University of Horticultural Sciences, Bagalkot

Udyanagiri, Navanagar, Bagalkot - 587104, Karnataka

Report on Ranking of Agricultural Universities - 2018

Report on

Ranking of Agricultural Universities-2018

Submitted to

Indian Council of Agricultural Research,

Krishi Anusandhan Bhavan, New Delhi

By

University of Horticultural Sciences,

Udyanagiri, Bagalkot – 587 104

Karnataka

INDEX

FOREWORD

It gives me a great sense of gratitude to present the achievements of University of Horticultural Sciences, Bagalkot for the period from January 2018 to December 2018. The report embodies a brief account of the progress, major achievements in horticultural education, research and extension undertaken by the University.

The University of Horticultural Sciences, Bagalkot has achieved new pinnacle in academic excellence, research and transfer of technology through innovative outreach activities. The university and its constituent colleges have been accreditated by National Agriculture Education Accreditation Board (NAEAB), ICAR, New Delhi till March 10, 2019. The University operates through 9 Constituent Colleges, 11 Research Stations, 12 Horticultural Extension Educational Units and one Krishi Vigyan Kendra spread across 23 districts of the Karnataka state. The University is bestowed with National Excellence award from ICAR for securing first position in JRFs under Horticulture and Forestry sector in AIEEA-PG 2018. The University has been ranked number 20 amongst the 63 Farm Universities of the country for the year 2017-18. The ICAR's Best AICRP Centre Award 2018 was bestowed on AICRP Fruits, KRCCH, Arabhavi. I express my genuine gratitude to the faculty and students for their great endeavor in providing the new growth trajectory to the University in a short span of ten years of its establishment and bringing laurels to the University.

The impressive support from the GOK and ICAR lead the development of the varieties, technologies and publications contributing for higher farm output emulating academic, research and extension excellence. The special outreach programmes such as Horti-app, Udyana Sahaya Vani - Toll free service to farmers and the central government theme programmes like Soil Health Mission, Mera Gaon Mera Gaurav, Adarsh Gram and Krishi Bhagya *etc*., have been greatly facilitated. Yet, we have miles to go and I am more confident that our University will stand unique amongst horticulture education institutes in near future in the country.

Date: 08/06/2019
Place: Bagalkot

K. M. Indiresh
Vice-Chancellor
UHS, Bagalkot

University of Horticultural Sciences, Bagalkot

Preamble

Karnataka stands 2nd in Area (2109.67 thousand hectares) and 7th in production (21309.90 thousand MT) in the country as per NHB data for the year 2017-18. Being a leader in the production of several horticulture crops in the nation *viz*, Plantation crops, Flowers, Fruits, Spices, Vegetables, Medicinal and Aromatic Plants, and Honey, it truly deserves the establishment of an exclusive Horticulture University to increase and sustain productivity and commercialization of horticulture in the State.

Realizing the importance of horticulture and with genuine foresightedness the Government of Karnataka has approved the establishment of the University of Horticultural Sciences (UHS) at Bagalkot through a Special Ordinance No. 2 of 2008 dated: 22-11-2008 with the enactment of State Legislation Act No.11 of 2010. The University was established at Bagalkot as the headquarters in northern Karnataka considering the rich horticultural production base of grapes, pomegranate, sapota, fig, lime, ber, varieties of vegetables, spices, medicinal and aromatic plants, which is supported by amiable agro climatic conditions for horticulture crops prevailing in the area.

University was established on 22nod November, 2008, at Bagalkot through a Special Ordinance No.2 of 2008 by GOK and the same was enacted through state legislation by UHSB Act

Vision

To attain excellence in academics by imparting quality education to develop professional human resource with entrepreneurial skills, addressing the thrust areas of research to develop advanced technologies and to promote farmer centric technology transfer for holistic growth of horticulture sector.

Mission

Adoption of advanced system of quality education and professional teaching with collaborative and participatory research with incubating, technology transfer system for inclusive growth of various stakeholders in horticulture sector.

Mandate

The University of Horticultural Sciences, Bagalkot has the following mandates.

- Imparting quality education in all branches of horticulture and allied disciplines.
- Conducting applied strategic and basic research in all branches of horticulture and allied disciplines.
- Conducting and facilitating transfer of technologies to the benefit of farming community through effective extension education mechanisms and technology enabled outreach programmes.
- Undertake such other activities as the state government may specify by notification in the official gazette from time to time.

Summary of achievements

The University of Horticultural Sciences, Bagalkot in a short span of time has achieved its academic, social and cultural reputation at the national level with the financial support from State Government and ICAR. The brief achievement of the University in the year 2018 is detailed below.

University of Horticultural Sciences, Bagalkot and its Constituent Colleges got accreditated by ICAR up to 10th March, 2019

Student's admission and performance

India hosts 36 horticultural colleges under State Agricultural Universities out of which 11 are located in Karnataka and UHSB hosts 9 horticultural colleges indicating 25 per cent of the country's horticulture colleges. Thus, UHSB is surging as a leader in horticulture education in the country. The number of total student intake has been increased from 210 in 2009-10 from four colleges to 2090 in nine constituent colleges in Graduate programme and from 36 to 299 in M.Sc. Programme and similarly 13 students in 2010-11 to 154 for Ph.D. programme in 2018-19.

Students' performance

During the academic year 2018-19, about 48 Junior Research Fellowships and 04 Senior Research Fellowships have been bagged by students of UHS, Bagalkot. Mr. Tejukumar B.K., COH, Bagalkot, Miss. Manasa N.S., COH, Bidar and Miss. Neetu T.M., COH, Munirabad got the "State Best NSS volunteer award for the year 2016-17. Hon'ble Chief Minister of Karnataka Sri Siddaramaiah presented the award on 16-05-2017. Jaswitha B.P., PG student, KRCCH, Arabhavi, Shivangi Paidarekar, PG student, KRCCH, Arabhavi, Lakshmi Pujari, III B.Sc., KRCCH, Arabhavi and Sushma L, IV B.Sc., COH, Mysuru represented the university in the state level debate competition held at Kannada University, Hampi on 13.02.2019.

Socio-cultural impact

UHSB students successful in bagged "RUNNERS-UP" trophy successfully 3 times making a hat trick achievement in "AGRI-UNIFEST" held during 2013-14 at GKVK, UAS, Bengaluru, 2014-15 at NDRI, Haryana and 2015-16 at OUAT, Bhubaneswar. During the year 2016-17, the university cultural team bagged II Runners-up position by winning gold 12 medals in two group events viz. Mime and Skit and one gold medal in cartooning and one bronze medal in light vocal competition in the Agri Unifest – 2018 held from 12th - 16th February, 2018 at Shri Venkateshwara Veterinary University, Tirupati. The University team is also successful in winning bronze medals in 4x400 m Relay (Woman), 1500 m (Woman) and 400 m (man) Athletic events in All India Agri-sports meet, held from 30th January to 3rd February, 2018 at University of Agricultural Sciences, Bengaluru. Our UHSB team bagged one –Silver medal and 12-Bronze medals. Overall Bagalkot has secured sixth place at National level at Sardar Krishinagar Dantiwada Agriculture University Gujarat during 2018-19. In All India Inter Agricultural University Sports & Games meet the UHSB team bagged Seven Bronze Medals at Punjab Agricultural University, Ludhiana from 2nd to 5th January, 2019.

ICAR accreditation of UHSB

During the year 2014 the University and colleges of Horticulture at Arabhavi and Bagalkot were accredited. On completion of first five years with respect to other colleges in 2016-17, ICAR accredited the all constituent colleges co-terminus with the university till March, 2019.

Lab equipments and State of art laboratories

The UG and PG laboratories and a seminar hall were equipped with laboratory equipments purchased out of GOK, Projects and ICAR funding. The important equipments available are High performance liquid chromatography, Texture analyzer, freezer driers, UV spectrometer and Nano drop spectrometers, cage with anti- viral contamination facility, walk-in cold storage units, gel documentation units, modified atmospheric storage unit, autoclaves, modular lab tables enabled the experimental facilities with a state of art equipments. This has created a very good impact in providing hands-on-training to the students and helped students to learn more of practical skills.

Architecture of the University includes

- ***Nine teaching campuses***
- ***Three Regional Horticultural research and extension centres***
- ***Eight Horticulture research centres***
- ***10 specialized centres of research***
- ***11 All India Co-ordinated research projects***

The University of Horticultural Sciences, Bagalkot with the with due financial support from GOK and ICAR has become a temple of horticulture learning in Karnataka with 318 teaching faculty recruited as per UGC / ICAR norms and 435 non-teaching staff, nine constituent colleges, 11 AICRP centres, 12 Horticultural Extension Education Units, One KVK, 11 Horticultural Research Stations. The present enrollment is 2543 students in UG, PG and Ph.D., Diploma and PG Diploma courses. The excellent infrastructure, state of art laboratories, digital libraries, computer systems, experienced and quality teachers have made UHSB as one of the leading horticulture education destinations in the country. University applauds and appreciates the continued suggestion and support of ICAR in bringing quality education in the university.

Implementation of new syllabus as per ICAR V Deans' Committee Report

Immediately after the release of new syllabus as per the recommendation of ICAR V Deans' Committee, a meeting of all faculties at each of the colleges was conducted. Then, college Deans were asked to conduct brain storming session for a fine tuning the syllabus. Then, it was placed before the BOS (UG) by inviting the teachers from UAHS, Shimoga to finalize the syllabus. After the due approval from Academic Council, the University notification was issued and implemented at UHS, Bagalkot from the academic year of 2016-17.

The fifth Dean Committee Recommendations and STUDENT READY Programme is implemented in toto with the financial assistance of ICAR, State Department of Agriculture, Horticulture and the University from the year 2016-17.

Implementation of STUDENT – READY (ELP + RHWE) Programme by UHSB

The Student Ready programme as announced by ICAR is also implemented at UHSB from the academic year 2016-17 itself. The one year student programme is designed with ELP in the Seventh Semester, RHWE in the eighth Semester and All India Tour during the semester break between 7th and 8th semester. The modules like Commercial Horticulture, Protected Cultivation of High Value Horticulture Crops, Processing of Fruits and Vegetables for Value Addition, Bio-inputs: Bio-agents & Bio-fertilizers and Seed Production of Horticultural crops are established in colleges. In the academic year all six ELP modules were implemented by the university and 384 students from all the constituent colleges participated in this programme. On an average each student earned a sum of Rs. 4000. The RHWE manuals are developed for efficient implementation of RHWE programmes. The students were benefitted with Rs. 2500/- from ICAR and Rs. 500/- from UHSB totally Rs. 3000/- financial assistance during six months period of RHWE at UHSB from 2016-17 itself.

Implementation of common admissions and common centralized examination systems at UHSB

From the inception of the university i.e., from 2009-10 to 2012-13 the admissions to first B.Sc. (Hort.) were done at university level as followed in farm universities in Karnataka. The students with their parents and guardians used to go for admission counseling in 4-5 universities. UHSB was instrumental in implementation of common online admission to the graduate programme through KEA. The common admission to various PG programmes of all farm Universities of Karnataka through CET and counseling & admission also being done through online with the support of NIC, Bengaluru. The university took lead in taking the decision in its Academic Council and Board of Management meeting to have the common admissions of all farm universities through Karnataka Examination Authority through conduct of Common Entrance Test and online counseling system. Earlier to 2013-14 all farm universities together used to get 22000 to 23000 applications for admission to the UG programme. But when admission process is clubbed with all medical, engineering and other professional degrees the receipt of application is to the tune of 1,50,000 students, thus, making tremendous impact for getting highly meritorious students to B.Sc. Hons (Hort.) degree programme.

The centralized examination with single common external question paper for final examination and getting them evaluated in university in main campus has resolved all issues of delay in getting answer papers evaluated and resulting into inordinate delay in announcing grades. This has reduced the usage of postage charges and honorarium to external evaluators and uniform evaluation system for all students in the university.

The exclusive PG research grants are provided by the university to all colleges to facilitate the PG students in getting all required inputs for their smooth conduct of PG experiments. Since 2013-14, a one week department – wise, PG study tour has been introduced to visit R&D related organizations / institutions during the semester break between I and II Semester of PG programme to provide exposure to PG students to thrust areas of research in their respective field of specialization, before the formulation programme of research by the students.

Knowledge & Information Centre

The Sarvajna library at the main campus and libraries at sub-campuses of the University play a pivotal role in achieving academic, research and extension mission of the University. A good collection of books, periodicals, thesis, reports, maps and encyclopedia relevant to the mandate areas of the university have been housed in Sarvajna library and sub-campus libraries.

The Sarvajna library at the main campus is equipped with remote access server, through which the digital library services are extended to libraries at sub-campuses, HRESs, KVK and HEEUs. There are 60,395 books, 1357 theses, 209 periodicals, 1,795 e-books are available in the library for the benefit of 2,664 registered members.

Research and Extension credentials of UHSB

Research

The University has released six varieties The University has approved and recommended for release of seven new crop varieties [3 of Chilli SRS-2 Sankeshwar selection, GPM-120-S-1, Hybrid-80, and 1 each of Fenugreek DFC - 21 (Devi Methi 1), Tamarind (Tamarindus indica) - ATS 1, Jackfruit - ‘Maharaja’ and identified seven crop varieties viz., Turmeric Var. Suroma for hill zone (Zone-9) of Karnataka, Fig varieties: Bellary and Deanna, Anthurium varieties such as Fire (red spathe), Moments (white spathe) and Pistache (green spathe), Gladiolus (Gladiolus hybridus Hort.)

varieties Green star green, Magma Red, Liemocello *yellow* and Pink lady Peach, Floribunda Roses for loose flower production, Vegetable Pigeon Pea cultivars ICP-7035 and ICPL-87091, new variety of potato Kufri Pukhraj varieties were recommended for adoption during the reporting period. Further the University has developed 37 production, protection and value addition technologies for inclusion in package of practices.

University has developed six varieties for release and seven varieties for adoption, 37 Production Technologies were identified for inclusion in package of practices

Commercialization of Technologies (Incubation centers)

University of Horticultural Sciences made a provision for the private partners as incubatees to commercialize the technologies developed in the university. Technologies shared to incubatees are; (i) Trichokavach, Dundanu Rakshak, Dharakshak to Natura Crop Care, Bengaluru, (ii) Bio-fertilizers to Hi7 Agri Bio Solutions, Bengaluru (iii) Micronutrient formulation to Krishi Biosys, Bengaluru and Bio-formulations (at Haveli), Natura Crop Care, Bengaluru. Incubation centers are expected to reach out all the farmers and also to contribute the university with an annual income generation of Rs. 20 lakhs.

Impact of Extension Programmes

The Directorate of Extension, University of Horticultural Sciences, Bagalkot has been proactive in reaching the unreached farmers by organizing exclusive need based frontline extension activities for effective dissemination of recently released technologies. At present the university has one KVK and 12 Horticulture Extension Education Units (HEEUs) to cover 23 districts coming under its jurisdiction.

Farmers toll free helpline, and Prativaara Parihaara – assigning every Monday as farmer's solution Day for providing in time solution to the needy farmers.

Totagarike Mela (Horticulture Fair) – 2018

UHS, Bagalkot in Association with different development departments of Government Karnataka like Horticulture, Agriculture, Animal Husbandry, Veterinary Science etc, and other private institutions jointly organized Horticulture fair with a theme ***"Horticulture for Prosperity"*** from 23rd to 25th December, 2018 at Bagalkot. During this fair, "Best Horticulture Farmers and Farm Women" selected from 23 jurisdiction districts of the university were felicitated with a memento and a cash prize of Rs. 5,000. There were totally 450 stalls by different organizations. SAUs, ICAR Institutions, Private firms and SHGs exhibited agri-horti inputs/machineries, provided information to farmers about developmental programmes and services. More than five lakh farmers, farm women, students, children, youth, public, staff of all the development departments from all the districts of Karnataka and neighboring states of Maharashtra, Tamil Nadu and Andhra Pradesh were part of this the mega event. All the guests and visitors appreciated the progress and development of the university within a short span of ten years

Inter-institutional collaborations

The PPMC works directly under the Vice-Chancellor. The Cell collaborates with teaching, research, extension and other administrative staff in its operations. The Cell has the mandate for preparation of an overall perspective development plan for the University. Sponsor specific research studies in different problem areas like human resource requirement, admission policies, examination reforms, internal efficiency, pooling of resources, etc. and to assess performance of current programmes of higher education and research.

The PPMC facilities Inter-institutional collaborations by making MOU's with various International organizations, ICAR institutes, State Agricultural Universities, Public and Private Institutes. As on date UHSB is having 42 MOU's with different institutions thereby facilitating students and faculty to take specific and frontier research thereby enriching human resource development and addressing burning problems of horticulture sector viz., climate resilient studies, ICT applications for effective outreach, nationally important diseases and pests management, bio-formulations identification for cost effective crop protection, molecular breeding for biotic and abiotic stress, exploitation of solar energy, value addition, mechanization in designing farming and harvesting tools and also designing structures for drying and storage for perishable horticulture products.

The collaborative efforts are efficient in addressing the issues and helpful for students and faculty to focus on crop and technology specific research at global, national and regional level. There by catering needs of different sectors including farming community, food processors, socio-economic and post-harvest and food processing sector.

The PPMC made efforts in UHSB Membership for National Knowledge Network. The NKN is a state-of-the-art multi-gigabite pan-India network for providing a unified high speed network backbone for all knowledge related institutions in the country. The purpose of such a knowledge network goes to the very core of the country's quest for building quality institutions with requisite research facilities and creating a pool of highly trained professionals. The NKN will enable scientists, researchers and students from different backgrounds and diverse strata to work closely for advancing human development in critical and emerging areas.

The University is an active participant of the All Indian Survey on Higher Education (AISHE), conducted by Higher Education council and completed the survey during 2018. Higher education is of vital importance for the country, as it is a powerful tool to build knowledge based society of the 21st Century.

EVALUATION PROFORMA FOR RANKING OF AGRICULTURAL UNIVERSITIES FOR THE YEAR 2018

Brief Profile of the University:

1. **Full Name and Address of the University :** University of Horticultural Sciences, Udyanagiri, Navanagar, Bagalkot

2. **Contact details of ICAR Nodal officer: Name : Dr. K. M. INDIRESH**
   Email : doe@uhsbagalkot.edu.in
   Mobile : 09449872872
   Landline No : 08354 230326

3. **Number of Students Passed out (2018):**
   UG : 417
   PG : 161
   Ph.D. : 23

4. **Faculty Position as on 01.01.2018**

	Sanctioned	In Position	% of Filled
Colleges	364	262	71.97
Research Centres	40	21	52.50
AICRP	16	14	87.50
KVKs	7	6	85.70
Total	**427**	**303**	**70.96**

5. **University budget of Financial Year 2018-19**

i) State Government : 75,33,00,000

ii) Central Government : 2,70,83,000

iii) Private Sector : 69,18,000

Total 78,73,01,000

UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOT
OFFICE OF THE REGISTRAR
Udyanagiri, Navanagar, Bagalkot-587 104, Karnataka
O: 08354-230276/278/286/280 M: +919480696389

No: R/UHSB/Ranking/2019-20 Date: 08-06-2019

DECLARATION

It is certified that the information provided in the proforma is correct and the responsibility of accuracy and authenticity of the data lies with the university.

