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

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Particulars</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Foreword</td>
<td>i</td>
</tr>
<tr>
<td>2</td>
<td>Preamble</td>
<td>01-06</td>
</tr>
<tr>
<td>3</td>
<td>Information for ranking of agricultural universities for the year 2018 in the prescribed Proforma</td>
<td>07-14</td>
</tr>
</tbody>
</table>

**Annexure No.**

<table>
<thead>
<tr>
<th>Teaching</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Number of students got ICAR-PG Scholarships (erstwhile JRF) during 2018/Number of UG students passed out</td>
<td>15</td>
</tr>
<tr>
<td>A2</td>
<td>Number of students got admission in Master’s program during 2018 through ICAR entrance examination/Number of UG students passed out</td>
<td>16-17</td>
</tr>
<tr>
<td>A3</td>
<td>Students Performance at M.Sc. Level</td>
<td>18</td>
</tr>
<tr>
<td>A4</td>
<td>Students Performance at M.Sc. Level</td>
<td>18</td>
</tr>
<tr>
<td>A6</td>
<td>Percentage of ARS selections in the disciplines offered by University against available seats advertised by ASRB during 2018</td>
<td>18-20</td>
</tr>
<tr>
<td>A7</td>
<td>Percentage of students qualified NET Exam in the disciplines of Agriculture and allied Sciences during 2018</td>
<td>21</td>
</tr>
<tr>
<td>A8</td>
<td>Percentage of faculty positions filled in teaching, research, extension, KVK, AICRP and at regional stations</td>
<td>21</td>
</tr>
<tr>
<td>A9</td>
<td>Number of students admitted from overseas for Ph.D. during 2018</td>
<td>21</td>
</tr>
<tr>
<td>A10</td>
<td>National and International awards</td>
<td>22-23</td>
</tr>
<tr>
<td>A11</td>
<td>Best Institution/University Awarded by ICAR in 2018</td>
<td>24</td>
</tr>
<tr>
<td>A12</td>
<td>Award in All India Youth Festival or All India Agri. University Sports Meet in 2018</td>
<td>25-26</td>
</tr>
<tr>
<td>A14</td>
<td>Percentage of Faculty with Ph.D. degrees obtained from universities from outside of the state where employed</td>
<td>27</td>
</tr>
<tr>
<td>A15</td>
<td>Percentage of Faculty from the State other than the State in which university situated</td>
<td>27</td>
</tr>
<tr>
<td>A16</td>
<td>Percentage of Faculty with 3 months or more of Post doctoral/Visiting scientist experiences abroad in 2018</td>
<td>28</td>
</tr>
<tr>
<td>A17</td>
<td>Average footfall in library</td>
<td>28</td>
</tr>
<tr>
<td>A18</td>
<td>CERA utilization in 2018</td>
<td>29</td>
</tr>
<tr>
<td>A19</td>
<td>Accreditation on 01.01.2018 (by ICAR)</td>
<td>30</td>
</tr>
<tr>
<td>A20</td>
<td>Implementation of recommendation of Fifth Deans, Committee/BSMA Committees.</td>
<td>31-37</td>
</tr>
</tbody>
</table>

**Research**

<p>| B1      | Research Product | 38-51 |
| B2      | Research Impact  | 52    |
| B3      | Research Excellence | 53-59 |
| B3 (ii) | Varieties released | 53-58 |
| B3 (iii)| Funds received through external competitive grants | 59 |</p>
<table>
<thead>
<tr>
<th>Annexure No.</th>
<th>Annexure</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2</td>
<td>Extension workers Award at State / National Level</td>
<td>60</td>
</tr>
<tr>
<td>C3</td>
<td>Quality input supplied by University</td>
<td>61</td>
</tr>
<tr>
<td>C4</td>
<td>If one lakh soil samples are analyzed per year</td>
<td>62</td>
</tr>
<tr>
<td>C5</td>
<td>Revenue generated through consultancies, certification, testing, tuition fee, licensing, training, sale of inputs and commercialization of technologies during FY 2018-19.</td>
<td>63</td>
</tr>
<tr>
<td>C6</td>
<td>Number of inter-institutional collaborative projects obtained during 2018</td>
<td>64</td>
</tr>
<tr>
<td>C7</td>
<td>Partnership with Private Sector made during 2018</td>
<td>65</td>
</tr>
<tr>
<td>C8</td>
<td>Exchange of faculty</td>
<td>66-67</td>
</tr>
<tr>
<td>C9</td>
<td>Number of Enterprises / start-ups promoted by the University</td>
<td>68</td>
</tr>
<tr>
<td>C10</td>
<td>Percentage of Students employed in Public/Private/Banking Sectors</td>
<td>68</td>
</tr>
</tbody>
</table>
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 accredited 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, KRCCCH, 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 2\textsuperscript{nd} in Area (2109.67 thousand hectares) and 7\textsuperscript{th} 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 \textit{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.

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.

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.

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.

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.

**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 (HEEU)s to cover 23 districts coming under its jurisdiction.

**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-gigabit 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

<table>
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<tr>
<th></th>
<th>Sanctioned</th>
<th>In Position</th>
<th>% of Filled</th>
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</thead>
<tbody>
<tr>
<td>Colleges</td>
<td>364</td>
<td>262</td>
<td>71.97</td>
</tr>
<tr>
<td>Research Centres</td>
<td>40</td>
<td>21</td>
<td>52.50</td>
</tr>
<tr>
<td>AICRP</td>
<td>16</td>
<td>14</td>
<td>87.50</td>
</tr>
<tr>
<td>KVKs</td>
<td>7</td>
<td>6</td>
<td>85.70</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>427</strong></td>
<td><strong>303</strong></td>
<td><strong>70.96</strong></td>
</tr>
</tbody>
</table>

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
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.

