

**UNIVERSITY OF HORTICULTURAL SCIENCES,
BAGALKOT, KARNATAKA**



**SELF STUDY REPORT FOR THE
M. Sc. HORTICULTURE IN PLANT PATHOLOGY
KRCCH, ARABHAVI, 2014-15 to 2018-19**

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

SUBMITTED BY
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PREFACE

India faced the challenge of providing food security to millions of its people soon after independence. The Research and Development initiatives taken by the Government of India resulted in the 'Green revolution' in the late 60s and early 70s. As a result of 'Green revolution', India has made significant achievement through production of 228 million tonnes of food grains and gained self-sufficiency. But considering the nutritional security, economic sustainability and high generation of employment, Horticulture sector plays an important role. Hence, it was only in mid-80s that the Government of India recognized the importance of Horticulture sector and thus greater emphasis was given on this. It is a means of diversification for making agriculture more profitable through efficient land use, optimum utilization of natural resources and creating skilled employment for rural masses. Horticulture has invariably improved the economic status of our farmers. It has also played a significant role in improving floriculture, plantation, spices, medicinal, aromatic industry, fruit and vegetable production and processing, production of quality seed and planting materials, encouraging hi-tech horticulture, contract farming, cooperative farming, participatory approach of production and marketing, etc. Thus, there is a growing awareness about the advantages of the horticultural crop production and this is bound to go up with the increase in socio-economic status of the people.

The R & D programmes in horticulture have received an impressive support from the Eighth Five Year Plan onwards. As a result, the research infrastructure has increased manifold with the setting up of a number of new institutes, national research centres in several crops, important both from domestic as well as export point of view. The establishment of educational institutions in the field of horticulture plays a pivotal role in developing human resource, which would cater to the needs of horticulture industry.

To cater the horticulture needs of the farmers of northern Karnataka and to develop the quality human resource in the field of horticulture, the **Kittur Rani Channamma College of Horticulture, Arabhavi** was established at Arabhavi on **31.08.1994** under the University of Agricultural Sciences, Dharwad, and is presently functioning under the University of Horticultural Sciences, Bagalkot. The college offers undergraduate, postgraduate and Ph.D. courses and has the admission capacity of 50 students for undergraduate, 30 students for Masters and 8 students for Ph.D.

degree programme annually excluding ICAR quota students. Students of this college have excelled not only in curriculum but also in extracurricular activities and national level competitive examinations and the college is making continuous efforts to improve the quality of education offered here. The ICAR has introduced the procedure of accreditation, which help in assessing facilities available to impart the quality education offered by the college. The college was accredited by ICAR Peer Review committee for a period of **five years**. After accreditation, the financial support of ICAR and State Government has greatly facilitated the growth and developmental activities of the college to a greater extent, as a result the quality of education has improved. Since the college is due for further accreditation, the present report provides all the necessary information about the college activities performed during **last eight years**.

The University Level Task Force and Steering Committee has been gratefully acknowledged for their 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. My heartfelt thanks to all those who are involved in preparation of this report.

**K.R.C. College of Horticulture, Arabhavi
September-2018**


Dean
(Nagesh H. Naik)

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6.4. SELF STUDY REPORT FOR M.Sc. HORTICULTURE IN PLANT PATHOLOGY AT KRCCH, ARABHAVI

6.4.1 Brief History of the Degree Programme

Diseases of horticultural crops are wide spread and cause great loss to farmers if unattended, during crop production as well as during post harvest. In each Agro-climatic Zone there may be certain set of diseases of each crop which are more important than others. **KRC College of Horticulture, Arabhavi** situated in Belagavi district (KRCCH, Arabhavi) is surrounded by areas cultivating many important horticultural crops in the category of vegetables, flowers, fruits, plantation, medicinal and aromatic crops. Hence, with an aim to strengthen region specific research on plant diseases utilizing student force Department of Plant Pathology started M.Sc. (Hort.) Plant Pathology degree programme during the year 2010-11.

