

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



**SELF STUDY REPORT FOR THE
M. Sc. HORTICULTURE IN FRUIT SCIENCE
COH, BAGALKOT, 2014-15 to 2018-19**

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

SUBMITTED BY
**University of Horticultural Sciences,
Udyanagiri, Bagalkot – 587 104
Karnataka**

PREFACE

The growth of Indian agriculture sector has had its moments of glory. The green revolution has been major success story of free India to achieve surplus today, nonetheless frequently plagued by famines and chronic food shortage. From food grain production around 55 million tons at the time of independence, now boast the production of 284.83 million tons of food grains (2017-18). Indian agriculture has witnessed wide variations in growth performance after independence in India. The record horticulture production (306.8 million tonnes estimated) during 2017-18 will mark the sixth straight year of horticulture production outstripping that of food grains. Further, the percentage share of horticulture in agriculture GDP is 33 per cent which is quite impressive. The horticulture sector plays vital role in nutritional security, economic sustainability and employment generation. It was realized only in mid-80s about the importance of horticulture and thus the Government of India recognized Horticulture as a prominent sector. Horticulture appears to be a viable means of diversification for making agriculture more profitable through efficient land use, optimum utilization of natural resources while creating skilled employment for the rural masses. Horticulture has invariably enhanced the economic status of farming community besides, without disturbing invaluable natural resources. In general the growth of horticulture sector has created ripples which consequently resulted in a wide spectrum of processing industries. In this context, quality seed and planting material supply, surge for hi-tech horticulture, better prospects for contract farming as well as cooperative farming, participatory approach in production and marketing have attained magnanimous stature. The higher growth rate in horticulture sector suggests a structural change in Indian agriculture where farmers are increasingly growing perishable commercial crops due to a growing market and a quicker cash flow as these crops require less time from sowing to marketing. Thus, there is a growing awareness about the advantages of the horticultural crop production and this is bound to go up with the improvement in socio-economic status of the people.

In the recent past R & D programmes in horticulture received an impressive support from the government. As a result, the research infrastructure has increased many-fold with the setting up of a number of new institutes, national research centres for several crops, important both from domestic as well as export point of view. The establishment of educational institutions in the field of horticulture play a

pivotal role in developing human infrastructure, which would cater to the needs of the emerging horticulture industry.

To develop the quality human infrastructure in the field of horticulture in general and to cater to the needs of the farmers of Northern Karnataka in particular, the College of Horticulture was established at Bagalkot on 07.07.2008 under the University of Agricultural Sciences, Dharwad. With the establishment of the University of Horticultural Sciences at Bagalkot the college of Horticulture came under the administrative control of the said university from 2009-10. The college offers undergraduate, postgraduate and Ph.D. courses. The college has the admission capacity of about 120 students annually for undergraduate, about 55 students for Master' degree programme and 25 students for Ph.D. programme. The students of this college have excelled not only in studies but also in extra-curricular activities and National level competitive examinations. The college has been making efforts to improve the quality of education offered in this direction. Since the college is due for accreditation, the present self study report provides all the necessary information about the college activities performed during last five years (01-01-2014 to 31-12-2018).

The University Level Task Force and Steering Committee have also 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 for providing valuable suggestions to improve the quality of presentation.

College of Horticulture, Bagalkot
March, 2019.


Dean
(H.B.Patil)

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6.4.1. BRIEF HISTORY OF THE DEGREE PROGRAMME M. SC. (HORT.) IN FRUIT SCIENCE

Realising the importance of rich horticultural production base of grapes, pomegranate, sapota, lime, fig, ber, guava, banana, etc. in the northern dry zone of Karnataka, the University of Horticultural Sciences, Bagalkot felt to start M. Sc. (Hort.) in Fruit Science programme at the College of Horticulture, Bagalkot as fruit science is one of the core subjects through which, the farmers problems can be tackled by conducting research through the students and faculty as the required staff was available to start the master's degree programme in fruit science. More ever many B.Sc. (Horticulture) graduates of the university were interested to continue their research career in the field of fruit science. In this context, the university started M.Sc.(Hort.) in fruit science at the College of Horticulture, Bagalkot during 2012.