E-mail: registrar@uhsbagalkot.edu.in
Web: www.uhsbagalkot.edu.in
## PROFORMA

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Score</th>
<th>Score awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A1. Number of students got ICAR-PG Scholarships (ertwhile JRF) during 2018/Number of UG students passed out</strong> (List to be enclosed as Annexure A1) (Maximum 1 mark)</td>
<td>11.51%</td>
<td>48 Students</td>
</tr>
<tr>
<td>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.)</td>
<td>1 mark</td>
<td></td>
</tr>
<tr>
<td><strong>A2. Number of students got admission in Master’s program during 2018 through ICAR entrance examination/Number of UG students passed out</strong> (List to be enclosed as Annexure A2) (Maximum 1 mark)</td>
<td>18.94%</td>
<td>79 Students</td>
</tr>
<tr>
<td>If more than 10% of UG students got admission at Masters level through ICAR entrance examination</td>
<td>1 mark</td>
<td></td>
</tr>
<tr>
<td><strong>A3. Students Performance at M.Sc. Level</strong> (List to be enclosed as Annexure A3) (Maximum 2 marks)</td>
<td>2.48%</td>
<td>4 Students</td>
</tr>
<tr>
<td>If more than 5% of students got ICAR-JRF/SRF (ertwhile SRF) or equivalent (The students who cleared the exam but not awarded ICAR-JRF/SRF not to be included.)</td>
<td>2 marks</td>
<td></td>
</tr>
<tr>
<td><strong>A4. Students Performance at M.Sc. Level</strong> (List to be enclosed as Annexure A4) (Maximum 1 mark)</td>
<td>8.70%</td>
<td>14 Students</td>
</tr>
<tr>
<td>If more than 10% of students got admission in Ph.D. through ICAR entrance examination</td>
<td>1 mark</td>
<td></td>
</tr>
<tr>
<td><strong>A5. ICAR Jawaharlal Nehru Award for Ph. D. thesis in 2018</strong> (List to be enclosed as Annexure A5) (Maximum 2 marks)</td>
<td>NIL</td>
<td></td>
</tr>
<tr>
<td>If number is 1</td>
<td>1 mark</td>
<td></td>
</tr>
<tr>
<td>If number is more than 1</td>
<td>2 marks</td>
<td></td>
</tr>
<tr>
<td><strong>A6. Percentage of ARS selections in the disciplines offered by University against available seats advertised by ASRB during 2018</strong> (List to be enclosed as Annexure A6) (Maximum 3 marks)</td>
<td>NIL</td>
<td></td>
</tr>
<tr>
<td>Up to 5 per cent</td>
<td>1 mark</td>
<td></td>
</tr>
<tr>
<td>More than 5 per cent</td>
<td>3 marks</td>
<td></td>
</tr>
<tr>
<td><strong>A7. Percentage of students qualified NET Exam in the disciplines of Agriculture and allied Sciences during 2018</strong> (List to be enclosed as Annexure A7) (Maximum 3 marks)</td>
<td>11.96%</td>
<td>22 Students</td>
</tr>
<tr>
<td>Up to 5 per cent</td>
<td>1 mark</td>
<td></td>
</tr>
<tr>
<td>More than 5 per cent</td>
<td>3 marks</td>
<td></td>
</tr>
<tr>
<td><strong>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 )</strong> (List to be enclosed as Annexure A8) (Maximum 4 marks)</td>
<td>70.96 %</td>
<td></td>
</tr>
<tr>
<td>60 to 70 %</td>
<td>1 mark</td>
<td></td>
</tr>
<tr>
<td>70 to 80 %</td>
<td>2 marks</td>
<td></td>
</tr>
<tr>
<td>If more than 80 %</td>
<td>4 marks</td>
<td></td>
</tr>
<tr>
<td>Parameters</td>
<td>Score</td>
<td>Score awarded</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>-------</td>
<td>---------------</td>
</tr>
<tr>
<td>A9. Number of students admitted from overseas for Ph.D. during 2018</td>
<td>01</td>
<td>Student</td>
</tr>
<tr>
<td>(List to be enclosed as Annexure A9) (Maximum 2 marks)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If number is up to 2</td>
<td>1</td>
<td>mark</td>
</tr>
<tr>
<td>If it is more than 2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>A10. National and International awards (such as those</td>
<td>03</td>
<td>Awards</td>
</tr>
<tr>
<td>conferred by the National Organizations like ICAR, CSIR, DBT, DST,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government of India, international Bodies of repute like FAO, UN, CG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centres and Recognized National Sciences / Engineering Academies)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(earned by Faculty) in 2018 (List with only top 10 awards to be</td>
<td></td>
<td></td>
</tr>
<tr>
<td>enclosed as Annexure A10) (Maximum 3 marks)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If Number is 1</td>
<td>1</td>
<td>mark</td>
</tr>
<tr>
<td>If Number is 2-4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>If Number is more than 4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>A11. Best Institution/University Awarded by ICAR in 2018 in any field</td>
<td>03</td>
<td>Awards</td>
</tr>
<tr>
<td>(Proof to be enclosed as Annexure A11) (Maximum 1 mark)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A12. Award in All India Youth Festival or All India Agri. University</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sports Meet in 2018 (Proof to be enclosed as Annexure A12) (Maximum 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mark)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;, 2&lt;sup&gt;nd&lt;/sup&gt; or 3&lt;sup&gt;rd&lt;/sup&gt; Position in 2018</td>
<td>1</td>
<td>mark</td>
</tr>
<tr>
<td>A13. Fellowship or Associateship of National Science Academies (NAA,</td>
<td>NIL</td>
<td></td>
</tr>
<tr>
<td>INSA, NAS, NAMS, INAE achieved during 2018) (List not more than five to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>be enclosed as Annexure A13) (Maximum 2 marks)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upto 1</td>
<td>1</td>
<td>mark</td>
</tr>
<tr>
<td>2 or more</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>A14. Percentage of Faculty with Ph.D. degrees obtained from universities</td>
<td>10.59</td>
<td>%</td>
</tr>
<tr>
<td>from outside of the state where employed (List along with proof to be</td>
<td></td>
<td></td>
</tr>
<tr>
<td>enclosed as Annexure A14) (Maximum 2 marks)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If less than 15 %</td>
<td>No</td>
<td>marks</td>
</tr>
<tr>
<td>15 to 25 %</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>More than 25 %</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>A15. Percentage of Faculty from the State other than the State in which</td>
<td>1.32</td>
<td>%</td>
</tr>
<tr>
<td>university situated (List along with proof to be enclosed as Annexure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A15) (Maximum 2 marks)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 20 %</td>
<td>No</td>
<td>marks</td>
</tr>
<tr>
<td>20 – 30 %</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>More than 30 %</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Parameters</td>
<td>Score</td>
<td>Score awarded</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>---------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>A16. Percentage of Faculty with 3 months or more of Post doctoral/Visiting scientist experiences abroad in 2018 (Maximum 1 mark)</td>
<td></td>
<td>NIL</td>
</tr>
<tr>
<td>More than 3% of faculty strength</td>
<td></td>
<td>1 mark</td>
</tr>
<tr>
<td>A17. Average footfall in library (Maximum 2 marks)</td>
<td></td>
<td>18.21%</td>
</tr>
<tr>
<td>Up to 15 % of students/faculty in position visiting library daily</td>
<td></td>
<td>1 mark</td>
</tr>
<tr>
<td>More than 15 % of students/faculty in position visiting library daily</td>
<td></td>
<td>2 marks</td>
</tr>
<tr>
<td>A18. CERA utilization in 2018 (Maximum 2 marks)</td>
<td></td>
<td>26769 hits</td>
</tr>
<tr>
<td>*CERA Utilization (number of hits/total number of students and faculty) (to be awarded for top 10 universities)</td>
<td></td>
<td>2 marks</td>
</tr>
<tr>
<td>A19. Accreditation on 01.01.2018 (by ICAR) (copy of accreditation letter/certificate to be enclosed as Annexure A19). (Maximum 3 marks)</td>
<td></td>
<td>University and Eight out of Nine colleges of its constituent colleges are accredited by ICAR up to March 10, 2019</td>
</tr>
<tr>
<td>Accreditation granted for up to 2 years to the University</td>
<td></td>
<td>2 marks</td>
</tr>
<tr>
<td>Accreditation granted for up to 5 years to the University</td>
<td></td>
<td>3 marks</td>
</tr>
<tr>
<td>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).</td>
<td></td>
<td>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</td>
</tr>
<tr>
<td>Fifth Deans Committee/BSMA Committees recommendations partially implemented (If not implemented in all the faculties / Colleges).</td>
<td></td>
<td>1 mark</td>
</tr>
<tr>
<td>Fifth Deans Committee/BSMA Committees recommendations fully implemented.</td>
<td></td>
<td>2 marks</td>
</tr>
</tbody>
</table>
### Parameters

#### (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)*

<table>
<thead>
<tr>
<th>Score awarded</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.04% (13 Papers)</td>
<td></td>
</tr>
</tbody>
</table>

- 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)*

<table>
<thead>
<tr>
<th>Score awarded</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.02% (6 Faculty)</td>
<td></td>
</tr>
</tbody>
</table>

- 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)*

<table>
<thead>
<tr>
<th>Score awarded</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIL</td>
<td></td>
</tr>
</tbody>
</table>

- 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))*

- **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))*

- **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))*

<table>
<thead>
<tr>
<th>Score awarded</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>06 (Varieties Released)</td>
<td></td>
</tr>
<tr>
<td>37 (Technologies Developed)</td>
<td></td>
</tr>
</tbody>
</table>

- 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)*

<table>
<thead>
<tr>
<th>Score awarded</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.49 crores</td>
<td></td>
</tr>
</tbody>
</table>

- 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)*

<table>
<thead>
<tr>
<th>Score awarded</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

- 1 mark
### Parameters

#### (C). EXTENSION AND OUTREACH (WEIGHTAGE 30% OR 30 MARKS)

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Score</th>
<th>Score awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C1. KVK Awards during 2018 (Maximum 4 marks)</strong> (Attach Proof as Annexure C1)</td>
<td></td>
<td>NIL</td>
</tr>
<tr>
<td>Zonal Award (one mark for each award)</td>
<td>2 marks</td>
<td></td>
</tr>
<tr>
<td>National Award (two marks for each award)</td>
<td>2 marks</td>
<td></td>
</tr>
<tr>
<td><strong>C2. Extension workers Award at State / National Level (by Government Agency) during 2018. (Proofs to be enclosed as Annexure C2) (Maximum 4 marks)</strong></td>
<td></td>
<td><strong>02 Awards</strong></td>
</tr>
<tr>
<td>State level Awards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5 Awards</td>
<td>1 mark</td>
<td></td>
</tr>
<tr>
<td>More than 5 awards</td>
<td>2 marks</td>
<td></td>
</tr>
<tr>
<td>National level awards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3 Awards</td>
<td>1 mark</td>
<td></td>
</tr>
<tr>
<td>More than 3 awards</td>
<td>2 marks</td>
<td></td>
</tr>
<tr>
<td><strong>C3. Quality input supplied by University (Seed, Semen, planting material etc.) during 2018 (Maximum 2 marks)</strong></td>
<td></td>
<td><strong>5,52,326 Planting Materials</strong></td>
</tr>
<tr>
<td>More than 50,000–1,50,000 planting material</td>
<td>1 mark</td>
<td></td>
</tr>
<tr>
<td>More than 1,50,000 planting material</td>
<td>2 marks</td>
<td></td>
</tr>
<tr>
<td>Or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semen up to 10,000 doses</td>
<td>1 mark</td>
<td></td>
</tr>
<tr>
<td>Semen 10001 to 50,000 doses</td>
<td>2 marks</td>
<td></td>
</tr>
<tr>
<td>Or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breeder Seed (Cereals and Pulses) upto 200 quintals</td>
<td>1 mark</td>
<td></td>
</tr>
<tr>
<td>More than 200 quintals</td>
<td>2 marks</td>
<td></td>
</tr>
<tr>
<td>Or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish Seed / fingerlings supplied</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Lakh to 1 Crore</td>
<td>1 mark</td>
<td></td>
</tr>
<tr>
<td>More than 1 Crore</td>
<td>2 marks</td>
<td></td>
</tr>
<tr>
<td><strong>C4. If one lakh soil samples are analyzed per year (Maximum 1 mark)</strong></td>
<td></td>
<td><strong>1,87,000 Soil Samples</strong></td>
</tr>
<tr>
<td>1 mark</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>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)</strong></td>
<td></td>
<td><strong>7.03 % (Rs. 5,53,77,000.00)</strong></td>
</tr>
<tr>
<td>5-10 % of University Budget</td>
<td>1 mark</td>
<td></td>
</tr>
<tr>
<td>10-20 % of University Budget</td>
<td>4 marks</td>
<td></td>
</tr>
<tr>
<td>20-30 % of University Budget</td>
<td>7 marks</td>
<td></td>
</tr>
<tr>
<td>More than 30 % of University Budget</td>
<td>10 marks</td>
<td></td>
</tr>
<tr>
<td><strong>C6. Number of inter-institutional collaborative projects obtained during 2018 (Proof to be enclosed as Annexure C6) (Maximum 2 marks)</strong></td>
<td></td>
<td><strong>05 Collaborations</strong></td>
</tr>
<tr>
<td>One project</td>
<td>1 mark</td>
<td></td>
</tr>
<tr>
<td>Two or more</td>
<td>2 marks</td>
<td></td>
</tr>
<tr>
<td>Parameters</td>
<td>Score</td>
<td>Score awarded</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>-------</td>
<td>---------------</td>
</tr>
<tr>
<td>C7. Partnership with Private Sector made during 2018 (Proof to be enclosed as Annexure C7) (Maximum 1 mark)</td>
<td></td>
<td>04 Partnerships</td>
</tr>
<tr>
<td>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)</td>
<td></td>
<td>16 Faculty</td>
</tr>
<tr>
<td>Faculty coming from outside University (Minimum 1)</td>
<td></td>
<td>1 mark</td>
</tr>
<tr>
<td>Faculty of University going to other University (Minimum 1 faculty)</td>
<td></td>
<td>1 mark</td>
</tr>
<tr>
<td>C9. Number of Enterprises / start-ups promoted by the University (List is to be provided as Annexure C9) (Maximum 2 marks)</td>
<td></td>
<td>04 Enterprises</td>
</tr>
<tr>
<td>1 - 2</td>
<td></td>
<td>1 mark</td>
</tr>
<tr>
<td>More than 2</td>
<td></td>
<td>2 marks</td>
</tr>
<tr>
<td>C10. Percentage of Students employed in Public/Private/Banking Sectors (List is to be provided as Annexure C10) (Maximum 2 marks)</td>
<td></td>
<td>64% (385 Students)</td>
</tr>
<tr>
<td>10 – 20 percent</td>
<td></td>
<td>1 mark</td>
</tr>
<tr>
<td>More than 20 percent</td>
<td></td>
<td>2 marks</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100 marks</td>
</tr>
</tbody>
</table>
**A1 : Number of students got ICAR-PG Scholarships (erstwhile JRF) during 2018 / Number of UG students passed out**