It is to declare that the entire filled-in proforma was uploaded on the website of the university and it is available at www.uhsbagalkot.edu.in / www.uhsbagalkot.in . It is further declared that the document shall be made available till next ranking.

REGISTRAR
Registrar
University of Horticultural Sciences
BAGALKOT.

Seal

UNIVERSITY OF HORTICULTURAL SCIENCES
REGISTRAR'S OFFICE
BAGALKOT

PROFORMA

Parameters	Score	Score awarded
(A).TEACHING OUTCOME (IMPACT/QUALITY WEIGHTAGE 40% OR 40 MARKS)		
A1. Number of students got ICAR-PG Scholarships (erstwhile JRF) during 2018/Number of UG students passed out (List to be enclosed as Annexure A1) **(Maximum 1 mark)**	**11.51% (48 Students)**	
If more than 5% of UG students got ICAR PG Scholarships (The students who cleared the exam but not awarded ICAR PG Scholarships not to be included.)	1 mark	
A2. Number of students got admission in Master's program during 2018 through ICAR entrance examination/Number of UG students passed out (List to be enclosed as Annexure A2) **(Maximum 1 mark)**	**18.94% (79 Students)**	
If more than 10% of UG students got admission at Masters level through ICAR entrance examination	1 mark	
A3. Students Performance at M.Sc. Level (List to be enclosed as Annexure A3) **(Maximum 2 marks)**	**2.48% (4 Students)**	
If more than 5% of students got ICAR-JRF/SRF (erstwhile SRF) or equivalent (The students who cleared the exam but not awarded ICAR-JRF/SRF not to be included.)	2 marks	
A4. Students Performance at M.Sc. Level (List to be enclosed as Annexure A4) **(Maximum 1 mark)**	**8.70% (14 Students)**	
If more than 10% of students got admission in Ph.D. through ICAR entrance examination	1 mark	
A5. ICAR Jawaharlal Nehru Award for Ph. D. thesis in 2018 (List to be enclosed as Annexure A5) **(Maximum 2 marks)**	**NIL**	
If number is 1	1 mark	
If number is more than 1	2 marks	
A6. Percentage of ARS selections in the disciplines offered by University against available seats advertised by ASRB during 2018 (List to be enclosed as Annexure A6) **(Maximum 3 marks)**	**NIL No Vacancies were notified for Horticulture discipline for the year 2018**	
Up to 5 per cent	1 mark	
More than 5 per cent	3 marks	
A7. Percentage of students qualified NET Exam in the disciplines of Agriculture and allied Sciences during 2018 (List to be enclosed as Annexure A7) **(Maximum 3 marks)**	**11.96% (22 Students)**	
Up to 5 per cent	1 mark	
More than 5 per cent	3 marks	
A8. Percentage of faculty positions filled in teaching, research, extension, KVK, AICRP and at regional stations (with details of Positions filled and sanctioned cadre strength for each category) (List to be enclosed as Annexure A8) **(Maximum 4 marks)**	**70.96 %**	
60 to 70 %	1 mark	
70 to 80 %	2 marks	
If more than 80 %	4 marks	

Parameters	Score	Score awarded
A9. Number of students admitted from overseas for Ph.D. during 2018 (List to be enclosed as Annexure A9) **(Maximum 2 marks)**	**01 Student**	
If number is up to 2	1 mark	
If it is more than 2	2 marks	
A10. National and International awards (such as those conferred by the National Organizations like ICAR, CSIR, DBT, DST, Government of India, international Bodies of repute like FAO, UN, CG Centres and Recognized National Sciences / Engineering Academies) (earned by Faculty) in 2018 (List with only top 10 awards to be enclosed as Annexure A10) **(Maximum 3 marks)**	**03 Awards**	
If Number is 1	1 mark	
If Number is 2-4	2 marks	
If Number is more than 4	3 marks	
A11. Best Institution/University Awarded by ICAR in 2018 in any field (Proof to be enclosed as Annexure A11) **(Maximum 1 mark)**	**03 Awards**	
A12. Award in All India Youth Festival or All India Agri. University Sports Meet in 2018 (Proof to be enclosed as Annexure A12) **(Maximum 1 mark)**	**(01 Silver & 12 Bronze Medals) in All India Inter Agricultural University Youth Festival 07 Bronze Medals (All India Inter Agricultural University Sports & Games meet)**	
1st, 2nd or 3rd Position in 2018	1 mark	
A13. Fellowship or Associateship of National Science Academies (NAAS, INSA, NAS, NAMS, INAE achieved during 2018) (List not more than five to be enclosed as Annexure A13) **(Maximum 2 marks)**	**NIL**	
Upto 1	1 mark	
2 or more	2 marks	
A14. Percentage of Faculty with Ph.D. degrees obtained from universities from outside of the state where employed (List along with proof to be enclosed as Annexure A14) **(Maximum 2 marks)**	**10.59 %**	
If less than 15 %	No marks	
15 to 25 %	1 mark	
More than 25 %	2 marks	
A15. Percentage of Faculty from the State other than the State in which university situated (List along with proof to be enclosed as Annexure A15) **(Maximum 2 marks)**	**1.32 %**	
Less than 20 %	No marks	
20 – 30 %	1 mark	
More than 30 %	2 marks	

Parameters	Score	Score awarded
A16. Percentage of Faculty with 3 months or more of Post doctoral/Visiting scientist experiences abroad in 2018 (Maximum 1 mark)	**NIL**	
More than 3% of faculty strength	1 mark	
A17. Average footfall in library (Maximum 2 marks)	**18.21%**	
Up to 15 % of students/faculty in position visiting library daily	1 mark	
More than 15 % of students/faculty in position visiting library daily	2 marks	
A18. CERA utilization in 2018 (Maximum 2 marks)	**26769 hits**	
*CERA Utilization (number of hits/total number of students and faculty) (to be awarded for top 10 universities)	2 marks	
A19. Accreditation on 01.01.2018 (by ICAR) (copy of accreditation letter/certificate to be enclosed as Annexure A19). **(Maximum 3 marks)**	**University and Eight out of Nine colleges of its constituent colleges are accreditated by ICAR up to March 10, 2019**	
Accreditation granted for up to 2 years to the University	2 marks	
Accreditation granted for up to 5 years to the University	3 marks	
A20. Implementation of recommendation of Fifth Deans, Committee/BSMA Committees. (copy of proceedings of Academic Council/ Board of Management, in which decision of implementation was taken, to be enclosed as Annexure A20) (Maximum 2 marks).	**University of Horticultural Sciences, Bagalkot has Implemented the recommendations of Fifth Dean's committee and BSMA almost in toto. The decision of the implementation of the same has been taken in the 21st Academic Council of the University of Horticultural sciences, Bagalkot held on 19-08-2016** **The decision of the implementation of the BSMA recommendation has been taken in the 1st Academic Council of the University of Horticultural sciences, Bagalkot held on 15-10-2010**	
Fifth Deans Committee/BSMA Committees recommendations partially implemented (If not implemented in all the faculties / Colleges).	1 mark	
Fifth Deans Committee/BSMA Committees recommendations fully implemented.	2 marks	

Parameters	Score	Score awarded
(B). RESEARCH (WEIGHTAGE 30 % OR 30 MARKS)		
B1. Research Product – (No. of research articles including review articles per faculty member having NAAS rating of over 6.0 in 2018) (List of papers along with NAAS rating 2019 to be enclosed as Annexure B1).Listing of publications below NAAS rating of 6.0 should not be made. **(Maximum 9 marks)**	**0.04% (13 Papers)**	
Less than 0.5 papers per faculty member	No marks	
0.6 – 1.0 papers per faculty member	3 marks	
1.1 – 1.5 papers per faculty member	5 marks	
1.6 – 2.0 papers per faculty member	7 marks	
More than 2.0 papers per faculty member	9 marks	
B2. Research Impact (Maximum 5 marks)		
Percentage of faculty having h-index as 10 or more than 10 (to be obtained from Google Scholar)	**0.02% (6 Faculty)**	
If 2 to 5 Percent	1 mark	
If 6 to 10 Percent	2 marks	
If 10 to 20 Percent	3 marks	
If more than 20 Percent	5 marks	
B3. Research Excellence		
(i) Patents granted during 2018 (Only patents granted along with proof to be listed as Annexure B3 (i)) **(Maximum 6 marks)**	**NIL**	
Per patent granted	2 marks (limited to 6 marks)	
(ii) Varieties released (Maximum 6 marks) (Varieties released by the centre/State Government and notified in Gazette to be listed. (Copy of gazette notification to be enclosed as Annexure B3(ii)) or **breeds/technologies/vaccines developed/new strains of bacteria/virus/parasite identified (Maximum 6 marks)** (Appropriate proof for development and adoption of technology to be enclosed as Annexure B3(ii)) or **new farm machinery & tools developed during the year 2018 (Maximum 6 marks)** (Appropriate proof for development and adoption of machinery & tools to be enclosed as Annexure B3(ii))	**06 (Varieties Released)** **37 (Technologies Developed)**	
	1 mark for each (limited to 6 marks)	
(iii) Funds received through external competitive grants (excluding ICAR development and KVK and AICRP grants) (Total amount) (Maximum 3 marks)	**9.49 crores**	
2 -3 Crores	1 mark	
3 to 5 Crores	2 marks	
More than 5 Crores	3 marks	
(iv) If PME Cell Established and Functional (Maximum 1 mark)	**Yes**	
	1 mark	

Parameters	Score	Score awarded
(C). EXTENSION AND OUTREACH (WEIGHTAGE 30% OR 30 MARKS)		
C1. KVK Awards during 2018 (Maximum 4 marks) (Attach Proof as Annexure C1)	**NIL**	
Zonal Award (one mark for each award)	2 marks	
National Award (two marks for each award)	2 marks	
C2. Extension workers Award at State / National Level (by Government Agency) during 2018. (Proofs to be enclosed as Annexure C2) **(Maximum 4 marks)**	**02 Awards**	
State level Awards		
1-5 Awards	1 mark	
More than 5 awards	2 marks	
National level awards		
1-3 Awards	1 marks	
More than 3 awards	2 marks	
C3. Quality input supplied by University (Seed, Semen, planting material etc.) during 2018 **(Maximum 2 marks)**	**5,52,326 Planting Materials**	
More than 50,000– 1,50,000 planting material	1 mark	
More than 1,50,000 planting material	2 marks	
Or		
Semen up to 10,000 doses	1 mark	
Semen 10001 to 50,000 doses	2 marks	
Or		
Breeder Seed (Cereals and Pulses) upto 200 quintals	1 mark	
More than 200 quintals	2 marks	
Or		
Fish Seed / fingerlings supplied		
10 Lakh to 1 Crore	1 mark	
More than 1 Crore	2 marks	
C4. If one lakh soil samples are analyzed per year (Maximum 1 mark)	**1,87,000 Soil Samples**	
	1 mark	
C5. Revenue generated through consultancies, certification, testing, tuition fee, licensing, training, sale of inputs and commercialization of technologies during FY 2018-19. The details of revenue, head (item) wise, duly certified and signed by comptroller of the University need to be listed as Annexure C5. The list should exclude the items listed in B3(iii) **(Maximum 10 marks)**	**7.03 % (Rs. 5,53,77,000.00)**	
5-10 % of University Budget	1 mark	
10-20 % of University Budget	4 marks	
20-30 % of University Budget	7 marks	
More than 30 % of University Budget	10 marks	
C6. Number of inter-institutional collaborative projects obtained during 2018 (Proof to be enclosed as Annexure C6) **(Maximum 2 marks)**	**05 Collaborations**	
One project	1 mark	
Two or more	2 marks	

Parameters	Score	Score awarded
C7. Partnership with Private Sector made during 2018 (Proof to be enclosed as Annexure C7) (Maximum 1 mark)	**04 Partnerships**	
C8. Exchange of faculty (Sabbatical, Visiting Scientist, Adjunct Faculty) during 2018 (Proofs to be enclosed as Annexure C8) (Guest lectures not to be included) **(Maximum 2 marks)**	**16 Faculty**	
Faculty coming from outside University (Minimum 1)	1 mark	
Faculty of University going to other University (Minimum 1 faculty)	1 mark	
C9. Number of Enterprises / start-ups promoted by the University (List is to be provided as Annexure C9) **(Maximum 2 marks)**	**04 Enterprises**	
1 - 2	1 mark	
More than 2	2 marks	
C10. Percentage of Students employed in Public/Private/Banking Sectors (List is to be provided as Annexure C10) **(Maximum 2 marks)**	**64% (385 Students)**	
10 – 20 percent	1 mark	
More than 20 percent	2 marks	
Total	**100 marks**	

A1 : Number of students got ICAR-PG Scholarships (erstwhile JRF) during 2018 / Number of UG students passed out

Sl No.	Number of students got ICAR- PG Scholarships in 2018	Total number of UG students passed out in 2018	Percentage (%)
1	48	417	11.51%

List of the students got ICAR-PG Scholarships in 2018

Sl No.	Name of the student
1	MANIKANTA R RAJAPPA
2	GANAPATI RATHOD
3	SHARAT SANSHI
4	NANDEESH J
5	APOORVA GUDDARADDI
6	GEETA PARASHURAM GUDAGI
7	RAVITEJA D H
8	MADHUSHREE S K
9	SHARANESHA D
10	THEJASWINI K
11	POOJA KARIBHIMAGOL
12	RANJITA BEELAGI
13	CHANDANA M R
14	SWEGA ANTONY K
15	MEGHANA D
16	HARSHITHA B S
17	KOWSALYA K B
18	LAVANYA V N
19	NAGENDRA
20	LALITHA K R
21	ARCHITHA M V
22	MURUGESH D
23	MAHESH KUMAR S K
24	SAHANA K N
25	CHANDANA S
26	SUSHMITHA L.C
27	VEENA GONI
28	VINAY J.U.
29	SHANTESH RAMESH KAMAT
30	SHIVASHANKAR
31	HARISHA NAIK T N
32	PRADEEP KUMAR N
33	RAKSHITHA K N
34	SOWMYASHREE A
35	PAVAN KUMAR M
36	YOGANANDA M
37	BINDU G R
38	REDDAPPA J B
39	SINCHANA JAIN N R
40	KARTHIK K P
41	SHAILAJA H K
42	SULOCHANA K H
43	SUSHMA BHAT
44	SHAMBHAVI KOTRALI
45	GOWTHAMI S
46	CHANDAN T K
47	UMESH DHOOD
48	VEDA V. BANDI

A2 : Number of students got admission in Master's program during 2018 through ICAR entrance examination / Number of UG students passed out

Sl No.	Number of students got admission in Masters program in 2018	Total number of UG students passed out in 2018	Percentage (%)
1	79	417	18.94%

List of the students got admission in Masters program in 2018	
Sl No.	**Name of the student**
1	MANIKANTA R RAJAPPA
2	GANAPATI RATHOD
3	SHARAT SANSHI
4	NANDEESH J
5	APOORVA GUDDARADDI
6	GEETA PARASHURAM GUDAGI
7	RAVITEJA D H
8	MADHUSHREE S K
9	SHARANESHA D
10	THEJASWINI K
11	POOJA KARIBHIMAGOL
12	RANJITA BEELAGI
13	CHANDANA M R
14	SWEGA ANTONY K
15	MEGHANA D
16	HARSHITHA B S
17	KOWSALYA K B
18	LAVANYA V N
19	NAGENDRA
20	LALITHA K R
21	ARCHITHA M V
22	MURUGESH D
23	MAHESH KUMAR S K
24	SAHANA K N
25	CHANDANA S
26	SUSHMITHA L.C
27	VEENA GONI
28	VINAY J.U.
29	SHANTESH RAMESH KAMAT
30	SHIVASHANKAR
31	HARISHA NAIK T N
32	PRADEEP KUMAR N
33	RAKSHITHA K N
34	SOWMYASHREE A
35	PAVAN KUMAR M
36	YOGANANDA M
37	BINDU G R
38	REDDAPPA J B
39	SINCHANA JAIN N R
40	KARTHIK K P

Sl No.	Name of the student
41	SHAILAJA H K
42	SULOCHANA K H
43	SUSHMA BHAT
44	SHAMBHAVI KOTRALI
45	GOWTHAMI S
46	CHANDAN T K
47	UMESH DHOOD
48	VEDA V. BANDI
49	Satish Nanu Rathod
50	Impa H R
51	Pooja Rajendra Dhange
52	Nandish H S
53	Kavyashree B
54	Mohan N. S.
55	Sharon Jacob
56	Menaka, M.
57	Puneeth Raj
58	Ajay D. Chougala
59	Maneesha Bhatt
60	Harish B.K.
61	Amal Jyothi A P
62	Amal John
63	Amal Kishore M
64	Bhuvnesh Kumar Mourya
65	Christina K T
66	Mukesh
67	Sneha K K
68	Veena Goni,
69	Shivashankar
70	Harshita Patil
71	Yogitha
72	Neer Somakka A N
73	Tirupati
74	Poovamma B C
75	Shreedhar Beese
76	Sachin H R
77	Akash
78	Mahesh S Banjantri
79	Chandrashekar

A3 : Students Performance at M.Sc. Level

Sl No.	Number of students got ICAR-JRF/SRFs in 2018	Total number of Masters students passed out in 2018	Percentage (%)
1	4	161	2.48 %
List of the students got ICAR-JRF/SRF Scholarships in 2018			
Sl No.	**Name of the student**		
SRF			
1	KIRANSAGAR D C		
2	SILPA G S		
3	PANCHAAL BHATTACHARJEE		
4	SUBHASINI GHOSH		

A4 : Students Performance at M.Sc. Level

Sl No.	Number of students got admission in Ph.D. in 2018 through ICAR entrance	Total number of Masters students passed out in 2018	Percentage (%)
1	14	161	8.70 %
List of the students got admission in Ph.D. in 2018 through ICAR entrance exam			
Sl No.	**Name of the student**		
1	SILPA G S		
2	PANCHAAL BHATTACHARJEE		
3	SUBHASINI GHOSH		
4	PALAVALASA RAVITEJA		
5	TAKHELLAMBAM HENNY CHANU		
6	ANUSHA RAMESH BHAGWAT		
7	LHINGNEIVAH CHONGLOI		
8	AVINASH M		
9	GAUTHAM SURESH S. P		
10	DHARAMPAL SINGH		
11	KIRAN SAGAR D C		
12	ADITYA SHIVANANDA HEGDE		
13	RAMAVATH RAMESH BABU		
14	V. JAYASHREE		

A6 : Percentage of ARS selections in the disciplines offered by University against available seats advertised by ASRB during 2018

Sl No.	Number of students got ARS in the disciplines offered by the university in 2018	Total number of seats available in such disciplines advertised by ASRB	Percentage (%)
-	-	-	-
List of the students got ARS selections			
Sl No.	**Name of the student**	**ARS Discipline**	
-	-	-	

कृषि वैज्ञानिक चयन मंडल
(भारतीय कृषि अनुसंधान परिषद)
कृषि अनुसंधान भवन-I, पूसा, नई दिल्ली 110 012
AGRICULTURAL SCIENTISTS RECRUITMENT BOARD
(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)
Krishi Anusandhan Bhavan-I, Pusa, New Delhi-110012

F.No. 1(16)/2017-Exam.II Dated the 24th January, 2018

NOTIFICATION

AGRICULTURAL RESEARCH SERVICE (ARS) EXAMINATION – 2017

in combination with

NATIONAL ELIGIBILITY TEST (NET-I) – 2018

1. The Agricultural Scientists Recruitment Board (ASRB) will hold a combined ARS-2017 (Preliminary) and NET (I)-2018 Examination during **06.04.2018** to **13.04.2018** in Online mode at 23 Centres across India in a staggered slot-wise examination format as per the Rules and Scheme of Examination indicated in this notification. The ARS-2017 (Mains) Examination will be conducted on **24.06.2018**. Candidates are advised to read the notification carefully before filling the Online Application Form.

