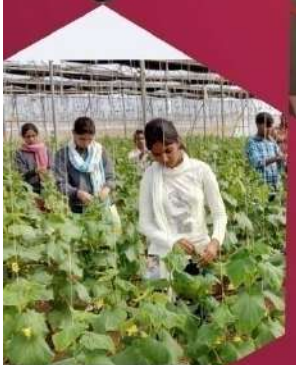


# SELF STUDY REPORT

## College of Horticulture & Forestry, Jhalawar



AGRICULTURE UNIVERSITY  
KOTA (RAJASTHAN)

**SELF STUDY REPORT  
FOR ACCREDITATION OF COLLEGE OF  
HORTICULTURE & FORESTRY, JHALAWAR**

**Submitted to**

**National Agricultural Education Accreditation Board  
Indian Council of Agricultural Research, New Delhi**



**Submitted by**

**AGRICULTURE UNIVERSITY KOTA (RAJ.)**

## PREFACE

It is a matter of gratification to present the "Self Study Report" prepared for renewal of Accreditation of the College before the Accreditation team, ICAR, New Delhi. The College of Horticulture & Forestry, Jhalawar has its modest beginning during 2004 and in its short span of over 16 years, travelled a long and acquired the status of one of the institutes of preference for higher education especially in the field of Horticulture and Forestry. At present, UG, PG and Ph.D. degree programmes in the field of Horticulture and Forestry are being offered in the college. The course curricula are as per approved norms of ICAR/ ICFRE. The college is fortunate enough that it has magnanimous support from ICAR in the form of NAHEP which has gone a long way in overall enriching infrastructure at the college befitting to cater higher education in the field of horticulture and forestry.

Till now 708 students have been passed out from the college. At present, 405 students including 361 in under-graduate, 37 in post-graduate and 07 for Ph.D. are on the roll. It is worth mentioning that many times our alumni have secured national ranking in various competitive examinations conducted by various boards/agencies. It is boasting that some of our alumni are pursuing higher education from abroad and proving their worth in academia and global level.

The present report prepared by the college team consisting of the Coordinator of the Editorial Team Dr. Jitendra Singh Professor & Head, Department of Fruit Science, Dr. Ashutosh Mishra, Professor & Head, Department of Floriculture & Landscape Architecture, Dr. P. S. Chauhan, Assoc. Professor & Head, Department of Forest Biology & Tree Improvement, Dr. S. B. S. Pandey, Assoc. Professor & Head, Department of Silviculture and Agroforestry, Dr. C. K. Arya, Dr. Prerak Bhatnagar, Dr. Anchal Sharma and Dr. Kanica Chauhan, Assistant Professors deserve special mentioning for accomplishing the task in time.

I am very much confident that the "Self Study Report" will be replete of all necessary information required for re-accreditation of the College of Horticulture & Forestry, Jhalawar (Agriculture University, Kota) by the ICAR.

Place : Jhalawar  
Date :



(I. B. Maurya)  
DEAN

College of Horticulture & Forestry

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## 6.5. ABOUT THE COLLEGE:

The College of Horticulture and Forestry, Jhalawar was established during year 2004, first of its kind in the State in the field of Horticulture and Forestry education. Before 2013, the College was a constituent unit of Maharana Pratap University of Agriculture and Technology, Udaipur. After establishment of Agriculture University, Kota (AUK) during 2013, the College became the part of Agriculture University, Kota. The teaching, research and extension education programmes of the College are fully interwoven in line to fulfill the mission of generation of professional manpower well versed especially in the field of Horticulture and Forestry. The College also undertook the need based research suiting to the local requirements of the region. As the result of our research outcome, the cultivation of strawberry and protected cultivation technology is catching fast in the region. The farmers are earning lucrative income out of cultivation of cucumber, colour capsicum and tomato in protected structures. The College is a seat of AICRP on Arid Zone Fruit and it is sure to contribute the development of drylands horticulture in national perspective. The College is fortunate enough that it has support from ICAR in the form of NAHEP which has gone a long way in overall enriching infrastructure at the College.

The College operates through two faculties namely, Horticulture and Forestry with 12 Departments *viz.*, Department of Fruit Science, Department of Vegetable Science, Department of Floriculture and Landscape Architecture, Department of Post Harvest Technology, Department of Plant Protection, Department of Silviculture and Agroforestry, Department of Forest Biology and Tree Improvement, Department of Forest Products and Utilization, Department of Wildlife Management, Department of Basic Science, Department of Natural Resource Management and Department of Social Science. The College has so far produced 596 graduates, 113 post graduates and 03 Ph.D. scholars in the field of horticulture and forestry.

The climate of the area is identical to the Indo-Gangetic plain. In summer, the temperature generally shoots up to 40 °C. In winter, the average lowest temperature dips many times to 0 °C. Jhalawar district has the highest rainfall in the Rajasthan state. An average of 890 mm of rainfall keeps it cool and gentle breezes ward off the stifling humidity. The surrounding of the district has many famous places like Sun Temple, Chandrabhaga Temple, Jain Temple, Gagrion Fort, Kolvi caves and Kalisindh thermal plant for visit.

The region is famous for mandarin cultivation next to Nagpur. Coriander, garlic, onion, tomato, chilli, okra, poppy, aswagandha, henna, etc, are other crops grown in dominance in the region. The region is also well known for organic production of many crops including mandarin and coriander. The farmers organic practice has been acclaimed nationally and the Manpura village is accredited with Padmashree laureate.



Map of the College



Main building of the College

## Goal and Objectives

### Goal:

- To generate competent human resource adequately skilled to address needs of Horticulture & Forestry and to keep pace with changing global cutting edge technologies in the subject.

### Objectives:

- To offer undergraduate and post graduate education in Horticulture & Forestry.
- To conduct basic and applied research in the field of Horticulture & Forestry.
- To act as a strong link for dissemination of technology, foster employment generation and development of entrepreneurship.
- To offer advisory and consultancy services to industries and other stakeholders.

### Accreditation/ Renewal of Degree Programmes:

The following academic programmes of the College are offered for renewal/fresh accreditation by National Agricultural Education Accreditation Board, ICAR, New Delhi:

Academic Programme	Programmes for Renewal	Duration
Under Graduate	B.Sc. (Hons.) Horticulture	Four years
	B.Sc. (Hons.) Forestry	Four years
Post Graduate	<b>M. Sc. (Horticulture)</b> in following disciplines <ul style="list-style-type: none"> <li>• Fruit Science</li> <li>• Vegetable Science</li> <li>• Floriculture and Landscape Architecture</li> </ul>	Two years
<b>Programme for Fresh Accreditation</b>		
Post Graduate	<b>M.Sc. (Forestry)</b> in following disciplines <ul style="list-style-type: none"> <li>• Silviculture &amp; Agroforestry</li> <li>• Forest Biology &amp; Tree Improvement</li> <li>• Forest Products &amp; Utilization</li> <li>• Wildlife Sciences</li> </ul>	Two years
Ph.D.	<b>Ph.D. (Horticulture) Fruit Science</b>	Three Years



## 6.5.1. College Administration

### 6.5.1.1. Dean's Office Establishment:

The Dean is the Head of the College for which post has been sanctioned by the State Government and is appointed as per the Statutes of the University. At present, Dr. I. B. Maurya is the Dean of the College.



#### **Prof. I. B. Maurya**

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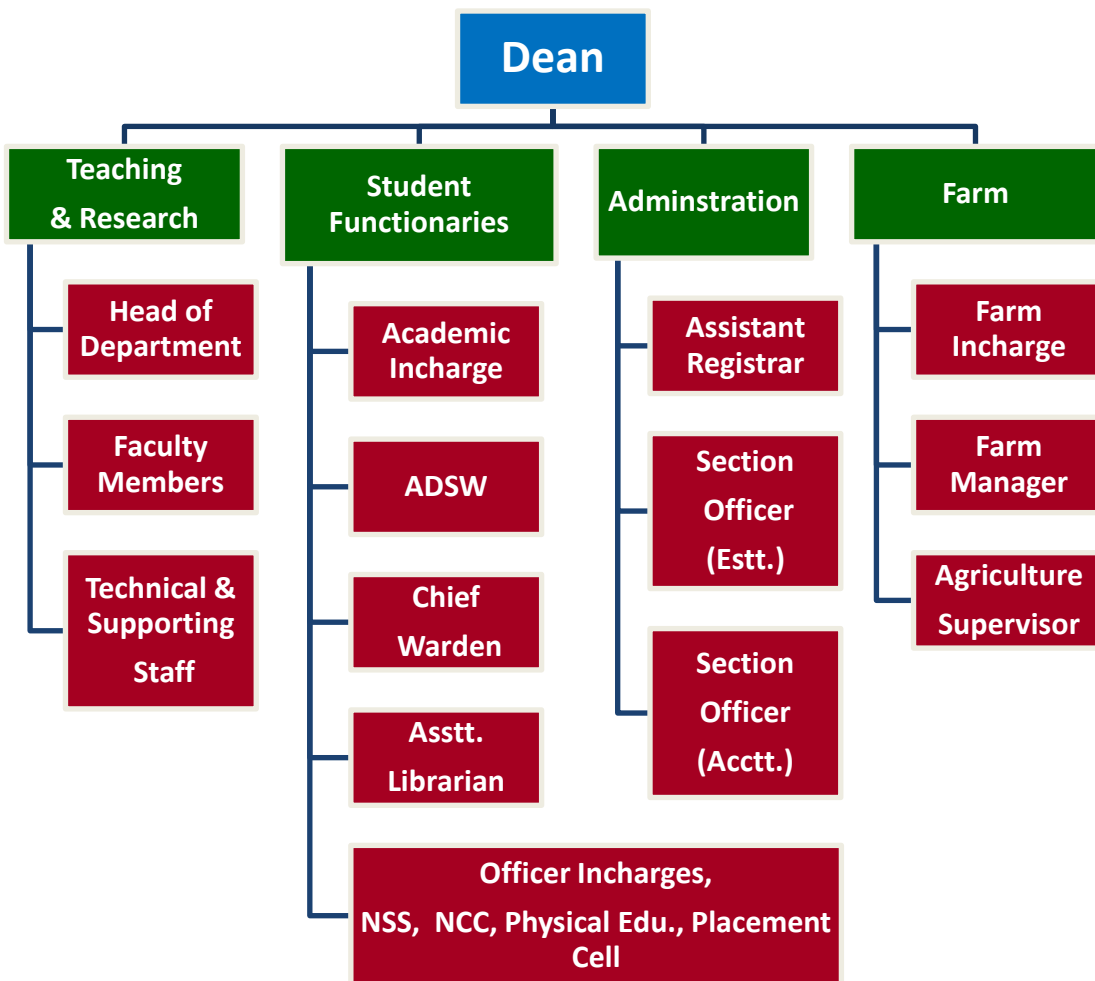
: deancohf2004@gmail.com

The incumbent Deans of the College of Horticulture & Forestry, since last five years:

S.No.	Name of the Dean	Mode of selection	Period
1.	Dr. L. K. Dashora	Regular	09.05.2009 to 31.03.2018
2.	Dr. I. B. Maurya	Regular	01.04.2018 to till date

### Administrative Structure:

The College of Horticulture and Forestry, Jhalawar comprises of two faculties *ie.*, Horticulture and Forestry. Each faculty is having four main departments namely Department of Fruit Science, Department of Vegetable Science, Department of Floriculture and Landscape Architecture and Department of Post Harvest and Technology for Faculty of Horticulture while, Department of Silviculture and Agroforestry, Department of Forest Biology and Tree Improvement, Department of Forest Products and Utilization, and Department of Wildlife Management for Faculty of Forestry. Department of Plant Protection, Department of Basic Science, Department of NRM and Department of Social Sciences are the supporting Departments common for both the Faculties.



**Administrative Structure of the College**

Each Department is lead by a HOD/Incharge nominated by the University. Each Department is equipped with a good Laboratory and instructional farm facility wherever required assisted by technical staff.

Assistant Director of Students Welfare (ADSW) looks after the welfare and co-curricular activities of students of the College. Wardens of Boys and Girls hostels take care of the hostel activities, assisted by a Care Taker / Matron under the overall supervision of the Chief Warden. Library is managed by Library Incharge with the support of Library Assistant and Shelf Assistant. Other Co- curricular activities are supervised by the respective Incharges like Games & Sports Incharge, NSS Incharge and NCC Officer.

The academic activities of the College are operationalized by Assistant Registrar and Academic Incharge. The account section is managed by the Assistant Registrar assisted by SO, UDC, LDC and Computer Operator. For farm and nursery activities, there is a Farm Incharge well assisted by Farm Manager and other technical staff.

**Staff Position for College Administration (other than faculty and laboratory staff)**

S.No.	Name of the Posts	Sanctioned	Filled	Remarks
<b>1.0</b>	<b>Deans Secretariat</b>			
1.1.	Dean	01	01	
1.2	PA/ Stenographer	02	02*	
1.3	Driver	02	01	
1.4	Peon, Class -IV	02	02*	
<b>2.0</b>	<b>Establishment &amp; Accounts</b>			
2.1	Assistant Registrar	01	-	
2.2	Section Officer	02	01	
2.3	UDC, Clerk Grade-II	02	-	
2.4	LDC, Clerk Grade-I	03	03*	
2.5	Store Keeper	01	-	
2.6	Peon, Class -IV	01	01*	
<b>3.0</b>	<b>Hostel</b>			
3.1	Chief Warden	-	01	One Professor is given responsibility
3.2	Warden	-	03	One Assistant Professor is given responsibility for each hostel
3.3	Matron/Care taker	03	01+02*	
3.4	Peon, Class- IV	01	01*	
<b>4.0</b>	<b>Library staff</b>			
4.1	Assistant Librarian	01	-	One Assistant Professor is given responsibility
4.2	Library Assistant	01	01	
4.3	Shelf Assistant	01	01*	
<b>5.0</b>	<b>Farm</b>			
5.1	Farm Manager	01	-	
5.2	Technical Assistant	02	02	
5.3	Agriculture Supervisor	04	03	
5.4	Gardner	02	02*	
5.5	Forest Guard	02	02	
5.6	Driver	01	01*	
5.7	Class- IV	01	01*	

\* Contractual basis. However, recruitment process for vacant positions is in progress.

**Infrastructure for College Administration (Other than Depts., Farms, Hostels, Library):**

S.No.	Items.	Facilities available	Size (Sqm)
1.	Deans's Chamber.,	Computer (01), Laptop (02), LCD (01), Photocopier Machine (01), Printer (01), CCTV Surveillance system,	55.0
	PA Cabin,	Computer (01), Printer (01)	11.56
	Waiting Lounge	Biometric System, Furniture	15.64
2.	Administration Office	Computer (01), Printer (01)	21.99
3.	Account Section	Computer (02), Printer (01), Photocopier Machine (01)	40.35
4.	Establishment Office	Computer (02), Printer (01)	12.48
5.	Student Section	Computer (02), Printer (01), Scanner (01), Photocopier Machine (01)	82.21
6.	Meeting Hall/ Seminar Room	Digital Podium (01), Smart Board (01), Visualizer (01), Mike system (complete set)	79.25
7.	Video Conferencing Hall	Digital Podium (01), LCD (01), Projector (01), Video Conferencing System (01)	82.21
8.	Examination Hall	Seating Capacity (100 students )	142
9.	Telephone & Intercom facility	Yes	-
10.	Internet connectivity & Wi-Fi, CCTV,	Yes	-
11.	Biometric System for attendance	01	-



**Dean's Chamber**



**Meeting Hall**

### **6.5.1.2. Monitoring Mechanism for Quality Education (On- Line and Off-Line):**

- The internal quality assurance system of the College comprises of monitoring directly by Dean and by HoDs through day to day and periodical feedback collected. Feedback is collected through the advisor of the student, course teacher, hostel warden, parents meeting, attendance register, etc. and discussed at HoDs meetings, Staff Council meetings and Board of Studies meetings and remedial measures are decided and implemented. Monitoring system of teacher advisor for each student for his/her academic & non-academic problems is giving best results. The system of minimum 75 per cent attendance, debarring upon continuous 7 days absence from classes, sending monthly attendance and mid-term result to parents are other ways employed for monitoring the quality of learning-teaching.
- Allotment of Teacher Advisor to each student for counseling and mentoring.
- Surprised visits to the classes, laboratories, instructional farms.
- Debarring students upon 7 days regular absence from the classes.
- Attendance of the students of each course is displayed by 5<sup>th</sup> of every month. At last, if students fail to maintain 75% of attendance, they are not allowed to appear the examination.
- Mid-term examination under UG and PG programme.
- External mode of evaluation in UG courses in final theory examination.
- Award of marks in practical on the basis of attendance in practical exercises.
- Monitoring of PG research by advisory committee, HoD, Dean and Director Education.
- Mandatory one seminar of PG and two seminars for Ph.D. students.
- Compulsion to stay at the College to fulfill residential requirement.
- External evaluation of thesis.
- Warning mechanism to maintain required OGPA for the degree completion.
- The Academic Management System (AMS), a web - enabled application software has been adopted. It has been introduced to manage various academic activities of the College. The AMS caters to the needs of different users like Dean, Registrar, Heads, Guides, Teachers, Students, Administrators and other officials to carry out their assigned tasks. It is user friendly and can be accessed ubiquitously. The online capabilities of the system allow the students, faculty members and administrators to publish and retrieve the information from their respective disciplines. It has modules like Course Management, Student Management, Faculty Management, Administration Management, E-Learning, Online fee collection.
- Library is equipped with RFID based management system.
- Monitoring of Student's attendance through biometric machine.



Figure: Online Management System

### Final Year Students Feedback:

- All Teaching faculties and Dean of the college frequently take feedback from the students and take necessary action to excel the teaching and laboratory work so that students can complete their degree within the stipulated time frame.
- One feedback/suggestion box is fitted in the reception room where one can drop any feedback, suggestion or enquiry.
- Final year students of B.Sc. degree program give their feedback regarding experiential learning, hands on training and RHWE programmes to the respective course teacher.
- Students as well as parents are advised to give feedback of complete degree programme.
- Visitors from different places, other schools and colleges, industry persons and farmers give feedback time to time telephonically as well as in written form and Dean of the college take necessary review for improvement in desired line.

### 6.5.1.3. Courses Committee / Board of Studies:

At each Department, there is provision of Committee of Courses for upgradation/updation purpose. The committee is proposed by HOD and consists of one internal member from concerned department and two external members approved by Academic Council. The Dean of the faculty is the Chairperson for the Board of Studies and all the Head of the Departments and two academicians nominated by the Hon'ble Vice-Chancellor, constitute the Board of Studies. The Board of Studies has the responsibility of proposing new programmes and changes for curriculum improvement and examination pattern. Review of teaching quality, evaluation methods and upgrading them in the interest of the students is also the mandate of the Board of Studies. Board of Studies is empowered for addition/deletion/modification in a particular course if deemed so. Such decisions are placed before the Academic Council for approval and subsequent implementation.

### Composition of Board of Studies:

As per section 20 of Act, the composition of Board of Studies is as under:

S. No.	Position	Position
1.	Dean (Senior most Dean of constituent Colleges) of the faculty	Ex-officio Chairman
2.	The Director Education	Ex-officio Member
3.	Director Students' Welfare	Ex-officio Member
4.	Controller of Examinations	Ex-officio Member
5.	Dean of the other College(s)	Ex-officio Member
6.	All Heads of the departments	Member
7.	Two Professors other than Heads to be nominated by the Vice-Chancellor	Member
8.	Two teachers to be nominated by the Vice-Chancellor	Member
9.	Two outside experts to be co-opted by the Board of Studies concerned from amongst persons who are not teachers in the University	Member

### Date of conduct of meetings of Board of Studies for last five years:

Date of Board of Studies	Major Recommendations
27.07.2017	<ol style="list-style-type: none"> <li>1. Approval of modifications in course curricula of UG &amp; PG degree programmes.</li> <li>2. Approval of semester wise course distribution of UG &amp; PG programme.</li> <li>3. Approval of course committee of various departments.</li> </ol>
23.05.2018	<ol style="list-style-type: none"> <li>1. Approved the initiation of the specialized M.Sc. Forestry programme separately in the existing four departments (Silviculture &amp; Agroforestry, Forest Biology and Tree Improvement, Forest Products and Utilization and Wildlife Sciences) of the faculty of forestry with an intake capacity of 5 students per programme from the academic session 2018-19, with standardization of the eligibility criteria and mode of admission for admission to various M.Sc. Forestry degree programmes, along with this also accepted the semester wise course programme and course curricula of the various M.Sc. Forestry degree programmes.</li> <li>2. It was decided and approved to reconstitute the committee for Board of Studies and also for course committee of different departments of the college of Horticulture &amp; Forestry, Jhalawar.</li> </ol>
08.01.2020	<ol style="list-style-type: none"> <li>1. It was approved to abolish the provision for direct admission on merit basis under B.Sc. (Hons.) Horticulture degree Programme.</li> <li>2. It was approved for increase of 10 per cent seats in UG in</li> </ol>

	compliance to Govt. order for providing reservation to students of EWS category.
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#### **6.5.1.4. Anti- Ragging Cell:**

As per the directive of the government, Anti-Ragging Cell has been established at the College and Anti-Ragging committees are formed to create awareness on curbing ragging and preventing such inhuman activities. To keep the surveillance, Anti-Ragging Squad is also formed under the supervision of the Dean. The squad is assisted by Chief Warden, Wardens and other faculty members of the College. The anti-ragging squad performs duties as per schedule framed for 24/7 hours availability. The squad frequently makes surprise visits of the hostel premises, canteen, corridors, class-rooms, laboratories, field Labs and play grounds. The squad observes the student's behavior during the class hours and also during closure of class/lab sessions and even after office hours in the playground and hostel premises. The vigilance activities are carried out during holidays as well.

As per the UGC guidelines, all the students are registered themselves on the website <http://www.amanmovement.org> and <http://www.antiragging.in> and give undertaking that they will not involve/indulge in any type of ragging activities. This is endorsed by their parents or guardians. Regular posters are also displayed and instructions are passed to students not to involve in ragging activities and if involved, it will be punishable.

Orientation and joint sensitization programmes are conducted by the College administration sensitizing students not to involve in ragging. Counseling of both fresher's and seniors is conducted specially during admission of new students. Every teaching and non-teaching staff, employees of mess/canteen are given necessary instructions to keep strict vigilance and to report any incidence of ragging to the College authorities.

The matter of ragging is resolved by the Anti Ragging Committee comprising of DSW, COE, ADSW, Chief Warden, Wardens under chairmanship of Dean. The name and contact number of the above officials have been displayed on the anti ragging board fitted in the College and hostel building.





Anti -Ragging Display Board in College



Anti -Ragging Display Board in College and hostels



Surveillance Camera at Entrance of College



Surveillance Camera at Girls Hostel

**Disciplinary committee:**

A disciplinary committee operates at the College to maintain the general rules and regulations at the College and hostel premises across various academic, residential and co-curricular activities. The committee deals with the grievances if any received from students. The detail of committee is as under:

S.No.	Disciplinary Committee	Member
1.	Dr. Ashutosh Mishra, Prof & Head and Chief Warden	Convener
2.	Dr. C. K. Arya, Asstt. Prof. and Academic Incharge	Member
3.	Dr. Hemraj Chhipa, Asstt. Prof. and ADSW	Member
4.	Dr. S. B. S. Pandey, Assoc. Prof. & Head and Warden PG Boys Hostel	Member
5.	Dr. Anchal Sharma, Asstt. Prof. & Warden Girls Hostel	Member
6.	Sh. Rajesh Kumar Sharma, Asstt. Prof. & Warden UG Boys Hostel	Member

**6.5.1.5. Biological Waste Disposal Facility:**

The laboratory waste disposal is being handled as per the regulations of the Government. Appropriate and duly labeled waste collection bins are used in laboratories of the College. The laboratory waste is controlled by segregating it into appropriate category right at laboratory stage. The waste requiring incineration is being subjected to incineration using the facility at Administrative building and Girls hostel. Safe and recyclable waste is collected by the Municipal Corporation. Rest of the controlled waste is disposed at the waste disposal unit at various locations in the College. No objectionable waste except biological waste is generated at the College.



**Biological waste disposal unit**

**6.5.1.6. Institutional Ethics Committee for Experiment on Animals:**

The College does not work on the aspect in which animals are put forth for experiment purpose as treatment component. There is no animal rearing unit at the College. However, a committee has been formed to monitor the future research work on animal as per CPCSEA guidelines.

**6.5.1.7. Committee for Prevention of Sexual Harassment of Women at Work Places:**

As per the “Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 that came into force on 9<sup>th</sup> December, 2013, a ‘Committee for

Prevention of Sexual Harassment of Women at Work Places' was constituted by the University to protect women against sexual harassment at workplace and to prevent and redress complaints of sexual harassment. This committee invigilates for a safe environment free from sexual harassment for every woman to practice her profession; to carry out their duty in area of concerned. Earlier, College of Horticulture and Forestry, Jhalawar was only the constituent College of the University, hence, University level committee often use to monitor the activities of the College. But after establishment of the Agriculture College, such committee has also been framed at College level. The committee members of the College are as under:

**The Members of the Committee in Action are as follows:**

1.	Chairman	Dean
2.	Member	Dr. Kavita Aravindakshan, Assistant Professor
3.	Member	Dr. Anchal Sharma, Assistant Professor
4.	Member	Sh. Rajesh Kumar Sharma, Assistant Professor
5.	Member	Mrs. Seema Cheeta, Matron
6.	Member	The topper student of the faculty concern from each faculty 1. Ms. Rishika Chaudhary, B.Sc (Hons.) Horticulture final year 2. Ms. Ayushi Jain, B.Sc (Hons.) Forestry final year

For the safeguards of women's and to prevent any case of sexual harassment at work place, the constituted committee has conducted two meeting during the last 5 years.

S.No	Date of Meeting	Action taken
1.	18.07.18	1. Girls were guided for self defence 2. Girls were made aware of sexual harassment guidelines as given by Govt. of India.
2.	02.11.20	1. Lectures on sexual harassment at work place. 2. Girls were made aware of cyber crime

However, no case of sexual harassment has been reported by the faculties as well as students. Besides, the University has also conducted following activities for all the faculties as well as students of the University.

**Activities undertaken by the University:**

Sl.No.	Dates of meeting and discussion	Topic
1	05.09.2019	Lecture organized on gender sensitization at work place by Mithali Garg, Additional SP, Crime Branch, Kota
2	19.12.2019	Lecture organized on women safety at work place by Mithali Garg, Additional SP, Crime Branch, Kota
3	30.09.2020	Webinar organized on sexual harassment at work Place

**6.5.2. Faculty****6.5.2.1. Faculty Strength:**

S. No.	Designation / Cadre	Sanctioned Strength	Filled position	Vacant position*
1	Dean	01	01	-
2	Professor	04	05**	+01
3	Associate Professor	13	02	11
4	Assistant Professor	43	21	22
	<b>Total</b>	<b>61</b>	<b>29</b>	<b>32</b>

\* Recruitment on 22 vacant positions is in process.

\*\* One Professor is acting as Dean.

**6.5.2.2. Faculty Profile:**

S. No.	Name of the Department	Sanctioned strength	Faculty in place	Vacant position	Faculty recommended by ICAR	Deviations from ICAR recommendations
<b>01</b>	<b>Department of Fruit Science</b>					
	Professor	01	02	-	01	+01
	Assoc. Professor	02	-	02	02	01
	Assistant Professor	04	02	02	03	01
<b>02</b>	<b>Department of Vegetable Science</b>					
	Professor	01	01*	-	01	-
	Assoc. Professor	01	-	01	01	01
	Assistant Professor	04	02	02	04	02
<b>03</b>	<b>Department of Floriculture and Landscape Architecture</b>					
	Professor	-	01	-	01	-
	Assoc. Professor	01	-	01	01	01
	Assistant Professor	02	-	02	02	02
<b>04</b>	<b>Department of Post Harvest Technology</b>					
	Professor	01	01	-	01	-
	Assoc. Professor	01	-	01	01	01
	Assistant Professor	02	-	02	02	02
<b>05</b>	<b>Department of Silviculture and Agroforestry</b>					
	Professor	01	-	01	01	01
	Assoc. Professor	01	01	-	02	01
	Assistant Professor	04	02	02	04	02
<b>06</b>	<b>Department of Forest Biology and Tree Improvement</b>					
	Professor	-	-	-	01	01
	Assoc. Professor	01	01	-	02	01
	Assistant Professor	03	01	02	04	03

<b>07</b>	<b>Department of Forest Product and Utilization</b>					
	Professor	-	-	-	01	01
	Assoc. Professor	02	-	02	02	02
	Assistant Professor	04	03	01	04	01
<b>08</b>	<b>Department of Wildlife Management</b>					
	Professor	-	-	-	01	01
	Assoc. Professor	01	-	01	02	02
	Assistant Professor	02	01	01	04	03
<b>09</b>	<b>Department of Basic Science</b>					
	Professor	-	-	-	01	01
	Assoc. Professor	01	-	01	02	02
	Assistant Professor	06	03	03	06	03
<b>10</b>	<b>Department of Natural Resource Management</b>					
	Professor	-	-	-	01	01
	Assoc. Professor	-	-	-	01	01
	Assistant Professor	05	03	02	06	03
<b>11</b>	<b>Department of Plant Protection</b>					
	Professor	-	-	-	01	01
	Assoc. Professor	02	-	02	02	02
	Assistant Professor	04	03	01	03	-
<b>12</b>	<b>Department of Social Science</b>					
	Professor	-	-	-	01	01
	Assoc. Professor	-	-	-	01	01
	Assistant Professor	03	01	02	05	04

\* Presently, act as Dean also.

### 6.5.2.3a. Credentials of the Faculty:

S. No	Name of the Faculty	Designation	Department	Higher Degree including Post Doctoral obtained	Related work experience (in years)	No. of PG/ Ph.D. students guided
1	Dr. I.B. Maurya	Prof. & Dean	Vegetable Science	Ph.D.	>23 years	26
2	Dr. Jitendra Singh	Prof. & Head	Fruit Science	Ph.D.	>23 years	21
3	Dr. Ashutosh Mishra	Prof. & Head	Floriculture	Ph.D.	>19 years	20
4	Dr. S.K. Jain	Prof. & Head	PHT	Ph.D.	>15 years	8
5	Dr. Virendra Singh	Professor	Fruit Science	Ph.D.	>14 years	18
6	Dr. P. S. Chauhan	Assoc. Prof. & Head	FBTI	Ph.D.	>15 years	04

7	Dr. S. B. S. Pandey	Assoc. Prof. & Head	SAF	Ph.D.	>19 years	05
8	Dr. Prerak Bhatnagar	Asstt. Prof.	Fruit Science	Ph.D.	>15 years	10
9	Dr. Prahlad V. C.	Assist. Prof.	SAF	Ph.D.	>15years	02
10	Dr. Kavita A.	Assist. Prof.	Vegetable Science	Ph.D.	>15 years	15
11	Er. C. K. Arya	Asstt. Prof. & Incharge	NRM	Ph.D.	>13 years	-
12	Dr. Ashok Kumar	Asstt. Prof. & Incharge	Basic Science	Post Doctoral	>7 years	-
13	Dr. Anil Kumar Gupta	Asstt. Prof.	Basic Science	Ph.D.	> 2 years	-
14	Dr. Suresh Kumar Jat	Asstt. Prof. & Incharge	Plant Protection	Ph.D.	> 2 years	-
15	Dr. Bhuvnesh Nagar	Asstt. Prof.	FPU	Ph.D.	> 2 years	01
16	Sh. Ladhu Ram	Asstt. Prof.	Plant Protection	M.Sc.	> 2 years	-
17	Dr. Priyanka Solanki	Asstt. Prof.	Basic Science	Ph.D.	> 2 years	-
18	Sh. Nirmal Kumar Meena	Asstt. Prof.	Fruit Science	M.Sc.	> 2 years	02
19	Dr. Navale Manasi R.	Asstt. Prof.	SAF	Ph.D.	> 2 years	-
20	Dr. Anchal Sharma	Asstt. Prof. & Incharge	Wildlife Management	Ph.D.	> 2 years	03
21	Dr. Hemraj Chhipa	Asstt. Prof.	Basic Science	Post Doctoral	> 2 years	-
22	Dr. Kanica Chauhan	Asstt. Prof. & Incharge	FPU	Ph.D.	> 2 years	01
23	Dr. Hanuman Singh	Asstt. Prof.	Plant Protection	Ph.D.	> 2 years	-
24	Ms. Neetha P.	Asstt. Prof.	FBTI	M.Sc.	> 2 years	02
25	Dr. Bhuri Singh	Asstt. Prof.	Basic Science	Ph.D.	> 2 years	-
26	Sh. Rajesh Kumar Sharma	Asstt. Prof.	Basic Science	M.Sc.	> 2 years	01
27	Dr. Anju S Vijayan	Asstt. Prof.	FPU	Ph.D.	> 2 years	01
28	Dr. Rahul Chopra	Asstt. Prof.	NRM	Ph.D.	> 2 years	-

### 6.5.2.3b. Honors, Awards, reflecting excellence in teaching & achievements:

S.No.	Name of faculty	Publications				Awards
		Research Paper	Articles	Book Chapter	Manuals/ Bulletin/ Abstract/	
1.	Dr. I.B. Maurya, Dean	71	24	8	3	<ul style="list-style-type: none"> <li>Shikshak Shree Samman for 2016</li> <li>Appreciation award by Hon'ble VC, AU, Kota for 2017</li> </ul>
2.	Dr. Jitendra Singh, Prof & Head	90	35	26	16	<ul style="list-style-type: none"> <li>Dr. Rajendra Prasad Puraskar, 2016</li> <li>Best teacher Award, 2016</li> </ul>
3.	Dr. S.K. Jain, Prof.	26	15	4	3	<ul style="list-style-type: none"> <li></li> </ul>

	& Head					
4.	Dr. Ashutosh Mishra, Prof & Head	49	2	1	-	<ul style="list-style-type: none"> <li>• Excellence in teaching award, 2017</li> <li>• Award of Appreciation, by District Magistrate, Jhalawar, 2018</li> </ul>
5.	Dr. Virendra Singh	25	50	3	20	<ul style="list-style-type: none"> <li>• Rashtrya Gaurav Award, 2017</li> <li>• VC appreciation, 2017</li> </ul>
6.	Dr. P. S. Chauhan Assoc. Prof. & Head	32	8	6	36	<ul style="list-style-type: none"> <li>• Excellence in Teaching Award, 2019</li> <li>• Appreciation Award, DCF, Jhalawar, 2019</li> <li>• Appreciation Award, CH&amp;F, Jhalawar, 2019</li> </ul>
7.	Dr. S. B. S. Pandey, Assoc. Prof. & Head	22	2	2	26	<ul style="list-style-type: none"> <li>• Gold Medal for Ph.D., 2018</li> <li>• Best Teacher Award , 2017</li> <li>• Vraksha Vardhak Puraskar , 2018</li> </ul>
8.	Dr. Prerak Bhatnagar, Asstt. Prof.	60	-	1	2	<ul style="list-style-type: none"> <li>• Appreciation Award by Hon'ble VC for 2019; Teaching &amp; Research Excellence Award during 2018 and Best Teacher award in horticulture, 2017</li> </ul>
9.	Dr. Kavita A., Asstt. Prof.	28	6	4	10	<ul style="list-style-type: none"> <li>• Appreciation by Hon'ble VC, 2017</li> </ul>
10.	Er. C. K. Arya, Asstt. Prof. & Incharge	17	3	-	1	<ul style="list-style-type: none"> <li>• DC Memorial Teacher Award, 2019</li> <li>• Appreciation award by District Magistrate, Jhalawar, 2018</li> </ul>
11.	Dr. Ashok Kumar, Asstt. Prof. & Incharge	14	1	1	10	<ul style="list-style-type: none"> <li>• Award of Appreciation by DM, Jhalawar, 2020</li> <li>• International Young Scientist Certificate, 2020</li> <li>• Excellence in teaching Award, 2017</li> </ul>
12.	Dr. Suresh Kumar Jat, Asstt. Prof. & Incharge	4	10	-	-	<ul style="list-style-type: none"> <li>• Appreciation Award by Hon'ble VC, AU, Kota, 2020</li> </ul>
13.	Sh. Nirmal Kumar Meena, Asstt. Prof.	5.	2	6	-	<ul style="list-style-type: none"> <li>• Young Scientist Award , 2018, 2019</li> <li>• Young Achiver Award , 2019</li> </ul>
14.	Dr. Prahlad V. C., Asstt. Prof.	6	4	3	24	
15.	Dr. Anchal Sharma, Asstt. Prof.. & Incharge	9	3	-	8	
16.	Dr. Hanuman Singh, Asstt. Prof.	6	3	1	1	
17.	Sh. Ladhu Ram, Asstt. Prof.	4	2	1	-	
18.	Dr. Hemraj Chhipa, Asstt. Prof.	3	-	4	-	
19.	Dr. Kanica Chauhan, Asstt. Prof. & Incharge	4	-	1	1	
20.	Dr. Rahul Chopra, Asstt. Prof.	6	6	-	-	

21.	Dr. Anil Kumar Gupta, Asstt. Prof.	-	-	1	2
22.	Dr. Bhuvnesh Nagar, Asstt. Prof.	.1	-		
23.	Dr. Priyanka Solanki, Asstt. Prof.	1	-	-	-
24.	Dr. Bhuri Singh, Asstt. Prof.	1	-	-	-
25.	Sh. Rajesh Kumar Sharma, Asstt. Prof.	-	5	-	-
26.	Ms. Neetha P., Asstt. Prof.	-	1	-	-
27.	Dr. Anju Vijyan	3	-	-	-
28.	Dr. Manasi Navale	4	-	1	-

#### 6.5.2.4. Technical and Supporting Staff:

Sl. No.	Designation	Sanctioned Strength	Filled	Vacant
1.	Assistant Librarian	01	-	01
2.	Assistant Registrar	01	-	01
3.	Section Officer	02	01*	01
4.	Technical Assistant/Farm Manager	03	02	01
5.	Lab Technician	01	-	01
6.	PA	01	01*	-
7.	Steno	01	01*	-
8.	U.D.C.	02	-	02
9.	Lab Assistant	06	05	01
10.	L.D.C.	03	03*	-
11.	Library Assistant	01	01	-
12.	Driver	02	01+01*	-
13.	Matron	01	01	-
14.	Care Taker	02	02*	
15.	Agriculture Supervisor	04	03	01
16.	Store Keeper	01	-	01
17.	Forest Guard	02	02	-
18.	Gardener	02	02*	-
19.	Shelf Assistant	01	01*	-
20.	Lab Attendant	01	-	01
21.	Class IV	05	05*	-
	<b>Total</b>	<b>43</b>	<b>32</b>	<b>11</b>

\*Contractual. However, recruitment on following vacant positions is in process.

**Note:** Presently, department wise distribution of technical and supporting staff does not exist in college. The duties are assigned to them, as per the need of the department and that too on the sharing basis.



**The proposed recruitment on non-teaching post during 2020-21**

LDC	Stenographer	Lab Attendant	Shelf Assistant	Lab Technician	Hostel Care Taker	Total
03	01	01	01	01	01	08

**6.5.3. Learning Resources:**

**6.5.3.1. College Library:**

College library is located in main building of the College at second floor. A bigger building of the library is under construction. The library covers total area of 1755 sq.ft., with seating capacity of 30 students. Library is air conditioned and enriched especially on recent catalogue to support academic pursuits of readers rendering diverse collection of books, journals, magazines and newspapers. College library has 13158 books, CDs, DVDs, reference books, 82 theses, 27 e-books, 53 manuals and other reference material. Besides, there are 1562 books in Book Bank. Facility of J-gate journal containing 46027 e-journals and CERA is also available in the library. Library has wi-fi facility along with computer and reprographic facility and managed through KOHA Library management software with Radio frequency identification (RFID) for circulation of books. Every year, the library is strengthened by procuring new books to cater the needs of horticulture and forestry students in terms of physical and digital outreach. The book bank facility is special privilege to students.

**Staff Position:**

Post	Number	Name of the Staff
Assistant Librarian	01	Dr. Bhuri Singh, Assistant Professor
Library Assistant	01	Sh. Ashish Dhanotiya
Shelf Assistant	01	Contractual
Book sorter	01	Contractual

**Availability of Wi-Fi, Books and other Reading Materials:** The library has Wi-Fi enabled internet facility favoring students from information floating in scientific spheres across the globe. The books are arranged discipline wise and digitalization of entire library through KOHA software has helped the library functionaries in issuance, counter checking availability and maintaining stock of study material. The college library is fully air conditioned with CCTV, UPS and computer facility enabling internet surfing, e-journals, e-thesis facility to support students.



### Digitalization of Library with KOHA:

Library is managed through KOHA Library management software with Radio frequency identification (RFID) for circulation of books.

### Book Bank:

Presently, book bank provides 1562 books and the facility is available for all bonafide students of the college. An open access system has been adopted for consultation and selection of books. In this system, all the books are issued for one complete semester.

### Books purchased during last five years

Year	Books purchased	e-journals	Amount (Rs.)
2016-17	324	03	2,36,400
2017-18	483	46027*	8,78,100
2018-19	540	46027*	7,33,136
2019-20	1120	-	6,22,250
2020-21	-	-	-
<b>Total</b>	<b>2467</b>	<b>46030</b>	<b>24,69,886</b>

\* College subscribes J-Gate which contains 46027 journals of various disciplines including Agriculture, Horticulture and Forestry.

### Year wise Master's Theses deposited by Different Departments

S.No.	Name of Department	2016	2017	2018	2019	2020	Total
1.	Fruit Science	02	03	04	05	04	18
2.	Vegetable Science	02	04	05	03	05	19
3.	Floriculture and Landscape Architecture	04	02	05	02	05	18
4.	Post Harvest Technology	-	01	02	02	01	06
5.	Silviculture and Agroforestry	-	01	01	02	02	06
6.	Forest Biology and Tree Improvement	-	01	-	02	03	06
7.	Forest Products and Utilization	-	01	-	-	03	04
8.	Wildlife Management	-	-	-	-	03	03
	<b>Total</b>	<b>08</b>	<b>13</b>	<b>17</b>	<b>16</b>	<b>26</b>	<b>80</b>



**Stacking of Books**



**Stacking of Books**



**Display of Journals & Magazines**



**Students reading in Library**

**Online Cataloguing (OPAC):** Library of the College of Horticulture and Forestry, Jhalawar has more than 13000 books, CDs, DVDs and Journals etc. which can be accessed through the library OPAC. The library catalogue can be searched out putting key words like author, title, series, publisher, subject, ISBN etc. A user can also check the status of a book, number of books borrowed, due date, due penalty charges etc. from the OPAC.



**Access of library through OPAC**

**Reprographic Unit:** This unit is functional since 2013. The college supports students through reprography by print out facility of available resource material in the library. More than 2.0 lac copies of various reading materials have been Xeroxed by various category of readers till date.

**Periodicals cum e- resource facility:** This unit supports teaching as well as research programs of M.Sc. and Ph.D. degree running at the college. It has a collection of journals and theses. Access to e-research contents have been provided to facilitate the research activities.

**Computers in Library:**

Separate computer Lab is available in the college over an area of 666 sq.ft. with 25 desktop computers having uninterrupted internet connection of 100mbps speed. The lab is provided with UPS, dome camera. CERA, CABI Abstract and other online journals and online resources are accessed through computer lab. Students regularly use the lab to access internet and prepare PPT presentations.

**Computers and Teaching Aids maintained in the College:**

S.No.	Items	Numbers
1	Desktop computer	84
2.	Laptop	13
3.	Printer	34
4.	Photocopier (black/white and colour)	04
5.	LCD/overhead projector/Kyan	13
6.	Scanner	09
7.	Camera	03
8.	Biometric machine	06
9.	CCTV camera	17
10.	Television	07

**6.5.3.2 Laboratories, Instructional Farm, Workshop, Dairy Plant, Veterinary Clinic, Hatchery, Ponds, etc:**

**Laboratories:**

- The College of Horticulture and Forestry has total 16 well equipped laboratories attached to individual department for conducting UG and PG practicals and research work.
- For teaching, there are 10 class rooms out of which six classes have seating capacity of 60 each and another four have seating capacity of 30 each. For practical purpose, there are two halls utilized exclusively for practical instruction in the subject of PHT and protected cultivation. For imparting quality teaching, three class rooms have been converted into smart class rooms under NAHEP project with addition of digital teaching device including Smart Boards, visualizer, overhead projector, digital podium, CCTV, biometric machine along with quality fixtures (desk cum chair), etc.

**Details of Department Wise Laboratories are as under:**

S.No.	Name of laboratories	Area (sq m.)	Major Equipments/tools (No.)
1.	Fruit Science	83.13	Electronic balance capacity sartorius 200g (1), Portable Photosynthesis system (1), Hot air oven (1), Willey grinder (1), Rotary flask shaker(1), Single distillation Unit (1), Leaf area meter (1), LAI meter (1), Elico digital pH meter (1), Probe soil thermometer (1), Microscope (3), Hot plate with digital temp cum controller (1), Water potential system (1), Open pan evaporimeter (1), Spectrophotometer (1)
2.	Vegetable Science	82.21	Top pan balance capacity 10 kg (2), Elico microprocessor scanning visible spectrophotometer SL-177 (1), All Quartz Double Distillation with auto cut off JSGW 1.5L/h (1), Kjeldal digestion unit (JSGW) With individual energy regulator (1), Elico digital Ph meter Model L1-127 (1), Digital electronic balance Sartorius model BT-2245 (1), Microscope (5), Digital balance (1), Hot Plate with digital temp cum controller (1), Centrifuge and accessories (2)
3.	Floriculture and Landscape Architecture	82.21	Hot air oven (1), Water distillation unit (1), Digital balance (1), Microwave oven (1), Digital camera (1), Hedge shear (3), Microscope (1), Brush cutter(3), Digital thermohygrometer (1), Hedge trimmer (1), Refrigerator (1)
4.	Post Harvest Technology	162.18	Boiler –Thermotech (1), Crown corking machine - Basil (1), Can reforming machine –basil (1), Compound microscope trinocular (1), Double seaming machine (1), Dicing and cubing machine (1), UV Spectrophotometer (1), Inert atmosphere can filler(1), Juice filtering equipment (1), Lid embossing machine (1), Lime juicer–manual (6), Laminar air flow horizontal (1), Magnetic stirrer with hot plate (1) Vegetable cutting machine (1), Micro processor based solar dryer (1), PP Cap sealing machine (1), Pulper with spare sieve (1), Portable digital thermometer (1), Microwave oven (1), PAN Stainless steel (2), Pair of ocular micrometer (1), Pocket refractometer 28-62 (1),

			Plastic bag sealing machine (1), Rotary shaker (1), Rotational viscometer (1), Steamed jacketed cooling kettle (1), Steam pipeline with overhead water tank (1), Thermo hygrometer digital (1), Tin sterilizer (1), Vacuum packaging machine (1), Vegetable washer (1)
5.	Silviculture and Agroforestry	82.21	Altimeter ravi (3), Binocular 7-30×50 Olympus (2), Fridge (2), Hedge Shear 14" (2), Herbarium Sheet Cabinet 18X15X3 ( 12 Drawer) (2), Balance- Digital MK-800 E (1), Bark gauge (1), Branch Cutter(1), GPS with Barometer (1), Hand pruning saw with wooden handle 16"(1), Hot air oven (1), pH Meter –Digital (1), Spiegel Relaskop (1), Thermo-hygrometer clock (1)
6.	Forest Biology and Tree Improvement	82.21	Digital balance (4), Vernier caliper (1), Oven (1), Microscope (1), Seed germinator (1), Digital moisture meter (1), Seed grader (1), Seed counter) (1), Seed precision divider (1), Purity work board (1), Binocular (19), Herbarium press (1), Luxmeter (1), Autoclave (1), Distillation unit (2), SLR camera (1), Kyaan (1)
7.	Forest Products and Utilization a. NTFP b. TFP	161.02 (2 Labs)	Weighing machine (1), Oven (1), Hot plate rectangular (45x30 cm) (1), Water bath (1), Freeze (320 litre) (1), Digital balance machine (1), Incubator universal (1), Kjeldahl digestion unit (1), Leica scanning microscope (1), Wood routers (model: m12sa2, m12sc) make : hitachi (2), Monocular microscope (2), Wood microtome (rotary) (1), Universal wood testing machine (1), Seed germinator with optional accessories (1), Lab digital electronic balance (1), Monocular microscope (1), Uv vis spectrophotometer (1), Power tiller with accessories (1)
8.	Wild Life Management	77.01	Binoculars (3), Camera (1), Dissecting kit (2), Camera trap (2), SS tray (3), Tripod board stand (1)
9.	Natural Resource Management (Soil Science)	83.86	Autoclave vertical high pressure (1), Automatic micropipette controller (1), Anemometer(1), Balance top loading (3), Centrifuge high research (1) Flame photometer(1), Flame photometer systonic (1), Hot plate rectangular (1), Kjeldal distillation and digestion combined unit (1), Microprocessor based water quality analyzer (1), Microscope binocular (1),

			Spectrophotometer (1), Spectrophotometer uv visible (1), Stevenson screen (1), Vaccum pump double stage (1), Water bath rectangular (1), LG refrigerator (1), Oven (1), Horizontal laminar flow cabin (1)
10.	Plant Breeding	77.68	Student microscope (10), Compound microscope (10), Wooden box (10)
11.	Plant Pathology	82.21	Laminar airflow (1), Refrigerator (1), Balance (1), BOD incubator (1), Microscope (student) (15), Centrifuge(1), Colony counter (1), Hot air oven (1), Autoclave(2), pH meter (1), Micropipette (3), Distillation unit (1), Spectrophotometer (1), Inoculation needle (3), Haemocytometer (1), Camera lucida (1), Micrometer (1), Compound microscope (1), Microwave oven (1)
12.	Entomology	79.95	Exhibition board (2), Dissecting kit (3), Insect display and Storage showcase (15), Insect showcase cabinet, 12 showcase (1), Stereo zoom Microscope, WF10x/20 (1), Insect storage box (50), Insect stretching board (Adjustable) (20), Insect collection net with aluminium handle (50), Insect cage (5), Dissecting tray with wax/EVAPad (10), Light trap (2), Mosquito trap (2), Pheromone trap (50), Sticky trap (30), Fruit fly trap (10), Suction trap (10), Berlise funnel (5)
13.	Agriculture Engineering	79.95	Anemometer (1), Digital humidity and temperature meter(1), Digital thermo-hygrometer (4), Farm power and Machinery tools (1), Hygrometer(1), Pan evaporimeter (1), Parshal flume (1), Rain gauge(1), Rain gauge non recording (1), Stevenson screen (1), Working model of IC engine (1)
14.	Tissue Culture Lab	450.0	Laminar air flow(4), Photoperiodic stimulator caster racks (12), Microscope (Trinocular/ Magnas /Zoom) (2), Digital balance (2), Hot air oven (1), Sterilizer (horizontal)(1), Refrigerator (11), Air conditioner(5), Single water distillation (1), Glass bead sterilizer (2), Deep freezer(2), Copper plate (1), Electric generator (1), Micro centrifuge (2), Digital deionizer (1), Electrophoresis (6), Lab incubator (1), Centrifuge Eltek (2), Trans eliminator (1), Centrifuge (4), Ice flanking machine (1), Autoclave (2), Real Time PCR (1), Thermal cycler (1), Gel documentation system

			(1), Gradient PCR (1), Spectrophotometer(1), Cryogenic container (7), Capillary electrophoresis (1), Elisa reader (1), Microwave oven (1)
15.	Computer Lab.	61.83	Desktop computers (24), Scientific calculator (10), Printers (6)
16.	Language Lab.	61.83	Desktop computers (19) and computer accessories

### Research cum Instructional Farm for the college:

S.No.	Department	Area (ha)	Crops grown
1.	Fruit Orchards	12.00	Mandarin, Guava, Acid lime, Custard apple, Kinnow, Tamarind, Jamun, Khirni, Bael, Sweet orange cv. Mosambi
2.	Vegetable Cultivation	7.00	Tomato, Brinjal, Okra, Turmeric, Coriander, garlic, Cucurbit, Nigella, Fenugreek
3.	Floriculture and Landscape Architecture	7.00	Gladiolus, Heliconia, Tuberose, Marigold, Gaillardia, Ganganagari rose, cheti rose, cut chrysanthemum and Jasmine.
4.	Herbal Garden	2.00	<i>Aloe vera</i> , Lemon grass, Cymbopogon, Shisham, Aonla, Teak, Neem, Mahua
5.	Mother Orchard of Chirongi	1.50	Mother orchard of <i>Buchanania lanzan</i>
6.	A-Z Plantation block	2.50	Block of 151 species of horticultural/forestry species
7.	Forestry	15.00	Forest species
7.	Others	53.00	Under crop production, plantation, etc.
<b>Total</b>		<b>100.00</b>	

### Protected Structures in the College:

S.No.	Structure	Number	Area (m <sup>2</sup> )	Purpose
1.	Net House	06	5902	For production and maintenance of seedlings/saplings of horticultural/forestry species.
2	Naturally ventilated polyhouse	05	3834	Cultivation of Cucumber, Sweet pepper, cauliflower, cabbage, strawberry plants. Maintenance of virus free stock of mandarin.
3	Polycarbonated structures	02	696	It is controlled structures and used for growing of crops hydroponically and hardening of tissue culture plants
4	Low tunnels	03	384	For raising of vegetable seedlings
<b>Total</b>		<b>16</b>	<b>10666</b>	





**Aerial view of Protected Cultivation Unit**

**Farm Equipments/Implements:**

S.No.	Equipments/Implements	No.
1	Tractor	3
2	Power tiller	1
3	M.B Plough	1
4	Cultivator	3
5	Rotavator	1
6	Harrow	1
7	Tractor Trailor Disc Harrow	1
8	Disc plough	1
9	Chisel Plough	1
10	Bakhar, Tractor Mounted	1
11	Laser leveller	1
12	Leveller Tractor Mounted	1
13	Tractor Mounted Scrapper	1
14	Bund Former Tractor Mounted	1
15	Post Hole Digger	2
16	Seed drill	1
17	Rotovator cum Seed drill	1
18	Submersible pump, 10 HP	1
19	Submersible pump, 7.5 HP	2

20	Submersible Motor 5HP with accessories	1
21	Submersible pump 3 hp	1
22	Diesel Engine 8 hp	2
23	Spade	50
24	Fork	10
25	Trowel	20
26	Garden rake	10
27	Hedge shear	5
28	Pruning saw	10
29	Thresher	02
30	Jeep trolley	1
31	Manual sprayer	6
32	Irrigation system(pipes+Accessories)	290
33	Sprinkler system(90 mm+ Accessories)	300
34	Barrel pump	1
35	Drum	3
36	Secateur	20
37	Bill Hook	2
38	Khurpi	30
39	Tree pruner	2
40	Fruit Gatherer with extension pipe	1
41	Budding machine	1
42	Tractor operated power spray	1
43	Spray pipe and Gun	1
44	Drip system at farm (Filters, Ventury and accessories)	PVC pipe 1320 metre running length,
45	Trolley for lifting of plants in nursery	1
46	Tree lopper	1



**Boom Sprayer**



**Fertigation Machine**



**Super Seeder Machine**



**Air Compressor**

**Water/ Irrigation Facility:**

For irrigation, college has open well, rain harvesting ponds and cemented tanks. To meeting irrigation requirement, the water from Kalisindh river is supplied through pipe line and collected in reservoirs at college site from where irrigation is provided to different units. The water and irrigation facility of the college is as under:

S.No.	Particulars	Number	Volume (m <sup>3</sup> )
1.	Water reservoir	02	4000 m <sup>3</sup>
2.	Rain Water harvesting pond	02	5250 m <sup>3</sup>
3.	Cemented water harvesting tank (20x20x3m)	01	1200 m <sup>3</sup>
4.	Open well	03	4856 m <sup>3</sup>



**Plastic line water Rain Water Harvesting Pond**



**Water Harvesting Tank**

### Green Initiatives:

The college has taken green initiatives to keep the campus green, pollution free and safe for the students as well as the working staff. For meeting the requirement of electricity, the college has established two solar PV systems of 20 and 10 KVA each. The 20 KVA solar plant is installed at Protected cultivation unit, while 10 KVA solar plant is fitted on roof top of main building to provide electricity to smart class rooms, seminar rooms, dean office and street lights. Both the solar plants have battery backup and hybrid type. Beside this, the college also has two soundless generator sets of 40 and 15 HP capacity for ensuring the all time electricity availability in the college for research activities.