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Number of students got ICAR-PG Scholarships in 2018</th>
<th>Total number of UG students passed out in 2018</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>48</td>
<td>417</td>
<td>11.51%</td>
</tr>
</tbody>
</table>

**List of the students got ICAR-PG Scholarships in 2018**

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Name of the student</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MANIKANTA R RAJAPPA</td>
</tr>
<tr>
<td>2</td>
<td>GANAPATI RATHOD</td>
</tr>
<tr>
<td>3</td>
<td>SHARAT SANSHI</td>
</tr>
<tr>
<td>4</td>
<td>NANDEESH J</td>
</tr>
<tr>
<td>5</td>
<td>APOORVA GUDDARADDI</td>
</tr>
<tr>
<td>6</td>
<td>GEETA PARASHURAM GUDAGI</td>
</tr>
<tr>
<td>7</td>
<td>RAVITEJA D H</td>
</tr>
<tr>
<td>8</td>
<td>MADHUSHREE S K</td>
</tr>
<tr>
<td>9</td>
<td>SHARANESHA D</td>
</tr>
<tr>
<td>10</td>
<td>THEJASWINI K</td>
</tr>
<tr>
<td>11</td>
<td>POOJA KARIBHIMAGOL</td>
</tr>
<tr>
<td>12</td>
<td>RANJITAA BEELAGI</td>
</tr>
<tr>
<td>13</td>
<td>CHANDANA M R</td>
</tr>
<tr>
<td>14</td>
<td>SWEGA ANTONY K</td>
</tr>
<tr>
<td>15</td>
<td>MEGHANA D</td>
</tr>
<tr>
<td>16</td>
<td>HARSHITHA B S</td>
</tr>
<tr>
<td>17</td>
<td>KOWSALYA B K</td>
</tr>
<tr>
<td>18</td>
<td>LAVANYA V N</td>
</tr>
<tr>
<td>19</td>
<td>NAGENDRA</td>
</tr>
<tr>
<td>20</td>
<td>LALITHA K R</td>
</tr>
<tr>
<td>21</td>
<td>ARCHITHA M V</td>
</tr>
<tr>
<td>22</td>
<td>MURUGESH D</td>
</tr>
<tr>
<td>23</td>
<td>MAHESH KUMAR S K</td>
</tr>
<tr>
<td>24</td>
<td>SAHANA K N</td>
</tr>
<tr>
<td>25</td>
<td>CHANDANA S</td>
</tr>
<tr>
<td>26</td>
<td>SUSHMITA L.C</td>
</tr>
<tr>
<td>27</td>
<td>VEENA GONI</td>
</tr>
<tr>
<td>28</td>
<td>VINAY J.U.</td>
</tr>
<tr>
<td>29</td>
<td>SHANTESH RAMESH KAMAT</td>
</tr>
<tr>
<td>30</td>
<td>SHIVASHANKAR</td>
</tr>
<tr>
<td>31</td>
<td>HARISHA NAIK T N</td>
</tr>
<tr>
<td>32</td>
<td>PRADEEP KUMAR N</td>
</tr>
<tr>
<td>33</td>
<td>RAKSHITHA K N</td>
</tr>
<tr>
<td>34</td>
<td>SOWMYASHREE A</td>
</tr>
<tr>
<td>35</td>
<td>PAVAN KUMAR M</td>
</tr>
<tr>
<td>36</td>
<td>YOGANANDA M</td>
</tr>
<tr>
<td>37</td>
<td>BINDU G R</td>
</tr>
<tr>
<td>38</td>
<td>REDDAPPA J B</td>
</tr>
<tr>
<td>39</td>
<td>SINCHANNA JAIN N R</td>
</tr>
<tr>
<td>40</td>
<td>KARTHIK K P</td>
</tr>
<tr>
<td>41</td>
<td>SHAILAJA H K</td>
</tr>
<tr>
<td>42</td>
<td>SULOCHANA K H</td>
</tr>
<tr>
<td>43</td>
<td>SUSHMA BHAT</td>
</tr>
<tr>
<td>44</td>
<td>SHAMBHAVI KOTRALI</td>
</tr>
<tr>
<td>45</td>
<td>GOWTHAMI S</td>
</tr>
<tr>
<td>46</td>
<td>CHANDAN T K</td>
</tr>
<tr>
<td>47</td>
<td>UMEH DHOOD</td>
</tr>
<tr>
<td>48</td>
<td>VEDA V. BANDI</td>
</tr>
</tbody>
</table>
### A2: Number of students got admission in Master’s program during 2018 through ICAR entrance examination / Number of UG students passed out

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Number of students got admission in Masters program in 2018</th>
<th>Total number of UG students passed out in 2018</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>79</td>
<td>417</td>
<td>18.94%</td>
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</tbody>
</table>

**List of the students got admission in Masters program in 2018**

<table>
<thead>
<tr>
<th>Sl No.</th>
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<tbody>
<tr>
<td>1</td>
<td>MANIKANTA R RAJAPPA</td>
</tr>
<tr>
<td>2</td>
<td>GANAPATI RATHOD</td>
</tr>
<tr>
<td>3</td>
<td>SHARAT SANSHI</td>
</tr>
<tr>
<td>4</td>
<td>NANDDEESH J</td>
</tr>
<tr>
<td>5</td>
<td>APOORVA GUDDARADDI</td>
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<tr>
<td>6</td>
<td>GEETA PARASHURAM GUDAGI</td>
</tr>
<tr>
<td>7</td>
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<tr>
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<tr>
<td>9</td>
<td>SHARANESHA D</td>
</tr>
<tr>
<td>10</td>
<td>THEJASWINI K</td>
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<tr>
<td>11</td>
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<tr>
<td>12</td>
<td>RANJITA BEELAGI</td>
</tr>
<tr>
<td>13</td>
<td>CHANDANA M R</td>
</tr>
<tr>
<td>14</td>
<td>SWEGA ANTONY K</td>
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<tr>
<td>15</td>
<td>MEGHANA D</td>
</tr>
<tr>
<td>16</td>
<td>HARSHITHA B S</td>
</tr>
<tr>
<td>17</td>
<td>KOWSALYA K B</td>
</tr>
<tr>
<td>18</td>
<td>LAVANYA V N</td>
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</tr>
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<td>MURUGESH D</td>
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<td>23</td>
<td>MAHESH KUMAR S K</td>
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<td>24</td>
<td>SAHANA K N</td>
</tr>
<tr>
<td>25</td>
<td>CHANDANA S</td>
</tr>
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<td>SUSHMITHA L.C</td>
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<td>27</td>
<td>VEENA GONI</td>
</tr>
<tr>
<td>28</td>
<td>VINAY J.U.</td>
</tr>
<tr>
<td>29</td>
<td>SHANTESH RAMESH KAMAT</td>
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<tr>
<td>30</td>
<td>SHIVASHANKAR</td>
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<tr>
<td>31</td>
<td>HARISHA NAIK T N</td>
</tr>
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<td>32</td>
<td>PRADEEP KUMAR N</td>
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<td>33</td>
<td>RAKSHITHA K N</td>
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<td>35</td>
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<td>36</td>
<td>YOGANANDA M</td>
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<td>BINDU G R</td>
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<td>KARTHIK K P</td>
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<tr>
<td>Sl No.</td>
<td>Name of the student</td>
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<tr>
<td>-------</td>
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<td>SULOCHANA K H</td>
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<tr>
<td>45</td>
<td>GOWTHAMI S</td>
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<td>46</td>
<td>CHANDAN T K</td>
</tr>
<tr>
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<td>UMESH DHOOD</td>
</tr>
<tr>
<td>48</td>
<td>VEDA V. BANDI</td>
</tr>
<tr>
<td>49</td>
<td>Satish Nanu Rathod</td>
</tr>
<tr>
<td>50</td>
<td>Impa H R</td>
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<td>51</td>
<td>Pooja Rajendra Dhangar</td>
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<tr>
<td>52</td>
<td>Nandish H S</td>
</tr>
<tr>
<td>53</td>
<td>Kavyashree B</td>
</tr>
<tr>
<td>54</td>
<td>Mohan N. S.</td>
</tr>
<tr>
<td>55</td>
<td>Sharon Jacob</td>
</tr>
<tr>
<td>56</td>
<td>Menaka, M.</td>
</tr>
<tr>
<td>57</td>
<td>Puneeth Raj</td>
</tr>
<tr>
<td>58</td>
<td>Ajay D. Chougala</td>
</tr>
<tr>
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<td>Maneesha Bhatt</td>
</tr>
<tr>
<td>60</td>
<td>Harish B.K.</td>
</tr>
<tr>
<td>61</td>
<td>Amal Jyothi A P</td>
</tr>
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<td>Amal John</td>
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<td>Amal Kishore M</td>
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<td>64</td>
<td>Bhuvnesh Kumar Mourya</td>
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<td>65</td>
<td>Christina K T</td>
</tr>
<tr>
<td>66</td>
<td>Mukesh</td>
</tr>
<tr>
<td>67</td>
<td>Sneha K K</td>
</tr>
<tr>
<td>68</td>
<td>Veena Goni,</td>
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<tr>
<td>69</td>
<td>Shivashankar</td>
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<tr>
<td>70</td>
<td>Harshita Patil</td>
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<td>71</td>
<td>Yogitha</td>
</tr>
<tr>
<td>72</td>
<td>Neer Somakka A N</td>
</tr>
<tr>
<td>73</td>
<td>Tirupati</td>
</tr>
<tr>
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<td>Poovamma B C</td>
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<tr>
<td>75</td>
<td>Shreedhar Beese</td>
</tr>
<tr>
<td>76</td>
<td>Sachin H R</td>
</tr>
<tr>
<td>77</td>
<td>Akash</td>
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<td>78</td>
<td>Mahesh S Banjantri</td>
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<tr>
<td>79</td>
<td>Chandrashekar</td>
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</tbody>
</table>
### A3 : Students Performance at M.Sc. Level