Objectives:

- To train the students in the field of plant pathology with maximum practical exposure
- To produce qualified specialists in the discipline who can cater to the needs of farmer
- To strengthen both applied and basic research in plant pathology emphasizing to solve local problems.

Accomplishments

Totally 17 students have completed their masters degree since its inception in 2010-11. Students have worked on major diseases of important crops like mango, banana, chilli, turmeric, ginger, ridge gourd, tomato, cabbage onion and chrysanthemum for their thesis.

Statistics of Masters Degree students (2013-14 to 2017-18)

Year of Admission	Admitted			Dropped			Passed			Remarks
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	
2012-13	2	4	6	1	-	1	1	4	5	
2013-14	-	-	-						-	
2014-15	2	1	3	2	-	2	-	1	1	
2015-16	2	1	3	-	-	-	2	1	3	
2016-17	3	1	4	1	-	1	-	-	-	Yet to complete
2017-18	2	2	4	-	-	-				Yet to complete
Grand Total									9	

Fellowships/ Scholarships received by Masters Degree students (2013- 14 to 17-18)

Scholarship Type	M.Sc.(Hort.)				
	2013-14	2014-15	2015-16	2016-17	2017-18
Merit Scholarship	1	1	2	2	2

Scholarship Type	M.Sc.(Hort.)				
	2013-14	2014-15	2015-16	2016-17	2017-18
Students Aid fund	-	-	-	-	-
Category I EBLScholarship	-	-	-	-	-
SC/ST Fellow Ship	1	1	1	1	-
GOI Scholarship (SC+ST)	-	1	1	-	-
Vidyasiri food & Accommodation	-	2	3	3	2
Muslim Minority	-	-	-	-	1
TOTAL	2	5	7	6	5

Gold Medals received by the Post Graduate students

	Year				
	2013-14	2014-15	2015-16	2016-17	2017-18
No. of Gold Medals	1	1	-	1	-

6.4.2 FACULTY STRENGTH

Faculty Strength (Cadre-wise)

Designation / Cadre	2014			2015			2016			2017			2018		
	S	F	V	S	F	V	S	F	V	S	F	V	S	F	V
Professor		1	-		1		-	1	-						
Associate Professor	1	-	-	1	-	-	1	-		1	-	1	1	-	1
Assistant Professor	2	-	-	2			2	2	-	2	2	-	2	2	-
Total	3	1	-	3	1	-									

S-Sanctioned, F- Filled, V- Vacant

Faculty Strength (2017-18)

Department	Sanctioned Faculty			Faculty in place			Vacant position			Recommended by ICAR			Deviation from ICAR recommendation		
	Prof.	Assoc. Prof.	Asst. Prof.	Prof.	Assoc. Prof.	Asst. Prof.	Prof.	Assoc. Prof.	Asst. Prof.	Prof.	Assoc. Prof.	Asst. Prof.	Prof.	Assoc. Prof.	Asst. Prof.
Plant Pathology		1	2			2		1	-	1	1	2	1	1	-
Faculty from AICRP *					1*										

*Head AICRP

6.4.3 TECHNICAL AND SUPPORTING STAFF

Sl.No.	Designation	Sanctioned strength	In place	Vacant position	Recommendation by ICAR	Deviations from ICAR Recommendation
1	Lab Assistant	01	01	-	01	0
2	Field Assistant	01	01	-	01	0
3	Messenger	01	01*		01	0

* Contract basis

6.4.4. CLASS ROOMS AND LABORATORIES

Classrooms

Sl. No.	Class room	Area (M ²)	Seating capacity	Other facilities (LCD, Projectors, Computers, Smart board etc.)
1.	Post Graduate class room -1	99	20	LCD projector, computer
2.	Seminar Hall*	120	80	LCD, Projectors, Computers

*Common seminar hall for all the disciplines

Laboratory

Sl. No.	Name f the laboratory	Area (M ²)	Seating capacity
1	PG Laboratory	99	10

Major equipments

Sl. No.	Name of the equipment	Quantity
1.	Laminar air flow cabinet	2
2	Trinocular microscope with digital photography	1
3	Compound microscope with inbuilt light	2
4	Sterobinocular microscope	1
5	BOD incubator	1
6	Shaker incubator	1
7	Thermal cycler	1
8	Gel Documentation Unit, Model Alpha Imagar Mini system (CINO:210652)	1
9	Refrigerators	3
10	Deep freez	1
11	Micropipettes	1 Set
12	Autoclaves	2

Along with these major equipments laboratory is well equipped with sufficient number of light microscopes, and other minor equipments.