**10 KVA Solar Panels fitted at Roof Top of the College Building**

The rain water harvesting system with collection pond is there. College campus is totally covered with variety of plantations including A to Z block where about 151 species of different horticultural/forestry species are planted for identification purposes to students.

### 6.5.3.3 Student READY/ In Plant Training/Internship/ Experiential Learning Programme

The college has established experiential learning units with support of different funding agencies to impart practical oriented hands on training to the students. The details of the Experiential Learning Units are as under:

S.No.	Name of ELU	Area (Sq m)	Financial Support
1.	Raising of quality planting material of tree planting	1600	ICAR, New Delhi
2.	Protected cultivation of high value Horticulture crops	10000	RKVY
3.	Commercial Horticulture	2622	NHM
4.	Processing of fruits and vegetables for value addition	700	RKVY & State Govt.
5.	Bee keeping and honey processing	155	MPLAD Fund
6.	Mass multiplication of plant and molecules through tissue culture	450	Stat Govt.
7.	Floriculture and landscape architecture	20000	AU, Kota.



Protected Cultivation Unit



Nursery Management



Honey Processing Unit



Building of Honey Processing Unit



EL on raising of quality material of Forest Plants



Tissue Culture Lab

**(a) Horticulture Work Experience programme (HWE):**

B.Sc. (Hons.) Horticulture/Forestry final year students undergo Student READY programme in field of horticulture. The Student READY Programme is being conducted to reorient graduates of Horticulture for ensuring and assuring employability and develop entrepreneur for emerging knowledge intensive Horticulture. The major components are

Experiential Learning, Rural Horticulture Work Experience, In-Plant Training/ Industrial Attachment, All India Study tour and Students Projects. The Student READY Programme is offered in last two semesters of the four year degree programme. The detail of Student READY programme is as under:

S.No.	Activity	Credit Hours
1.	Experiential Learning (Professional Package)	0+20
2.	RHWE and Placement Industry	0+20
	<b>Total</b>	<b>0+40</b>

The College has 6 six EL units but presently horticulture students are allowed in following Experiential Learning activities:

Code	Title	Major areas	Activities
HWE-421	Experiential Learning	1.Commercial Horticulture	Plant multiplication, weed mgt., training and pruning, hi-tech cultivation of crops, spray etc.
		1. Protected cultivation of high value Horticulture crops	Cultivation practices of cucumber, cherry tomato, indeterminate tomato, strawberry, capsicum and leafy vegetables under hi tech conditions, their packaging, marketing etc.
		3.Floriculture and Landscape Architecture	Production of annuals, propagation, postharvest management, value addition and marketing etc.

**RHWE Programme includes the following:**

S.No.	Activity	Credit Hours
1.	Orientation Programme	2 weeks
2.	Village stay	12 weeks
3.	All India Study Tour	3 weeks
4.	Placement Programme	4 weeks
5.	Report writing & Final Examination	3 weeks
	<b>Total</b>	<b>24 weeks</b>

RHWE and EL activities are offered in each semester to the students based on their choice. In the beginning of semester with the allotment of students, a teacher Incharge is nominated to monitor entire activities as per prescribed schedule of activities. The attendance

of the students is also monitored by the concerned Incharge and ultimately by college administration.

As a part of Experiential Learning, to fulfill the requirement of RHWE, the students are attached with horticulture and allied industries for 4 weeks duration. The students are exposed to various industrial processes in the commercial units.

Further, at the end of allotted semester, the students are evaluated on the basis of presentation made by students out of activities/project work. The work is evaluated by a committee. The committee award score to the individual student on the basis of attendance, presentation, report preparation and over all accomplishment to the assigned target to a particular module.



B.Sc. Horticulture students under experiential learning programme

### **(b) Forestry Work Experience programme (FOWE)**

The major component of Student READY is FOWE, ELP, Industry attachment and Project work. Forestry Work Experience is being conducted to give proper hands on training for final year students of undergraduate programme. This programme includes village attachment, followed by intensive attachment with State Forest Department. The students are also assigned various forest based industries like: Wood Workshop and Saw Mills, Carpentry and bamboo crafts, Aromatic and Medicinal Plant Units and other Wood Products Industries *etc.* The students are also advised to prepare their project report and oral presentation after completion. The details of Student READY is given as under:

S. No.	Activity	Cr. Hrs.	Days
1.	FORESTRY WORK EXPERIENCE (Socio-economic surveys -village attachment)	0+4	28
2	Attachment with State Forest Department for Forestry operations	0+10	70
3	Industrial Placement	0+4	28
4	Report Writing and Presentation	0+2	14
	<b>Total</b>	<b>0+20</b>	<b>140</b>

### Multidisciplinary Courses/Vocational Training:

Students need to opt any one of the five activities mentioned below during her/his third year of vocational training in order to get expertise on particular subject.

S. No.	ELU	Activity	Cr. Hrs.
1.	ELU-I*	Production and marketing of high value forest produce	0+5
		Raising quality planting material for forest regeneration	
		Apiculture/Sericulture	
		Ecotourism	
		Wild Animal Health management	
2.	ELU-II*	Production and marketing of high value forest produce	0+5
		Raising quality planting material for forest regeneration	
		Apiculture/Sericulture	
		Ecotourism	
		Wild Animal Health management	
3.		PW Project Work & Dissertation	0+10
		<b>Total</b>	<b>0+20</b>

\* Any one of the five activities to be opted by the students

#### 6.5.3.4. Curricula Delivery through IT:

To ensure delivery of quality teaching, the college has created digital class rooms. These class rooms are equipped with digital teaching devices consisting of smart board, visualiser, over head projector, digital podium and other accessories. Besides, the smart class room is also fitted with CCTV camera, biometric machine and quality furniture. Some salient features of IT enables facilities are as under:

- The teachers use smart boards, visualiser and L.C.D projectors for animated delivery of course curricula.
- The entire college has Wi-Fi facility.
- Students get facilitated by Digital Podium in which there is facility of recording and retention of audio version of the lecture which can be used as per convenience by the students in case a particular lecture is missed by the student.
- Seminar room is also equipped with smart board and digital podium which is invariably utilized by PG and Ph.D. students in the deliverance of seminar, synopsis and other presentation.



Smart Class room equipped with Digital Teaching Devices



- The facility of video conferencing exists in conference room. Video conferencing room has interlinking facility of remote camera with facility of live presentation of the field activities.

### Class Room Information of the College

Sl.No.	Building	Room/ Seminar	Number	Area (m <sup>2</sup> )	Seating capacity
1.	College building Ground Floor	Class room	2	200.0	60
		Seminar room	1	80.0	50
		Conference room	1	80.0	60
2.	College building I floor	Class room	2	200.0	60
3.	College building II floor	Class room	4	160.0	30
4.	Hi-tech unit	Training Hall	1	170.0	40
5.	PHT Building	Class room	2	225.0	80
6.	Krishak Bhawan	Training Hall	1	120.0	70

### 6.5.4. Student Development:

#### 6.5.4.1. Student Intake and Attrition:

#### B. Sc. (Hons.) Horticulture Degree Programme:

Year	Intake (in 1st Year)	Enrolled (in 1st Year)			Attrition			Attrition Percentage		
		M	F	T	M	F	T	M	F	T
2016-17	55	37	18	55	03	0	03	8.10	0.0	5.45
2017-18	55	42	11	53	0	0	00	0.0	0.0	0.0
2018-19	55	37	12	49	02	0	02	5.40	0.0	4.08
2019-20	55	40	14	54	01	0	01	2.50	0.0	1.85
2020-21	61	38	21	59	--	--	--	--	--	--

M=Male F=Female T= Total

#### B. Sc. (Hons.) Forestry Degree Programme:

Year	Intake (in 1st Year)	Enrolled (in 1st Year)			Attrition			Attrition Percentage		
		M	F	T	M	F	T	M	F	T
2016-17	30	26	4	30	01	0	01	3.84	0.0	3.33
2017-18	30	20	07	27	03	0	03	15.0	0.0	11.11
2018-19	60	36	16	52	02	1	03	5.55	6.25	5.76

2019-20	60	34	13	47	01	0	01	2.94	0.0	2.12
2020-21	66	47	12	59	--	--	--	--	--	-

M=Male F=Female T= Total

**M. Sc. Degree Programme:**

Year	Intake (in 1st Year)	Enrolled (in 1st Year)			Attrition			Attrition Percentage		
		M	F	T	M	F	T	M	F	T
<b>M. Sc. Horticulture (Fruit Science)</b>										
2016-17	05	04	01	05	0	0	0	0.0	0.0	0.0
2017-18	05	04	01	05	0	0	0	0.0	0.0	0.0
2018-19	05	05	0	05	0	0	0	0.0	0.0	0.0
2019-20	05	04	01	05	0	0	0	0.0	0.0	0.0
2020-21	05	--	--	---	--	--	---	--	--	---
<b>M. Sc. Horticulture (Vegetable Science)</b>										
2016-17	05	03	02	05	0	0	0	0.0	0.0	0.0
2017-18	05	03	02	05	01	0	01	33.33	0.0	20.0
2018-19	05	03	02	05	0	0	0	0.0	0.0	0.0
2019-20	05	04	01	05	0	0	0	0.0	0.0	0.0
2020-21	05	--	--	---	--	--	---	--	--	---
<b>M. Sc. Horticulture (Floriculture and Landscape Architecture)</b>										
2016-17	05	04	01	05	0	0	0	0.0	0.0	0.0
2017-18	05	04	01	05	01	0	01	25.0	0	20.0
2018-19	03	02	01	03	0	0	0	0.0	0.0	0.0
2019-20	03	01	02	03	0	0	0	0.0	0.0	0.0
2020-21	03	--	--	--	---	--	--	--	--	---
<b>M. Sc. Forestry (common)*</b>										
2016-17	05	03	--	03	--	--	--	--	--	--
2017-18	05	03	02	05	01	--	01	33.33	--	20.0
<b>M.Sc. Forestry Silviculture and Agroforestry</b>										
2018-19	05	04	01	05	--	--	--	--	--	--
2019-20	05	--	03	03	--	--	--	--	--	--
2020-21	05	--	--	--	--	--	--	--	--	--
<b>M.Sc. Forestry Forest Biology and Tree Improvement</b>										
2018-19	05	01	02	03	--	--	--	--	--	--
2019-20	05	--	--	--	--	--	--	--	--	--
2020-21	05	--	--	--	--	--	--	--	--	--
<b>M.Sc. Forestry Forest Products and Utilizations</b>										
2018-19	5	03	--	03	01	--	01	--	--	--
2019-20	5	--	--	--	--	--	--	--	--	--

2020-21	5	--	--	--	--	--	--	--	--	--
<b>M.Sc. Forestry Wildlife Management</b>										
2018-19	5	02	01	03	--	--	--	--	--	--
2019-20	5	--	--	--	--	--	--	--	--	--
2020-21	5	--	--	--	--	--	--	--	--	--

\*Admission during 2016-17 and 2018-19 was done in common M.Sc. Forestry degree programme. However, degree programme was bifurcated in 4 different disciplines from 2018-19 onwards.

#### Ph. D. Horticulture (Fruit Science) Degree Programme

Year	Intake (in 1st Year)	Enrolled (in 1st Year)			Attrition		Attrition Percentage
		M	F	T	M	F	
2016-17	--	--	--	--	--	--	--
2017-18	03	02	01	03	--	--	--
2018-19	03	02	01	03	--	--	--
2019-20	03	02	--	02	--	--	--
2020-21	03	---	---	---	--	--	--

#### 6.5.4.2. Average Number of Students in Theory and Practical:

##### UG Degree Programme:

S. No.	Name of programme	Year	Intake / year	No. of batch in theory class	No. of batches in practical class
2.	B. Sc. (Hons.) Horticulture	2016-17	55	1	Batch A:28, Batch B:27
		2017-18	55	1	Batch A:28, Batch B:27
		2018-19	55	1	Batch A:28, Batch B:27
		2019-20	55	1	Batch A:28, Batch B:27
		2020-21	61	1	Batch A:31, Batch B:30
3.	B. Sc. (Hons.) Forestry	2016-17	30	1	Batch A:30
		2017-18	30	1	Batch A:30
		2018-19	60	1	Batch A:30, Batch B:30
		2019-20	60	1	Batch A:30, Batch B:30
		2020-21	66	1	Batch A:33, Batch B:33

**Post Graduate Degree Programme:**

S.No	Degree Programme	Total Intake / year	Batch of Students in Theory Class	Batch of Students in Practical Class
1.	M. Sc. Horticulture (Fruit Science)	5	Batch A:5	Batch A:5
2.	M. Sc. Horticulture (Vegetable Science)	5	Batch A:5	Batch A:5
3.	M. Sc. Horticulture (Floriculture and Landscape Architecture)	3	Batch A:3	Batch A:3
4.	M. Sc. Forestry (Silviculture & Agroforestry)	5	Batch A:5	Batch A:5
5.	M. Sc. Forestry (Forest Biology and Tree Improvement)	5	Batch A:5	Batch A:5
6.	M. Sc. Forestry (Forest Biology and Tree Improvement)	5	Batch A:5	Batch A:5
7.	M. Sc. Forestry (Forest Products and Utilizations)	5	Batch A:5	Batch A:5
8.	M. Sc. Forestry (Wildlife Sciences)	5	Batch A:5	Batch A:5
9.	Ph. D. Horticulture (Fruit Science)	3	Batch A:3	Batch A:3
10.	Ph. D. Forestry (Silviculture & Agroforestry)	2	Batch A:2	Batch A:2

**6.5.4.3. Admission Process****Admission Mechanism and Intake Seat Matrix:**

Admission to various academic programmes including bachelors, masters and doctoral are made on rank obtained by the candidates in State level Joint Entrance Test conducted by State Agriculture University of Rajasthan (either of 5 SAUs) or through the ICAR. Reservation policy of the Government of Rajasthan is considered for admission process. The academic session comprising of two semesters normally commences from July and ends during June.

The seat matrix for admission to different UG and PG degree programs at college for the academic year 2020-21 is given hereunder:

Name of Degree Programme	Number of seats
<b>Bachlors</b>	
B.Sc. (Hons) Horticulture	61

B.Sc. (Hons) Forestry	66
<b>M.Sc. Horticulture</b>	
Fruit Science	5
Vegetable Science	5
Floriculture and Landscape Architecture	3
<b>M.Sc. Forestry</b>	
Silviculture & Agroforestry	5
Forest Biology & Tree Improvement	5
Forest Production & Utilization	5
Wildlife Sciences	5
<b>Ph. D.</b>	
Horticulture (Fruit Science)	3
Forestry (Silviculture & Agroforestry)	2
<b>Total</b>	165

**Mode of Admission:**

**Bachelor's level Programmes:**

Academic Programme	Mode
B.Sc. (Hons.) Horticulture B.Sc. (Hons.) Forestry	<ul style="list-style-type: none"> <li>The admission to B.Sc. (Hons.) Horticulture/B.Sc. (Hons.) Forestry is made through the seat allotment according to State <b>Joint Entrance Test</b> conducted by SAUs in the State.</li> <li>15 percent of total seats in both the disciplines are also filled through ICAR All India Entrance Examination.</li> </ul>

**Master's level Programme:**

Academic Programme	Mode
M.Sc. Horticulture	<ul style="list-style-type: none"> <li>The admission to M.Sc. Horticulture is made through the seat allotment according to State <b>Joint Entrance Test/Pre-PG Test</b> conducted by SAUs in the State.</li> <li>25 per cent of total seats are also filled through ICAR All India Entrance Examination.</li> </ul>
M.Sc. Forestry	<ul style="list-style-type: none"> <li>The admission to M.Sc. Forestry is made through the seat allotment according to State <b>Joint Entrance Test/Pre-PG Test</b> conducted by SAUs in the State.</li> </ul>
Ph. D. Horticulture / Forestry	<ul style="list-style-type: none"> <li>The admission to Ph.D. Horticulture (Fruit Science)/ Forestry (Silviculture and Agroforestry) is made through State <b>Joint Entrance Test/Pre-PG/Ph.D. Entrance Examination</b> conducted by SAUs in the State.</li> </ul>

## Registration System

**Fee Payment:** Normally, the fee is collected online at the time of filling of option form, allotment of college and remaining at the time of reporting at the college.

**Advisory System:** At UG level, each student is allotted to a Teacher Advisor at the time of admission by the College Administration. The advisor takes care of the student in his entire academic and co-curricular matters.

At PG level, there is a system of Advisory Committee. An advisory committee of the PG students consists of major advisor, besides three other members who are mostly involved in facilitating students in carrying out PG research required for the degree. Time to time the advisory committee counsel the students and advice in academic and co-curricular activities.

**Academic Calender:** Academic calendar for all SAUs of Rajasthan is prepared common and submitted to the Governor, Rajasthan for approval. The approved academic calerndar is implemented.

### Promotion to the Higher Class:

The student is promoted to the next higher class subject to the declaration of result acquiring required OGPA in their respective classes. The minimum requirement of OGPA for promotion to higher class is as under:

Year to which Promotion is being considered	Minimum OGPA required for Promotion
Second	4.00
Third	4.50
Fourth	4.75

### 6.5.4.4. Conduct of Practical and Hands on Training:

Students are taught both basic and applied techniques to meet the requirements of hands on practice in a particular subject. In order to update the students and to synergize the theory and practice on the ongoing courses the maximum professional, practical exposure is attempted to be imparted to the students where in students accrue the knowledge by actually involving in exercises both at field and laboratory levels.

In order to facilitate effective conducting of practical classes small groups of convenient size of students are formed to ensure sufficient availability of tools and equipments to each student for better learning in practical aspects. Such small groups exercise the experiments under the supervision of instructors. The knowhow of practical, instrument handling, data collection methods, analysis and practical inference are explained

by the instructor to the students for further enrichment of the knowledge. Further student conducts exercise at their own level for self learning.

The College campus which is spread over 120 ha area offers department wise instructional farms. There are good demonstration plots for students for keen observations, identification and to interpret the effect of response to the treatments.

Hands on training on handling of laboratory equipments, raising seedlings of both Horticulture and Forestry species in nursery, plantation and orchard establishment, hormonal treatments, nutrient analysis, soil analysis, tissue culture techniques, various plant protection activities, canopy treatments, harvesting, processing and storage related practical are conducted in existing departmental laboratories, nursery, orchards and instructional farms.

To meet the specific objective, frequent excursions to farmers field, natural forests, wastelands, JFM areas, local nursery, protected units, demonstration plots, KVKs, village institutions, panchayats, marketing cells, processing units, storage units and industries are organized.

Apart from this, the doubt raised by students is attended by teacher concerned and students are encouraged to make their own observations and analysis of a particular problem. Efforts are made to analyze the data by students using advanced on line and offline statistical software and computerized programs in plotting graphs and statistical analysis. The practical records maintained by the students are monitored, corrected, verified, suggested and evaluated in subsequent practical classes by concerned teachers.

At regular intervals interaction with progressive farmers, officers of line departments, entrepreneurs and industrialists are arranged for students. In order to facilitate the dynamic changes in the subjects and to update the current status, students are motivated to participate in ongoing thematic trainings within the campus and outside.

#### **6.5.4.5 Examination and Evaluation Process:**

##### **Undergraduate Degree Programme:**

Candidates are required to pass in theory and practical examinations separately in each course. The grading is done on a 10-point scale derived from dividing the percentage of marks obtained by 10. The minimum grade point for passing a course would be 4.0 out of 10 and for the degree an OGPA of 5.0 out of 10.0 in UG degree. Those students who fail to maintain OGPA as specified at the end of the first academic year or the second academic year, as the case may be, are dropped from the college/university automatically.

In evaluating the student performance at each course level, the following points are considered.

- **Regular Attendance:** Minimum attendance requirement to appear in final examinations is 75 per cent in theory and practical separately in each course.

- **Class Performance:** It includes the evaluation of students performance in theory and practical examinations separately.
- **Mid- Term Examination:** A mid-term examination with maximum marks of 20 is conducted in the mid of the semester on completion of about 50 per cent syllabus in each course. The duration of mid-term examination is one hour and evaluation pattern is internal only.
- **Final Theory Examination:** The entire course content is covered for this examination. The duration of the final theory examination is three hours. The external evaluation system is being adopted for question paper setting as well as evaluation of answer sheets.
- **Final Practical Examination:** The prescribed practical part of the syllabus of the course is covered by the teachers for the examination purpose. External evaluation system is being adopted to conduct the practical examination. Evaluation is made on the basis of field exercise, practical records, assignment and viva-voce. The duration of the final practical examination is three hours. However, for the courses implemented under V Dean Committee recommendations implemented in the university since academic year 2017-18 onwards, practical examinations are evaluated by subject expert within the university system other than the course teacher through internal evaluation system.

**Examination Scheme for Evaluation of Courses in Degree Programme:**

S. No.	Credit Hrs (Marks Theory & Practical)	Theory				Practical				Total Th.+ Pr.
		Final	Mid Term (MT)	Total Final + MT	Passing Marks 40%	Final	Mid Term	Total Final + MT	Passing Marks 40%	
1.	1+1/ 2+1/ 3+1 (70+30)	50	20	70	28	30	-	30	12	100
2.	0+1/ 0+2/0+3/ 0+4 (0+100)	-	-	-	-	80	20	100	40	100
3.	1+0/ 2+0/3+0/4 +0/(100+0)	80	20	100	40	-	-	-	-	100
4.	1+2/1+3/1+4 (30+70)	30	-	30	12	50	20	70	28	100

MT = Mid-Term

**Arrangement of Question Paper:**

In the beginning of the each semester, course teacher submits the panel of external examiners to set the question paper/evaluation through the Dean to the Controller of Examinations (COE) for further approval by the Vice Chancellor. As a follow up, Controller of Examinations with consent of the external examiners sends a model question papers along with the theory syllabus. Thus, the COE arranges question papers for examination. The entire process follows strict confidentiality and secrecy to maintain the sanctity of the examination.



### Examination of Experiential Learning Programme:

Rural Awareness and Horticulture Work Experiential Learning Programme (RHWEP) and Forestry Work Experiential Programme (FWEP) are regular practical oriented courses for final year UG students.

### Evaluation Criteria of Experiential Learning Programme:

S.No	Particulars	Marks
1.	Attendance	20
2.	Project Report	30
3.	Presentation	30
4	Viva Examination	20

### Result Declaration:

After completion of examination, answer sheets of theory examination are sent to the Controller of Examination for further evaluation to appointed external examiner. The consolidated result is put forth before the Result Committee consisting of COE, Faculty Chairman and one member nominated by the Vice-Chancellor.

### Post-graduate Degree Programme:

At PG level, every student requires to pass in theory and practical exam separately in each course. The grading is done on 10-point scale derived from dividing the percentage of marks obtained by 10. The minimum grade point for passing a course is 6.0 out of 10 and for the Degree an OGPA of 6.5 out of 10.0. A PG student with an OGPA of less than 6.0 at the end of any academic year is removed from the college.

In evaluating the PG students' performance at course and degree levels, the following points are considered.

- **Regular Attendance:** Minimum attendance requirement to appear in final examinations is 75 per cent in each course separately in theory and practical.
- **Class Performance:** It includes the evaluation of students performance in theory and practical examinations separately.
- **Mid-term Examination:** A mid-term examination of maximum 20 marks is conducted in the mid of the semester on completion of about 50 per cent syllabus in each course. The duration of mid-term examination is one hour and evaluation pattern is internal only.

- **Final Theory Examination:** The entire course content is covered for this examination for the maximum 50 marks. However, the core course question papers are framed and evaluated by external subject experts appointed by the Vice Chancellor as per panel submitted by controller of examination. For rest of the courses, setting of question paper and evaluation are carried at internal level by the concerned course teacher.
- **Final Practical Examination:** The prescribed practical part of the syllabus is covered for this examination held for maximum 30 marks. Evaluation is made on the basis of field exercise, practical records, assignment and viva-voce.
- **Credit Seminar:** The PG examination also includes evaluation of credit seminar that is evaluated by seminar incharge and a group of teachers from specialized subject area.

### **Comprehensive Examination for Master's Degree Programme:**

The comprehensive examination is conducted after completion of minimum 75 percent of the course requirement. The comprehensive examination consists of two parts; a written examination followed by oral examination. The written part consists of two papers of 100 marks each. The first paper includes questions from major subjects and the second paper includes questions from minor subjects. The papers are set internally and also evaluated internally. The minimum pass marks for written examination are 60 per cent in major and minor separately and satisfactory grade in oral examination as evaluated by respective research advisory committee under the overall control of the Head of Department are necessary.

### **Thesis Evaluation:**

The research work carried out as per the approved synopsis under the guidance of major advisor and advisory committee required to be presented as pre thesis seminar before submission of the thesis. Such thesis verified by the major advisor and advisory committee is further forwarded to external evaluator by the Director of Education. The suggestion, corrections and comments on the thesis regarding acceptance for the award of the degree made by the external examiner are incorporated for further submission of the final bound thesis after viva voce examination conducted by concerned advisory committee. Satisfactory/Unsatisfactory grade is awarded in evaluation of thesis.

### **Ph.D. Degree Programme:**

For Ph.D. course programme, evaluation pattern is similar to that considered for M. Sc. Degree Programme except following changes:

- 1. Comprehensive Examination:** The comprehensive examination consists of two parts, a written examination followed by an oral examination. The written examination consists of three papers of 100 marks each. The first two papers include questions from major subjects and the third paper includes questions from minor subjects. The minimum pass marks for written examination are 60 per cent in each paper separately as in M. Sc. Degree programme. Oral comprehensive examination is conducted by entire advisory committee in presence of external examiner. However, the oral examination remains open to other Faculty members and students of the Department also. Consequent upon attainment of satisfactory grade the student is considered having passed the Viva Voce Examination necessary to complete the Ph.D. degree.
- 2. Thesis Evaluation:** The draft of the thesis verified by the advisory committee is evaluated by two external examiners and viva-voce is conducted by the students' advisory committee in the presence of external examiner as approved by the Vice-Chancellor.

#### 6.5.4.6. NCC/NSS/ RVC Units:

##### National Cadet Core (NCC):

There is a NCC Unit at the College. The Unit (Army Wing) was started during the year 2018 with approved capacity of 53. It is associated with 14 Raj BN NCC, Kota, Rajasthan. Fresh regular physically and mentally fit UG students are enrolled in first year. The students are enrolled as per their willingness to join the NCC.

NCC provides three year training for “C” **Certificate** exams and two year for “B” **Certificate** exams. Every cadet who completes 75 percent weekly parades with two camps is eligible for “C” Certificate exams and 75 percent attendance with one camp for “B” Certificate.

##### List of Important Activities carried out by NCC Unit at CH&F Jhalawar:

Date	Activities	Participants
29.09.2018	Celebration of Surgical Strike Day	70
13.06.2019- 22.06.2019	CATC-II cum Pre TSC and Yoga Camp	12
14.08.2019- 23.08.2019	Participated in IGC for TSC cum DTE camp	02
17.09.2019- 26.09.2019	Participated in CATC-IV cum pre PVSC-II and group selection of IGC Pre RDC	06
02.10.2019	Swachhata Hi Seva Movement	36
07.11.2019- 16.11.2019	Participated in Combined Annual Training Camp	01

26.11.2019	Celebration of 70 <sup>th</sup> anniversary of constitution day	100
31.05.2020	COVID-19 training for NCC Cadets	36
20.08.2020- 25.08.2020	E-camp AtmaNirbhar Bharat Abhiyan	07
02.09.2020	E-Quiz on COVID-19 Pandemic General Awareness	250
05.10.2020	No Mask No Entry	36
26.11.2020	Celebration of constitution Day	25

### Special Awards and Achievements of Cadets

1. Jyotiraditya Solanki, Senior Under Officer, secured 1<sup>st</sup> rank at state level in debate competition organized by Directorate of NCC, Jaipur.
2. Harsha Gajra, Sgt, secured first position in sports and games during CATC-II cum Pre TSC and Yoga Camp on 13-22 June, 2019.
3. Simran, Sgt received best drill award in CATC-II cum Pre TSC and Yoga Camp on 13-22 June, 2019.



**NCC Unit of College with Faculty Members**

### National Service Scheme (NSS):

There is NSS unit at the college. It enrolls students admitted in I<sup>st</sup> & II<sup>nd</sup> year UG class. The NSS is offered as a non-credit compulsory course. NSS activities are monitored by Programme Officer. The Unit has regular/Special camp activities. Since the inception of NSS Program at CH&F, Jhalawar, NSS Unit is actively engaged in organizing integrated social service, awareness activities, and personality development program.etc. It is mandatory for NSS volunteers to undertake special NSS Camp at village level. This provides an opportunity

to students for interaction with villagers, to undergo group discussion, to participate in cultural program and to involve in awareness activities along with rendering voluntary services for the betterment of village environment and community health, student community and general public. The following major activities were conducted during 2016-17 to 2020-2021:

S. No.	Academic Year	NSS Activities	Date	No of Participants
1.	2016-17	Swach Bharat Mission Pakhwara	1-15 Aug, 2016	149
		Slogan writing on Swachhta	05 Aug, 2016	149
		Debate competition on Swachhta	09 Aug, 2016	149
		Save Plants oath	09 Aug, 2016	149
		Village adoption-Chhacchhao and Ralayata	1 <sup>st</sup> April, 2016- 31 March, 2017	149
		NSS special Camp at Ralayata, Jhalawar	10-17 April, 2017	86
		International Yoga Day	21 June, 2017	119
		Swachta Pakhwara	1-15 Aug, 2017	166
2.	2017-18	Environment Day	05 June, 2017	150
		Cleanliness campaign at village Gadiamar	11 Aug, 2017	55
		Blood donation camp	10 Sept, 2017	40
		Cleanliness drive at Chandrabhaga river, Jhalarpatan,	28 Oct, 2017	30
		Daughters are precious programme	11Nov, 2017	125
		Swachta Rally	11Aug, 2017	150
		<i>Ek sham Sahidon ke naam</i>	25 Jan, 2018	55
		National Youth Festival at Gyanvihar University, Jagatpura, Jaipur	12-16Jan, 2018	2
3.	2018-19	NSS special Camp at Undal, Jhalawar	19-26 March, 2018	29
		International Yoga Day	21June, 2018	32
		Swachhta pakhwara	01-15Aug, 2018	160
		District level Essay competition	13-Aug, 2018	3
		Patriotic song competition at Govt Medical College , Jhalawar	18 Aug, 2018	11
		Sadbhawna Diwas	20 Aug, 2018	38
		Hindi Diwas debate competition at Girls PG College, Jhalarpatan	12Sep, 2018	3
		NSS Foundation Day	24 Sep, 2018	66
		Surgical Strike day	29 Sep, 2018	189
		Samajh Sparsh Ki ralley	01Oct, 2018	61
		Gandhi jyanti celebration	02 Oct, 2018	160
		Swami Vivekanand jayanti	12Jan, 2019	160
		Homage to Martyr Army in Pulwama, J&K	02 Feb, 2019	58
NSS Special Camp at Ummedpura village, Jhalawar	20-27 Feb,2019	134		

		Blood donation camp	12 April, 2019	61
		Ambedkar Jyanti	14 April, 2019	168
		Plantation drive	20 July, 2019	300
		Gandhi March	27 July, 2019	150
		Jalshakti karyakram	29 July, 2019	98
		Sadbhawna Diwas	Aug 20, 2019	114
		NSS camp and Sewa shivir	11-18 Sep, 2019	154
		Silver jubilee celebration NSS Foundation Day	24 Sep, 2019	166
		Gandhi Darshan	11Sep-31 Dec, 2019	120
		150 <sup>th</sup> Gandhi jyanti	02 Oct,2019	150
		Gandhi lecture series	03-05 Oct, 2019	48
		Constitution day	26 Nov, 2019	60
		Agricultural Education Day	03 Dec, 2019	200
		NSS special Camp at Ummedpura	15-21 Feb, 2020	84
4	2019-20	Mask and Sanitizer distribution and Covid-19 Awareness programme	18 March,2020	30
		Arogya setu app downloading promotion and immunity boosting awareness	Throughout lockdown period	
		World Environment day quiz on Covid-19 awareness	05 June, 2020	Online
		World Yoga Day	17 June, 2020	250 Online mode
			21 June, 2020	Online
5.	2020-21	Parthenium eradication week	18-22 Aug, 2020	50
		Sadbhawna Diwas	20 Aug, 2020	Online
		Teachers day	05 Sep, 2020	Online
		Hindi Diwas	14 Sep, 2020	Online
		NSS Foundation day	24 Sep, 2020	Online
		Gandhi Jyanti	02 Oct, 2020	Online
		Book Exhibition on Gandhi an philosopy	02-08 Oct, 2020	85
		No mask No Entry Awareness on Covid-19	06 Oct, 2020	30
		Oath on covid-19 awareness	06 Oct, 2020	35
		Constitution day	26 Nov, 2020	Online
		Agricultural Education Day-2020	03 Dec, 2020	Online



**Plantation Programme by NSS & NCC Unit**



**Parthenium Eradication Week**



**Blood Donation Camp**



**Gandhi Darshan**



**Lecture on Agriculture Education Day**



**Celebration of Constitution Day**

**6.5.4.7. Language Laboratory:**

College is having Language laboratory through which specialized language classes are imparted through the computerized audio visual, multimedia approach. Lab is well equipped with sufficient seating arrangements, individual screens, and master control conferencing unit to handle centralized mass communication and group discussions through projectors, head phones and speakers. The Language lab basically intends to impart improving vocabulary, phonetics, grammar and improvement in spoken English and communication skills. Over a period of its functioning, the Language lab has been identified as vital learning unit to boost up the confidence and skills of the students to face the various state and central level competitive exams, banking and corporate sectors in particular to deal the interviews through effective communication.



**Student practicing in Language Lab**

#### 6.5.4.8. Cultural Centre:

To facilitate the regular practice in various hobbies, fine arts, music and dance among girls students especially, one independent room has been allotted for this with necessary musical instruments, speakers and recorders. On special occasions students were also trained by external resource persons and local artists are involved to fine tune their skills.

The various activities organized for students in this duration provided a platform not only to prepare, practice and present but also to exchange their hidden skills and to gain confidence in performance. The annual college day, national festivals, national day celebration, special occasions, interclass competitions, University festivals are various occasions where in the students exhibited their talent, skills and interest. As most of these activities are group-oriented which have students from different niches, which gives them a chance to know about people of different passions and cultures and helps in development of interpersonal skills. The various cultural activities conducted in earlier years are enlisted.



**Student practicing in Cultural room**

- UG and PG students participated in Global Rajasthan Agri-tech Meet held during 9-11 November 2016 at Jaipur.
- Students participated in Agri-unifest 2016-17 at RAJUVAS Bikaner during 22 to 25 Feb 2017.
- Cultural week was organized from 3 to 7 April 2017.
- Cultural week was organized in April 2018 with various cultural activities like Literary, Fine Arts, Theatre, Music and Dance.
- The cultural week was organized from 15 to 19 January, 2019 at College of Horticulture and Forestry, Jhalawar.
- Participated in various cultural activities in Agri-unifest 2019 during 1 to 8 February 2019 at Sardar Krushinagar Dantiwada, Agriculture University Gujarat.
- Cultural week was organized during 18 to 20 September 2019, at College of Horticulture and Forestry, Jhalawar. Students participated in various events like Literary, Fine Arts, Theatre, Music and Dance.
- Participated in Agri-Unifest 2020 at Indira Gandhi Krishi Vishwavidyalaya, Raipur from 08/02/2020 to 12/02/2020. Team won 4<sup>th</sup> position in Mime completion.
- Essay Competition: Online state level essay competition on COVID19 and LOCKDOWN and pollution reduction on 5 June, 2020.
- National Painting and Photography Competition: National online painting and photography competition 2020 on COVID-19 Blessing in disguise for wildlife organized on 10 June, 2020.
- National Dance Competition: Directorate of Student Welfare organized a National level online Dance Competition in the College during October 2020. Students from various agriculture universities were participated in the event.



#### 6.5.4.9. Personality Development:

The Personality Development Programs were conducted through specialized trainings and exposures. An equal opportunity, encouragement and environment have been given to the student mass to actively participate in various personality development programs organized from time to time.

Special evening classes were organized to build the capacity and capabilities of the Scheduled Tribes and scheduled class students taking part in various competitive exams particularly. Special classes were organized for students for ICAR- JRF examination. Time to time quiz programmes were organized on various aspects of horticulture and forestry to enable the students performed better in JRF/competitive examination during April-May, 2020. The faculty and external resource persons were engaged for this purpose. The student's participation and its impact are worth to note here. Apart from this, other vital personality development activities are listed as follows:

- Students participated in a Programme on Road safety organized by Inaaya Foundation on 07 March 2017
- Students participated in International Yoga day programme on 21 June 2017 at Rajkiya Khel Shukul, Jhalawar
- Lecture on stress management was organized by the College for students on 11th September 2019. The lecture was delivered by International speaker Mr. E.V. Girish, from Prajapati Bhrama Kumari Vishwvidhyalaya
- Two days personality development training of students was organized by the College during 16-17 November 2019 under NAHEP-IG project
- A 10 days tour programme was organized for fourth year students of the College during 18-27 February 2020.
- Two days workshop entitled “Personality Development” under NAHEP-IG was organized during 16-17 November, 2019 by Mrs. Radha at the College of Horticulture and Forestry, Jhalawar.
- One day workshop sponsored by ICAR-NAARM Hyderabad on “Development of Soft Skills for Entrepreneurship among Agri graduates” was organised on 12 February 2020 at the College of Horticulture and Forestry, Jhalawar.



Organization of Workshop on Personality Development under NAHEP-IG



**Training Programme on *Safalata apki mutthi me***



**Celebration of International Yoga Day**

**6.5.5. Physical Facilities:**

**6.5.5.1. Hostels**

**Number of Hostels:**

S.No.	Name of Hostel	No. of Hostel	Area (sqm)	Capacity	Occupancy/ room
1.	Boys Hostel	1	2340	100	2
2.	PG Boys Hostel	1	580	24	2
3.	Girls Hostel	1	765	58	2
4.	Farmers Hostel	1	880	32	2 & 6



**Boys Hostel**



**PG Boys Hostel**



**Girls Hostel**

**Facilities available in Hostels:**

**A. Details of facilities available in Boys and Girls Hostel:**

S. No.	Particular	Boys Hostel	PG Hostel	Girls Hostel
1.	No. of Rooms	51	12	33
2.	Mess facility	Co-operative mess	Co-operative mess	Co-operative mess
3.	Drinking water	Water cooler with filter-3	Water cooler with filter-1	Water cooler with filter-2

4.	Bran Maire (keeping food hot)	Available	Available	Available
5.	Indoor games	Chess, TT	Chess, TT, Badminton	Chess, TT, Badminton
6.	Incinator	NA	NA	Available
7.	Dining hall	Available	Available	Available
8.	Kitchen	Available	Available	Available
9.	TV hall	Available	Available	Available
10.	Treadmill	Available	NA	Available
11.	Gym Hall	Available	Available	NA
12.	Warden office	Available	Available	NA
13.	Reading room	Available	Available	Available
14.	Guest room	Available	Available	Available
15.	Store room	Available	Available	Available
16.	Wi-Fi connection	Available	Available	Available
17.	CCTV	Available	Available	Available
18.	Culture Room (music system and Musical instruments )	NA	NA	Available
19.	Parking facility	Available	Available	Available
20.	Outside sitting space	Available	Available	Available
21.	Invertor	Available	Available	Available

### B. Facilities available at Kishak Bhavan

Sr.No.	Particular	Availability	Numbers	Capacity	Remark
1.	Krishak Bhavan	Available	01	32	
1.2	Rooms	Available	04	2 persons/ room	With TV, Air conditioned, geyser available
1.3	Dormitory	Available	04	6 persons/ dormitory	Air conditioned, geyser available
1.4	Dining hall	Available	01	20 X 27 feet	With TV and dining table (capacity for 40 persons)
1.5	Kitchen	Available	01	16X14 feet	
1.6	Drinking water Facility	Available	01	40 litre	
2.	In charge office	Available	01		
3.	Guard/Care taker room	Available	01		

4.	Training Hall	Available	01	60 persons	
5.	Store Room	Available	01		
6.	Transport Facility	Not Available	--	--	College vehicle is used when needed

### Medical and Transport Facilities:

At the college, each student is having life insurance *i.e.*, Student Safety Accident Insurance Policy by State Insurance & Provident Fund Department, Rajasthan covering Rs.1.0 lakh of amount at the time of admission.

Upon requirement student visit the nearby Government Hospital on arrangement made by College. In case of emergency, the students are taken to nearby hospitals by College vehicle to avail required medical assistance. At the Girls hostel, there is arrangement of Girls hostel warden as well as care taker who personally takes care of resident students.

### Security:

Required number of security personnel are engaged at all the entry points in the campus and in all the hostels. Warden keeps a strict vigil on the safety and security system of the hostel. CCTV cameras have been installed in hostels and in the warden residence to monitor security.

### 6.5.5.2. Examination Hall:

The bigger examination hall of the college is under construction. In present arrangement, the examination is conducted in PHT hall and class rooms. The detail arrangement for examination is as under:

### Details of Examination Facility with Seating Capacity:

Building	No. of Room	Seating Capacity	Area (Sqm)
Examination Hall	01	100	350
PHT Building Room No.1	01	100	150
PHT Building Room No.2	01	40	90
Class rooms (104,108,205 & 208)	04	96	100 each
<b>Total</b>	<b>07</b>	<b>336</b>	

### 6.5.5.3. Sports and Recreation Facilities:

#### Details of Games & Sports Facilities:

Games and Sports	Number	Size	Facilities
<b>Outdoor sports</b>			
Football cum Cricket	1	105 x 68 sq. m	Football, Net, corner flag, Bat, ball, helmets, pads, stumps, liner, chest and thigh guards, guards, gloves
Kabaddi	1	13 x 10 sq. m	Knee cap, Elbow supporter
Volleyball	1	18 x 9 sq. m	Net, balls, LED light facilities
Athletics	1	400 m running track	
Basketball	1	28.7x15.2 sq. m	Basketball, ring net, LED light facilities
Kho-Kho	1	27x16 sq m	Knee cap, Elbow supporter
Long jump & high jump	1	-	Pit
Shot put, Discus throw, Javelin throw	1	-	On cricket ground
<b>Indoor games</b>			
Chess	2	Big size	Chess board with coins and clock
Table Tennis	3	Standard size	Tables, Net, Bats and balls
Badminton	2	13.6x6.1 sq.m	Rackets, shuttle cocks, nets
Gymnasium	2	25x15 sq m	Treadmill, Pec Deck Machine, Dumbbells, Parallel bar etc.

#### Day to Day Management of Sports:

According to the V<sup>th</sup> Deans committee recommendations, non credit (NC) courses of sports are offered to the students. A class of 1 hour and 40 minutes is assigned to each course. The students are taught about the specific games and sports with practical conducted on each course on the grounds or in courts with required facilities.

Sports In-charge and a sports coach look after college sports activities. A separate store room for storing sports materials has been established to facilitate timely availability of sports materials.

House system is being followed for the games and sports and other co-curricular activities wherein all college students are distributed into various houses and they prepare regularly for inter house competitions. This helps students to get selected in college team for inter-collegiate tournaments and also for Inter-Agri University and West Zone open tournaments. The courts and play ground remains open for the students in morning and evening hours and students practice various games-sports at the ground. The hostels have table tennis, chess and court for badminton as indoor facility.

### Students' Achievements in Games & Sports of Inter - class Tournaments:

The students' participant in Inter-class tournament in different games and sports events which are organized regularly during middle of each academic session.

The Inter-College Games and Sports Events were organized during January 22-24, 2019 and October 17-19, 2019 at College of Horticulture and Forestry, Jhalawar. The students from across constituent colleges participated and performed in different events. The following are the achievements:

Sl. No.	Events	Position during 2018-19	Position during 2019-20
1	Kabaddi (Men)	Winner	Winner
2	Kabaddi (Women)	-	Winner
3	Volleyball (Men)	Winner	Winner
4	Volleyball (Women)	-	Winner
5	Basketball (Men)	Winner	Winner
6	Basketball (Women)	-	Winner
7	Cricket	Winner	Winner
8	Badminton (single) men	Winner	Winner
9	Badminton (double) men	Winner	Winner
10	Badminton (single) women	Winner	Winner
11	Badminton (double) women	Winner	Winner
12	Chess		I
13	Table Tennis (Men)		II
14	100, 200, 400, 4x100 meter riley, 800, 1500 meters, javelin, disc throw (Men)	I	I
15	5000 m running (Men)	-	II
	100 m race (Women)	I	I
	200 m race (Women)	II	I
16	400, 4x100 meter riley, javelin (Women)	I	I
17	High jump, Long jump	I	II



Kabaddi Court



400 m running track



Volleyball Ground



Basketball Court



Chess



Cricket Pitch

#### **6.5.5.4. Auditorium:**

The College does not have auditorium, however college is having two seminar halls with a seating capacity of 150 persons at a time and is available for trainings, seminars, meetings etc.

#### **6.5.5.5. Exhibition Hall/Museum:**

The College has one museum that displays replica of different specimen, activities, events, achievements etc.

### 6.5.6. Research Facilities:

#### 6.5.6.1. Post Graduate Laboratories and Equipments:

Each Department has well equipped laboratory for smooth conduction of UG & PG practical classes and PG research work. The list of laboratories in the college is as under and Department wise list of equipments are given in Annexure-I.

#### Department wise Laboratories Dimensions and Seating Capacity:

S. No.	Name of Laboratory	Working Area (m <sup>2</sup> )	Seating capacity
1.	Fruit Science Lab	83.13	30
2.	Vegetable Science Lab	82.21	30
3.	Post Harvest Technology Lab	162.18	30
4.	Floriculture and Landscape Architecture Lab	82.21	30
5.	Silviculture and Agroforestry Lab	82.21	30
6.	Forest Biology and Tree Improvement Lab	82.21	30
7.	Wood Science and Wood Technology	83.34	30
8.	Non Wood Forest products	77.68	30
9.	Wildlife Lab	77.68	30
10.	Soil Science Lab	83.86	30
11.	Agriculture Engineering Lab	79.95	30
12.	Plant Pathology Lab	82.21	30
13.	Entomology Lab	79.95	30
14.	Plant Breeding Lab	77.68	30
15.	Tissue Culture Lab	450.00	30
16.	Computer Lab	61.83	30
17.	Language Lab	61.83	30





**Laboratory for Practical classes**



**Laboratory for Practical classes**



**Centrifuge**



**Spectrophotometer**

**6.5.6.2. Research Contingency:**

Adequate contingency grant is provided to each Department for research and post graduate students. The grants available under JRF/SRF are used for students research. Following research projects were also handled by the College as given under.

S. No.	Project Name	Year	Total budget (Lakh)	Sponsored by
1.	Exploring possibilities of Strawberry Cultivation under climatic condition of Jhalawar	2015-16	2.58	RKVY, ICAR
2.	Popularization of Strawberry Cultivation in Jhalawar District	2017-18	25.91	RKVY, ICAR
		2018-19	5.00	
3.	Conservation, Propagation and Popularization of Chironji ( <i>Buchanania lanzan</i> ) in South Eastern Rajasthan	2015-16	6.20	RKVY, ICAR
		2016-17	5.41	
		2017-18	4.00	
		2018-19	7.47	
4.	AICRP on Arid Zone Fruits	2015-16	5.13	CIAH, Bikaner (ICAR)
		2016-17	2.66	
		2017-18	5.99	
		2018-19	5.06	
		2019-20	1.65	
		2020-21	1.00	
5	National Agriculture Higher Education Project	2018-19-2020-21	421.50	ICAR

**Work done under NAHEP Project:**

Under this Project the following work has been conducted for overall Strengthening of the Academic, Research activities along with Human Resource Development.

- For quality teaching 3 classrooms have been modernized with digital teaching device consisting of smart board, visualizer, overhead projector, CCTV and biometric system and furniture.
- Poly house structures has been renovated with cladding material and additional facilities of circulating fans, fertigation machine, temperature and humidity sensors, rain water harvesting system, internal path
- One poly house has been constructed with cladding material of poly carbonated sheet for establishment of hydroponic unit. Hydroponic unit comprising of different models has been constructed in 500 mtr sq area.
- For modernization of instructional farms drip and sprinklers facilities has been created in 18 ha area. Further, equipments like boom sprayer, super seeder, power auger, bund farmer, air compressor, weighing machine has been purchased.
- Library has been strengthened with text books, e- journals and internet facility.