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Number of students got ICAR-JRF/SRFs in 2018</th>
<th>Total number of Masters students passed out in 2018</th>
<th>Percentage (%)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>161</td>
<td>2.48</td>
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</table>

List of the students got ICAR-JRF/SRF Scholarships in 2018

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>SRF</td>
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</tr>
<tr>
<td>1</td>
<td>KIRANSAGAR D C</td>
</tr>
<tr>
<td>2</td>
<td>SILPA G S</td>
</tr>
<tr>
<td>3</td>
<td>PANCHAAP BHATTACHARJEE</td>
</tr>
<tr>
<td>4</td>
<td>SUBHASINI GHOSH</td>
</tr>
</tbody>
</table>

### A4 : Students Performance at M.Sc. Level

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Number of students got admission in Ph.D. in 2018 through ICAR entrance</th>
<th>Total number of Masters students passed out in 2018</th>
<th>Percentage (%)</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>14</td>
<td>161</td>
<td>8.70</td>
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</table>

List of the students got admission in Ph.D. in 2018 through ICAR entrance exam

<table>
<thead>
<tr>
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<td>1</td>
<td>SILPA G S</td>
</tr>
<tr>
<td>2</td>
<td>PANCHAAP BHATTACHARJEE</td>
</tr>
<tr>
<td>3</td>
<td>SUBHASINI GHOSH</td>
</tr>
<tr>
<td>4</td>
<td>PALAVALASA RAVITEJA</td>
</tr>
<tr>
<td>5</td>
<td>TAKHELLAMBAM HENNY CHANU</td>
</tr>
<tr>
<td>6</td>
<td>ANUSHA RAMESH BHAGWAT</td>
</tr>
<tr>
<td>7</td>
<td>LHINGNEIVAH CHONGLOI</td>
</tr>
<tr>
<td>8</td>
<td>AVINASH M</td>
</tr>
<tr>
<td>9</td>
<td>GAUTHAM SURESH S. P</td>
</tr>
<tr>
<td>10</td>
<td>DHARAMPAL SINGH</td>
</tr>
<tr>
<td>11</td>
<td>KIRAN SAGAR D C</td>
</tr>
<tr>
<td>12</td>
<td>ADITYA SHIVANANDA HEGDE</td>
</tr>
<tr>
<td>13</td>
<td>RAMAVATH RAMESH BABU</td>
</tr>
<tr>
<td>14</td>
<td>V. JAYASHREE</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Number of students got ARS in the disciplines offered by the university in 2018</th>
<th>Total number of seats available in such disciplines advertised by ASRB</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tbody>
</table>

List of the students got ARS selections

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Name of the student</th>
<th>ARS Discipline</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
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</tbody>
</table>
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**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Code No.</th>
<th>Discipline</th>
<th>UR</th>
<th>SC</th>
<th>ST</th>
<th>OBC (OD/HD)</th>
<th>Total</th>
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<tbody>
<tr>
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<td>Agricultural Biotechnology</td>
<td>5</td>
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<td>0</td>
<td>1</td>
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<td>1</td>
<td>1</td>
<td>06</td>
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<td>05</td>
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<td>2</td>
<td>2</td>
<td>5</td>
<td>18</td>
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<td>2</td>
<td>2 (1 BL)</td>
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<td>08</td>
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<td>0</td>
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<td>03</td>
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<td>2</td>
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<td>06</td>
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<td>2</td>
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<td>09</td>
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<td>1</td>
<td>2</td>
<td>09</td>
</tr>
<tr>
<td>26</td>
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<td>Computer Application &amp; IT</td>
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<td>2</td>
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<td>28</td>
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<td>2</td>
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</table>

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

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Number of students qualified NET in the disciplines of agriculture and allied sciences</th>
<th>Total number of PG and PhD students</th>
<th>Percentage (%)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>22</td>
<td>184</td>
<td>11.96%</td>
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### List of the students qualified NET

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<tr>
<th>Sl No.</th>
<th>Name of the student</th>
<th>Discipline</th>
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<tbody>
<tr>
<td>1</td>
<td>Monika Patel</td>
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</tr>
<tr>
<td>2</td>
<td>Harshita</td>
<td>Post Harvest Technology</td>
</tr>
<tr>
<td>3</td>
<td>Kavita</td>
<td>Fruit Science</td>
</tr>
<tr>
<td>4</td>
<td>Kiran</td>
<td>Fruit Science</td>
</tr>
<tr>
<td>5</td>
<td>Ravi G K</td>
<td>Fruit Science</td>
</tr>
<tr>
<td>6</td>
<td>Kiran sagar D.C</td>
<td>Fruit Science</td>
</tr>
<tr>
<td>7</td>
<td>Mahesh P .N</td>
<td>Fruit Science</td>
</tr>
<tr>
<td>8</td>
<td>Yallaling D Mallapur</td>
<td>Fruit Science</td>
</tr>
<tr>
<td>9</td>
<td>Beerappa</td>
<td>Fruit Science</td>
</tr>
<tr>
<td>10</td>
<td>Saniya</td>
<td>Floriculture</td>
</tr>
<tr>
<td>11</td>
<td>Bharath Kumar A</td>
<td>PHT</td>
</tr>
<tr>
<td>12</td>
<td>Basavaraj Shelliikeri</td>
<td>Vegetable Science</td>
</tr>
<tr>
<td>13</td>
<td>Thilak J C</td>
<td>Vegetable Science</td>
</tr>
<tr>
<td>14</td>
<td>Shwetha A</td>
<td>Vegetable Science</td>
</tr>
<tr>
<td>15</td>
<td>Laxmi Mastiholi</td>
<td>PSMA</td>
</tr>
<tr>
<td>16</td>
<td>Chaitra Kulkarni</td>
<td>CIB</td>
</tr>
<tr>
<td>17</td>
<td>Anushree T</td>
<td>Soil Science</td>
</tr>
<tr>
<td>18</td>
<td>Anusha A</td>
<td>Plant Pathology</td>
</tr>
<tr>
<td>19</td>
<td>Madhushree S K</td>
<td>Plant Pathology</td>
</tr>
<tr>
<td>20</td>
<td>Archit T C</td>
<td>Plant Pathology</td>
</tr>
<tr>
<td>21</td>
<td>Mahesh S Dashyal</td>
<td>Plant Pathology</td>
</tr>
<tr>
<td>22</td>
<td>Nagesh Bhatt</td>
<td>Plant Pathology</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Colleges</th>
<th>Sanctioned</th>
<th>In Position</th>
<th>% of Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>364</td>
<td>262</td>
<td>71.97</td>
</tr>
<tr>
<td>Research Centres</td>
<td>40</td>
<td>21</td>
<td>52.50</td>
</tr>
<tr>
<td>AICRP</td>
<td>16</td>
<td>14</td>
<td>87.50</td>
</tr>
<tr>
<td>KVKs</td>
<td>7</td>
<td>6</td>
<td>85.70</td>
</tr>
<tr>
<td>Total</td>
<td>427</td>
<td>303</td>
<td>70.96</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Name of the student</th>
<th>Discipline</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>COH, Bengaluru</td>
<td>Najibulla Mujadadi</td>
<td>Fruit Science</td>
<td>Afghanistan</td>
</tr>
</tbody>
</table>
### A 10 : National and International Awards