Objectives

- Development of new technology with respect to pomegranate, lime, banana and other fruits.
- Research and development of low cost technologies for fruit production
- Consultancy services to farmers through phone, discussions, demonstrations and field visits.

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	01	01	-	01	Nil
2	Associate Professor	02	-	-	02	-
3	Assistant Professor	02	02	-	02	-
Faculty from other directorates and nearby colleges/ stations						
4.	Professor of Fruit Science and ADRE	-	1	-	-	-
5.	Assistant Professor Directorate of Research	-	2	-	-	-
6.	Assistant Professor KRCCH, Arabhavi	-	1	-	-	-

6.4.3. TECHNICAL AND SUPPORTING STAFF

Sl. No.	Cadre	Sanctioned strength	In place	Vacant position	Recommended by ICAR	Deviations from ICAR recommendation
1	Laboratory Assistant	1	1	Nil	1	Nil
2	Field Assistant	1	-	Nil	1	-1

6.4.4. CLASS ROOMS AND LABORATORIES

a. Class rooms

Sl. No.	Class room No.	Area	Seating capacity	Other facilities (LED, projector, Computer, etc.)
1	M.Sc. Class room	26ftx23ft	40	LCD Projector, Computer and smart board facility

b. Laboratories

Sl. No.	Name of the laboratory	Area	Seating capacity
1	Post Graduate Laboratory	36ftx26ft	35

c. Major equipments

Sl. No.	Name of the equipment	Quantity	Sl. No.	Name of the equipment	Quantity
1	Vertical double distillation unit	01No	6	Weighing balance	03 Nos.
2	Tree pruner	01No	7	Refractometer	02 Nos.
3	Hot air oven	01No	8	Digital S.L.R. Camera	01No.
4	Water bath	01 No	9	Refrigerator	01No.
5	pH indicator	03 No	10	Vernier Calipers	02Nos

(Miscellaneous: Filing cabinets (steel 4 drawer), Lab stools, Office tables, Office executive chairs, Assistant tables, Almeria, Glass door Almeria, Slotted angle rack steel, Computers, Printers, Notice board, Hand lens 10x, Lab tables fixed with reagent racks, Glass block board(6X4)(8x4, Wooden key board, Air coolers, Acrylic display boards)

d. Farm facilities

Sl.No.	Farm Area	Irrigated/ Non-Irrigated	Crops grown
1.	10 Acres	Irrigated	Minor Fruit Block

6.4.5. CONDUCT OF PRACTICAL AND HANDS ON TRAINING

Sl.No.	Course Number and Title	Skills / Method of Hands on training
1.	FSC 501	<ul style="list-style-type: none"> • Description of different varieties of tropical fruits • Nutrient diagnosis • Study of flowering and fruit set • Project preparation for establishment of orchards • Visit to progressive orchards
2.	FSC 502	<ul style="list-style-type: none"> • Description of different varieties of sub tropical fruits • Nutrient diagnosis • Study of flowering and fruit set • Project preparation for establishment of orchards • Visit to progressive orchards
3.	FSC 504	<ul style="list-style-type: none"> • Understanding dormancy mechanisms in seeds and stratification of seeds • Study of growth and development patterns • Study of growth regulator functions • Visit to research centers
4.	FSC 505	<ul style="list-style-type: none"> • Description and classification of related species • Study of floral biology and hybridization techniques • Visit to research centers
5.	FSC 506	<ul style="list-style-type: none"> • Study of diagnostic techniques • Study of root distribution • Leaf sampling techniques • Study of deficiency symptoms • Nutrient culture studies
6.	FSC 507	<ul style="list-style-type: none"> • Preparation of nursery beds • Stratification and scarification of seeds • Methods of propagation • Use of growth regulators • Visit to commercial nurseries
6.	FSC 508	<ul style="list-style-type: none"> • Study of types of canopy • Training and pruning techniques • Use of growth inhibitors • Geometry of planting

6.4.6. SUPERVISION OF STUDENTS IN PG PROGRAMME

For allotment of the research topic and major advisors, the students are encouraged to search literature and come out with the appropriate research areas. The allotment will be made by the HOD/ Dean of the respective colleges.

