



CENTRE OF ADVANCED FACULTY TRAINING
GENETIC RESOURCE MANAGEMENT AND NANOTECHNOLOGY
UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOTE – 587 104



INTRODUCTION

Karnataka being a leader in the production of several horticulture crops in the Nation. It ranks 2nd in Area with 2109.67 thousand hectares and 7th in production with 21309.90 thousand MT in the country during the year 2017-18. Therefore it truly deserves the establishment of exclusive Horticulture University to increase and sustain productivity and commercialization of horticulture in the State. To attain new heights in horticulture education, research and extension, shaping horticulture into a premier university for creation of horticultural wealth ensuring food and nutritional security.

The mission of University of Horticultural Sciences, Bagalkot (UHSB) is to enhance the growth of horticulture sector by providing leadership in teaching, research and extension services in horticulture and allied sciences through continuous innovation and assimilation of emerging paradigms, concepts and technology developments. Conducting applied, strategic and basic research in all branches of horticulture and allied disciplines. Transfer of technologies for the benefit of farming community through effective extension education mechanism and outreach programmes.

In India there is a tremendous natural plant diversity about 48,000 plants species and 89,000 biotic species, it accounts for 12 per cent plant genetic resource of the world. There are about 30,000 rice cultivars out of 1,20,000 documented in the world cultivated. There are more than 1000 mango types in field. Wide range of medicinal / aromatic plants (about 10,000) exists commercial cultivation of only a few giving 66 to 100 billion dollars annually. But, there are potential pressures *viz.*, population growth likely to overtake China by 2050, stagnate resource base, diminishing and deteriorating water and land resource, increasing biotic / abiotic stresses, loss of bio-diversity, plant genetic resources, *etc.* With the view of all these problems there is urgent need to conserve the plant genetic resources through creating awareness among the university faculty through regular trainings.

OBJECTIVES OF THE PROJECT

1. To become national leader in plant genetic resources and their conservation strategies with special emphasis on horticulture genetic resources of Karnataka state
2. To organize national level training programmes for improving the competence of the faculty of various SAU's and ICAR institutes on horticulture genetic resources and their conservation strategies including nano technology
3. To strengthen the teaching, research and extension activities by providing advanced infrastructure facilities and specific equipments for both under graduate and post graduate students of the university
4. To bring out scientific / technical publications on all aspects related to horticulture genetic resources and their conservation strategies including nano-technology

FACULTY STRENGTH

CAFT Director: **Dr. K. M. Indires**,

Vice Chancellor, Director of Education & ICAR Nodal Officer,

University of Horticultural Sciences, Bagalkote – 587 104

Year of establishment of CAFT Centre at UHS, Bagalkote: **2017**

Sl. No.	Name of the faculty	Area of specialization
I	Department of Biotechnology	
	Professor	
1	Dr. R. C. Jagadeesha	Breeding of self pollinated horticultural crops
2	Dr. B. Fakrudin	Production of transgenic plants
	Assistant Professor	
3	Dr. R. K. Ramachandra	Mutation and ploy-ploidy breeding
4	Dr. G. K. Halesh	Genetic engineering
5	Dr. S. C. Venkatesha	Molecular markers
6	Mr. Mohankumar S.	Physiological disorders in vegetables
7	Dr. H. M. Pallavi	Seed production techniques
8	Mrs. Jayashree Ugalat	Carbohydrates, lipids and vitamins
9	Dr. G. Raghavendra	Molecular studies in fruits and vegetables
II	Department of Fruit Science	
	Professor	
10	Dr. D. R. Patil	Pomegranate and grapes
11	Dr. G. S. K. Swamy	Jamun and jack
12	Dr. Kulapati Hipparagi	Citrus fruits

III	Department of Vegetable Science	
I	Professor	
13	Dr. K. M. Indiresh	Artichoke, Endive Jerusalem, Lettuce
14	Dr. H. B. Patil	Onion
	Assistant Professor	
15	Dr. Amarananjundeswara	Potato
16	Dr. Shashikanth Evoor	Gourds
IV	Plantation, Spices, Medicinal and Aromatic Crops	
I	Professor	
17	Dr. Laxminarayana Hegde	Cardmom, Black pepper and long pepper
18	Dr. N. K. Hegde	Arecanut and ginger
19	Dr. Vishnuvardhana	Plantation crops
	Assistant Professor	
20	Dr. B. N. Maruthiprasad	Safed Musli and black cumin
V	Floriculture and Landscape Architecture	
	Professor	
21	Dr. Balaji S. Kulkarni	Chrysanthemum, gladiolus, gomphrena and spider lilly
	Associate Professor	
22	Dr. G. K. Seetharam	Anthurium and carnation
VI	Post - Harvest Technology	
	Professor	
23	Dr. Ramachandra Naik	Post harvest management of vegetable and tuber crops
VII	Department of Plant Pathology	
	Associate Professor	
24	Dr. M. P. Basavarajappa	Beetlevine