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Faculty Name</th>
<th>Award</th>
<th>Sponsor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dr. Kulapati Hipparagi</td>
<td>Best Teacher Award</td>
<td>UHS, Bagalkot</td>
</tr>
<tr>
<td>2</td>
<td>Dr. Satish, D.,</td>
<td>Best Teacher Award</td>
<td>UHS, Bagalkot</td>
</tr>
<tr>
<td>3</td>
<td>Dr. Sadanand, G.K.</td>
<td>Best Teacher Award</td>
<td>UHS, Bagalkot</td>
</tr>
<tr>
<td>4</td>
<td>Dr. Kulapati Hipparagi</td>
<td>“DR. APJ ABDUL KALAM Life time Achievement” National Award for excellence in the filed of Teaching, Research and Publications</td>
<td>International Institute for Social and economic reforms(R), Bengaluru</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Out Standing Achievement in Horticulture Award-2018</td>
<td>Hi-tech Horticultural Society</td>
</tr>
<tr>
<td>6</td>
<td>Dr. KiranKumar K.C</td>
<td>“Young Scientist of 2018” at International Conference on “Emerging Issues in agricultural, environmental and applied sciences for sustainable development” (EIAEASSD-2018)</td>
<td>Agro-Environmental Developmental Society (AEDS),</td>
</tr>
</tbody>
</table>
INTERNATIONAL INSTITUTE FOR SOCIAL AND ECONOMIC REFORMS (R), BANGALORE

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 15-17 November 2018 at Hotel Aston Kuta, Kuta, Bali (Indonesia)
A 11 : Best Institution / University Awarded by ICAR in 2018

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Award</th>
<th>Name of the Institution</th>
<th>Sponsor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>First position in ICAR JRF Examination under programme category Horticulture and forestry by ICAR -2018</td>
<td>UHS, Bagalkot</td>
<td>ICAR</td>
</tr>
<tr>
<td>2</td>
<td>Best AICRP Centre</td>
<td>AICRP, Hassan</td>
<td>ICAR</td>
</tr>
<tr>
<td>3</td>
<td>Best AICRP Centre</td>
<td>AICRP, Arabhavi</td>
<td>ICAR</td>
</tr>
</tbody>
</table>
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

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

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of the Student</th>
<th>College</th>
<th>Event</th>
<th>Accomplishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Ms. Sahana P V</td>
<td>COH, Bagalkot</td>
<td>Light Vocal</td>
<td>2nd Place</td>
</tr>
<tr>
<td>2.</td>
<td>Ms. Sahana P V</td>
<td>COH, Bagalkot</td>
<td>Patriotic Song</td>
<td>3rd Place</td>
</tr>
<tr>
<td></td>
<td>Ms. Shrutidevi Math</td>
<td>COH, Bagalkot</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ms. Harshada Madali</td>
<td>COH, Bagalkot</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ms. Shrinidhi B R</td>
<td>COH, Bagalkot</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ms. Rashmitha G</td>
<td>KRCCH, Arabhavi</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ms. Soumya H S</td>
<td>COH, Sirsi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Ms. Poojitha</td>
<td>KRCCH, Arabhavi</td>
<td>Skit</td>
<td>3rd Place</td>
</tr>
<tr>
<td></td>
<td>Mr. Akash Malleda</td>
<td>COH, Bagalkot</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ms. Shrutidevi Math</td>
<td>COH, Bagalkot</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ms. Hima N Prasad</td>
<td>COH, Bengaluru</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mr. Venuganapati Hegde</td>
<td>COH, Munirabad</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mr. Tejaswi S N</td>
<td>COH, Mysuru</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Ms. Rashmitha G</td>
<td>KRCCH, Arabhavi</td>
<td>One act play</td>
<td>4th Place</td>
</tr>
<tr>
<td></td>
<td>Ms. Poojitha</td>
<td>KRCCH, Arabhavi</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ms. Tejaswi S N</td>
<td>COH, Mysuru</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ms. Shritidevi Math</td>
<td>COH, Bagalkot</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mr. Akash Malleda</td>
<td>COH, Bagalkot</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mr. Abhilash K N</td>
<td>COH, Bagalkot</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mr. Venuganapati Hegde</td>
<td>COH, Munirabad</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mr. Pruthviraj H M</td>
<td>COH, Bengaluru</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lohitashwa K M</td>
<td>COH, Bengaluru</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Ms. Pravalika K M</td>
<td>COH, Bengaluru</td>
<td>Collage</td>
<td>4th Place</td>
</tr>
</tbody>
</table>
2. **All India Inter Agricultural University Sports & Games meet Achievements**

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Sports &amp; Games Meet</th>
<th>Year</th>
<th>Held at</th>
<th>UHS, Position</th>
<th>No of Universities Participated</th>
<th>No of Prizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Punjab Agricultural University, Ludhiana from 2&lt;sup&gt;nd&lt;/sup&gt; to 5&lt;sup&gt;th&lt;/sup&gt; January, 2019</td>
<td>2018-19</td>
<td>-</td>
<td>65</td>
<td>07 Bronze Medals</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of Student</th>
<th>College</th>
<th>Event</th>
<th>Accomplishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mr. Jayant Pujari</td>
<td>COH, Bagalkot</td>
<td>Shot Put - Men</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Place</td>
</tr>
<tr>
<td>2.</td>
<td>Mr. Basavaraj Devaji</td>
<td>CHEFT, Devihosuru</td>
<td>Discuss Throw - Men</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Place</td>
</tr>
<tr>
<td>3.</td>
<td>Ms. Lavanya S M</td>
<td>COH, Kolar</td>
<td>Women’s 1500 Mtr Athletics</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Place</td>
</tr>
<tr>
<td>4.</td>
<td>Ms. Madhumathi Patil</td>
<td>KRCCH, Arabhavi</td>
<td>Women’s 4 x 100 Mtr Relay</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Place</td>
</tr>
<tr>
<td>5.</td>
<td>Ms. Anita L R</td>
<td>COH, Mysuru</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Ms. Sheela Reimie</td>
<td>COH, Mysuru</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Ms. Sikha Manoharan</td>
<td>COH, Munirabad</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**Proud Achievers of the 19<sup>th</sup> All India Inter Agricultural University Sports and Games Meet held at Punjab Agricultural University, Ludhiana from 2<sup>nd</sup> to 5<sup>th</sup> 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**

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Number of faculty with Ph.D degrees obtained from universities from outside of the state where employed</th>
<th>Total number of faculty</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>23</td>
<td>217</td>
<td>10.59 %</td>
</tr>
</tbody>
</table>

List of the faculty members

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Name of the faculty member</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dr. K.N. Kattimani</td>
</tr>
<tr>
<td>2</td>
<td>Dr. Nagesh Naik</td>
</tr>
<tr>
<td>3</td>
<td>Dr. Eranna Rajashekar</td>
</tr>
<tr>
<td>4</td>
<td>Dr. K R Vasudeva</td>
</tr>
<tr>
<td>5</td>
<td>Dr. Meenakhi Sood</td>
</tr>
<tr>
<td>6</td>
<td>Dr. Itigi Prabhakar</td>
</tr>
<tr>
<td>7</td>
<td>Dr. V.P. Singh</td>
</tr>
<tr>
<td>8</td>
<td>Dr. Kiran Nagajjanavar</td>
</tr>
<tr>
<td>9</td>
<td>Dr. Shankar Meti</td>
</tr>
<tr>
<td>10</td>
<td>Dr. Noorulla Haveri</td>
</tr>
<tr>
<td>11</td>
<td>Dr. Manjunath Hubballi</td>
</tr>
<tr>
<td>12</td>
<td>Dr. Chikkanna G.S.</td>
</tr>
<tr>
<td>13</td>
<td>Dr. Shashidhar Chavan</td>
</tr>
<tr>
<td>14</td>
<td>Dr. Preetham S.P.</td>
</tr>
<tr>
<td>15</td>
<td>Dr. Manjunath, R.</td>
</tr>
<tr>
<td>16</td>
<td>Dr. Sadananda, G. K.</td>
</tr>
<tr>
<td>17</td>
<td>Dr. Jayashree Ugalat</td>
</tr>
<tr>
<td>18</td>
<td>Dr. Raghawendra Gunnaiah</td>
</tr>
<tr>
<td>19</td>
<td>Dr. Mala C. Patil</td>
</tr>
<tr>
<td>20</td>
<td>Dr. Pavana Kumar P.</td>
</tr>
<tr>
<td>21</td>
<td>Dr. Shiddanagouda Yadachi</td>
</tr>
<tr>
<td>22</td>
<td>Dr. Dhananjaya P.</td>
</tr>
<tr>
<td>23</td>
<td>Dr. Vijaykumar Rathod</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Number of faculty from the States other than the State in which university is located</th>
<th>Total number of faculty</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>303</td>
<td>1.32%</td>
</tr>
</tbody>
</table>

List of the faculty members

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Name of the faculty member</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mr. K. Tulasiram</td>
</tr>
<tr>
<td>2</td>
<td>Dr. Meenakshi Sood</td>
</tr>
<tr>
<td>3</td>
<td>Mr. Rajesh A M</td>
</tr>
<tr>
<td>4</td>
<td>Dr. V. P. Singh</td>
</tr>
</tbody>
</table>
A16: Percentage of Faculty with 3 months or more of Post doctoral/Visiting scientist experiences abroad in 2018

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Number of faculty with 3 months or more of Postdoctoral/Visiting scientist experiences abroad in 2018</th>
<th>Total number of faculty</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

List of the faculty members

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the faculty member</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A17: Average footfall in library

![Certificate Image]

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.