**RKVY Project on Strawberry**



**Hydroponic Unit**



**RKVY Project on Chironji**



**AICRP on AZF**

**6.5.7. Outcome / Output****6.5.7.1. Student Performance in National Examinations:**

S.No.	Year	JRF	SRF	NET	ARS	NTS
1.	2016-17	-	1	4	1	4
2.	2017-18	4	2	-	-	3
3.	2018-19	3	2	5	-	5
4.	2019-20	2	2	3	-	6
5.	2020-21	-	-	-	-	5

Note: Detailed list of students are given in Annexure-II

**6.5.7.2. Students Placement Profile:**

S.No.	Year	Higher Education	CAU/SAU job	Central Govt.	State Govt.	PDF/ Foreign	Bank/ Others
1.	2016-17	18	1	--	8	--	2
2.	2017-18	17	7	--	5	1	5
3.	2018-19	21	3	1	12	--	25
4.	2019-20	23	1	5	5	1	9
5.	2020-21	41	-	-	6		12
	<b>Total</b>	<b>120</b>	<b>12</b>	<b>6</b>	<b>36</b>	<b>2</b>	<b>53</b>

Note: Detailed list of students are given in Annexure-III

**6.5.7.3. Awards / Recognitions / Certificates:**

Details of State / National / International awards / Best teacher / thesis / Agri-unifest & Agri-unisports and any National award / recognitions

**Faculty:**

S. No	Name of the Faculty	Name of the Award	Name of the Awarding Institute	Date
1.	Dr. I. B. Maurya	Shikshak Sree Samman	Rashtriya Samta Swatantra Munch, Jaipur	5 Sep, 2016
2.	Dr. Jitendra Singh	Reviewer Excellence award	Agricultural Research Communication Centre, Karnal	23 Aug, 2016.
3.	Dr. P. Bhatnagar	Outstanding Scientist Award	IJTA 3rd International Conference	25-26 June, 2016
4.	Dr. P. Bhatnagar	Outstanding Researcher Award	Aufau International	4 June, 2016
5.	Dr C K Arya	Appreciation Award	District	2017

			Administration, Jhalawar	
6.	Ms. Neetha P	Kamta Prasad Sageriya best research paper award	Society of tropical forestry scientists Jabalpur	2017
7.	Dr. P.S. Chauhan	Certificate of appreciation	Dean, CHF, Jhalawar	18 March, 2017
8.	Dr. Jitendra Singh	Dr. Rajendra Prasad Award	ICAR, Govt. of India	16 July, 2017
9.	Dr. I.B. Maurya	Appreciation Award	AU, Kota	15 Aug, 2017
10.	Dr. Kavita A.	Appreciation Award	AU, Kota	15 Aug, 2017
11.	Dr. Ashutosh Mishra	Excellence in Teaching Award	GRISAAS -2017 at MPUAT, Udaipur	2017
12.	Dr. Ashok Kumar	Excellence in Teaching Award-2017	All India Agricultural Students Association (AIASA), New Delhi	2017
13.	Dr. P. Bhatnagar	Best Teacher Award 2017	Advances in Agricultural and Biological Conservation for Sustainable Development	27-28 Oct, 2017
14.	Dr. S. B. S. Pandey	Best Teacher Award Ph.D. Gold Medal Vraksha Vardhak Puraskar	DM, Jhalawar NAU, Navsari , Guj. DCF, Jhalawar	2017 2018 2018
15.	Dr. C. K. Arya	Young Scientist Award	Society for Agriculture Innovation & Development, Ranchi	2018
16.	Dr. Ashutosh Mishra	Appreciation Award	District Administration, Jhalawar	2018
17.	Sh. Nirmal Kumar Meena	Young Scientist Award	University of Allahabad -2018	2018
18.	Dr. P. S. Chauhan	Certificate of appreciation	DCF, Govt. of Rajasthan Jhalawar	22 May, 2019.
19.	Dr. P. Bhatnagar	Appreciation Award	Agriculture University Kota	26 Jan,2019
20.	Dr. C K Arya	Appreciation Award	Agriculture University Kota	26 Jan,2019
21.	Sh. Nirmal Kumar Meena	Young Achiever award	Institute of scholars Bangalore	2019

22.	Sh. Nirmal Kumar Meena	Best article Award	Agriculture and food e-newsletters	2019
23.	Dr. P. S. Chauhan	Excellence in Teaching Award	Agro Environmental Development Society (AEDS) Rampur, Uttar Pradesh	29 Sep,2019
24.	Sh. Nirmal Kumar Meena	Young Scientist Award-2019	Agricultural and Environmental Technology Development Society, US Nagar, Uttarakhand (India)	1-2 Dec, 2019
25.	Dr. Jitendra Singh	Best Teacher Award	Indian Society of Horticultural Research, Uttarakhand,, Dehradun	08 Dec, 2019
26.	Dr Ashok Kumar	Certificate and Memento	District Administration, Jhalawar	26 Jan, 2020
27.	Dr Suresh Kumar Jat	Appreciation award	Agriculture University Kota	26 Jan,2020
28.	Dr Hemraj Chhipa Sh Rajesh Kumar Sharma	Best Poster Award	National Seminar CH&F, Jhalawar	30-31 Jan, 2020
29.	Dr Priyanka Solanki	Best Oral paper Award	National Seminar CH&F, Jhalawar	30-31 Jan, 2020
30.	Dr Ashok Kumar	Best Young Scientist	SynBiogenica Labs, India	Oct 24-26, 2020
31.	Dr. C. K. Arya	DC Memorial Teacher Award	Society of World Environment, Food and Technology, New Delhi	2020

**Students:**

S. No.	Name of the Students	Name of the award	Name of the awarding Institute	Date
1.	Mohan Lal	Best Student of the Year	Agriculture University Kota	26 Jan, 2016
2.	Mohit Hussain	Best Student of the Year	Agriculture University Kota	26 Jan, 2016

3.	Jitendra Singh Shivran	Best Student of the Year	Agriculture University Kota	26 Jan, 2017
4.	Jai Bhagwan	Best Student of the Year	Agriculture University Kota	26 Jan, 2017
5.	Hanuman Ram	I <sup>st</sup> Rank in ARS	ARS	2016-17
6.	Miss Vishakha	M.Sc in Food Science & Bio-Technology	Teesside University, England	2017-18
7.	Mr. Rajesh Gurjar	I <sup>st</sup> rank in pre PhD examination	MPUAT, Udaipur	2017-18
8.	Ms Pratibha	Best Student award	Agriculture University Kota	26 Jan, 2018
9.	Mr Kamal Mahala	Best Student award	Agriculture University Kota	26 Jan, 2018
10.	Ms Puspendra Kumar	Best Student Award	Agriculture University Kota	26 Jan, 2019
11.	Miss Simran	I <sup>st</sup> Position in Drill	NCC, Kota group	13-22 June, 2019
12.	Miss Harsha Gajra	I <sup>st</sup> Position in Sports and Games	NCC, Kota group	13-22 June, 2019
13.	Ashwin Acharya	I <sup>st</sup> Rank In District level Debate Competition	Medical College Jhalawar	2019
14.	Himanshu Chawla	Best Student Award	Agriculture University Kota	26 Jan, 2020
15.	Nandish	Best Oral paper	National Seminar CH&F, Jhalawar	30-31 Jan, 2020
16.	Shubham Meena	Best Poster Award	National Seminar CH&F, Jhalawar	30-31 Jan, 2020
17.	Arvind Bairwa and Team	4 <sup>th</sup> Position in Mime event	ICAR-Agri-unifest, Raipur	Feb, 2020
18.	Miss Niti Agarwal	I <sup>st</sup> position in online national poster competition	Datiwara Agriculture University	2020
19.	Miss Varsha Shekhawat	3 <sup>rd</sup> Position in online state level essay Competition	Agricultural University Kota	11 June, 2020
20.	Jyotiraditya Solanki	I <sup>st</sup> position in State Debate	Directorate of NCC Jaipur	22 Aug, 2020

#### **6.5.7.4. Employability:**

After graduation students enter a broad range of challenging and rewarding professional careers in crop production, management, marketing, education, research, state government, banking and civil examinations. Some of them have opened their own business enterprises such as production of fruits, vegetables, spices, medicinal and aromatic crop, flower production, landscape design/build and maintenance companies, nurseries, processing industries, greenhouses and garden centers.

College has established a placement cell for career guidance and personality development programme which is aimed at increasing employability of the students. The cell regularly conducts trainings and guest lectures for the development of the soft skills of the students. Two National Level Seminars, 4 Workshops, 7 Trainings, 2 training of 200 hrs each of skill development , 7 webinars and total of 29 tutorial lectures were conducted for the motivation and development of students. Faculty guide encourage students to appear for various competitive exams like ASRB, RPSC, UPSC, IBPS, CAT and other competitive examinations.

Many students from College of Horticulture and Forestry have cleared RPSC, IBPS, and competitive exam and presently working as Assistant Professor, Scientist, Agriculture Officer, Horticulture Officer, and Bank Officer in various nationalized bank and also in private sector across the country.



**Campus interview by Dayal Group**

Beside this, College also provide training and demonstrations to the farmers at protected cultivation unit of the college, which has made an impact on farming society in Hadoti area in uplifting socio economic status of the farmers. At the time of establishing the unit the area under protected cultivation was negligible which tremendously increased to more than ten thousand ha in span of last 5 years. Shri. Ravindra Swami, Shri Virendra Nagar, Shri Dherandra, Shri Atul Jhala and many more farmers among the beneficiaries who are presently not only cultivating but also motivating and imparting trainings to others farmers in this business.



## Our Entrepreneurs

1. Name : Mr. Indraraj Jat
2. Father's Name : Sh. Girdhari Lal Jat
3. Degree program : B.Sc. (Hons.) Horticulture
4. Enrolment No. : 05/113
5. Year of admission : 2005
6. Year of passing : 2009
7. Contact details : 468 Khod Ki Dhani  
Village- Tigariya via Itwa-Bhopal  
Tehsil-Chomu  
Dist- Jaipur  
State: Rajasthan-303804



8. Entrepreneurial details : After getting degree from the college, the student took his own business. Initially, he entered in the business in organic farming area with a unit of vermicomposting. Later on he added roof top farming of vegetables in his business. The business progressed slowly and slowly and he set up a firm "Reliable Group of Companies". He is also running a NGO in name of Green World Foundation. Presently, he is dealing in the business of vertical farming with zeal and enthusiasm and supplying infrastructural facility of roof top gardening along with quality vegetable seedlings to the city dwellers. His business covers up many house hold in city of Jaipur. His customers include more than 1000 farming beneficiaries using inputs and technical knowhow provided by his firm. Nowadays, he extended his business in agro tourism where a visitor can see the technologies, experience recreation and purchase organically produced farm produces. He has entered into an agreement with the group of growers followed in conservation agriculture in natural environment around Jaipur city. The visitors with their willingness to farming sector are enabled to visit the farm being maintained focusing upon sustainable issues. The total out turn of his firm is around 30.0 lakh on annual basis. His initiative is being viewed as an role model for students passing out from the college and wants to shape their future in entrepreneurial sector.

**Certificate**

I, the Dean, College of Horticulture & Forestry, Jhalawar hereby certify that the information contained in the Section 6.4 and Section 6.5.1 to 6.5.8 are furnished as per the records available in the College and Degree Awarding University.



**(I.B. Maurya)**

**DEAN**  
**Dean**

**College of Horticulture and Forestry**  
**(Agriculture University, Kota)**  
**Jhalrapatan, JWR 326023 (Rajasthan)**

**ANNEXURE-I****Department wise Lists of Equipments****1. Department of Fruit Science:**

S. No.	Name of the equipment	Quantity
1.	Electronic balance capacity 10 kg	01
2.	Electronic balance capacity 2 kg	01
3.	Electronic balance capacity sartorius 200g	01
4.	Photosynthesis system	01
5.	Hot air oven	01
6.	Willey grinder	01
7.	Rotary flask shaker	01
8.	Abbe refractometer	01
9.	Hand refractometer ERMA-0-18 %	02
10.	Hand refractometer ERMA-0-55%	02
11.	Digital hand refractometer	01
12.	Digital vernier calipers	04
13.	Vapour pressure osmometer	01
14.	Thermohygrometer	02
15.	Single distillation Unit	01
16.	Leaf area meter	01
17.	Lai meter	01
18.	Elico digital ph meter	02
19.	Probe soil thermometer	01
20.	Microscope	03
21.	Hot plate with digital temp cum controller	01
22.	Water potential system	01
23.	Open pan evaporimeter	01
24.	Spectrophotometer	01
25.	Fruit penetrometer	01
26.	Mercury soil thermometer	06

**2. Department of Vegetable Science :**

S. No.	Name of the equipment	Quantity
1.	Spring balance capacity 20 kg	01
2.	Top pan balance capacity 10 kg	01
3.	Seed purity board	01
4.	Multiple exhibit panel for outdoor use	01
5.	Dual purpose (half exhibit –alf white )display panel	01

6.	Hand refractometer ERMA-0-18 %	01
7.	Hand refractometer ERMA-0-55%	01
8.	Digital Vernier caliper	01
9.	Elico microprocessor scanning visible spectrophotometer SL-177	02
10.	All Quartz Double Distillation with auto cut off JSGW 1.5L/h	01
11.	Kjeldal digestion unit(JSGW) With individual energy regulator	01
12.	Elico digital Ph meter Model L1-127	01
13.	Digital electronic balance Sartorius model BT-2245	01
14.	Conductivity meter pen type	01
15.	Microscope	05
16.	Hot Plate with digital temp cum controller	01
17.	Laboratory oven perfect system	01
18.	Centrifuge and accessories	02
19.	Tap three way	01
20.	Exhibit panel for indoor use Research scholar	04
21.	Vortex	01
22.	Spade	12
23.	Digital Screw Gauge	01
24.	Computer UPS	02
25.	Laptop (note book HP probok 40000 s series )	01
26.	Pliar	01
27.	Laboratory balance 300g	01
28.	pH meter pocket type ERMA	01
29.	Pocket balance electronic	01
30.	Digital balance	01

### 3. Department of Floriculture and Landscape Architecture :

S. No.	Name of equipments	Quantity
1.	Hot air oven	01
2.	Exhibition panel	07
3.	Water distillation unit	01
4.	Digital balance	01
5.	Vernier caliper	01
6.	pH meter	01
7.	Lawn mower	02
8.	Secateurs	41
9.	Pruning shear	01
10.	Bonsai kit	01
11.	Budding an grafting knife	67
12.	Microwave oven	01

13.	Digital camera	01
14.	Hedge shear	03
15.	Microscope	01
16.	Hand weeder	66
17.	Khurpi	42
18.	Sprinkler	09
19.	Wrench	01
20.	Brush cutter	03
21.	Digital thermohygrometer	01
22.	Hedge trimmer	01
23.	Refrigerator	01
24.	Grass sword	02
25.	Garden hoe	02
26.	Rack	01
27.	Cultivator	02
28.	Looping shear	01

#### 4. Department of Post Harvest Technology:

S. No.	Name of equipments	Quantity
1.	Balance Cap.10 kg	01
2.	Bottle filling machine	01
3.	Blancher	01
4.	Bottle Opener	02
5.	Boiler (Thermotech)	01
6.	Bottle sterilization tank	01
7.	Canning pressure cooker retort	01
8.	Crown corking machine (Basil)	01
9.	Can reforming machine (basil)	01
10.	Compound microscope trinocular	01
11.	Counting chamber	01
12.	Cork borer	01
13.	Double seaming machine	01
14.	Dicing and cubing machine	01
15.	Uv Spectrophotometer	01
16.	Digital hand refractometer	01
17.	Exhaust box with 10ft conveyer	01
18.	Electric kettle	01
19.	Electronic colony counter	01
20.	Electric hand blander	01
21.	Electric citrus juicer	01
22.	Fruit halving machine (Basil)	01
23.	Gas stove	01

24.	Gas cylinder 14.5 + commercial	04
25.	Heating mantle	01
26.	Hot plate	01
27.	Hydraulic juice press	01
28.	Inert atmosphere can filler	01
29.	Juice filtering equipment	01
30.	Knife cutting	06
31.	Knife peeling	06
32.	Lid embossing machine	01
33.	Lime juicer (manual)	06
34.	Laminar air flow horizontal	01
35.	Magnetic stirrer with hot plate	01
36.	Vegetable cutting machine	01
37.	Micro processor based solar dryer	01
38.	Mortar pestle	02
39.	Onion peeling machine	01
40.	O2 CO2 analyzer	01
41.	pH meter digital	01
42.	PP Cap sealing machine	01
43.	Pulper with spare sieve	01
44.	Portable digital thermometer	01
45.	Microwave oven	01
46.	PAN Stainless steel	02
47.	Pocket refractometer Erma 0-32	01
48.	Pair of ocular micrometer	01
49.	Pocket refractometer 28-62	01
50.	Pocket refractometer 58-92	01
51.	pH meter portable	01
52.	Plastic bag sealing machine	01
53.	Rotary shaker	01
54.	Rotational viscometer	01
55.	Rubber cork	36
56.	Screw type juice extractor	01
57.	Storage and mixing tank	01
58.	Steamed jacketed cooling kettle	01
59.	Swan neck tap	02
60.	Slide box 100 slides	02
61.	Steam pipeline with overhead water tank	01
62.	Spatula stainless steel	05
63.	Thermo hygrometer digital	01
64.	Tin sterilizer	01
65.	Vortex shaker	01

66.	Vacuum packaging machine	01
67.	Vegetable washer	01
68.	Voltage stabilizer	01
69.	Vernier caliper digital	01
70.	Water bath	01
71.	Working table	02
72.	Working trays	10
73.	wine testing kit	01

## 5. Department of Plant Protection :

### (a) Entomology:

S. No.	Name of equipments	Quantity
1.	Laboratory stool	20
2.	Exhibition board	02
3.	Dissecting kit	03
4.	Hand lens with metal frame	02
5.	Insect display and Storage showcase	15
6.	Insect showcase cabinet, 12 showcase	01
7.	Stereo zoom Microscope, WF10x/20	01
8.	Insect storage box	50
9.	Insect stretching board (Adjustable)	20
10.	Insect collection net with aluminium handle	50
11.	Insect cage	05
12.	Dissecting tray with wax/EVAPad	10
13.	Light trap	2
14.	Mosquito trap	2
15.	Pheromone trap	50
16.	Sticky trap	30
17.	Fruit fly trap	10
18.	Suction trap	10
19.	Berlise funnel	05
20.	Display chart	50
21.	Display photographs	15

### (b) Plant Pathology :

S. No.	Name of equipments	Quantity
1.	Laminar airflow	01
2.	Refrigerator	01
3.	Herbarium press	04
4.	Balance	01

5.	BOD incubator	01
6.	Microscope (student)	15
7.	Centrifuge	01
8.	Colony counter	01
9.	Sieve plates	12
10.	Hot air oven	01
11.	Autoclave	02
12.	pH meter	01
13.	Micropipette	03
14.	Distillation unit	01
15.	Spectrophotometer	01
16.	Inoculation needle	03
17.	Spirit lamp	03
18.	Test tube stand	02
19.	Cork borer	01
20.	Haemocytometer	01
21.	Camera lucida	01
22.	Micrometer	01
23.	Compound microscope	01
24.	Microwave oven	01

## 6. Department of Natural Resources Management:

### (a) Soil Science:

S. No.	Name of equipments	Quantity
1.	Autoclave vertical high pressure	01
2.	Automatic micropipette controller	01
3.	Balance top loading	03
4.	Centrifuge high research	01
5.	Digital U based conductivity meter	01
6.	Exhibit panel	02
7.	Electric heating cup	01
8.	Flame photometer	01
9.	Flame photometer systonic	01
10.	Hot plate rectangular	01
11.	Handa copper	01
12.	Iron stand	01
13.	Infiltrometer	02
14.	Kjeldal distillation and digestion combined unit	01
15.	Microprocessor based water quality analyzer	01
16.	Magnetic stirrer with hot plate	01
17.	Microscope binocular	01



18.	pH meter digital	01
19.	pH meter elico	01
20.	pH glass electrode	03
21.	Rotary flask shaker	01
22.	Spectrophotometer	01
23.	Soil tensiometer 30 cm	01
24.	Soil tensiometer 60 cm	01
25.	Soil thermometer multi channel with 50 cm probe MAC	01
26.	Cylindrical core cutter	04
27.	Steel dolly	02
28.	Hammer with steel road	02
29.	Water bath	01
30.	Spatula	15
31.	Measuring tape	03
32.	Hydrometer	05
33.	Enamel tray	14
34.	Crucible silica	04
35.	Porcelain	20
36.	Spirit lamp stainless	10
37.	Pan and cover	01
38.	Sieve shaker	01
39.	Laboratory permeability apparatus	01
40.	Over head tank	01
41.	Vernier caliper	01
42.	Tachometer digital non contact	01
43.	Hydrometer	01
44.	First aid box	01
45.	Moisture content tin	20
46.	Soil auger	03
47.	Sieve	02
48.	Stop watch mechanical	01
49.	Stop watch electronic	02
50.	Spectrophotometer uv visible	01
51.	Vaccum pump double stage	01
52.	Water bath rectangular	01
53.	Sampling auger outfit blade	01
54.	Extension rod 1 m for auger	01
55.	1 handle and T piece	01
56.	Spanner	01
57.	Sampling tube	01
58.	Speedy moisture meter	01

59.	Pycnometer set	06
60.	Sieves	11
61.	LG refrigerator	01
62.	Oven	01
63.	Horizontal laminar flow cabin	01
64.	Willey grinder	01

**(b) Agriculture Engineering :**

S. No.	Name of equipments	Quantity
1.	Anemometer	01
2.	Digital humidity and temperature meter	01
3.	Digital thermo-hygrometer	04
4.	Farm power and Machinery tools	01
5.	Hygrometer	01
6.	Pan evaporimeter	01
7.	Parshal flume	01
8.	Rain gauge	01
9.	Rain gauge non recording	01
10.	Stevenson screen	01
11.	Vernier caliper	01
12.	Wet and dry bulb thermometer	02
13.	Working model of IC engine	01

**7. Department of Forest Products and Utilization:**

S. No.	Name of equipments	Quantity
1.	Weighing machine	01
2.	Oven	01
3.	Hot plate rectangular (45x30 cm)	01
4.	Water bath	01
5.	Portable ph meter	01
6.	Wood chipper	01
7.	Rotary pulping digester	01
8.	Voltage stabilizer	01
9.	Freeze (320 litre)	02
10.	Bucket (iron)	09
11.	Axe	05
12.	Pruning saw	22
13.	Hammer (2p, 4p,5p,8p)	08
14.	Sharpening tools	06
15.	Measuring tape	03
16.	Spade	29

17.	Tagari	20
18.	Pickaxe (ganthis)	14+4
19.	Kudali	07
20.	Wooden chisel (iron)	04
21.	Pit saw	05
22.	Aluminium scale	05
23.	Pliers	01
24.	Crow bar	10
25.	Drill machine	02
26.	Wood planar	02
27.	Basela	04
28.	Guniya	02
29.	Girmit	05
30.	Chisel	05
31.	Muffle furnace	01
32.	Digital balance machine	01
33.	Incubator universal	01
34.	Pressure cooker (10 ltr)	01
35.	Kjeldahl digestion unit	01
36.	Magnetic stirrer	01
37.	V.d.r.l. Shaker	01
38.	Heater	01
39.	Iron chaini	02
40.	Leica scanning microscope	01
41.	Wood routers (model: m12sa2, m12sc)      make : hitachi	02
42.	Monocular microscope	02
43.	Wood microtome (rotary)	01
44.	Universal wood testing machine	01
45.	Universal wood working machine with circular saw planner	01
46.	Power chain saw	01
47.	Grinding mill – walley grinder	01
48.	Handycam sony dcr	01
49.	Wood moulding and turning machine	01
50.	Seed germinator with optional accessories	01
51.	Lab digital electronic balance	01
52.	Monocular microscope	01
53.	Uv vis spectrophotometer	01
54.	Power tiller with accessories	01
55.	Secateur	03
56.	Garden rack	02
57.	Shovel	02
58.	Crude fibre estimation unit	01

59.	Heating mental	04
60.	Digital vernier caliper	01
61.	Flexible stand for board	02
62.	Projector trolley	02
63.	Dual purpose display	01
64.	Magnetic board	02
65.	Chart cabinet for handicraft	02
66.	Drawing board with stand	01
67.	Computer for remote sensing and gis	01
68.	Gps	01
69.	Erdas imagine professional	01
70.	Torch	01
71.	Scissor	01
72.	Spirit lamp	03

### 8. Department of Wildlife Management:

S. No.	Name of equipments	Quantity
1.	Binoculars	03
2.	Camera	01
3.	Dissecting kit	02
4.	Camera trap	02
5.	SS tray	03

### 9. Department of Silviculture and Agroforestry:

S. No.	Name of equipments	Quantity
1.	pH meters	01
2.	Digital balance	02
3.	Refrigerator	02
4.	Hot air oven	01
5.	Computer for remote sensing and GIS with Erdas imagine professional & Arc GIS	01
6.	GPS	02
7.	Wedge prism	7
8.	Napsack Sprayer	4
9.	Altimeter Ravi	3
10.	Aluminum Ladder	3
11.	Prsssler's Increment Borer	2

**10. Department of Forest Biology and Tree Improvement:**

S. No.	Name of equipments	Quantity
1.	Digital balance	04
2.	Vernier caliper	01
3.	Oven	01
4.	Secateur	10
5.	Budding and grafting knife	15
6.	Khurpi	15
7.	Microscope	01
8.	Seed germinator	01
9.	Digital moisture meter	01
10.	Seed grader	01
11.	Seed counter	01
12.	Seed precision divider	01
13.	Purity work board	01
14.	Binocular	19
15.	Herbarium press	01
16.	Luxmeter	01
17.	Autoclave	01
18.	Distillation unit	02
19.	SLR camera	01
20.	k –yan	01
22.	Snake rescue kit	01
23.	Flesh light	02
24.	Measuring tape	03
25.	Axe	01
26.	Sickle	02
27.	Pliers	01

**11. Department of Basic Science:**

**(a) Tissue Culture Laboratory:**

S. No.	Name of equipments	Quantity
1.	Hot plate	02
2.	Laminar air flow	04
3.	Photoperiodic stimulator caster racks	12
4.	Digital photoperiodic timer	02
5.	Digital room temperature controller	02
6.	Digital humidity controller	01
7.	Sequential timer	02
8.	Luxmeter	01

9.	Microscope (Trinocular/Magnas /Zoom)	02
10.	Digital camera	01
11.	Digital balance	02
12.	Hot air oven	01
13.	Sterilizer (horizontal)	01
14.	Clear pipette	01
15.	Fire extinguisher	02
16.	Spirit lamp	04
17.	Forceps	18
18.	Bunsen burner	02
19.	Refrigerator	11
20.	Office table	04
21.	Computer table	01
22.	Shoe rack	02
23.	Aqua guard	01
24.	Vacuum cleaner	01
25.	Air conditioner	05
26.	Magnetic stirrer	01
27.	Single water distillation	01
28.	Glass bead sterilizer	02
29.	Deep freezer	02
30.	Copper plate	01
31.	Pressure cook	02
32.	Gas stove	01
33.	Gas cylinder	04
34.	Packing machine	01
35.	Electric generator	01
36.	Digital pH meter	01
37.	Universal oven	02
38.	Pass box	02
39.	Micro centrifuge	02
40.	Aerosol disinfectant	01
41.	Digital deionizer	01
42.	Electrophoresis	06
43.	Lab incubator	01
44.	Water bath	02
45.	Micro top	01
46.	Tissue floatation bath	01
47.	Vortex mixture	02
48.	Centrifuge Eltek	02
49.	Trans eluminator	01
50.	UV lamp	01

51.	Centrifuge	04
52.	Ice flanking machine	01
53.	Autoclave	02
54.	Real Time PCR	01
55.	Thermal cycler	01
56.	Gel documentation system	01
57.	Gradient PCR	01
58.	Multi channel pipette	06
59.	Spectrophotometer	01
60.	Vacuum pump	01
61.	Hi tech green house net	01
62.	Cryogenic container	07
63.	Capillary electrophoresis	01
64.	Sample disruption system	01
65.	Incubator	01
66.	Elisa reader	01
67.	Microwave oven	01
68.	Pocket refractometer	01
69.	Digital stopwatch	01
70.	Pliar and screw driver	01
71.	Compressor	01
72.	UPS & Batteries	01

**(b) Plant Breeding:**

S. No.	Name of equipments	Quantity
1.	Student microscope	10
2.	Compound microscope	10
3.	Wooden box	10

**Annexure-II: Student Performance in National Examinations**

Examinations	Year	No. of students	Name of Students
<b>JRF</b>	2016-17	--	--
	2017-18	4	1. Rakesh Jangid 2. Alka 3. Nitin Yadav 4. Kamal Mehla
	2018-19	3	1.Puspendra Kumar 2.Dhirendra Pratap 3.Singh Solanki
	2019-20	2	1.Gurpreet Singh 2.Kamlesh Kumar Yadav
	2020-21	--	-
<b>SRF</b>	2016-17	1	1.Sushma Patil
	2017-18	2	1. Kamal Kishor Nagar 2. Ashok Choudhary
	2018-19	2	1. Deeksha Gautam 2. Kavita
	2019-20	2	1. Apoorva Guddaraddi 2. Mukesh
<b>NET</b>	2016-17	4	1. Kamal Kishor Nagar 2. Yogendra Sharma 3. Ashok Choudhary 4. Sushma Patil
	2017-18	-	-
	2018-19	5	1. Anita Verma 2. Nitu Kumari 3. Poonam 4. Sunita Jhajhra 5. Rahul Byadwal
	2019-20	3	1. Deeksha Gautam 2. Kavita 3. Apporva Palled
<b>ARS</b>	2016-17	1	1. Rajkumar
<b>NTS</b>	2016-17	4	1. Mohit Hussain 2. Rahul Kumar Byadwal 3. Sushma Patil 4. Sachin GE
	2017-18	3	1. Apporva Palled 2. Kavita 3. Rakesh M
	2018-19	5	1.Battu Premkumar 2.Apporva Palled 3.Kavita



			4.Rakesh M 5.Nandish H. S.
	2019-20	6	1.Akshita 2.Neelkanth 3.Poonam N.J. 4.Shivangi Rai 5.Battu Premkumar 6.Nandish H. S.
	2020-21	5	1.Akshita 2.Neelkanth 3.Poonam N.J. 4.Shivangi Rai 5.Battu Premkumar

**Annexure-III: Student Placement Profile**

Organization	Year	No. of students	Name of Students
<b>Higher Education</b>	2016-17	<b>18</b>	<ol style="list-style-type: none"> <li>1. Ankita Mantri</li> <li>2. Dinesh Raj Tanwar</li> <li>3. Jagdeesh Prasad Rathore</li> <li>4. Mohan Lal Jat</li> <li>5. Om Prakash Kumawat</li> <li>6. Prakash Kanwar</li> <li>7. Rajesh Bajia</li> <li>8. Rajesh Choudhary</li> <li>9. Ram Lakhna Meena</li> <li>10. Ram Raj Jat</li> <li>11. Vijendra Kumar Yadav</li> <li>12. Dharmendra Kumar</li> <li>13. Jitendra Singh Ranawat</li> <li>14. Manish Kumar</li> <li>15. Manoj Kumar Yadav</li> <li>16. Minita Sharma</li> <li>17. Rohit Kumar</li> <li>18. Shweta Bhardwaj</li> </ol>
	2017-18	17	<ol style="list-style-type: none"> <li>1. Jitendra Singh Shivram</li> <li>2. Megha Patidar</li> <li>3. Mukesh Chand Bhatishwar</li> <li>4. Neeraj Solanki</li> <li>5. Pawan Deep Singh</li> <li>6. Pradeep Kumar Bairwa</li> <li>7. Prerna Yadav</li> <li>8. Raj Kiran</li> <li>9. Ravindra Choudhary</li> <li>10. Shivanjali Saraswat</li> <li>11. Shubham Choudhary</li> <li>12. Sonu Nagar</li> <li>13. Chetna Ram Jat</li> <li>14. Jaya Bahariya</li> <li>15. Ramniwas Viashnav</li> <li>16. Vikram Kumar Hinonia</li> <li>17. Pooja Meena</li> </ol>
	2018-19	21	<ol style="list-style-type: none"> <li>1. Bhupendra Singh</li> <li>2. Manish Kumar Meena</li> <li>3. Alka</li> <li>4. Bhagwan Sahay Bijarniya</li> <li>5. Chander Shekhar Patidar</li> <li>6. Jitendra Gurjar</li> <li>7. Kamal Mahala</li> <li>8. Kamlesh Kumar Yadav</li> <li>9. Nitin Yadav</li> <li>10. Pratibha</li> <li>11. Rakesh Jangid</li> <li>12. Ramdhan Chopdhar</li> </ol>

			<ul style="list-style-type: none"> <li>13. Sonali Choudhary</li> <li>14. Yogesh Suman</li> <li>15. Dinesh Kumar Lodha</li> <li>16. Rani Sharma</li> <li>17. Suman Chahar</li> <li>18. Surendra Meghwal</li> <li>19. Vishnu Prasad Patidar</li> <li>20. Sushma Patil</li> <li>21. Poonam</li> </ul>
	2019-20	23	<ul style="list-style-type: none"> <li>1. Jitendra Singh Ranawat</li> <li>2. Kanheya Lal Yadav</li> <li>3. Deeksha Gautam</li> <li>4. Apoorva Palled</li> <li>5. Kumari Pushpa</li> <li>6. Aanchal Katara</li> <li>7. Poonam Purbia</li> <li>8. Rekha Nagar</li> <li>9. Bali Ram Yadav</li> <li>10. Dharendra Pratap Singh Solanki</li> <li>11. Ganesh Kumar Chopdar</li> <li>12. Gurpreet Singh</li> <li>13. Kamlesh Kumar Yadav</li> <li>14. Mali Ram Yadav</li> <li>15. Nikita Diwakar</li> <li>16. Prerna Kumawat</li> <li>17. Puran Chand Verma</li> <li>18. Radhe Shyam Jat</li> <li>19. Shankar Lal Kumawat</li> <li>20. Sunil Mahariya</li> <li>21. Umesh Kothiwal</li> <li>22. Vijay Singh</li> <li>23. Vikram Choudhary</li> </ul>
	2020-21	41	<ul style="list-style-type: none"> <li>1. Alka Naraniya</li> <li>2. Apporva Guddaraddi</li> <li>3. Mukesh Chand Bhateswar</li> <li>4. Hemlata Meena</li> <li>5. Rakesh Jangid</li> <li>6. Prakash</li> <li>7. Divya</li> <li>8. Abhishek</li> <li>9. Harshit</li> <li>10. Himanshu Chawla</li> <li>11. Kamal Mahla</li> <li>12. Komal</li> <li>13. Krishna Kumar Sharma</li> <li>14. Lata Meena</li> <li>15. Megha Patidar</li> <li>16. Nitin Yadav</li> <li>17. Pankaj</li> <li>18. Pooja Garwa</li> </ul>

			19. Pooja Kumari 20. Pooja Tatarwal 21. Phushpendra Choudhary 22. Prakash 23. Pratibha 24. Raees Mohammad 25. Ramdhan Chopdhar 26. Ramji Lal Yadav 27. Ravindra Kumar 28. Surajbhan Jat 29. Swaroop Singh 30. Raman Choudhary 31. Bahadur Singh Rathore 32. Bhan Pratap Patidar 33. Devram Meena 34. Kamal Kishor 35. Nilesh Tailor 36. Ram Lakhani Dhakar 37. Ravi Kumar Swami 38. Shubhanshu 39. Shiba Mansoori 40. Shishpal Choudhary 41. Vishal Mathuria
<b>CAU/SAU/ Private</b>	2016-17	1	1. Mohit Hussain 2. Indira Yadav
	2017-18	7	1. Yogendra Sharma 2. Subhash Chandra 3. Rajendra Kumar Sharma 4. Renuka 5. Prabhu Dayal Kumawat 6. Dinesh Mandwadia 7. Kailash Chandra Jat
	2018-19	3	1. Anil Kumar Saini 2. Ritesh Kumar Mehar 3. Bhupendra Singh
	2019-20	1	1. Durga Shanker Meena
<b>Central Govt.</b>	2016-17	-	
	2017-18	-	
	2018-19	1	1. Rahul Kumar Byadwal
	2019-20	5	1. Amit Kumar Dhaker 2. Om Prakash Meena 3. Sunil Kumar Rundala 4. Yogesh 5. Jitendra Bunkar
<b>State Govt.</b>	2016-17	8	1. Chanda Disaniya 2. Govind Singh Hada 3. Manhuri 4. Mordwaj Meghwal 5. Mukesh Kumar Jat 6. Pradeep Kumar Jakhar

			7. Satyanarayan Patidar 8. Surya Narayan Gurjar
	2017-18	5	1. Gopal Lal Dhaker 2. Mukesh Kumar Dangi 3. Dharam Raj Dhakar 4. Prameshwar Meena 5. Balveer Meena
	2018-19	12	1. Sunita Jhajhra 2. Anita Verma 3. Poonam 4. Bhoori Singh 5. Shoji Lal Meena 6. Nitu Kumari 7. Sarita Bagri 8. Sangeeta 9. Monia Olla 10. Shweta Ahir 11. Vijendra Damor 12. Chandra Shekhar Patidar
	2019-20	5	1. Antim Kumar Carpenter 2. Radhe Shyam Balai 3. Vinod Kumar Meena 4. Yesh Kumar 5. Kavita
	2020-21	6	1. Kalpana Choudhary 2. Deeksha Gautam 3. Rajesh Kumari Meena 4. Hemraj Meena 5. Sunil Kumawat 6. Vimal Roat
<b>PDF/Foreign</b>	2016-17	-	
	2017-18	1	1. Vishaka Inda
	2018-19	-	
	2019-20	1	1. Naseer Khan Mohibe
<b>Bank/Others</b>	2016-17	2	1. Pramond Kumar 2. Radheshyam Vaishnav
	2017-18	5	1. Ajay Singh Rathore 2. Arjun Rebari 3. Lalit Kumar Meena 4. Mahendra Kumar Meghwal 5. Prabhu Dayal Kumawat
	2018-19	25	1. Praveen Bochalya 2. Dinesh Kumar 3. Jai Bhagwan 4. Monika Olla 5. Priyanka Devanda 6. Sonu Carpenter

			<ol style="list-style-type: none"> <li>7. Dharmendra Kumar</li> <li>8. Manohar Singh Lodha</li> <li>9. Deepak Patidar</li> <li>10. Bhavesh Prajapat</li> <li>11. Antim Kmar Carpenter</li> <li>12. Prakash</li> <li>13. Dhanraj Mehta</li> <li>14. Shankar Lal Kumawat</li> <li>15. Alka Choudhary</li> <li>16. Umesh Kothiwal</li> <li>17. Lokesh Malav</li> <li>18. Vishesh Nagar</li> <li>19. Vikee</li> <li>20. Sachin GE</li> <li>21. Puspendra Singh Chauhan</li> <li>22. Kailash Chandra Jat</li> <li>23. Mahendra Singh Bapariya</li> <li>24. Om Prakash Sahu</li> <li>25. Dinesh Mandrawalia</li> </ol>
	2019-20	9	<ol style="list-style-type: none"> <li>1. Narendra Kumar Verma</li> <li>2. Manohar Singh Lodha</li> <li>3. Bhavesh Prajapat</li> <li>4. Deepak Patidar</li> <li>5. Sunil Bisu</li> <li>6. Dharmendra</li> <li>7. Prakash</li> <li>8. Rakesh M</li> <li>9. Shubham Pareek</li> </ol>
	2020-21	12	<ol style="list-style-type: none"> <li>1. Nandish H.S.</li> <li>2. Kamlesh Yadav</li> <li>3. Vinod Yadav</li> <li>4. Vishal Mathuriya</li> <li>5. Manoj Prajapat</li> <li>6. Ajay Sharma</li> <li>7. Surendra Meghwal</li> <li>8. Vishnu Prasad Patidar</li> <li>9. Manoj Kumar Yadav</li> <li>10. Manish Jangid</li> <li>11. Manju Attri</li> <li>12. Raju Jatav</li> </ol>



# SELF STUDY REPORT

## Degree Programmes in Horticulture



College of Horticulture & Forestry, Jhalawar  
Agriculture University Kota (Raj.)



**SELF STUDY REPORT  
FOR  
ACCREDITATION OF DEGREE  
PROGRAMMES IN HORTICULTURE**

**B.Sc. (Hons.) Horticulture  
M.Sc. (Horticulture) Fruit Science  
M.Sc. (Horticulture) Vegetable Science  
M.Sc. (Horticulture) Floriculture & Landscape Architecture  
Ph.D. (Horticulture) Fruit Science**

**Submitted to**

**National Agricultural Education Accreditation Board  
Indian Council of Agricultural Research, New Delhi**

**Submitted by**



**COLLEGE OF HORTICULTURE AND FORESTRY, JHALAWAR  
AGRICULTURE UNIVERSITY KOTA**

## **PREFACE**

Horticulture deals with the science of plants used as food, feed and medicines by human being besides for aesthetic gratification of surroundings. It is the worth of the horticulture that in spite of global changes being witnessed across the globe, the horticultural production and productivity touched the mark of higher order especially in context to India. The virtue of horticulture has been realized in global standpoint and Food and Agriculture Organization of the United Nations has declared 2021 as the International Year of Fruits and Vegetables.

In view of intrinsic attributes of high remunerability, unique identity, more productivity, maximum input use efficiency, better stress tolerance, suitability to alternate land use system, ecological balance among many more traits, horticulture holds dominant standing in national agricultural scenario. Rajasthan is uniquely placed in biotic realm of agriculture sphere. The state is known for matchless production of kinnow, mandarin, custard apple, guava, jamun, ber, khejri, muskmelon, pea, cauliflower, roses, seed spices among other horticultural crops. Though harness nature bounteous gift of horticultural strength, the role of skilled manpower is needless to signify.

In a mission to justify its establishment, the College through its 120 ha farm area, field laboratories and dedicated team of staff members; stands sturdily towards the betterment of students specializing in Horticulture degree programme. The college offers undergraduate and post graduate degree programmes in horticulture faculty, besides Ph.d. with specialization of Fruit Science.

Through the support received from NAHEP, ICAR, New Delhi, the class rooms have been modernized with creating facilities of smart board, digital podium, visualizer, overhead projector, CCTV, wi-fi enabled system, etc. Likewise, farm infrastructure has also been upgraded with drip/sprinkler facility, renovation of protected structures and establishment of hydroponic unit with fertigation. The college holds repute among students for their academic persuasion.

The college administration acknowledges the support, guidance, and the facilitation arrangement for the sake of overall growth and development of the college for all betterments. The support extended by the university level task force and steering committee is placed on record for the timely guidance extended for preparation of SSR. The committee constituted at the college level for the accreditation purpose deserve due mentioning to accomplish the requisite task well in time. I hope that the information contained in the bulletin will serve the purpose of accreditation as intended.

Place : Jhalawar  
Date :

  
(I. B. Maurya)  
DEAN

College of Horticulture & Forestry

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# SELF STUDY REPORT

## B.Sc. (Hons.) Horticulture



College of Horticulture and Forestry, Jhalawar  
Agriculture University Kota (Raj.)

#### **6.4.1. Brief History of Degree Programme:**

The College of Horticulture and Forestry was established during July 2004. It was the 6<sup>th</sup> constituent college of MPUAT, Udaipur. After the bifurcation of the University in 2013, the College of Horticulture & Forestry, Jhalawar, is the first constituent College of the Agriculture University, Kota. The College started UG Programme in Horticulture with initial intake capacity of 20 during year 2004. The intake capacity increased on time span and at present the programme runs with intake of 61 students in each academic session.

The courses kept on revising and updating as per ICAR/ University guidelines from time to time. The College has adopted the recommendation of the V<sup>th</sup> Deans committee from academic session 2017-18. At present the UG degree programme of B.Sc. (Hons.) Horticulture has total credit load of 167 across eight semesters. Last two semesters are exclusively marked for Student READY Programme. In Student READY Programme, the students are offered 20 credit hours in each semester focused upon skill oriented training that includes RHWE, ELP, Industrial attachment and Educational tour.

Till date, 13 batches having 431 students have successfully completed the bachelor degree programme and many of them have/are pursuing higher education as well as working at various National and International organizations.

#### **Objectives:**

- To generate competent human resources in Horticulture.
- To demonstrate updated technology in Horticulture and applied science like nursery management, protected cultivation, precision farming, post harvest handling, seed production, orchard management, landscaping and others.

**Nomenclature of the Degree programme** : B.Sc. (Hons.) Horticulture

**Duration of the Degree programme** : 04 Years (08 Semesters)

**Intake capacity of the programme** : 61

**Admission Process** : The admission to B.Sc. (Hons.) Horticulture is made through the competitive State level Joint Entrance Test (JET) conducted by SAUs on rotation basis. 85 percent of the seats are filled through JET while remaining 15 per cent of the seats are filled through ICAR All India Entrance Examination.

**Total credit load of the programme** : 184 credit hours

**Year wise admission to B.Sc. (Hons.) Horticulture for last five years**

Year of admission	Intake capacity	Admitted			Dropped		
		Boys	Girls	Total	Boys	Girls	Total
2016-17	55	37	18	55	03	0	03
2017-18	55	42	11	53	0	0	00
2018-19	55	37	12	49	02	0	02
2019-20	55	40	14	54	01	0	01
2020-21	61	38	21	59	--	--	--

**Award/Scholarships**

Name of Scholarship	Amount/ year	2016-17			2017-18			2018-19			2019-20		
		M	F	T	M	F	T	M	F	T	M	F	T
Samaj Kalyan Vihbhag Scholarship	10000 - 15000	13	06	19	19	8	27	28	15	43	40	15	55
Agriculture Girls Scholarship	12000	--	16	16	--	21	21	--	35	35	--	38	38
Nirman Shrimik Shiksha and Kaushal Vikas Yojana	15000 - 18000	--	--	--	--	--	--	--	--	03	--	02	02
NTS Scholarship	3000	01	--	01	--	--	--	02	--	02	01	01	02
RAWE/Ready Scholarship	18000	08	03	11	07	04	11	12	05	17	24	03	27
Medhawi Chhatra Scooty Yojana	Scooty/ student	--	01	01	--	--	--	--	--	--	--	--	--
<b>Total-</b>		<b>22</b>	<b>26</b>	<b>48</b>	<b>26</b>	<b>33</b>	<b>59</b>	<b>42</b>	<b>55</b>	<b>100</b>	<b>65</b>	<b>59</b>	<b>124</b>

**6.4.2. Faculty Strength**

S.No.	Designation	Sanctioned	Faculty in place	Vacant position*	Faculty recommendation by ICAR
1.	Professor	03	05	(+)02	08
2.	Associate Professor	08	-	08	11
3.	Assistant Professor	30	14	16	31
	<b>Total</b>	<b>41</b>	<b>19</b>	<b>22</b>	<b>50</b>

\* Recruitment on following vacant positions is in process

The deficit requirement is met out by deploying teachers from local institution or hiring services on contractual basis and also from other units of the university.

**The proposed recruitment on teaching posts during 2020-21**

Professor	Associate Professor	Assistant Professor	Assistant Librarian	Total
03	04	14	01	22

### 6.4.3 Technical and Supporting Staff

Sl. No.	Designation	Sanctioned Strength	Filled	Vacant
1.	Assistant Librarian	01	-	01
2.	Assistant Registrar	01	-	01
3.	Section Officer	02	01*	01
4.	Technical Assistant/Farm Manager	03	02	01
5.	Lab Technician	01	-	01
6.	PA	01	01*	-
7.	Steno	01	01*	-
8.	U.D.C.	02	-	02
9.	Lab Assistant	06	05	01
10.	L.D.C.	03	03*	-
11.	Library Assistant	01	01	-
12.	Driver	02	01+01*	-
13.	Matron	01	01	-
14.	Care Taker	02	02*	-
15.	Agriculture Supervisor	04	03	01
16.	Store Keeper	01	-	01
17.	Forest Guard	02	02	-
18.	Gardener	02	02*	-
19.	Shelf Assistant	01	01*	-
20.	Lab Attendant	01	-	01
21.	Class IV	05	05*	-
	<b>Total</b>	<b>43</b>	<b>32</b>	<b>11</b>

\*Contractual. However, the recruitment on following vacant posts is in process.

### Proposed recruitment on non-teaching posts during 2020-21

LDC	Stenographer	Lab Attendant	Shelf Attendant	Lab Technician	Hostel Care Taker	Total
03	01	01	01	01	01	08

### 6.4.4. Class Rooms and Laboratories

College has modern classrooms and laboratories for teaching of undergraduate and postgraduate students. The classrooms are equipped with smart board, overhead/LCD projectors, along with web camera and CCTV cameras. Besides, college has a language lab and a computer lab to provide additional skills and proficiency among students. For the common lectures, seminar presentations and conferencing related matters, one seminar hall



and one video conferencing room are also designated. All the laboratories are well equipped with sufficient seating capacity and necessary aids. Final year UG students get learning experience in various units such as Commercial Horticulture, Protected Cultivation of High Valued Horticulture Crops, Floriculture and Landscape Architecture, Post Harvest Processing of fruits and vegetables for value addition etc. under student READY programme.

### Classroom/laboratory infrastructure

Infrastructure	Number
Classroom	10
Laboratories	16
Seminar Rooms	01
Video- Conferencing Room	01
Examination Hall	03
Instructional Farm	100 ha
Experiential Learning Units	06

### Classrooms

S.No.	Classroom No.	Area (m <sup>2</sup> )	Seating capacity	Available facilities
1.	104	100	60	Furniture, blackboard, podium, touch screen display, LCD projector, electrical fittings, CCTV camera
2.	108	100	60	Furniture, blackboard, podium, touch screen display, LCD projector, electrical fittings, CCTV camera
3.	205	100	60	Furniture, blackboard, podium, touch screen display, LCD projector, electrical fittings, CCTV camera
4.	208	100	60	Furniture, blackboard, podium, touch screen display, LCD projector, electrical fittings, CCTV camera
5.	PHT-01	130	70	Furniture, blackboard, podium
6.	PHT-02	120	70	Furniture, blackboard, podium
7.	305a	38.97	30	Furniture, blackboard, podium, electrical fittings
8.	305b	38.97	30	Furniture, blackboard, podium, electrical fittings
9.	308a	38.97	30	Furniture, blackboard, podium, electrical fittings
10.	308b	38.97	30	Furniture, blackboard, podium, electrical fittings

\* There is a common Seminar Hall (79.25m<sup>2</sup>) and having seating capacity of 50 students.

## Laboratories

There are 16 well equipped laboratories in the Department for practical classes. The list of equipments available in each laboratory are appended in Annexure-I

S. No.	Laboratory	Area (m <sup>2</sup> )	Seating capacity
1.	Fruit Science Lab	83.13	30
2.	Vegetable Science Lab	82.21	30
3.	Floriculture and Landscape Architecture Lab	82.21	30
4.	Post Harvest Technology Lab	162.18	30
5.	Silviculture and Agroforestry Lab	82.21	30
6.	Forest Biology and Tree Improvement Lab	82.21	30
7.	Wood Science & Wood Technology Lab	83.34	30
	Non Wood Forest product Lab	77.68	30
8.	Wildlife Lab	77.01	30
9.	Soil Science Lab	83.86	30
10.	Agriculture Engineering Lab	79.95	30
11.	Plant Pathology Lab	82.21	30
12.	Entomology Lab	79.95	30
13.	Plant Breeding Lab	77.68	30
14.	Tissue culture Lab	450.00	30
15.	Language Lab	61.83	30
16.	Computer Lab	61.83	30

## Research cum Instructional Farm:

S.No.	Unit	Area (ha)	Crops grown
1.	Fruit Orchards	12.00	Mandarin, Guava, Acid lime, Custard apple, Kinnow, Tamarind, Jamun, Khirni, Bael, Sweet orange cv. Mosambi
2.	Vegetable Cultivation	7.00	Tomato, Brinjal, Okra, Turmeric, Coriander, garlic, Cucurbit, Nigella, Fenugreek
3.	Floriculture and Landscape Architecture	7.00	Gladiolus, Heliconia, Tuberose, Marigold, Gaillardia, Ganganagari rose, Cheti rose, cut chrysanthemum and Jasmine.
4.	Herbal Garden	2.00	<i>Aloe vera</i> , Lemon grass, Cymbopogon, Shisham, Aonla, Teak, Neem, Mahua
5.	Mother Orchard	1.50	Mother orchard of <i>Buchanania lanzan</i>
6.	A-Z Plantation Block	2.50	Block of 151 species of Horticultural/ Forestry species
7.	Agro forestry & Silviculture	15.00	Forest species
8.	Forestry plantation	53.00	Under crop production, plantation, etc.
9.	Building, roads, sports and hostel	20.00	-
<b>Total</b>		<b>120.00</b>	

**Experiential Learning Units:**

S.No.	Name of ELU	Area (Sq m)	Financial Support
1.	Commercial horticulture	2622	NHM
2.	Protected Cultivation of high value horticulture crops	10000	RKVY
3.	Processing of fruits and vegetables for value addition	700	RKVY & State Govt.
4.	Mass multiplication of plant and molecules through tissue culture	450	Stat Govt.
5.	Bee keeping & honey processing	155	MPLAD Fund
6.	Floriculture and landscape architecture	20000	AU, Kota



**Modern classrooms and laboratory facilities**

**6.4.5. Conduct of Practical and Hands on Training**

Practical classes of the individual subjects are carried out regularly batch wise by the respective course teacher both in laboratory and at field as the case be. Students registered for the course have to maintain minimum 75 percent attendance which is mandatory for appearing in the practical examinations. The practicals are conducted as per syllabus and prescribed time table in the batches.

**Theory and Practical batches for the Degree Programme:**

S. No.	Name of programme	Year	Intake / year	No. of batch in theory class	No. of batch in practical class
1.	B. Sc. (Hons.) Horticulture	2016-17	55	1	Batch A:28, Batch B:27
		2017-18	55	1	Batch A:28, Batch B:27
		2018-19	55	1	Batch A:28, Batch B:27
		2019-20	55	1	Batch A:28, Batch B:27
		2020-21	61	1	Batch A:31, Batch B:30

Students are taught both basic and applied techniques to meet the requirements of hands on practice in a particular subject. In order to update the students and to synergize the theory and practice on the ongoing courses the maximum professional, practical exposure is attempted to be imparted to the students where in students accrue the knowledge by actually involving in exercises both at field and laboratory levels.

In order to facilitate effective conducting of practical classes small groups of convenient size of students are formed to ensure sufficient availability of tools and equipments to each student for better learning in practical aspects. Such small groups exercise the experiments under the supervision of instructors. The knowhow of practical, instrument handling, data collection methods, analysis and practical inference are explained by the instructor to the students for further enrichment of the knowledge. Further student conducts exercise at their own level for self learning.

A significant emphasis is given on practical part of the subject and the students are evaluated based on their practical learning also. Different aspects which make students practical oriented are as under:

- Sophisticated laboratories give proper knowledge on every small scientific aspect.
- Well maintained farm, nurseries, orchards and instructional units give appropriate practical exposure.
- Hi-tech units, hydroponics unit and tissue culture facilities offer de novo and modern approaches to the students.
- Propagations, nursery establishment, harvesting, handling, packaging and marketing practices prove its worth in making horticulture more business oriented rather than source of livelihood.