   The ARS (Preliminary) Examination is a qualifying examination and its marks will not be carried forward for determining final merit of the candidates. All those candidates desirous of appearing for ARS Examination are required to take both the Preliminary and Mains Examination and viva-voce. Only those candidates who qualify the ARS-2017 (Preliminary) Examination as per standards given in **Appendix-VII** will be eligible to appear in the ARS-2017 (Mains) Examination, further restricted to 15 candidates for one vacancy. Candidates declared successful in ARS-2017 (Mains) Examination and viva-voce will be recommended for appointment as Scientists in Agricultural Research Service (ARS) of Indian Council of Agricultural Research (ICAR) in the Pay Band-III of ₹15,600-39,100 plus Research Grade Pay of ₹ 6,000/-.

   National Eligibility Test (NET) is a qualifying examination for determining eligibility for the position of Lecturer/Assistant Professor in the State Agricultural Universities (SAUs) and other Agricultural Universities (AUs). Candidates clearing the National Eligibility Test will be eligible to apply for the post of Lecturers or Assistant Professors in the SAUs/AUs. NET certificates will be issued by the ASRB to the qualified candidates to enable them to apply against vacancies to be notified or advertised by the State Agricultural Universities/Agricultural Universities. SAUs/AUs will satisfy themselves with regard to fulfilment of prescribed eligibility condition/criterion for requisite posts of Lecturers/Assistant Professors including authenticity of the NET Certificate in the possession of the candidates.

2. **CENTRES:-**
   The Centres where the combined Preliminary ARS-2017 and NET (I)-2018 Examination will be conducted in Online Computer Based Test (CBT) mode are mentioned in **Appendix-I.** The Centres where the ARS-2017 Mains Examination will be conducted in conventional Paper and Pen mode, are mentioned in **Appendix-II**. The Centres and date(s) of holding the Examinations as mentioned above could be changed at the discretion of ASRB. Candidates must select the centres of examination(s) carefully. No request for change of centre would be entertained.

APPENDIX-III

VACANCY POSITION FOR ARS EXAMINATION- 2017 AS REQUISITIONED BY ICAR

S. No.	Code No.	Discipline	UR	SC	ST	OBC	Divyang (OD/HD)	Total
1.	01*	Agricultural Biotechnology	5	0	0	1	2 (OD) (1 BL)	06
2.	02	Agricultural Entomology	1	0	0	0	0	01
3.	03**	Agricultural Microbiology	3	1	1	1	0	06
4.	05	Genetics & Plant Breeding	9	2	2	5	0	18
5.	07**	Plant Biochemistry	4	1	2 (1 BL)	2	1 (HD)	09
6.	08	Plant Pathology	4	1	0	3	0	08
7.	09	Plant Physiology	2	0	0	1	0	03
8.	10	Seed Science & Technology	1	0	0	1	0	02
9.	16*	Animal Biotechnology	1	0	0	1	0	02
10.	17	Animal Genetics & Breeding	2	1	0	1	0	04
11.	19	Animal Physiology	1	0	0	1	0	02
12.	25	Livestock Production Management	2	0	1	1	0	04
13.	27	Veterinary Medicine	1	0	0	0	0	01
14.	31	Veterinary Pharmacology	1	0	0	0	0	01
15.	32	Veterinary Public Health	1	0	0	0	0	01
16.	35	Fisheries Resource Management	3	0	1	2	0	06
17.	40**	Agricultural Chemicals	2	1	1	1	0	05
18.	41	Agricultural Meteorology	1	0	0	0	0	01
19.	42	Agroforestry	2	0	0	2	0	04
20.	43	Agronomy	4	1	1	2	0	08
21.	45*	Soil Sciences	5	2	1	2	2 (OD) (1 BL)	10
22.	47*	Agricultural Economics	8	2	1	5	1 (OD)	16
23.	48	Agricultural Extension	3	0	1	2	0	06
24.	49*	Agricultural Statistics	5	2	2	0	1 (OD)	09
25.	51	Farm Machinery and Power	5	1	1	2	0	09
26.	52**	Computer Application & IT	11	3	2	6	3 (HD)	22
27.	53	Land and Water Management Engineering	4	1	1	2	0	08
28.	54	Bioinformatics	6	2	1	2	0	11
29.	56	Agricultural Structure & Process Engineering	6	2	2	2	0	12
		Total	**103**	**23**	**21**	**48**	**10**	**195**

N.B.: 'Divyang' has been used in place of Persons with Disability

*Disciplines identified for Orthopedically Divyang category candidates.

** Disciplines identified for Hearing Divyang category candidates.

N.B.: Appointments of Divyang candidates other than the disciplines identified as suitable for them, shall not be considered.

Abbreviations:

UR- Unreserved; SC- Scheduled Caste; ST- Scheduled Tribe; OBC- Other Backward Class; OD- Orthopedically Divyang; HD- Hearing Divyang; BL – Backlog vacancy

Vacancy position of Divyang (OD*/HD**) candidates is included in the total number of vacancy through lateral reservation.

14

A7 : Percentage of students qualified NET Exam in the disciplines of Agriculture and allied Sciences during 2018

Sl No.	Number of students qualified NET in the disciplines of agriculture and allied sciences	Total number of PG and PhD students	Percentage (%)
1	22	184	11.96 %
List of the students qualified NET			
Sl No.	**Name of the student**	**Discipline**	
1	Monika Patel	Post Harvest Technology	
2	Harshita	Post Harvest Technology	
3	Kavita	Fruit Science	
4	Kiran	Fruit Science	
5	Ravi G K	Fruit Science	
6	Kiran sagar D.C	Fruit Science	
7	Mahesh P .N	Fruit Science	
8	Yallaling D Mallapur	Fruit Science	
9	Beerappa	Fruit Science	
10	Saniya	Floriculture	
11	Bharath Kumar A	PHT	
12	Basavaraj Shellikeri	Vegetable Science	
13	Thilak J C	Vegetable Science	
14	Shwetha A	Vegetable Science	
15	Laxmi Mastiholi	PSMA	
16	Chaitra Kulkarni	CIB	
17	Anushree T	Soil Science	
18	Anusha A	Plant Pathology	
19	Madhushree S K	Plant Pathology	
20	Archit T C	Plant Pathology	
21	Mahesh S Dashyal	Plant Pathology	
22	Nagesh Bhatt	Plant Pathology	

A8 : Percentage of faculty positions filled in teaching, research, extension, KVK, AICRP and at regional stations

	Sanctioned	In Position	% of Filled
Colleges	364	262	71.97
Research Centres	40	21	52.50
AICRP	16	14	87.50
KVKs	7	6	85.70
Total	**427**	**303**	**70.96**

A9 : Number of students admitted from overseas for Ph.D. during 2018

Sl.No.	Name of the student	Discipline	Country
COH, Bengaluru			
1	Najibulla Mujadadi	Fruit Science	Afghanistan

A 10 : National and International Awards

Sl.No.	Faculty Name	Award	Sponsor
1	Dr. Kulapati Hipparagi	Best Teacher Award	UHS, Bagalkot
2	Dr. Satish, D.,	Best Teacher Award	UHS, Bagalkot
3	Dr. Sadanand, G.K.	Best Teacher Award	UHS, Bagalkot
4	Dr. Kulapati Hipparagi	**"DR. APJ ABDUL KALAM Life time Achievement"** National Award for excellence in the filed of Teaching, Research and Publications	International Institute for Social and economic reforms(R), Bengaluru
5		Out Standing Achievement in Horticulture Award-2018	Hi-tech Horticultural Society
6	Dr. KiranKumar K.C	**"Young Scientist of 2018"** at International Conference on "Emerging Issues in agricultural, environmental and applied sciences for sustainable development" (EIAEASSD-2018)	Agro-Environmental Developmental Society (AEDS),

ತೋಟಗಾರಿಕಾ ವಿಜ್ಞಾನಗಳ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬಾಗಲಕೋಟ
UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOT

ವಿಶ್ವವಿದ್ಯಾಲಯ ಪ್ರಶಸ್ತಿ ಪತ್ರ

ಡಾ. ಕುಲಪತಿ ಹಿಪ್ಪರಗಿ, ಪ್ರಾಧ್ಯಾಪಕರು, ತೋಟಗಾರಿಕೆ ಮಹಾವಿದ್ಯಾಲಯ, ಬಾಗಲಕೋಟ ಇವರಿಗೆ ನಾಡ್ಡ ಪೀಠಿಯಲ್ಲಿ ಸ್ನಾತಕೋತ್ತರ 2017-18 ನೇ ಸಾಲಿನ ಯೋ.ವಿ.ವಿ. ಬಾಗಲಕೋಟ ವ್ಯಾಯೋಜಿತ ಅತ್ಯುತ್ತಮ ಶಿಕ್ಷಕ ಪ್ರಶಸ್ತಿಯನ್ನು ದಿನಾಂಕ 22ನೇ ನವಂಬರ್, 2018 ರಂದು ಜರುಗಿದ 10ನೇ ಸಂಸ್ಥಾಪನಾ ದಿನಾಚರಣೆಯಂದು ಪ್ರದಾನ ಮಾಡಿ ಸನ್ಮಾನಿಸಲಾಯಿತು.

University Award Certificate

This is to certify that Dr. Kulapati Hipparagi, Professor, College of Horticulture, Bagalkot has been conferred with UHS, Bagalkot sponsored Best Teacher Award after verifying his excellence in teaching for the year 2017-18 on 10th foundation day, 22nd November 2018.

Dr. K. M. Indiresh
Vice-Chancellor
UHS, Bagalkot

ತೋಟಗಾರಿಕಾ ವಿಜ್ಞಾನಗಳ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬಾಗಲಕೋಟ
UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOT

ವಿಶ್ವವಿದ್ಯಾಲಯ ಪ್ರಶಸ್ತಿ ಪತ್ರ

ಡಾ. ಸದಾನಂದ, ಜಿ. ಕೆ. ಸಹಾಯಕ ಪ್ರಾಧ್ಯಾಪಕರು, ತೋಟಗಾರಿಕೆ ಮಹಾವಿದ್ಯಾಲಯ, ಜೆಂಗಳೂರು ಇವರಿಗೆ ನಾಡ್ಡ ಪೀಠಿಯಲ್ಲಿ ಸ್ನಾತಕೋತ್ತರ 2017-18 ನೇ ಸಾಲಿನ ಯೋ.ವಿ.ವಿ. ಬಾಗಲಕೋಟ ವ್ಯಾಯೋಜಿತ ಅತ್ಯುತ್ತಮ ಶಿಕ್ಷಕ ಪ್ರಶಸ್ತಿಯನ್ನು ದಿನಾಂಕ 22ನೇ ನವಂಬರ್, 2018 ರಂದು ಜರುಗಿದ 10ನೇ ಸಂಸ್ಥಾಪನಾ ದಿನಾಚರಣೆಯಂದು ಪ್ರದಾನ ಮಾಡಿ ಸನ್ಮಾನಿಸಲಾಯಿತು.

University Award Certificate

This is to certify that Dr. Sadananda, G. K. Assistant Professor, College of Horticulture, Bengaluru has been conferred with UHS, Bagalkot sponsored Best Teacher Award after verifying his excellence in teaching for the year 2017-18 on 10th foundation day, 22nd November 2018.

Dr. K. M. Indiresh
Vice-Chancellor
UHS, Bagalkot

INTERNATIONAL INSTITUTE FOR SOCIAL AND ECONOMIC REFORMS (R), BENGALURU

Proudly Presents

Dr. APJ Abdul Kalam Life Time Achievement National Award

DR. KULAPATI HIPPARAGI

Bagalkot

for your distinguished contributions to the development of the Nation and achieving outstanding excellence in the field of Teaching, Research and Publications

Today the 26th January 2019 at Bengaluru

Dr. H.V. SHIVAPPA
President

G.S. DESAI
Secretary

HI-TECH HORTICULTURAL SOCIETY

The Executive Committee confers its

Outstanding Achievement in Horticulture Award-2018

to

Dr. Kulapati Hipparagi

Professor of Fruit Science
University of Horticultural Sciences, Bagalkot, Karnataka, India

for her outstanding contribution and recognition in the field of "Fruit Science" on the occasion of International Conference on 2nd Global Meet on Science & Technology for Ensuring Quality Life (GMST 2018) held during 13-17 November 2018 at Hotel Aston Kuta, Kuta, Bali (Indonesia)

Prof. Bijendra Singh
President HTHS

A 11 : Best Institution / University Awarded by ICAR in 2018

Sl.No.	Award	Name of the Institution	Sponsor
1	First position in ICAR JRF Examination under programme category Horticulture and forestry by ICAR -2018	UHS, Bagalkot	ICAR
2	Best AICRP Centre	AICRP, Hassan	ICAR
3	Best AICRP Centre	AICRP, Arabhavi	ICAR

A 12 : Award in All India Youth Festival or All India Agri University Sports Meet in 2018

1. All India Inter Agricultural University Youth Festival Achievements

Sl. No	All India Youth Festival				
	Year	Held at	UHS, Position	No of Universities Participated	No of Prizes
1.	2018-19	Saradarkrushinagar Dantiwada Agricultural University, Gujarat from 3rd to 7th February, 2019	-	55	01 Silver & 12 Bronze Medals

Sl. No	Name of the Student	College	Event	Accomplishment
1.	Ms. Sahana P V	COH, Bagalkot	Light Vocal	2nd Place
2.	Ms. Sahana P V	COH, Bagalkot	Patriotic Song	3rd Place
	Ms. Shrutidevi Math	COH, Bagalkot		
	Ms. Harshada Madali	COH, Bagalkot		
	Ms. Shrinidhi B R	COH, Bagalkot		
	Ms. Rashmitha G	KRCCH, Arabhavi		
	Ms. Soumya H S	COH, Sirsi		
3.	Ms. Poojitha	KRCCH, Arabhavi	Skit	3rd Place
	Mr. Akash Malleda	COH, Bagalkot		
	Ms. Shrutidevi Math	COH, Bagalkot		
	Ms. Hima N Prasad	COH, Bengaluru		
	Mr. Venuganapati Hegde	COH, Munirabad		
	Mr. Tejaswi S N	COH, Mysuru		
4.	Ms. Rashmitha G	KRCCH, Arabhavi	One act play	4th Place
	Ms. Poojitha	KRCCH, Arabhavi		
	Ms. Tejaswi S N	COH, Mysuru		
	Ms. Shritidevi Math	COH, Bagalkot		
	Mr. Akash Malleda	COH, Bagalkot		
	Mr. Abhilash K N	COH, Bagalkot		
	Mr. Venuganapati Hegde	COH, Munirabad		
	Mr. Pruthiviraj H M	COH, Bengaluru		
	Lohitashwa K M	COH, Bengaluru		
5.	Ms. Pravalika K M	COH, Bengaluru	Collage	4th Place

2. All India Inter Agricultural University Sports & Games meet Achievements

Sl. No	Sports & Games Meet				
	Year	Held at	UHS, Position	No of Universities Participated	No of Prizes
1.	2018-19	Punjab Agricultural University, Ludhiana from 2nd to 5th January, 2019	-	65	07 Bronze Medals

Sl. No	Name of Student	College	Event	Accomplishment
1.	Mr. Jayant Pujari	COH, Bagalkot	Shot Put - Men	3rd Place
2.	Mr. Basavaraj Devaji	CHEFT, Devihosuru	Discuss Throw- Men	3rd Place
3.	Ms. Lavanya S M	COH, Kolar	Women's 1500 Mtr Athletics	3rd Place
4.	Ms. Madhumathi Patil	KRCCH, Arabhavi	Women's 4 x 100 Mtr Relay	3rd Place
5.	Ms. Anita L R	COH, Mysuru		
6.	Ms. Sheela Reimie	COH, Mysuru		
7.	Ms. Sikha Manoharan	COH, Munirabad		

Proud Achievers of the 19th All India Inter Agricultural University Youth Festival held at Saradarkrushinagar Dantiwada Agricultural University, Gujarat from 3rd to 7th February, 2019 and UHS, Bagalkot bagged 01 Silver & 12 Bronze Medals

Proud Achievers of the 19th All India Inter Agricultural University Sports and Games Meet held at Punjab Agricultural University, Ludhiana from 2nd to 5th January, 2019 and UHS, Bagalkot bagged 07 Bronze Medals

A14 : Percentage of faculty with Ph.D degrees obtained from universities from outside of the state where employed

Sl No.	Number of faculty with Ph.D. degrees obtained from universities from outside of the state where employed	Total number of faculty	Percentage (%)
1	23	217	10.59 %
List of the faculty members			
Sl No.	**Name of the faculty member**		
1	Dr. K.N. Kattimani		
2	Dr. Nagesh Naik		
3	Dr. Eranna Rajashekara		
4	Dr. K R Vasudeva		
5	Dr. Meenakhi Sood		
6	Dr. Itigi Prabhakar		
7	Dr. V.P. Singh		
8	Dr. Kiran Nagajjanavar		
9	Dr. Shankar Meti		
10	Dr. Noorulla Haveri		
11	Dr. Manjunath Hubballi		
12	Dr. Chikkanna G.S.		
13	Dr. Shashidhar Chavan		
14	Dr. Preetham S.P.		
15	Dr. Manjunath, R.		
16	Dr. Sadananda, G. K.		
17	Dr. Jayashree Ugalat		
18	Dr. Raghawendra Gunnaiah		
19	Dr. Mala C. Patil		
20	Dr. Pavana Kumar P.		
21	Dr. Shiddanagouda Yadachi		
22	Dr. Dhananjaya P.		
23	Dr. Vijaykumar Rathod		

A15 : Percentage of Faculty from the State other than the State in which university situated

Sl No.	Number of faculty from the States other than the State in which university is located	Total number of faculty	Percentage (%)
1	4	303	1.32%
List of the faculty members			
Sl No.	**Name of the faculty member**		
1	Mr. K. Tulasiram		
2	Dr. Meenakshi Sood		
3	Mr. Rajesh A M		
4	Dr. V. P. Singh		

A16 : Percentage of Faculty with 3 months or more of Post doctoral/Visiting scientist experiences abroad in 2018

Sl No.	Number of faculty with 3 months or more of Postdoctoral/Visiting scientist experiences abroad in 2018	Total number of faculty	Percentage (%)
-	-	-	-

List of the faculty members

Sl. No.	Name of the faculty member
-	-

A17 : Average footfall in library

UNIVERSITYOF HORTICULTURAL SCIENCES, BAGALKOT
SARVAJNA LIBRARY

University Library,
Udyanagiri, Navanagar
Bagalkot – 587 104
Karnataka State

(M) : 9480696383
e-mail: ul@uhsbagalkot.edu.in

UHSB/ULib/ /2019-20 Date: 30-05-2019

CERTIFICATE

This is to certify that, the average footfall of faculty and students in the library is **18.21 %** as per the records in the libraries of University of Horticultural Sciences, Bagalkot during 2018.