Farm facilities:

Department is having one exclusive net house facility. Field and polyhouse facilities available with other horticultural disciplines are being utilized by the students based on the crop taken for research.

Sl. No	Particulars	No.	Area (M ²)	Details	Remarks
1.	Fruit Science				
	Poly houses	4	960.00	Nursery for Mango, Guava, Sapota Jamun, seedling	
	Shade nets	5	2616.00	Seedling of fruits crop	
2.	Vegetable Science				
	Poly houses	3	4552.00	Tomato Capsicum, cucumber	
	Shade nets	4	1720.00	Tomato, Capsicum, Bitter gourd	
3.	Floriculture and Landscape Architecture				
	Poly houses	5	2500.00	Chrysanthemum, Orchids Rose	
	Shade nets	5	1251.00	Nursery managment	
	Mist house	1	100.00	Ornamental nursery	
4.	Plantation, Spices and Medicinal Crops				
	Shade nets	3	752.00	Medicinal and aromatic plant nursery	
	Poly tunnel	1	22.94	Medicinal and aromatic plant nursery	
5.	Biotechnology and crop improvement				
	Poly houses	3	580.00	Hardening of tissue culture plants	
	Shade nets	3	668.00	Population development and maintenance of gemplasm	
6.	AICRP on tropical fruits				
	Poly houses	1	324.00	Nursery	
	Shade nets	1	500.00	Nursery	
7.	Plant pathology				
	Net house	1	10.00	Inoculation and screening	
8.	Entomology				
	Glass house	1	10.00	Pest screening	
9.	Natural Resource Management				
	Mushroom cultivation unit	1	15.00	Mushroom cultivation	

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
1.	Plant Pathology	Full strength	Full strength

6.4.5 CONDUCT OF PRACTICALS AND HANDS-ON-TRAINING

Glimpses of Practicals

Sl.No.	Course	Skills / Method of Hands on training
1.	Principles of Plant Pathology HPP 501 (1+1)	Basics of disease monitoring and management Preparation of fungicidal solutions, slurries, pastes and their applications, bio-consortia production Field visits for acquaintance with diseases and management.
2.	Mycology HPP 502 (2+1)	Isolation, Identification and characterization of different fungi, up to genus or species level
3.	Plant Bacteriology HPP 503 (1+1)	Isolation, identification and characterization of different plant pathogenic bacteria, bioassay. Specific inoculation techniques
4.	Plant Nematology HPP 504 (1+1)	Isolation, Identification and characterization of different nematodes, Specific inoculation techniques
5.	Plant Virology HPP 505 (1+1)	Study of specific viruses, isolation and inoculation techniques, transmission studies
6.	Disease resistance in plants HPP 506 (1+1)	Disease resistance screening Understanding host pathogen interaction, Assay for plant defense compounds
7.	Integrated disease management HPP 507 (1+1)	Testing different disease management modules Progressive farmer's Field visits
8.	Plant disease diagnostics HPP 508 (0+1)	Microscopy techniques, serological techniques and Molecular techniques for plant pathogen identification, disease diagnosis based on symptomatology

6.4.6 SUPERVISION OF STUDENTS IN M. SC. PROGRAMME

Every student shall have Advisory Committee with a Major Advisor and at least four members among whom two members shall be from outside the major field of specialization. Programme of Research proposed by the Advisory Committee and approved by the Dean (Post Graduate Studies) will be carried out by the student under the supervision of Advisory Committee. Research work was carried out by students on the major crops which are grown in this area.