### **Student READY Programme**

The Student READY Programme is being conducted to reorient graduates of Horticulture for ensuring and assuring employability and develop entrepreneur for emerging knowledge intensive Horticulture. The major components are Experiential Learning, Rural Horticulture Work Experience, In-Plant Training/ Industrial Attachment and Students Projects. The Student READY Programme is offered in last two semesters of the four year degree programme. The detail of Student READY programme is as under:

<b>S.No.</b>	<b>Activity</b>	<b>Credit Hours</b>
1.	Experiential Learning (Professional Package)	0+20
2.	RHWE and Placement Industry	0+20
	<b>Total</b>	<b>0+40</b>



**Glimpses of students working under Student READY Programme**

**RHWE Programme Schedule:**

S.No.	Activity	Credit Hours
1.	Orientation Programme	2 weeks
2.	Village stay	12 weeks
3.	All India Study Tour	3 weeks
4.	Placement Programme	4 weeks
5.	Report writing & Final Examination	3 weeks
	<b>Total</b>	<b>24 weeks</b>

Presently, the College is running following Experiential Learning activities in Horticulture:

Code	Title	Major areas	Activities
HWE-421	Experiential Learning	1. Commercial Horticulture	Plant multiplication, weed mgt., training and pruning, hi-tech cultivation of crops, spray etc.
		2. Protected cultivation of high value Horticulture crops	Cultivation practices of cucumber, cherry tomato, indeterminate tomato, strawberry, capsicum and leafy vegetables under hi tech conditions, their packaging, marketing etc.
		3. Floriculture and Landscape Architecture	Production of annuals, propagation, postharvest management, value addition and marketing etc.

#### **6.4.6. Supervision of Students in PG/Ph.D.**

In UG degree programme, there is provision of faculty advisory for students. Each student is allotted to a teacher who advises, guides and counsels in various academic activities as well as for personal problems. For every 5-8 students, there is one teacher who acts as an advisor. Students need to take sign and prior approval for leave, registration and for other official tasks from the advisor. The tenure of advisor remains for four years i.e. during whole degree programme.

#### **6.4.7. Feedback of Stakeholders (Students, Parents, Farmers, Industries, Employer etc.)**

- All teaching faculties and Dean of the college frequently take feedback from the students and take necessary actions to excel the teaching and laboratory work so that students can complete their degree within the stipulated time frame.
- One feedback/suggestion box is fitted in the reception room of college as well as in hostels where one can drop any feedback, suggestion or enquiry.
- Final year outgoing students of B.Sc. degree programme give their feedback regarding the courses, teaching, laboratory, experiential learning, hands on training and RHWE programmes.
- Students as well as parents are advised to give feedback of complete degree programme.
- Feedback from industries, employers and farmers is also taken from time to time during interaction with Dean, HoDs & faculty.

Feedback given by the stakeholders are summarised as under:

S. No.	Name	Stakeholder	Important remarks/feed back
1.	Vishal Mathuriya	Student	The college staff is supportive and helping in nature; the campus is good and the latest smart class enabled us in attaining quality education.
2.	Vinod Beniwal	Student	Staff of the college is very knowledgeable and supportive and hostel facility in campus is very good. Placement cell is supportive for placement and new career options.
3.	Rishika Choudhary	Student	I got very good academic environment, good laboratory and teaching facilities, smart classroom, study material from the excellent teaching facilities, sports facilities, hostel facilities.
4.	Dr. J. P. Tetarwal	Parent	My ward is studying at your reputed institute. Being as parent, I am satisfied with academic environment, teaching facilities, faculty members, sports facilities, hostel facilities and environment, laboratory equipments, farm facilities and student disciplines.
5.	Purshottam Patidar	Farmer	The fruit science department of the college supported us for improvement in Nagpur mandarin quality and increase of income by scientific interventions.
6.	Sitaram Patidar	Farmer	We got benefitted by purchasing of acid lime cv. Kagzi and guava cv. L-49 plants. The plants are bearing well and contributing us income.

#### 6.4.8. Student Intake and Attrition in B.Sc. (Hons.) Horticulture Degree Programme for last five years

Degree Programme	Year	Intake Capacity	Students Admitted	Attrition	Attrition (%)
B.Sc. (Hons.) Forestry	2016-17	55	55	03	5.45
	2017-18	55	53	00	00
	2018-19	55	49	02	4.08
	2019-20	55	54	01	1.85
	2020-21	61	59	--	--

#### **6.4.9. ICT Applications in Curricula Delivery**

The College is having the following ICT based facilities to meet the current requirement of the students regarding the curricula delivery:

##### **(A) Common ICT facility:**

- Technology-enhanced learning Smart class room facility is available in three classrooms that enhances the quality of teaching and learning which is integrated with the digital displays, computer, whiteboards, assistive listening devices, and other audio/visual components that make lectures easier, engaging, and more interactive.
- Uninterrupted high speed internet connectivity with wi-fi facility is available in the college as well as hostels for providing easy access to online resources on the internet which enhances the exposure of students on different topics and also specifically to students involved in research that can help in research.
- Two separate seminar halls are equipped with LCD projectors, smart podium, interactive white boards or smart boards, Television, which help students to learn their lessons in a smart approach ensures enhanced interactive Learning Experience that has increased productivity.
- College is having computer lab with good quality internet connected 26 computers and peripherals to offer students with quality education by helping them to understand concepts better, improve their reading and comprehension skills, and achieve academic excellence.

##### **(B) Academic Management System**

Academic Management System has been implemented in the college under NAHEP Component-II by Division of Computer Applications, IASRI, Pusa, New Delhi. This system automates various academic processes of the university and enhances the efficiency of the system by saving time and efforts involved in manual processes. The system has following sub modules:

- Courses Management
- Student Management
- Faculty Management
- Administration Management
- E-Learning
- Online fee collection

##### **(C) Online Teaching & Examination**

- Live online lectures through live video classes through (ZOOM, MS Team, Google Meet, etc.)
- Notes and other file sharing through Google classrooms, WhatsApp, Internet
- Online discussion forums for students were conducted through (ZOOM, MS Team, Google Meet, etc.)



- E-courses from ICAR and other sources are put on website for students and teachers.
- Organization of meeting, seminar, meeting of courses committee through MS team.

However, there is urgent need of separate library building enabled with ICT facilities and equipped electronic gadget for faculty and students to access information floating worldwide in the field of Horticulture & Forestry. It will foster specially the faculty in best curricula delivery and also the student grasping the subject matter delivered by faculty.

**Certificate:**

I, the Dean, College of Horticulture & Forestry, Jhalawar hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the College and Degree Awarding University.

Place : Jhalawar, Rajasthan

Date :

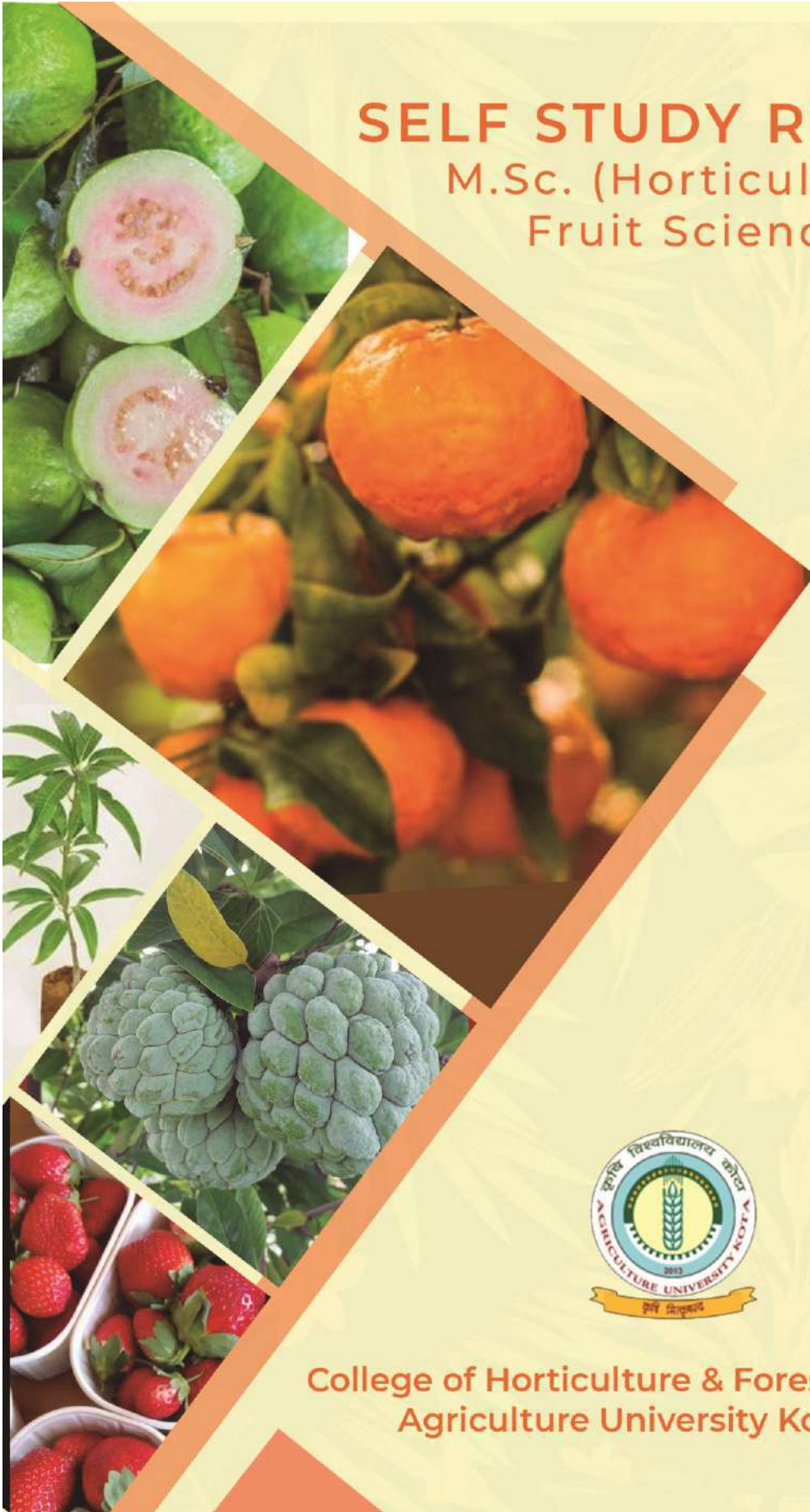


(I.B. Maurya)

**Dean  
College of Horticulture and Forestry  
(Agriculture University, Kota)  
Jhalrapatan, JWR 326023 (Rajasthan)**

# SELF STUDY REPORT

M.Sc. (Horticulture)  
Fruit Science



College of Horticulture & Forestry, Jhalawar  
Agriculture University Kota (Raj.)

### **6.4.1 Brief History of the Degree Programme**

With a mission to generate specialized manpower well versed in Fruit Science, the College is offering post graduate programme in Fruit Science since year 2011-12. Initially the common PG programme in Horticulture was started during 2006-07 with intake capacity of 02 students. Further, specialized PG degree in Fruit Science was initiated during 2011-12 with intake capacity of 05 students. During last five years, 19 students have successfully completed the course and secured job in various organizations.

The students work upon various aspects of fruit production like drip irrigation, propagation, bio-fertilizers, fertilizers, pollination, organic inputs etc. on fruit crops such as mandarin, lime, sweet orange, guava, jamun, khirni, custard apple etc. The department has instructional farm spread over 12 hectares area at the college premises. PG students are thoroughly exposed to specific and need based hands-on trainings and they are trained to review, plan and formulate the research programmes under the guidance of advisory committee. Time to time, the students are taken to institutional visits where they get exposure to various developments going on in a particular field of research and development.

#### **Objectives of the Department:**

- To develop competent human resources specialized in the subject of Fruit Science.
- To conduct need based strategic and applied research.

**Nomenclature of the Degree programme** : M.Sc. (Horticulture) Fruit Science

**Duration of the Degree programme** : 02 Years (04 Semesters)

**Admission Process** : The admission to M.Sc. (Horticulture) Fruit Science is made through the competitive State level Joint Entrance Test (JET) conducted by SAUs on rotation basis. 75 percent of the seats are filled through JET Examination while remaining 25 per cent of the seats are filled through ICAR All India Entrance Examination.

#### **Requirement for Degree Programme**

A student admitted to a post graduate programme shall have to successfully complete the following before award of a degree:

- An approved programme of study prepared by his/her advisory committee
- A comprehensive or preliminary examination

- Synopsis seminar and approval of synopsis
- Pre-thesis seminar
- Submission of thesis and its evaluation report
- Thesis viva-voce examination
- Minimum residential requirement- four semesters
- Minimum OGPA requirement – 6.5 out of 10 point scale

A student of master's programme is required to complete courses of a minimum of 57 credit hours for the degree. The distribution of courses for master's programme is as under:

Title	Approved course load
Major courses	: 22 Credit hours (including 12 credit hours as core courses)
Minor and Supporting courses	: 14 Credit hours
Seminar	: 01 Credit hour
Comprehensive	: Non credit hour
Research	: 20 Credit hours
Non credit e-courses	: 06

### Distribution of courses for M.Sc. (Horticulture) Fruit Science

	Course No.	Title of Course	Credit Hrs.
<b>MAJOR COURSES</b>	FRS – 511*	Tropical and Dry Land Fruit Production	3(2+1)
	FLS – 511*	Production Technology of Cut Flowers	3(2+1)
	VEG- 511*	Production Technology of Warm Season Vegetables	3(2+1)
	PHT – 511*	Principle of Post-Harvest Technology of Horticultural Crops	3(2+1)
	FRS-521	Biodiversity and Conservation of Fruit Crops	3(2+1)
	FRS-522	Sub-Tropical and Temperate Fruit Production	3(2+1)
	FRS-535	Propagation and Nursery Management of Horticultural Crops	3(2+1)
	FRS-533	Breeding of Fruit Crops	3(2+1)
<b>MINOR COURSES</b> (Any five courses compulsory to opt)	STAT-511	Statistical Methods	3(2+1)
	BTH-514	Bio-technology of Horticultural Crops	3(2+1)
	STAT-521	Design of Experiment –I	3(2+1)
	PHY-531	Growth and Development of Horticultural Crops	3(2+1)
	FRS- 536	Underexploited Fruit Crops	3(2+1)
	FPU-525	Plant production and Breeding techniques of MAPs	3(2+1)
	VEG-532	Protected Cultivation of Horticultural Crops	3(2+1)

<b>NON-CREDIT e- COURSES (compulsory)</b>	PGS-501	Library and Information Services	0+1 (NC)
	PGS-502	Technical Writing and Communication Skills	0+1 (NC)
	PGS-503	Intellectual Property and its Management in Agriculture	1+0 (NC)
	PGS-504	Basic Concepts in Laboratory Techniques	0+1 (NC)
	PGS-505	Agricultural Research, Research Ethics and Rural Development Programmes	1+0 (NC)
	PGS-506	Disaster Management	1+0 (NC)
	FRS-541	Comprehensive	NC
	FRS-591	Seminar	01
	FRS-599	Research	20
<b>Grand Total</b>			<b>57</b>

\*Core courses

### Accreditation/renewal of the Degree Programme

The academic programme M.Sc. (Horticulture) Fruit Science is accredited for five years upto March, 2021 by ICAR and offered for further renewal for next five years.

Academic Programme	Programme for Renewal	Duration
Post Graduate	M.Sc. (Horticulture) Fruit Science	Two years (Four semesters)

### Year wise admission to M.Sc. (Horticulture) Fruit Science for last five years

Year of Admission	Intake capacity	Admitted			Dropped			Passed		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
2016-17	05	04	01	05	-	-	-	02	-	02
2017-18	05	04	01	05	01	-	01	02	01	03
2018-19	05	05	-	05	-	-	-	03	01	04
2019-20	05	04	01	05	-	-	-	04	01	05
2020-21	05	Admission in process						05	-	05
<b>Total</b>		<b>17</b>	<b>03</b>	<b>20</b>	<b>01</b>	<b>-</b>	<b>01</b>	<b>16</b>	<b>03</b>	<b>19</b>

### Awards / Scholarships

Name of Scholarship	Amount of Scholarship (Rs.)	2016-17			2017-18			2018-19			2019-20		
		M	F	Total	M	F	Total	M	F	Total	M	F	Total
Samaj Kalyan Vihbhag Scholarship	10000-15000/- Per year	04	01	05	---	03	03	03	---	03	04	---	04

Agriculture Girls Scholarship	15000/- Per year	--	02	02	--	02	02	---	01	01	--	01	01
NTS Scholarship	5000/- Per month	---	---	---	01	--	01	02	---	02	02	--	02
Total-		<b>04</b>	<b>03</b>	<b>07</b>	<b>01</b>	<b>05</b>	<b>06</b>	<b>05</b>	<b>01</b>	<b>06</b>	<b>06</b>	<b>01</b>	<b>07</b>

#### 6.4.2 Faculty Strength

S. No.	Faculty	Sanctioned	Faculty in place	Vacant position*	Faculty recommended by ICAR
1	Professor	01	02	-	01
2	Associate Professor	02	-	-	02
3	Assistant Professor	04	02	02	03
	<b>Total</b>	<b>07</b>	<b>04</b>	<b>02</b>	<b>06</b>

\*Recruitment on vacant positions is in process

#### PG recognized faculty for teaching/guiding M.Sc. (Horticulture) Fruit Science

S.No	Name of Faculty	Designation	Teaching/Guiding
1.	Dr. Jitendra Singh	Professor & Head	Teaching & Guiding
2.	Dr. Virendra Singh	Professor	Teaching & Guiding
3.	Dr. Prerak Bhatnagar	Assistant Professor	Teaching & Guiding
4.	Sh. Nirmal Kumar Meena	Assistant Professor	Teaching & Guiding
5.	Dr. L.K. Dashora	Professor Emeritus	Teaching & Guiding
6.	Dr. S.K. Jain	Professor & Head	Teaching & Guiding
6.	Dr. Ashutosh Mishra	Professor & Head	Teaching & Guiding
7.	Dr. Kavita Arvindakshan	Assistant Professor	Teaching & Guiding
8.	Dr. Ashok Kumar	Assistant Professor	Teaching
9.	Dr. Bhuri Singh	Assistant Professor	Teaching
10.	Dr. Anil Kumar Gupta	Assistant Professor	Teaching
11.	Dr. Priyanka Solanki	Assistant Professor	Teaching

#### 6.4.3 Technical and Supporting Staff

S. No.	Designation	Sanctioned Strength	Filled	Vacant
1.	Assistant Librarian	01	-	01
2.	Assistant Registrar	01	-	01
3.	Section Officer	02	01*	01
4.	Technical Assistant/Farm Manager	03	02	01
5.	Lab Technician	01	-	01
6.	PA	01	01*	-

7.	Steno	01	01*	-
8.	U.D.C.	02	-	02
9.	Lab Assistant	06	05	01
10.	L.D.C.	03	03*	-
11.	Library Assistant	01	01	-
12.	Driver	02	01+01*	-
13.	Matron	01	01	-
14.	Care Taker	02	02*	
15.	Agriculture Supervisor	04	03	01
16.	Store Keeper	01	-	01
17.	Forest Guard	02	02	-
18.	Gardener	02	02*	-
19.	Shelf Assistant	01	01*	-
20.	Lab Attendant	01	-	01
21.	Class IV	05	05*	-
	<b>Total</b>	<b>43</b>	<b>32</b>	<b>11</b>

\*Contractual. However, recruitment on vacant positions is in process.

**Note:** The College has 43 sanctioned posts of technical and supporting staff for conducting skill demonstration and field experiments during practical classes, laboratory analysis and for assisting field work, field visits and training programme of various departments.

#### 6.4.4 Classrooms and Laboratories

PG classes are arranged in the class room allotted for PG classes in college building. Fruit Science department has independent laboratory where practicals and research work are conducted. Some of the research work/ practicals are also conducted at institutional farm and protected cultivation structures. The detail of the facility is as under:

S. No.	Classroom/Laboratory	Area	Seating capacity	Other facilities (LED, Projectors, Computers, Smart board etc.)
1.	Classroom	1076 sq ft	60	Projector
2.	Fruit Science Laboratory **	885 sq ft	25	Well equipped as per requirement
3.	Seminar Hall*	885 sq ft	50	LED, Projectors, Computers
4.	Training Hall	9257 sq ft	60	LED, Projector, Computer
5.	Instructional Farm	12 ha	-	Well equipped with farm implements, fertigation facility
6.	Protected Cultivation Structures	2612 sq m	03	Shade net and Polyhouse are used for growing of mother fruit plants
7.	Nursery	1812 sq ft	01	For growing of saplings of different fruit plants

\*Common Seminar hall for all PG Departments

\*\* Laboratories of other Departments/ Central laboratory are also used for PG practical/ research work.

### Major equipments in laboratory for conduct of practical classes

S. No.	Name of major equipment	Quantity
1.	Photosynthesis system	1
2.	Hot air oven	1
3.	Leaf area meter	1
4.	LAI meter	1
5.	Microscope	3
6.	Water potential system	1
7.	Open pan evaporimeter	1
8.	Spectrophotometer	1

Note: The detail list of equipments of the department is appended in Appendix-I

### Farm Facilities

The College has total farm of 100 hectares area. Of the total, 12 hectares area is under Instructional Farm for the Department of Fruit Science. The instructional farm is well equipped with drip irrigation and fertigation facilities. It has plantation of different fruit crops.

### Details of fruit plants planted at the Instructional Farm

S. No.	Name of fruit plants	Spacing (m)	Area (ha)	No.	Variety	Year of planting
1.	Mandarin	6 x 6	2.87	800	Nagpur Mandarin	2006
2.	Lime	6 x 6	0.71	200	Kagzi lime	2006
3.	Sweet orange	6 x 6	1.03	289	Mosambi	2017
4.	Kinnow	6 x 6	0.14		Kinnow	2008
5.	Guava	6 x 6	1.69	472	Sardar, Allahabad Safeda	2010, 2018 (New)
6.	Custard apple	5 x 5	0.60	240	Arka Sahan, Balanagar	2010
7.	Tamarind	8 x 8	0.89	140	PKM-1, Pratishthan, Urigam, Red Tamarind, Goma Prateek	2010
8.	Bael	8 x 8	0.76	120	NB-5, NB-7, NB-9, NB-14, NB-16, CISH B-1, CISH B-2	2012
9.	Pomegranate	5 x 5	0.15	60	Bhagwa	2017
10.	Lasoda	8 x 8	0.12	36	Genotypes	2012
11.	Jamun	6 x 6	0.71	198	Goma Priyanka	2017
12.	Khirni	6 x 6	0.17	50	Thar Rituraj	2018
13.	Mango	8 x 8	0.19	30	Dashehari	2017



**Protected Cultivation Structures:** The Department has following protected cultivation structures.

S. No.	Particulars	No.	Area (m <sup>2</sup> )	Details
1.	Shade net house	01	1872	Used for growing and maintaining plants of mandarin, musambi, guava, mango, bamboo, teak, rough lemon etc.
2.	Poly house	01	250	Is used for nursery activities particularly during winter season when outside temperature doesn't permit growing of plants
3.	Insect proof net house	01	500	It finds uses for maintaining mother plants free from insect transmissible diseases.

### Nursery:

There is a functional nursery with the Department. The nursery produces fruit plants of asexual origin of guava, mandarin, mosambi and acid lime. The seedling plants of papaya, khirni, jamun, custard apple, tamarind, rough lemon, lasoda etc. are also grown in the nursery. The mother block area spread over 10.00 ha. provides propagule to prepare elite planting material of different fruit crops. During last five years, more than 1.6 lacs plants have been raised in the nursery.



**View of Department Nursery**

**All India Coordinated Research Project on Arid Zone Fruits:** The AICRP on AZF is operationalised at the Department. The centre is continually working on mandate crops such as Custard apple, Tamarind, Lasoda, Bael and Pomegranate.

The centre maintains germplasm of custard apple, tamarind and lasoda crops and in all around 75 germplasms are getting maintained at the centre.

### Major experiments assigned to AICRP on AZF

AH. 1.1	Germplasm Survey and Collection of Lasoda, Tamarind and Custard apple
AH. 1.2	Evaluation of Germplasm of Lasoda, Tamarind and Custard apple
AH. 1.3	Varietal Evaluation Trial of Bael, Custard apple and Tamarind
AH. 4.2	Integrated Nutrient Management in Custard apple cv. Arka Sahan

AH. 5.1	Rootstock Trial in Arid Fruit Crops
AH. 10.1	Survey and Surveillance of Key Diseases of Arid Zone Fruits
AH. 10.3	Screening of Germplasm of Arid Zone Fruit for Resistance Against Different Diseases
AH 10.13	Identification of Different Micro-organism Causing Post-Harvest Fruit Rots
AH 10.37	Management of Leaf Spot of Lasoda
	High density planting in custard apple cv. Phule Janki
	Studies on enhancement of shelf life in custard apple cv. Balanagar



Fruits from different orchards of AICRP on AZF



View of different orchards under AICRP on AZF

### Some salient findings of the project during last five years

- Collection of 3 elite germplasm each of custard apple, lasoda and tamarind
- Identification and collection of 4 superior genotypes of custard apple, 2 of tamarind and 3 of lasoda
- Identification of 2 elite genotypes for each lasoda and tamarind.

### 6.4.5 Conduct of Practicals and Hands on Training

Every course has practical content where students are exposed to practical aspects on regular basis. To impart practical skill there are laboratories, full fledged instructional farm, nursery, protected cultivation structures etc. There is sufficient plantation of mandarin, lime, sweet oranges, guava, jamun, khirni, custard apple, tamarind, lasoda, bael, pomegranate, mango etc. The farm has the facility of drip irrigation and fertigation which are invariably used for practical orientation of students.

### Average Number of Students in Theory and Practical Classes

Total intake in M.Sc. (Horticulture) Fruit Science is 5. The minimum attendance of 80% is compulsory in theory as well as practical classes separately.

S. No.	Name of the Department	Theory Batch	Practical Batch	Number of students per batch
1.	Fruit Science	1	1	5



Students practicing different practical aspects

### 6.4.6 Supervision of students in PG

Every student have Advisory Committee with a Major Advisor and at least three members among whom one is from major field of specialization, another one from minor field of study and one is nominated by Director Education. Programme of Research proposed by the Advisory Committee and Dean is finally approved by the Director Education. The research is conducted by the student under the supervision of Advisory Committee.

**Number of PG recognized guides and teacher:student ratio of the Department**

S. No.	Year	No. of PG recognized guides	Intake of students M.Sc.	Total (PG students)	Teacher: Student ratio
1.	2016-17	4	5	5	1:1.25
2.	2017-18	6	5	5	1:0.83
3.	2018-19	5	5	5	1:1
4.	2019-20	5	5	5	1:1
5.	2020-21	5	Admission in process		

**Title of theses submitted during last five years**

Year	Thesis Title
<b>2016-17</b>	<ul style="list-style-type: none"> <li>Effect of foliar feeding of Borax , Zinc Sulphate and Urea on Fruiting, Yield and Quality of Guava (<i>Psidium guajava</i> L) cv. Shweta and Lalit under high density planting system</li> <li>Evaluation of Capegoose berry (<i>Physalis peruviana</i> L.) under humid agro climatic condition of Jhalawar</li> </ul>
<b>2017-18</b>	<ul style="list-style-type: none"> <li>Effect of media and seed treatment on germination and seedling growth of papaya (<i>Carica papaya</i> L.) cv. Red Lady</li> <li>Survey and evaluation of physic-chemical characters of guava (<i>Psidium guajava</i>) cv. L-49 growing in Jhalawar district</li> <li>Effect of date of transplanting and crop geometry on growth, yield and quality of cape gooseberry (<i>Physalis peruviana</i> L.)</li> </ul>
<b>2018-19</b>	<ul style="list-style-type: none"> <li>Effect of sowing dates and genotypes on growth, production and quality of cape gooseberry (<i>Physalis peruviana</i> L.)</li> <li>Effect of biofertilizers on growth and development of mango plants (<i>Mangifera indica</i> L.) cvs. Dashehari and Kesar</li> <li>Effect of foliar spray of Gibberellic acid and Urea on growth, Flowering, Yield and Quality of Guava (<i>Psidium guajava</i>) cv. L-49</li> <li><i>In-vitro</i> propagation of strawberry (<i>Fragaria x ananassa</i> Duch.</li> </ul>
<b>2019-20</b>	<ul style="list-style-type: none"> <li>Effect of mulches on growth of Jamun (<i>Syzygium cumini</i> Skeels) cv. Goma Priyanka</li> <li>Effect of Vermicompost and Phosphorus Solubilizing Bacteria (PSB) on growth and development of Guava (<i>Psidium guajava</i> L.) cv. L-49</li> <li>Effect of Biochar, Vermicompost and Azotobacter on growth and development of Jamun (<i>Syzygium cumini</i> L.) cv. Goma Priyanka</li> </ul>

	<ul style="list-style-type: none"> <li>• Effect of mulches on growth and development of guava (<i>Psidium guajava</i> L.) cv. L-49</li> <li>• Effect of Organic manures, Inorganic fertilizers and Biofertilizers on growth, yield and quality of Guava (<i>Psidium guajava</i> L.) cv.Sardar in Mrig Bahar Crop</li> </ul>
<b>2020-21</b>	<ul style="list-style-type: none"> <li>• Effect of assisted pollination on yield and quality of custard apple (<i>Annona squamosa</i> L.) cv. Arka Sahan</li> <li>• Effect of foliar spray of zinc and iron on growth, yield and quality parameters of guava (<i>Psidium guajava</i> L.) cv. L-49</li> <li>• Effect of thickness of mulch on growth and development of <i>Khirni</i> (<i>Manilkara hexandra</i> Roxb.) cv. Thar Rituraj</li> <li>• Effect of Microbial Consortia on growth and development of Jamun (<i>Syzygium cumini</i> L.) cv. Goma Priyanka</li> <li>• Effect of Vermicompost and PSB on growth and development of Jamun (<i>Syzygium cumini</i> Skeels.) cv. Goma Priyanka</li> </ul>

#### 6.4.7. Feedback of Stakeholders (Students, Parents, Industries, Employers, Farmers etc.)

S. No.	Name	Stakeholders	Important remarks/feed back
1.	Rakesh M.	Student	The teachers are well devoted. The faculty members take care of students. Good facilities are available for undertaking PG research.
2.	Sunita Prajapat	Student	The teachers are cooperative. They help-support students in completion of degree and guiding them for career.
3.	Rajesh Gujar	Parent	There is good environment at the college. The student learns a lot in Jhalawar environment. The teaching programme runs very timely.
5.	Om Prakash Patidar	Farmer	The teachers of the department guide us from time to time in cultivation of fruits. They think for betterment of farmers.
6.	Om Patidar	Farmer	I feel happy to participate in different programme organized by the department of fruit science. I learned a lot in fruit cultivation due to support of teachers of the department of fruit science.

#### 6.4.8. Student Intake and Attrition in the Programme for last five years

Year	Sanctioned seats	Actual intake	Attrition	% Attrition
2016-17	5	5	0	0
2017-18	5	5	0	0
2018-19	5	5	0	0
2019-20	5	5	0	0
2010-21	(Admission in progress)			

#### 6.4.9 ICT Application and Curricula Delivery

The College is having the following ICT based facilities to meet the current requirement of the students regarding the curricula delivery:

##### (A) Common ICT facility:

- Technology-enhanced learning Smart class room facility is available in three classrooms that enhances the quality of teaching and learning which is integrated with the digital displays, computer, whiteboards, assistive listening devices, and other audio/visual components that make lectures easier, engaging, and more interactive.
- Uninterrupted high speed internet connectivity with wi-fi facility is available in the college as well as hostels for providing easy access to online resources on the internet which enhances the exposure of students on different topics and also specifically to students involved in research that can help in research.
- Two separate seminar halls are equipped with LCD projectors, smart podium, interactive white boards or smart boards, Television, which help students to learn their lessons in a smart approach ensures enhanced interactive Learning Experience that has increased productivity.
- College is having computer lab with good quality internet connected 26 computers and peripherals to offer students with quality education by helping them to understand concepts better, improve their reading and comprehension skills, and achieve academic excellence.

##### (B) Academic Management System

Academic Management System has been implemented in the college under NAHEP Component-II by Division of Computer Applications, IASRI, Pusa, New Delhi. This system automates various academic processes of the university and enhances the efficiency of the system by saving time and efforts involved in manual processes. The system has following sub modules:

- Courses Management
- Student Management
- Faculty Management

- Administration Management
- E-Learning
- Online fee collection

### **(C) Online Teaching & Examination**

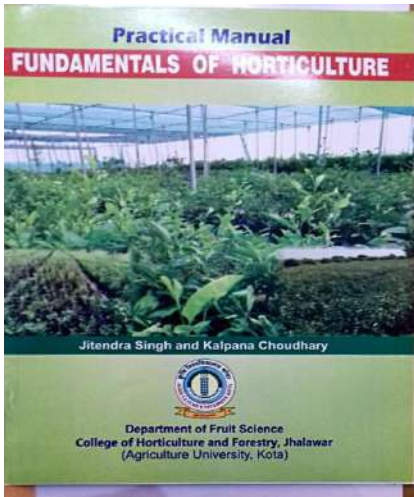
- Live online lectures through live video classes through (ZOOM, MS Team, Google Meet, etc.)
- Notes and other file sharing through Google classrooms, WhatsApp, Internet
- Online discussion forums for students were conducted through (ZOOM, MS Team, Google Meet, etc.)
- E-courses from ICAR and other sources are put on website for students and teachers.
- Organization of meeting, seminar, meeting of courses committee through MS team.

However, there is urgent need of separate library building enabled with ICT facilities and equipped electronic gadget for faculty and students to access information floating worldwide in the field of Horticulture & Forestry. It will foster specially the faculty in best curricula delivery and also the student grasping the subject matter delivered by faculty.

### **Departmental Activities**

Apart from the academic curricula the students are also exposed through other research and training programmes organized by the Department. A brief of the Departmental activities during last five years is appended below:

1. The Department operates Centre of All India Co-ordinated Research Project (AICRP) on Arid Zone Fruits. The centre works upon the mandate crops like custard apple, tamarind, lasoda, bael and pomegranate on various aspects like germplasm collection, nutrient management, rootstock, high density planting, diseases and post harvest.
2. Department has played major role in introducing the strawberry crop first time in the region.
3. During last five years, the Department has organized one winter school of 21 days duration, one National Webinar, ASCI training on Job Role of Mandarin Workers and 12 trainings under TSP.
4. Department has published 59 papers; 02 Bulletins on orange, strawberry; 02 leaflets on guava, strawberry; 02 manuals: 1. Fundamentals of Horticulture and 2. Breeding of Fruits and Plantation Crop during last 5 years.
5. During last five years, 18 students accomplished PG degree and 3 Ph.D. degree.
6. Mr. Arjun Singh, Scientist under training, ICAR-NRC on Banana completed three months training *w.e.f.* 19.06.2020 to 19.09.2020 with the Department.
7. 02 Students got Gold medal and one student Chancellor Gold medal (Rakesh M.) during last 5 years.



Practical manual



Compendium of ICAR Winter School



Bulletin on Mandarin Production



Organization of winter school



Participants of ASCI Training on Citrus Fruit Growers organized during Jan.7-21, 2019

**NATIONAL WEBINAR ON FOOD AND IMMUNITY IN FIGHT AGAINST COVID-19**

COVID-19 is taking heavy toll on the life and survival of mankind. Its effect has not yet remained confined in a particular geographical region rather it has been rampant spreading in last in January 2020 across and continues all over the world. Around more than 14 lakh people have been suffered with COVID-19 epidemic. The health system having been associated with measurement on-standby against the strength of immunity in fighting against the globally spreading COVID-19. It is said that no any systematic level in development of medicinal antibodies. The horticulture produce like beans, vegetables, spices, tubers, plantations, medicinal and aromatic crops etc. are living source of food recognized with medicinal value. There is need to have consumption of such food to build up support. As mankind under growing state economic. After all food the vitalizing source of health and wealth of commoner. Response in naturally occurring in life and production are very scarce provided the society a great ally in fight against disease. It is in this regard it is proposed to organize a webinar on rising immunity bearing focus of different horticulture component crops besides try to get an spread of COVID-19.

**Organizing Committee**

<b>Patron</b> Dr. D. C. Jishi Vice-Chancellor, AU, Kota	<b>Coordinator</b> Dr. Prashu Bhansagar Asst. Professor CSF, Jhalawar
<b>Chairman</b> Dr. B. B. Maurya Dean & PG, NHEP CSF, Jhalawar	<b>Co-Chairman</b> Nimesh Kumar Maurya Asst. Professor CSF, Jhalawar
<b>Organizing Secretary</b> Dr. Jitendra Singh DAV, AU, Kota	

**Empanel Speakers**

Dr. Bansi Maurya Professor Dept. of Food Sci. & Nutrition College of Commerce & Agri. Sci. NHEP, Jhalawar	Dr. M. S. Prasad Professor Dept. of Community Medicine, SRS Hospital, Bikaner	Dr. Brijesh K. Shrivastava Professor Dept. of Pathology BBAU, Lucknow
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**Participants**  
Students, Researchers,  
Govt. & N.G.O. Scientists,  
Govt. Officials & NGO  
Professional Farmers

**Programme**

10:00 AM	Participants in	Dr. Jitendra Singh
10:20 AM	Welcome address	Dr. Jitendra Singh
10:30 AM	Opening remarks	Dr. D. C. Jishi
10:35 AM	Stable Vitamins & herbs	Dr. Bansi Maurya
11:30 AM	Presentation of COVID-19 spreading in community	Dr. M. S. Prasad
11:35 PM	Discussion for immunity bearing	Dr. Brijesh K. Shrivastava
11:50 PM	Vote of thanks	Dr. B. B. Maurya

ZOOM Meeting ID: **Coming soon**  
Date: 17<sup>th</sup> June, 2020 Time: 10:00 AM-1:00 PM  
Directorate of Studies, Jhalawar, AU, Kota in collaboration with NHEP-JC, College of Horticulture and Forestry, Jhalawar

National webinar on June 17, 2020 on Food and Immunity in Fight Against COVID-19



### Awards and Honours

S. No.	Year	Name of award	Awarding agency
<b>Dr. Jitendra Singh</b>			
1.	2016-17	Reviewer Excellence award.	Agricultural Research Communication Centre, Karnal
2.	2017-18	Dr. Rajendra Prasad award	ICAR, New Delhi
3.	2019-20	Best teacher award	Indian Society for Horticulture Research and Development, Dehradun, Uttarakhand
<b>Dr. P. Bhatnagar</b>			
2.	2017-18	Best Teacher Award	Agriculture Technology Development Society, Ghaziabad (UP)
3.	2018-19	National Teaching and Research Excellent	IRDP Group of Journals, Chennai
		Appreciation Certificate	AU, Kota
<b>Sh. Nirmal Kumar Meena</b>			
1.	2016	Best Poster Award	ICPASN, Integral University, Lucknow
2.	2018	Young Scientist Award	University of Allahabad
3.	2019	Young Scientist Award	Ag. & Env. Technology Development Society, U.S. Nagar (UK)
4.	2019	Young Achiever Award	InSc, Bengaluru
5.	2019	Best Article Award	Agriculture & Food Newsletter

### Certificate

I, the Dean, College of Horticulture & Forestry, Jhalawar hereby certify that the information contained in the Section 6.4.1 to 6.4.9 is furnished as per the records available in the College and Degree Awarding University.

Place : Jhalawar, Rajasthan

Date :



(I.B. Maurya)

**Dean**  
**College of Horticulture and Forestry**  
**(Agriculture University, Kota)**  
**Jhalrapatan, JWR 326023 (Rajasthan)**

# SELF STUDY REPORT

M.Sc. (Horticulture)  
Vegetable Science



College of Horticulture & Forestry, Jhalawar  
Agriculture University Kota (Raj.)

#### **6.4.1 Brief History of the Degree Programme**

With a mission to generate specialized manpower well versed in vegetable science, the college is offering post graduate programme in vegetable science since year 2011-12. Initially the common PG programme in Horticulture was started during 2006-07 with intake capacity of 02 students. Further, specialized PG degree in Vegetable Science was initiated during 2011-12 with intake capacity of 05 students. During the five years, 19 students have successfully completed the course and secured job in various organizations.

The programme emphasis on various aspects of vegetable production, protection, seed production, breeding and protected cultivation ranging from traditional to modern aspects to match with the global development in the field of vegetable science. PG students are thoroughly exposed to specific and need based hands-on trainings and they are trained to review, plan and formulate the research programmes under the guidance of advisory committee. Time to time, the students are taken to institutional visits where they get exposure to various developments going on in a particular field of research and development.

#### **Objectives of the Department:**

- To develop competent human resources, specialized in the subject of Vegetable Science.
- To undertake need based, strategic and applied research in vegetable science.

**Nomenclature of the Degree programme** : M.Sc. (Horticulture) Vegetable Science

**Duration of the Degree programme** : 02 Years (04 Semesters)

**Admission Process** : The admission to M.Sc. (Horticulture) Vegetable Science is made through the competitive State level Joint Entrance Test (JET) conducted by SAUs on rotation basis. 75 percent of the seats are filled through JET Examination while remaining 25 per cent of the seats are filled through ICAR All India Entrance Examination.

#### **Requirement for Degree Programme**

A student admitted to a post graduate programme shall have to successfully complete the following before award of a degree:

- An approved programme of study prepared by his/her advisory committee
- A comprehensive or preliminary examination

- Synopsis seminar and approval of synopsis
- Pre-thesis seminar
- Submission of thesis and its evaluation report
- Thesis viva-voce examination
- Minimum residential requirement- four semesters
- Minimum OGPA requirement – 6.5 out of 10 point scale

A student of master's programme is required to complete a minimum of 57 credit hours for the degree. The distribution of courses for master's programme is as under:

Title	Approved Course Load
Major courses	: 22 Credit Hours (Including 12 cr. hrs. as core courses)
Minor & Supporting Courses	: 14 Credit Hours
Seminar	: 01 Credit Hours
Comprehensive	: Non Credit Hours
Research	: 20 Credit Hours
Non-Credit e-courses (Compulsory)	: 06

### Distribution of courses for Master's Programme

	Course No.	Title of Course	Cr. Hrs.
MAJOR COURSES	VEG-511*	Production Technology of Warm Season Vegetables	3(2+1)
	FLS-511*	Production Technology of Cut Flowers	3(2+1)
	FRS-511*	Tropical and Dry Land Fruit Production	3(2+1)
	PHT-511*	Principle of Post-Harvest Technology of Horticultural Crops	3(2+1)
	VEG-521	Production Technologies of Cool Season Vegetable Crops	3(2+1)
	VEG-523	Breeding of Vegetable Crops	3(2+1)
	VEG-531	Seed Production Technology of Vegetable Crops	3(2+1)
	VEG-522	Production Technologies of Spice Crops	3(2+1)
		Total	24(16+8)
MINOR COURSES (Any five courses to opt)	VEG-532	Protected Cultivation of Horticultural Crops	3(2+1)
	VEG-533	Production Technology of Under Exploited Vegetable Crops	3(2+1)
	PHY-531	Growth and Development of Horticultural Crops	3(2+1)
	BTH-521	Bio-technology of Horticultural Crops	3(2+1)
	STAT-511	Statistical Methods	3(2+1)
	STAT-521	Design of Experiment –I	3(2+1)
		Total	18(12+6)

NON-CREDIT E-COURSES (compulsory)	PGS-501	Library and Information Services	0+1 (NC)
	PGS-502	Technical Writing and Communication Skills	0+1 (NC)
	PGS-503	Intellectual Property and its Management in Agriculture	1+0 (NC)
	PGS-504	Basic concepts in laboratory techniques	0+1 (NC)
	PGS-505	Agricultural Research, Research Ethics and Rural Development Programmes	1+0 (NC)
	PGS-506	Disaster management	1+0 (NC)
	VEG-541	Comprehensive	NC
	VEG-591	Seminar	01
	VEG-599	Research	20
		<b>Total</b>	<b>57</b>

\* Core Courses

### Accreditation/renewal of Degree Programmes

The academic programme M.Sc. (Horticulture) Vegetable Science is accredited for five years upto March, 2021 by ICAR and offered for further renewal for next five years.

Academic Programme	Programme for Renewal	Duration
Post Graduate	M. Sc. (Horticulture) Vegetable Science	Two years (4 Semesters)

### Year wise admission to M.Sc. (Horticulture) Vegetable Science for last five years

Year of Admission	Intake capacity	Admitted			Dropped			Passed		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
2016-17	05	3	2	5	-	-	-	2	0	2
2017-18	05	3	2	5	-	-	-	3	1	4
2018-19	05	3	2	5	-	-	-	3	2	5
2019-20	05	4	1	5	-	-	-	1	2	3
2020-21	05	Admission in progress			-	-	-	3	2	5

### Award / Scholarships

Name of Scholarship	Amount of Scholarship (Rs.)	2016-17			2017-18			2018-19			2019-20		
		M	F	Total	M	F	Total	M	F	Total	M	F	Total
NTS Scholarship	5000/- Per month	01	--	01	--	01	01	--	01	01	--	01	01
JRF (PG) Scholarship	12640/- Per month	---	---	---	---	---	---	---	01	01	--	01	01
<b>Total-</b>		<b>01</b>	<b>--</b>	<b>01</b>	<b>--</b>	<b>01</b>	<b>01</b>	<b>--</b>	<b>02</b>	<b>02</b>	<b>--</b>	<b>02</b>	<b>02</b>

### 6.4.2 Faculty Strength

S. No	Faculty	Sanctioned	Faculty in place	Vacant position*	Faculty recommended by ICAR
1	Professor	1	1	-	1
2	Associate Professor	1	-	1	1
3	Assistant Professor	3	2	2	4
	Total	5	3	3	6

\*Recruitment on vacant positions is in process.

### PG recognized faculty for teaching/guiding M.Sc. (Horticulture) Vegetable Science

S. No	Name of Faculty	Designation	Teaching/Guiding
1.	Dr. I. B. Maurya	Professor & Head	Teaching & Guiding
2.	Dr. Kavita Aravindakshan	Assistant Professor	Teaching & Guiding
3.	Sh. Rajesh K. Sharma	Assistant Professor	Teaching & Guiding
4.	Dr. S.K. Jain	Professor & Head	Teaching & Guiding
5.	Dr. Ashutosh Mishra	Professor & Head	Teaching & Guiding
6.	Dr. Prerak Bhatnagar	Assistant Professor	Teaching & Guiding
7.	Sh. Nirmal Kumar Meena	Assistant Professor	Teaching & Guiding
8.	Dr. Ashok Kumar	Assistant Professor	Teaching
9.	Dr. Bhuri Singh	Assistant Professor	Teaching
10.	Dr. Anil Kumar Gupta	Assistant Professor	Teaching
11.	Dr. Priyanka Solanki	Assistant Professor	Teaching

### 6.4.3 Technical and Supporting Staff

S.No.	Designation	Sanctioned Strength	Filled	Vacant
1.	Assistant Librarian	01	-	01
2.	Assistant Registrar	01	-	01
3.	Section Officer	02	01*	01
4.	Technical Assistant/Farm Manager	03	02	01
5.	Lab Technician	01	-	01
6.	PA	01	01*	-
7.	Steno	01	01*	-
8.	U.D.C.	02	-	02
9.	Lab Assistant	06	05	01
10.	L.D.C.	03	03*	-

11.	Library Assistant	01	01	-
12.	Driver	02	01+01*	-
13.	Matron	01	01	-
14.	Care Taker	02	02*	
15.	Agriculture Supervisor	04	03	01
16.	Store Keeper	01	-	01
17.	Forest Guard	02	02	-
18.	Gardener	02	02*	-
19.	Shelf Assistant	01	01*	-
20.	Lab Attendant	01	-	01
21.	Class IV	05	05*	-
	<b>Total</b>	<b>43</b>	<b>32</b>	<b>11</b>

\*Contractual. However, recruitment on vacant posts is in process.

**Note:** The College has 43 sanctioned posts of technical and supporting staff for conducting skill demonstration and field experiments during practical classes, laboratory analysis and for assisting field work, field visits and training programme of various departments.

#### 6.4.4 Classrooms and Laboratories

Vegetable Science Department has independent laboratory where practicals and research work are conducted. PG classes are arranged in the class room allotted for PG classes in College building. Some of the research work/ practicals are also conducted at institutional farm and protected cultivation structures. The detail of the facility is as under:

S. No.	Class room / Laboratories	Area	Seating capacity	Other facilities (LED, Projectors, Computers, Smart board etc.)
1.	Classroom	1076 sq ft	60	Projector
2.	Vegetable Science Laboratory**	885 sq ft	30	Well equipped as per requirement
3.	Seminar Hall*	885 sq ft	50	LED, Projectors, Computers, Video conferencing system
4.	Training Hall	167 sq m	60	Projector, Computer
5.	Instructional Farm	07 ha	-	Well equipped with farm implements, fertigation facility
6.	Protected Cultivation Unit	6964 sq m	03	Shade net Polyhouse are used for growing of mother plant fruits

\*Common Seminar hall for all PG Departments

\*\* Laboratories of other Departments/ Central laboratory are also used for PG practicals/ research work

### Major equipments in laboratory for conduct of practical classes

S. No.	Name of the equipment	Quantity
1.	Elico microprocessor scanning visible spectrophotometer SL-177	2
2.	All Quartz Double Distillation with auto cut off JSGW 1.5L/h	1
3.	Kjeldal digestion unit(JSGW) With individual energy regulator	1
4.	Digital electronic balance Sartorius model BT-2245	1
5.	Centrifuge and accessories	2
6.	Digital Balance 300g	1
7.	Elico digital Ph meter Model L1-127	1
8.	Digital vernier calliper	1
9.	Conductivity meter pen type	1
10.	Microscope	5
11.	Hot Plate with digital temp cum controller	1
12.	Laboratory oven perfect system	1

Note: The detail list of the equipments of the Department is appended in Annexure-I

### Farm facilities

The College has total farm of 100 hectares, out of which 07 hectares are available for cultivation as well as research activity to the Department. All the fields are well connected with approach roads and internal roads. Entire farm is fully irrigated having drip as well as mini sprinkler system. The detail of farm facilities in the Department of the Vegetable Science is given below.

S. No.	Name of the Department	Farm Area	Use
1.	Vegetable Science	07 ha	Research trials of PG students/Projects and commercial cultivation of vegetables and spices

### Protected Cultivation Unit

Beside farm facility, the Department has a State of Art of protected cultivation facility for carrying out research work. The infrastructural facility available at protected cultivation unit is as under:

S. No	Particulars	No.	Area (sq.m)	Details
1.	Naturally Ventilated Poly house	4	3584	For growing of vegetables
2.	Poly tunnel	3	384	For raising of nursery



3.	Polycarbonated Structure	1	728	For cultivation of vegetables hydroponically.
4.	Insect Net House	1	1500	For cultivation of vegetables
5.	Training Hall	1	167	For imparting training
6.	Walk in Cold Room	1	09	For storing farm produce



**Aerial view of Protected Cultivation Unit**

### **Hydroponic Unit**

The department has a very good hydroponic unit for conducting research on soilless culture. The total area of the hydroponic unit is 500 m<sup>2</sup>. The hydroponic unit has been established in fan-pad structure which is made of polycarbonated sheet and completely controlled with devices of temperature and humidity sensor. Usually 25<sup>0</sup>C temperature is maintained inside the structure. For electricity back up, solar system (20KVA) and generator facility (40HP) are available. The unit comprises three different types of models of hydroponics viz., horizontal, vertical (tower) and A-frame. The detail of different models is as under:

S.No.	Hydroponic Models	Numbers
1	Horizontal	09
2	Vertical Towers	16
3	A-Frame	04



**Vertical Tower**



**Horizontal Model**



**A-frame**

**Different models of hydroponics**

**6.4.5. Conduct of Practical and Hands on Training**

Masters degree in vegetable science aimed to develop skilled and professionally sound human resource to serve the booming Horticulture sector of India. The students who are practicing what they learnt in class room through hands on training like production, post harvest handling and marketing of vegetables grown out door and under protected cultivation.

**Average Number of Students in Theory and Practical Classes**

Postgraduate students as they are less in number are grouped into one batch for theory and practical. The minimum attendance of 80% is compulsory in theory as well as practical classes separately.

Sl. No.	Name of the Department	Theory Batch	Practical Batch	Number of students/batch
1.	Vegetable Science	1	1	5

Out of total 57 credit hours, 13 credit hours are prescribed for practical. Regular practicals are conducted in the lab and field in respective courses.

#### 6.4.6. Supervision of students in PG

Every student shall have Advisory Committee with a Major Advisor and at least three members among whom one is from major field of specialization, another one from minor field of study and one is nominated by Director Education. Programme of Research proposed by the Advisory Committee and Dean is finally approved by the Director Education. The research is conducted by the student under the supervision of Advisory Committee.