S.No	Campus	Total no of users (Membership)	Average Visits per Day to Library
1	UHS, Bagalkot (Main campus)	627	115
2	COH, Arabhavi	424	57
3	COH, Bengaluru	185	48
4	COH, Bidar	263	50
5	COH, Kolar	262	33
6	COH, Munirabad	262	40
7	COH, Mysuru	283	55
8	COH, Sirsi	258	60
	Total	2564	467

Total Average Visits per Day to Library (in No.s) : 467
Total users (Membership): 2564
Average use of library per day (in No.s) : 467
Percentage of foot fall in the library per day:

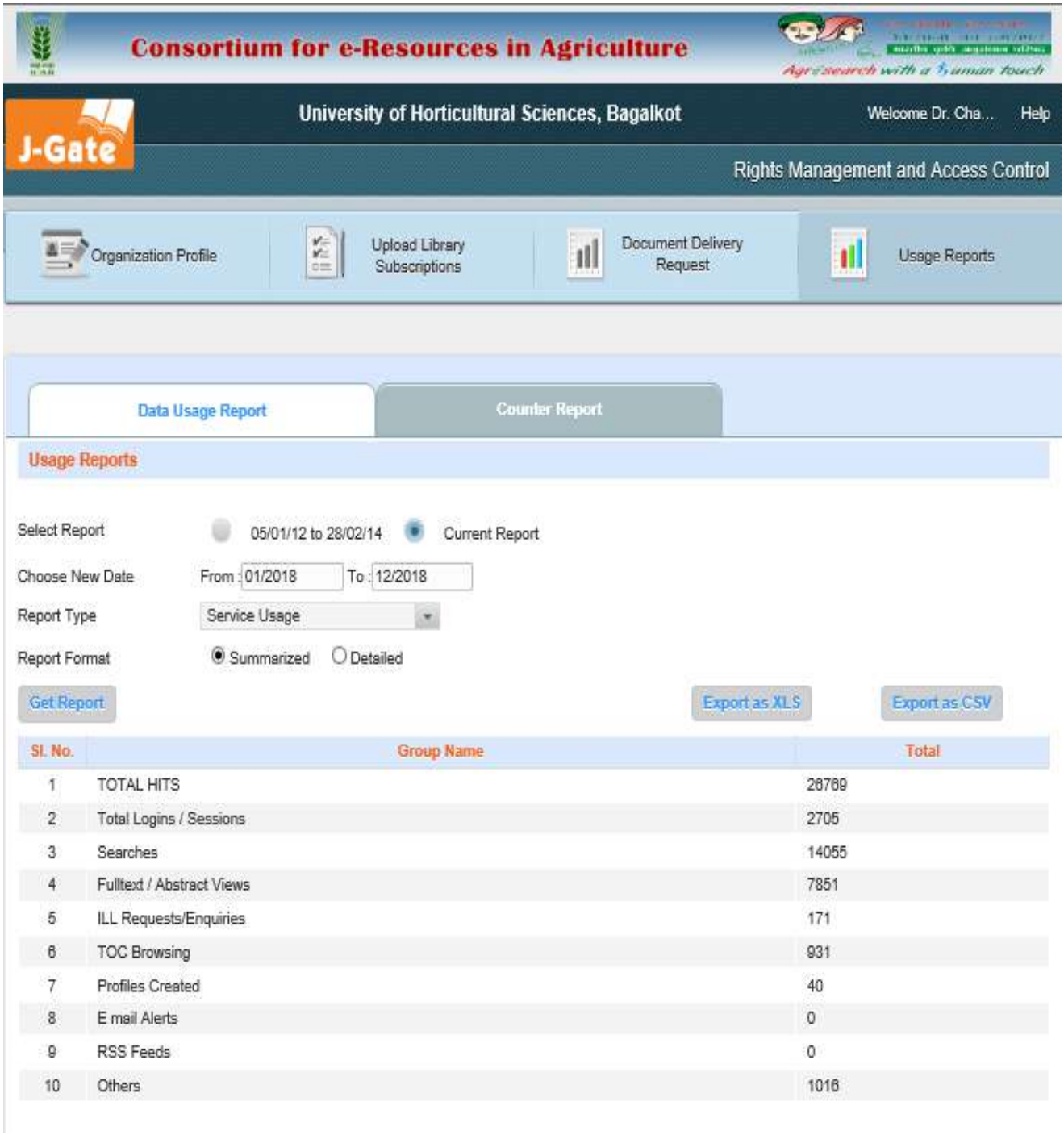
= Average use of library per day * 100
Total no. of users.

= 467 *100
2564
= 18.21 %

Percentage of foot fall in the library per day : 18.21 %

30/5
University Librarian
University Librarian
University of Horticultural Sciences
Udyanagiri, BAGALKOT

A18 : CERA utilization in 2018



Consortium for e-Resources in Agriculture

Agri research with a human touch

J-Gate

University of Horticultural Sciences, Bagalkot

Welcome Dr. Cha... Help

Rights Management and Access Control

Organization Profile | Upload Library Subscriptions | Document Delivery Request | Usage Reports

Data Usage Report | Counter Report

Usage Reports

Select Report: 05/01/12 to 28/02/14 | Current Report

Choose New Date: From : 01/2018 To : 12/2018

Report Type: Service Usage

Report Format: Summarized | Detailed

Get Report | Export as XLS | Export as CSV

Sl. No.	Group Name	Total
1	TOTAL HITS	26769
2	Total Logins / Sessions	2705
3	Searches	14055
4	Fulltext / Abstract Views	7851
5	ILL Requests/Enquiries	171
6	TOC Browsing	931
7	Profiles Created	40
8	E mail Alerts	0
9	RSS Feeds	0
10	Others	1016

A19 : Accreditation on 01.01.2018 (by ICAR)

INDIAN COUNCIL OF AGRICULTURAL RESEARCH
NEW DELHI

NATIONAL AGRICULTURAL EDUCATION ACCREDITATION BOARD

CERTIFICATE OF ACCREDITATION

On the recommendations of the ICAR Peer Review Team, the National Agricultural Education Accreditation Board, ICAR, New Delhi hereby grants accreditation to the University of Horticultural Sciences, Bagalkot (Karnataka) and its following constituent colleges upto March 10, 2019.

- College of Horticulture, Arabhavi
- College of Horticulture, Bagalkot
- College of Horticulture, Bidar
- College of Horticulture, Kolar
- College of Horticulture, Bengaluru
- College of Horticulture, Mysore
- College of Horticulture, Sirsi
- College of Horticulture, Munirabad

The accredited academic programmes are listed overleaf.

March, 2017
New Delhi

(Narendra Singh Rathore)
Deputy Director General (Agril. Edn.), ICAR
and Vice-Chairman, NAEAB

(Trilochan Mohapatra)
Secretary, DARE & Director General, ICAR
and Chairman, NAEAB

A20 : Implementation of recommendation of Fifth Deans, Committee/BSMA Committees

UNIVERSITY OF HORTICULTURAL SCIENCES
UDYANAGIRI, NAVANAGAR, BAGALKOT

PROCEEDINGS OF THE 21st ACADEMIC COUNCIL MEETING HELD ON 19-08-2016 AT 09:00 AM, IN THE CONFERENCE HALL, UHS, BAGALKOT

The 21st Meeting of the Academic Council of University of Horticultural Sciences, Bagalkot was held in the Conference Hall, UHS, Bagalkot on 19th August, 2016. The following members were present.

1.	Vice-Chancellor& Director of Education, UHS, Bagalkot	- Chairman
2.	Director of Research, UHS, Bagalkot	- Member
3.	Director of Extension, UHS, Bagalkot	- Member
4.	Registrar, UHS, Bagalkot	- Member
5.	Dean (PGS), UHS, Bagalkot	- Member
6.	DSW, UHS, Bagalkot	- Member
7.	Dean, College of Horticulture, Bagalkot	- Member
8.	Dean, College of Horticulture, Arabhavi	- Member
9.	Dean, College of Horticulture, Bengaluru	- Member
10.	Dean, College of Horticulture, Mysuru	- Member
11.	Dean, College of Horticulture, Sirsi	- Member
12.	Dean, College of Horticulture, Kolar	- Member
13.	Dean, College of Horticulture, Koppal	- Member
14.	Dean, College of Horticulture, Bidar	- Member
15.	Dr. T. B. Alloli, Nodal Officer, CHEFT, Haveri	- Member invitee
16.	Comptroller, UHS, Bagalkot	- Member

At the outset, the Director of Extension, UHS, Bagalkot, welcomed the Members and Chairman for the 21st Academic Council Meeting and requested the Hon'ble Vice-Chancellor and Chairman of Academic Council to permit to move the items as per the agenda. The Chairman accorded permission to move the items as per the agenda.

PART – A

The action taken report on the minutes of 20th Academic Council Meetings held on 18th April, 2016 was called for.

The Director of Extension, UHS, Bagalkot placed the action taken report on the minutes of 20th Academic Council Meetings. The Academic Council after reviewing the Action taken expressed its satisfaction over the progress made.

ITEM No.17: Implementation of Recommendations of V Dean Committee Syllabus for B.Sc. (Hort.) Degree Programme at UHS, Bagalkot from the academic year 2016-17

After detailed discussion, the Academic Council suggested the following corrections

Sl. #	Proposed	To be Modified
1	**Department of Vegetable Science:** VSC 202 | Precision Farming and Protective Cultivation of Vegetables | 1 (0+1)	VSC 202 | Precision Farming and **Protected** Cultivation of Vegetables | 1 (0+1)
2	**HEL:** 2. Module-II. Protective Cultivation of high Value Horticulture Crops:	**HEL:** 2. Module-II. **Protected** Cultivation of high Value Horticulture Crops.
3	**RHWE:** # | RHWE Programme | Duration 1 | Orientation programme | 1 week 2 | Village stay at RSK/ Hobli level | 12 weeks 3 | All India study tour | 3 weeks 4 | Placement Programme | 5 weeks 5 | Report writing & final examination | 3 weeks **Total** | **24 weeks**	**RHWE:** # | RHWE Programme | Duration 1 | Orientation programme | 2 week 2 | Village stay at RSK/ Hobli level | 12 weeks 3 | All India study tour | 2 weeks 4 | Placement Programme | 5 weeks 5 | Report writing & final examination | 3 weeks **Total** | **24 weeks**
4	**Department of Social Science:** AEX 303 | Entrepreneurship Development and Business Management | 2(2+0)	**Department of Social Science:** Bifurcated as AEC 301: Business Management and Entrepreneurship 1(1+0) AEX 303: Communication Skills in Entrepreneurship Development 1(1+0) (Detailed syllabus is given in the annexure-III)
5	**EXAMINATION AND EVALUATION** **1. Examination** External theory (50%) Internal Theory + Practical (50%) **Courses with Theory and Practical** Mid-term Exam (30%) + Assignment (5%) + Practical test and record (15%) **Courses with only Theory** Mid-term Exam (40%) + Assignment (10%) **Courses with only Practical**: (100%) Internal: Mid-term Exam (40%) + [Final Practical Test + Practical Record (50%)] and Assignment (10%)	**EXAMINATION AND EVALUATION** **1. Examination** External theory (50%) Internal Theory + Practical (50%) **Courses with Theory and Practical** Mid-term Exam (25%) + Attendance (5%) + Assignment (5%) + Practical test (10%) and record (5%) **Courses with only Theory** Mid-term Exam (40%) + Attendance (5%) + Assignment (5%) **Courses with only Practical**: (100%) Internal: Mid-term Practical Exam (40%) + Final Practical Test (40%)+ Practical Record (10%) + Attendance (5%) + Assignment (5%)
6	2. Evaluation: All Degrees **Percentage of Marks Obtained**/100 | **Conversion into Points** 10 Points 90 to <100 | 9 to <10 80 to <90 | 8 to <9 70 to <80 | 7 to <8 60 to <70 | 6 to <7 50 to <60 | 5 to <6 <50 (Fail) | <5 Eg. 80.76 | 8.08 43.60 | 4.36	2. Evaluation: All Degrees **Percentage of Marks Obtained**/100 | **Conversion into Points** 10 Points 90 to <100 | 9 to <10 80 to <90 | 8 to <9 70 to <80 | 7 to <8 60 to <70 | 6 to <7 50 to <60 | 5 to <6 <50 (Fail) | <5 Eg. 80.76 | 8.08 43.60 | 4.36 **Note: After converting the grade point in to two decimal, credit points will be calculated.**

(Action: Dean, Bagalkot / Registrar)

ITEM No.23: Issue of semester marks cards to the graduate students in a common approved format by all the constituent colleges of the university.

The Academic Council accepted the item as put up in the agenda and suggested to implement from this academic year itself

(Action: Registrar)

ITEM No.24: Finalizing Modified Syllabus of Two Year Diploma (Hort) Course for the Academic Year 2016-17 Onwards At UHS, Bagalkot

The Academic Council after detailed deliberation, informed the Dean PGS to circulate the proposed syllabus including 'Introduction to Computer Application Course' among the Deans COH, Bagalkot and Bengaluru inviting the inputs / comments. After incorporating the suggestion place before the Board of Studies (GP) for its recommendation.

(Action: Dean PGS)

Further, Hon'ble Vice Chancellor and Chairman in the concluding remarks, insisted the members to focus on bringing the agenda items like more on developing the policy related issues, capacity revolution, ICT components *etc*, from next academic council meeting onwards.

With this, the meeting ended with vote of thanks to chairman and members.

No.UHSB/DOE/AC.21/12 72 /2016-17

Directorate of Education,
UHS, Bagalkot
Dated: 19.08.2016

Approved by Hon'ble Vice Chancellor, UHS, Bagalkot dated: 20-08-2016.

20/8/16.

Director of Education
UHS, Bagalkot

Director of Education
University of Horticultural Sciences
Udyanagiri, Near Saamikeri Cross
BAGALKOT-587104, Karnataka

To,

All the above and Concerned Members.
/- with a request to take the necessary action as per the proceedings.

Copy submitted to:

PS to VC with a request to bring to the kind notice of Hon'ble Vice Chancellor, UHS, Bagalkot.

UNIVERSITY OF HORTICULTURAL SCIENCES
SECTOR.60, NAVANAGAR, BAGALKOT

PROCEEDINGS OF THE 1ST ACADEMIC COUNCIL MEETING HELD ON 15-10-2010 BETWEEN 2.30 PM – 6.00 PM AT KRCCH, ARABHAVI

The first meeting of the Academic Council of University of Horticultural Sciences, Bagalkot was held at KRCCH, Arabhavi on 15-10-2010 in the meeting hall between 2.30 pm to 6.00 pm. The following members were present

1	Vice-Chancellor, UHS, Bagalkot	Chairman
2	Director of Research, UHS, Bagalkot	Member
3	Director of Extension, UHS, Bagalkot	Member
4	Registrar, UHS, Bagalkot	Member
5	Dean, College of Horticulture, Arabhavi	Member
6	Dean, College of Horticulture, Mudigere	Member
7	Dean, College of Horticulture, Bagalkot	Member
8	Dean, College of Horticulture, Bidar	Member
9	Dean, College of Horticulture, Kolar	Member
10	Dean, College of Horticulture, Mysore	Member
11	Dean, College of Horticulture, Hiriyur	Member
12	Dean, College of Horticulture, Koppal	Member
13	Dean, College of Horticulture, Sirsi	Member
14	Dr. B. Hemla Naik, Professor, COH, Mudigere	Member
15	K T Shivashankar, Former Professor of Horticulture, Nagarabhavi, Bangalore	Member
16	Director of Horticulture or his nominee not below the rank of Joint Director, Government of Karnataka, Bangalore	Member
17	Dr. K. A. Kulkarni, Former Prof. of Entomology & Registrar, UAS, Dharwad	Co-Opted Member
18	Director of Education, UHS, Bagalkot	Member Secretary

Page 1 of 9

ITEM NO – 6: Approval of Forms Nos: 1 to 32 for Post Graduate degree programme

Proposed By : Dean, Post Graduate Studies, University of Horticultural Sciences, Bagalkot

Moved By : Special Officer / Dean, College of Horticulture, Kolar

The committee, based on the recommendations of the Board of Studies Post Graduate (BOS-PG) and after detailed discussions has made certain minor suggestions. After incorporations of the same, it was approved to adopt the same with effect from 2010-11.

ITEM NO – 7: Course syllabus for Master's Degree Programme (Revised Syllabus as per ICAR guidelines) 2010-11

Proposed By : Dean, Post Graduate Studies, University of Horticultural Sciences, Bagalkot

Moved By : Dean, College of Horticulture, Mudigere

The item was placed before the Board of Studies, Post Graduate (BOS-PG) as per the revised syllabus. Board of Studies, Post Graduate (BOS-PG) has approved the same after detailed examination. Since, it is as per the Indian Council of Agricultural Research (ICAR) suggestions, the Academic Council has approved the same to be adopted from the year 2010-11.

ITEM NO – 8: Creation of Department of Medicinal and Aromatic Crops in the University of Horticultural Sciences, Bagalkot

Proposed By : Dean, Post Graduate Studies, University of Horticultural Sciences, Bagalkot

Moved By : Special Officer, College of Horticulture, Bagalkot

Considering the importance of the subject and need of the Industry on one hand and the facilities available on the other, the subject proposed by Dean, Post Graduate Studies, University of Horticultural Sciences, Bagalkot was discussed in Board of Studies, Post Graduate (BOS-PG). The new trend of the Industry was examined and the proposal was approved by the Academic Council for placing it in Board of Management (BOM) for its final approval. The department of Medicinal and Aromatic Crops can be started from the academic year 2011-12 after the same is approved by the Board of Management (BOM).