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

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: 

\[
\text{Percentage of foot fall in the library per day} = \frac{\text{Average use of library per day} \times 100}{\text{Total no. of users.}}
\]

\[
= \frac{467 \times 100}{2564} = 18.21\%
\]

Percentage of foot fall in the library per day: 18.21%
A18 : CERA utilization in 2018

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Group Name</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TOTAL HITS</td>
<td>29708</td>
</tr>
<tr>
<td>2</td>
<td>Total Logins / Sessions</td>
<td>2705</td>
</tr>
<tr>
<td>3</td>
<td>Searches</td>
<td>14055</td>
</tr>
<tr>
<td>4</td>
<td>Fulltext / Abstract Views</td>
<td>7851</td>
</tr>
<tr>
<td>5</td>
<td>ILL Requests/Enquiries</td>
<td>171</td>
</tr>
<tr>
<td>6</td>
<td>TCC Browsing</td>
<td>931</td>
</tr>
<tr>
<td>7</td>
<td>Profiles Created</td>
<td>40</td>
</tr>
<tr>
<td>8</td>
<td>E mail Alerts</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>RSS Feeds</td>
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</tr>
<tr>
<td>10</td>
<td>Others</td>
<td>1016</td>
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</table>
A19: Accreditation on 01.01.2018 (by ICAR)
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, Arubhavi - 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. Allof, Nodal Officer, CHEFT, Haveri - Member
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

<table>
<thead>
<tr>
<th>Sl. No.</th>
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<td>1</td>
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<tr>
<td>1</td>
<td>VSC: Precision Farming and</td>
<td>VSC: Precision Farming and</td>
</tr>
<tr>
<td>2</td>
<td>202: Protective Cultivation of Vegetables</td>
<td>202: Protective Cultivation of Vegetables</td>
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<tr>
<td>2</td>
<td>HEL:</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Module-I: Protective Cultivation of High</td>
<td>Module-I: Protected Cultivation of High</td>
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<td>4</td>
<td>Value Horticulture Crops</td>
<td>Value Horticulture Crops</td>
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<tr>
<td>5</td>
<td>RHWE:</td>
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<tr>
<td>6</td>
<td># RHWE Programme</td>
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<td>7</td>
<td>Duration</td>
<td></td>
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<td>8</td>
<td>Orientation programme</td>
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<tr>
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<td>1 week</td>
<td>1 week</td>
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<td>Village stay at RSK/ Hombil level</td>
<td>Village stay at RSK/ Hombil level</td>
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<td>11</td>
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<td>12</td>
<td>All India study tour</td>
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<tr>
<td>13</td>
<td>3 weeks</td>
<td>2 weeks</td>
</tr>
<tr>
<td>14</td>
<td>Placement Programme</td>
<td>Placement Programme</td>
</tr>
<tr>
<td>15</td>
<td>3 weeks</td>
<td>3 weeks</td>
</tr>
<tr>
<td>16</td>
<td>Report writing &amp; final examination</td>
<td>Report writing &amp; final examination</td>
</tr>
<tr>
<td>17</td>
<td>3 weeks</td>
<td>3 weeks</td>
</tr>
<tr>
<td>18</td>
<td>Total 24 weeks</td>
<td>Total 24 weeks</td>
</tr>
</tbody>
</table>

Department of Social Sciences:

AEX: Entrepreneurship
- Development and Business Management
- 2(2+0)

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

Mid-term Exam (100%) + Final Practical test + Practical Record (50%) and Assignment (10%)

Evaluation: All Courses

<table>
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<th>Percentage of Marks Obtained (100)</th>
<th>Conversion into Points (10 Points)</th>
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<tr>
<td>90 to &lt;100</td>
<td>9 to &lt;10</td>
</tr>
<tr>
<td>80 to &lt;90</td>
<td>8 to &lt;9</td>
</tr>
<tr>
<td>70 to &lt;80</td>
<td>7 to &lt;8</td>
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<tr>
<td>60 to &lt;70</td>
<td>6 to &lt;7</td>
</tr>
<tr>
<td>50 to &lt;60</td>
<td>5 to &lt;6</td>
</tr>
<tr>
<td>&lt;50 (Fail)</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Example 80.76</td>
<td>8.06</td>
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<tr>
<td>53.60</td>
<td>4.36</td>
</tr>
</tbody>
</table>

Note: After converting the grade point into 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.

(Acton: 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 piece before the Board of Studies (GP) for its recommendation.

(Acton: 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.21/12-17/2016-17

Directorate of Education,
UHS, Bagalkot
Dated: 19.08.2016

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

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 KRCH, ARABHAVI**

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

<p>| | | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Vice-Chancellor, UHS, Bagalkot</td>
<td>Chairman</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Director of Research, UHS, Bagalkot</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Director of Extension, UHS, Bagalkot</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Registrar, UHS, Bagalkot</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Dean, College of Horticulture, Arabhavi</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Dean, College of Horticulture, Mudigere</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Dean, College of Horticulture, Bagalkot</td>
<td>Member</td>
<td></td>
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<tr>
<td>8</td>
<td>Dean, College of Horticulture, Bidar</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Dean, College of Horticulture, Kolur</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Dean, College of Horticulture, Mysore</td>
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<td></td>
</tr>
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<td>11</td>
<td>Dean, College of Horticulture, Hiriyur</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Dean, College of Horticulture, Koppal</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Dean, College of Horticulture, Sirsi</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Dr. B. Hemta Naik, Professor, COH, Mudigere</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>K T Shivashankar, Former Professor of Horticulture, Nagarahalli, Bangalore</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Director of Horticulture of his nominee not below the rank of Joint Director, Government of Karnataka, Bangalore</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Dr. K. A. Kulkarni, Former Prof. of Entomology &amp; Registrar, UAS, Dharwad</td>
<td>Co-Opted Member</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Director of Education, UHS, Bagalkot</td>
<td>Member Secretary</td>
<td></td>
</tr>
</tbody>
</table>
ITEM NO - 6: Approval of Form No. 1 to 12 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, Muddenahore

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 undergraduate programme as non-load course.

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

Moved By : Dean, KRCH, Arambhavi

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
drops 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 Yojana (RKVY) for funding.

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

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.

[Signatures]
Director of Education
Member, Secretary, Academic Council

[Signature]
Vice-Chancellor
Chairman, Academic Council
**B1 : Research Product**

<table>
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<tr>
<th>Sl No.</th>
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<th>Number of research papers per faculty</th>
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**List of the research articles**

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<thead>
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<td>9</td>
<td>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, <em>Erwerbs-Obstbau</em>, 60(3): 261-270.</td>
<td>6.60</td>
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* 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.
Correction to: Identification of main effect and epistatic quantitative trait loci for morphological and yield-related traits in peanut (*Arachis hypogaea* L.)


Published online: 1 June 2018
© Springer Science+Business Media B.V., part of Springer Nature 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.
Sequencing Analysis of Genetic Loci for Resistance for Late Leaf Spot and Rust in Peanut (Arachis hypogaea L.)


*Department of Research and Development, Kannada DNA Research Institute (KORI), India. †Department of Biotechnology, University of Agricultural Sciences, Dharwad, India. ‡Department of Genetics and Plant Breeding, University of Agricultural Sciences, Dharwad, India. §Center of Excellence in Genomics and Genetic Science (CEGiS), International Crop 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 262 markers published in the previous studies were mapped on a genetic map covering 1610.1 cM. Subsequent quantitative trait locus (QTL) analysis revealed major genetic loci for LLS and rust resistance on chromosomes A02 and A03, respectively. Heterogeneous introgressed family-derived near isogenic lines and the pedigree of the resistant gene donor, A. cardenalis Krapov. & W.C. Gregory, including the resistant derivatives of ICV 86655 and VIG 9514 as well as GPBD 4, were employed for whole-genome resequencing analysis. The results indicated the GTI candidates for LLS and rust resistance were located in 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 resistances, respectively. These disease-related 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 loci, restriction-site associated DNA sequencing, whole-genome resequencing analysis

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 spot (LLS) caused by Mycospheura arachidis K. Yabuta, also known as Phaeosphaeriaicornis Kondratiev & M.A. Curtis von Arx, and rust by Phakopsora arachidicola Spegi. These diseases can reduce yield by up to 70% (Subrahmanyan et al., 1984) and can adversely affect kernel and fodder quality (Drozd et al., 2002). The production of disease resistant cultivars...
Exploring the genomic resources of carrot for cross-genera transferability and phylogenetic assessment among orphan spices and vegetables of Apioaceae family

Sarvanagiri S. Chenin1, Chaitra P. Polasti3, U. S. Mankanta2, Calvin Christopher4

Abstract
Carrot (Daucus carota L.) is a member of the Apioaceae 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 34 carrot molecular markers for eight different genera composed of five seed spices, ornamentals 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 principal 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 3.99 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 0.62 observed among 14 polymericamic 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 reflected four genotypes which could be our genotype and kept the other cluster comparison intact. Comprehensive study of these eight crops with many more molecular markers would help to understand the evolutionary relationship for distant hybridization among Apioaceae family members to either transfer genes of interest or create novel crops.