#### Number of PG recognized guides and teacher: student ratio of the department

S. No.	Year	No. of PG recognized guides	Intake of students	Teacher: Student ratio
1.	2016-17	2	5	1:2.5
2.	2017-18	2	5	1:2.5
3.	2018-19	3	5	1:1.67
4.	2019-20	3	5	1:1.67
5.	2020-21	3	5	1:1.67

#### Titles of theses submitted during last five years

Year	Thesis Title
2016-17	<ol style="list-style-type: none"> <li>1. Effect of paclabutrAZOL on growth and yield attributes of gynoeocious cucumber (<i>Cucumis sativus</i> L.) cv. Isatis</li> <li>2. Effect of sowing date and spacing on growth, yield and quality of broccoli (<i>Brassica oleracea</i> var. italica) var. Green Head</li> </ol>
2017-18	<ol style="list-style-type: none"> <li>1. Influence of plat growth regulators and boron on performance of bottle gourd (<i>Lagenaria siceraria</i> (Mol.) Standl.) var. Pusa Naveen</li> <li>2. Effect of vermicompost mycorrhiza and micronutrients mixture on growth, yield and quality of okra (<i>Abelmoschus esculentus</i> L. Moench) Cv. Arka Anamika</li> <li>3. Studies on heterosis and combining ability in ridge gourd (<i>Luffa acutangula</i> (L.) Roxb.)</li> <li>4. Effect of biofertilizers and growth regulators on growth, yield and quality of cauliflower (<i>Brassica oleracea</i> var. botrytis L.) cv. Pusa Paushja</li> </ol>
2018-19	<ol style="list-style-type: none"> <li>1. Effect of bioregulators and boron on growth, yield and quality of cabbage (<i>Brassica oleracea</i> var. capitata L.) cv. Golden acre.</li> <li>2. Studies on Genetic Variability and Character Association in Turmeric (<i>Curcuma longa</i> L.).</li> </ol>

	<p>3. Genetic variability in fenugreek (<i>Trigonella foenum-graecum</i> L.).</p> <p>4. Effect of nitrogen and spacing on growth, yield and Quality of carrot (<i>Daucus carota</i> L.).</p> <p>5. Study on date of planting and size of bulblets on growth and yield attributes of kharif onion (<i>Allium cepa</i> L.) cv. Agrifound Dark Red.</p>
2019-20	<p>1. Variation in fenugreek (<i>Trigonella foenum-graecum</i> L.) genotypes at different salinity levels.</p> <p>2. Effect of vermicompost and biofertilizers on growth, yield and quality of fenugreek (<i>Trigonella foenum-graecum</i> L.).</p> <p>3. Effect of pruning and fertigation levels on growth and yield of gynoecious cucumber (<i>Cucumis sativus</i> L.) under naturally ventilated polyhouse condition</p>
2020-21	<p>1. Study on intercropping of Fenugreek (<i>Trigonella foenum-graecum</i> L.) with different short duration vegetable crops.</p> <p>2. Assessment of variability and tolerance indices for moisture stress in Fenugreek (<i>Trigonella foenum-graecum</i> L.).</p> <p>3. Effect of Growth regulator on growth yield and quality of capsicum cultivar California wonder under the naturally ventilated polyhouse condition.</p> <p>4. Effect of nano particles on germination growth yield and quality in tomato <i>solanum lycopersicon</i>.</p> <p>5. Effect of growth regulators and spacing on growth, yield and quality of Radish (<i>Raphanus sativus</i> L.).</p>

#### 6.4.7. Feedback of Stakeholders (Students, Parents, Employers, Farmers etc.)

S. No.	Name	Stakeholders	Important remarks/feed back
1.	Sachine G. E.	Student	Overall teaching is good but there is lack of teaching faculty. Good facilities are available for conducting PG research.
2.	Poonam	Student	Good guidelines were given during the course of study along with demonstration and use of recent technologies for conduction of research.
3.	Sh. Ram Lal Malav	Parent	Teaching is very good, but there should be more faculty and supportive staff for help during the research trail.
4.	Narottam Malav	Employer	Good and supportive staff members, providing guidance time to time for better and effective work.
5.	Ravindra	Farmers	Protected cultivation technology demonstration was highly influential, which inspired me to set

			up my own protected cultivation unit.
6.	Atul Jhala	Farmers	Protected cultivation unit of the college is marvelous and a way of inspiration in this region. Regular demonstration and motivation by the faculty helped lot of farmers to establish their own poly houses in Hadoti region.

#### 6.4.8. Student Intake and Attrition in the Programme for last five years

Year	Sanctioned seats	Actual intake	Attrition	% Attrition
2016-17	05	05	-	-
2017-18	05	05	-	-
2018-19	05	05	-	-
2019-20	05	05	-	-
2020-21	05	Admission in progress	-	-

#### 6.4.9. ICT Application and Curricula Delivery

The College is having the following ICT based facilities to meet the current requirement of the students regarding the curricula delivery:

##### (A) Common ICT facility:

- Technology-enhanced learning Smart class room facility is available in three classrooms that enhances the quality of teaching and learning which is integrated with the digital displays, computer, whiteboards, assistive listening devices, and other audio/visual components that make lectures easier, engaging, and more interactive.
- Uninterrupted high speed internet connectivity with wi-fi facility is available in the college as well as hostels for providing easy access to online resources on the internet which enhances the exposure of students on different topics and also specifically to students involved in research that can help in research.
- Two separate seminar halls are equipped with LCD projectors, smart podium, interactive white boards or smart boards, Television, which help students to learn their lessons in a smart approach ensures enhanced interactive Learning Experience that has increased productivity.
- College is having computer lab with good quality internet connected 26 computers and peripherals to offer students with quality education by helping them to understand concepts better, improve their reading and comprehension skills, and achieve academic excellence.

### **(B) Academic Management System**

Academic Management System has been implemented in the college under NAHEP Component-II by Division of Computer Applications, IASRI, Pusa, New Delhi. This system automates various academic processes of the university and enhances the efficiency of the system by saving time and efforts involved in manual processes. The system has following sub modules:

- Courses Management
- Student Management
- Faculty Management
- Administration Management
- E-Learning
- Online fee collection

### **(C) Online Teaching & Examination**

- Live online lectures through live video classes through (ZOOM, MS Team, Google Meet, etc.)
- Notes and other file sharing through Google classrooms, WhatsApp, Internet
- Online discussion forums for students were conducted through (ZOOM, MS Team, Google Meet, etc.)
- E-courses from ICAR and other sources are put on website for students and teachers.
- Organization of meeting, seminar, meeting of courses committee through MS team.

However, there is urgent need of separate library building enabled with ICT facilities and equipped electronic gadget for faculty and students to access information floating worldwide in the field of Horticulture & Forestry. It will foster specially the faculty in best curricula delivery and also the student grasping the subject matter delivered by faculty.

### **Departmental Activities:**

Apart from the academic curricula the students are also exposed by different research and training programmes organized by the department for upliftment of the subject knowledge of the students.

### **Research:**

- Department has developed protected cultivation technology of high valued vegetable crops for the region.
- Department has introduced the strawberry crop first time in the area.
- Developed hydroponic technology for growing of vegetable for the area.
- The faculty of the department has also contributed various research papers, book chapters, and bulletins towards literary support to horticulture in broader perspective.

- The department has handled two RKVY projects.
- Presently, the college is running NAHEP project in which department is the major center of activities.

### **Extension:**

- The department is demonstrating and disseminating the technology of protected cultivation of vegetables among the farmers from last 10 years in the area. Because of which the area has increase from zero in 2010 to 10 ha in 2020.
- The faculty of the department has delivered several lectures during workshops and trainings to make the farmers, vegetable growers and students to gain more practical knowledge of the subject.
- Solution of farmer's field problems though field visit, WhatsApp, telephone, etc.

### **Human Resource Development:**

- Conducted 2 national seminars, six workshops and 8 trainings for scientists, students, farmers and industry.
- Till date, 19 students have successfully completed their course work and doing job in government department and private sector.
- Demonstration of horticultural activities and motivation to school class 12<sup>th</sup> students for attracting themselves towards agricultural education.





### Departmental Activities

**NATIONAL WEBINAR ON Avenues in horticulture in post COVID scenario**

The worth of horticulture in re-averting socio-economic scenario of the farmers is well known. The horticulture covers 25.45 million hectare area, with commensurate production of 213.85 million tonnes contributes 30.4 per cent of total GDP from agriculture. Reduction of horticulture major in Indian farming sector is sufficient enough to take account of the significance, the horticulture hobby especially in rural livelihood. With sudden onslaught of COVID pandemic associated scenario, it has really been a daunting challenge as to how to keep the developmental pace of agriculture growing where a large mass of people once migrated from the village is again making their way towards countryside. Providing employment avenues to work force has been the priority nowadays. Horticulture, with its varied spectrum of labour intensiveness among others, offers multidimensional avenues as far as employment generation vis-à-vis income and nutritional security are concerned. With a view to help disseminate the options and advancement available for adoption at and shop level, it is envisaged to organize a Webinar.

**Theme**

- Protected Horticulture
- Arid Horticulture
- Floriculture
- Sweet Spices
- Medicinal and Aromatic Plants

**Date :** 08<sup>th</sup> June, 2020 **Time :** 10AM to 2PM

**Registration :**

For faculty & guest speakers:  
Zoom Meeting ID: **5487565923**

For participants:  
Join the official Facebook group of college to watch zoom live streaming.

**Participants**

- UG & PG Students
- Research Scholars
- Univ. & KVK Scientists
- Gov. officials & NGO
- Innovative farmers

**Eminent Speakers**

Dr. Brahma Singh, Former Director, DDO, New Delhi  
Dr. P.L. Saroj, Director, ICAR, Bilaspur  
Dr. K.V. Prasad, Director, ICAR DRR, Pune  
Dr. Gopal Lal, Director, ICAR WCEC, Ajmer, Rajasthan  
Dr. Samresh Dwivedi, Former Scientist, CIMR, Lucknow

College of Horticulture & Forestry, Jhalrapatan City, Nimoda Road, Jhalawar-326023 (Rajasthan)

**Programme**

Time	Particulars	Speakers
9.00 AM to 10.00 AM	Participants - in	-
10.00 AM	Welcome Address	Dr. I.B. Maurya
10.05 AM	Opening Remarks	Dr. D.C. Joshi
10.15 AM	Arid Horticulture	Dr. P.L. Saroj
11.00 AM	Protected Cultivation	Dr. Brahma Singh
11.45 AM	Avenues in floriculture in post covid scenario	Dr. K.V. Prasad
12.30 PM	Seed Spices: An option for entrepreneurship	Dr. Gopal Lal
1.15 PM	Current trends in MAPs with special emphasis on Indian scenario	Dr. Samresh Dwivedi
2.00 PM	Vote of thanks	Dr. Jitendra Singh

College of Horticulture & Forestry, Jhalrapatan City, Nimoda Road, Jhalawar-326023 (Rajasthan)  
Email: deancoh2004@gmail.com | Mobile: 9867095832

### Organization of National Webinar by the Department



**Certificate**

I, the Dean, College of Horticulture & Forestry, Jhalawar hereby certify that the information contained in the Section 6.4.1 to 6.4.9 is furnished as per the records available in the College and Degree Awarding University.

Place : Jhalawar, Rajasthan

Date :



(I.B. Maurya)

**Dean**

**College of Horticulture and Forestry  
(Agriculture University, Kota)  
Jhalrapatan, JWR 326023 (Rajasthan)**

# SELF STUDY REPORT

M.Sc. (Horticulture)  
Floriculture & Landscape  
Architecture



College of Horticulture & Forestry, Jhalawar  
Agriculture University Kota (Raj.)

#### **6.4.1 Brief History of the Degree Programme**

With a mission to generate specialized manpower well versed in Floriculture and Landscape Architecture, the College is offering post graduate programme in Floriculture and Landscape Architecture, since year 2011-12. Initially the common PG programme in horticulture was started during 2006-07 with intake capacity of 02 students. Further, specialized PG degree in Floriculture and Landscape Architecture was initiated during 2011-12 with intake capacity of 05 students, later on 03 students since 2018-19. Till now, 17 students have successfully completed the course and secured job in various organizations.

The programme emphasis on various aspects of flower production, propagation, seed production, breeding and protected cultivation ranging from traditional to modern aspects to match with the global development in the field of Floriculture. PG students are thoroughly exposed to specific and need based hands-on trainings and they are trained to review, plan and formulate the research programmes under the guidance of advisory committee. Time to time, the students are taken to institutional visits where they get exposure to various developments going on in a particular field of research and development.

#### **Objectives:**

- To develop competent human resources specialized in Floriculture and Landscape Architecture
- To undertake need based strategic and applied research.

**Nomenclature of the Degree programme** : M.Sc. (Horticulture) Floriculture and Landscape Architecture

**Duration of the Degree programme** : 02 Years (04 Semesters)

**Admission Process** : The admission to M.Sc. (Horticulture) Floriculture and Landscape Architecture is made through the competitive State level Joint Entrance Test (JET) conducted by SAUs on rotation basis. 75 percent of the seats are filled through JET Examination while remaining 25 per cent of the seats are filled through ICAR All India Entrance Examination.

### Requirements for Degree Programme :

A student admitted to a post graduate programme shall have to successfully complete the following before award of a degree:

- An approved programme of study prepared by his/her advisory committee
- A comprehensive or preliminary examination
- Synopsis seminar and approval of synopsis
- Pre-thesis seminar
- Submission of thesis and its evaluation report
- Thesis viva-voce examination
- Minimum residential requirement- four semesters
- Minimum OGPA requirement – 6.5 out of 10 point scale

A student of master's programme is required to complete a minimum of 57 credit hours for the degree. The distribution of courses for master's programme is as under:

Title	Approved Course Load
Major courses	: 22 Credit Hours (12 credit hours as core courses)
Minor & Supporting Courses	: 14 Credit Hours
Seminar	: 01 Credit Hours
Comprehensive	: Non Credit Hours
Research	: 20 Credit Hours
Non-Credit e-courses (Compulsory)	: 06

### Distribution of courses for Master's Programme

	Course No	Course Name	Credit hours
Major Courses	FLS-511*	Production Technology of Cut Flowers	3(2+1)
	FRS-511*	Tropical Dry Land Fruit Production	3(2+1)
	VEG-511*	Production Technology of Warm Season vegetables	3(2+1)
	PHT-511*	Principles of Post Harvest Technology of Horticultural Crops	3(2+1)
	FLS-521	Landscaping & Ornamental Gardening	3(2+1)
	FLS-522	Production Technology of Loose Flowers	3(2+1)
	FLS-534	Breeding of flowers crops & Ornamental plants	3(2+1)
	FLS-535	Protected Floriculture	3(2+1)

Minor Courses (Any 5 courses)	STAT-511	Statistical Methods	3(2+1)
	BT-521	Biotechnology of Horticultural crops	3(2+1)
	STAT-521	Design of Experiments-1	3(2+1)
	FPU-525	Plant Production & Breeding Techniques of MAPs	3(2+1)
	PHY-531	Growth & Development of Horticultural crops	3(2+1)
	SAF-521	Modern Nursery Technology	3(2+1)
NON-CREDIT E-COURSES (compulsory)	PGS-501	Library and Information Services	0+1 (NC)
	PGS-502	Technical Writing and Communication	0+1 (NC)
	PGS-503	Skills	1+0 (NC)
	PGS-504	Intellectual Property and its Management in Agriculture	0+1 (NC)
	PGS-505	Basic concepts in laboratory techniques	1+0 (NC)
	PGS-506	Agricultural Research, Research Ethics and Rural Development Programmes	1+0 (NC)
	FLS-541	Seminar	01
	FLS-591	Comprehensive	NC
	FLS-599	Research	20
		<b>Grand Total</b>	<b>57</b>

\*Core courses

Course curriculum for PG has been designed with special emphasis on specialized Horticultural techniques. Further as a part of their course curriculum, the PG students are taken to exposure visits to different research institutes, progressive farmers' field and industries.

### Accreditation/renewal of Degree Programmes

The academic programme M.Sc. (Horticulture) Floriculture and Landscape Architecture is accredited for five years upto March, 2021 by ICAR and offered for further renewal for next five years.

Academic Programme	Programme for Renewal	Duration
Post Graduate	M.Sc. (Horticulture) Floriculture and Landscape Architecture	Two years (4 Semesters)

**Year wise admission to M.Sc. (Horticulture) Floriculture and Landscape Architecture for last five years**

Year of Admission	Intake capacity	Admitted			Dropped			Passed		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
2016-17	05	04	01	05	01	-	01	03	01	04
2017-18	05	04	01	05	02	-	02	-	02	02
2018-19	03	02	01	03	-	-	-	04	01	05
2019-20	03	01	02	03	-	-	-	01	01	02
2020-21	03	Admission process is in progress						03	01	04

**Award / Scholarships**

Name of Scholarship	Amount of Scholarship (Rs.)	2016-17			2017-18			2018-19			2019-20		
		M	F	T	M	F	T	M	F	T	M	F	T
NTS Scholarship	5000/- Per month		01	01	--	01	01	--	01	01	--	01	01
JRF (PG) Scholarship	12640/- Per month	---	---	---	---	---	---	---	01	01	--	01	01
<b>Total-</b>		--	--	<b>01</b>	--	<b>01</b>	<b>01</b>	--	<b>02</b>	<b>02</b>	--	<b>02</b>	<b>02</b>

**6.4.2 Faculty Strength**

S. No	Faculty	Sanctioned	Faculty in place	Vacant position*	Faculty recommended by ICAR
1	Professor	--	01	-	01
2	Associate Professor	01	-	01	01
3	Assistant Professor	02	--	02	04
	Total	03	01	03	06

\*Recruitment on vacant positions is in process

**PG recognized faculty for teaching/guiding M.Sc. (Horticulture) Floriculture and Landscape Architecture**

S. No	Name of Faculty	Designation	Teaching/Guiding
1.	Dr. Ashutosh Mishra	Professor & Head	Teaching & Guiding
2.	Dr. S. K. Jain	Professor & Head	Teaching & Guiding
3.	Dr. Kavita Aravindakshan	Assistant Professor	Teaching

4.	Dr. Prerak Bhatnagar	Assistant Professor	Teaching
5.	Sh. Rajesh K. Sharma	Assistant Professor	Teaching
6.	Dr. Bhuri Singh	Assistant Professor	Teaching
7.	Dr. Kanica Chauhan	Assistant Professor	Teaching
8.	Dr. Anil Kumar Gupta	Assistant Professor	Teaching
9.	Sh. Arvind Nagar	Assistant Professor	Teaching
10.	Dr. Priyanka Solanki	Assistant Professor	Teaching

### 6.4.3 Technical and supporting staff

S. No.	Designation	Sanctioned Strength	Filled	Vacant
1.	Assistant Librarian	01	-	01
2.	Assistant Registrar	01	-	01
3.	Section Officer	02	01*	01
4.	Technical Assistant/Farm Manager	03	02	01
5.	Lab Technician	01	-	01
6.	PA	01	01*	-
7.	Steno	01	01*	-
8.	U.D.C.	02	-	02
9.	Lab Assistant	06	05	01
10.	L.D.C.	03	03*	-
11.	Library Assistant	01	01	-
12.	Driver	02	01+01*	-
13.	Matron	01	01	-
14.	Care Taker	02	02*	-
15.	Agriculture Supervisor	04	03	01
16.	Store Keeper	01	-	01
17.	Forest Guard	02	02	-
18.	Gardener	02	02*	-
19.	Shelf Assistant	01	01*	-
20.	Lab Attendant	01	-	01
21.	Class IV	05	05*	-
	<b>Total</b>	<b>43</b>	<b>32</b>	<b>11</b>

\*Contractual. However, recruitment on vacant posts is in process.

**Note:** The College has 43 sanctioned posts of technical and supporting staff for conducting skill demonstration and field experiments during practical classes, laboratory analysis and for assisting field work, field visits and training programme of various departments.

#### 4.4.4 Classrooms and Laboratories

Floriculture and Landscape Architecture Department has independent laboratory where practicals and research work are conducted. PG classes are arranged in the class room allotted for PG classes in college building. Some of the research work/ practicals are also conducted at institutional farm and protected cultivation unit. The detail of the facility is as under:

S.No.	Class room / Laboratories	Area	Seating capacity	Other facilities (LED, Projectors, Computers, Smart board etc.)
1.	Classroom	1076 sq ft	60	Projector
2.	Floriculture and Landscape Architecture Laboratory**	885 sq ft	30	Well equipped as per requirement
3.	Seminar Hall*	885 sq ft	50	LED, Projectors, Computers
4.	Instructional Farm	5.0 ha	-	Well equipped with farm implements, fertigation facility
5.	Shade Net	500 sq m	01 No.	Shade net is used for keeping shade loving plants & raising of seedlings

\*Common Seminar hall for all PG Departments

\*\* Laboratories of other Departments/ Central laboratory are also used for PG practicals/ research work.

#### List of Major Equipments Available in the Department

S. No.	Name of the equipment	Quantity
1.	BOD incubator	1
2.	SS Distillation Plant	1
3.	Digital balance top pan	1
4.	Digital balance Sartorius model BT-2245	1
5.	Elico digital Ph meter Model L1-127	1
6.	Microscope	1
7.	Microwave	1

Note: The detail list of the equipments of the Department is appended in Annexure-I

#### Farm facilities

The College has total farm of 100 hectares, out of which 5 hectares are available for cultivation as well as research activity to the Department. All the fields are well connected with approach roads and internal roads. Entire farm is fully irrigated having drip as well as mini sprinkler system. The detail of farm facilities in the Department of the Floriculture &



Landscape Architecture is given below.

Farm Area	Crops grown
7.0 ha	Tuberose, Gladiolus, Heliconia, Chrysanthemum, Jasmine, Cheti/ Ganganagari rose, Marigold, Gaillardia, Annuals, Trees ,Shrubs and indoor plants

### Shade net house

Sl. No	Particulars	No.	Area (sqm)	Details	Remarks
1	Shade net house	01	500	For the collection of Indoor/ shade loving plants and propagation of ornamental plants	

### 6.4.5. Conduct of Practical and Hands on Training

Master Degree in Floriculture & Landscape Architecture aimed to develop skilled and professionally sound human resource to serve the booming Horticulture sector of India. The students who are practicing what they learnt in class room through hands on training like production, post harvest handling and marketing of flowers grown out door and under protected cultivation.

### Average Number of Students in Theory and Practical Classes

Postgraduate students as they are less in number are grouped into only one theory batch and one practical batch.

Sl. No.	Name of the Department	Theory Batch	Practical Batch	Number of students/batch
1.	Floriculture & Landscape Architecture	1	1	3

Out of total 57 credit hours, 13 credit hours are prescribed for practical. Regular practicals are conducted in the lab and field in respective courses.

### 6.4.6. Supervision of Students in PG

Every student shall have Advisory Committee with a Major Advisor and at least three members among whom one is from major field of specialization, another one from minor field of study and one is nominated by Director Education. Programme of Research proposed by the Advisory Committee and Dean is finally approved by the Director Education. The research is conducted by the student under the supervision of Advisory Committee.

**Number of PG recognized guides and teacher : student ratio of the department**

S. No.	Year	No. of PG recognized guides	Intake of students	Total (PG students)	Teacher: Student ratio
1	2016-17	2	5	5	1:2.5
2	2017-18	2	5	5	1:2.5
3	2018-19	1	3	3	1:3
4	2019-20	1	3	3	1:3
5	2020-21	1	3	Admission in Progress	--

**Titles of theses submitted during last five years in the department**

Year	Thesis Title
2016-17	<ol style="list-style-type: none"> <li>1. Effect of Genotype and Planting Geometry on Growth, Flowering and Corm Production of Gladiolus (<i>Gladiolus x hybridus</i> Hori.).</li> <li>2. Effect of Planting Dates and Varieties on Growth, Yield and Quality on Gladiolus (<i>Gladiolus hybridus</i> Hort.) under sub-humid Zone of Rajasthan.</li> <li>3. Effect of bioregulators on growth, flowering and Corn production of Gladiolus (<i>Gladiolus x hybridus</i> Hort.) Varieties.</li> <li>4. Effect of Drying Techniques and Embedding Media on Dried Flower Quality of Rose (<i>Rosa chinensis</i> Jacq.) and water Lily (<i>Nymphaea alba</i> L.).</li> </ol>
2017-18	<ol style="list-style-type: none"> <li>1. Evaluation of Genetic Variability and Varietal Performance of Standard Chrysanthemum (<i>Chrysanthemum morifolium</i> Ramat.) Under Ecological Condition of Sub-Humid Zone of Rajasthan</li> <li>2. Effect of different Chemicals on Vase Life of Gladiolus Varieties (<i>Gladiolus hybridus</i> Hort.)</li> </ol>
2018-19	<ol style="list-style-type: none"> <li>1. Studies on Genetic variability in Gaillardia (<i>Gaillardia pulchella</i> Foug.).</li> <li>2. Effect of Integrated Nutrient Management on Growth, Yield and corm production of Gladiolus (<i>Gladiolus hybridus</i> Hort.) cv. American Beauty.</li> <li>3. Evaluation of genetic Variability and varietal performance of Tuberose (<i>Polianthes tuberosa</i> L.) under Jhalawar condition.</li> <li>4. Effect of Nitrogen and phosphorus on growth, flowering and yield of Gaillardia (<i>Gaillardia pulchella</i> Foug.) cv. Local Yellow under Jhalawar condition.</li> <li>5. Studies on drying techniques of Palash (<i>Butea monosperma</i> Lam.) and Semal (<i>Bombax ceiba</i> L.) flowers.</li> </ol>
2019-20	<ol style="list-style-type: none"> <li>1. Effect of panchgavya and vermishwash on vegetative growth, yield and quality of Gladiolus (<i>Gladiolus hybridus</i> Hort.) cv. Gunjan.</li> <li>2. Effect of Jasmonic acid on French Marigold (<i>Tagetes patula</i> L.) var. Pusa</li> </ol>

	Arpita.
2020-21	<ol style="list-style-type: none"> <li>1. Effect of Panchagavya on growth, flowering and yield of French marigold (<i>Tagetes patula</i>) variety Pusa Arpita.</li> <li>2. Varietal performance of marigold (<i>Tagetes</i> spp.) under Jhalawar conditions.</li> <li>3. Efficacy of bio-control agent on growth, flowering and disease management in chrysanthemum (<i>Dendranthema grandiflora</i> Tzvelev) cv. Marigold.</li> <li>4. Evaluation of Genetic variability and varietal performance of chrysanthemum (<i>Dendranthema grandiflora</i> Tzvelev) under Jhalawar condition.</li> </ol>

#### 6.4.7 Feedback of Stakeholders (Students, Parents, Industries, Employers, Farmers etc.)

Sl. No.	Name	Stakeholder	Important remarks/feed back
1.	Sushma Patil	Student	I want to say thank you for your heartwarming advice, your words made a huge impact in my life and I am so glad that I got such good counselor. Even I gained more practical knowledge from the Deptt. and there were many collections of ornamental and potted plants.
2.	Kavita	Student	Good guidelines were given during the course of study along with demonstration and use of recent technologies for conduction of research.
3.	Apoorva Guddaraddi	Student	It was my pleasure to a part of Department of Floriculture and Landscaping, which made me to seek knowledge much more than syllabus oriented. Special thanks to my guide who help me lot in each and every aspects, Even the college's large infra, facilities led me to move out easily in every circumference. .
4.	Sunil Kumar Solanki	Student	Deptt. of Floriculture and Landscaping at CHF is best all the departments which provides knowledge more than syllabus. College large infrastructure helps us in every circumstance. It was a great pleasure to me having a part of deptt. of FLS at CHF, Jhalawar
5	Mr. Shanamukhagauda and Mrs. Vijaya	Parent	My daughter gained more knowledge from you sir, even your friendly nature with us given a confident for us and well caring and well behaved sir. I feel so gratitude for you sir, I

			always thankful for you department.
6.	Atul Jhala	Agripreneur	It was always been education and inspiring visit before entering the college building with the lovely colours of beautiful flower patches. Hopefully in coming time Jhalawar would be the floriculture hub. Good luck to you all as the mentors of local farmers.

#### 6.4.8. Student Intake and Attrition in the Programme for last five years

Year	Intake Capacity	Admitted	Attrition	Attrition (%)
2016-17	05	05	01	20.0
2017-18	05	05	02	40.0
2018-19	03	03	-	-
2019-20	03	02	-	-
2020-21	03	Admission in progress		

#### 6.4.9 ICT application and curricula delivery

The College is having the following ICT based facilities to meet the current requirement of the students regarding the curricula delivery:

##### (A) Common ICT facility:

- Technology-enhanced learning Smart class room facility is available in three classrooms that enhances the quality of teaching and learning which is integrated with the digital displays, computer, whiteboards, assistive listening devices, and other audio/visual components that make lectures easier, engaging, and more interactive.
- Uninterrupted high speed internet connectivity with wi-fi facility is available in the college as well as hostels for providing easy access to online resources on the internet which enhances the exposure of students on different topics and also specifically to students involved in research that can help in research.
- Two separate seminar halls are equipped with LCD projectors, smart podium, interactive white boards or smart boards, Television, which help students to learn their lessons in a smart approach ensures enhanced interactive Learning Experience that has increased productivity.
- College is having computer lab with good quality internet connected 26 computers and peripherals to offer students with quality education by helping them to understand

concepts better, improve their reading and comprehension skills, and achieve academic excellence.

### **(B) Academic Management System**

Academic Management System has been implemented in the college under NAHEP Component-II by Division of Computer Applications, IASRI, Pusa, New Delhi. This system automates various academic processes of the university and enhances the efficiency of the system by saving time and efforts involved in manual processes. The system has following sub modules:

- Courses Management
- Student Management
- Faculty Management
- Administration Management
- E-Learning
- Online fee collection

### **(C) Online Teaching & Examination**

- Live online lectures through live video classes through (ZOOM, MS Team, Google Meet, etc.)
- Notes and other file sharing through Google classrooms, WhatsApp, Internet
- Online discussion forums for students were conducted through (ZOOM, MS Team, Google Meet, etc.)
- E-courses from ICAR and other sources are put on website for students and teachers.
- Organization of meeting, seminar, meeting of courses committee through MS team.

However, there is urgent need of separate library building enabled with ICT facilities and equipped electronic gadget for faculty and students to access information floating worldwide in the field of Horticulture & Forestry. It will foster specially the faculty in best curricula delivery and also the student grasping the subject matter delivered by faculty.

### **Departmental Activities**

Apart from the academic curricula the students are also exposed to different research and training programmes organized by the Department for upliftment of the subject knowledge of the students.

- Department has introduced the new commercial varieties of gladiolus and cut chrysanthemum crop first time in this area for commercial cultivation.
- Department has good collection of germplasms of chrysanthemum, Gladiolus, Tuberose, Desi rose, Heliconia, Marigold and ornamental plants like trees, shrubs, indoor plants, cactus & succulents, annuals, hedge / edge plants for the identification of students etc.

- The Department has published 35 research papers, 01 book chapters and 01 Manual towards literary support to Horticulture in broader perspective.
- The Faculty of the Department has delivered several lectures during workshop and trainings to make the farmers, flower growers and students gain more practical knowledge of the subject.
- During five years, 17 students have successfully completed their course work and doing job in government Department and private sector.

**Number of students qualified NET and SRF examination in the Department**

S. No	Year	No of NET qualified students	No of SRF qualified students	
1.	2016	1	-	-
2.	2017	2	1	7 <sup>th</sup> Rank
3.	2018	1	2	1 <sup>st</sup> and 2 <sup>nd</sup> Rank
4.	2019	2	2	3 <sup>rd</sup> and 9 <sup>th</sup> Rank
5.	2020	-	1	23 <sup>rd</sup> Rank
	<b>TOTAL</b>	<b>6</b>	<b>6</b>	





### **Field Activities**

#### **Certificate**

I, the Dean, College of Horticulture & Forestry, Jhalawar hereby certify that the information contained in the Section 6.4.1 to 6.4.9 is furnished as per the records available in the College and Degree awarding University.

Place : Jhalawar, Rajasthan

Date :

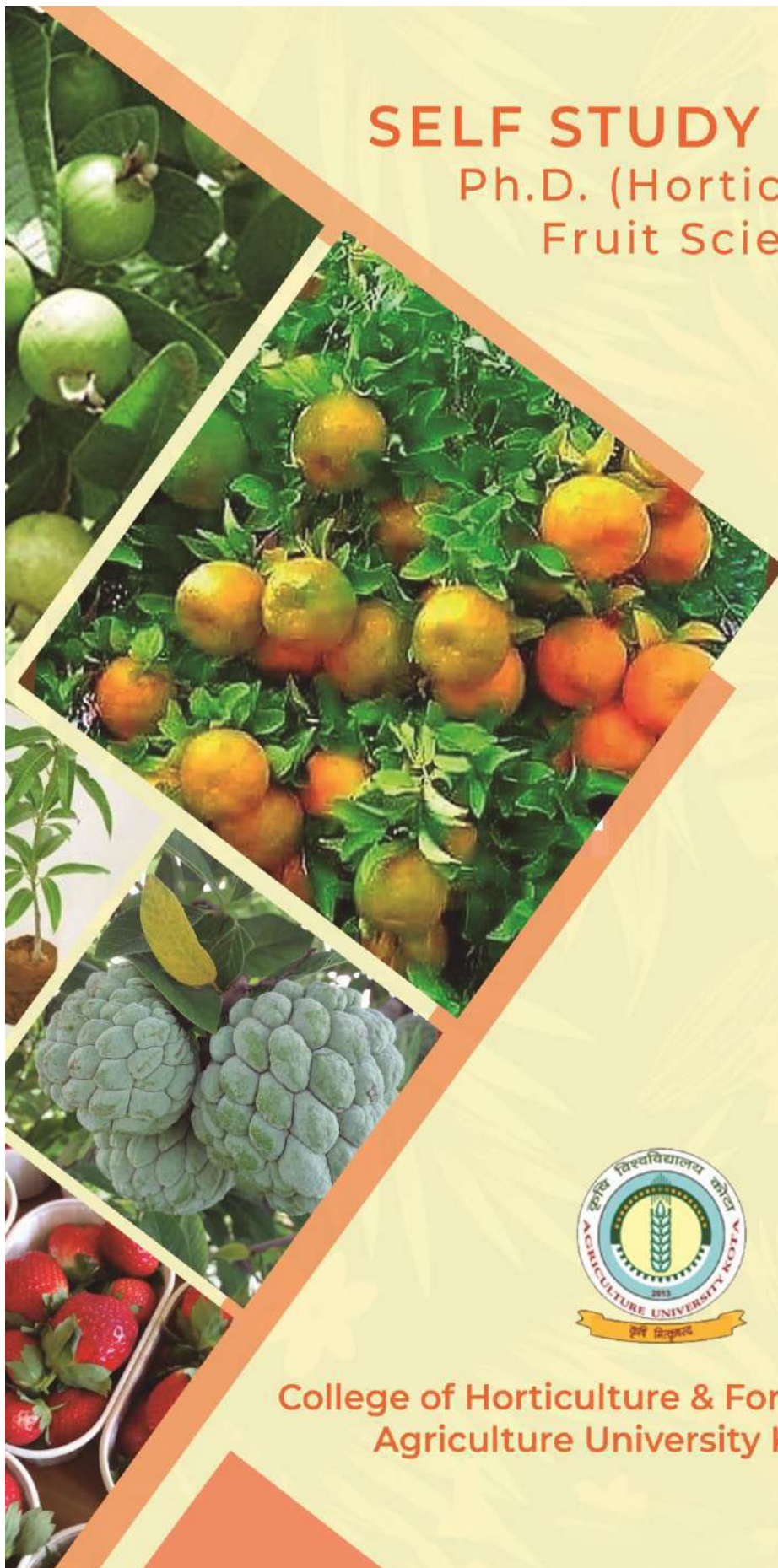


(I.B. Maurya)

**Dean**  
**College of Horticulture and Forestry**  
**(Agriculture University, Kota)**  
**Jhairapatan, JWR 326023 (Rajasthan)**

# SELF STUDY REPORT

Ph.D. (Horticulture)  
Fruit Science



College of Horticulture & Forestry, Jhalawar  
Agriculture University Kota (Raj.)



### **6.4.1 Brief History of the Degree Programme**

The Department started Ph.D. programme during 2017-18. It was started with annual intake capacity of 03 students. The courses have been outlined to provide students insight into basic and strategic research on various aspects of fruit production. The students get analytical ability to work upon various themes towards improvement of production, productivity and quality of fruit production. First batch of 03 students have successfully completed the course and secured job in various organizations.

### **Objectives of the Department**

- To develop competent human resources specialized in the subject of fruit Science
- To conduct need based strategic and applied research

**Nomenclature of the Degree programme** : Ph.D. (Horticulture) Fruit Science

**Duration of the Degree programme** : 03 Years (06 Semesters)

**Admission Process** : The admission to Ph.D. (Horticulture) Fruit Science is made through the competitive State level Joint Entrance Test (JET)/ Pre-PG Test conducted by SAUs on rotation basis.

### **Requirements for Degree Programme :**

A student admitted to a Ph.D. programme shall have to successfully complete the following before award of a degree:

- An approved programme of study prepared by his/her advisory committee
- A comprehensive or preliminary examination
- Synopsis seminar and approval of synopsis
- Pre-thesis seminar
- Submission of thesis and its evaluation report
- Thesis viva-voce examination
- Minimum residential requirement- four semesters
- Minimum OGPA requirement – 6.5 out of 10 point scale

A student of Ph.D. programme is required to complete courses of a minimum of 75 credit hours for the degree. The distribution of courses for Ph.D. programme is as under:

Title	Approved course load
Major courses	: 15 Credit hours (including 06 credit hours as core courses)
Minor and Supporting courses	: 13 Credit hours
Seminar	: 02 Credit hour
Comprehensive	: Non credit hour
Research	: 45 Credit hours
Non credit e-courses	: 06

**Distribution of courses for Ph.D. Horticulture (Fruit Science)**

Course Description	Course No.	Title of Course	Credit Hrs.
Major Courses (Any three courses to opt except marked ones)	FRS-611*	Advances in Production of Fruit Crops	3(2+1)
	FRS- 612*	Advances in Breeding of Fruit Crops	3(2+1)
	FRS- 613	Advances in Nutrition of Fruit Crops	3(2+1)
	FRS- 614	Genomics And Bioinformatics In Horticulture	3(2+1)
	FRS-621	Advances in Growth Regulation of Fruit Crops	3(2+1)
	FRS-622	Biotic and Abiotic Stress Management in Fruit Crops	3(2+1)
	FRS-623	Systematics of Fruit Crops	3(2+1)
	FRS-624	Advances in Propagation of Fruit Crops	3(2+1)
Minor and Supporting Courses (Any five courses to opt)	VEG-521	Production Technology of Cool Season Vegetable Crops	3(2+1)
	VEG-522	Production Technologies of Spice Crops	3(2+1)
	PHT-521	Post Harvest Micro Biology of Horticultural Produce	3(2+1)
	FORT-524	Medicinal and Aromatic Plants	3(2+1)
	STAT-622	Design of Experiments -II	3(2+1)
	FORT-531	Agroforestry Systems and Practices	3(2+1)
	FORT-532	Watershed Management	3 (2+1)
	FORT-536	Remote sensing and geographic information system	3(2+1)
	PHY-531	Growth and Development of Horticultural Crops	3(2+1)
	PHT-521	Analytical Techniques for Fresh and Processed Horticultural Produce	3(2+1)
	PHT-531	Processing and Preservation of Horticultural Crops	3(2+1)

	VEG-531	Seed production technology of vegetable crops	3(2+1)
	FLS-535	Protected Floriculture	3(2+1)
Non-Credit e-courses (Compulsory to opt part or all, if not studied in PG programme)	PGS-501	Library and Information Services	NC
	PGS-502	Technical Writing and Communication Skills	NC
	PGS-503	Intellectual Property and its Management in Agriculture	NC
	PGS-504	Basic concepts in laboratory techniques	NC
	PGS-505	Agricultural research, research ethics and rural development programmes	NC
	PGS-506	Disaster management	NC
	FRS-641	Comprehensive/Preliminary Examination	NC
	FRS-691	Seminar ( Two each of 1 credit point)	02
	FRS-699	Research	45
<b>Grand Total</b>			<b>75</b>

\*Core courses

### Accreditation of the Degree Programme

The Degree programme commenced during 2017-18 and offered for accreditation by National Agriculture Education Accreditation Board, ICAR, New Delhi.

Degree Programme	Name of the Degree Programme for accreditation	Duration
Ph.D.	Ph.D. (Horticulture) Fruit Science	03 Years

### Year wise admission to Ph.D. (Horticulture) Fruit Science for last five years

Year of Admission	Admitted			Dropped			Passed		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
2017-18	2	1	3	-	-	-	2	1	3
2018-19	2	1	3	-	-	-	-	-	-
2019-20	2	-	2	-	-	-	-	-	-
2020-21	Admission process is in progress								
<b>TOTAL</b>	6	2	<b>8</b>	-	-	-	2	1	3

Note: Ph.D. programme started from 2017-18

### Award/ Scholarships

Name of Scholarship	Amount of Scholarship (Rs.)	2017-18			2018-19			2019-20		
		M	F	Total	M	F	Total	M	F	Total
Samaj Kalyan Vihbhag Scholarship	10000-15000/- Per year	01	--	01	--	01	01	02	02	04
Agriculture Girls Scholarship	15000/- Per year	--	01	01	--	02	02	--	02	02
NTS Scholarship	5000/- Per month	---	---	---	---	---	---	---	--	---
JRF (PG) Scholarship	12640/- Per month	---	---	---	---	---	---	---	--	---
National Fellowship & Scholarship for Higher Studies of ST Student	28000/- Per month	---	---	---	---	---	---	--	01	01
<b>Total</b>		<b>01</b>	<b>01</b>	<b>02</b>	<b>---</b>	<b>03</b>	<b>03</b>	<b>02</b>	<b>05</b>	<b>07</b>

### 6.4.2 Faculty Strength

S. No	Faculty	Sanctioned	Faculty in place	Vacant position*	Faculty recommended by ICAR
1	Professor	1	2	-	1
2	Associate Professor	2	-	1	2
3	Assistant Professor	4	2	2	3
	Total	7	4	3	6

\*Recruitment on vacant positions is in process

### PG recognized faculty for teaching/guiding Ph.D (Horticulture) Fruit Science

S. No	Name of Faculty	Designation	Teaching/Guiding
1.	Dr. Jitendra Singh	Professor & Head	Teaching & Guiding
2.	Dr. Virendra Singh	Professor	Teaching & Guiding
3.	Dr. Prerak Bhatnagar	Assistant Professor	Teaching & Guiding
4.	Dr. L.K. Dashora	Professor Emeritus	Teaching & Guiding
5.	Dr. I. B. Maurya	Professor & Head	Teaching
6.	Dr. S.K. Jain	Professor & Head	Teaching
6.	Dr. Ashutosh Mishra	Professor & Head	Teaching
7.	Dr. Kavita Arvindakshan	Assistant Professor	Teaching

### 6.4.3 Technical and Supporting Staff

Sl.No.	Designation	Sanctioned Strength	Filled	Vacant
1.	Assistant Librarian	01	-	01
2.	Assistant Registrar	01	-	01
3.	Section Officer	02	01*	01
4.	Technical Assistant/Farm Manager	03	02	01
5.	Lab Technician	01	-	01
6.	PA	01	01*	-
7.	Steno	01	01*	-
8.	U.D.C.	02	-	02
9.	Lab Assistant	06	05	01
10.	L.D.C.	03	03*	-
11.	Library Assistant	01	01	-
12.	Driver	02	01+01*	-
13.	Matron	01	01	-
14.	Care Taker	02	02*	-
15.	Agriculture Supervisor	04	03	01
16.	Store Keeper	01	-	01
17.	Forest Guard	02	02	-
18.	Gardener	02	02*	-
19.	Shelf Assistant	01	01*	-
20.	Lab Attendant	01	-	01
21.	Class IV	05	05*	-
	<b>Total</b>	<b>43</b>	<b>32</b>	<b>11</b>

\*Contractual. However, recruitment on vacant posts is in process.

**Note:** The College has 43 sanctioned posts of technical and supporting staff for conducting skill demonstration and field experiments during practical classes, laboratory analysis and for assisting field work, field visits and training programme of various departments.

### 6.4.4 Classrooms and Laboratories:

Fruit Science department has independent laboratory where practicals and research work are conducted. Classes are arranged in the class room allotted for Ph.D. classes in college building. Some of the research work/ practicals are also conducted at institutional farm and protected cultivation structures available in the College. The detail of the facility is as under:

S. No.	Classroom/Laboratory	Area	Seating capacity	Other facilities (LED, Projectors, Computers, Smart board etc.)
1.	Classroom	1076 sq ft	60	Projector
2.	Fruit Science Laboratory **	885 sq ft	25	Well equipped as per requirement
3.	Seminar Hall*	885 sq ft	50	LED, Projectors, Computers
4.	Training Hall	9257 sq ft	60	LED, Projector, Computer
5.	Instructional Farm	12 ha	-	Well equipped with farm implements, fertigation facility
6.	Protected Cultivation Structures	2612 sq m	03	Shade net and Polyhouse are used for growing of mother fruit plants
7.	Nursery	1812 sq ft	01	For growing of saplings of different fruit plants

\*Common Seminar hall for all PG Departments

\*\* Laboratories of other Departments/ Central laboratory are also used for practicals/ research work.

### Major equipments for conduct of practical classes

S. No.	Name of the equipment	Quantity
1.	Photosynthesis system	1
2.	Hot air oven	1
3.	Willey grinder	1
4.	Abbe refractometer	1
5.	Digital hand refractometer	1
6.	Digital vernier calipers	4
7.	Vapour pressure osmometer	1
8.	Leaf area meter	1
9.	LAI meter	1
10.	Probe soil thermometer	1
11.	Microscope	3
12.	Water potential system	1
13.	Open pan evaporimeter	1
14.	Spectrophotometer	1

Note: The detail list of the equipments of the Department is appended in Annexure-I

### Farm Facilities

College has total spread of 120.00 hectares area. of the total, 12 hectares area is under Instructional Farm for the department of Fruit Science. The instructional farm is well equipped with drip irrigation and fertigation facilities. It has plantation of different fruit crops.



**Detail of fruit plants planted at the Instructional Farm**

S. No.	Name of fruit plants	Spacing (m)	Area (ha)	No.	Variety	Year of planting
2.	Mandarin	6 x 6	2.87	800	Nagpur Mandarin	2006
2.	Lime	6 x 6	0.71	200	Kagzi lime	2006
3.	Sweet orange	6 x 6	1.03	289	Mosambi	2017
4.	Kinnow	6 x 6	0.14		Kinnow	2008
5.	Guava	6 x 6	1.69	472	Sardar Allahabad Safeda	2010, 2018
6.	Custard apple	5 x 5	0.60	240	Arka Sahan, Balanagar	2010
7.	Tamarind	8 x 8	0.89	140	PKM-1, Pratishtan, Urigam, Red Tamarind, Goma Prateek	2010
8.	Bael	8 x 8	0.76	120	NB-5, NB-7, NB-9, NB-14, NB-16, CISH B-1, CISH B-2	2012
9.	Pomegranate	5 x 5	0.15	60	Bhagwa	2017
10.	Lasoda	8 x 8	0.12	36	Genotypes	2012
11.	Jamun	6 x 6	0.71	198	Goma Priyanka	2017
12.	Khirni	6 x 6	0.17	50	Thar Rituraj	2018
13.	Mango	8 x 8	0.19	30	Dashehari	2017

**Protected Cultivation Structures**

S. No	Particulars	No.	Area (m <sup>2</sup> )	Details
1.	Shade net house	01	1872	Used for growing and maintaining plants of mandarin, musambi, guava, mango, bamboo, teak, rough lemon etc
2.	Poly house	01	250	Is used for nursery activities particularly during winter season when outside temperature doesn't permit growing of plants
3.	Insect proof net house	01	500	It finds uses for maintaining mother plants free from insect transmissible diseases.
4.	Training hall (Farmers Hostel)	1	880	Used for various training/workshop/seminar/symposia etc.

## Nursery

There is a functional nursery with the department. The nursery produces fruit plants of asexual origin of guava, mandarin, mosambi and acid lime. The seedling plants of papaya, khirni, jamun, custard apple, tamarind, rough lemon, lasoda etc. are also grown in the nursery. The mother block area spread over 10.0 ha. provides propagule to prepare elite planting material of different fruit crops. During last five years more than 1.0 lac sixty thousand plants have been raised at the nursery.



**All India Coordinated Research Project on Arid Zone Fruits:** The AICRP on AZF is operationalised at the Department. The centre is continually working on mandate crops such as Custard apple, Tamarind, Lasoda, Bael and Pomegranate.



Glimpses of collected elite germplasms



The centre maintains germplasm of custard apple, tamarind and lasoda crops and in all around 75 germplasms is getting maintained at the centre.



Different arid fruit orchards under AICRP on AZF

**Across mandate crops, the major experiments assigned to the centre are as under:**

- AH. 1.1 Germplasm Survey and Collection of Lasoda, Tamarind and Custard apple
- AH. 1.2 Evaluation of Germplasm of Lasoda, Tamarind and Custard apple
- AH. 1.3 Varietal Evaluation Trial of Bael, Custard apple and Tamarind

AH. 4.2	Integrated Nutrient Management in Custard apple cv. Arka Sahan
AH. 5.1	Rootstock Trial in Arid Fruit Crops
AH. 10.1	Survey and Surveillance of Key Diseases of Arid Zone Fruits
AH. 10.3	Screening of Germplasm of Arid Zone Fruit for Resistance Against Different Diseases
AH 10.13	Identification of Different Micro-organism Causing Post-Harvest Fruit Rots
AH 10.37	Management of Leaf Spot of Lasoda High density planting in custard apple cv. Phule Janki  Studies on enhancement of shelf life in custard apple cv. Balanagar

**Some salient findings of the project during last five years are as under**

- Collection of 3 elite germplasm each of custard apple, lasoda and tamarind
- Identification and collection of 4 superior genotypes of custard apple, 2 of tamarind and 3 of lasoda
- Identification of 2 elite genotypes for each lasoda and tamarind.

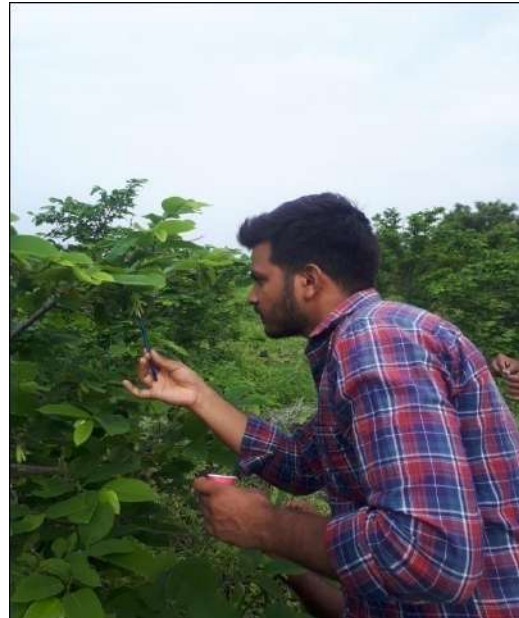
**6.4.5 Conduct of Practical and Hands on Training**

Every course has practical content as its counterpart. The students are exposed to practical aspects on regular basis suiting to a particular course. To impart practical skill there is full fledged instructional farm over which there is sufficient plantation of mandarin, lime, sweet oranges, guava, jamun, khirni, custard apple, tamarind, lasoda, bael, pomegranate, mango etc. The farm has the facility of drip irrigation and fertigation which are invariably used for practical orientation of students.

**Average Number of Students in Theory and Practical Classes**

Total intake in Ph.D. programme is 3. The attendance of student remains cent per cent in theory as well as in practical classes.

S. No.	Name of the Department	Theory Batch	Practical Batch	Number of students/batch
1.	Fruit Science	1	1	3



**Practical exposure to the students**

#### **6.4.6 Supervision of Students in Ph.D**

Every student shall have Advisory Committee with a Major Advisor and at least four members among whom one is more from major field of specialization, two members shall be from the minor field of study and one is nominated by Director Education. Programme of Research is proposed by the Advisory Committee and approved by the Dean and finally approved by the Director Education. The research is carried out by the student under the supervision of Advisory Committee. Research work is accomplished by students on the aspect under thematic area as approved by the Research Council of the university.

**No. of PG recognized guides and teacher: student ratio of the department**

S. No.	Year	No. of Ph.D. recognized guides	Intake of students Ph.D.	Total (Ph.D. students)	Teacher: Student ratio
1.	2017-18	5	3	3	1:0.6
2.	2018-19	4	3	3	1:0.75
3.	2019-20	4	3	3	1:0.75
4.	2020-21	4	Admission in process		

Note: Ph.D. Prog. Started in 2017-18

**Title of theses submitted during last five years**

Year	Theses Title
2020-21	<ul style="list-style-type: none"> <li>Effect of water volumes and mulches on growth and development of sweet orange (<i>Citrus sinensis</i> Osbeck) cv. Mosambi</li> <li>Effect of plant growth regulators and fertigation on growth yield and quality of pomegranate (<i>Punica granatum</i> L.) cv. Bhagwa under high density planting system</li> <li>Effect of <i>Azospirillum</i> and Vermicompost on growth, yield and fruit quality of custard apple cvs. "Balanagar and Raydurg</li> </ul>

**6.4.7 Feedback of Stakeholders (Students, Parents, Industries, Employers, Farmers etc.)**

S.No.	Name	Stakeholders	Important remarks/feedback
1.	Ms. Kalpana Choudhary	Student	The teaching facility is good. There is adequate farm for trial purpose.
2.	Mr. Yogendra Singh	Student	All staff members at the college are very much cooperative. They supported me in completion of the degree.
3.	Sh. Chhaju Ram Choudhary	Parent	I found the environment at the College better for student. My ward felt happy while studying at the college
5.	Sh. Hukam Chand Patidar	Farmer	The college supports farmers in horticultural activities. They organize seminar, field visit and consider farmer for their development.
6.	Sh. Vishnu Mewara	Farmers	The department staff is very much farmers friendly. They support the farmer in accomplishing horticultural activities.