ITEM NO – 9: Course syllabus for Ph.D degree programme (Revised Syllabus as per ICAR guidelines) 2010-11

Proposed By : Dean, Post Graduate Studies, University of Horticultural Sciences, Bagalkot

Moved By : Dr.Hemla Naik, Professor and Head, Department of Floriculture and Landscape Architecture, College of Horticulture, Mudigere

Based on the recommendation of Board of Studies, Post Graduate (BOS-PG) and after the examination of the subject, the Proposal was approved by Academic Council for implementation from 2010-11.

ITEM NO – 10: Offering of English communication and comprehensive skill course (0+1) for under graduate programme as non-load course.

Proposed By : Dean, Post Graduate Studies, University of Horticultural Sciences, Bagalkot

Moved By : Dean, KRCCH, Arabhavi

Considering the need to upgrade the English Knowledge of the students both in spoken and comprehensive written English, the matter was placed in Board of Studies, Under Graduate (BOS.UG) and the same was approved. Accordingly the Academic Council has examined the need in detail and approved the same for implementation from the academic year 2010-11.

ITEM NO – 11: Permitting Indian Council of Agricultural Research (ICAR) seats for Ph.D. to State candidates

Proposed By : Director of Education, University of Horticultural Sciences, Bagalkot

Moved By : Registrar, University of Horticultural Sciences, Bagalkot

The subject was discussed at length. Considering the delay on one hand and non-availability of any such precedence in other Universities on the other, the subject is not approved.

ITEM NO – 12: Proposal for filling up of the posts

Proposed By : Registrar, University of Horticultural Sciences, Bagalkot

Moved By : Registrar, University of Horticultural Sciences, Bagalkot

The urgent need for the teaching and non-teaching staff was emphasized and discussed in both Board of Studies Under Graduate and Post Graduate as well as in Research Council and Extension Education Council. Because of this urgent need, the proposal was sent to the

dropouts to urban areas and also to create the much needed skilled workforce. The Vice Chancellor briefed the Academic Council about the need for starting training centers to conduct above training. The matter was also placed before Extension Education Council and the same was approved. Accordingly, the subject was considered very important by Academic Council and accorded its approval in principle to send this proposal as early as possible. However, it was also suggested to prepare detailed proposal including course title, eligibility, duration etc. in detail and submit the same to Board of Management for its approval before submitting to Indian Council of Agricultural Research (ICAR) / Rashtriya Krishi Vikas Yojane (RKVY) for funding.

ITEM NO – 16: Establishment of Directorate of Extension and also Extension Wings

Proposed By : Director of Extension, University of Horticultural Sciences, Bagalkot

Moved By : Director of Extension, University of Horticultural Sciences, Bagalkot

Extension Education and transfer of technology is one of the mandates of the University. The subject was placed before the Extension Education Council and the same was approved with certain modifications. The corrected proposal was discussed in the Academic Council for its kind perusal. After the detailed discussions and also considering the future needs of the University, the same was approved by Academic Council with recommendation to place it before Board of Management with all the details.

Approved

Director of Education/
Member Secretary, Academic Council

Vice-Chancellor
Chairman, Academic Council

B1 : Research Product

Sl No.	Total number of research articles having NAAS rating of over 6.0 published in 2018	Total number of faculty	Number of research papers per faculty
1	13	303	0.04

List of the research articles*

Sl No.	Details of publication	NAAR Rating
1	Yogendra Khedikar, Manish K Pandey, V Sujay, Sube Singh, Spurthi N Nayak, Henry W Klein-Gebbinck, Cholin Sarvamangala, Ganapati Mukri, Vanika Garg, Hari D Upadhyaya, H L Nadaf, M V C Gowda, Rajeev K Varshney, Ramesh S Bhat, 2018. Identification of main effect and epistatic quantitative trait loci for morphological and yield-related traits in peanut (A*rachishypogaea* L.), *Molecular Breeding* (Springer Netherlands), 38 (6), 78.	8.4
2	Kenta Shirasawa, Ramesh S Bhat, Yogendra P Khedikar, Venkataswamy Sujay, Rohini M Kolekar, Sharanabasappa B Yeri, Mallenahally Sukruth, Sarvamangala Cholin, Byregowda Asha, Manish K Pandey, Rajeev K Varshney, Makanahally V C Gowda, Sequencing Analysis of Genetic Loci for Resistance for Late Leaf Spot and Rust in Peanut (*Arachishypogaea* L.), *Front Plant Sci.* 2018; 9: 1727. doi: 10.3389/fpls.2018.01727	10.298
3	Sarvamangala S Cholin, Chaitra A. Poleshi, Manikanta D. S and Calvin Christopher 2018, Exploring the Genomic Resources of Carrot for Cross-Genera Transferability and Phylogenetic Assessment among Orphan Spices and Vegetables of Apiaceae Family. *Hortic. Environ. Biotechnol.* https://doi.org/10.1007/s13580-018-0101-4	7.193
4	Nusrat Perveen, Sarvamangala S. Cholin, Kulapati Hipparagi, B N S Murthy and Dadapeer Peerjade, Genetic variability studies in pomegranate, *Indian J. Hort.* 75(3), September 2018: 355-361, DOI : 10.5958/0974-0112.2018.00062.2	6.19
5	Nusrat Perveen, Sarvamangala S. Cholin, Kulapati Hipparagi, B N S Murthy and Dadapeer Peerjade, Assessment of genetic divergence among Indian cultivars of Pomegranate (*Punicagranatum* L.) for economic traits: A basis for parental selection for hybridization Indian J. Hort. 76(1), March 2019: 8-15, DOI : 10.5958/0974-0112.2019.00002.1	6.19
6	Venkataravanappa V, Lakshminarayana Reddy C N, Saha S, Shankarappa K. S. and Krishna Reddy M. 2018, Detection and characterization of tomato leaf curl New Delhi virus association with mosaic disease of ivy gourd (Cocciniagrandis (L.) Voigt) in North India Archives of Biological Sciences,17(1):e2134,https://doi.org/10.2298/ABS170616051V.	6.37

Sl No.	Details of publication	NAAR Rating
7	Konana, A., Dhaliwal, M.S., Jindal, S.K., and Fakrudin, B., 2018, Mapping of fruit length related QTLs in interspecific cross (*Capsicum annum* L.x*Capsicumgalapagoense*Hunz.) of chilli.,*Breeding Sci*.,68: 219-226.	7.56
8	Venkataravanappa, V.,Lakshminarayana Reddy, C. N., Shankarappa, K. S. and Krishna Reddy, M. 2018.Association of tomato leaf curl New Delhi virus, betasatellite, and alphasatellite with mosaic disease of spine gourd (*Momordicadioica*Roxb. Willd) in India. *Iranian Journal of Biotechnology*, 17 (1) : e-2134	6.34
9	Shankar Reddy Kolle, T.H. Shankarappa and T. B. Manjunatha Reddy, 2018, Trends in Mango Research as seen Through Science Citation Expanded Index of Web of Science, *Erwerbs-Obstbau*, 60(3): 261-270.	6.60
10	Somu R, R.K. Mesta, Mansur, C.P., Hipparagi K. and Kiran Kumar K.C. Survey for the incidence of wilt of pomegranate in major pomegranate growing distict of Karnataka. *Journal of Entomology and Zoology Studies*, 6(1):390-399.	6.68
11	Guranna Prabhuling and Hoolageri Huchesh., 2018, Direct *in vitro r*egeneration in Fig (*Ficus carcia* L.) Cv. Brown Turkey. *Research Journal of Biotechnology*, 13 (5): 77-83.	6.23
12	Guranna Prabhuling and Hoolageri Huchesh *In vitro* regeneration in Pomegranate (*Punica granatum* L.) cv. Bhagwa using double nodal segments. *Research Journal of Biotechnology*, 13 (8): 1-10.	6.23
13	Naraboli.V.C., Srikant .S. Bhardwaj, A.K, Meti.S, Alur, A.S and Nagaraja, M.S. 2019., Simple estimate for optimization of K nutrition in vine yards. *Current Science*. 116 (1):30-32	6.00

* List only research articles (including review articles) published in print or online with page number, volume number for publications in year 2018 only. Publications of faculty members based on the work carried erstwhile may also be included.

Mol Breeding (2018) 38: 78
https://doi.org/10.1007/s11032-018-0835-9

CORRECTION

Correction to: Identification of main effect and epistatic quantitative trait loci for morphological and yield-related traits in peanut (*Arachis hypogaea* L.)

Yogendra Khedikar · Manish K. Pandey · V. Sujay · Sube Singh · Spurthi N. Nayak · Henry W. Klein-Gebbinek · Cholin Sarvamangala · Ganapati Mukri · Vanika Garg · Hari D. Upadhyaya · H. L. Nadaf · M. V. C. Gowda · Rajeev K. Varshney · Ramesh S. Bhat

Published online: 1 June 2018

Correction to: Mol Breeding (2018) 38:7
https://doi.org/10.1007/s11032-017-0764-z

The published online version of this article unfortunately missed to capture Rajeev K. Varshney as co-corresponding author. There should have been two corresponding authors for this paper (Rajeev K. Varshney and Ramesh S. Bhat). The correct declaration is shown below.

The online version of the original article can be found at https://doi.org/10.1007/s11032-017-0764-z

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frontiers in Plant Science

ORIGINAL RESEARCH
published: 26 November 2018
doi: 10.3389/fpls.2018.01727

Sequencing Analysis of Genetic Loci for Resistance for Late Leaf Spot and Rust in Peanut (*Arachis hypogaea* L.)

Kenta Shirasawa[1], Ramesh S. Bhat[2], Yogendra P. Khedikar[3], Venkataswamy Sujay[3], Rohini M. Kolekar[2], Sharanabasappa B. Yeri[2], Mallenahally Sukruth[2], Sarvamangala Cholin[3], Byregowda Asha[2], Manish K. Pandey[4], Rajeev K. Varshney[4] and Makanahally V. C. Gowda[3]*

[1] Department of Frontier Research and Development, Kazusa DNA Research Institute (KDRI), Chiba, Japan, [2] Department of Biotechnology, University of Agricultural Sciences, Dharwad, India, [3] Department of Genetics and Plant Breeding, University of Agricultural Sciences, Dharwad, India, [4] Center of Excellence in Genomics and System Biology (CEGSB), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Hyderabad, India

The aim of this study was to identify candidate resistance genes for late leaf spot (LLS) and rust diseases in peanut (*Arachis hypogaea* L.). We used a double-digest restriction-site associated DNA sequencing (ddRAD-Seq) technique based on next-generation sequencing (NGS) for genotyping analysis across the recombinant inbred lines (RILs) derived from a cross between a susceptible line, TAG 24, and a resistant line, GPBD 4. A total of 171 SNPs from the ddRAD-Seq together with 282 markers published in the previous studies were mapped on a genetic map covering 1510.1 cM. Subsequent quantitative trait locus (QTL) analysis revealed major genetic loci for LLS and rust resistance on chromosomes A02 and A03, respectively. Heterogeneous inbred family-derived near isogenic lines and the pedigree of the resistant gene donor, *A. cardenasii* Krapov. & W.C. Greg., including the resistant derivatives of ICGV 86855 and VG 9514 as well as GPBD 4, were employed for whole-genome resequencing analysis. The results indicated the QTL candidates for LLS and rust resistance were located in 1.4- and 2.7-Mb genome regions on A02 and A03, respectively. In these regions, four and six resistance-related genes with deleterious mutations were selected as candidates for LLS and rust resistance, respectively. These delimited genomic regions may be beneficial in breeding programs aimed at improving disease resistance and enhancing peanut productivity.

Keywords: late leaf spot and rust diseases, peanut, quantitative trait locus, restriction-site associated DNA sequencing, whole-genome resequencing analysis

OPEN ACCESS

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INTRODUCTION

Peanut (*Arachis hypogaea* L.), so-called groundnut, is an important legume crop widely cultivated for food, oil, and fodder productions. Peanut productivity in most areas is hampered by foliar diseases, particularly late leaf spots (LLS) caused by *Mycosphaerella berkeleyi* W.A. Jenkins, also known as *Phaeoisariopsis personata* (Berk. & M.A. Curtis) van Arx, and rust by *Puccinia arachidis* Speg. These diseases can reduce yield by up to 70% (Subrahmanyam et al., 1984) and can adversely affect kernel and fodder quality (Dwivedi et al., 2002). The production of disease resistant cultivars

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RESEARCH REPORT

Exploring the genomic resources of carrot for cross-genera transferability and phylogenetic assessment among orphan spices and vegetables of Apiaceae family

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Abstract
Carrot (*Daucus carota* L.) is a member of the Apiaceae family that includes economically important medicinal, ornamentals, seed spices and vegetables. However, the genomic resources in these crops are limited compared to carrot, which is enriched with a number of molecular markers that are publicly available. Hence, we studied the usefulness of the 30 carrot molecular markers for eight different genera composed of five seed spices/condiments and three vegetables. The study revealed the transferability of these carrot markers and the genetic diversity across the genera for respective loci were compared by phylogenetic assessment using an un-rooted neighbour joining tree (NJ) and principle coordinate analysis (PCoA). An average of 66.66% amplification with a total of 73 alleles from 30 loci was observed across eight crops with an average of 3.39 alleles/loci. The average polymorphic information content was 0.50, the effective number of alleles was 2.92, gene diversity was 0.56 with a highest fixation index of 0.82 observed among 18 polymorphic markers. These results indicate the practical use of these markers in the respective crops. Interestingly, phylogenetic analysis grouped the eight crops into three clusters, but the PCoA identified four groups in which carrot was out grouped and kept the other cluster composition intact. Comprehensive study of these eight crops with many more molecular markers would help to understand the evolutionary relatedness for distant hybridization among Apiaceae family members to either transfer genes of interest or to create novel crops.

Keywords Distant hybridization · Genetic parameters · Molecular markers · Novel crops · PCoA

1 Introduction

Apiacea is one of the largest plant families of economic importance that is used as spice condiment, (i.e. cumin, fennel, coriander, ajwain, hing), vegetable (i.e. celery, carrot, dill, parsley) and medicinal crop (i.e. centella, cicuta, aethusa). Apart from the taste and flavour they add to food, they also contribute essential oils, antioxidants, minerals and vitamins to our health, suggesting that they are potential gold mine of neutraceuticals (Rathore et al. 2013; Christine and John 2008; Ramaswamy et al. 2011). India is known as the land of spices, which are considered to be "low volume high value crops" and widely grown in arid and semiarid parts of the country. The area under spice cultivation in India is 3.5 million hectare, with an annual production of 7.0 million tons and productivity of 2.0 t ha^{-1} (www.nhb.gov.in), which contributes 68% to the world spice production. Among seed spices, cumin contributes the most to the economy followed by coriander.

Despite their huge importance, genetic improvement of these crops is lagging behind due to many challenges associated with it like the biennial nature of the crops, climatic fluctuations, low seed replacement rates, biotic stresses and seed production problems. Therefore, focus on the development of breeding programs for novel varieties is necessary to address these agricultural and economical bottlenecks. However, there is a limited information on the genetic variability, diversity, inheritance pattern and floral biology of these species. Due to the high outcrossing that occurs in these crops and inadequate genomic resources, traditional

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Genetic variability studies in pomegranate

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ABSTRACT

Genetic variability studies in 23 diverse genotypes including four mutant lines of pomegranate revealed higher genetic variability for most of the biochemical and morphological traits studied. High magnitude of coefficient of variability (phenotypic and genotypic) was observed for fruit and aril traits characters like fruit weight, fruit volume, fresh weight of 100 arils, dry weight of 100 arils, total aril weight and biochemical traits like titratable acidity, while low to moderate level of variation was observed in total soluble solids (TSS), pH and seed parameters like seed length and width. High heritability coupled with high magnitude of genetic advance was recorded for most of the characters *viz.* fruit weight, fruit volume, peel weight, aril weight, total no. of arils and titratable acidity. Whereas, comparatively lower heritability accompanied by low genetic advance was exhibited by characters like rind thickness, TSS, fruit juiciness and fruit diameter.

Key words: *Punica granatum*, morphological & biochemical traits, diverse, heritability, genetic advance.

INTRODUCTION

Pomegranate (*Punica granatum* L.), one of the oldest and beloved cultivated species of fruit crops, is a predominant member of family Lythraceae and is commercially grown for its fully luscious grains called 'arils' which constitute about 55-60% of the total fruit weight and consists of about 75-85% juice and 15-25% seeds (Al-Maiman and Ahmad, 1). The optimum growth conditions for pomegranate exist in Mediterranean-like climates which include long exposure to sunlight; mild winters with minimal temperatures not lower than 12°C; and dry hot summers without rain during the last stages of the fruit development (Levin, 4). In India, it thrives well in hot dry summer and cold winter, performing best under irrigated conditions. Pomegranate fruits are widely consumed fresh or processed into juice, syrup, jams and wine (Poyrazoglu *et al.*, 14). The concentrated juice and other plant parts of pomegranate bear properties like anti-oxidant, anti-inflammatory and anti-atherosclerotic against diseases like osteoarthritis, prostate cancer, heart diseases and even the deadly disease like HIV-1. Despite this, pomegranate culture has hitherto been restricted and is often considered as a minor crop. In order to exploit the full potential of this miraculous plant, a systematic effort aimed at the genetic improvement of this crop would be a paramount. Improvement of any crop, to a great deal depends upon the magnitude of genetic variability present among different characters and the extent to which these characters are transmitted from one generation to the next. Since, most of the yield and quality attributing traits are governed by polygenes and are highly influenced by environmental conditions, it is often difficult for a breeder to discern whether the observed variability is heritable or not. This information to a great extent decides the efficacy of selection and hence, in order to enhance the precision of selection, it becomes inevitable to partition the overall genetic variability into its heritable and non-heritable components. An attempt has thus, been made to estimate the genetic variability components in the pomegranate germplasm for the economic traits including morphological and biochemical components and thereby identify promising types depending on their performance under Karnataka conditions.

