UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOT, KARNATAKA

SELF STUDY REPORT FOR THE M.Sc. HORTICULTURE IN PLANT PATHOLOGY COH, BENGALURU, 2014-15 to 2018-19

SUBMITTED TO

Indian Council of Agricultural Research,
Krishi Bhavan, New Delhi.

SUBMITTED BY

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PREFACE

Horticulture - a science of production and management of plants for food, comfort, feed, recreation, and beauty – is potentially vital in raising agricultural production, value addition, farm income and employment in the country. In the context of hazards like climate change, scarcity of water, labour problem etc., Horticulture is contributing incessantly in planning sustainable development goals. After UN General Assembly Summit held on January 1st of 2016, India has adopted 17 SDGs and 169 targets to strengthen health and economy of the nation. Modern era of digitalization has introduced new perspectives like digital horticulture, precision farming, climate smart farming, and nutritional security into the prospectus of horticulture.

Karnataka was the first state in the country to recognize the potential of horticulture sector to bring prosperity to the farmers. To increase the focus on the sector, the state took the lead and created the country's first Horticulture Department and other states followed the example of Karnataka. Presently Karnataka is placed second in horticulture performance in the entire country and the state received 'Best State in Horticulture' award in 2015. Karnataka is the highest exporter of cashew, roses, gherkins, rose onions, spices and condiments. The state has achieved remarkable progress in many fronts from production to storage, packaging and marketing of fruits, vegetables, flowers and plantation crops.

The horticulture sector, which includes a wide variety of crops such as fruits, vegetables, spices, plantation crops, floriculture, medicinal and aromatic plants etc., is recognized as an important sector for potential diversification and value addition for the sustainability of the farmers. It has been recognized that growing horticulture crops is now an ideal option to improve livelihood security; enhance employment generation; attain income and food security; and increase income through value addition.

After its establishment in 2008, University of Horticultural Sciences, Bagalkot established RHREC in a newly transferred land of 125 acres at its campus in Bengaluru in the year 2010 and in the year 2011 Post Graduation Centre was established. Initially the campus was called as Post Graduation Centre but with the commencement of Bachelor's degree programme and two year diploma course in the year 2014, it was re-christened as College of Horticulture.

The college is striving hard to impart quality education in terms of theory, research and extension. The college is gathering laurels through the performance of teachers as well as the students. The college has an excellent track record in both academicals and co-curricular activities.

ICAR, through an accreditation procedure of its own is assessing facilities available and to improve the quality of education rendered by the college. After accreditation, by the financial support of ICAR and State Government, the growth and developmental activities of the college will be

improved further to a greater extent. Since the college is due for accreditation by ICAR the present report provides all the necessary information about the college activities performed during last five years.

The University level task force and steering committee is gratefully acknowledged for the help, guidance and suggestions given in preparing the report. The College level steering committee and task force have done a great job in compiling information and bringing out this report to be submitted to Accreditation Board of ICAR. I gratefully thank all those who have helped in preparing this report.

Dean
(VISHNUVARDHANA)
College of Horticulture, Bengaluru

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6.4.1. BRIEF HISTORY OF THE DEGREE PROGRAMME

The Department of Plant Pathology at the College of Horticulture, Bengaluru, University of Horticultural Sciences, Bagalkot was started in the academic year 2012-13. The Department has the set of mandates viz.,

1. To find solutions to the plant disease menace in horticultural ecosystem,
2. To conduct basic, applied and strategic research in Plant Pathology,
3. To develop man power/ human resource through teaching and hands on training,
4. To develop disease management strategies, which are eco-friendly, economically viable and safe to non-target organisms including human
5. To create awareness about the beneficial role and ecosystem services of bio-control agents
6. To provide advisory services to the horticulture farmers and entrepreneurs.

The Department has four regular teaching staff along with other subject experts from the nearby constituent colleges/ research stations of the University. The experts from different research institutes like ICAR- IIHR, ICAR-NBAIR and University of Agricultural Sciences, Bengaluru having MOU with the university are also utilized for teaching and research of the PG programme. Finally, the Department will be the center for excellence in the area of Teaching, Research, Human Resource Development and Extension services as well.