#### 6.4.8 Student Intake and Attrition in the Programme for last five years

Year	Sanctioned seats	Actual intake	Attrition	% Attrition
2017-18	03	03	-	-
2018-19	03	03	-	-
2019-20	3	02	-	-
2020-21	03	Admission in process		

#### 6.4.9 ICT Application and Curricula Delivery

The College is having the following ICT based facilities to meet the current requirement of the students regarding the curricula delivery:

##### (A) Common ICT facility:

- Technology-enhanced learning Smart class room facility is available in three classrooms that enhances the quality of teaching and learning which is integrated with the digital displays, computer, whiteboards, assistive listening devices, and other audio/visual components that make lectures easier, engaging, and more interactive.
- Uninterrupted high speed internet connectivity with wi-fi facility is available in the college as well as hostels for providing easy access to online resources on the internet which enhances the exposure of students on different topics and also specifically to students involved in research that can help in research.
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- Student Management
- Faculty Management

- Administration Management
- E-Learning
- Online fee collection

### **(C) Online Teaching & Examination**

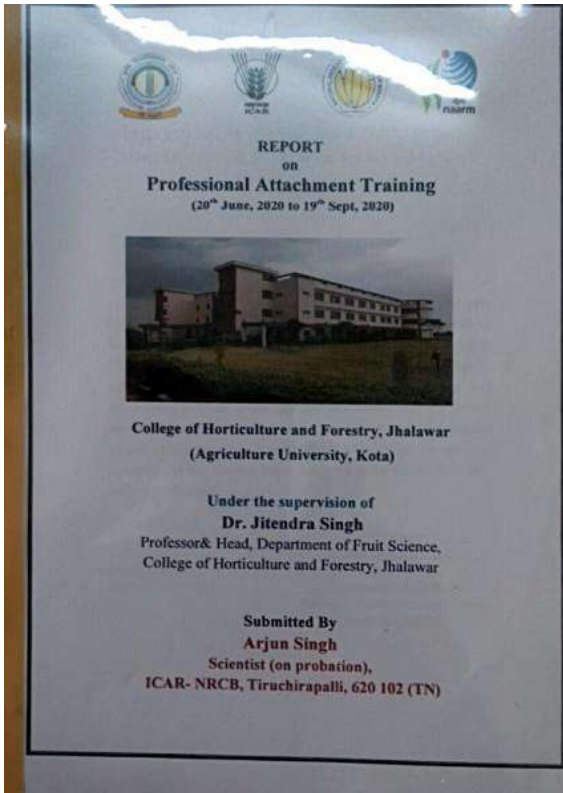
- Live online lectures through live video classes through (ZOOM, MS Team, Google Meet, etc.)
- Notes and other file sharing through Google classrooms, WhatsApp, Internet
- Online discussion forums for students were conducted through (ZOOM, MS Team, Google Meet, etc.)
- E-courses from ICAR and other sources are put on website for students and teachers.
- Organization of meeting, seminar, meeting of courses committee through MS team.

However, there is urgent need of separate library building enabled with ICT facilities and equipped electronic gadget for faculty and students to access information floating worldwide in the field of Horticulture & Forestry. It will foster specially the faculty in best curricula delivery and also the student grasping the subject matter delivered by faculty.

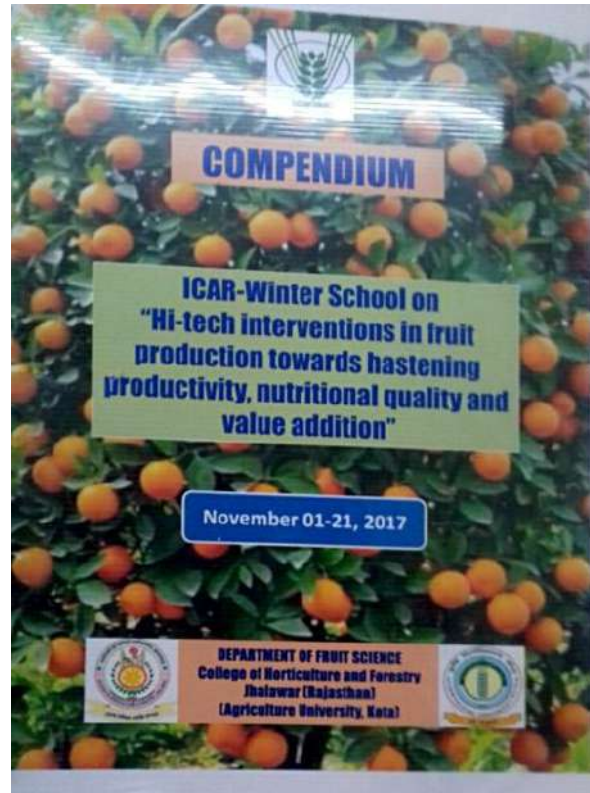
### **Departmental Activities**

Apart from the academic curricula the students are also exposed through other research and training programmes organized by the Department. A brief of the Departmental activities during last five years is appended below:

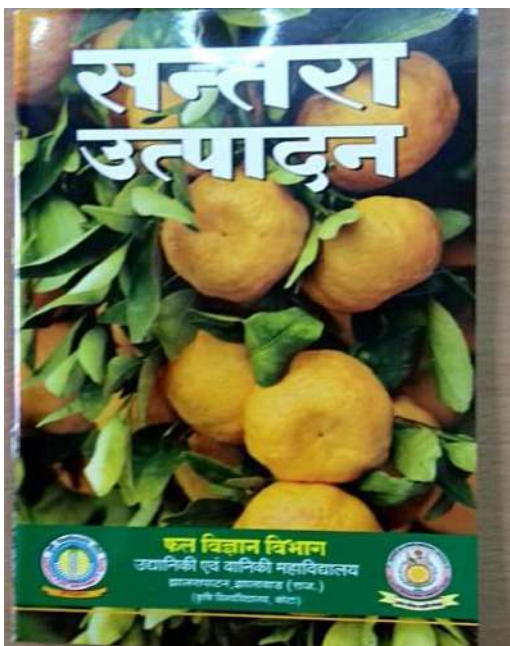
1. The Department operates Centre of All India Co-ordinated Research Project (AICRP) on Arid Zone Fruits. The centre works upon the mandate crops like custard apple, tamarind, lasoda, bael and pomegranate on various aspects like germplasm collection, nutrient management, rootstock, high density planting, diseases and post harvest.
2. Department has introduced the strawberry crop first time in the region.
3. During last five years, the Department has organized one winter school of 21 days duration, one National Webinar, ASCI training on Job Role of Nursery Workers and 12 trainings under TSP.
4. Department has published 59 papers; 02 Bulletins on orange, strawberry; 02 leaflets on guava, strawberry; 02 manuals: 1. Fundamentals of Horticulture and 2. Breeding of Fruits and Plantation Crop during last 5 years.
5. During last five years, 18 students accomplished PG degree and 3 Ph.D. degree.
6. Mr. Arjun Singh, Scientist under training, ICAR-NRC on Banana completed three months training *w.e.f.* 19.06.2020 to 19.09.2020 with the Department.
7. 02 Students got Gold medal and one student Chancellor Gold medal (Rakesh M.) during last 5 years



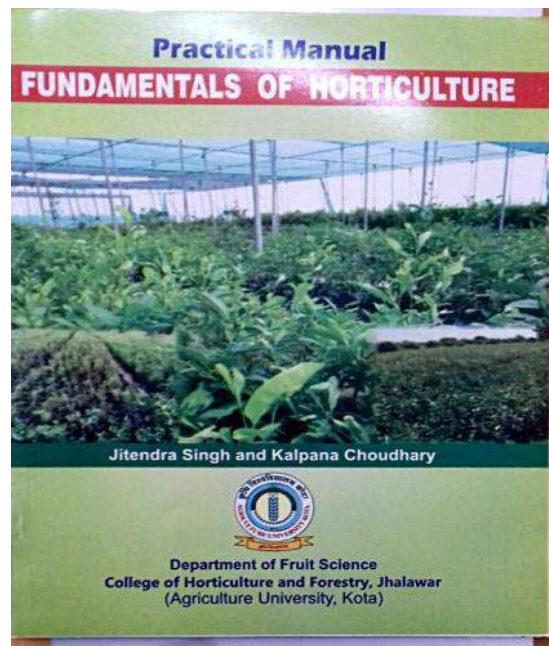
Professional training report submitted by ICAR scientist



Compendium released during ICAR Winter School



Release of farmer friendly literature on Mandarin Production



Development of Practical manual for students



Closing ceremony of Winter School



Participants of ASCI Training on Citrus Fruit Growers organized during Jan.7-21, 2019

**NATIONAL WEBINAR ON FOOD AND IMMUNITY IN FIGHT AGAINST COVID**

COVID-19 is taking heavy toll on the life and survival of mankind. Its effect has not yet remained confined in a particular geographical region rather it has been rampant spreading its firm in almost 216 countries and territories all over the world. Around more than 74 lakh people have been affected with CORONA epidemic. The health workers having been associated with containment invariably speaks of the strength of immunity in fighting against the globally spreading CORONA. It is said that no any vegetable kind is devoid of medicinal substances. The horticulture produce like fruits, vegetables, spices, tubers, pharmaceuticals, medicinal and aromatic crops are the living source of food crop enriched with medicinal value. There is need to boost consumption of such food to really help support the mankind under growing crisis scenario. After all food the vitalizing source of health and wealth of communal organism in routinely activities in life and profession are very rare to provide the society a great filling in fight against corona. It is in this regard it is proposed to organize a webinar on using immunity boosting foods of different horticulture components crops besides way-out to prevent spread of COVID.

**Organising Committee**

**Patron**  
Dr. D. C. Joshi  
Vice-Chancellor,  
AU, Kota

**Chairman**  
Dr. I. B. Maurya  
Dean & PI, NAHEP  
CNF, Jabalpur

**Organising Secretary**  
Dr. Jitendra Singh  
DSW, AU, Kota

**Coordinator**  
Dr. Pradeep Bhatnagar  
Asstt. Professor  
CNF, Jabalpur

**Coordinator**  
Nimal Kumar Meena  
Asstt. Professor  
CNF, Jabalpur

**Eminent Speakers**

**Dr. Renu Mehta**  
Professor  
Deptt. of Food Sci. & Nutrition  
College of Commerce & Appl. Sci. MPUAT, Udaipur

**Dr. M. S. Swarnakar**  
Professor  
Deptt. of Community Medicine,  
S.R.G Hospital, Jabalpur

**Dr. Deepa H. Dvivedi**  
Professor  
Deptt. of Horticulture  
BBAU, Ludhiana

**Participants**  
Students Researchers  
Univ. EVK Scientists  
Gov. Officials & NGO  
Progressive Farmers

**Programme**

10.00 AM	Participants in	-
10.20 AM	Welcome address	Dr. Jitendra Singh
10.25 AM	Opening remarks	Dr. D. C. Joshi
10.30 AM	Health vitalizing foods	Dr. Renu Mehta
11.30 AM	Prevention of COVID spreading in community	Dr. M.S. Swarnakar
12.30 PM	Horticulture for immunity boosting	Dr. Deepa H. Dvivedi
01.30 PM	Vote of thanks	Dr. I. B. Maurya

**ZOOM Meeting ID: Coming soon.**  
Date: 17<sup>th</sup> June, 2020 Time: 10.00 AM-1.00 PM  
Directorate of Student's Welfare, AU, Kota in collaboration with NAHEP-KC, College of Horticulture and Forestry, Jabalpur

National webinar on June 17, 2020 on Food and Immunity in Fight Against COVID-19

**Awards and Honours**

S. No.	Year	Name of award	Awarding agency
<b>Dr. Jitendra Singh</b>			
1.	2016-17	Reviewer Excellence award.	Agricultural Research Communication Centre, Karnal
2.	2017-18	Dr. Rajendra Prasad award	ICAR, New Delhi
3.	2019-20	Best teacher award	Indian Society for Horticulture Research and Development, Dehradun, Uttarakhand
<b>Dr. P. Bhatnagar</b>			
1	2016-17	-	
2.	2017-18	Best Teacher Award	Agriculture Technology Development Society, Ghaziabad (UP)
3.	2018-19	National Teaching and Research Excellent	IRDP Group of Journals, Chennai
		Appreciation Certificate	AU, Kota



<b>Sh. Nirmal Kumar Meena</b>			
1.	2016	Best Poster Award	ICPASN, Integral University, Lucknow
2.	2018	Young Scientist Award	University of Allahabad
3.	2019	Young Scientist Award	Ag. & Env. Technology Development Society, U.S. Nagar (UK)
4.	2019	Young Achiever Award	InSc, Bengaluru
5.	2019	Best Article Award	Agriculture & Food Newsletter

### **Certificate**

I, the Dean, College of Horticulture & Forestry, Jhalawar hereby certify that the information contained in the Section 6.4.1 to 6.4.9 is furnished as per the records available in the College and Degree Awarding University.

Place : Jhalawar, Rajasthan

Date :



(I.B. Maurya)

**Dean**  
**College of Horticulture and Forestry**  
**(Agriculture University, Kota)**  
**Jhalrapatan, JWR 326023 (Rajasthan)**

## ANNEXURE-I

The detail lists of equipments /instruments/ machineries available in the laboratory of different departments are as under:

### 1. Fruit Science Lab

S. No.	Name	Quantity
1.	Electronic balance capacity 10 kg	01
2.	Electronic balance capacity 2 kg	01
3.	Precision weighing balance capacity Sartorius 200g	01
4.	Photosynthesis system	01
5.	Hot air oven	01
6.	Willey grinder	01
7.	Rotary flask shaker	01
8.	Abbe refractometer	01
9.	Hand refractometer ERMA-0-18 %	02
10.	Hand refractometer ERMA-0-55%	02
11.	Digital hand refractometer	01
12.	Digital vernier calipers	04
13.	Vapour pressure osmometer	01
14.	Thermohygrometer	02
15.	Single distillation Unit	01
16.	Leaf area meter	01
17.	Elico digital pH meter	02
18.	Probe soil thermometer	01
19.	Microscope	03
20.	Digital Hot plate with temp controller	01
21.	Water potential system	01
22.	Open pan evaporimeter	01
23.	Spectrophotometer	01
24.	Fruit penetrometer	01
25.	Mercury soil thermometer	06

### 2. Vegetable Science Lab

S. No.	Name of the equipment	Quantity
1.	Spring balance capacity 20 kg	01
2.	Top pan balance capacity 10 kg	01
3.	Seed purity board	01
4.	Multiple exhibit panel for outdoor use	01
5.	Dual purpose (half exhibit –half white )display panel	01
6.	Hand refractometer ERMA-0-18 %	01
7.	Hand refractometer ERMA-0-55%	01
8.	Digital Vernier caliper	01
9.	Elico microprocessor scanning visible spectrophotometer SL-	02

	177	
10.	All Quartz Double Distillation with auto cut off JSGW 1.5L/h	01
11.	Kjeldal digestion unit(JSGW) With individual energy regulator	01
12.	Elico digital Ph meter Model L1-127	01
13.	Digital electronic balance Sartorius model BT-2245	01
14.	Conductivity meter pen type	01
15.	Microscope	05
16.	Digital Hot Plate with temp controller	01
17.	Laboratory oven system	01
18.	Centrifuge and accessories	02
19.	Exhibit panel for indoor use Research scholar	04
20.	Vortex	01
21.	Digital Screw Gauge	01
22.	Computer UPS	02
23.	Laptop (note book HP probook 40000 s series )	01
24.	Precision Laboratory balance 300g	01
25.	pH meter pocket type ERMA	01
26.	Digital Pocket balance	01
27.	Digital balance	01

### 3. Floriculture and Landscape Architecture Lab

S. No.	Name of equipments	Quantity
1.	Hot air oven	01
2.	Exhibition panel	07
3.	Water distillation unit	01
4.	Digital balance	01
5.	Vernier caliper	01
6.	pH meter	01
7.	Lawn mower	02
8.	Secateurs	41
9.	Pruning shear	01
10.	Bonsai kit	01
11.	Budding and grafting knife	67
12.	Microwave oven	01
13.	Digital camera	01
14.	Hedge shear	03
15.	Microscope	01
16.	Hand weeder	66
17.	Khurpi	42
18.	Sprinkler	09

19.	Wrench	01
20.	Brush cutter	03
21.	Digital thermohygrometer	01
22.	Hedge trimmer	01
23.	Refrigerator	01
24.	Grass sword	02
25.	Garden hoe	02
26.	Rack	01
27.	Cultivator	02
28.	Looping shear	01

#### 4. Post Harvest Technology Lab

S. No.	Name of equipments	Quantity
1.	Balance Cap.10 kg	01
2.	Bottle filling machine	01
3.	Blancher	01
4.	Bottle Opener	02
5.	Boiler (Thermotech)	01
6.	Bottle sterilization tank	01
7.	Canning pressure cooker retort	01
8.	Crown corking machine	01
9.	Can reforming machine	01
10.	Compound microscope trinocular	01
11.	Counting chamber	01
12.	Cork borer	01
13.	Double seaming machine	01
14.	Dicing and cubing machine	01
15.	Uv Spectrophotometer	01
16.	Digital hand refractometer	01
17.	Exhaust box with 10ft coveyor	01
18.	Electric kettle	01
19.	Electronic colony counter	01
20.	Electric hand blander	01
21.	Electric citrus juicer	01
22.	Fruit halving machine (Basil)	01
23.	Gas stove	01
24.	Gas cylinder 14.5 + commercial	04
25.	Heating mantle	01
26.	Hot plate	01
27.	Hydraulic juice press	01
28.	Inert atmosphere can filler	01
29.	Juice filtering equipment	01
30.	Knife cutting	06
31.	Knife peeling	06
32.	Lid embossing machine	01
33.	Lime juicer (manual)	06

34.	Laminar air flow horizontal	01
35.	Magnetic stirrer with hot plate	01
36.	Vegetable cutting machine	01
37.	Micro processor based solar dryer	01
38.	Mortar pestle	02
39.	Onion peeling machine	01
40.	O <sub>2</sub> CO <sub>2</sub> analyzer	01
41.	pH meter digital	01
42.	PP Cap sealing machine	01
43.	Pulper with spare sieve	01
44.	Portable digital thermometer	01
45.	Microwave oven	01
46.	PAN Stainless steel	02
47.	Pocket refractometer Erma 0-32	01
48.	Pair of ocular micrometer	01
49.	Pocket refractometer 28-62	01
50.	Pocket refractometer 58-92	01
51.	pH meter portable	01
52.	Plastic bag sealing machine	01
53.	Rotary shaker	01
54.	Rotational viscometer	01
55.	Rubber cork	36
56.	Screw type juice extractor	01
57.	Storage and mixing tank	01
58.	Steamed jacketed cooling kettle	01
59.	Swan neck tap	02
60.	Slide box 100 slides	02
61.	Steam pipeline with overhead water tank	01
62.	Spatula stainless steel	05
63.	Thermo hygrometer digital	01
64.	Tin sterilizer	01
65.	Vortex shaker	01
66.	Vacuum packaging machine	01
67.	Vegetable washer	01
68.	Voltage stabilizer	01
69.	Vernier caliper digital	01
70.	Water bath	01
71.	Working table	02
72.	Working trays	10
73.	wine testing kit	01

### 5. Silviculture and Agroforestry Lab

S. No.	Name of equipments	Quantity
1.	pH meters	01
2.	Digital balance	02
3.	Refrigerator	02
4.	Spade	90
5.	Hot air oven	01
6.	Computer for remote sensing and GIS with Erdas imagine professional & Arc GIS	01
7.	GPS	02
8.	Secateurs	70
9.	Khurpi	58
10.	Kudali with Wooden Handle	55
11.	Sickle with handle	52
12.	Pick axe	50
13.	Acrylic label with stand for field	30
14.	Budding and grafting Knife	20
15.	Seed store jars	40
16.	Insect mounting tray	10
17.	Museum specimen Jar 6X4X8	10
18.	Museum specimen Jar 7X4X9	10
19.	Tape ( Measuring)	8
20.	Insect killing bottle	7
21.	Wedge prism	7
22.	Herbarium press for field use 45×30 cm	6
23.	Herbarium press for field use 45×30 cm	5
24.	Dissection set box	5
25.	Insect display & storage showcase 53"×45" 'Rescholar'	5
26.	Camping Tents	4
27.	Field Chair	4
28.	Napsack Sprayer	4
29.	Altimeter Ravi	3
30.	Aluminum Ladder	3
31.	Insect cage	3
32.	Insect collecting net with wooden handle	3
33.	Water can ( Nursery )	3
34.	Aluminum caliper 50cm	2
35.	Binocular 7-30×50 Olympus	2
36.	Exhibition Panel with Stand	2
37.	Field lens	2

38.	Field Umbrella	2
39.	Hedge Shear 14"	2
40.	Herbarium Sheet Cabinet 18X15X3 ( 12 Drawer)	2
41.	Herbarium Sheet Cabinet 18X15X3 ( 6 Drawer)	2
42.	Moss stick	2
43.	Prssler's Increment Borer	2
44.	Seed washing Tub ( big)	2
45.	Seed washing Tub (small)	2
46.	Wooden caliper	2
47.	White Board with Tripod Stand	2
48.	Anemometer Cup counter	1
49.	Bark gauge	1
50.	Branch Cutter	1
51.	Calculator Scientific	1
52.	Canon EOS 350 DSLR	1
53.	Fire Extinguisher - 5 Kg	1
54.	GPS with Barometer	1
55.	Hand pruning saw with wooden handle 16"	1
56.	Handy digital balance	1
57.	L C D projector	1
58.	LCD 4X70 Voice Recorder Sony	1
59.	Muffle Furnace UTS 1.07B	1
60.	pH Meter –Digital	1
61.	PVC Pipe (7.5 m)	1
62.	Seed spread mat (Tripal)	1
63.	Slide projector with built in screen	1
64.	Spiegel Relaskop	1
65.	Thermo-hygrometer clock	1
66.	Tripod simplex- Camera stand	1
67.	Water cane	50
68.	Aluminum labels 8×3 cm thick	1000
69.	Nursery bags with hole (of different sizes)	200 Kg

## 6. Forest Biology and Tree Improvement Lab

S. No.	Name of the equipment	Quantity
1.	Autoclave	1
2.	Battery Operated Sprayer	1
3.	Binoculars	19
4.	Camera Trap	3
5.	Digital Moisture Meter	1
6.	Digital SLR Camera	1
7.	Digital Vernier Caliper	1

8.	Digital Vernier Caliper	1
9.	Electronic balance capacity 100 gm	1
10.	Electronic balance capacity 35 Kg	1
11.	Electronic balance capacity sartorius 60 Kg	1
12.	Flash Light	2
13.	GPS	3
14.	Herbarium Press	1
15.	Hot Air Oven	1
16.	K-yan (Portable Projector)	1
17.	Lux Meter	1
18.	Microscope	1
19.	Seed Counter	1
20.	Seed Germinator	1
21.	Seed Grader	1
22.	Seed Precision Divider	1
23.	Seed Purity Work Board	1
24.	Single distillation Unit	2

### 7. Forest Products and Utilization Lab

S. No.	Name of the equipment	Quantity
1.	Electronic balance capacity 10 kg	3
2.	Hot air oven	1
3.	Hot Plate Rectangular (45x30 cm)	1
4.	Water Bath	1
5.	Portable pH meter	1
6.	Wood Chipper	1
7.	Rotary Pulping Digester	1
8.	Axe	5
9.	Pruning saw	22
10.	Hammer (2P, 4P,5P,8P)	8
11.	Sharpening Tools	6
12.	Measuring Tape -3 metre , 5 metre	4
13.	Spade	29
14.	Wooden Chisel	4
15.	Pit Saw	5
16.	Crow Bar	10
17.	Drill Machine	2
18.	Muffle Furnace	1
19.	Kjeldahl Digestion Unit	1
20.	Magnetic stirrer	1
21.	VDRL Shaker	1
22.	Leica Scanning Microscope	1
23.	Wood Routers	2



24.	Monocular Microscope	3
25.	Wood Microtome	1
26.	Universal Wood Working Machine with circular saw planner	1
27.	Power Chain Saw	1
28.	Grinding mill-walley grinder	1
29.	Wood Moulding and Turning Machine	1
30.	Seed Germinator with optional accessories	1
31.	Crude Fibre Estimation Unit	1
32.	UV VIS Spectrophotometer	1
33.	Heating Mental	4
34.	Digital Vernier Calliper	1

### 8. Wildlife Lab

Sl. No.	Name of the equipment	Quantity
1.	Binocular	03
2.	Camera	01
3.	Camera Trap	02
4.	Insect Dissecting Kit	02

### 9. Entomology Lab

S. No.	Name of equipments	Quantity
1.	Laboratory stool	20
2.	Exhibition board	02
3.	Dissecting kit	03
4.	Hand lens with metal frame	02
5.	Insect display and Storage showcase	15
6.	Insect showcase cabinet, 12 showcase	01
7.	Stereo zoom Microscope, WF10x/20	01
8.	Insect storage box	50
9.	Insect stretching board (Adjustable)	20
10.	Insect collection net with aluminium handle	50
11.	Insect cage	05
12.	Dissecting tray with wax/EVAPad	10
13.	Light trap	02
14.	Mosquito trap	02
15.	Pheromone trap	50
16.	Sticky trap	30
17.	Fruit fly trap	10
18.	Suction trap	10
19.	Berlise funnel	05
20.	Display chart	50
21.	Display photographs	15

### 10. Plant Pathology Lab

S. No.	Name of equipments	Quantity
1.	Laminar airflow	01
2.	Refrigerator	01
3.	Herbarium press	01
4.	Balance	01
5.	BOD incubator	01
6.	Microscope (student)	15
7.	Centrifuge	01
8.	Colony counter	01
9.	Sieve plates	12
10.	Hot air oven	01
11.	Autoclave	02
12.	pH meter	01
13.	Micropipette	03
14.	Distillation unit	02
15.	Spectrophotometer	01
16.	Inoculation needle	03
17.	Spirit lamp	03
18.	Test tube stand	02
19.	Cork borer	01
20.	Haemocytometer	01
21.	Camera lucida	01
22.	Micrometer	01
23.	Compound microscope	01
24.	Microwave oven	01

### 11. Soil Science Lab

S. No.	Name of equipments	Quantity
1.	Autoclave vertical high pressure	01
2.	Automatic micropipette controller	01
3.	Balance top loading	03
4.	Centrifuge high research	01
5.	Digital U based conductivity meter	01
6.	Exhibit panel	02
7.	Electric heating cup	01
8.	Flame photometer	01
9.	Flame photometer Systonic Make	01
10.	Hot plate rectangular	01
11.	Handa copper	01
12.	Iron stand	01
13.	Infiltrometer	02
14.	Kjeldal distillation and digestion combined unit	01
15.	Microprocessor based water quality analyzer	01
16.	Magnetic stirrer with hot plate	01
17.	Microscope binocular	01

18.	pH meter digital	01
19.	pH meter elico	01
20.	pH glass electrode	03
21.	Rotary flask shaker	01
22.	Spectrophotometer	01
23.	Soil tensiometer 30 cm	01
24.	Soil tensiometer 60 cm	01
25.	Soil thermometer multi channel with 50 cm probe MAC	01
26.	Cylindrical core cutter	04
27.	Steel dolly	02
28.	Hammer with steel road	02
29.	Water bath	01
30.	Spatula	15
31.	Measuring tape	03
32.	Hydrometer	05
33.	Enamel tray	14
34.	Crucible silica	04
35.	Porcelain	20
36.	Spirit lamp stainless	10
37.	Pan and cover	01
38.	Sieve shaker	01
39.	Laboratory permeability apparatus	01
40.	Over head tank	01
41.	Vernier caliper	01
42.	Tachometer digital non contact	01
43.	Hydrometer	01
44.	First aid box	01
45.	Moisture content tin	20
46.	Soil auger	03
47.	Sieve	02
48.	Stop watch mechanical	01
49.	Stop watch electronic	02
50.	Spectrophotometer uv visible	01
51.	Vaccum pump double stage	01
52.	Water bath rectangular	01
53.	Sampling auger outfit blade	01
54.	Extension rod 1 m for auger	01
55.	1 handle and T piece	01
56.	Spanner	01
57.	Sampling tube	01
58.	Speedy moisture meter	01
59.	Pycnometer set	06
60.	Sieves	11
61.	LG refrigerator	01
62.	Oven	01
63.	Horizontal laminar flow cabin	01
64.	Willey grinder	01

## 12. Agriculture Engineering Lab

S. No.	Name of equipments	Quantity
1.	Anemometer	01
2.	Digital humidity and temperature meter	01
3.	Digital thermo-hygrometer	04
4.	Farm power and Machinery tools	01
5.	Hygrometer	01
6.	Pan evaporimeter	01
7.	Parshal flume	01
8.	Rain gauge	01
9.	Rain gauge non recording	01
10.	Stevenson screen	01
11.	Vernier caliper	01
12.	Wet and dry bulb thermometer	02
13.	Working model of IC engine	01

## 13. Plant Breeding Lab

S. No.	Name of equipments	Quantity
1.	Student microscope	10
2.	Compound microscope	10
3.	Wooden box	10
4.	Display chart	20

## 14. Tissue Culture Lab

S. No.	Name of equipments	Quantity
1.	Hot plate	02
2.	Laminar air flow	04
3.	Photoperiodic stimulator caster racks	12
4.	Digital photoperiodic timer	02
5.	Digital room temperature controller	02
6.	Digital humidity controller	01
7.	Sequential timer	02
8.	Luxmeter	01
9.	Microscope (Trinocular/Magnas /Zoom)	02
10.	Digital camera	01
11.	Digital balance	02
12.	Hot air oven	01
13.	Sterilizer (horizontal)	01
14.	Clear pipette	01
15.	Fire extinguisher	02
16.	Spirit lamp	04
17.	Forceps	18
18.	Bunsen burner	02
19.	Refrigerator	11
20.	Office table	04

21.	Computer table	01
22.	Shoe rack	02
23.	Aqua guard	01
24.	Vacuum cleaner	01
25.	Air conditioner	05
26.	Magnetic stirrer	01
27.	Single water distillation	01
28.	Glass bead sterilizer	02
29.	Deep freezer	02
30.	Copper plate	01
31.	Pressure cook	02
32.	Gas stove	01
33.	Gas cylinder	04
34.	Packing machine	01
35.	Electric generator	01
36.	Digital pH meter	01
37.	Universal oven	02
38.	Pass box	02
39.	Micro centrifuge	02
40.	Aerosol disinfectant	01
41.	Digital deionizer	01
42.	Electrophoresis	06
43.	Lab incubator	01
44.	Water bath	02
45.	Micro top	01
46.	Tissue floatation bath	01
47.	Vortex mixture	02
48.	Centrifuge Eltek	02
49.	Trans eluminator	01
50.	UV lamp	01
51.	Centrifuge	04
52.	Ice flanking machine	01
53.	Autoclave	02
54.	Real Time PCR	01
55.	Thermal cycler	01
56.	Gel documentation system	01
57.	Gradient PCR	01
58.	Multi channel pipette	06
59.	Spectrophotometer	01
60.	Vacuum pump	01
61.	Hi tech green house net	01
62.	Cryogenic container	07
63.	Capillary electrophoresis	01
64.	Sample disruption system	01
65.	Incubator	01
66.	Elisa reader	01
67.	Microwave oven	01
68.	Pocket refractometer	01

69.	Digital stopwatch	01
70.	Pliar and screw driver	01
71.	Compressor	01
72.	UPS & Batteries	01

### **15. Computer Lab**

<b>S. No.</b>	<b>Name of equipments</b>	<b>Quantity</b>
1.	Desktop computers	24
2.	Scientific calculator	10
3.	Printers	06
4.	Vacuum cleaner	01

### **16. Language Lab**

<b>S. No.</b>	<b>Name of equipments</b>	<b>Quantity</b>
1.	Desktop computers and accessories	19

# SELF STUDY REPORT

## Degree Programmes in Forestry



College of Horticulture and Forestry, Jhalawar  
Agriculture University Kota (Raj.)

**SELF STUDY REPORT  
FOR  
ACCREDITATION OF DEGREE PROGRAMMES  
IN FORESTRY**

**B.Sc. (Hons.) Forestry  
M.Sc. Forestry (Silviculture and Agroforestry)  
M.Sc. Forestry (Forest Biology and Tree Improvement)  
M.Sc. Forestry (Forest Products and Utilization)  
M.Sc. Forestry (Wildlife Management)**

**Submitted to**

**National Agricultural Education Accreditation Board  
Indian Council of Agricultural Research, New Delhi**

**Submitted by**



**COLLEGE OF HORTICULTURE AND FORESTRY, JHALAWAR  
AGRICULTURE UNIVERSITY KOTA (RAJ.)**



## PREFACE

Forests are very vibrant repositories of terrestrial biodiversity. They form sole base for survival and sustenance over the earth planet. After all the life or *jeevan* in common description is nothing except *jeev* and *van*. These words etymologically itself manifest the beauty and utility of forest in continuum of life on the only inhabiting earth planet. Forests provide a wide array of products and services to people throughout the world. There are interactions among various component beneficiaries which ultimately decide the way for ecological balance which has been a much sought after concern locally and globally as well. Conservation of forest resources is essential for sustaining the productive value of forests, maintaining the health and vitality of ecosystems and allowing them playing their protective, environmental and cultural roles. However, the shift of forests land into other land uses is proving major threat to forest ecosystem and consequently in man-animal living sphere and the ecological balance is turning very fragile.

It is priority concern across the globe to deal with the conservation of forest and forest resources. With such a backdrop, the university took a lead and established a separate College of Horticulture and Forestry during year 2004. In all, the College imparts two undergraduate programmes, eight PG programmes and two Ph.D. programmes independently in the faculty of Horticulture and Forestry. At present, the College spans over 120 ha area of land. The land area is further allotted to various academic, co-curricular and instructional purposes. To impart practical oriented education, the farm is used mostly for instructional purposes. A variety of forestry activities are carried out under the faculty of forestry to make students acquainted along the broad thematic areas of Forestry.

The College has resources to offer quality education to students. Thanks to the support received from the NAHEP, the curricular delivery system of the college has been improved and nowadays IT tools are finding place in teaching-learning programme running at the College. The class rooms have been modernized with creating facilities of smart board, digital podium, visualizer, overhead projector, CCTV, wi-fi enabled system, and likewise farm infrastructure has also been upgraded. The college holds repute among students for their academic persuasion.

The support extended by the university level task force and steering committee is placed on record that due to the guidance of these functionaries, the accreditation report is being prepared for the desired purpose. The committee constituted at the college level for the accreditation purpose deserve due mentioning who have been behind this novel cause to accomplish the requisite herculean task well in time. I hope that the information contained in the bulletin will serve the purpose of accreditation as intended.

Place : Jhalawar  
Date :

  
(I. B. Maurya)  
DEAN  
College of Horticulture & Forestry

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# SELF STUDY REPORT

## B.Sc. (Hons.) Forestry



College of Horticulture and Forestry, Jhalawar  
Agriculture University Kota (Raj.)

### 6.4.1 Brief history of the Degree Programme

The College of Horticulture and Forestry was established during July 2004. It was the 6<sup>th</sup> constituent college of MPUAT, Udaipur. After the bifurcation of the University; it is the first constituent college of Agriculture University, Kota since 2013. The College operates through two separate faculties namely Horticulture and Forestry. B.Sc. (Hons.) Forestry is the four-year under graduate programme, divided into eight semesters. Students are allotted under Forestry Work Experience and Experiential learning in the last two semesters. They are attached to various forest departments and forest based industries as part of Forestry Work Experience. Educational tour and All India tour is compulsory for B.Sc. (Hons.) Forestry students as per the ICAR- V Deans' Committee recommendations.

The Bachelor degree had intake capacity of 10 students in the year 2004, has been increased to 66 by the academic session 2019-20. Till date 13 batches having 168 students has successfully completed the bachelor degree programme, while during last five years 08 students have cleared the JRF examination. Many of them are pursuing higher education as well as working at various National and International organizations.

#### Objectives:

- To generate competent human resource in Forestry.
- To demonstrate updated technology in Forestry and applied sciences like Nursery Management, Forest Biology and Tree Improvement, Forest Product Utilization, and Wildlife Management.

<b>Nomenclature of Degree programme</b>	: B.Sc. (Hons.) Forestry
<b>Duration of the Degree programme</b>	: 04 Years (08 Semesters)
<b>Admission Process</b>	: The admission to B.Sc. (Hons.) Forestry is made through the competitive State level Joint Entrance Test (JET) conducted by SAUs on rotation basis. 85 percent of the seats are filled through JET Examination while remaining 15 per cent of the seats are filled through ICAR All India Entrance Examination.
<b>Total credit load of the programme</b>	: 184 credit hours

**Year wise admission to B.Sc. (Hons.) Forestry for last five years**

Year	Intake (in 1st Year)	Enrolled (in 1st Year)			Dropped		
		Boys	Girls	Total	Boys	Girls	Total
2016-17	30	26	4	30	01	0	01
2017-18	30	20	07	27	03	0	03
2018-19	60	36	16	52	02	1	03
2019-20	60	34	13	47	01	0	01
2020-21	66	47	12	59	--	--	--

**Scholarships/Awards**

Name of Scholarship	Amount/ year	2016-17			2017-18			2018-19			2019-20		
		M	F	T	M	F	T	M	F	T	M	F	T
Samaj Kalyan Vihbhag Scholarship	10000 - 15000	13	06	19	19	8	27	28	15	43	40	15	55
Agriculture Girls Scholarship	12000	--	16	16	--	21	21	--	35	35	--	38	38
Nirman Shrimik Shiksha and Kaushal Vikas Yojana Scholarship	15000 - 18000	--	--	--	--	--	--	--	--	03	--	02	02
NTS Scholarship	3000	01	--	01	--	--	--	02	--	02	01	01	02
RAWE/Ready Scholarship	18000	08	03	11	07	04	11	12	05	17	24	03	27
Medhawi Chhatra Scooty Yojana Scholarship	Scooty/ student	--	01	01	--	--	--	--	--	--	--	--	--
<b>Total-</b>		<b>22</b>	<b>26</b>	<b>48</b>	<b>26</b>	<b>33</b>	<b>59</b>	<b>42</b>	<b>55</b>	<b>100</b>	<b>65</b>	<b>59</b>	<b>124</b>

**6.4.2. Faculty Strength**

S.No.	Designation	Sanctioned	Faculty in place	Vacant position*	Faculty recommendation by ICAR
1.	Professor	01	-	01	06
2.	Associate Professor	06	02	04	12
3.	Assistant Professor	27	14	13	26

	<b>Total</b>	<b>34</b>	<b>16</b>	<b>18</b>	<b>44</b>
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\*Recruitment on following positions is in process.

The deficit requirement is met out by deploying teachers from local institution or hiring services on contractual basis and also from other units of the university.

### **Proposed recruitment on teaching posts during 2020-21**

<b>Professor</b>	<b>Associate Professor</b>	<b>Assistant Professor</b>	<b>Assistant Librarian</b>	<b>Total</b>
01	03	06	01	11

### **6.4.3 Technical and Supporting Staff**

<b>Sl. No.</b>	<b>Designation</b>	<b>Sanctioned Strength</b>	<b>Filled</b>	<b>Vacant</b>
1.	Assistant Librarian	01	-	01
2.	Assistant Registrar	01	-	01
3.	Section Officer	02	01*	01
4.	Technical Assistant/Farm Manager	03	02	01
5.	Lab Technician	01	-	01
6.	PA	01	01*	-
7.	Steno	01	01*	-
8.	U.D.C.	02	-	02
9.	Lab Assistant	06	05	01
10.	L.D.C.	03	03*	-
11.	Library Assistant	01	01	-
12.	Driver	02	01+01*	-
13.	Matron	01	01	-
14.	Care Taker	02	02*	-
15.	Agriculture Supervisor	04	03	01
16.	Store Keeper	01	-	01
17.	Forest Guard	02	02	-
18.	Gardener	02	02*	-
19.	Shelf Assistant	01	01*	-
20.	Lab Attendant	01	-	01
21.	Class IV	05	05*	-
	<b>Total</b>	<b>43</b>	<b>32</b>	<b>11</b>

\*Contractual. However, the recruitment on following vacant positions is in process.

**The proposed recruitment on non-teaching post during 2020-21**

LDC	Stenographer	Lab Attendant	Shelf Assistant	Lab Technician	Hostel Care Taker	Total
03	01	01	01	01	01	08

**6.4.4. Class Rooms and Laboratories**

College has modern classrooms and laboratories for teaching of undergraduate and postgraduate students. The classrooms are equipped with smart board, overhead/LCD projectors, along with web camera and CCTV cameras. Final year UG students get exposure to learning experience in various units such as Nursery, Hi-tech units, Orchards etc. under student READY programme. Besides, college has one language lab and one computer lab to provide additional skills and proficiency among students. For the common lectures, seminar presentations and conferencing related matters, one seminar hall and one video conferencing room are also designated. All the laboratories are well equipped with sufficient seating capacity and necessary aids. Details of classrooms and laboratories are mentioned underneath:

**Classroom/ laboratories infrastructure for B.Sc. (Hons.) Forestry**

Infrastructure	Number
Classroom	10
Laboratories	16
Seminar Room	01
Videoconferencing Room	01
Examination Hall	01
Training Hall	02
Instructional Farm	100 ha
EL units	02

**Class rooms:**

S.No.	Classroom No.	Area (m <sup>2</sup> )	Seating capacity	Available facilities
1.	104	100	66	Furniture, podium, touch screen display, Smart board, green board, visualize, overhead projector, electrical fittings, CCTV camera, biometric machine
2.	108	100	70	Furniture, podium, touch screen display, Smart board, green board, visualize, overhead projector, electrical fittings, CCTV camera, biometric machine
3.	205	100	70	Furniture, blackboard, podium, LCD projector, electrical fittings, CCTV camera



4.	208	100	70	Furniture, podium, touch screen display, Smart board, green board, visualize, overhead projector, electrical fittings, CCTV camera, biometric machine
5.	PHT-01	130	80	Furniture, blackboard, podium
6.	PHT-02	120	80	Furniture, blackboard, podium
7.	305a	38.97	30	Furniture, blackboard, podium
8.	305b	38.97	30	Furniture, blackboard, podium
9.	308a	38.97	30	Furniture, blackboard, podium
10.	308b	38.97	30	Furniture, blackboard, podium

\* There is a common Seminar Hall (79.25m<sup>2</sup>) having seating capacity of 70 students.

### Laboratories:

S. No.	Laboratory	Area (m <sup>2</sup> )	Seating capacity
1.	Silviculture and Agroforestry Lab	82.21	30
2.	Forest Biology and Tree Improvement Lab	82.21	30
3.	Wood Science & Wood Technology Lab	83.34	30
	Non Wood Forest product Lab	77.68	30
4.	Wildlife Lab	77.01	30
5.	Fruit Science Lab	83.13	30
6.	Vegetable Science Lab	82.21	30
7.	Floriculture and Landscape Architecture Lab	82.21	30
8.	Post Harvest Technology Lab	162.18	30
9.	Soil Science Lab	83.86	30
10.	Agriculture Engineering Lab	79.95	30
11.	Plant Pathology Lab	82.21	30
12.	Entomology Lab	79.95	30
13.	Plant Breeding Lab	77.68	30
14.	Tissue culture Lab	450.00	30
15.	Language Lab	61.83	30
16.	Computer Lab	61.83	30

The lists of major equipments /instruments/ machineries available in the laboratory are given in Annexure-I.

### Research cum Instructional Farm and Department wise Distribution:

S.No.	Department	Area (ha)	Crops grown
1.	Fruit Orchards	12.00	Mandarin, Guava, Acid lime, Custard apple, Kinnow, Tamarind, Jamun, Khirni, Bael, Sweet orange cv. Mosambi
2.	Vegetable Cultivation	7.00	Tomato, Brinjal, Okra, Turmeric, Coriander,

			garlic, Cucurbit, Nigella, Fenugreek
3.	Floriculture and Landscape Architecture	7.00	Gladiolus, Heliconia, Tuberose, Marigold, Gaillardia, Ganganagari rose, Cheti rose, cut chrysanthemum and Jasmine.
4.	Herbal Garden	2.00	<i>Aloe vera</i> , Lemon grass, Cymbopogon, Shisham, Aonla, Teak, Neem, Mahua
5.	Mother Orchard of Chirongi	1.50	Mother orchard of <i>Buchanania lanzan</i>
6.	A-Z Plantation Block	2.50	Block of 151 species of Horticultural/ Forestry species
7.	Agro forestry & Silviculture	15.00	Forest species
8.	Forestry plantation	53.00	Under crop production, plantation, etc.
9.	Building, roads, sports and hostel	20.00	-
<b>Total</b>		<b>120.00</b>	

### Experiential Learning Units:

S.No.	Name of ELU	Area	Funding Agency
1.	Raising Quality Planting Materials for forest regeneration	1.0 ha	ICAR
2.	Production and Marketing of high value forest produce	2.0 ha	AU, Kota
3.	Apiculture	155 sqm	MPLAD Fund



**Modern classrooms and laboratory facilities**

### 6.4.5. Conduct of Practicals and Hands on Training

Forestry being a professional degree programme, the college emphasizes the UG Forestry students to gain more practical and day to day updation in the field of Forestry. As the subject requires more field visits to natural areas and field exposures frequent academic excursions are arranged to natural forests, protected areas, plantations, farmers field, wastelands, JFM areas, local nurseries, demonstration plots, KVKs, village institutions, panchayats, marketing cells, industries etc. State level and National level academic tours are arranged to impart the practical and first hand information on the forestry status, usage and management practices in general. In order to inculcate the production of quality planting materials students are engaged in nursery raising activities as part of their course work also as a separate module under experiential learning or in Forestry Experience Programme intensively in final year. Tree planting exercise is a common part in the academic year during monsoon period at the campus.



### Theory and Practical batches for Degree programme:

S. No.	Name of programme	Year	Intake / year	No. of batch in theory class	No. of batch in practical class
1.	B. Sc. (Hons.) Forestry	2016-17	30	1	Batch A:30
		2017-18	30	1	Batch A:30
		2018-19	60	1	Batch A:30, Batch B:30
		2019-20	60	1	Batch A:30, Batch B:30
		2020-21	66	1	Batch A:33, Batch B:33

During the field visits major practicals like identification, plus tree marking, seed collection, forest measurement, NTFP collection techniques, natural regeneration studies, forest ecology and biodiversity studies, wild life biology and management studies are focused. Interaction with forest department personnel and special lectures from prominent forest experts were also a part of initiatives in providing practical input to the students. The audio visual aids, study materials are also used in communicating the practical information on forest, wild life and environment related issues. The knowhow of principles and practices of the subject, instrument handling, data collection methods, analysis and practical inference will be explained by the instructor to the students during practical classes for effective learning. Further student will conduct exercise at their level for self learning and maintain the practical records for further evaluation. The practical records prepared by students were regularly verified, corrected, suggested and interacted and evaluated accordingly.

### Student READY Programme

The major component of Student READY are FEW, ELP, Industry attachment and Project. Forestry work experience is being conducted to give proper hands on training for final year students of undergraduate programme. This programme includes village attachment, followed by intensive attachment with state forest department. The students are also assigned various forest based industries like: Wood Workshop and Saw Mills, Carpentry and bamboo crafts, Aromatic and Medicinal Plant Units and Other Wood Products Industries *etc.* The students are also advised to prepare their project report and oral presentation after completion. The Forestry Work Experience (FOWE) course has the following modules:

S. No.	Activity	Cr. Hrs.	Days
1.	FORESTRY WORK EXPERIENCE (Socio-economic surveys -village attachment)	0+4	28
2	Attachment with State Forest Department for Forestry operations	0+10	70
3	Industrial Placement	0+4	28
4	Report Writing and Presentation	0+2	14
	<b>Total</b>	<b>0+20</b>	<b>140</b>

S.No.	ELU	Activity	Cr. Hrs.
1.	ELU-I*	Production and marketing of high value forest produce	0+5
		Raising quality planting material for forest regeneration	
		Apiculture/Sericulture	
		Ecotourism	
		Wild Animal Health management	
2.	ELU-II*	Production and marketing of high value forest produce	0+5
		Raising quality planting material for forest regeneration	
		Apiculture/Sericulture	
		Ecotourism	
		Wild Animal Health management	
3.		PW Project Work & Dissertation	0+10
		<b>Total</b>	<b>0+20</b>

\* Any one of the five activities to be opted by the students



### Glimpses of students working under student READY programme

#### 6.4.6. Supervision of Students

At the time of admission to the degree program, the College administration allots a teacher Advisor to each student in order to facilitate the academic follow-ups, counseling and to get acquainted with the academic system throughout the degree programme. Thus, the student under regular interaction and supervision by the Advisor follows the guidance in relation to admission, examinations, scholarships, competitive exams and career oriented issues during their study period. Students need to take sign and prior approval during leave, registration and for other official tasks.

#### 6.4.7 Feedback of Stakeholders (Students, Parents, Farmers, Industries, Employer etc.)

- All teaching faculties and Dean of the College frequently take feedback from the students and take necessary actions to excel the teaching and laboratory work so that students can complete their degree within the stipulated time frame.
- One feedback/suggestion box is fitted in the reception room of college as well as in hostels where one can drop any feedback, suggestion or enquiry.

- Final year outgoing students of B.Sc. degree programme give their feedback regarding the courses, teaching, laboratory, experiential learning, hands on training and FWE programmes.
- Students as well as parents are advised to give feedback of complete degree programme.
- Visitors from different places, other schools and colleges, industry persons and farmers give feedback from time to time telephonically as well as in written form and Dean of the College take necessary review to excel and improvement in desired line.

Feedback given by the stakeholders are summarised as under:

S. No.	Name	Stakeholder	Important remarks/feed back
1.	Shiba Mansoori	Student	College fulfils all possible needs of the students within the campus itself. It has library with wide range of books, hostel and mess facility and other amenities to students. College has wide range of knowledgeable faculty members who make sessions very interactive and clarify doubts and explain concepts.
2.	Shakina Bano	Student	The college prepared us for successful future life. The classes with practical knowledge are really helpful to understand the make it easy to memorize concept easily. The teachers are very motivating and push students to get best out of us
3.	Rafik Mohammad	Parent	The teachers of the college are so hardworking, creative and innovative. My ward enjoyed and happily learned the subjects of forestry.
4.	Kuldeep Nagar	Farmer	I was participated in various trainings conducted by the department of Silviculture and Agroforestry. The participants learn about new innovative and scientific technologies viz. hydroponics for growing different varieties of exotic vegetables, organic farming and conservative farming. I also learnt about nursery management of forest species by the supportive faculty of the college.

5.	Babu Lal Raiger	Farmer	I attended various training programme conducted by the college. By these training the farmers can enhance their income by taking other allied activities along with farming. All the trainings are very helpful and faculty also explain concepts in very easy way.
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#### 6.4.8 Student intake and attrition in B.Sc. (Hons.) Forestry

Degree programme	Year	Intake Capacity	Students admitted	Attrition	Attrition (%)
B.Sc. (Hons.) Forestry	2016-17	30	30	01	3.33
	2017-18	30	27	03	11.11
	2018-19	60	52	03	5.76
	2019-20	60	47	01	2.12
	2020-21	66	59	Admission in progress	--

#### 6.4.9. ICT Applications in Curricula Delivery

The College is having the following ICT based facilities to meet the current requirement of the students regarding the curricula delivery:

##### (A) Common ICT facility:

- Technology-enhanced learning Smart class room facility is available in three classrooms that enhances the quality of teaching and learning which is integrated with the digital displays, computer, whiteboards, assistive listening devices, and other audio/visual components that make lectures easier, engaging, and more interactive.
- Uninterrupted high speed internet connectivity with wi-fi facility is available in the college as well as hostels for providing easy access to online resources on the internet which enhances the exposure of students on different topics and also specifically to students involved in research that can help in research.
- Two separate seminar halls are equipped with LCD projectors, smart podium, interactive white boards or smart boards, Television, which help students to learn their lessons in a smart approach ensures enhanced interactive Learning Experience that has increased productivity.
- College is having computer lab with good quality internet connected 26 computers and peripherals to offer students with quality education by helping them to understand concepts better, improve their reading and comprehension skills, and achieve academic excellence.

## **(B) Academic Management System**

Academic Management System has been implemented in the college under NAHEP Component-II by Division of Computer Applications, IASRI, Pusa, New Delhi. This system automates various academic processes of the university and enhances the efficiency of the system by saving time and efforts involved in manual processes. The system has following sub modules:

- Courses Management
- Student Management
- Faculty Management
- Administration Management
- E-Learning
- Online fee collection

## **(C) Online Teaching & Examination**

- Live online lectures through live video classes through (ZOOM, MS Team, Google Meet, etc.)
- Notes and other file sharing through Google classrooms, WhatsApp, Internet
- Online discussion forums for students were conducted through (ZOOM, MS Team, Google Meet, etc.)
- E-courses from ICAR and other sources are put on website for students and teachers.
- Organization of meeting, seminar, meeting of courses committee through MS team.

However, there is urgent need of separate library building enabled with ICT facilities and equipped electronic gadget for faculty and students to access information floating worldwide in the field of Horticulture & Forestry. It will foster specially the faculty in best curricula delivery and also the student grasping the subject matter delivered by faculty.

## **Certificate**

I, the Dean, College of Horticulture & Forestry, Jhalawar hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the College and Degree Awarding University.