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MATERIALS AND METHODS

Plant material consisting of 23 pomegranate cultivars including four mutant lines were used for the present investigation *viz.* Amlidana, Bhagwa, CO-1, Dholka, Early Bhagwa, G-137, Ganesh, Kabul Yellow, Kaladagi Local, KRS, Mridula, P-23, P-26, Phule Arakta, Ruby, Super Bhagwa, Tobasto, Wonderful, Yercaud and mutant lines; UHSP-23, UHSP-57, UHSP-81, UHSP-125. The experiment was carried out at University of Horticultural Sciences (UHS), Bagalkot, Karnataka in a Randomized Block Design with three replications during the year

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Assessment of genetic divergence among Indian genotypes of pomegranate for economic traits

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ABSTRACT

The efficacy of pomegranate improvement for higher productivity as well as fruit quality can be achieved by selecting superior parental combinations made between divergent clones. The nature and magnitude of genetic divergence was assessed for 35 quantitative traits using Mahalanobis D^2 analysis in 23 popular Indian pomegranate genotypes. Interestingly, peel weight followed by seed width had higher contribution to the diversity among the selected genotypes. Tocher's method of cluster analysis grouped all the cultivars into four distinct clusters. Genotypes falling in clusters II and III were highly diverse from each other. Mean value for most of the fruits and aril parameters were highest in cluster III, a solitary cluster comprising of the most popular cultivar Ganesh followed by cluster I consisting of a commercial pomegranate cultivars like Bhagwa and its clones. The wider variations for different traits among the clusters in the selected pomegranate cultivars shows that genotypes from desirable clusters could be directly used in breeding experiments for the desirable traits of interest depending upon the breeding objectives.

Key words: *Punica granatum*, genetic divergence, Mahalanobis D^2, clusters, quantitative traits.

INTRODUCTION

Pomegranate (*Punica granatum* L.), favourite table fruit in the tropical and sub-tropical regions, is a predominant member of family Lythraceae, comprising only two species, *Punica granatum* L. and *P. protopunica* Balf. f. 1882. *Punica protopunica* is endemic to Socotra Island (Yemen) and is considered to be the only congeneric relative of *P. granatum* species currently in cultivation (Zukovski, 19; Mars, 11; Levin, 10) and has been suggested as the ancestor of this genus based on its xylem anatomy (Shilkina, 18). The chromosome number differs among the cultivars and haploid chromosome number of eight (Sheidai and Noormohammadi, 17) or nine (Darlington and JanakiAmmal, 3) has been reported. Pomegranate and its usage are an integral part of human history, with its utilization spreading across many ancient human cultures as food as well as a medical remedy. Pomegranate fruits are widely consumed as fresh or processed into juice, syrup, jams and wine (Poyrazoglu *et al*., 14). Dried pomegranate arils known as anardana are used as acidulant for culinary purposes. A recent upsurge witnessed in the demand for pomegranate products is mainly attributed to its nutritional and medicinal properties including anti-oxidant anti-carcinogenic, anti-microbial, anti-viral and anti-atherosclerotic activities (Gil *et al*., 5; Seeram *et al*., 16).

Pomegranate being an out crossing species possesses a huge diversity in pomological traits (Patil and Sanghavi, 13). In spite of the presence of significant amount of variability in pomegranate germplasm, its utilization in breeding programs has been meagre till date. Being a perennial species, introgression of desirable traits in to cultivated varieties is laborious and time consuming. Understanding the diversity, superiority for multiple traits and also the isozymes among the already existing popular cultivars would help a breeder to improve the quality and productivity of otherwise superior cultivar through hybridization. Being a clonally propagated crop, the identified superior segregants can be directly fixed by vegetative propagation. In this regard, prior quantitative assessment of genetic divergence of the popular cultivars is of prime importance. With the increase in the magnitude of divergence in the parents, the chances of achieving heterotic F1 with wide spectrum of recombination or transgressive segregants in the segregating generations, also increases. The genetic divergence between the population can effectively be quantified by using appropriate statistical analysis, among which, multivariate analysis has been reported to be the most effective one (Joshi and Dhawan, 7; Kumar, 9). Hence, in the present investigation, an effort has been made to assess the genetic divergence among 23 popular Indian pomegranate genotypes by using Mahalanobis D^2 analysis in order to find out the

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Detection and characterization of tomato leaf curl New Delhi virus association with mosaic disease of ivy gourd (*Coccinia grandis* (L.) Voigt) in North India

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Abstract: Sixteen ivy gourd (*Coccinia grandis* (L.) Voigt) plant samples showing severe mosaic symptoms were collected from New Delhi and Varanasi (Uttar Pradesh) in India. Begomovirus infection was confirmed by PCR using begomovirus-specific primers. Amplified PCR products (1.2 kb fragments) were cloned and the sequence was characterized. Based on sequence analysis, begomovirus associated with the majority of ivy gourd samples (16) was found to be a member of a bipartite begomovirus species, which is closely related to tomato leaf curl New Delhi virus (ToLCNDV). Therefore, two samples of ivy gourd, IVG1-ND and IVG2-Var, were selected for full-length genome (DNA-A and DNA-B-like sequence) amplification by the rolling circle DNA amplification (RCA) method. Sequence analysis performed using the Species Demarcation Tool (SDT) program revealed that they share 89.8-91.3% (IVG1-ND) and 93.4-96.8% (IVG2-Var) nucleotide (nt) identity with the DNA-A-like sequence of ToLCNDV isolated from cucurbits and chilli, respectively. The IVG1-ND and IVG2-Var isolates shared 90% nt identity among themselves, indicating that they are two different strains of ToLCNDV. Similarly, SDT analysis of the DNA-B-like sequence of IVG1-ND and IVG2-Var exhibited showed 82.7-93.3% nt identity with the DNA-B-like sequences of ToLCNDV infecting cucurbits. The recombination analysis of DNA-A and DNB-B-like sequences showed that the greater part of their genome most likely originated from previously reported begomoviruses that are known to infect chilli and cucurbits through recombination.

Key words: begomoviruses; ivy gourd; recombination; phylogenetic analysis; perennial crop

INTRODUCTION

Ivy gourd (*Coccinia grandis* (L.) Voigt) is an important vegetable and medicinal plant from the Cucurbitaceae family. It is distributed in tropical Asia, Africa, Pakistan, India and Sri Lanka [1,2]. The fruits are used as a green vegetable [2], while different parts of the plants are utilized in traditional medicine for treating jaundice, diabetes, wound healing, ulcers, stomach ache, skin disease, fever, asthma and cough. The leaf constituents possess hypoglycemic, hypolipidemic and antioxidant properties [3]. Ivy gourd is a good source of vitamin A, β-carotene and proteins. However, its production is hampered by many fungal and viral diseases. Among the viral pathogens, begomoviruses play a major role in reducing fruit yield of ivy gourd. There are several begomoviruses reported in cucurbitaceous crops in India, including tomato leaf curl New Delhi virus (ToLCNDV) [4,5], squash leaf curl China virus [6], pepper leaf curl Bangladesh virus [7], Mesta yellow vein mosaic virus [8], Indian cassava mosaic virus [9], tomato leaf curl Palampur

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Research Paper

Mapping of fruit length related QTLs in interspecific cross (*Capsicum annuum* L. × *Capsicum galapagoense* Hunz.) of chilli

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Fruit length in chilli is quantitatively inherited trait and selection based on phenotypic performance is tedious and time consuming. To detect QTLs determining fruit length in *Capsicum* spp., an interspecific F_2 mapping population was developed from the cross of *C. annuum* L. cv. 'PL 201' with *C. galapagoense* Hunz. accession 'TC 07245'. Fruit length in this cross showed a quantitative inheritance with the population depicting a symmetric distribution in histogram. To map quantitative trait loci (QTLs) for fruit length 400 SSR markers were surveyed on the parental genotypes but only 28 markers were observed to be polymorphic indicating less genetic diversity between the two *Capsicum* species. Polymorphic markers were then analyzed in F_2 population consisting of 210 plants and 24 of these markers were mapped on to three linkage groups (LGs): LG 1, LG 2 and LG 3. Two fruit length determining QTLs designated as *pafl2.1* and *pafl2.2* were identified and both the QTLs were mapped on to LG 2. The two QTLs together explained 21.78 per cent of the phenotypic variation. Apart from the two QTLs, positive alleles were detected in the small fruited parent 'TC 07245' which might be of potential use in chilli breeding programs.

Key Words: chilli pepper, fruit length, molecular markers, *pafl2.1*, *pafl2.2*, QTL mapping.

Introduction

Chilli or hot pepper belongs to the genus *Capsicum* five species of which namely *C. annuum* L., *C. chinense* Jacq., *C. frutescens* L., *C. baccatum* L. Ruiz. & Pavon, and *C. pubescens* Ruiz. & Pavon are domesticated. *C. annuum* L. is the widely cultivated species worldwide and includes both, the chilli pepper and the bell pepper (Bosland 1992). Improving yield related traits have remained a major goal for chilli breeding (Barchi *et al.* 2009, Zygier *et al.* 2005). Fruit length in chilli determines consumer acceptability and contributes directly to the yield. This is a polygenic trait with narrow sense heritability of 0.68–0.76 (Ben Chaim *et al.* 2001). The conventional biometrical approaches, although descriptive of inheritance, but do not explain the effects of individual quantitative trait loci (QTL) effecting a trait. Therefore, breeders grow large populations over locations and years to reliably make selection on phenotypic basis. This makes the field evaluation for fruit length and yield improvement cumbersome and time consuming with low genetic gains.

In recent years, progress in molecular marker technology has permitted breeders to identify individual QTLs and estimate their effects on phenotypic performance (Barchi *et al.* 2009, Lu *et al.* 2012). Introgression of QTLs from the related species to the commercial types has been accelerated through Marker-Assisted Breeding (MAB). Among the molecular markers, Simple Sequence Repeats (SSRs) have been extensively used in mapping programs due to their suitability for automation, high throughput and good genome coverage (Hearne *et al.* 1992, Mimura *et al.* 2012, Powell *et al.* 1996, Sugita *et al.* 2013). Despite the advances made in marker technology, progress in mapping QTLs in chilli has been rather slow when compared with other Solanaceous crops such as tomato (*Solanum lycopersicum* L.). The probable reasons could be that chilli has larger genome size, approx. 3× that of tomato (Park *et al.* 2011) and exhibit low levels of polymorphism (Dhaliwal *et al.* 2014, Dwivedi *et al.* 2013). To facilitate MAB in chilli, Barchi *et al.* (2009), Ben Chaim *et al.* (2001), Dwivedi *et al.* (2013), and Han *et al.* (2016) detected QTLs for fruit length, fruit diameter, fruit shape, fruit weight and other yield related traits in populations originating from intra- and inter-specific crosses.

The objective of this study was to identify and map QTLs for fruit length in F_2 population derived from an

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Research Article

Association of Tomato Leaf Curl New Delhi Virus, Betasatellite, and Alphasatellite with Mosaic Disease of Spine Gourd (*Momordica dioica Roxb.* Willd) in India

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Background: Spine gourd (Momordica dioica Roxb. Willd) is one of the important cucurbitaceous crops grown across the world for vegetable and medicinal purposes. Diseases caused by the DNA viruses are becoming the limiting factors for the production of spine gourd reducing its potential yield. For the commercial cultivation of the spine gourd, propagation material used by most of the growers is tuberous roots and stem cuttings, which in turn results in an increased occurrence of the mosaic disease. There is a need for understanding the causal agent; through characterization of which will lead to the designing management strategies for the spine gourd mosaic disease control.
Objectives: Characterization of a begomovirus and its satellites associated with mosaic disease on spine gourd.
Materials and Methods: Total DNA was extracted from spine gourd samples exhibiting symptoms typical to the begomoviruses infection (mosaic mottling, leaf curl) and was tested by PCR using begomovirus specific primers. Furthermore, the complete genome of begomo viruses (DNA A, DNA B, alpha satellite, and beta satellite) was amplified by rolling circle amplification (RCA) method.
Results: The full-length sequences of DNA A, DNA B, alpha satellite, and beta satellite isolated from symptomatic spine gourd were determined. The full length genomes (DNA A and DNA B) of the Tomato leaf curl New Delhi Virus (ToLCNDV) infecting spine gourd were compared with the other begomovirus genomes available in the data base. The sequence analysis has revealed that DNA A and DNA B components of the begomovirus infecting spine gourd share 95.4-96.2 and 86.7-91.2% identical sequence (i.e., nucleotide (nt) identity) with that of ToLCNDV infecting potato and cucurbits in the Indian subcontinent isolates reported earlier (available in GenBank), respectively. Further, alpha satellite and beta satellite were also detected in the begomovirus infected spine gourd samples. The recombination analysis of the DNA A, DNA B, beta satellite, and alpha satellite of the begomovirus infecting spine gourd showed the associated begomovirus and satellite DNAs were driven from the different begomoviruses, leading to emergence as a new variant of the begomovirus infecting spine gourd.
Conclusions: The commercial cultivation of the spine gourd by most growers depends on the tuberous roots and stem cutting. The occurrence of begomovirus in spine gourd gives an alarming signal against utilization of such infected plant materials in the crop breeding and improvement programs. Using the clean virus-free vegetative propagation material is considered as one of the most important methods for controlling viral diseases. The study is highly useful for detection of the begomovirus infecting spine gourd in the detection of the virus infection in the clonally propagated planting material.

Keywords: Alphasatellite; Betasatellites; Begomovirus; Recombination

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Trends in Mango Research as seen Through Science Citation Expanded Index of Web of Science

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Original Article
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Abstract

The publication of research work on mango carried out world over during the period 1993–2016 is reviewed for the various publications retrieved through the Science Citation Index Expanded. A total of 2984 documents were found in the search, of which 2665 are research articles and they were characterized for publication output and scientific descriptors. It was observed that there are 623 core journals involved in publication on mango research. 91.81% of the articles were published in English language and the journal *Scientia Horticulturae* was the most productive journal. India was the most productive country with 664 articles (24%) followed by Brazil. Among the institutions working on mango, the top three out of 10 were from India, Indian Institute of Horticultural Research, Bangalore, Indian Agricultural Research Institute, New Delhi and Central Food Technology and Research Institute, Mysore. The words "*Mangifera*" "mango cultivar" and "Diptera" are the most figured key words in the title of the article and the major portion of the research was concerned with genetic diversity, genetic relatedness and quality aspects of the mango. This work would be useful to the researchers to know the trends in mango research.

Keywords

Bibliometrics Mango Productive countries Productive institutions India

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Survey for the incidence of wilt of pomegranate in major pomegranate growing district of Karnataka

Somu R, RK Mesta, Chidanand P Mansur, Kulapati Hipparagi and Kiran Kumar KC

Abstract
A survey was carried out in major pomegranate growing districts of Karnataka to know the incidence of wilt during 2015-16, which revealed that among the villages of different district surveyed the highest mean incidence (45.80%) of pomegranate wilt was noticed in Govindkoppa village followed by Kaladgi village (27.05%) in the Bagalkot taluk of Bagalkot district and the least disease incidence (1.00%) was noticed in the Bajjapanhatii village of Hosadurga talku, Chitradurga district. Among the taluks, the highest mean incidence of wilt (19.93%) was recorded in the Bagalkot taluk of Bagalkot district followed by Vijayapura taluk (9.27%) of Vijayapura district. The lowest incidence of pomegranate wilt (3.20%) was recorded in the Indi taluk of Vijayapura district. Among the districts, the highest mean incidence of wilt (15.27%) was recorded in Bagalkot district followed by Vijayapura district (6.23%). The lowest incidence of pomegranate wilt (3.75%) was recorded in Chirtradurga district. Orchards of four years and above old planted under black soil showed higher incidence of wilt along with shot hole borer and root knot nematode infection. Among the soil parameters electrical conductivity of soil showed the significant positive correlation with per cent disease incidence.

Keywords: Survey, wilt, pomegranate, *Ceratocystis fimbriata*

1. Introduction
Pomegranate (*Punica granatum* L.) is an ancient fruit, belonging to the botanical family Lythraceae. Pomegranate is an important fruit crop grown in the dry regions of India. It is also cultivated to a large extent in the northern dry districts of Karnataka state. It is one of the most adaptable subtropical minor fruit crops and its cultivation is increasing very rapidly. The fruit is very much liked for its cool and refreshing juice. The arils of the well matured fruit are consumed as such and also in processed form like juice or concentrate, syrup and jelly. Seeds with fleshy portions of sour pomegranates are dried and marketed as 'Anardana', which is used as a condiment and for souring curries. Wine can be prepared of this fruit as it ferments very easily. The most popular varieties suitable for processing and table use are Ganesh, Mridula, Arakta, Bhagwa, Kesar, G-137 and Khandar. Area under pomegranate is increasing worldwide because of its hardy nature, wider adaptability, drought tolerance, higher yield levels, excellent keeping quality and remunerative prices in domestic as well as export markets. It thrives well in the dry tropics and sub-tropics and comes up very well in soils of low fertility status, adding to that it is salt tolerant too.

In India, it is regarded as a "vital cash crop", grown in an area of 143 thousand ha with a production of 1774 thousand tonnes with an average productivity of 10.75 tonnes/ha (Anon., 2015). Among the different states growing pomegranate, Maharashtra is the largest producer occupying 2/3rd of total area in the country followed by Karnataka, Andhra Pradesh, Gujarat and Rajasthan. Karnataka state has the distribution of cultivating pomegranate under tropical condition in an area of 19.04 thousand hectare with a production of 204.64 thousand tonnes and productivity 10.75 tons per hectare (Anon., 2015). Where this crop has spread across different districts of Karnataka, the major districts come under cultivation are Chitradurga, Vijayapura, Bellary, Koppal and Bagalkot with an area of 6.31, 1.53, 1.70, 1.68, 1.36 thousand hectare and production of 40.68, 15.25, 15.00, 14.03, 10.44 tonnes per hectare respectively [1].

Successful cultivation of pomegranate in recent years has met with different traumas such as pest and diseases. Among the diseases wilt caused by *Ceratocystis fimbriata* Ellis and Halst. is a major threat. At present, the crop is severely affected by wilt pathogen and day by day the disease is increasing at a faster rate.

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Direct *In Vitro* Regeneration in Fig (*Ficus carcia* L.) Cv. Brown Turkey

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Abstract

The fig (Ficus carcia L.) cv. brown turkey is one of the important exotic fruit crop originated from Asia. Its nutracutical importance, drought tolerance and remunerable economy of the crop have made faster worldwide expansion. Micropropagation of fig has provided many advantages over the conventional methods of vegetative propagation. It ensures true to type of plants, uniform quality and rapid mass production of disease free planting materials with seasonal independency.

The present study was carried out with the objective to standardize efficient and reproducible protocol for direct regeneration in fig cv. "Brown Turkey". The current season twigs were collected from healthy and vigorously growing mother plant. The nodal explants of length 4-6 cm were isolated and subjected for surface sterilization. The effective surface sterilization was achieved with $HgCl_2$ 0.10 % for 10 minute which resulted in significantly higher aseptic culture establishment (71 %) and lowest contamination (19 %) and lesser intensity of browning (10 %) on to the initiation MS medium supplemented with BAP 0.50 mg/l + activated charcoal 500 mg/l.