Sl. No.	Year	No. of PG recognized teachers			Intake of students	Student to teacher ratio
		KRCCH, Arabhavi	Off Campus	Total		
1.	2012-13	04	00	04	6	1:0.67
2.	2013-14	04	00	04	-	-
3.	2014-15	03	00	03	3	1:1
4.	2015-16	04	00	04	3	1:1.3
5.	2016-17	04	00	04	4	1:1
6.	2017-18	03	00	03	4	1:0.75

6.4.7 FEEDBACK OF STAKEHOLDERS (STUDENTS, PARENTS, INDUSTRIES, EMPLOYERS, FARMERS ETC.)

Sl. No.	Feedback	Action Taken/Attended
Students		
1.	Students' request for provision of financial support through PG grants for their research activities	Provision has been made
2.	Student requests for more and more field visits in each course	Implemented
Industries		
1.	Industry's request to provide skilled personnel for disease screening	Attended: Individual student is well trained with the techniques during their respective course allowed for hands on training.
Farmers		
1.	Farmers request to provide recent management aspects	Implemented: with greater emphasis

6.4.8 STUDENT INTAKE AND ATTRITION IN THE PROGRAMME FOR LAST FIVE YEARS

Year	Sanctioned seats	Actual intake	Attrition	% Attrition
2013-14	-	-	0	0.00
2014-15	3	3	2	66.66
2015-16	3	3	0	0.00
2016-17	4	4	2	50.00
2017-18	4	4	0	0.00

6.4.9 ICT APPLICATION IN CURRICULA DELIVERY

ICT enabled teaching-learning encompasses a variety of techniques, tools, content and resources aimed at improving the quality and efficiency of the teaching-learning process. There are a variety of options available to the teacher and students to utilize various ICT tools at KRCCH Arabhavi for effective teaching and learning. Teachers participate in selection and critical evaluation of digital content and resources. They are also encouraged to develop their own digital resources, sharing them with colleagues and students through the digital repositories. For this each individual staff allotted with high configured computer system and connected with high speed Internet facilities for sharing digital contents.

Below Mentioned ICT facilities are well established in the college during the period of 2013-14 to 2017-18. Detailed ICT Lab facilities are listed below

S.No.	Name of Lab	Equipment	Usage
1.	ICT Enabled Class Rooms	4 PG Class rooms with Computer Systems and LCD Projectors	For educational video, PPT, conferencing , teaching and learning
2.	PG -Computer Lab	16 HP Computers Systems	AutoCAD Lab for landscape and gardening design
3.	ICT Enabled Smart Boards	6 Smart Boards installed in different departments	Teaching, Learning
4.	ICT Enabled Conference Hall	High Definition CISCO Camera System with High Speed Internet of 4 Mbps lease Line connectivity	For online interaction with University key officials by students and staff, online interaction with different subject experts in different streams

General

S.No.	Name of Lab	Equipment	Usage
1.	ICT Enabled Conference Hall	High Definition CISCO Camera System with High Speed Internet of 4 Mbps lease Line connectivity	For online interaction with University key officials by students and staff, online interaction with different subject experts in different streams

Different ICT Software's Used at KRCCH Arabhavi


Sl. No	ICT Application	Usage
1.	Academic Management System Software	Online PG Student Admission, POW , POR, Thesis Submission, Qualifying Examination etc. Complete activities of Student, Staff, Academic section activities, automated in this software
2.	Horti App	Provide information about the horticulture trends, technologies and methods being used. HortiApp is a useful app in cultivation of all kinds of crops, where it gives detailed information of each crop.
3.	SYSTAT	Statistical Software for analysis of Statistical Data
4.	Window STAT	Statistical Software for analysis of Statistical Data
5.	AutoCAD	Landscape and Gardening designs using software
6.	HERBIQ	Windows Form Application that stores data in encrypted XML files to track the progress of plants, nutrient levels, environment, smoke effects, strain characteristics for breeding, etc. Output to single file with embedded images like a pdf file or some open format to show others

6.4.12.

CERTIFICATE

I the Dean, Kitturu Rani Channamma College of Horticulture, Arabavi 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



Dean
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