Place : Jhalawar, Rajasthan

Date :



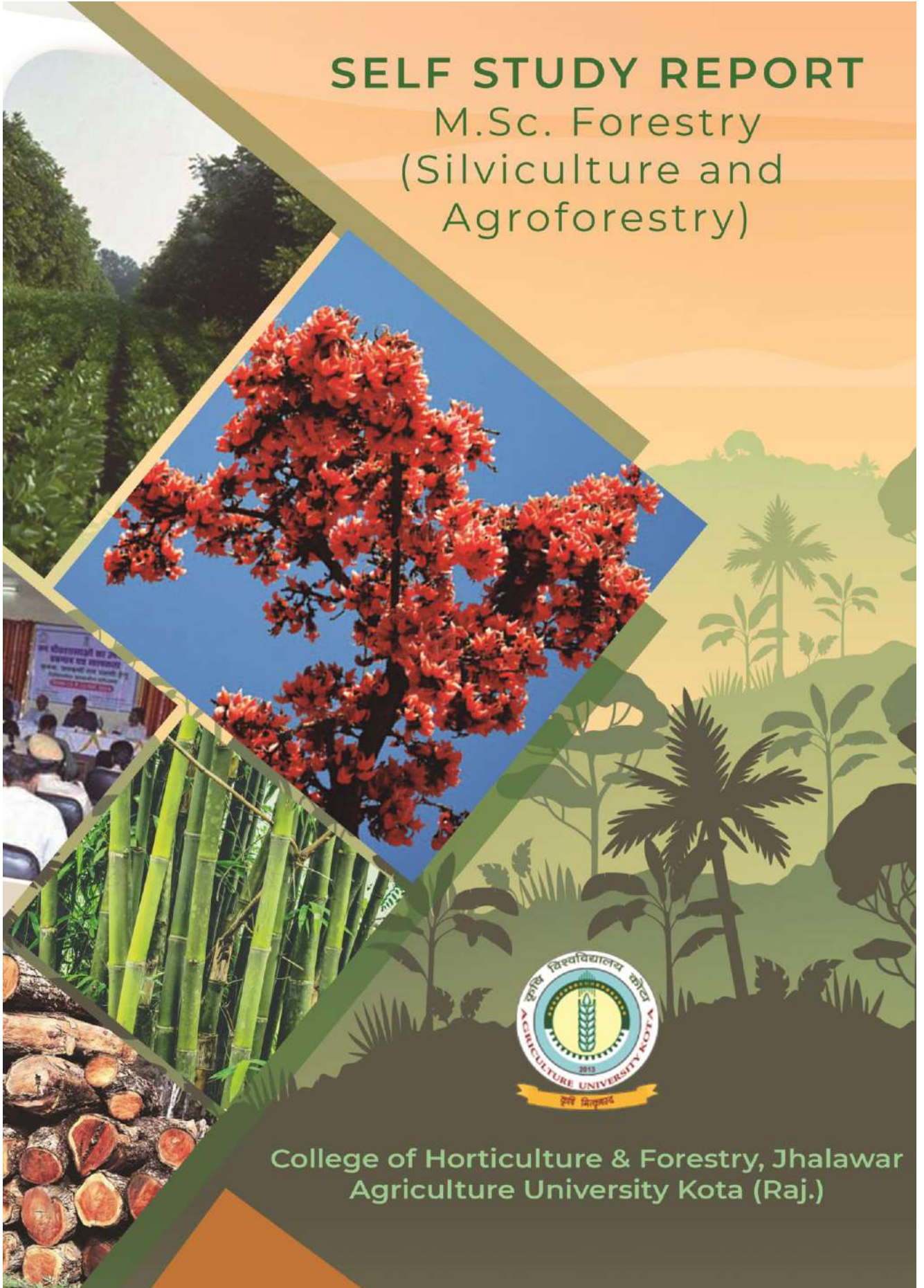
(I.B. Maurya)

Dean  
College of Horticulture and Forestry  
(Agriculture University, Kota)  
Jhalrapatan, JWR 326023 (Rajasthan)



# SELF STUDY REPORT

## M.Sc. Forestry (Silviculture and Agroforestry)



College of Horticulture & Forestry, Jhalawar  
Agriculture University Kota (Raj.)

### 6.4.1 Brief History of the Degree Programme

Silviculture and Agroforestry constitutes core department in forestry as it is associated directly with the culture of trees and shrubs- the major floral wealth in strengthening forest resources. Skilled human resource is the base input to perpetuate the science and technology for the betterment of human being and the society in broader perspective. As felt necessary to generate more man power with specialization in the subject, PG degree programme was started since academic session 2015-16. Seed Technology, Nursery Management, Forest Protection, Forest Mensuration, Forest management, Forest Economics, Forest laws, Legislation and Policies are some major subject covered in Silviculture and Agroforestry. The theoretical knowledge and research applications go side by side in curriculum delivery to make the students conceptualizing Agroforestry and Silviculture.

#### Objectives:

- To generate competent manpower in Silviculture and Agroforestry.
- To carry out basic and applied research in Silviculture and Agroforestry.

**Nomenclature of Degree programme** : M. Sc. Forestry (Silviculture and Agroforestry)

**Duration of the Degree programme** : 02 Years (04 Semesters)

**Admission Process** : The admissions are made through the competitive State level Joint Entrance Test/Pre-PG Test conducted by SAUs on rotation basis.

#### Requirement for Degree Programme

A student admitted to a post graduate programme shall have to successfully complete the following before award of a degree:

- An approved programme of study prepared by his/her advisory committee
- A comprehensive or preliminary examination
- Synopsis seminar and approval of synopsis
- Pre-thesis seminar
- Submission of thesis and its evaluation report
- Thesis viva-voce examination
- Minimum residential requirement- four semesters
- Minimum OGPA requirement – 6.5 out of 10 point scale

A student of master's programme is required to complete a minimum of 57 credit hours for the completion of degree programme. The distribution of courses for master's programme is as under:

Title	Approved Course Load
Major courses	: 27 Credit Hours (including 12 credit hours as core courses)
Minor & Supporting Courses	: 09 Credit Hours
Seminar	: 01 Credit Hour
Comprehensive	: NC (Non Credit Hours)
Research	: 20 Credit Hours
Non-Credit & e-courses (Compulsory)	: 06

### Distribution of courses for Master's Programme

<b>MAJOR COURSES</b>	FORT – 511*	Advances in Silviculture and Forest biometry	3 (2+1)
	FORT – 512*	Advances in Forest Management and Protection	3 (2+1)
	FORT – 513*	Tree Physiology and Tree Improvement	3 (2+1)
	FORT – 531*	Forest Products –Chemistry and Industries	3 (2+1)
	SAF – 511**	Seed Collection, Storage and Testing	3 (2+1)
	SAF - 531**	Nutrient and Weed Management in Nursery and Plantation	3 (2+1)
	SAF - 522**	Plantation Forestry	3 (2+1)
	SAF - 521**	Modern Nursery Technology	3 (2+1)
	SAF - 532**	Management of Insect Pest and Diseases in Forestry	3 (2+1)
	SAF - 523**	Energy Plantations and Bio-fuels	3 (2+1)
	SAF - 527**	Agroforestry Systems	3 (2+1)
	SAF - 528**	Economics of Agroforestry Systems	3 (2+1)
	SAF - 529**	Fruit Plants, Trees and Shrubs for Agroforestry	3 (2+1)
	SAF - 534**	Crops and animal Production Management in Agroforestry	3 (2+1)
	SAF - 512**	Soil and Water Management in Agroforestry	3 (2+1)
	SAF - 535**	Rangeland and Pasture Management	3 (2+1)
	*Core courses, Compulsory ** Any <i>five courses</i> to be opted		
		<b>Total (Major Courses)</b>	<b>27 (18+9)</b>
<b>MINOR COURSES</b>	STAT -512	Statistical Methods and Computer Application	3 (2+1)
	NRM-531	*Remote Sensing and Geographic Information System	3 (2+1)
	SAF-526	*Forests and Climate Change	3 (2+1)
	SAF-524	*Forest Policy, Law and International Conventions	3 (2+1)
	NRM-532	*Land Use and Watershed Management	3 (2+1)
	SAF-536	*Ecotourism and Participatory Forestry	3 (2+1)
	SAF-525	* Production Management in Nursery and Plantation	3 (2+1)
	NRM-521	Forestry * Forest Soil and Land Reclamation	3 (2+1)
	* Any <i>two courses</i> to be opted		

		<b>Total (Minor Courses)</b>	<b>09(6+3)</b>
<b>NON -CREDIT</b>	PGS 501	Library and Information Services	0+1(NC)
	PGS 502	Technical Writing and Communication Skills	0+1(NC)
	PGS 503	<b>e-course</b> –Intellectual Property and its Management in	1+0(NC)
	PGS 504	Agriculture	0+1(NC)
	PGS 505	Basic Concepts in Laboratory Techniques	1+0(NC)
	PGS 506	<b>e-course</b> –Agricultural Research, Research Ethics and Rural Development Programmes <b>e-course-</b> Disaster Management	1+0(NC)
		<b>Total (Non-Credit &amp; e-Courses)</b>	<b>06 (3+3)</b>
	SAF-591 SAF-541 SAF-599	<b>Credit Seminar Comprehensive (NC)</b> Research	1 (0+1) 1+0 (NC) <b>20(0+20)</b>
		<b>Grand Total</b>	<b>57</b>

### Accreditation of Degree Programmes

The following PG programme is offered for accreditation by National Agricultural Education Accreditation Board, ICAR, New Delhi:

Academic Programme	Programme for Renewal	Duration
Post Graduate	M.Sc. Forestry (Silviculture and Agroforestry)	Two years (Four Semesters)

### Year wise admission to M.Sc. Forestry (Silviculture and Agroforestry) for last five years

Year of Admission	Intake Capacity	Admitted			Dropped			Passed		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
2016-17	05*	01	-	01	-	-	-	-	-	-
2017-18	05*	02	01	03	01	-	01	01	-	01
2018-19	05	04	01	05	-	-	-	01	00	01
2019-20	05	-	03	03	-	-	-	01	01	02
2020-21	05	Admission in Progress			-	-	-	01	01	02
<b>Total</b>		<b>07</b>	<b>05</b>	<b>12</b>	<b>01</b>	<b>-</b>	<b>01</b>	<b>04</b>	<b>02</b>	<b>06</b>

\*Common admission in M.Sc. (Forestry)

**Award / Scholarships**

Scholarship Type	M.Sc. Forestry (Silviculture and Agroforestry)				
	2016-17	2017-18	2018-19	2019-20	2020-21
Social Welfare scholarship (SC/ST )	-	01	01	02	-
Ag. Girls Scholarship	-	01	01	03	-
<b>TOTAL</b>	-	<b>02</b>	<b>02</b>	<b>05</b>	-

**4.2 Faculty Strength**

S.No.	Designation	Sanctioned	Faculty in place	Vacant position*	Faculty recommendation by ICAR
1.	Professor	01	-	01	01
2.	Associate Professor	01	01	-	02
3.	Assistant Professor	04	02	02	04
	<b>Total</b>	<b>06</b>	<b>03</b>	<b>03</b>	<b>07</b>

\*Recruitment on vacant positions is in process

**PG Recognized Faculty for Teaching/Guiding M.Sc. Forestry (Silviculture and Agroforestry)**

S.No	Name of Faculty	Designation	Teaching/Guiding
1.	Dr. S.B.S. Pandey	Assoc. Professor & Head	Teaching & Guiding
2.	Dr. V.C. Prahlad	Assistant Professor	Teaching & Guiding
3.	Dr. Manasi Navale R.	Assistant professor	Teaching & Guiding
4.	Dr. P.S. Chauhan	Assoc. Professor	Teaching & Guiding
5.	Dr. Kanica Chauhan	Assistant professor	Teaching & Guiding
6.	Dr. Anju S Vijayan	Assistant professor	Teaching & Guiding
7.	Dr. Anchal Sharma	Assistant professor	Teaching & Guiding
8.	Dr. C.K. Arya	Assistant professor	Teaching
9.	Dr. Rahul Chopra	Assistant professor	Teaching
10.	Dr. Arjun Kumar Verma	Assistant professor	Teaching
11.	Dr. Ashok Kumar	Assistant professor	Teaching
12.	Dr. Bhuri Singh	Assistant professor	Teaching
13.	Dr. Bhuvnesh Nagar	Assistant professor	Teaching
14.	Sh. Rajesh KumarSharma	Assistant professor	Teaching
15.	Mrs. Neetha P.	Assistant professor	Teaching
16.	Dr. Priyanka Solanki	Assistant professor	Teaching

17.	Dr. Suresh Kumar Jat	Assistant professor	Teaching
18.	Dr. Laduram	Assistant professor	Teaching
19.	Dr. Hanuman Singh	Assistant professor	Teaching
20.	Dr. Anil Kr. Gupta	Assistant professor	Teaching

#### 6.4.3 Technical and Supporting Staff

S. No.	Designation	Sanctioned Strength	Filled	Vacant
1.	Assistant Librarian	01	-	01
2.	Assistant Registrar	01	-	01
3.	Section Officer	02	01*	01
4.	Technical Assistant/Farm Manager	03	02	01
5.	Lab Technician	01	-	01
6.	PA	01	01*	-
7.	Steno	01	01*	-
8.	U.D.C.	02	-	02
9.	Lab Assistant	06	05	01
10.	L.D.C.	03	03*	-
11.	Library Assistant	01	01	-
12.	Driver	02	01+01*	-
13.	Matron	01	01	-
14.	Care Taker	02	02*	-
15.	Agriculture Supervisor	04	03	01
16.	Store Keeper	01	-	01
17.	Forest Guard	02	02	-
18.	Gardener	02	02*	-
19.	Shelf Assistant	01	01*	-
20.	Lab Attendant	01	-	01
21.	Class IV	05	05*	-
	<b>Total</b>	<b>43</b>	<b>32</b>	<b>11</b>

\*Contractual. However, recruitment on vacant position is in process

Note: The College has 43 sanctioned posts of technical and supporting staff of which 32 is filled for conducting skill demonstration and field experiments during practical classes, laboratory analysis and for assisting field work and training programme of various Departments.

#### 6.4.4 Classrooms and Laboratories:

Silviculture and Agroforestry Department has independent laboratory where practicals and research work are conducted. PG classes are arranged in the class room allotted for PG classes in College building. Some of the research work/ Practical are also conducted at

Instructional Farm/ Herbal Garden and protected cultivation structures available in the College. The detail of the facility is as under:

S.No.	Unit	Area	Seating capacity	Other facilities (LED, Projectors, Computers, Smart board etc.)
1.	Classroom	386 Sq. ft.	30	Projector, Smart Board, Digital Podium
2.	Seminar Hall*	885 Sq. ft.	50	LED, Projectors, Computers
3.	Silviculture and Agroforestry Laboratory**	885 Sq.ft.	30	Seed specimen of different tree species, forest mensurational equipments and Nursery inputs like polybags, watering canes, spade , Geti etc.
4.	Instructional Farm	15.0 ha	-	For research and growing of forestry plants
5.	Protected structure	1500 sqm	-	For raising of seedlings/saplings
6.	EL unit (one)	1.0 ha	30	Two shadenet, media mixing platform, store room

\*Common Seminar hall for all PG Departments

\*\* Laboratories of other Departments/ Central laboratory are also used for PG practicals/ research work.

### Major equipments and tools for conduct of practical classes

S. No.	Name of equipments	Quantity
1.	pH Meter –Digital	01
2.	Digital balance	02
3.	Refrigerator	02
4.	Hot air oven	01
5.	Binocular 7-30×50 Olympus	2
6.	GPS	02

The detail list of equipment of the department is appended in Annexure-I

### Farm Facilities - Herbal Garden, Road Side Plantations & Agroforestry

Department of Silviculture and Agroforestry maintain an Instructional Agroforestry farm covering an area 15.0 ha. of land for the establishment of different agroforestry systems and herbal garden. Herbal garden comprises demonstration plots of various Medicinal and

Aromatic plants, with collection of trees, shrubs, climbers and plantation of different important species. The herbal garden has various important medicinal and aromatic plants like: *Cymbopogon* spp. (Lemon grass), Palmarosa, *Ocimum* spp. (Tulsi), *Aloe vera*, *Withania somnifera*, *Rauvolfia serpentina*, *Mentha* spp., *Catharanthus roseus*, *Curcuma* etc. The research trials of intercropping *Curcuma longa* under agroforestry with *Shisham* and *Aonla* and *Neem*, and other research trials of *Tectona grandis* with different spacing and organic inputs are being carried out on regular basis. The area is well equipped with irrigation facilities with drip irrigation for 0.5 ha area. It has plantation of different medicinal, aromatic and NWFP species for developing the skill and exposure of students to Agroforestry interventions, Medicinal and aromatic crops and plantations.



**Intercropping of different genotypes of *Curcuma longa* with *Dalbergia sissoo***

#### **6.4.5 Conduction of Practical and Hands on Training**

Every course for PG program consists of practical components to acquaint the students with practical aspect of the subject. There is a well equipped laboratory to carry out various practical classes as well as research activity. The department maintains road side and other plantations along entire campus of approximately 120 hectares. Agroforestry plantations, Forest Nursery and Herbal Garden, which have various important medicinal and aromatic plants like: Lemon grass(*Cymbopogon* spp.), Palmarosa, *Ocimum* spp. (Tulsi), *Aloe vera*, *Withania somnifera*, *Rauvolfia serpentina*, *Mentha* spp., *Catharanthus roseus*, *Curcuma* etc. and perennial trees like *Neem*, *Mahuwa*, *Shisham*, *Aonla*, *Palash*, *Arjun*, *Sagon*, *Babool*, *Gmari* and *Bottlebrush* etc., which are invariably used for practical purposes for students.

#### **Average Number of Students in Theory and Practical Classes**

S. No.	Name of the Department	Theory Batch	Practical Batch	Number of students/batch
1.	Silviculture and Agroforestry	01	01	05



### 6.4.6 Supervision of Students in PG

A major Advisor is allotted to every student after getting admission that forms an Advisory Committee with at least three members among whom one member is from the major field of specialization, another one from minor field of study and one is nominated by Director Education. The research programme as proposed by the Advisory Committee is firstly presented by the concerned student and after approval by the Dean and finally by the Director Education, the programme is executed. The research is carried out by the student under the supervision of Major Advisor and Advisory Committee.

#### Number of PG recognized guides and teacher student ratio of the Department

S. No.	Year	PG recognized guides	Intake of students	Teacher : student ratio
1.	2016-17	2	1	1 : 0.5
2.	2017-18	2	3	1 : 1.5
3.	2018-19	3	5	1 : 1.6
4.	2019-20	3	3	1 : 1
5.	2020-21	3	Admissions in Progress	

#### Titles of theses submitted during last five years

<b>2017-18</b>	<ul style="list-style-type: none"> <li>Growth, structure and regeneration studies of Dhaw forests (<i>Anogeissus pendula</i> Edgew.) in Jhalawar forest division.</li> </ul>
<b>2018-19</b>	<ul style="list-style-type: none"> <li>Intercropping Turmeric (<i>Curcuma longa</i> L) under mandarin based Agroforestry system in south eastern Rajasthan</li> </ul>
<b>2019-20</b>	<ul style="list-style-type: none"> <li>Evaluation of different doses of Farmyard manure and intercropping turmeric (<i>Curcuma longa</i> L.) under Mandarin (<i>Citrus reticulata</i> Blanco) based Agroforestry system</li> <li>Intercropping of Ashwagandha (<i>Withania somnifera</i> L. Dunal) under Mandarin and Kinnow based Agroforestry Systems in Jhalawar Region</li> </ul>
<b>2020-21</b>	<ul style="list-style-type: none"> <li>Effect of growing media on germination and seedling growth of important Agroforestry species of semi-arid region of Rajasthan</li> <li>Survey on Productivity of Forest Nurseries and study of Planting Performance of Important Agroforestry Tree species in Jhalawar district of Rajasthan</li> </ul>

#### 6.4.7 Feedback of Stakeholders (Students, Parents, Industries, Employers, Farmers etc.)

The students, parents and farmers give feedback regarding their academics and other problems to the appointed advisor of the department. If any problem is found, it is resolved after discussion with higher authorities. Many times experts were invited from the specific field to guide the students.

S. No.	Name	Stakeholder	Important remarks/feed back
1.	Manish Chaudhary	Student	The teachers are well versed. The faculty members take care of students. Sufficient facilities are available for undertaking PG research.
2.	Jitendra Singh Ranawat	Student	The teachers are cooperative. They help-support students in completion of degree and guiding them for career.
3.	Jaya Bhariya	Student	There is good environment at the college. The student learns a lot in Jhalawar environment. The teaching programme runs very timely.
4.	Manju Attri	Student	The Department has well established green shade-nets and laboratories with good research facilities
5.	Raju Jatav	Student	The teachers are well devoted. The faculty members take care of students.
6.	Prakash	Student	The campus is very impressive and having various on-farm demonstration for practical exposure.
8.	Ashok Nagar	Farmer	I feel happy to participate in different training programmes organized by the department of Silviculture and Agroforestry. I learnt a lot in tree species nursery cultivation due to support of teachers of the department.
9.	Rambabu	Farmer	The teachers for the department guide us from time to time on Agroforestry interventions and of MAP's. They think for betterment of farmers and enhancing their income.

#### 6.4.8. Student intake and attrition in the programme for last five years

Year	Intake capacity	Admitted	Attrition	% Attrition
2016-17	5*	1	0	0
2017-18	5 *	3	1	33.3
2018-19	5	5	0	0
2019-20	5	3	0	0
2020-21	5	Admissions in Progress	-	-

\*Common admission to M.Sc. (Forestry)

#### 6.4.9 ICT Application and Curricula Delivery

The College is having the following ICT based facilities to meet the current requirement of the students regarding the curricula delivery:

##### (A) Common ICT facility:

- Technology-enhanced learning Smart class room facility is available in three classrooms that enhances the quality of teaching and learning which is integrated with the digital displays, computer, whiteboards, assistive listening devices, and other audio/visual components that make lectures easier, engaging, and more interactive.
- Uninterrupted high speed internet connectivity with wi-fi facility is available in the college as well as hostels for providing easy access to online resources on the internet which enhances the exposure of students on different topics and also specifically to students involved in research that can help in research.
- Two separate seminar halls are equipped with LCD projectors, smart podium, interactive white boards or smart boards, Television, which help students to learn their lessons in a smart approach ensures enhanced interactive Learning Experience that has increased productivity.
- College is having computer lab with good quality internet connected 26 computers and peripherals to offer students with quality education by helping them to understand concepts better, improve their reading and comprehension skills, and achieve academic excellence.

##### (B) Academic Management System

Academic Management System has been implemented in the college under NAHEP Component-II by Division of Computer Applications, IASRI, Pusa, New Delhi. This system automates various academic processes of the university and enhances the efficiency of the system by saving time and efforts involved in manual processes. The system has following sub modules:

- Courses Management
- Student Management
- Faculty Management
- Administration Management
- E-Learning
- Online fee collection

### **(C) Online Teaching & Examination**

- Live online lectures through live video classes through (ZOOM, MS Team, Google Meet, etc.)
- Notes and other file sharing through Google classrooms, WhatsApp, Internet
- Online discussion forums for students were conducted through (ZOOM, MS Team, Google Meet, etc.)
- E-courses from ICAR and other sources are put on website for students and teachers.
- Organization of meeting, seminar, meeting of courses committee through MS team.

However, there is urgent need of separate library building enabled with ICT facilities and equipped electronic gadget for faculty and students to access information floating worldwide in the field of Horticulture & Forestry. It will foster specially the faculty in best curricula delivery and also the student grasping the subject matter delivered by faculty.

### **Departmental Activities -**

1. The Department has to its credit the Best Teacher Award for 2017 in the field of Agroforestry by ATDS, Ghaziabad (U.P.) and “ Vraksha Vardhak Puruskar by the Forest Department, Government of Rajasthan on 31<sup>st</sup> March 2018.
2. The faculty of Department has delivered various lectures during workshops, seminars and trainings to different categories of officials and students on various aspects of silviculture and agroforestry.
3. The faculty contributed 02 manuals on Forest Protection and World Forestry.
4. The faculty of the Department delivered various radio talks, participated in phone-in programmes, and contributed research papers, book chapters, popular articles and bulletins towards literary support to forestry in broader perspective during last 5 years.
5. A Student (Mr. J. S. Ranawat) got Best Thesis Award in II<sup>nd</sup> International Conference on Advances in Agricultural, Biological and Applied Sciences for Sustainable future on 20-22 Oct’ 2018.
6. The Department organized a residential training Entitled as “*Van Paudhshalao Ka Upyog, Prabandhan and Vyapakta*” for the Farmers/Forest Guards/Foresters of the State Forest Department, Rajasthan w.e.f. 13 to 15 March’2018.

7. The Department organized a residential training Entitled as “Vriksharopan Uddeshya, Prakar avum Vividh Aayam” for the Farmers/Forest Guards/Foresters of the State Forest Department, Rajasthan w.e.f. 21-23 March’18.
8. Organized 25 days Skill Development training (ASCI) on “Nursery Worker (QP – AGR/Q0807)” w. e. f. 2<sup>6th</sup> February, 2020 - to 2<sup>1st</sup> March, 2020.
9. The Department has conducted 2 days Online National webinar on “Avenues in forestry for farmers and students” on 03-04 July, 2020 during covid-19 pandemic and more than 500 participants attended the programme.

**Organization of 02-Days National webinar from 03-04 July, 2020 on “Avenues in forestry for farmers and students”**



Boundary Wall Plantation of Neem & Teak



Mandarin and Turmeric in Agroforestry



3- Days Residential Training on “Nursery Management”



3- Days Residential Training on “Plantation”



ASCI Training on Nursery Worker

### Certificate

I, the Dean, College of Horticulture & Forestry, Jhalawar hereby certify that the information contained in the Section 6.4.1 to 6.4.9 is furnished as per the records available in the College and Degree Awarding University.

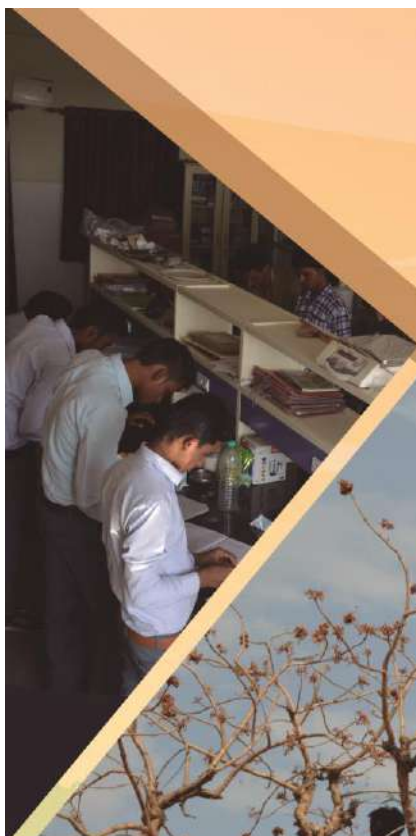
Place : Jhalawar, Rajasthan  
Date :

  
(I.B. Maurya)

Dean  
College of Horticulture and Forestry  
(Agriculture University, Kota)  
Jhalrapatan, JWR 326023 (Rajasthan)

# SELF STUDY REPORT

## M.Sc. Forestry (Forest Biology & Tree Improvement)



College of Horticulture & Forestry, Jhalawar  
Agriculture University Kota (Raj.)

### 6.4.1 Brief History of the Degree Programme

Natural resources and tree improvement programme stand valid in natural ecosystems and appear most effective tool in maintaining environmental balance and in devising mitigation strategies for conservation of nature. Keeping in view the requirement of sustenance of nature and natural resources, study of conservation biology is very pertinent aspect. In this line, the College of Horticulture and Forestry set up the Department of Forest Biology and Tree Improvement (FBTI) since its inception from year 2004. Since 2015, PG programme in forestry was started.

The Department offers a dynamic array of professional opportunities in biology and tree improvement via course work enriched by an active program of teaching and research. Through a suite of electives in addition to a required core, students pursue their studies toward a particular field of interest in FBTI. The students work upon various aspects of forest biology, seed germination, fodder quality, progeny trials, forest structure and functions, community ecology, biomass, productivity and carbon sequestration of important deciduous tree species for ecosystem monitoring and climate change mitigation. The mother orchard of Chironji (*Buchanania lanzan*) established in the year 2016-17 at the instructional farm spread over 1.5 hectares area in the college premises facilitates teaching and research activities of the department.

#### Objectives of the Department :

- To generate competent human resource with specialization in the field of forest biology and tree improvement.
- To undertake need based strategic and applied research.

**Nomenclature of Degree programme** : M.Sc. Forestry (Forest Biology and Tree Improvement)

**Duration of the Degree programme** : 02 Years (04 Semesters)

**Admission Process** : The admissions are made through the competitive State level Joint Entrance Test/Pre-PG Test conducted by SAUs on rotation basis.

#### Requirement for Degree Programme

A student admitted to a post graduate programme shall have to successfully complete the following before award of a degree:

- An approved programme of study prepared by his/her advisory committee
- A comprehensive or preliminary examination



- Synopsis seminar and approval of synopsis
- Pre-thesis seminar
- Submission of thesis and its evaluation report
- Thesis viva-voce examination
- Minimum residential requirement- four semesters
- Minimum OGPA requirement – 6.5 out of 10 point scale

The student of master's programme is required to complete a minimum of 57 credit hours for the degree; the department is offering the same. To give extra knowledge to the students 06 e- courses are compulsory. The distribution of courses for master's programme is as under:

Title	Approved Course Load
Major courses	: 27 Credit Hours (12 credit hours as core courses)
Minor & Supporting Courses	: 09 Credit Hours
Seminar	: 01 Credit Hours
Comprehensive	: NC (Non Credit Hours)
Research	: 20 Credit Hours
Non-Credit e-courses (Compulsory)	: 06

### Distribution of courses for Master's Programme

	Course No.	Title of Course	Credit Hrs.
MAJOR COURSES	FORT – 511*	Silviculture & Forest Biometry	3 (2+1)
	FORT – 512*	Forest Management and Protection	3 (2+1)
	FORT – 513*	Tree Physiology & Tree Improvement	3 (2+1)
	FORT – 514*	Forest Products – Chemistry and Industries	3 (2+1)
	FBT-522	**Reproductive Biology of Forest Trees	3 (2+1)
	FBT-523	**Quantitative Genetics in Forest Tree Breeding	3 (2+1)
	FBT-524	**Forest Botany and Seed Technology	3 (2+1)
	FBT-525	**Breeding Methods in Forest Trees	3 (2+1)
	FBT-526	**Forest Genetic Diversity and Conservation	3 (2+1)
	FBT-527	**Forest Biotechnology	3 (2+1)
	FBT-521	Tree Seed Orchards	3 (2+1)
	FBT-531	Clonal Forestry	3 (2+1)
		*Core courses and compulsory **Any Three courses to be opted	
		<b>Total (Major Courses)</b>	<b>27 (18+9)</b>

<b>MINOR COURSES</b>	STAT-512	Statistical Methods and Computer application	3 (2+1)
	FBT-532	*Forest Ecology and Biodiversity Conservation	3 (2+1)
	NRM-511	* Forest Soil and Land Reclamation	3 (2+1)
	SAF-511	*Forests and Climate Change	3 (2+1)
	NRM-531	* Remote Sensing and Geographic Information System	3 (2+1)
	NRM-512	*Landuse and Watershed Management	3 (2+1)
	SAF-512	* Ecotourism & Participatory Forestry	3 (2+1)
SAF-537	* Forests and People	3 (2+1)	
		<i>* Any Two courses to be opted</i>	
		<b>Total (Minor Courses)</b>	<b>9(6+3)</b>
<b>NON-CREDIT E-COURSES (compulsory)</b>	PGS-501	Library and Information Services	0+1(NC)
	PGS-502	Technical Writing and Communication Skills	0+1 (NC)
	PGS-503	Intellectual Property and its Management in Agriculture	1+0 (NC)
	PGS-504	Basic concepts in laboratory techniques	0+1 (NC)
	PGS-505	Agricultural Research, Research Ethics and Rural Development Programmes	1+0 (NC)
	PGS-506	Disaster management	1+0 (NC)
	FBT-591	Credit Seminar	1 (0+1)
	FBT-541	Comprehensive (NC)	1(1+0)
	FBT-599	Research	NC
		<b>Grand Total</b>	<b>57</b>

### Accreditation of Degree programme

The following P.G. programme is offered for the accreditation to National Agricultural Education Accreditation Board, ICAR, New Delhi:

Academic Programme	Programme for Accreditation	Duration
Post Graduate	M. Sc. Forestry (Forest Biology and Tree Improvement)	Two years (Four Semesters)

### Year wise admission to M. Sc. Forestry (Forest Biology and Tree Improvement)

Year of Admission	Intake capacity	Admitted			Dropped			Passed		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
2016-17	05*	-	-	-	-	-	-	-	-	-
2017-18	05*	01	01	02	-	-	-	-	-	-
2018-19	05	03	02	05	-	-	-	01	-	01
2019-20	05	-	-	-	-	-	-	01	01	02
2020-21	05	Admission in progress			-	-	-	-01	02	03
<b>Total</b>		<b>04</b>	<b>03</b>	<b>07</b>		<b>-</b>	<b>-</b>	<b>02</b>	<b>03</b>	<b>06</b>

\*Common admission in M.Sc (Forestry)

**6.4.2 Faculty Strength**

S. No.	Faculty	Sanctioned Faculty	Faculty in place	Vacant position*	Recommended by ICAR
1.	Professor	-	-	-	01
2.	Assoc. Prof.	01	01	-	02
3.	Asstt. Prof.	03	01	02	04
	<b>Total</b>	<b>04</b>	<b>02</b>	<b>02</b>	<b>07</b>

\*Recruitment on vacant positions is in process

**P.G. Recognized Faculty for Teaching/Guiding of courses of the Department**

S.No	Name of Faculty	Designation	Teaching/Guiding
1.	Dr. P.S. Chauhan	Associate Professor and Head	Teaching & Guiding
2.	Mrs. Neetha P.	Assistant Professor	Teaching & Guiding
3.	Dr. S.B.S. Pandey	Associate Professor	Teaching & Guiding
4.	Dr. Prahlad V.C.	Assistant Professor	Teaching & Guiding
5.	Dr. Kanica Chauhan	Assistant Professor	Teaching & Guiding
6.	Dr. Anchal Sharma	Assistant Professor	Teaching & Guiding
7.	Dr. Bhuvanesh Nagar	Assistant Professor	Teaching & Guiding
8.	Dr. Anju S. Vijayan	Assistant Professor	Teaching & Guiding
9.	Dr. C.K. Arya	Assistant Professor	Teaching
10.	Dr. Ashok Kumar	Assistant Professor	Teaching
11.	Dr. Rahul Chopra	Assistant Professor	Teaching
12.	Dr. Bhuri Singh	Assistant Professor	Teaching
13.	Dr. Hanuman Singh	Assistant Professor	Teaching
14.	Dr. Anil Kumar Gupta	Assistant Professor	Teaching
15.	Dr. Priyanka Solanki	Assistant Professor	Teaching
16.	Dr. Suresh Kumar Jat	Assistant Professor	Teaching
17.	Sh. Rajesh Kumar Sharma	Assistant Professor	Teaching

**6.4.3 Technical and Supporting Staff**

Sl. No.	Designation	Sanctioned Strength	Filled	Vacant
1.	Assistant Librarian	01	-	01
2.	Assistant Registrar	01	-	01
3.	Section Officer	02	01*	01
4.	Technical Assistant/Farm Manager	03	02	01
5.	Lab Technician	01	-	01
6.	PA	01	01*	-

7.	Steno	01	01*	-
8.	U.D.C.	02	-	02
9.	Lab Assistant	06	05	01
10.	L.D.C.	03	03*	-
11.	Library Assistant	01	01	-
12.	Driver	02	01+01*	-
13.	Matron	01	01	-
14.	Care Taker	02	02*	
15.	Agriculture Supervisor	04	03	01
16.	Store Keeper	01	-	01
17.	Forest Guard	02	02	-
18.	Gardener	02	02*	-
19.	Shelf Assistant	01	01*	-
20.	Lab Attendant	01	-	01
21.	Class IV	05	05*	-
	<b>Total</b>	<b>43</b>	<b>32</b>	<b>11</b>

\*Contractual. However, recruitment on vacant posts is in process.

Note: The College has 43 sanctioned posts of technical and supporting staff of which 32 is filled for conducting skill demonstration and field experiments during practical classes, laboratory analysis and for assisting field work and training programme of various Departments.

#### 6.4.4 Classrooms and Laboratories:

The Department has adequate facilities of classrooms, laboratories, research farm etc as detailed below:

S.No.	Unit	Area	Seating capacity	Other facilities (LED, Projectors, Computers, Smart board etc.)
1.	Classroom	1076 sq. ft.	60	Projector
2.	Seminar Hall**	885 sq. ft.	50	LED, Projectors, Computers
3.	Forest Biology and Tree Improvement Laboratory*	875 sq. ft.	30	Well equipped as per requirement
4.	Instructional farm	15.0 ha		Forestry plantation
5.	Shade Net	1948 sq. ft.		Used for multiplication of forestry plants

\*Common Seminar hall for all PG Departments

\*\* Laboratories of other Departments/ Central laboratory are also used for PG practicals/ research work.

### Major equipments in laboratory for conduct of practical classes

S. No.	Name of the equipment	Quantity
1.	Autoclave	1
2.	Seed Germinator	1
3.	Hot Air Oven	1
4.	K-yan (Portable Projector)	1
5.	Lux Meter	1
6.	Microscope	1
7.	Seed Grader	1
8.	Single distillation Unit	2
9.	Binoculars	19
10.	Camera Trap	3
11.	GPS	3

The detail list of equipments of the department is appended in Annexure-I

### Farm Facilities

The College has total spread of 120.00 hectares area. of the total, 1.5 hectares area is under Instructional Farm for the Department of FBTI. The instructional farm is well equipped with drip irrigation facilities. It has plantation of eight different germplasm of Chironji (*Buchanania lanzan*), i.e. (Villages/Places- Murti, Shahbad, Pratapgarh, Mokha, Manga (Acharpura), Kalu (Acharpura), Manoharthana, Rampura) to make the students skilled and exposed in orchard concept.

S. No.	Name of fruit plants	Spacing (m)	Area (ha)	No.	Variety	Year of planting
1.	Chironji	5 x 5	1.50	470	Chironji Germplasm	2018



A synoptic view of mother block plantation of Chironji (Shade nets)

**Shade Net**

Particulars	No.	Area (Sq. ft.)	Details	Remarks
Shade Net House	01	1948	Used for growing and maintaining plants of forestry species. Experiments of P.G. research students	

**6.4.5 Conduct of Practical and Hands-on Training**

The students are exposed to practical aspects on regular basis suiting to a particular course. There are also field exposure visit to forest, wildlife sanctuaries, national park and man-made ecosystems.

**Average Number of Students in Theory and Practical Classes**

Total intake in PG programme is 05. The attendance of student remains 95 per cent in theory as well as practical classes.

S. No.	Name of the Department	Theory Batch	Practical Batch	Number of students/batch
1.	Forest Biology and Tree Improvement	01	01	05



**Exposure during practical and excursion visits**

### 6.4.6 Supervision of Students in PG

Every student shall have Advisory Committee with a Major Advisor and at least three members among whom one is from major field of specialization, another one from minor field of study and one is nominated by Director Education. Programme of Research proposed by the Advisory Committee and Dean is finally approved by the Director Education. The research is conducted by the student under the supervision of Advisory Committee.

### Number of recognized teachers and teacher student ratio in the Department

S. No.	Year	No. of PG recognized guides	Intake of students M.Sc.	Student to teacher ratio
1.	2016-17	01	-	-
2.	2017-18	01	02	1:2.0
3.	2018-19	02	05	1:2.5
4.	2019-20	02	-	-
5.	2020-21	02	Admission is in progress	

### Title of the theses submitted during last five years

Year	Thesis Title
<b>2018-19</b>	1. Microsite Mosaics Charaterization of Dry Deciduous Forest of Baran Forest Division.
<b>2019-20</b>	1. Vegetation Analysis, Biomass production and Carbon Stock of Tree Species of Mukundra Hills Tiger reserve. 2. Study of Seed and Seedling Attributes of <i>Buchanania lanzan</i> (Spreng.) in South-Eastern Rajasthan.
<b>2020-21</b>	1. Study on progeny evaluation and variation in fodder quality and nutrient status of <i>Madhuca indica</i> J.F. Gmel in Rajasthan. 2. Effect of different salinity levels on seedling growth attributes of pre-treated seeds of <i>Tectona grandis</i> Linn. f'. 3. Effect of provenance variation in phytochemical and nutrient composition in flower of plus trees of <i>Butea monosperma</i> (Lam.) Kuntze (Palash) from Hadoti region of Rajasthan

**Awards and Honours of the Departmental Faculty and Staff**

S. No.	Year	Name of award	Awarding agency
<b>Dr. P.S. Chauhan</b>			
1.	2017	Certificate of appreciation	DEAN, CHF Jhalawar
3.	2019	Certificate of appreciation	District Administration, Jhalawar and Forest Department, Jhalawar
4.	2019	Excellence in Teaching Award	The Agro Environmental Development Society (AEDS) Rampur, Uttar Pradesh
<b>Ms. Neetha P.</b>			
1.	2017	7 <sup>th</sup> Kamta Prasad Sageriya Best Research Paper Award	From Society of Tropical Forestry Scientists Jabalpur
<b>Sh. Rajpal Varma</b>			
1.	2019	Appreciation Award	Agriculture University, Kota, Rajasthan.

**6.4.7 Feedback of Stakeholders**

S. No.	Name	Stakeholder	Important remarks/feed back
1.	Bhupendra Singh	Student	The teachers are devoted and take care of students in and off Campus. Ample facilities are available for undertaking PG research.
2.	Dharmendra Kumar	Student	Teachers help-support students in completion of degree and guiding them for career.
3.	Gayathri P.M.	Student	Teachers of the department are very supportive also guide properly in the research problems especially at the time of Thesis writing.
4.	Sh. Mohandas P.S. and Mrs. Rejani K.	Parents	There is a healthy environment at the college premises. The student is comfortable and learns a lot in peaceful Jhalawar environment. The teaching programme runs as per the scheduled.
5.	Sh. Ramesh Nagar	Employer	The compatible atmosphere of teaching at the college exists.
6.	Jagdish (Mundiya) Shahbad (Baran)	Farmer	The teachers of the department guide us from time to time in cultivation of Chironji and other forestry species. They always looks for more income generation of farmers.
7.	Kalu (Acharpura)	Farmer	I learned a lot by participating in different programme organized by the department of FBTI.



#### 6.4.8. Student Intake and Attrition in the Programme for Last Five Years

Year	Intake capacity	Admitted	Attrition	% Attrition
2016-17	05*	01	0	0
2017-18	05*	02	0	0
2018-19	05	05	0	0
2019-20	05	-	0	0
2020-21	05	Admission in progress	0	0

\*Common admission in M.Sc. (Forestry)

#### 6.4.9. ICT Application and Curricula Delivery

The College is having the following ICT based facilities to meet the current requirement of the students regarding the curricula delivery:

##### (A) Common ICT facility:

- Technology-enhanced learning Smart class room facility is available in three classrooms that enhances the quality of teaching and learning which is integrated with the digital displays, computer, whiteboards, assistive listening devices, and other audio/visual components that make lectures easier, engaging, and more interactive.
- Uninterrupted high speed internet connectivity with wi-fi facility is available in the college as well as hostels for providing easy access to online resources on the internet which enhances the exposure of students on different topics and also specifically to students involved in research that can help in research.
- Two separate seminar halls are equipped with LCD projectors, smart podium, interactive white boards or smart boards, Television, which help students to learn their lessons in a smart approach ensures enhanced interactive Learning Experience that has increased productivity.
- College is having computer lab with good quality internet connected 26 computers and peripherals to offer students with quality education by helping them to understand concepts better, improve their reading and comprehension skills, and achieve academic excellence.

##### (B) Academic Management System

Academic Management System has been implemented in the college under NAHEP Component-II by Division of Computer Applications, IASRI, Pusa, New Delhi. This system automates various academic processes of the university and enhances the efficiency of the system by saving time and efforts involved in manual processes. The system has following sub modules:

- Courses Management
- Student Management
- Faculty Management
- Administration Management
- E-Learning
- Online fee collection

### (C) Online Teaching & Examination

- Live online lectures through live video classes through (ZOOM, MS Team, Google Meet, etc.)
- Notes and other file sharing through Google classrooms, WhatsApp, Internet
- Online discussion forums for students were conducted through (ZOOM, MS Team, Google Meet, etc.)
- E-courses from ICAR and other sources are put on website for students and teachers.
- Organization of meeting, seminar, meeting of courses committee through MS team.

However, there is urgent need of separate library building enabled with ICT facilities and equipped electronic gadget for faculty and students to access information floating worldwide in the field of Horticulture & Forestry. It will foster specially the faculty in best curricula delivery and also the student grasping the subject matter delivered by faculty.

### Departmental Activities:

- Department has successfully listed the Biodiversity of Jhalawar districts (Flora and Fauna).
- Department has an association with Rajasthan State Biodiversity Board (Jaipur, Rajasthan) to complete State Biodiversity Action Plan and People's Biodiversity Register for Rajasthan State.
- Department organized 06 training programme sponsored by RKVY and State Forest Department benefiting 186 farmers and forest officials.

**COLLEGE OF HORTICULTURE AND FORESTRY, JHALAWAR**  
(Agriculture University, Kota)

**NATIONAL WEBINAR ON FOREST CONSERVATION AND TREE IMPROVEMENT IN INDIA**  
*Organised by Department of Forest Ecology and Tree Improvement*

**Organizing Committee**

**Patron**  
Prof. D. C. Joshi  
Vice-Chancellor  
AU, Kota

**Chairman**  
Dr. I. B. Maurya  
Dean  
CHF, Jhalawar

**Organizing Secretary**  
Dr. P. S. Chauhan  
Assoc. Prof. & Head  
FBTI, CHF, Jhalawar

**Co-organizing Secretary**  
Ms. Neetha F.  
Asst. Prof., FBTL  
CHF, Jhalawar

**Coordinator**  
Dr. Anshul Sharma  
Asst. Prof. & Incharge  
WLM, CHF, Jhalawar

**Coordinator**  
Dr. Bhuvanesh Nagar  
Asst. Prof., FPU  
CHF, Jhalawar

**Coordinator**  
Dr. Anju S. Vijayan  
Asst. Prof., FPU  
CHF, Jhalawar

India has a rich and varied heritage of biodiversity, encompassing a wide spectrum of habitats, species and their genetic diversity. The biodiversity in the forests is enormous and is being used for socio-economic development and the demand is increasing in view of the high economic growth. The sustained utilization of the forests to meet present-day needs coupled with the protection of ecosystems and their functions provide the only solution for lasting genetic conservation. For production of goods and services, the conservation and management practices gain importance in relation to the forest genetic resources. In the present scenario, forest ecosystem conservation is utmost required in order to conserve the wild genetic pool and further implementation of tree improvement programmes in India.

Programme		
09:30 AM	Participant entry	
09:50 AM	Welcome address	Dr. P. S. Chauhan
09:55 AM	Opening remarks	Prof. D. C. Joshi
10:10 AM	Biodiversity Park: A model for urban sustainability	Dr. Faiyaz A. Khudsar
11:00 AM	Forest Conservation: An overview	Prof. N. P. Todaria
11:50 AM	Planting stock improvement of forest tree species	Dr. S. K. Verma
12:55 PM	Vote of thanks	Dr. I. B. Maurya

ZOOM Meeting ID: 5487565923  
Registration link: <https://forms.gle/ff09yM80zdt1Uz8MH9>

**Eminent Speakers**

Dr. Faiyaz A. Khudsar  
Scientist  
BPP, CEMDE  
University of Delhi

Prof. N. P. Todaria  
Ex-Dean,  
School of Ag. &  
Allied Sc. HNBGU,  
Srinagar

Dr. S. K. Verma  
Asst. Prof.  
Deptt. of Agr. for entry  
ANDUARI, UP

Date: 27<sup>th</sup> June, 2020  
Time: 9:30 AM-1:00 PM

Participants:  
Students, Researchers,  
Univ./KVAFSU Scientists,  
Gov. Officials & NGO

Active participants will  
receive e-certificate

Organization of National Webinar on June 27, 2020 on Forest Conservation and Tree Improvement in India due to Corona-19 Pandemic

- During last 5 years, the teachers of the department contributed two manuals entailed “Disaster Management” and “Plant Physiology”.
- A total 4 girl student from the Department of the Forest Biology and Tree Improvement received “Girls scholarship for girl motivation in agriculture Department”.
- The faculty of the Department has contributed 15 papers towards literary support to forestry sciences in broader perspective during last 5 years.
- Till date 3 PG students completed their degree from the Department.
- The Department organized district level “Environment, Forests and Wildlife Awareness Campaign”, 16-18 March, 2017.
- The Department organized a webinar on “Forest conservation and Tree Improvement in India”, June 27, 2020

**Externally funded projects: Funded by Rashtriya Krishi Vikas Yojna (RKVY), Jaipur, Rajasthan.**

The project has total outlay of Rs. 33.08 Lakh as in 2014-2020. The detailed outlay of the project for the last 6 years is as under:

S. No.	Years	Total outlay (Lakh)	
		Recurring	Non-recurring
1.	2014-15 to 2019-20 (RKVY Funded)	23.75	9.33

**Some salient findings of the project during last five years are as under**

S. No.	Salient findings
1	Ecological survey and quantitative data generation in forest and non-forest areas.
2	Seed collection of Chironji.
3	Collection of Germplasm of Chironji from 8 different localities.
4	Production of 850 improved seedlings.
5	Establishment of 1.25 ha mother orchard consisting 470 sapling of improved germplasm.
6	Training to the 151 farmers/Tribals on Chironji Farming, Processing and Value Addition.
7	Publication and distribution of 60 Folders and 110 Training Manual of Chironji Farming, Processing and Value Addition.
8	Chironji Orchard Management.



The Guests and Participants in Chironji training during 16-18<sup>th</sup> March,2018



Famers and forest officials in training at farmer's field of Chironj



Trainees in the nursery of Chironji seedlings (RKVY)

**Training Organized (2016-17 till Date)**

S. No.	Trainings title	Duration	Place	No. of participant
2.	Chironji Farming	04.03.2017 to 06.03.2017	Shahbad and CH&F, Jhalawar	55
3.	Van Podhshyaon Ka Upiyog, Prabandhan evam Vyapakta	13.03.2018 to 15.03.2018	CH&F, Jhalawar	35
4.	Chironji Farming	16.03.2018 to 18.03.2018	Shahbad and CH&F, Jhalawar	25
5.	Chironji Farming	09.03.2019 to 11.03.2019	Shahbad and CH&F, Jhalawar	25
6.	Chironji Farming	13.03.2019 to 15.03.2019	Shahbad and CH&F, Jhalawar	25
7.	Chironji Farming	18.03.2019 to 20.03.2019	Shahbad and CH&F, Jhalawar	25

**External Research Projects Completed:**

	Project Title	Funding Agency	Location	Duration (Years)
1.	Conservation, propagation and popularization of Chironji ( <i>Buchanania lanzan</i> ) in South-eastern Rajasthan	Rastriya Krishi Vikas Yojna (RKVY), Jaipur	C.H&F, Jhalawar	5
2.	Vegetation Carbon Pool Assessment –IGBP-ISRO	IIRS, Dehradun	Rajasthan	2
3.	Exploration and development of natural tree gum of Haduati region of Rajasthan	NOVOD, Govt. of India, New Delhi	Baran, Bundi, Jhalawar and Kota, Rajasthan	2
4.	Survey and collection of germplasm and production of quality planting material of medicinal plants of Hadoti region of Rajasthan	National Medicinal Plant Board, New Delhi	Baran, Bundi, Jhalawar and Kota, Rajasthan	3

## **Certificate**

I, the Dean, College of Horticulture & Forestry, Jhalawar hereby certify that the information contained in the Section 6.4.1 to 6.4.9 is furnished as per the records available in the College and Degree Awarding University.

Place : Jhalawar, Rajasthan

Date :



(I.B. Maurya)

**Dean**  
**College of Horticulture and Forestry**  
**(Agriculture University, Kota)**  
**Jhalrapatan, JWR 326023 (Rajasthan)**

# SELF STUDY REPORT

## M.Sc. Forestry (Forest Products & Utilization)



College of Horticulture & Forestry, Jhalawar  
Agriculture University Kota (Raj.)

#### 6.4.1 Brief history of the Degree Programme

Department of Forest Products and Utilization includes studies on forest products other than wood also offer a means of more complete use of the forest crop. Natural resins, such as oleoresin from pines or the so-called "wood resins" distilled from pine stumps, numerous tannins, essential oils, gums, dyes and drugs offer a wide variety of supplemental products of utility of often high value. To produce specialized human resource, the PG programme in Forestry started since year 2015-16. The students work upon various aspects of wood and non-wood forest products, including the physical, chemical and anatomical studies as well as propagation, harvesting and value addition of NWFP.

#### Objectives:

- To develop competent human resources, specialized in the subject of Forest Products & Utilization.
- To carry out basic and applied research in the field of forest products and utilization.

**Nomenclature of Degree programme** : M.Sc. Forestry (Forest Products & Utilization)

**Duration of the Degree programme** : 02 Years (04 Semesters)

**Admission Process** : The admissions are made through the competitive State level Joint Entrance Test/Pre-PG Test conducted by SAUs on rotation basis.