HUMAN RESOURCE DEVELOPMENT: CAFT TRAINING PROGRAMMES CONDUCTED DURING 2017 – 2020

Sl. No.	Title of the training programme	Duration	Name of the Co-ordinators	No. of participants	ICAR / SAU wise distribution of participants		Opinion towards training design & delivery				
					ICAR	SAU	Excellent	Very good	Good	Poor	
ACTION PLAN FOR THE YEAR 2017-18											
1	Exploitation and conservation of plant genetic resources in major, minor and under exploited vegetables	03.01.2018 to 23.01.2018	Dr. H. B. Patil, Dr. Basavarajappa M. P and Dr. Shashikanth Evoor	17	01	16	Information not available in the CBP portal				
2	Exploitation of genetic resources and conservation of major, minor and underexploited fruits	04.12.2017 to 24.12.2017	Dr. G. S. K. Swamy, Dr. Venkat Rao, Dr. Ramachandra R. K. and Er. G. H. Krishnamurthy	13	00	13					
3	Recent developments in conservation technology of PGR in horticulture crops	04.01.2018 to 24.01.2018	Dr. B. Fakrudin, Dr. G. K. Halesh, Dr. Ramachandra R. K.	17	03	14					
4	Recent advances in genetic exploration and conservation of genetic resources in ornamental plants	08.02.2018 to 28.02.2018	Dr. Seetharam G. K and Dr. B. C. Patil	16	00	16					
ACTION PLAN FOR THE YEAR 2018-19											
5	Comparative genomics of horticulture plant genetic resources: Methods and applications	01.08.2018 to 21.08.2018	Dr. B. Fakrudin, Dr. G. K. Halesh, Dr. S. Mohankumar and Dr. G. Raghavendra	20	02	18	177	39	21	03	
6	Conservation and utilization of plant genetic resources in plantation and spice crops	11.10.2018 to 31.10.2018	Dr. Vishnuvardhana, and Dr. Maruthi Prasad	16	01	15	123	52	17	00	
7	Conservation and utilization of plant genetic resources in medicinal and aromatic plants	03.12.2018 to 23.12.2018	Dr. Laxminarayan Hegde and Dr. N. K. Hegde	12	02	10	98	29	17	00	

Sl. No.	Title of the training programme	Duration	Name of the Co-ordinators	No. of participants	ICAR / SAU wise distribution of participants		Opinion towards training design & delivery			
					ICAR	SAU	Excellent	Very good	Good	Poor
ACTION PLAN FOR THE YEAR 2019-20										
8	Recent advances in comparative genomics of plant genetic resources for trait dissection and utilization in solanaceous crop	05.09.2019 to 25.09.2019	Dr. B. Fakrudin, Dr. G. K. Halesh, Dr. Jayashree Ugalat and Dr. Amaranjundeswara	18	01	17	154	45	05	00
9	Advances in conservation and utilization of plant genetic resources in major flowers and ornamental plants	20.11.2019 to 10.12.2019	Dr. Seetharamu G. K. and Dr. Balaji S. Kulkarni	23	02	21	212	51	13	00
10	Advances and developments of seed science and technology in the era of genomics for management and utilization of horticultural plant genetic resources	25.11.2019 to 15.12.2019	Dr. Pallavi H. M and Dr. Ramachandra R. K	18	00	18	158	39	17	02

**FACILITIES AVAILABLE FOR CONDUCTING THE PROGRAMME SUCH AS
LABORATORY EQUIPMENTS / INSTRUMENTS**

Sl. No.	Particulars
1	Freezer (-20 0C) 340ltr
2	Oregon 650 (Garmin)
3	Deep well plate rotor
4	Autoclave 60ltrs
5	Northern blotting Unit
6	Heat sealer
7	Acid storage unit
8	pH meter digital probe type
9	Refrigerator
10	Stove Pigeon Induction cook top
11	Growth chamber
12	Stainless steel trolleys
13	Barcode generator and reading system
14	Open top aqua shaker
15	LAF loop sterilizer
16	Vacuum suction system
17	Microwave oven
18	Biosafety cabinet
19	Electroporator evaporator
20	Bolt welcome pk with bolt 21 EA
21	Vertical electrophoresis system for protein
22	Non refrigerated microcentrifuge
23	Bench top refrigerated incubation shaker
24	Dry bath
25	Thermal cycle with fast PCR
26	Nucleic acid hybridization oven
27	PCR cooler with isotherm system
28	Gel document system with desktop computer & printer
29	Orbital shaker
30	Stereo binocular microscope
31	Monocular microscope
32	Dissection microscope
33	Digital balance model cb-600
34	Digital PH meter with electrode model 335
35	Thermostatic water bath
36	Hot plate rectangular
37	Cyclomixer
38	Colony counter digital
39	Magnetic stirrer with heating top plate
40	BOD incubator 170l capacity
41	Deep freezer
42	UV trans-illuminator
43	Seed germinator