Further the in vitro established aseptic cultures were transferred to the MS medium with various concentration and combination of BAP, NAA, Kinetin for induction of shoots. The best shoot proliferation was observed with MS medium supplemented with BAP 1 mg/l + NAA 0.10 mg/l with 3.50 shoot/explants, 4.10 cm shoot length and 5 leaves/shoot. The microshoots of length 6-8 cm were transferred on to the M.S medium supplemented with various concentrations of IBA and NAA. Best rooting was observed with MS medium supplemented with IBA 0.50 mg/l + activated charcoal 500 mg/l with 58 % rooting, 4.30 primary roots/per shoot and 7.90 cm root length. The rooted plantlets were successfully hardened under polytunnels with 100 % survival.

Keywords: Aseptic culture, Brown Turkey, Double nodal segment, Auxiliary bud, Browning of the medium.

Introduction

Ficus carcia L. is popularly known as fig plant. The fruit is consumed either in fresh or dried form. There are two hundred edible figs cultivars growing with wide range of shapes, colors and textures.[36] The major global fig producing countries are Turkey, Egypt, Iran, Greece and Algeria.[26] As per the, latest report, the area under fig cultivation in India constitute 5500 hectares with annual production of 19,000 tones.[11] Maharashtra ranks first in the production. Gradually fig farming is finding its way even in Gujarat, Uttar Pradesh, Karnataka and Tamil Nadu. Among various edible figs cultivars "Brown Turkey" is more popular in Indian subcontinent (figure 1).

Figure 1: 'Brown Turkey' a popular cultivar of Fig

77

choose one or more of these criteria in K-nutrition to obtain the best results.

Most of the farmers in the study area either relied on conventional knowledge or approached not very professionally skilled consultants (many a times fellow farmers). Owners of the high-output vineyards tend to use higher rates of K fertilizers, primarily to improve fruit quality. It appears that the economic conditions of farmers played small role in deciding the rate of K-fertilizer application. It was mostly the awareness that a farmer did not have about optimum ranges for soil, petiole and yield which could be achieved with proper fertilizer application. The K-optimization goals proposed in this study are easy to follow. Multiple parameter ranges as suggested in this study would also provide an opportunity to influence more growers to adopt these optima, since farmers do not seem to be much aware of diagnosis techniques, nor do they have access to expert consultancy. This study brings out clear and simple ranges for diagnostic parameters used for K fertilization in the country which are easier for farmers to follow and maximize returns from their vineyards.

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Brainea insignis (Hook.) J.Sm. – a conservation priority fern of North East India

A false tree fern, *Bowringia insignis* Hook., was described by Hooker[1] as a new genus to honour John Bowring and his son, J. O. Bowring, who first sent live plants of it from Hong Kong for introduction to the Royal Botanic Garden, Kew, London. Taxonomically *Bowringia* Hooker (1853) was an illegitimate later homonym of *Bowringia* Champ. ex Benth. (1852, Fabaceae) and a new name, *Brainea*, was therefore proposed for this fern-genus to honour J. C. Braine[2], who had also introduced it at Kew in 1850.

Brainea is a monotypic genus of false tree ferns represented by *Brainea insignis* (Hook.) J.Sm. (family Blechnaceae). The plant has a thick, upright or ascending, slow-growing trunk which may attain a height up to 1 m. The apex of the trunk bears a compact radiating basket of many fronds giving the appearance of a cycad; hence it is often called 'cycad fern' in the nursery trade. The individual plants are scattered in often large colonies on open or semi-shaded slopes. Like cycad, *Brainea* is also a perennial plant; it can survive for several years and thrive in warm and exposed places. The fronds are unipinnate with long, narrow, pointed, glossy green pinnae which are light green or glaucous white on the under surface. The naked sori are produced on the under surface of leaf segments in a line along the reticulate veins (Figure 1).

B. insignis is a native to Southeast Asia (India, Myanmar, Malay Peninsula, Philippines, Thailand, Taiwan, Vietnam, Indonesia, Sumatra and south China)[3,4]. North East India is its westernmost limit,

B2 : Research Impact

Sl No.	Number of faculty members having h-index as 10 or more	Total number of faculty	Percentage of faculty with h-index as 10
1.	6	303	0.02 %

List of faculty members having h-index as 10 or more

Sl No.	Name of the faculty	h-index
1.	B.G. Prakash	17
2.	Ravindra Mulge	15
3.	B. Fakrudin	14
4.	Babu A.G.	13
5.	Balaji S. Kulkarni	12
6.	P. S. Ajjappalavar	10

B3 : Research Excellence

ii) List of Verities Approved for Release by University of Horticultural Sciences, Bagalkot

1. SRS-2 (Sankeshwar selection): Features/Characteristics	
SRS-2 is an open pollinated variety suitable for green chilli production under *rainfed* as well as irrigated situation throughout the state. Fruits are parrot green in colour, 16 to 17.50 cm long and moderately resistant to chilli muruda complex. Yield potential is about 15- 18 t/ha.	

2. GPM-120-S-1 : Features/Characteristics	
GPM-120-S-1 is an open pollinated variety suitable for dry chilli production. When the fruits are dry they appear dark red colour. Oleoresin recovery is almost equal to traditional Byadgi Dabbi cultivar. It is high yielding dry chilli variety yields about 2 – 3 t/ha.	 

3. Hybrid-80 : Features/Characteristics	
Hy-80 is a F_1 hybrid suitable for both green as well as dry chilli production for rainfed and irrigated situation. This hybrid is resistant to murda complex of chilli and yields about 27 to 30 t/ha of green chilli.	 

4. Fenugreek variety – DFC - 21 (Devi Methi 1): Features/Characteristics	
DFC - 21 (Devi Methi 1) is having plant height (39.0 cm) with 11.9 number of primary branches per plant. Seed yield potential is 1068 kg/ ha and moderately resistant to powdery mildew.	 

5. Tamarind (*Tamarindus indica*)- *ATS 1:* Features/Characteristics	
Hy-80 is a F_1 hybrid suitable for both green as well as dry chilli production for rainfed and irrigated situation. This hybrid is resistant to murda complex of chilli and yields about 27 to 30 t/ha of green chilli.	 

6. Jackfruit variety 'Maharaja' : Features/Characteristics	
It is having fruit length 39 - 49.12 cm, fruit breadth 24 - 34 cm, fruit weight 12.50 - 17.06 kg with TSS (^{o}B) 24.02 - 30.33. Yield potential is 50 – 80 fruits/year.	 

Technologies developed by UHS, Bagalkot during 2017-18

SI.No	Crop	Title of the Experiment	Description of Technologies
FRUIT SCIENCE			
1	Banana	*In vitro* micropropagation protocol for Banana cv. Kamalapur Red	The protocol produces 77.23% clean cultures, 8.53 shoots with 3.53 cm height on medium containing 1-5 mg BAP/lit + 0.1-1.0 mg NAA/lit and 6.10 roots with 6.7cm longest root on 0.1-2 mg IBA/lit.
2	Banana	Direct feeding techniques of nutrients to banana bunch on yield (Variety: Grand Naine)	Direct feeding of 5g Urea, 5g SOP, 5g Banana special, 500g cow dung and 200ml water to the banana bunches after removal of male bud helps in increasing the finger weight as well as bunch weight.
3	Sapota	Spacing trial in Sapota	In 10 x 10 m spacing maximum growth (tree volume - 30.9 m^3) and yield (95.40 kg/ tree) were observed, whereas, minimum growth (tree volume – 16.51 m^3) and yield (64.50 kg/ tree) were recorded with 8 x 4 m spacing. However, yield per unit was maximum in 8 x 4 m spacing (20.74 t/ha) owing to accommodation of more number of plants/ha in years old trees as compared to the normal spacing (10x10 m for 100/ha) (9.54 t/ha).
FLORICULTURE AND LANDSCAPE ARCHITECTURE			
4	Orchid	Foliar nutrition in Orchid (Var. Sonia -17)	Foliar application 20:20:20 NPK (0.3%) + 0.1 % Micronutrient (Zinc, Magnesium, Calcium and Boron) during vegetative growth and 10:08:20 NPK (3%) + 0.1 % Micronutrient (Zinc, Magnesium, Calcium and Boron) after flowering found best for cultivation of Dendrobium orchid.
PLANTATION, SPICES, MEDICINAL AND AROMATIC PLANTS			
5	Chilli	New drying methods in Chilli	Drying of chilli under solar tunnel dryer at a temperature of 52 – 54 ^{0}C reduce the period of drying by 40 – 50 per cent and also helps to maintain the fruit quality.
6	Garlic	Jeevamruta application for garlic production	Drenching of jeevamruta for garlic at the time of planting and vegetative stage (25 DAS) 500 l/ha at each stage has given the highest yield.
7	Cashew	Intercropping option in cashew	Crops such as Turmeric, Ginger and Coleus were found suitable as intercrop during first six years in Cashew.
8	Turmeric	Performance of transplanted turmeric V/s direct sown turmeric	Portray raised seedlings of turmeric were found superior in characters such as number of tillers, number of primary and secondary rhizomes and also the yield of fresh and cured rhizome.
NATURAL RESOURCE MANAGEMENT			
9	Onion	Herbicides application pattern for weed management in drill sown onion	Sequential application of oxyfluorfen @ **0.08 kg** a.i. / ha (PE) followed by oxyfluorfen @ 0.25 kg a.i. /ha (PoE)recorded higher average onion bulb yield (19.18 t/ ha) in drill sown onion.
10	Mango	Intercropping options in	For commercial production of mango under 8mt

SI.No	Crop	Title of the Experiment	Description of Technologies
		Mango cultivation	X 8mt spacing cultivation of amla a mixed crop in 8 mt X 4 mt spacing was found best compared to other crops like guava, fig, Custard, Apple, Karonda ,Drumstick, Curry leaf and Pomogrenate in initial five years of cultivation without damaging main crop and also getting highest return with good productivity.
11	Sapota	Intercropping options in Sapota cultivation	For commercial production of sapota under 8mt X 8mt spacing **c**ultivation of amlas a mixed crop in 8 mt X 4 mt spacing was found best compared to other crops like Guava, Fig, Custard Apple, Karonda ,Drum stick, Curry leaf and Pomogrenate in initial five years of cultivation without damaging main crop and also getting highest return with good productivity.
12	Passion fruit	AM fungi for rooting in Passion fruit	Application of five grams of *Glomus monihofis* or *Glomus bagyarajii* culture below the cuttings before sowing enhanced per cent rooting, vigor of the seedling and number of roots per seedling in Passion fruit.
13	Oil palm	Weed control with new molecule- Indaziflam 500 SC against mixed weeds in Oil palm.	Application of new herbicide Indaziflam 500 SC at 125 ml/ha (62.5 g. a. i/ha) as pre-emergence spray against mixed weeds in Oil palm resulted in best control.
14	Coconut	Nutrient management under coconut based cropping systems for different agro climatic regions	Growing of Lime, Drumstick, Banana, Cocoa as a intercrop in Coconut garden with application of organic recycling with vermicompost, vermiwash, biofertilizer,*in situ* green manuring & green leaf manuring (Glyricidia loppings),composted coir pith and mulching with coconut leaves (cropping system) gave more net returns(income) to the farmers throughout the year.
BIOTECHNOLOGY AND CROP IMPROVEMENT			
15	Vegetable seeds	Seed treatment formulation using bio agents and signaling molecules to control seed borne and soil borne pathogens in vegetable seeds	Seeds of Tomato, Brinjal and Chilli bioprimed with liquid consortium (*Trichoderma* + *Pseudomonas putida*) for 6 hours has resulted in increased speed of germination, germination per centage, seedling length, seedling vigour index and per cent transplantable seedlings.
VEGETABLE SCIENCE			
16	Cucumber	Production of Parthenocarpic cucumber production technique under polyhouse	For commercial production of parthenocarpic cucumber under polyhouse, adopting raised bed with paired row system following the standard spacing of 60 cm between row to row and 30 cm between plant to plant, application of recommended quantity of FYM-30 tonnes per hectare and fertigation with water soluble fertilizers of 72:60:96 kg NPK/ha through drip system in 8 splits at an interval of 10 days during crop growth period was found best in getting highest yield with good productivity.
POST HARVEST TECHNOLOGY			

SI.No	Crop	Title of the Experiment	Description of Technologies
17	Pinapple	Osmo-dehydro product from Pinapple with fructose	Pineapple fruit pieces treated with 50 per cent syrup solution and allowed it for 18 hours osmotic dehydration has given good quality pineapple fruit candy and such obtained osmotically dehydrated pineapple fruit candy can be stored for 4 to 6 months.
18	Sapota	Sapota Powder Mixture Cake	Submitted for patenting so that information is not given
ENTOMOLOGY			
19	Tomato	Bioformulations for management of early blight of tomato using defense activators	Biofourmulations containing Pseduomonas fluorescence, chitosan (0.2%) and isonicontinic acid (150 ppm) was found effective in enhancing the diseased resistance and yield attributes of tomato against early blight of tomato.
20	Mango	Management of bark eating caterpillar in mango	Pouring of Cholrantraniliprole 18.5 SC (Rynaxypyr 18.5 SC) @ 0.2ml/litre of water in the hole inhabited by the larvae using syringe gave effective control of bark eating caterpillar in mango.
21	Sapota	Management of bark eating caterpillar in Sapota	To control the damage caused by this insect Cholrantraniliprole 18.5 SC (Rynaxypyr 18.5 SC) @ 0.2ml/litre of water should be poured in the hole inhabited by the larvae using syringe or Chlorpyriphos 20 EC @ 2ml/litre of water has to be poured to the trees so that the affected part is completely inundated. Newly grafted seedlings should be maintained in such way that the the grafted region remains above the group. Depending on the age of the plants 20-40 g Carbofuran 3 G granules has to be spread around the stem and then has to be watered. This has to be repeated 2-3 times in a month or Chlorpyriphos 20 EC @ 7-10 ml/litre of water has to be poured around the trees.
22	Ginger	Management of Ginger shoot borer in Humnabad Local variety	Spraying of Spinosad 45SC @ 0.25 ml/litre of water or Dimethoate 30 EC @ 1.7 ml or Monocrotophos 36 SL @ 1 ml/litre or Malathion 50 EC 2 ml/litre of water has give better control shoot borer in ginger cv. Humnabad Local variety.
23	Grapes	Fipronil 5 % SC @ 1.0 ml/l for management of thrips in Grapes	Spraying of Fipronil 5 % SC @ 1.0 ml/l after October pruning in grapes orchards twice (First spray after 15 DAP and Second spray after 20 DAP) reduced the incidence of thrips.
24	Pomegranate	Chlorantroniliprole 18.5 SC against pomegranate fruit borer	Spraying of Chlorantraniliprole 18.5 SC @ 0.15 ml/l in pomegranate for the management fruit borer Spraying of Chlorantraniliprole 18.5 SC @ 0.15 ml/l at fifty per cent flowering stage twice reduces the incidence of fruit borer damage in pomegranate.
25	Cashew	Management of tea	Spraying of Acephate 75SP @ 1 g/l followed by

SI.No	Crop	Title of the Experiment	Description of Technologies
		mosquito bug in Cashew	Profenphos 50EC @ 2.5 ml/l followed by L-cyhalothrin (0.5 ml/l) at vegetative, flowering and apple and nut formation stage effectively controls tea mosquito bug as compared to Dimethoate 30EC @ 1.70 ml/l.
26	Guava	Management of Guava kajji bug	Application of two sprays of L-cyhalothrin (0.5 ml/l) when fruits are marble size and 15 days after first spray signficnatly effective for management of guava kajji bug as compared to Dimethoate 30EC @ 1.70 ml/l.
27	Tomato	New insecticides against *Helicoverpa armigera* Hübner in tomato	Spraying of Flubendiamide 39.35EC @ 0.1ml/l spray at 30, 45 and 60 days after transplanting resulted in effective management of *Helicoverpa armigera* Hübner in tomato.
28	Tomato	Integrated management of tomato leaf miner	Integrated management module consisting of raising the tomato seedlings under nylon net (200 mesh size) + Seedling root dip in Imidacloprid 17.8 SL @ 0.3 ml/l at the time of transplanting + neem cake application @ 250 kg/ha as basal application in main field + pheromone trap @ 50 traps/ha with Tuta lure (replace lure at every 20 days) fixed at 2 feet height from the ground till harvest)+ Profenophos 50 EC @ 2ml/l, Chlorantraniliprole 18.5 SC @ 0.15 ml/l and Lambda cyhalothrin 5 EC @ 0.6 ml/l spray at 30, 45 & 60 DAT respectively effectively controls the tomato leaf miner.
29	Coconut	Newer insecticides against red palm weevil	The chemicals Chlorantraniliprole 18.5 SC (4.0 ml + 1000 ml of water) or Indoxacarb 14.5 SC (4.0 ml + 1000 ml of water) have to be imposed on the affected palms once in a month through crown region as well as through bored hole by red palm weevil on trunk portion.
30	Coconut	Olfactory conditioned larval parasitoid (*Goniozus nephantidis*) against *Opisina arenosella*	The parasitoids were pre-conditioned in prior to release in the field. For olfactory conditioning, the parasitoids were exposed to odour of larval frass for about to 72 hours. Then, parasitoids (Goniozus 20 per palm or Bracon 30 per palm) were released. Four releases were made at 15 days interval.
31	Coconut	Pheromone lures for management of rhinoceros beetle, redpalm weevil and black headed caterpillar in Coconut	NPM- CPCRI (Nano Porus Matrix -Central Plantation Crops Research Institute) pheromone trap has to be installed and lure has to be changed after every six months once.
32	Coconut	Management of Coconut Black Headed Caterpillar in Coconut garden	Spraying of Chlorantraniliprole 18.5 SC%@ 0.10 ml/l or Dichlorovas 76 % EC 1 ml/l , Root feeding with Azadirachtin 5% @ 7.5ml/palm at half yearly interval + PCI lure + Soil application of Neem cake 2.5 kg/palm/year + Four release of *Goniozus nephantidis* @ 20/palm at 15 days interval.
33	Coconut	INM package for management of eriophyid mite in coconut	1. Adoption of phytosanitary measures in coconut gardens

SI.No	Crop	Title of the Experiment	Description of Technologies
		gardens	2. Root feeding of Azadirachtin (Azadirachtin 5% (7.5 ml + 7.5 ml water) or Azadirachtin 1% (10 ml + 10 ml water) three times a year during April-May, Sept-Oct and Feb-March. 3. Recycling of biomass generated within the coconut system by vermicompost method or by using Lignin degrading fungus. 4. Raising of green manure crops in the coconut basins (sunnhemp, cowpea, Calapagonium) 5. Application of recommended dosage of fertilizers in two doses (Urea-1.3 kg; Super phosphate-2.0 kg; potash 3.5 kg: neem cake-5.0 kg; Vermicompost-20 kg: FYM-50 kg/ palm/ year).Recommended level of irrigation during summer months 6. Soil moisture conservation by the following methods: a) Burial of coconut husk in the basin b) Mulching the basins (2 m radius) with coconut leaves or c) Mulching with coir pith (2 m radius)
34	Cabbage	Rynaxypyr for Cabbage diamond back moth management	Spraying of rynaxypyr 18.5 Sc @ 0.5 ml/l of water is effective against diamond back moth in cabbage.
PLANT PATHOLOGY			
35	Black pepper	Bio-inoculants for nursery production in Black pepper	For every 1kg of nursery mixture (2 part of fertile soil, 1 part of sand and 1 part of farm yard manure) 2 g each of Pseudomonas, VAM, trichoderma harzianium and paecilomyces bio-inoculants were found best for nursery production in Black pepper.
36	Coriander	Management of powdery mildew of Coriander	Spray Hexaconazole @ 1 ml/l or Wettable Sulphur 80% WP twice at 15 days interval immediately after the first symptoms of disease is observed significantly effective for management of powdery mildew of Coriander.
37	Black pepper	Phosfik 8-Potassium Phosphonate for management of foot rot (*Phytophthora capsici*) of black pepper	Mono & di potassium salts of phosphorus acid (32%) + ionic Cu -8% (phasfik-8) @ 4.5ml/l of water or foliar spray and soil drenching (5-10 l/vine) with metalaxyl 72 WP @ 0.125% or soil drenching (5-10li/vine) with copper oxy chloride 50 WP @ 0.2% at 45-50cm radius around basal region of each vine and foliar spray with Bordeaux mixture @ 1% during pre monsoon (May-June) and Post Monsoon (August) season resulted in effective management of basal foot rot.