6.4.2. FACULTY STRENGTH

Sl. No.	Cadre	Sanctioned strength	Faculty in place	Vacant position	Faculty recommended by ICAR	Deviations from ICAR recommendations
1	Professor	1	1	0		
2	Associate Professor	1	0	1		
3	Assistant Professor	2	3	0		

6.4.3. TECHNICAL AND SUPPORTING STAFF

Sl. No.	Designation	Sanctioned strength	Faculty in place	Vacant position	Faculty recommended by ICAR	Deviations from ICAR recommendations
1	Assistant Registrar/ Administrative Officer	01	01			
2	Superintendent (Administration)					
3	Assistant Comptroller	01	01			
4	Assistant Engineer (Civil)	01				
5	Assistant Medical Officer					
6	Junior Engineer (Electrical)					
7	Lab Technician					
8	Library Assistant					
9	Lab Assistant					
10	Field assistant					
1	Shelf assistant					
12	Assistant-cum-Computer Operator					
13	Driver					
14	Tractor Driver					
15	Cook					
16	Care taker					
17	Plumber					
18	Electrician					
19	Bus helper					
20	Sports helper					
21	Gardener					
22	Janitor					
23	Office Attender					
24	Watchman					
25	Nurse (Female + Male)					

*and ** marks to be mentioned as per the guidelines

6.4.4. CLASS ROOMS AND LABORATORIES

Classrooms

Sl. No.	Class room No.	Area	Seating capacity	Other facilities (LED, projector, Computer, etc.)
1	1		40	YES

Laboratories

Sl. No.	Name of the laboratory	Area	Seating capacity
1	UG laboratory	11m x 8.5 m	30
2	PG laboratory	13.5m x 7.5 m	30

Major equipment

Sl. No.	Name of the equipment	Quantity	Working condition
1	Microscope RXL-4B	9	Functional
2	Microscope (Symbiont)	3	Functional
3	Microscope (Olympus CH20i)	1	Functional
4	Microscope (Olympus BX43)	1	Functional
5	Trinocular compound microscope with digital camera (5TZ800T)	1	Functional
6	Stereozoom microscope (Labomed-CZMA))	1	Functional
7	Fluorescent Microscope (LYNX)	1	Functional
8	Autoclave vertical(Small)	1	Functional
9	Autoclave vertical (Big)	1	Functional
10	Microwave Oven (LG)	1	Functional
11	Hot Air Oven	1	Functional
12	Laminar Air Flow Cabinet (Scientek)	2	Functional
13	BOD incubator (Scientek)	1	Functional
14	Incubator shaker	1	Functional
15	Petridish incubator (Biobee)	1	Functional
16	Water Bath	1	Functional
17	PH Meter (Scientek)	1	Functional
18	Precision balance	1	Functional
19	Balance Essar DS-252(5g-1Kg)	1	Functional
20	Balance Essar DS-252(10g-3Kg)	1	Functional
21	Pipettes (Eppendorf) 0.5 t 10 µl, 10-100 µl , 100-1000 µl , 2-20 µl , 20-200 µl & 0.5-5 ml	1 set	Functional
22	Micro pipette stand (Eppendorf)		Functional
23	Nematode Extraction Units And Accessories	1	Functional

Sl. No.	Name of the equipment	Quantity	Working condition
24	Rotary Spin Rotary Mixer	1	Functional
25	Vertex Shaker (Biobee)	1	Functional
25	Refrigerator (LG-1, Whirlpool-1)	2	Functional
26	Absorbance Microplate Reader (ELISA Reader) (Biotek)	1	Functional
27	Horizontal Electrophoresis System		Functional
28	Pressure Cooker (Prestige)	1	Functional
29	Induction Stove (Prestige)	1	Functional
30	Gel Rocker	1	Functional
31	Horizontal electrophoresis unit	1	Functional
32	Power pack for electrophoresis unit	1	Functional
33	Remi centrifuge RM02 Plus	1	Functional
34	Magnetic stirrer (Spinit)	1	Functional
35	Mixer Grinder (Philips)	1	Functional
36	Gradient thermal cycler (PCR machine)	1	Functional
37	Refrigerated centrifuge	1	Functional
38	Western blotting apparatus along with vertical electrophoresis system	1	Functional
39	Air cooler	1	Functional
40	Deep freezer (-20)	1	Functional