SCIENTIFIC PUBLICATIONS

- Abdul Karim Amin, Vasudeva K R, Jayashree Ugalat, Suresha G J, and Khalid Akhundzada. 2018, Development of blended RTS from pomegranate and grapes. *International Journal of Chemical Studies* 6(4), 3337-3341(5.31)
- Ajay, B.C., Byre Gowda, M., Prasad, P.S., Veerakumar G.N., Prashanth Babu,H., Gnanesh B.N., Venkatesh S.C., Ganapathy K.N., Abdul Fiyaz, R., and Ramya, K.T., 2015, Identification of AFLP markers linked to Fusarium wilt disease in Pigeonpea (*Cajanus cajan* (L.) Millsp.), *Legume research*, 38 (1), 126-130, (6.12)
- Akshata Hongal, Basavaraj N., Shivanand Hongal, Hegde, N.K. and Sudheesh Kulkarni, 2018, Evaluation of Coriander (*Coriandrum sativum* L.) genotypes for yield and quality under Hill zone (Zone-9) of Karnataka, India, *International Journal of Current Microbiology and Applied Sciences*, 7(5) ,2494 -2502 (5.38)
- Amarananjundeswara H., 2016. Physiological characterization of Jasmine flower (*Jasmine sambac*) senescence during storage, *Journal of Applied and Natural Science*8 (3): 1475-1478 (5.08)
- Amarananjundeswara, H. Prasad, P. S., Soumya Shetty and Sandhya, G. C, 2018, Evaluation of promising Potato varieties for yield potentiality and late blight disease tolerance in southern dry zone of Karnataka, *International Journal of Current Microbiology and Applied Science*, 7 (2), 341-350, (5.38)
- Amarananjundeswara, H. Prasad, P. S., Soumya Shetty and Sandhya, G. C, 2018, Response of Potato variety Kufri Jyoti to different levels of NPK and their cost economics in Southern Dry zone of Karnataka., *International Journal of Chemical Studies*, 6(2), 908-911.,(5.31)
- Anand Sadashiv Kalatippi, Swamy, G.S.K., and Kumbarigire,G.A., 2016, Effect of diatomaceous earth on quality of Pomegranate var. Kesar, *The Bioscan*,11(4),2359-2362,(5.26)
- Anilkumar, G.S., Umesha, K., Maruthi Prasad, B.N., Shivapriya,M., and Nithin Kumar V.C., 2018, Varietal response of Coriander (*Coriandrum sativum* L.) for growth, yield and quality attributes.*Journal of Pharmacology and Phytochemistry*, SP3, 35-39. (5.21)

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- Anupama, G., Hegde, L.N., Hegde, N.K., Devappa, V., Mastiholi, A.B. and Nishani, S., 2017, Effect of Nitrogen and spacing levels on physiological and yield parameters of Kasuri Methi (*Trigonella corniculata* L.) var. Pusa Kasuri, *International Journal of Current Microbiology and Applied Sciences*, 6(9), 723-733 (5.38)
- Aparna, P.M., Suryanarayana, M.A, Rajasekharan, P.E., Bhanuprakash,K., Umesha, K., and Maruthi Prasad B.N., 2018,Seed propagation studies in *Embelia ribes* burm. F. *Journal of Pharmacology and Phytochemistry*. SP3, 380-383 (5.21)
- Ashwini, S Ganur, Kulapati Hipparagi, Patil, D.R., Jagadeesh, S.L, Suma.R., and Arun K, 2016, Impact of canopy management on growth and yield of wine Grapes under Northern Dry zone of Karnataka, *The Bioscan*, 11(4), 2589-2592 (5.26)
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- Dhanush, K.V., D.R.Patil, Kantesh, G., S.N.Patil and Ashok Alur, 2017. Studies on the influence of different types of mulches on growth, yield and quality of Grapes (*Vitis vinifera* L.) cv. Kishmish rosavis white. *The Bioscan*, 12(2), 953-957 (5.26).
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Kaviraja, H., Manjunath, R.P., Mansur, C.P., Patil, V., Vijaymahantesh, Gasti, V.D. and Sanjeev Reddy, E., 2017, influence of nutrient management practices on yield, quality and nutrient uptake of N, P and K of Vegetable Cowpea (*Vigna unguiculata* L.) in Northern Dry Zone of Karnataka, India. *International Journal of Current Microbiology and Applied Sciences*, 7(2), 3734-3748 (5.38)

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**FINANCIAL STATEMENT FOR EXPENDITURE UNDER CAFT
DURING 2017-2020**

Amount Rs. in Lakhs

Head wise release of grants	2017-18	2018-19	2019-20
Trainings	2626000	3285500	3282500
TA & DA	50000	35000	50000
Books	35000	50000	35000
Recurring contingencies	400000	400000	400000
Total	3111000	3767500	3767500
Expenditure	2113835	2449490	--
Unspent balance	997165	1318010	--