Advisory Committee of M.Sc. student shall consist of at least four members including Major advisor among whom, two members shall be from outside the major field of specialization. The members from the major field shall be chosen to form a closely knit team in the area of specialization giving a co-ordinated approach to help the student to complete the research work. At any given time, a PG teacher shall not be a major advisor for more than six PG students.

Student's plan of work shall be decided by the advisory committee taking into consideration of student's research topic. The programme of research of the students is thoroughly discussed by the advisory committee and approved by the Dean (PGS).

Sl. No.	Number of PG recognized teachers	Academic year	Intake of Students	Students : Teachers
1	4	2014-15	11	2.75:1
2	4	2015-16	11	2.75:1
3	5+2*	2016-17	10	1.42:1
4	5+2*	2017-18	09	1.28:1

*Faculty working in nearest stations

The PG recognised faculty available in the campus (including college as well as directorates of research and extension) is sufficient to run the M.Sc. classes and to guide the students. In addition to these, faculty from neighbouring colleges and research stations are also available to offer the courses.

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

Feedback from the students

Sl. No.	Name	Year of completion	Important remarks/feed back	Action taken
1	Nusrat Perveen	2017	Hands on session is required for the operation of instruments at molecular biology lab	Hands on session have been conducted.
			Demand of internet facilities	Internet facilities are provided in the department.

2.	Yallaling Mallapur	2018	Teaching faculty gives the opportunity to the students to implement ideas regarding research and helps to do their best during research	The same tempo is maintained
			Department should collaborate with other institutes so that students get exposed to other laboratories	The same trend is continued

Student intake and attrition in the programme for last five years (1.01.2014 to 31.12.2018)

Year	Sanctioned seats	Actual intake	Attrition	% Attrition
2014-15	11	11	0	0%
2015-16	11	11	0	0%
2016-17	10	10	0	0%
2017-18	09	09	0	0%

Achievements of M.Sc.(Hort.)in Fruit Science students

Sl. No.	Name of the student	Name of the award	Date	Title of the work considered for award	Awarded during/ by/at
1	Nusrat Perveen	7 Gold Medals	2017	Outstanding student in Fruit Science	2017 UHS, convocation

6.4.9. ICT APPLICATION AND CURRICULA

In the college, the students pay the fees and register 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 done through AMS. Approvals by the head of the department, chairman and members of the advisory committee, Dean (PGS) and Registrar is processed through on line by using AMS in order to make paperless transactions.

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. Teachers will participate in selection and critical evaluation of digital content and resources. They will also be 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. Teaching will be done by using teaching aids like ,black board, PPT and smart boards.

Internet and Wi-fi facility

The department is having computers with facility of internet to all the faculty and students. Internet facility in the main campus is available through IP based network, through which students and faculty members can browse CeRA and e-resources of the library in hostels and departments.

CeRA, e-books and other online e-resources:

Library is having CeRA facility which is ICAR Consortium of e-resources in Agriculture. This covers more than 3,000 scholarly journals pertaining to the Agriculture and allied sciences which are available in full text. Also library is having access to Springer e-books for the copy right for 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:

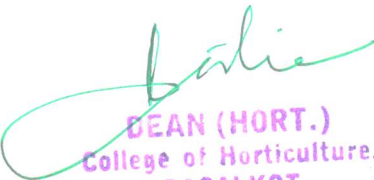
Krishikosh is database of theses submitted to the Agriculture universities and ICAR institutions, The UHS Library has membership for Krishikosh and all the theses submitted to the UHS are being uploaded regularly.

6.4.12.

CERTIFICATE

I. the Dean, College of Horticulture, Bagalkot 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 (HORT.)
College of Horticulture,
BAGALKOT.