Farm facilities

Sl. No.	Name of the Department	Farm Area	Irrigated / Non-irrigated	Crops grown
1	Plant Pathology	2.75acre	0.50acre	Chrysanthemun, tomato, brinjal, cucumber, onion
2	Field Laboratory	20ftx15 ft	-	Invitro studies

Workshops if any

The facilities available are not sufficient to meet the course curricular requirement due to the deficiency of the following basic requirements:

1) Glass house for screening of different germplasm
2) Nematode extraction Unit: For UG and PG practicals
3) Irrigation: for 2 acres
4) Biocontrol laboratory for hands on training to PG students

6.4.5. CONDUCT OF PRACTICAL AND HANDS ON TRAINING

Sl. No.	Department	Method of hands-on-training
1.	Plant Pathology	• Instrumentations • Seasonal survey for disease incidence • Preservation of diseased specimen • Diagnosis of plant diseases • Preparation of biocontrol agents • Preparation of fungicidal mixture • Awareness regarding safety use of pesticides • Study on host pathogen interaction • Testing the bio-efficacy of fungicides, bactericides and nematicides against plant pathogens • Screening of different germplasm against different diseases • Exposure visit to nearby institutions viz., IIHR, UASB, NBAIR and BCRL

The students are instructed about disease specimen collection and preservation. The collected disease specimensare used to study the external symptoms and utilized for microscopic observations. The students are encouraged to isolate and purify various plant pathogens under laboratory to know their identity, physiology and other characters. Hands on training on isolation, formulation of biocontrol agents. The PG students are encouraged to develop or design the strategies for disease management. Exposure visits to IIHR, BCRL, UAS, Bengaluru and NBAIR help to study the recent developments in Plant Pathology.

6.4.6. SUPERVISION OF STUDENTS IN PG PROGRAMMES

Academic Year	No. of PG recognised teachers	Intake of students	Student to teacher ratio
2014-15	4	3	1:0.75
2015-16	4	4	1:1
2016-17	4	4	1:1
2017-18	4	4	1:1
2018-19	4	8	1:0.5

The present faculty available for PG teaching and research is sufficient to supervise students in PG programmes.

6.4.7. FEEDBACK

At the end of each semester, each course teacher takes the feedback from the students related to the course. The course teacher analyses the feedback for further improvement in teaching methodology, if required.

6.4.8. STUDENT INTAKE AND ATTRITION OF M.SC

Year	Sanctioned seats	Actual intake	Attrition	% Attrition
2014-15	3	4	1	25
2015-16	3	5	1	25
2016-17	4	4	0	0
2017-18	4	5	0	0
2018-19	10	10	0	0

6.4.9. ICT APPLICATION AND CURRICULA

In the college the students have paid the fees and registered through Academic Management System (AMS). All PG correspondences like Plan of Work, Programme of Research and Submission of all PG forms by the students are through AMS. All approvals are made by the Head of the Department, Chairman and members of the Advisory Committee, Dean (PGS) and Registrar approval through on line by using AMS in order to make paperless transactions. Teaching will be done by using PPT and smart boards.

The Koha (library management) open wear software is implemented to automate the library activities. The charging and discharging of documents is automated and e-mail reminder facility has been introduced.

CeRA and other online e-resources:

CeRA is the ICAR Consortium of e-resources in Agriculture. This covers more than 3000 scholarly journals pertaining to the Agriculture and allied sciences which are available in full text.

E-books:

Library has access to Springer e-books for the copy right years 2014-16, which covers nearly 1900 books in virtual format with full text availability and at a time 25 users can open an e-book. In addition library has access to 200 Indian e-books.

Krishikosh:

Krishikosh is a database of thesis submitted to the Agriculture Universities and ICAR institutions, The UHS Library is member for Krishikosh and all the thesis submitted to the UHS are being uploaded regularly.

Internet

The library is provided with separate internet link line with speed of 100mbps. There is a separate digital library section made in the library which is equipped with 25 computers with facility of internet connected to all computers. Web OPAC of the main campus library is available in the net. EZ-proxy remote access server is installed in the library through which one can access e-resources, CeRA, and Agristat in distant places also.

Wi-fi facility:

Wi-fifacility is available in the library premises. One can have net facility in the main campus through IP based network through which students and faculty members can browse CeRA and e-resources of the library from hostels and the Department.

6.4.12.

CERTIFICATE

I the Dean, College of Horticulture, Bengaluru 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.

Date: March, 2019