#### Requirement for Degree Programme

A student admitted to a post graduate programme shall have to successfully complete the following before award of a degree:

- An approved programme of study prepared by his/her advisory committee
- A comprehensive or preliminary examination
- Synopsis seminar and approval of synopsis
- Pre-thesis seminar
- Submission of thesis and its evaluation report
- Thesis viva-voce examination
- Minimum residential requirement- four semesters
- Minimum OGPA requirement – 6.5 out of 10 point scale



A student of master's programme is required to complete a minimum of 57 credit hours for the degree. The distribution of courses for master's programme is as under:

Title	Approved Course Load
Major courses	: 27 Credit Hours (including 12 credit hours as core courses)
Minor & Supporting Courses	: 09 Credit Hours
Seminar	: 01 Credit Hours
Comprehensive Research	: Non Credit
Non-Credit courses (Compulsory)	: 20 Credit Hours
	: 06

### Course Distribution for PG Degree Program

MAJOR COURSES	FORT – 511*	Silviculture and Forest Biometry	3 (2+1)
	FORT – 512*	Forest Management and Protection	3 (2+1)
	FORT – 513*	Tree Physiology and Tree Improvement	3 (2+1)
	FORT – 531*	Forest Products –Chemistry and Industries	3 (2+1)
	FPU - 521	**General Properties of Wood	3 (2+1)
	FPU – 522	**Wood Seasoning and Preservation	3 (2+1)
	FPU – 523	**Paper and Pulp Technology	3 (2+1)
	FPU - 524	**Wood Anatomy and Identification	3 (2+1)
	FPU - 525	**Plant Production and Breeding Techniques of MAP'S	3 (2+1)
	FPU - 526	**Biotechnological Approaches and Agrotechniques for MAP Species	3 (2+1)
	FPU – 527	**Role of MAP'S in Health Care System	3 (2+1)
	FPU - 528	**Improvement of Medicinal and Aromatic Plants	3 (2+1)
	FPU - 531	**Wood Chemistry	3 (2+1)
	FPU – 532	**Composite Wood and Wood Modification	3 (2+1)
	FPU - 533	**Forest Products and Resource Utilization	3 (2+1)
	FPU – 534	**Pharmacognosy of MAP'S	3 (2+1)
*Core courses and compulsory ** Any five courses to be opted			
MINOR COURSES	STAT-512	Statistical Methods and Computer Application	3 (2+1)
	NRM-511*	Forest Soil and Land Reclamation	3 (2+1)
	NRM-513*	Forest Business Management	3 (2+1)
	NRM-531*	Remote Sensing and Geographic Information System	3 (2+1)
	SAF-511*	Forests and Climate Change	3 (2+1)

	SAF-537*	Forests and People	3 (2+1)
	FPU – 535*	Wood Science and Technology	3 (2+1)
	FPU – 536 *	Medicinal Chemistry and Processing of MAP'S	3 (2+1)
	(*Any two courses to be opted)Total (Minor Courses)		9 (6+3)
NON –CREDIT	PGS 501	Library and Information Services	0+1(NC)
	PGS 502	Technical Writing and Communication Skills	0+1(NC)
	PGS 503	Intellectual Property and its Management in Agriculture	1+0(NC)
	PGS 504	Basic Concepts in Laboratory Techniques	0+1(NC)
	PGS 505	Agricultural Research, Research Ethics and Rural Development Programmes	1+0(NC)
	PGS 506	Disaster Management	1+0(NC)
	FPU-541	Comprehensive (NC)	1+0 (NC)
	FPU-591	Credit Seminar	1 (0+1)
	FPU-599	Research	20 (0+20)
	Grand Total		<b>57</b>

### Accreditation of Degree Programmes

The following PG programme is offered for accreditation by National Agricultural Education Accreditation Board, ICAR, New Delhi:

Academic Programme	Programme for Accreditation	Duration
Post Graduate	M.Sc. Forestry (Forest Products & Utilization)	Two years (4 Semesters)

### Year wise admission to M.Sc. Forestry (Forest Products and Utilization) for last 5 years

Year of Admission	Intake Capacity	Admitted			Dropped			Passed		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
2016-17	05*	-	-	-	-	-	-	-	-	-
2017-18	05*	-	-	-	-	-	-	01	-	01
2018-19	05	03	-	03	-	-	-	-	-	-
2019-20	05	-	-	-	-	-	-	-	-	-
2020-21	05	(Admission process in progress)						03	-	03
<b>Total</b>		<b>03</b>	<b>00</b>	<b>03</b>	<b>00</b>	<b>-</b>	<b>00</b>	<b>04</b>	<b>00</b>	<b>04</b>

\*Common admission in M.Sc. (Forestry)

**6.4.2 Faculty Strength**

S.No	Faculty	Sanctioned Faculty	Faculty in place	Vacant position*	Recommended by ICAR
1.	Professor	-	-	-	01
2.	Assoc. Prof.	02	-	02	02
3.	Asst. Prof.	04	03	01	04
	Total	06	03	03	07

\*Recruitment on vacant positions is in process

**PG recognized faculty for teaching/guiding the courses of the Department**

S.No	Name of Faculty	Designation	Teaching/Guiding
1.	Dr. Kanica Chauhan	Assistant professor	Teaching & Guiding
2.	Dr. Anju Vijyan	Assistant professor	Teaching & Guiding
3.	Dr. Bhuvnesh Nagar	Assistant professor	Teaching & Guiding
4.	Dr. S.B.S. Pandey	Assoc. Professor	Teaching
5.	Dr. V.C. Prahlad	Assistant Professor	Teaching
6.	Dr. P.S. Chauhan	Assoc. Professor	Teaching
7.	Mrs. Neetha P.	Assistant professor	Teaching
8.	Dr. Anchal Sharma	Assistant professor	Teaching
9.	Dr. Bhuri Singh	Assistant professor	Teaching
10.	Dr. Ashok Kumar	Assistant professor	Teaching

**6.4.3 Technical and supporting staff**

Sl. No.	Designation	Sanctioned Strength	Filled	Vacant
1.	Assistant Librarian	01	-	01
2.	Assistant Registrar	01	-	01
3.	Section Officer	02	01*	01
4.	Technical Assistant/Farm Manager	03	02	01
5.	Lab Technician	01	-	01
6.	PA	01	01*	-
7.	Steno	01	01*	-
8.	U.D.C.	02	-	02
9.	Lab Assistant	06	05	01
10.	L.D.C.	03	03*	-

11.	Library Assistant	01	01	-
12.	Driver	02	01+01*	-
13.	Matron	01	01	-
14.	Care Taker	02	02*	
15.	Agriculture Supervisor	04	03	01
16.	Store Keeper	01	-	01
17.	Forest Guard	02	02	-
18.	Gardener	02	02*	-
19.	Shelf Assistant	01	01*	-
20.	Lab Attendant	01	-	01
21.	Class IV	05	05*	-
	<b>Total</b>	<b>43</b>	<b>32</b>	<b>11</b>

\*Contractual, However the recruitment on vacant position is in process.

Note: The College has 43 sanctioned posts of technical and supporting staff of which 32 is filled for conducting skill demonstration and field experiments during practical classes, laboratory analysis and for assisting field work and training programme of various Departments.

#### 6.4.4 Classrooms and Laboratories:

Forest Products & Utilization Department has sufficient number of classrooms and laboratories as detailed below-

#### Classrooms & Laboratories

S. No.	Class room	Area	Seating capacity	Other facilities (LED, Projectors, Computers, Smart board etc.)
1.	Forest Products &utilization	1076 Sq ft	60	Projector
2.	Seminar Hall*	885 Sq ft	50	LED, Projectors, Computers
3.	Wood Science and Wood Technology Laboratory**	897 Sq ft	30	Lab equipments, glasswares, with all required facilities
4.	Non Wood Forest Products Laboratory	836 Sq ft	30	Lab equipments, glasswares, with all required facilities
5.	Herbal garden	02 ha		Cultivation and maintenance of Medicinal plants

\*Common Seminar hall for all PG Departments

\*\* Laboratories of other Departments/ Central laboratory are also used for PG practicals/ research work.



Digital classroom & Laboratory Facilities for students

### Major equipments in laboratory for conduct of practical classes

S. No.	Name of the equipment	Quantity
1.	Hot air oven	1
2.	Wood Chipper	1
3.	Rotary Pulping Digester	1
4.	Kjeldahl Digestion Unit	1
5.	Leica Scanning Microscope	1
6.	Wood Routers	2
7.	Monocular Microscope	3
8.	Wood Microtome	1
9.	Universal Wood Working Machine with circular saw planner	1
10.	Power Chain Saw	1
11.	Wood Moulding and Turning Machine	1
12.	Seed Germinator with optional accessories	1
13.	UV VIS Spectrophotometer	1

The complete list is appended in Annexure-I

### Herbal Garden

There is an established herbal garden developed over 2 ha area. The garden accommodates wide variety of plants like *Cymbopogon* spp. (Lemongrass), Palmarosa, *Ocimum* spp. (Tulsi), *Aloe vera*, *Withania somnifera*, *Rauwolfia serpentina*, *Mentha* spp., *Catharanthus roseus*, *Curcuma*, *Vitis nigrundo*, *Barlaria cristata*, *Lawsonia alba*, *Tinospora cordifolia* etc. The research trials of intercropping (Agroforestry) of *Curcuma* with *Dalbergia sissoo* and other research trials based on different forestry species are maintained in the garden. The garden is well equipped with irrigation facilities.



Research Trial of different genotypes of *Aloe vera* in Herbal Garden

#### 6.4.5 Conduct of Practical and Hands on Training

Every course for PG programme is with practical content to acquaint the students with the practical aspect in reference to the theory portion of a particular course. To impart practical skill, there are fully functional and well equipped laboratories, separately for wood and non-wood practical purposes. The Department also maintains herbal garden which has various important medicinal and aromatic plants like: *Cymbopogon*spp. (Lemongrass), Palmarosa, *Ocimum* spp. (Tulsi), *Aloe vera*, *Withania somnifera*, *Rauwolfia serpentina*, *Mentha* spp., *Catharanthus roseus*, *Curcuma*, *Barlaria cristata*, *Lawsonia alba*, *Tinospora cordifolia* etc. which are invariably used for practical orientation as well as research activities of students.

#### Average Number of Students in Theory and Practical Classes

Postgraduate students as they are less in number are grouped into one theory and one practical batch.

S. No.	Name of the Department	Theory Batch	Practical Batch	Number of students per batch
1.	Forest Products & Utilization	01	01	5

#### 6.4.6 Supervision of Students in PG

Every student shall have Advisory Committee with a Major Advisor and at least three members among whom one is from major field of specialization, another one from minor field of study and one nominated by Director Education. Programme of Research proposed by the Advisory Committee and Dean is finally approved by the Director Education. The research is conducted by the student under the supervision of Advisory Committee.

**Number of PG recognized teachers and student: teacher ratio of the Department.**

S. No.	Year	No. of PG recognized teachers	Intake of students M.Sc.	Student to teacher ratio
1.	2016-17	2	3	1:2
2.	2017-18	1	3	-
3.	2018-19	3	5	1:1
4.	2019-20	3	-	-
5.	2020-21	3	Admission in process	

**Titles of theses submitted during last five years**

Year	Title
2017-18	1. Evaluation of <i>Aloe barbadensis</i> genotypes suitable for south east region of Rajasthan.
2020-21	1. Investigation on Physico- chemical properties of important wood species of Jhalawar district. 2. Effect of Organic Manure on growth and yield of <i>Aloe barbadensis</i> MILL. In Semi-Arid region of Rajasthan 2. Ethnobotanical studies of wild edible plants and nutritional analysis of wild fruits used by Saharia Tribe of Baran, Rajasthan

**6.4.7 Feedback of Stakeholders (Students, Parents, Industries, Employers, Farmers etc.**

The students and parents give feedback regarding their academics and other problems to the appointed advisor of the department. If any problem is found, it is resolved after discussion with higher authorities. Many times experts were invited from the specific field to guide the students, So that they can be employed in different sectors.

S. No.	Name	Stakeholder	Important remarks/feed back
1.	Surendra Meghwal	Student	The teachers are well devoted. The faculty members take care of students. good facilities are available for undertaking PG research.
2.	Manoj Yadav	Student	The teachers are cooperative. They help-support students in completion of degree and guiding them for career.
3.	Dhagla Ram	Parent	There is good environment at the college. The student learns a lot in

			Jhalawar environment and timely degree.
4.	Gopal Patidar	Farmer	The teachers from the department guide us from time to time in cultivation of MAP's. They think for betterment of farmers.
5.	Kanhaiya lal Patidar	Farmer	I feel happy to participate in different programme organized by the college. I learned a lot in cultivation due to support of teachers of the department of Forest Products & Utilization.

#### 6.4.8. Student Intake and Attrition in the Programme for Last Five Years

Year	Sanctioned seats	Admitted	Attrition	% Attrition
2016-17	05*	-	-	-
2017-18	05*	-	-	-
2018-19	05	03	-	-
2019-20	05	-	-	-
2020-21	05	(Admission in progress)		

\*Common admission in M. Sc. (Forestry)

#### 6.4.9 ICT Application and Curricula Delivery

The College is having the following ICT based facilities to meet the current requirement of the students regarding the curricula delivery:

##### (A) Common ICT facility:

- Technology-enhanced learning Smart class room facility is available in three classrooms that enhances the quality of teaching and learning which is integrated with the digital displays, computer, whiteboards, assistive listening devices, and other audio/visual components that make lectures easier, engaging, and more interactive.
- Uninterrupted high speed internet connectivity with wi-fi facility is available in the college as well as hostels for providing easy access to online resources on the internet which enhances the exposure of students on different topics and also specifically to students involved in research that can help in research.
- Two separate seminar halls are equipped with LCD projectors, smart podium, interactive white boards or smart boards, Television, which help students to learn their



lessons in a smart approach ensures enhanced interactive Learning Experience that has increased productivity.

- College is having computer lab with good quality internet connected 26 computers and peripherals to offer students with quality education by helping them to understand concepts better, improve their reading and comprehension skills, and achieve academic excellence.

### **(B) Academic Management System**

Academic Management System has been implemented in the college under NAHEP Component-II by Division of Computer Applications, IASRI, Pusa, New Delhi. This system automates various academic processes of the university and enhances the efficiency of the system by saving time and efforts involved in manual processes. The system has following sub modules:

- Courses Management
- Student Management
- Faculty Management
- Administration Management
- E-Learning
- Online fee collection

### **(C) Online Teaching & Examination**

- Live online lectures through live video classes through (ZOOM, MS Team, Google Meet, etc.)
- Notes and other file sharing through Google classrooms, WhatsApp, Internet
- Online discussion forums for students were conducted through (ZOOM, MS Team, Google Meet, etc.)
- E-courses from ICAR and other sources are put on website for students and teachers.
- Organization of meeting, seminar, meeting of courses committee through MS team.

However, there is urgent need of separate library building enabled with ICT facilities and equipped electronic gadget for faculty and students to access information floating worldwide in the field of Horticulture & Forestry. It will foster specially the faculty in best curricula delivery and also the student grasping the subject matter delivered by faculty.

### **Departmental Activities:**

1. The faculty of Department has delivered various lectures during workshops and training to make the farmers, forest guards and students gain more practical knowledge of the subject.
2. The faculty of the department contributed manuals.
3. The faculty of the department has also contributed various research papers, chapters and bulletins towards literary support to forestry in broader perspective during last 5 years.

4. One PG student was awarded with Social Welfare scholarship.
5. Department has been engaged in various plantation activities of the College.
6. The Department has also conducted 2 days Online National webinar on “Avenues in forestry for farmers and students” on 3-4 July, 2020 during covid-19 pandemic.



Exposure Visits



Visit to forest Department

Nursery Visit

**NATIONAL WEBINAR  
ON  
“AVENUES IN FORESTRY FOR FARMERS AND STUDENTS”**

**Patron**  
Prof. D. C. Joshi  
Vice-Chancellor, AU, Kota

**Chairman**  
Dr. I. B. Masrya  
Dean, X.H., Jharkhand

**Organizing Secretary:**  
Dr. S.B.S. Pandey, Assoc. Prof. & Head (SAF)

**Co-organizing Secretary:**  
Dr. Kamlesh Chandra, Asst. Prof. & VC (FPU)

**Co-ordinators:**  
Dr. V.C. Prithvi, Asst. Prof. (SAF)  
Dr. Navale Manasi R., Asst. Prof. (SAF)  
Dr. Anju S. Vijayan, Asst. Prof. (FPU)  
Dr. Bhuvnesh Nagar, Asst. Prof. (FPU)

Participants  
Students & Researchers, UGs/ PGs, Scientists, Govt., Officials, NGO, Forest officials & Progressive Farmers  
ZOOM Meeting ID: 5687365923  
Click for registration:  
<https://www.zoom.us/j/5687365923>

Active participants  
will get the  
e-certificates

**EMINENT SPEAKERS**

 Dr. J.C. Tewari <small>Retd. Principal Scientist ICAR-CARRI Jodhpur Rajasthan</small>	 Dr. K.R. Sharma <small>Retd. Prof. Former Dean, K.V.P. (B.P. Nainsi, Solan Himachal Pradesh)</small>	 Dr. S.S. Sarkade <small>Dean (Agri) &amp; Director of Extension ICAR-ICAR, Dapoli Maharashtra</small>	 Dr. J.P. Singh <small>Principal Scientist ICAR-CARRI Jodhpur Rajasthan</small>	 Dr. T.K. Kishore <small>Assoc. Director of Research (Forestry) Prof. &amp; Head (SAF) K.A.U., Bhubaneswar Odisha</small>	 Dr. Sanita S. Dhanraj <small>Principal Scientist ICAR-ICAR, Lucknow Uttar Pradesh</small>
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Organization of 2-Days National webinar from 3-4 July, 2020 on “Avenues in forestry for farmers and students”

## Certificate

I, the Dean, College of Horticulture & Forestry, Jhalawar hereby certify that the information contained in the Section 6.4.1 to 6.4.9 is furnished as per the records available in the College and Degree Awarding University.

Place : Jhalawar, Rajasthan

Date :



(I.B. Maurya)

**Dean**  
**College of Horticulture and Forestry**  
**(Agriculture University, Kota)**  
**Jhalrapatan, JWR 326023 (Rajasthan)**

# SELF STUDY REPORT

## M.Sc. Forestry (Wildlife Sciences)



College of Horticulture & Forestry, Jhalawar  
Agriculture University Kota (Raj.)

#### **6.4.1. Brief History of the Degree Programme:**

The Department of Wildlife Management has its inception during 2017-18 under the Faculty of Forestry. Wildlife sciences focuses on the biology and management of wild animals, including their ecology and conservation. The study material takes into account native and the exotic birds, mammals, reptiles and amphibians in natural or created environments, their biodiversity and human-wildlife interactions. The subject makes the students able to implement and evaluate wildlife management programs for captive and free ranging purposes. One will develop a strong scientific knowledge of wildlife anatomy and physiology, breeding, reproduction, nutrition, health, husbandry, ecology, welfare and behavior with excellent wildlife trapping, identification and handling skills.

#### **Objectives:**

- To generate competent human resources and capacity building of students in field of Forestry (Wildlife Sciences).
- To find solution to emerging issues related to conservation of the threatened species.

**Nomenclature of Degree programme** : M.Sc. Forestry (Wildlife Sciences)

**Duration of the Degree programme** : 02 Years (04 Semesters)

**Admission Process** : The admissions are made through the competitive State level Joint Entrance Test/Pre-PG Test conducted by SAUs on rotation basis.

#### **Requirement for Degree Programme**

A student admitted to a post graduate programme shall have to successfully complete the following before award of a degree:

- An approved programme of study prepared by his/her advisory committee
- A comprehensive or preliminary examination
- Synopsis seminar and approval of synopsis
- Pre-thesis seminar
- Submission of thesis and its evaluation report
- Thesis viva-voce examination
- Minimum residential requirement- four semesters
- Minimum OGPA requirement – 6.5 out of 10 point scale

A student of master's programme is required to complete a minimum of 57 credit hours for the degree. The distribution of courses for master's programme is as under:

Title	Approved Course Load
Major courses (Core & Optional)	: 27 Credit Hours (including 12 credit hours as core courses)
Minor & Supporting Courses	: 09 Credit Hours
Seminar	: 01 Credit Hour
Comprehensive	: NC (Non Credit Hours)
Research	: 20 Credit Hours
Non-Credit e-courses (Compulsory)	: 06 Credit Hours

### Distribution of courses for Degree Programme

	Course No.	Title of Course	Credit Hrs.
<b>MAJOR COURSES</b>	FORT- 511*	Silviculture and Forest Biometry	3 (2+1)
	FORT- 512*	Forest Management and Protection	3 (2+1)
	FORT- 513*	Tree Physiology and Tree Improvement	3 (2+1)
	FORT- 531*	Forest Products –Chemistry and Industries	3 (2+1)
	WLS-521	*Taxonomy and Biology of Wild Animals	3 (2+1)
	WLS-522	*Wildlife Ecology and Conservation Biology	3 (2+1)
	WLS-523	*Wildlife Population Dynamics	3 (2+1)
	WLS-524	*Ethology of Wild Animals	3 (2+1)
	WLS-531	**Wildlife Nutrition, Disease and Health Management	3 (2+1)
	WLS -532	**Wildlife Crime, Legislation and Forensic Sciences	3 (2+1)
	WLS -533	**Endangered Species Management	3 (2+1)
		<b>Total (Major Courses)</b>	<b>27 (18+9)</b>

<b>MINOR COURSES</b>	STAT-512	Statistical Methods and Computer Application	3 (2+1)
	SAF-511	*Forest and Climate Change	3 (2+1)
	SAF-512	*Ecotourism and Participatory Forestry	3 (2+1)
	WLS-511	*Captive Animal and Biological Parks Management	3 (2+1)
	WLS-534	*Wildlife Photography, Nature Interpretation and Education	3 (2+1)
	WLS-535	*Man and Animal Conflict	3 (2+1)
	NRM-512	*Land use and Watershed Management	3 (2+1)
	NRM-531	*Remote Sensing and Geographic Information System <i>* Any Two to be opted(as per semester distribution option)</i>	3 (2+1)
		<b>Total (Minor Courses)</b>	<b>9(6+3)</b>
<b>NON - CREDIT</b>	PGS 501	Library and Information Services	0+1(NC)
	PGS 502	Technical Writing and Communication Skills	0+1(NC)
	PGS 503	Intellectual Property and its Management in Agriculture	1+0(NC)
	PGS 504	Basic Concepts in Laboratory Techniques	0+1(NC)
	PGS 505	Agricultural Research, Research Ethics and Rural Development Programmes	1+0(NC)
	PGS 506	Disaster Management	1+0(NC)
	WLS-591	Credit Seminar	<b>1(0+1)</b>
	WLS-541	Comprehensive (NC)	1(1+0)NC
	WLS-599	Research	<b>20(0+20)</b>
		Grand Total	<b>57</b>

### Accreditation of Degree Programmes

The following PG programme is offered for accreditation by National Agricultural Education Accreditation Board, ICAR, New Delhi:

Academic Programme	Programme for Fresh Accreditation	Duration
Post Graduate	M.Sc. Forestry (Wildlife Sciences)	Two years (4-Semesters)

**Year wise admission to M.Sc. Forestry (Wildlife Sciences) for last five years:**

Year of Admission	Intake capacity	Admitted			Dropped			Passed		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
2018-19	5	2	1	3	-	-	-	--	--	--
2019-20	5	--	--	--	--	--	--	--	--	--
2020-21	5	(Admission is in progress)						2	1	3

**Note:** PG programme started from academic session 2018-19

**6.4.2. Faculty Strength:**

S.No	Faculty	Sanctioned Faculty	Faculty in place	Vacant position*	Recommended by ICAR
1.	Professor	-	-	-	01
2.	Assoc. Prof.	01	0	01	02
3.	Asst. Prof.	02	01	01	04
	<b>Total</b>	03	01	02	07

\*Recruitment on vacant positions is in process.

**PG recognized faculty for teaching/guiding M.Sc Forestry (Wildlife Sciences):**

S.No	Name of Faculty	Designation	Teaching/Guiding
1.	Dr. Anchal Sharma	Assistant Professor	Teaching & Guiding
2.	Dr. S.B.S. Pandey	Assoc. Professor	Teaching
3.	Dr. V.C. Prahlad	Assistant Professor	Teaching
4.	Dr. P.S. Chauhan	Assoc. Professor	Teaching
5.	Mrs. Neetha P.	Assistant Professor	Teaching
6.	Dr. Kanica Chauhan	Assistant Professor	Teaching
7.	Dr. Anju Vijyan	Assistant Professor	Teaching
8.	Dr. Bhuvnesh Nagar	Assistant Professor	Teaching
9.	Dr. Ashok Kumar	Assistant Professor	Teaching
10.	Dr. Bhuri Singh	Assistant Professor	Teaching
11.	Dr. Priyanka Solanki	Assistant Professor	Teaching

**6.4.3. Technical and Supporting Staff:**

Sl. No.	Designation	Sanctioned Strength	Filled	Vacant
1.	Assistant Librarian	01	-	01
2.	Assistant Registrar	01	-	01



3.	Section Officer	02	01*	01
4.	Technical Assistant/Farm Manager	03	02	01
5.	Lab Technician	01	-	01
6.	PA	01	01*	-
7.	Steno	01	01*	-
8.	U.D.C.	02	-	02
9.	Lab Assistant	06	05	01
10.	L.D.C.	03	03*	-
11.	Library Assistant	01	01	-
12.	Driver	02	01+01*	-
13.	Matron	01	01	-
14.	Care Taker	02	02*	
15.	Agriculture Supervisor	04	03	01
16.	Store Keeper	01	-	01
17.	Forest Guard	02	02	-
18.	Gardener	02	02*	-
19.	Shelf Assistant	01	01*	-
20.	Lab Attendant	01	-	01
21.	Class IV	05	05*	-
	<b>Total</b>	<b>43</b>	<b>32</b>	<b>11</b>

\*Contractual. However, recruitment on vacant positions is in process.



Note: The College has 43 sanctioned posts of technical and supporting staff of which 32 is filled for conducting skill demonstration and field experiments during practical classes, laboratory analysis and for assisting field work and training programme of various departments.

#### 6.4.4. Classrooms and Laboratories:

Department of Wildlife Management has sufficient number of classrooms and laboratories as detailed below.

Sl.No.	Unit	Area (sq ft)	Seating capacity	Other facilities (LED, Projectors, Computers, Smart board etc.)
1.	Classroom	1076	66	Smart classrooms equipped with Projector, wi-fi
2.	Laboratory	77.01	30	Well equipped as per requirement
3.	Seminar Hall*	885	50	LED, Projectors, Computers, Video-conferencing system

\* Common Seminar hall for all PG Departments

	
<p>Fieldwork by the student</p>	<p>Classroom for students teaching</p>

**Major equipments available in the Department:**

Sl. No.	Name of the equipment	Quantity
1.	Binocular	03
2.	Camera	01
3.	Camera Trap	02
4.	Insect Dissecting Kit	02

Besides equipments the department maintains various models of species as well as preserved specimen of some dead animals for better understanding of the subject due to strict adherence of Wildlife Protection Act 1972.

**6.4.5. Conduct of Practical and Hands on Training:**

The Department of Wildlife Management is offering post graduate programme in Wildlife Sciences and the students are particularly guided accordingly to their field of expertise. The programme has been designed focusing more on the field related to wildlife research. PG students are systematically exposed to various need based techniques of wildlife for better research and more constructive approach for management of endangered and threatened species under the guidance of advisory committee.

**Average Number of Students in Theory and Practical Classes:**

Postgraduate students as they are less in number are grouped into one theory batch and one practical batch.

Sl. No.	Name of the Department	Theory Batch	Practical Batch	Number of students per batch
1.	Wildlife Sciences	01	01	5

**6.4.6. Supervision of Students in PG:**

Every student shall have Advisory Committee with a Major Advisor and at least three members among whom one is from major field of specialization, another one from minor field of study and one nominated by Director Education. Programme of Research proposed by the Advisory Committee and Dean is finally approved by the Director Education. The research is conducted by the student under the supervision of Advisory Committee.

**Number of PG recognized guides and teacher : student ratio of the Department**

Sl. No.	Year	No. of PG recognized guides	Intake of M.Sc. students	Student to teacher ratio
1	2018-19	01	03	1:3
2	2019-20	01	-	--
3	2020-21	01	Admission in process	

**Titles of theses submitted during last five years:**

Year	Theses Title
2020-21	<ol style="list-style-type: none"> <li>1. Nesting Patterns of birds in Jhalawar region of Rajasthan</li> <li>2. A Study on Hanuman Langur (<i>Semnopithecus entellus</i>) for Distribution and Demography South-Eastern Rajasthan</li> <li>3. Assessment and Management strategies of vultures in Hadoti region of Rajasthan</li> </ol>

**6.4.7. Feedback of Stakeholder (Students, Parents, Industries, Employers, Farmers etc.):**

The students and parents give feedback regarding their academics and other problems to the appointed advisor of the Department. If any problem is found, it is resolved after discussion with higher authorities. Many times experts were invited from the specific field to guide the students.

Sl. No.	Name	Stakeholder	Important remarks/feed back
1.	Firdous Khan	Student	Infrastructure and available facilities are good; all the faculty members are highly cooperative. Duration of reach work will be an inspiration for future.
2.	Prashant Kumar Mishra	Student	Good guidelines were given during the course of research work.

3.	Shubham Suthar	Student	Teaching is very good, excellent exposure to every kind of facility i.e., lab instruments, library, internet, sports, seminars etc.
4	Abbas Khan	Parent	The college has good learning environment with well educated and cooperative faculty members.

#### 6.4.8. Student Intake and Attrition in the Programme for last Five Years:

Year	Intake capacity	Admitted	Attrition	% Attrition
2018-19	5	3	0	0
2019-20	5	No admission	0	0
2020-21	5	Admission in process		

#### 6.4.9. ICT Application and Curricula Delivery:

The College is having the following ICT based facilities to meet the current requirement of the students regarding the curricula delivery:

##### (A) Common ICT facility:

- Technology-enhanced learning Smart class room facility is available in three classrooms that enhances the quality of teaching and learning which is integrated with the digital displays, computer, whiteboards, assistive listening devices, and other audio/visual components that make lectures easier, engaging, and more interactive.
- Uninterrupted high speed internet connectivity with wi-fi facility is available in the college as well as hostels for providing easy access to online resources on the internet which enhances the exposure of students on different topics and also specifically to students involved in research that can help in research.
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- College is having computer lab with good quality internet connected 26 computers and peripherals to offer students with quality education by helping them to understand concepts better, improve their reading and comprehension skills, and achieve academic excellence.

##### (B) Academic Management System

Academic Management System has been implemented in the college under NAHEP Component-II by Division of Computer Applications, IASRI, Pusa, New Delhi. This system

automates various academic processes of the university and enhances the efficiency of the system by saving time and efforts involved in manual processes. The system has following sub modules:

- Courses Management
- Student Management
- Faculty Management
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- Online fee collection

### **(C) Online Teaching & Examination**

- Live online lectures through live video classes through (ZOOM, MS Team, Google Meet, etc.)
- Notes and other file sharing through Google classrooms, WhatsApp, Internet
- Online discussion forums for students were conducted through (ZOOM, MS Team, Google Meet, etc.)
- E-courses from ICAR and other sources are put on website for students and teachers.
- Organization of meeting, seminar, meeting of courses committee through MS team.

However, there is urgent need of separate library building enabled with ICT facilities and equipped electronic gadget for faculty and students to access information floating worldwide in the field of Horticulture & Forestry. It will foster specially the faculty in best curricula delivery and also the student grasping the subject matter delivered by faculty.

### **Departmental Activities:**

Apart from Academic curricula, the students are also exposed by different research and training programme organized by the Department for upliftment of the subject knowledge of the students.

- The faculty of the department has also contributed various research papers, abstracts and articles towards literary support to wildlife science in broader perspective.
- The faculty of the department contributed reading manual on Wildlife Management.
- Preparation of Brochure on Tiger Conservation and Snake Rescue Technique
- One of the student Ms. Firdous Khan received Ag. Girls Scholarship.
- Till date, 03 students have successfully completed the degree programme. Out of which 01 is selected as Education officer in BHNS (Bombay Natural History & Society).
- The faculty of Department has delivered various lectures during workshops and trainings to make the students gain more practical knowledge of the subject.
- Besides organizing certain activities during celebration of wildlife week, the students of the department have actively participated in the programmes hosted by the Forest

Department and the Mukundra Hill Tiger Reserve from time to time.

- The Department has organized one day training of snake rescue technique to bring awareness among the students.
- The Department has also conducted 1 day Online National webinar on “Wildlife Conservation” on 01<sup>st</sup> July, 2020 during covid-19 pandemic.

**COLLEGE OF HORTICULTURE AND FORESTRY, JHALAWAR**  
(Agriculture University, Kota, Raj.)

**NATIONAL WEBINAR ON WILDLIFE CONSERVATION**  
Organised by Department of Wildlife Management

Organising Committee		Programme		Eminent Speakers	
<b>Patron</b> Prof. D. C. Joshi Vice-Chancellor AU, Kota (Raj.)		10.00 AM	Participants in	-	
		10.20 AM	Welcome Address	<b>Dr. Anchal Sharma</b>	<b>Prof. K. K. Sharma</b> Former Vice Chancellor MDSU, Ajmer (Raj.)
		10.25 AM	Opening Remarks	<b>Prof. D. C. Joshi</b>	
		10.30 AM	Role of Effective Rescue Operations in Wildlife Conservation	<b>Dr. Sandeep Kumar</b>	
<b>Chairman</b> Dr. J. B. Maurya Dean CHF, Jhalawar (Raj.)		11.10 AM	Modern Bioacoustics Tools in Identification & Monitoring of Wildlife.	<b>Dr. K. K. Sharma</b>	<b>Dr. Sandeep Kumar, IFS</b> DCF, Bhavnagar Gujarat
<b>Organizing Secretary</b> Dr. Anchal Sharma Asstt. Prof. & Incharge WLM, CHF, Jhalawar		11.50 AM	Mammalian Diversity & their Conservation in India	<b>Dr. Gaurav Sharma</b>	
<b>Co-organizing Secretary</b> Dr. P. S. Chaudhan Assoc. Prof. & Head FBTI, CHF, Jhalawar		12.30 PM	Current status and Future of Great Indian Bustard in Rajasthan.	<b>Dr. Sumit Dookia</b>	<b>Dr. Gaurav Sharma</b> Scientist-E & Officer-in-Charge ZSI, Dehradun (U.K)
<b>Coordinator</b> Dr. Bhuvanesh Nagar Asstt. Prof., FPU CHF, Jhalawar		01.10 PM	Vote of Thanks	<b>Dr. L. B. Maurya</b>	<b>Dr. Sumit Dookia</b> Asstt. Prof. Adjutor GIB Conservation Prog. GGSIPI, Delhi.

**Participants:**  
Students/ Researchers  
Univ/ KVK Scientists  
Gov. Officials & NGO

*Registered participants will get e-certificate,  
Register yourself on the given below link:*

<https://bms.gyrfk.com/forms/01/5v-MP3McTYm1h4V1v0r3100uqtcUJhnp12v0/01.india>

Contact us : Tel- 07432-242155; E-Mail-deancohf2004@gmail.com

**Please Do Remember :**  
Date: 01/07/2020  
Time: 10:00 AM-1:30 PM  
ZOOM Meeting ID : 5487565923

**National webinar on “WILDLIFE CONSERVATION”**



**Training on “SNAKE RESCUE TECHNIQUE”**



**Wildlife Week Celebration**



**World's Tiger Day Awareness**



**Exposure visit of students to Wildlife Surveillance & Anti - Poaching System**



**Exposure visit of students to Veterinary Hospital**



**Participation of students in Biodiversity Festival**



**Participation of students in Bird Exhibition**

**Certificate:**

I, the Dean, College of Horticulture & Forestry, Jhalawar hereby certify that the information contained in the Section 6.4.1 to 6.4.9 is furnished as per the records available in the college and degree awarding university.

Place : Jhalawar, Rajasthan

Date :



(I.B. Maurya)

**Dean  
College of Horticulture and Forestry  
(Agriculture University, Kota)  
Jhalrapatan, JWR 326023 (Rajasthan)**



## Appendix-I

### The lists of major equipments /instruments/ machineries available in the laboratory

#### 1. Fruit Science Lab

S. No.	Name	Quantity
1.	Electronic balance capacity 10 kg	01
2.	Electronic balance capacity 2 kg	01
3.	Precision weighing balance capacity Sartorius 200g	01
4.	Photosynthesis system	01
5.	Hot air oven	01
6.	Willey grinder	01
7.	Rotary flask shaker	01
8.	Abbe refractometer	01
9.	Hand refractometer ERMA-0-18 %	02
10.	Hand refractometer ERMA-0-55%	02
11.	Digital hand refractometer	01
12.	Digital vernier calipers	04
13.	Vapour pressure osmometer	01
14.	Thermohygrometer	02
15.	Single distillation Unit	01
16.	Leaf area meter	01
17.	Elico digital pH meter	02
18.	Probe soil thermometer	01
19.	Microscope	03
20.	Digital Hot plate with temp controller	01
21.	Water potential system	01
22.	Open pan evaporimeter	01
23.	Spectrophotometer	01
24.	Fruit penetrometer	01
25.	Mercury soil thermometer	06

**2. Vegetable Science Lab**

S. No.	Name of the equipment	Quantity
1.	Spring balance capacity 20 kg	01
2.	Top pan balance capacity 10 kg	01
3.	Seed purity board	01
4.	Multiple exhibit panel for outdoor use	01
5.	Dual purpose (half exhibit –half white )display panel	01
6.	Hand refractometer ERMA-0-18 %	01
7.	Hand refractometer ERMA-0-55%	01
8.	Digital Vernier caliper	01
9.	Elico microprocessor scanning visible spectrophotometer SL-177	02
10.	All Quartz Double Distillation with auto cut off JSGW 1.5L/h	01
11.	Kjeldal digestion unit(JSGW) With individual energy regulator	01
12.	Elico digital Ph meter Model L1-127	01
13.	Digital electronic balance Sartorius model BT-2245	01
14.	Conductivity meter pen type	01
15.	Microscope	05
16.	Digital Hot Plate with temp controller	01
17.	Laboratory oven system	01
18.	Centrifuge and accessories	02
19.	Exhibit panel for indoor use Research scholar	04
20.	Vortex	01
21.	Digital Screw Gauge	01
22.	Computer UPS	02
23.	Laptop (note book HP probook 40000 s series )	01
24.	Precision Laboratory balance 300g	01
25.	pH meter pocket type ERMA	01
26.	Digital Pocket balance	01
27.	Digital balance	01

### 3. Floriculture and Landscape Architecture Lab

S. No.	Name of equipments	Quantity
1.	Hot air oven	01
2.	Exhibition panel	07
3.	Water distillation unit	01
4.	Digital balance	01
5.	Vernier caliper	01
6.	pH meter	01
7.	Lawn mower	02
8.	Secateurs	41
9.	Pruning shear	01
10.	Bonsai kit	01
11.	Budding and grafting knife	67
12.	Microwave oven	01
13.	Digital camera	01
14.	Hedge shear	03
15.	Microscope	01
16.	Hand weeder	66
17.	Khurpi	42
18.	Sprinkler	09
19.	Wrench	01
20.	Brush cutter	03
21.	Digital thermohygrometer	01
22.	Hedge trimmer	01
23.	Refrigerator	01
24.	Grass sword	02

25.	Garden hoe	02
26.	Rack	01
27.	Cultivator	02
28.	Looping shear	01

#### 4. Post Harvest Technology Lab

S. No.	Name of equipments	Quantity
1.	Balance Cap.10 kg	01
2.	Bottle filling machine	01
3.	Blancher	01
4.	Bottle Opener	02
5.	Boiler (Thermotech)	01
6.	Bottle sterilization tank	01
7.	Canning pressure cooker retort	01
8.	Crown corking machine	01
9.	Can reforming machine	01
10.	Compound microscope trinocular	01
11.	Counting chamber	01
12.	Cork borer	01
13.	Double seaming machine	01
14.	Dicing and cubing machine	01
15.	Uv Spectrophotometer	01
16.	Digital hand refractometer	01
17.	Exhaust box with 10ft conveyer	01
18.	Electric kettle	01
19.	Electronic colony counter	01

20.	Electric hand blander	01
21.	Electric citrus juicer	01
22.	Fruit halving machine (Basil)	01
23.	Gas stove	01
24.	Gas cylinder 14.5 + commercial	04
25.	Heating mantle	01
26.	Hot plate	01
27.	Hydraulic juice press	01
28.	Inert atmosphere can filler	01
29.	Juice filtering equipment	01
30.	Knife cutting	06
31.	Knife peeling	06
32.	Lid embossing machine	01
33.	Lime juicer (manual)	06
34.	Laminar air flow horizontal	01
35.	Magnetic stirrer with hot plate	01
36.	Vegetable cutting machine	01
37.	Micro processor based solar dryer	01
38.	Mortar pestle	02
39.	Onion peeling machine	01
40.	O <sub>2</sub> CO <sub>2</sub> analyzer	01
41.	pH meter digital	01
42.	PP Cap sealing machine	01
43.	Pulper with spare sieve	01
44.	Portable digital thermometer	01
45.	Microwave oven	01

46.	PAN Stainless steel	02
47.	Pocket refractometer Erma 0-32	01
48.	Pair of ocular micrometer	01
49.	Pocket refractometer 28-62	01
50.	Pocket refractometer 58-92	01
51.	pH meter portable	01
52.	Plastic bag sealing machine	01
53.	Rotary shaker	01
54.	Rotational viscometer	01
55.	Rubber cork	36
56.	Screw type juice extractor	01
57.	Storage and mixing tank	01
58.	Steamed jacketed cooling kettle	01
59.	Swan neck tap	02
60.	Slide box 100 slides	02
61.	Steam pipeline with overhead water tank	01
62.	Spatula stainless steel	05
63.	Thermo hygrometer digital	01
64.	Tin sterilizer	01
65.	Vortex shaker	01
66.	Vacuum packaging machine	01
67.	Vegetable washer	01
68.	Voltage stabilizer	01
69.	Vernier caliper digital	01
70.	Water bath	01
71.	Working table	02

72.	Working trays	10
73.	wine testing kit	01

### 5. Silviculture and Agroforestry Lab

S. No.	Name of equipments	Quantity
1.	pH meters	01
2.	Digital balance	02
3.	Refrigerator	02
4.	Spade	90
5.	Hot air oven	01
6.	Computer for remote sensing and GIS with Erdas imagine professional & Arc GIS	01
7.	GPS	02
8.	Secateurs	70
9.	Khurpi	58
10.	Kudali with Wooden Handle	55
11.	Sickle with handle	52
12.	Pick axe	50
13.	Acrylic label with stand for field	30
14.	Budding and grafting Knife	20
15.	Seed store jars	40
16.	Insect mounting tray	10
17.	Museum specimen Jar 6X4X8	10
18.	Museum specimen Jar 7X4X9	10
19.	Tape ( Measuring)	8
20.	Insect killing bottle	7
21.	Wedge prism	7

22.	Herbarium press for field use 45×30 cm	6
23.	Herbarium press for field use 45×30 cm	5
24.	Dissection set box	5
25.	Insect display & storage showcase 53"×45" 'Rescholar'	5
26.	Camping Tents	4
27.	Field Chair	4
28.	Napsack Sprayer	4
29.	Altimeter Ravi	3
30.	Aluminum Ladder	3
31.	Insect cage	3
32.	Insect collecting net with wooden handle	3
33.	Water can ( Nursery )	3
34.	Aluminum caliper 50cm	2
35.	Binocular 7-30×50 Olympus	2
36.	Exhibition Panel with Stand	2
37.	Field lens	2
38.	Field Umbrella	2
39.	Hedge Shear 14"	2
40.	Herbarium Sheet Cabinet 18X15X3 ( 12 Drawer)	2
41.	Herbarium Sheet Cabinet 18X15X3 ( 6 Drawer)	2
42.	Moss stick	2
43.	Prssler's Increment Borer	2
44.	Seed washing Tub ( big)	2
45.	Seed washing Tub (small)	2
46.	Wooden caliper	2
47.	White Board with Tripod Stand	2



48.	Anemometer Cup counter	1
49.	Bark gauge	1
50.	Branch Cutter	1
51.	Calculator Scientific	1
52.	Canon EOS 350 DSLR	1
53.	Fire Extinguisher - 5 Kg	1
54.	GPS with Barometer	1
55.	Hand pruning saw with wooden handle 16"	1
56.	Handy digital balance	1
57.	L C D projector	1
58.	LCD 4X70 Voice Recorder Sony	1
59.	Muffle Furnace UTS 1.07B	1
60.	pH Meter –Digital	1
61.	PVC Pipe (7.5 m)	1
62.	Seed spread mat (Tripal)	1
63.	Slide projector with built in screen	1
64.	Spiegel Relaskop	1
65.	Thermo-hygrometer clock	1
66.	Tripod simplex- Camera stand	1
67.	Water cane	50
68.	Aluminum labels 8×3 cm thick	1000
69.	Nursery bags with hole (of different sizes)	200 Kg

## 6. Forest Biology and Tree Improvement Lab

S. No.	Name of the equipment	Quantity
1.	Autoclave	1
2.	Battery Operated Sprayer	1

3.	Binoculars	19
4.	Camera Trap	3
5.	Digital Moisture Meter	1
6.	Digital SLR Camera	1
7.	Digital Vernier Caliper	1
8.	Digital Vernier Caliper	1
9.	Electronic balance capacity 100 gm	1
10.	Electronic balance capacity 35 Kg	1
11.	Electronic balance capacity sartorius 60 Kg	1
12.	Flash Light	2
13.	GPS	3
14.	Herbarium Press	1
15.	Hot Air Oven	1
16.	K-yan (Portable Projector)	1
17.	Lux Meter	1
18.	Microscope	1
19.	Seed Counter	1
20.	Seed Germinator	1
21.	Seed Grader	1
22.	Seed Precision Divider	1
23.	Seed Purity Work Board	1
24.	Single distillation Unit	2

### 7. Forest Products and Utilization Lab

S. No.	Name of the equipment	Quantity
1.	Electronic balance capacity 10 kg	3
2.	Hot air oven	1
3.	Hot Plate Rectangular (45x30 cm)	1
4.	Water Bath	1
5.	Portable pH meter	1
6.	Wood Chipper	1
7.	Rotary Pulping Digester	1
8.	Axe	5
9.	Pruning saw	22
10.	Hammer (2P, 4P,5P,8P)	8

11.	Sharpening Tools	6
12.	Measuring Tape -3 metre , 5 metre	4
13.	Spade	29
14.	Wooden Chisel	4
15.	Pit Saw	5
16.	Crow Bar	10
17.	Drill Machine	2
18.	Muffle Furnace	1
19.	Kjeldahl Digestion Unit	1
20.	Magnetic stirrer	1
21.	VDRL Shaker	1
22.	Leica Scanning Microscope	1
23.	Wood Routers	2
24.	Monocular Microscope	3
25.	Wood Microtome	1
26.	Universal Wood Working Machine with circular saw planner	1
27.	Power Chain Saw	1
28.	Grinding mill-walley grinder	1
29.	Wood Moulding and Turning Machine	1
30.	Seed Germinator with optional accessories	1
31.	Crude Fibre Estimation Unit	1
32.	UV VIS Spectrophotometer	1
33.	Heating Mental	4
34.	Digital Vernier Calliper	1

### 8. Wildlife Lab

Sl. No.	Name of the equipment	Quantity
1.	Binocular	03
2.	Camera	01
3.	Camera Trap	02
4.	Insect Dissecting Kit	02

**9. Entomology Lab**

S. No.	Name of equipments	Quantity
1.	Laboratory stool	20
2.	Exhibition board	02
3.	Dissecting kit	03
4.	Hand lens with metal frame	02
5.	Insect display and Storage showcase	15
6.	Insect showcase cabinet, 12 showcase	01
7.	Stereo zoom Microscope, WF10x/20	01
8.	Insect storage box	50
9.	Insect stretching board (Adjustable)	20
10.	Insect collection net with aluminium handle	50
11.	Insect cage	05
12.	Dissecting tray with wax/EVAPad	10
13.	Light trap	02
14.	Mosquito trap	02
15.	Pheromone trap	50
16.	Sticky trap	30
17.	Fruit fly trap	10
18.	Suction trap	10
19.	Berlise funnel	05
20.	Display chart	50
21.	Display photographs	15

**10. Plant Pathology Lab**

<b>S. No.</b>	<b>Name of equipments</b>	<b>Quantity</b>
1.	Laminar airflow	01
2.	Refrigerator	01
3.	Herbarium press	01
4.	Balance	01
5.	BOD incubator	01
6.	Microscope (student)	15
7.	Centrifuge	01
8.	Colony counter	01
9.	Sieve plates	12
10.	Hot air oven	01
11.	Autoclave	02
12.	pH meter	01
13.	Micropipette	03
14.	Distillation unit	02
15.	Spectrophotometer	01
16.	Inoculation needle	03
17.	Spirit lamp	03
18.	Test tube stand	02
19.	Cork borer	01
20.	Haemocytometer	01
21.	Camera lucida	01
22.	Micrometer	01
23.	Compound microscope	01
24.	Microwave oven	01

**11. Soil Science Lab**

S. No.	Name of equipments	Quantity
1.	Autoclave vertical high pressure	01
2.	Automatic micropipette controller	01
3.	Balance top loading	03
4.	Centrifuge high research	01
5.	Digital U based conductivity meter	01
6.	Exhibit panel	02
7.	Electric heating cup	01
8.	Flame photometer	01
9.	Flame photometer Systonic Make	01
10.	Hot plate rectangular	01
11.	Handa copper	01
12.	Iron stand	01
13.	Infiltrometer	02
14.	Kjeldal distillation and digestion combined unit	01
15.	Microprocessor based water quality analyzer	01
16.	Magnetic stirrer with hot plate	01
17.	Microscope binocular	01
18.	pH meter digital	01
19.	pH meter elico	01
20.	pH glass electrode	03
21.	Rotary flask shaker	01
22.	Spectrophotometer	01
23.	Soil tensiometer 30 cm	01
24.	Soil tensiometer 60 cm	01

25.	Soil thermometer multi channel with 50 cm probe MAC	01
26.	Cylindrical core cutter	04
27.	Steel dolly	02
28.	Hammer with steel road	02
29.	Water bath	01
30.	Spatula	15
31.	Measuring tape	03
32.	Hydrometer	05
33.	Enamel tray	14
34.	Crucible silica	04
35.	Porcelain	20
36.	Spirit lamp stainless	10
37.	Pan and cover	01
38.	Sieve shaker	01
39.	Laboratory permeability apparatus	01
40.	Over head tank	01
41.	Vernier caliper	01
42.	Tachometer digital non contact	01
43.	Hydrometer	01
44.	First aid box	01
45.	Moisture content tin	20
46.	Soil auger	03
47.	Sieve	02
48.	Stop watch mechanical	01
49.	Stop watch electronic	02
50.	Spectrophotometer uv visible	01

51.	Vaccum pump double stage	01
52.	Water bath rectangular	01
53.	Sampling auger outfit blade	01
54.	Extension rod 1 m for auger	01
55.	1 handle and T piece	01
56.	Spanner	01
57.	Sampling tube	01
58.	Speedy moisture meter	01
59.	Pycnometer set	06
60.	Sieves	11
61.	LG refrigerator	01
62.	Oven	01
63.	Horizontal laminar flow cabin	01
64.	Willey grinder	01

## 12. Agriculture Engineering Lab

S. No.	Name of equipments	Quantity
1.	Anemometer	01
2.	Digital humidity and temperature meter	01
3.	Digital thermo-hygrometer	04
4.	Farm power and Machinery tools	01
5.	Hygrometer	01
6.	Pan evaporimeter	01
7.	Parshal flume	01
8.	Rain gauge	01
9.	Rain gauge non recording	01



10.	Stevenson screen	01
11.	Vernier caliper	01
12.	Wet and dry bulb thermometer	02
13.	Working model of IC engine	01

### 13. Plant Breeding Lab

S. No.	Name of equipments	Quantity
1.	Student microscope	10
2.	Compound microscope	10
3.	Wooden box	10
4.	Display chart	20

### 14. Tissue Culture Lab

S. No.	Name of equipments	Quantity
1.	Hot plate	02
2.	Laminar air flow	04
3.	Photoperiodic stimulator caster racks	12
4.	Digital photoperiodic timer	02
5.	Digital room temperature controller	02
6.	Digital humidity controller	01
7.	Sequential timer	02
8.	Luxmeter	01
9.	Microscope (Trinocular/Magnas /Zoom)	02
10.	Digital camera	01
11.	Digital balance	02
12.	Hot air oven	01

13.	Sterilizer (horizontal)	01
14.	Clear pipette	01
15.	Fire extinguisher	02
16.	Spirit lamp	04
17.	Forceps	18
18.	Bunsen burner	02
19.	Refrigerator	11
20.	Office table	04
21.	Computer table	01
22.	Shoe rack	02
23.	Aqua guard	01
24.	Vacuum cleaner	01
25.	Air conditioner	05
26.	Magnetic stirrer	01
27.	Single water distillation	01
28.	Glass bead sterilizer	02
29.	Deep freezer	02
30.	Copper plate	01
31.	Pressure cook	02
32.	Gas stove	01
33.	Gas cylinder	04
34.	Packing machine	01
35.	Electric generator	01
36.	Digital pH meter	01
37.	Universal oven	02
38.	Pass box	02

39.	Micro centrifuge	02
40.	Aerosol disinfectant	01
41.	Digital deionizer	01
42.	Electrophoresis	06
43.	Lab incubator	01
44.	Water bath	02
45.	Micro top	01
46.	Tissue floatation bath	01
47.	Vortex mixture	02
48.	Centrifuge Eltek	02
49.	Trans eluminator	01
50.	UV lamp	01
51.	Centrifuge	04
52.	Ice flanking machine	01
53.	Autoclave	02
54.	Real Time PCR	01
55.	Thermal cycler	01
56.	Gel documentation system	01
57.	Gradient PCR	01
58.	Multi channel pipette	06
59.	Spectrophotometer	01
60.	Vacuum pump	01
61.	Hi tech green house net	01
62.	Cryogenic container	07
63.	Capillary electrophoresis	01
64.	Sample disruption system	01

65.	Incubator	01
66.	Elisa reader	01
67.	Microwave oven	01
68.	Pocket refractometer	01
69.	Digital stopwatch	01
70.	Pliar and screw driver	01
71.	Compressor	01
72.	UPS & Batteries	01

### 15. Computer Lab

S. No.	Name of equipments	Quantity
1.	Desktop computers	24
2.	Scientific calculator	10
3.	Printers	06
4.	Vacuum cleaner	01

### 16. Language Lab

S. No.	Name of equipments	Quantity
1.	Desktop computers	19