Keywords: Distant hybridization, Genetic parameters, Molecular markers, Novel crops, PCoA

1 Introduction
Apioaceae is one of the largest plant families of economic importance that is used as spice condiment, i.e., cummin, fenugreek, coriander, cumin, fennel, vegetable (e.g., celery, carrot, dill, parsley) and medicinal crop (i.e., centella, clove, alicis). Apart from the taste and flavour they add to foods, they also contribute essential oils, antioxidants, minerals and vitamins to our health, suggesting that they are potential gold mine of nutraceuticals (Gatherer et al. 2013; Christine and John 2008; RamaSwaroop 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 and around parts of the country. The area under spice cultivation in India is 3.5 million hectares, with an annual production of 7.0 million tons and productivity of 2.0 kg ha⁻¹ (www.spiceind. org.in), which contributes 6% to the world spice production. Among seed spices, cummin contributes the most to the economy followed by coriander.

Despite their large importance, genetic improvement of these crops is lagging behind due to many challenges associated with it like the tetraploid 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 moderate genomic resources, traditional
Genetic variability studies in pomegranate

Nusrat Perveen, Sarvarangai S. Cholin, Kulapati Hipparagi, BNS Murthy* and Dadapeer Peerjade

University of Horticultural Sciences, Bagalkot 587122, Karnataka

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 arils, dry weight of 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, fresh weight, total aril weight, total no. of arils and titratable acidity. Whereas, comparatively lower heritability accompanied by low genetic advance was exhibited by characters like seed 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 best known cultivated species of fruit crops, is a predominant member of family Lythraceae and is commercially grown for its fully juicy, white to yellowish fruits which contain about 55-60% of the total fruit weight and consists of about 75-85% juice and 15-25% seeds (Ali-Nasirian 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, in 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.

MATERIALS AND METHODS

Plant material consisting of 23 pomegranate cultivars including four mutant lines were used for the present investigation viz. Ambidana, Bhagwa, CO-1, Dholka, Early Bhagwa, G-137, Ganesh, Kabuli Yellow, Kaladagi Local, KRG, Mirula, P-23, P-28, Prabha Arvinda, Ruby, Supor Bhagwa, Totapuri, Wonderful, Yeacaud 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.
Assessment of genetic divergence among Indian genotypes of pomegranate for economic traits
Nusrat Perveen, Sarvamangala B. Cholin, Kulapat Hapapragi, BNS Murthy, Dadapra Peerdade
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ABSTRACT

The efficiency 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, pooled weight followed by seed weight had higher contribution to the diversity among the selected genotypes. Tewari’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 traits and all parameters were highest in cluster III, a solitary cluster comprising of the usual popular cultivar Ganesh followed by cluster I consisting of a commercial pomegranate cultivar like Bhagali 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, genetica 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. 1880. Punica protopunica is endemic to Sudder Island (Yemen) and is considered to be the only congeneric relative of P. granatum species currently in cultivation (Zulkowski, 1981; Levin, 1983) and has been suggested as the ancestor of this genus based on its xylem anatomy (Shihito, 1985). The chromosome number differs among the cultivars and haploid chromosome number of eight (Sethid and Noormohammadi, 1987) or nine (Carling and JankelAmnial, 1993) has been reported. Pomegranate and its usage are an integral part of human history, with its utilization spanning across many ancient human cultures we food as well as a medical remedy. Pomegranate fruits are widely consumed as fresh or processed into juice, syrup, jam and wine (Papadeou et al., 2014). Dried pomegranate arils known as arandana 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 (Gh et al., 2009; Serain et al., 2010).

Pomegranate being an out crossing species possesses a huge diversity in horticultural traits (Potti and Sanghavi, 1983). 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 cultivated varieties is laborious and time consuming. Understanding the diversity, superiority for multiple traits and also the terasurias among the already existing popular cultivars would help a broader to improve the quality and productivity of otherwise superior cultivars 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 $F_1$ 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 (Jelani and Dhawan, 2001; Kumar, 2008). 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
Detection and characterization of tomato leaf curl disease in New Delhi virus association with mosaic disease of ivy gourd (Cucumis grantis (L.) Voigt) in North India


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Received: [June 16, 2017]; Revised: November 16, 2017; Accepted: November 29, 2017; Published online: December 23, 2017

Abstract: Sixteen ivy gourd (Cucumis 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 (14) was found to be a member of the 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 Determination Tool (SDT) program revealed that they share 89.9–91.3% (IVG1-ND) and 93.6–98.8% (IVG2-Var) nucleotide (nt) identity with the DNA-A-like sequence of ToLCNDV isolated from cucurbits and chili, respectively. The IVG1-ND and IVG2-Var isolates shared 96% nt identity among themselves, indicating that they are two different strains of ToLCNDV. Similarly, SITV analysis of the DNA-B-like sequence of IVG1-ND and IVG2-Var exhibited showed 92.7–93.3% nt identity with the DNA-B-like sequence of ToLCNDV infecting cucurbits. The recombination analysis of DNA-A and DNA-B-like sequences showed that the greater part of their genome most likely originated from previously reported begomoviruses that are known to infect chili and cucurbits through recombination.

Key words: begomoviruses; ivy gourd; recombinant; phylogenetic analysis; perennial crop.

INTRODUCTION

Ivy gourd (Cucumis 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 plant 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 cucurbitaceae crops in India, including tomato leaf curl New Delhi virus (ToLCNDV) [4,5], aequus 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 virus [10].
Mapping of fruit length related QTLs in interspecific cross (Capsicum annuum L. x 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 F2 mapping population was developed from the cross of C. annuum L. cv. ‘PL 301’ with C. galapagoense Hunz. accession ‘TC 07245’. Fruit length in this cross showed a qualitative inheritance with the population displaying a symmetric distribution in histogram. To map quantitative trait loci (QTLs) for fruit length 11 SSR markers were surveyed on the parental genotypes but only 28 markers were observed to be polymorphic indicating low genetic diversity between the two Capsicum species. Polymorphic markers were then analyzed in F2 population consisting of 110 plants and 24 of these markers were mapped on to three linkage groups (LG1, LG2, LG3). Two fruit length determining QTLs designated as panfl1.1 and panfl2.2 were identified and both the QTLs were mapped on to LG2. 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 shrub parent ‘TC 07245’ which might be of potential use in chilli breeding programs.

Key Words: chilli pepper, fruit length, molecular markers, panfl1.1, panfl2.2, 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 & Pav., and C. pubescens Ruiz & Pavon are domesticated. C. annuum L. is the widely cultivated species worldwide and includes both the chilli pepper and the hot pepper (Berland 1992). Improving yield related traits have remained a major goal for chilli breeding (Barbati et al. 2009, Zygier et al. 2015). Fruit length in chilli determines consumer acceptability and contributes directly to the yield. This is a polygenic trait with narrow genetic variability of 0.68–0.7% (Rah Chinth et al. 2001). The conventional biometrical approaches, although descriptive of inheritance, do not explain the effects of individual quantitative trait loci (QTL) affecting a trait. Therefore, breeders have long recognized the need for effective selection in these traits. This makes the yield 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 (Barbati et al. 2009, Lu et al. 2012). Identification 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 (Hameen et al. 1992, Nimura et al. 2012, Powell et al. 1996, Bugati 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 a larger genome size, poor density of marker (Pasq et al. 2011) and exhibit low levels of polymorphism (Dhaliwal et al. 2014, Dwivedi et al. 2013). To facilitate MAB in chilli, Barbati et al. (2009), Ram Chint et al. (2001), Dwivedi et al. (2013), and Han et al. (2014) 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 objectives of this study was to identify and map QTLs for fruit length in F2 population derived from an
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 commercial cash 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 begomovirus infection (mosaic mottling, leaf curl) and was tested by PCR using begomovirus specific primers. Furthermore, the complete genome of begomovirus (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 shares 89.4-96.2 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 recombinant analysis of the DNA A, DNA B, beta satellite, and alpha satellite of the begomovirus infecting spine gourd showed the associated begomovirus and satellite DNA were driven from 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 cuttings. The occurrence of begomovirus in spine gourd given 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 cleanly propagated planting material.

Keywords: Alphasatellite; Betasatellite; Begomovirus; Recombination.
Trends in Mango Research as seen Through Science Citation Expanded Index of Web of Science

Erwerbs-Obstbau.

September 2018, Volume 60, Issue 3, pp 261–270 | Cite as

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Original Article
First Online: 22 March 2018

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

Entwicklungen in der Forschungsarbeit über Mangos, betrachtet mit Hilfe des

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

Somu R, RK Mesta, Chidanand P Mansur, Kulapat 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 Bajeppa village of Hosadurga taluk, 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 Bagalkot taluk of Bagalkot district. Among the districts, the highest mean incidence of wilt (15.27%) was recorded in Bagalkot district followed by Vijayapura district (6.22%). The lowest incidence of pomegranate wilt (3.75%) was recorded in Chitradurga district. Orchards of four years and above old planted under black soil showed higher incidence of wilt along with spot hole borer and root knot nematode infection. Among the soil parameters electrical conductivity of soil showed the significant positive correlation with percent 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 Garesh, Mridula, Arakata, 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 hectares 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 hectares and production of 40.68, 15.25, 15.00, 14.03, 10.44 tonnes per hectare respectively. 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 Halest, 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.
Direct In Vitro Regeneration in Fig (Ficus carica L.) Cv. Brown Turkey

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Abstract
The fig (Ficus carica L.) cv. Brown turkey is one of the important exotic fruit crop originated from Asia. Its nutriculrest importance, drought tolerance and remunerative 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 HgCl2 0.1% for 10 min. which resulted in significantly higher axenic culture establishment (71%) and lower contamination (19%) and faster intensity of browning (10%) on the initiation MS medium supplemented with BAP 0.50 mg/l and activated charcoal 500 mg/l.