B3 iii) : Funds received through external competitive grants (Excluding ICAR development, KVK and AICRP grants)

Sl No	Title of the Project	Funding Agency	Year of Sanctioned	Budget alloted (Rs. In Lakhs)
1	Establishment of Centre for Research &Development on Potato and Sweet potato under UHS-Bagalkot in collaboration with International Potato Centre	RKVY	2018-19	600.00
2	Zero Budget Natural Farming (ZBNF)	Dept. of Agriculture	2018-19	341.00
3	An energy application in Horticulture	Pranic Healing Mysuru	2018-19	02.70
4	Production, Standardization and utility of rganic neem seed production in north eastern transitional zone of Karnataka (Zone-1)	Zilla panchayat, Bidar	2018-19	05.00
Total				**948.70**

C2 : Extension workers award at State / National Level

Sl.No.	Name of the Scientist	Award	Sponsor
1.	**Dr. Vijaymahantesh,** Asst. Professor of Agronomy, Directorate of Extension, UHS, Bagalkot	Dr. S. B. Dandin, Best Extension Scientist Award	UHS, Bagalkot during 10th Foundation Day on 22nd Nov, 2018.
2.	**Dr. Vijaymahantesh,** Asst. Professor of Agronomy, Directorate of Extension, UHS, Bagalkot	Best Paper Presentation Award for "Entrepreneurial Opportunities in Horticulture" at I st International Conference on Dynamics of Entrepreneurship	Teresian college Mysuru from 27-28th Nov, 2018.

ತೋಟಗಾರಿಕಾ ವಿಜ್ಞಾನಗಳ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬಾಗಲಕೋಟ

UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOT

ವಿಶ್ವವಿದ್ಯಾಲಯ ಪ್ರಶಸ್ತಿ ಪತ್ರ

ಡಾ. ವಿಜಯಮಹಾಂತೇಶ, ಸಹಾಯಕ ಪ್ರಾಧ್ಯಾಪಕರು, ವಿಸ್ತರಣಾ ನಿರ್ದೇಶನಾಲಯ ಕಛೇರಿ, ತೋ.ವಿ.ವಿ. ಬಾಗಲಕೋಟ ಇವರಿಗೆ ವಿಸ್ತರಣಾ ಕ್ಷೇತ್ರದಲ್ಲಿ ಮಾಡಿದ ಅತ್ಯುತ್ತಮ ಸಾಧನೆಗಳನ್ನು ಗುರುತಿಸಿ 2017-18 ನೇ ಸಾಲಿಗೆ ಡಾ. ಎಸ್. ಬಿ. ದಂಡಿನ ಅತ್ಯುತ್ತಮ ವಿಸ್ತರಣಾ ವಿಜ್ಞಾನಿ ಪ್ರಶಸ್ತಿಯನ್ನು ದಿನಾಂಕ 22ನೇ ನವಂಬರ, 2018 ರಂದು ಜರುಗಿದ 10ನೇ ಸಂಸ್ಥಾಪನಾ ದಿನಾಚರಣೆಯಂದು ಪ್ರಧಾನ ಮಾಡಿ ಸನ್ಮಾನಿಸಲಾಯಿತು.

University Award Certificate

This is to certify that Dr. Vijayamahantesh, Assistant Professor, Directorate of Extension, UHS, Bagalkot has been conferred with Dr. S. B. Dandin Best Extension Scientist Award for his achievement in the field of Horticulture Extension during 2017-18 on 10th foundation day, 22nd November 2018.

Dr. K. M. Indiresh
Vice-Chancellor
UHS, Bagalkot

1st INTERNATIONAL CONFERENCE ON DYNAMICS OF ENTREPRENEURSHIP

TERESIAN COLLEGE

(Affiliated to University of Mysore and Re-accredited by NAAC at 'A' Grade in III Cycle with CGPA 3.19)

POST-GRADUATE DEPARTMENT OF COMMERCE
SIDDARTHANAGARA, MYSURU – 570 011

1ST TWO-DAY INTERNATIONAL CONFERENCE ON DYNAMICS OF ENTREPRENEURSHIP

Certificate

This is to certify that Prof./Dr./Mr./Ms. VIJAY MAHANTESH *has secured* ***"Best Paper Award"*** *in the* ***"1st Two-Day International Conference on Dynamics of Entrepreneurship"*** *held on 27th and 28th November, 2018, organised by the Post-Graduate Department of Commerce, Teresian College, Mysuru – 570 011.*

He / She has presented a paper entitled "ENTREPRENEURIAL OPPORTUNITIES IN HORTICULTURE".

Dr. P. M. SHIVA PRASAD
Organising Secretary

Dr. VEENA M. D'ALMEIDA
Principal

Dr. Sr. SAJITHA
Director

C3 : Quality input supplied by the University during 2018

UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOT

Dr. N Basavaraja
Director of Research
Tel.No.08354-201353
Cell: 9480696387

Directorate of Research
Udyanagiri, Navanagar, Bagalkot -587104
e-mail:dr@uhsbagalkot.edu.in
druhsbagalkot@gmail.com

No: DR/UHSB/Est.-IV/ /2019-20 Date: 07.06.2019

CERTFICATE

This is to certify that, following are the details of quality inputs (seeds, seedlings, bio-agents, predators/parasitoids) produced and supplied to farming beneficiaries from the University during 2018-19.

SI No	Particulars	Quantity (Nos./kg)
01	Seeds	9353.00
02	Planting materials	353373.00
03	Bio agents (kgs)	34600.00
04	Predators/Parasitoids (Nos)	155000.00
	Total	**552326.00**

Director of Research
UHS, Bagalkot

Director of Research
University of Horticultural Sciences
Udyanagiri, Navanagar
BAGALKOT-587103(Karnataka)

C4 : Soil sample

UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOT

Dr. N Basavaraja
Director of Research
Tel.No.08354-201353
Cell: 9480696387

Directorate of Research
Udyanagiri, Navanagar, Bagalkot -587104
e-mail:dr@uhsbagalkot.edu.in
druhsbagalkot@gmail.com

No: DR/UHSB/Est.-IV/ /2019-20 Date: 07.06.2019

CERTFICATE

This is to certify that, following are the details of analysis of soil, water and plant samples of beneficiary farmers analysed at the University during 2018-19.

Sl No	Samples analysed	Quantity (Nos.)
01	Soil samples	80,700.00
02	Water samples	50,600.00
03	Plant samples	55,700.00
	Total	**1,87,000.00**

Director of Research
UHS, Bagalkot

Director of Research
University of Horticultural Sciences
Udyanagiri, Navanagar
BAGALKOT-587103(Karnataka)

C5 : Revenue Generated

Sl No.	Total revenue generated	Total budget of university	Percentage
1.	55377000	787301000	07.03 %

Sl No.	Revenue generated*	Amount in lakhs
1	Consultancies	-
2	Certification	-
3	Testing	8231000
4	Tuition fee	14651000
5	Licensing	-
6	Training	-
7	Sale of inputs	3,24,95,000
8	Commercialization of technologies	-
9	Any other (Please specify)	-
	Total	**5,53,77,000**

UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOT

Phone No. (O): 08354-230001
(F): 08354-235152
E-Mail: comptroller@uhsbagalkot.edu.ir

Office of the Comptroller,
Udyanagiri, Navanagar,
Bagalkot – 587 104
State: Karnataka

CERTIFICATE

This is to certify that, University has generated Rs. 553.77 lakhs (Rupees five hundred fifty three lakhs and seventy seven thousand only) resource/income through testing fee, tuition fee and sale of inputs during 2018-19 as per the University book of accounts.

Sl No.	Revenue generated*	Amount in lakhs
1	Consultancies	-
2	Certification	-
3	Testing	8231000.00
4	Tuition fee	14651000.00
5	Licensing	-
6	Training	-
7	Sale of inputs	32495000
8	Commercialization of technologies	-
9	Any other (Please specify)	-
	Total	**55377000.00**

COMPTROLLER

Comptroller,
University of Horticultural Sciences
Navanagar, BAGALKOT.

C6 : Number of inter-institutional collaborative projects obtained during 2018

UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOT

Phone No(M): 94806 96389
(O): 08354-230276/230280
E-mail: registrar@uhsbagalkot.edu.in

Office of the Registrar
Udyangiri, Navnagar
Bagalkot – 587 104

UHSB/Reg/Rectt-I/ /2019-20 Date : 07.06.2019

CERTIFICATE

This is to certify that the following are the Inter- Institutional collaborative projects obtained by UHS, Bagalkot during 2018.

I. Unnath Bharath Abhiyana flag ship programme of Government of India – collaborated with Indian Institute of Technology, New-Delhi.

II. Alliance with MANAGE for collaborative Extension programmes and projects- ACABC, DAESI, certificate courses, and off campus capacity building programmes collaboration with MANAGE, Hyderabad.

III. Collaboration with Karnataka State Department of Horticulture, Agriculture, Animal Husbandry, Sericulture, Fishery, Child and Family Welfare for Technology Generation, Promotion and Advocacy.

IV. Collaboration with IIHR, NRCs, AICRPs, SAUs, MIDH, NHM, NHB, Spice Board, NBB, Coffee Board- ICAR and National Schemes for technology generation and promotion.

V. Collaboration with private organizations, educational institutes i.e., BVV, Sangha, Bagalkot and CFTRI, Mysuru and financial organizations i.e., NABARD, STATE BANK OF INDIA for Organizing field extension activities and action research.

REGISTRAR
UHS BAGALKOT
Registrar
University of Horticultural Sciences
BAGALKOT.

C7 : Partnership with Private Sector made during 2018

UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOT

Phone No(M): 94806 96389
(O): 08354-230276/230280
E-mail: registrar@uhsbagalkot.edu.in

Office of the Registrar
Udyangiri, Navnagar
Bagalkot – 587 104

UHSB/Reg/Rectt-I/ /2019-20

Date : 07.06.2019

CERTIFICATE

This is to certify that the following are the collaborative private sectors obtained by UHS, Bagalkot during 2018.

Sl. No	Organizations	Areas of collaboration
1	K. J. Somaiya Institute of Applied Agricultural Research Sameerwadi, Mudhol Tq., Bagalkot District	Sugarcane based farming systems, and Disease and pest management in sugarcane based agri-horti farming system
2	Hain Future Natural Products Pvt. Ltd., Gurgaon, Haryana	The mission is accomplished through research and innovation of science and technology and capacity strengthening and to foster inter-institutional cooperation in education, research and development (Extension)
3	Vanasara foods private limited, Udupi	Development/Popularisation, , multiplication and seedling production of elite varieties of Jack fruit
4	Premanath agricultural Science foundation, United Nations(FAO)	Project on "Morphological and molecular diversity of south Indian lanraces of mangalore southekayi (*Cucumis mela var. conomon*)"

REGISTRAR
UHS BAGALKOT

Registrar
University of Horticultural Sciences
BAGALKOT.

C8 : Exchange of faculty

UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOT

Dr. Y. K. Kotikal
Director of Extension
Cell No. 9480696381
E-mail: de@uhsbagalkot.edu.in

DIRECTORATE OF EXTENSION
Udyanagiri, Hubli Bypass
(Near Seemikeri Cross)
Bagalkot-587 104

No. DE/UHSB/71 /2019-20 Date: 7-06-2019

CERTIFICATE

This is to certify that, the following Teachers are involved in the Faculty Exchange programmes as per the list shown below at different Universities indicated.

Sl. No	Name of the Faculty	University/Organization	Duration
1	Dr. S. Shashikumar Associate Professor of Agril. Extension	Karnataka Janpad Vishvidhyalay, Haveri, Karnataka	2017-2021
2	Dr. Dinesh A Nagegowda Principle Scientist, Molecular Plant Biology and Biotechnology	CSIR-CIMAPCentre. Allalasandra, GKVK, Bengaluru	2018
3	Dr.M.K.Rajesh Principle Scientist Crop Improvement	ICAR- central Plantation Crops Research Institute Kasaragodu	2018
4	Sreedhar, R. V. Scientist and Assistant Professor Dept. of Lipid science	CSIR-CFTRI, Mysuru	2018
5	Dr Preethi, P. Scientist (Fruit Science),	ICAR-Directorate of Cashew Research, Puttu-574202	2018
6	Dr. Elain Apshara, Principal Scientist (Horticulture-fruit Science),	ICAR- Central Plantation Crops Research Institute (CAR-CPCRI), Vittal, Bantwal Tq. Dakshina Kannada Dt.	2018
7	Dr. Siddanna Savadi, Scientist (Biotechnology),	ICAR-Directorate of Cashew Research, Puttur, Dakshina Kannada Dt.	2018

- -2-

8	Dr. B.G. Hanumantharaya, Assistant Professor, Dept. of Horticulture,	University of Agricultural Sciences, GKVK, Bengaluru	2018
9	Dr. G. C. Satisha, Principal scientist (Soil Science), Division of Soil Science and Agricultural Chemistry,	ICAR-IIHR, Hesaraghatta Lake post, Bengaluru-89	2018
10	Dr. A.S. Gontia, Professor and Head, Dept. of Plant Physiology,	College of Agriculture, JNKVV, Jabalpur-482004	2018
11	Dr. N. M. Ganesh Babu, Assistant Professor, T Plantation, Spices, Medicinal and Aromatic Crops	The University Trans-Disciplinary Health Sciences and Technology (TDU), 74/2, Jarakabande Kaval, Attur Post, Yelahanka, Bengaluru-560064	2018
12	Mrs, Nandini, D. Consultant, Plantation, spices, Medicinal and Aromatic Crops	The University Trans Disciplinary Health Sciences and Technology (TDU), 74/2, Jarakabande Kaval, Attur Post,Yelahanka, Bengaluru-560064	2018
13	Dr. Shamusudheen Mangalassery, Scientist (Soil science)	ICAR- Directorate of Cashew Research, Darbe (post), Puttur, Dakshina Kannada Dist.	2018
14	Dr. M. Papireddy, Assistant Professor, Dept. of Genetics and Plant Breeding, College of Sericulture, UAS, Bengaluru, Chintamani	College of Sericulture, UAS, Bengaluru, Chintamani	2018
15	Dr. H.P Maheswarappa, (Agronomy) Project Coordinator (Palms), All India Coordinated Research Project on Palms,	ICAR- Central Plantation Crops Research Institute, Kasaragodu, Kudlu (PO) Kasaragodu, Kerala State	2018
16	Dr. Basavaprabhu L. Patil, Senior Scientist (Agri. Biotechnology),	Division of Biotechnology, ICAR-Indian Institute of Horticultural Research (IIHR), Hesaraghatta Lake post, Bengaluru-560089	2018

DIRECTOR OF EXTENSION
UHS, BAGALKOT
Director of Extension
U. H. S. Bagalkot

C9 : Number of Enterprises / start-ups promoted by the University

Sl. No.	Company	Facility for incubation	Product details	Security deposit	Occupant pay / Per Month	Royalty
1.	M/s. Krishi Biosys, Bengaluru	Biological control laboratory, DR Office, UHS, Bagalkot	*Trichodermaharzianum, Trichodermaviride, Pseudomonas fluorescens, Paecilomyceslilacinus, Pochoniachlamydosporia*, Arka KrishiAll-rounder	25,000	5,000	3%
2.	Natura Crop Care, Bengaluru	Biological control laboratory, DR Office, UHS, Bagalkot	Dharakshak, Dundanu Rakshak, Tricho Kavach	25,000	8,000	3%
3.	M/s. Agri. Bio Solutions, Bengaluru	Biological control laboratory, DR Office, UHS, Bagalkot	Arka Banana Special, Arka Vegetable Special, Arka Mango Special, IISR Ginger Rich, IISR Pepper Special, IISR Cardamom Special	25000	5,000	3%
4.	Natura Crop Care, Bengaluru	Haveli Farm UHS, Bagalkot	Arka Microbial Consortia liquid, Arka Microbial Consortia powder, Decomposer, Arka Neem soap, Arka Pongamia soap, Arka citrus special, Pheromone trap	-	-	3%

C10 : Percentage of Students employed in public / private / banking sector

Sl. No	Name of the College	Public							Private							Total
		Teaching	Banking	ICAR	NGO	Higher Edu.	Self Employed	Others	Teaching	Banking	ICAR	NGO	Higher Edu.	Self Employed	Others	
1.	COH, Bagalkot	06	10	-	-	33	-	01	-	-	-	01	-	02	07	**60**
2.	COH, Bengaluru	11	09	-	-	21	-	04	-	-	-	-	-	04	08	**57**
3.	COH, Munirabad	-	-	-	-	25	01	-	-	-	-	-	-	07	-	**33**
4.	COH, Mysuru	-	02	-	-	42	-	-	-	-	-	-	-	-	11	**55**
5.	COH, Sirsi	-	05	14	-	37	-	-	-	-	-	-	-	06	07	**69**
6.	COH, Kolar	-	07	09	-	26	06	-	-	-	-	04	-	-	04	**56**
7.	COH, Bidar	-	-	-	-	08	-	-	-	01	-	-	-	02	06	**17**
8.	KRCCH, Arabhavi	-	5	-	-	24	-	-	-	5	-	-	-	2	2	**38**
	Total	**17**	**38**	**23**	**0**	**216**	**7**	**5**	**0**	**6**	**0**	**5**	**0**	**23**	**45**	**385**

10th Foundation Day Celebration

Inauguration of Totagarike Mela – 2018 by Hon'ble Chief Minister, GOK.

8th Convocation Ceremony

University of Horticultural Sciences

Udyanagiri, Navanagar, Bagalkot – 587 104, Karnataka
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