Further the in vitro established axenic 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 shoots/plants, 4.10 cm shoot length and 5.1 leaves/shoot. The microshoots of length 6-8 cm were transferred on to the MS 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 38% rooting, 4.30 primary roots/shoot and 7.90 cm root length. The rooted plantlets were successfully hardened under polythene with 100% survival.

Keywords: Axenic culture, Brown Turkey, Double nodal segment, Auxin bud, Browning of the medium.

Introduction
Ficus carica L. is popularly known as fig plant. The fruit is consumed either in fresh or dried form. There are two hundred edible fig cultivars growing with wide range of shapes, colors and textures. The major global fig producing countries are Turkey, Egypt, Iran, Greece and Algeria. As per the latest report, the area under fig cultivation in India constitutes 5500 hectares with annual production of 19,000 tonnes. 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
Brainea insignis (Hook.) J.Sm. – a conservation priority fern of North East India

A false tree fern, *Browningia insignis* Hook., was described by Hooker as a new genus to honour John Browning and his son, J. U. Browning, who first sent live plants of it from Hong Kong for introduction to the Royal Botanic Garden, Kew, London. Taxonomically *Browningia* Hooker (1853) was an illegitimate later homonym of *Browningia* Champ. ex. Benth. (1852, Fabaceae) and a new name, *Brainea*, was therefore proposed for this fern genus to honour J. C. Brain, who had also introduced it at Kew in 1850. *Brainea* is a monotypic genus of false tree ferns represented by *B. 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 c ycad; hence it is often called ‘cyca rd fern’ in the nursery trade. The individual plants are scattered in open large colonies or open semi-shaded slopes. Like c yc ad, *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)14. North East India is its westernmost limit,
### B2 : Research Impact

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Number of faculty members having h-index as 10 or more</th>
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**List of faculty members having h-index as 10 or more**

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<td>B. Fakrudin</td>
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<td>Babu A.G.</td>
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<td>6.</td>
<td>P. S. Ajjappalavar</td>
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</table>
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 I : 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 (“B”) 24.02 - 30.33. Yield potential is 50 – 80 fruits/year.
## Technologies developed by UHS, Bagalkot during 2017-18

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Crop</th>
<th>Title of the Experiment</th>
<th>Description of Technologies</th>
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<tbody>
<tr>
<td>1</td>
<td>Banana</td>
<td>In vitro micropropagation protocol for Banana cv. Kamalapur Red</td>
<td>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 6.7 cm longest root on 0.1-2 mg IBA/lit.</td>
</tr>
<tr>
<td>2</td>
<td>Banana</td>
<td>Direct feeding techniques of nutrients to banana bunch on yield (Variety: Grand Nains)</td>
<td>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.</td>
</tr>
<tr>
<td>3</td>
<td>Sapota</td>
<td>Spacing trial in Sapota</td>
<td>In 10 x 10 m spacing maximum growth (tree volume - 30.9 m³) and yield (95.40 kg/ tree) were observed, whereas, minimum growth (tree volume - 16.51 m³) 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).</td>
</tr>
<tr>
<td>4</td>
<td>Orchid</td>
<td>Foliar nutrition in Orchid (Var. Sonia -17)</td>
<td>Foliar application 20:20:20 NPK (0.3%) + 0.1 % Micronutrient (Zinc, Magnesium, Calcium and Boron) during vegetative growth and 10:8:20 NPK (3%) + 0.1 % Micronutrient (Zinc, Magnesium, Calcium and Boron) after flowering found best for cultivation of Dendrobium orchid.</td>
</tr>
<tr>
<td>5</td>
<td>Chilli</td>
<td>New drying methods in Chilli</td>
<td>Drying of chilli under solar tunnel dryer at a temperature of 52 – 54 °C reduce the period of drying by 40 – 50 per cent and also helps to maintain the fruit quality.</td>
</tr>
<tr>
<td>6</td>
<td>Garlic</td>
<td>Jeevamruta application for garlic production</td>
<td>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.</td>
</tr>
<tr>
<td>7</td>
<td>Cashew</td>
<td>Intercropping option in Cashew</td>
<td>Crops such as Turmeric, Ginger and Coleus were found suitable as intercrop during first six years in Cashew.</td>
</tr>
<tr>
<td>8</td>
<td>Turmeric</td>
<td>Performance of transplanted turmeric V/s direct sown turmeric</td>
<td>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.</td>
</tr>
<tr>
<td>9</td>
<td>Onion</td>
<td>Herbicides application pattern for weed management in drill sown onion</td>
<td>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.</td>
</tr>
<tr>
<td>10</td>
<td>Mango</td>
<td>Intercropping options in</td>
<td>For commercial production of mango under 8mt</td>
</tr>
<tr>
<td>SL.No</td>
<td>Crop</td>
<td>Title of the Experiment</td>
<td>Description of Technologies</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------</td>
<td>--------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>5</td>
<td>Mango</td>
<td>Mango cultivation</td>
<td>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 Pomegranate in initial five years of cultivation without damaging main crop and also getting highest return with good productivity.</td>
</tr>
<tr>
<td>11</td>
<td>Sapota</td>
<td>Intercropping options in Sapota cultivation</td>
<td>For commercial production of sapota under 8mt X 8mt spacing cultivation 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 Pomegranate in initial five years of cultivation without damaging main crop and also getting highest return with good productivity.</td>
</tr>
<tr>
<td>12</td>
<td>Passion fruit</td>
<td>AM fungi for rooting in Passion fruit</td>
<td>Application of five grams of <em>Glomus moniliformis</em> or <em>Glomus bagyarajii</em> culture below the cuttings before sowing enhanced per cent rooting, vigor of the seedling and number of roots per seedling in Passion fruit.</td>
</tr>
<tr>
<td>13</td>
<td>Oil palm</td>
<td>Weed control with new molecule- Indaziflam 500 SC against mixed weeds in Oil palm.</td>
<td>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.</td>
</tr>
<tr>
<td>14</td>
<td>Coconut</td>
<td>Nutrient management under coconut based cropping systems for different agro climatic regions</td>
<td>Growing of Lime, Drumstick, Banana, Cocoa as a intercrop in Coconut garden with application of organic recycling with vermicompost, vermiwash, biofertilizer, <em>in situ</em> green manuring &amp; 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.</td>
</tr>
<tr>
<td>15</td>
<td>Vegetable seeds</td>
<td>Seed treatment formulation using bio agents and signaling molecules to control seed borne and soil borne pathogens in vegetable seeds</td>
<td>Seeds of Tomato, Brinjal and Chilli bioprimed with liquid consortium (<em>Trichoderma + Pseudomonas putida</em>) for 6 hours has resulted in increased speed of germination, germination percentage, seedling length, seedling vigour index and per cent transplantable seedlings.</td>
</tr>
<tr>
<td>16</td>
<td>Cucumber</td>
<td>Production of Parthenocarpic cucumber production technique under polyhouse</td>
<td>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.</td>
</tr>
<tr>
<td>SL No</td>
<td>Crop</td>
<td>Title of the Experiment</td>
<td>Description of Technologies</td>
</tr>
<tr>
<td>-------</td>
<td>-----------</td>
<td>---------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>17</td>
<td>Pineapple</td>
<td>Osmo-dehydro product from Pineapple with fructose</td>
<td>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.</td>
</tr>
<tr>
<td>18</td>
<td>Sapota</td>
<td>Sapota Powder Mixture Cake</td>
<td>Submitted for patenting so that information is not given</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ENTOMOLOGY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Tomato</td>
<td>Bioformulations for management of early blight of tomato using defense activators</td>
<td>Bioformulations containing Pseudomonas fluorescence, chitosan (0.2%) and isonicotinic acid (150 ppm) was found effective in enhancing the diseased resistance and yield attributes of tomato against early blight of tomato.</td>
</tr>
<tr>
<td>20</td>
<td>Mango</td>
<td>Management of bark eating caterpillar in mango</td>
<td>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.</td>
</tr>
<tr>
<td>21</td>
<td>Sapota</td>
<td>Management of bark eating caterpillar in Sapota</td>
<td>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.</td>
</tr>
<tr>
<td>22</td>
<td>Ginger</td>
<td>Management of Ginger shoot borer in Humnabad Local variety</td>
<td>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.</td>
</tr>
<tr>
<td>23</td>
<td>Grapes</td>
<td>Fipronil 5 % SC @ 1.0 ml/l for management of thrips in Grapes</td>
<td>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.</td>
</tr>
<tr>
<td>24</td>
<td>Pomegranate</td>
<td>Chlorantraniliprole 18.5 SC against pomegranate fruit borer</td>
<td>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.</td>
</tr>
<tr>
<td>25</td>
<td>Cashew</td>
<td>Management of tea</td>
<td>Spraying of Acephate 75SP @ 1 g/l followed by</td>
</tr>
<tr>
<td>SL.No</td>
<td>Crop</td>
<td>Title of the Experiment</td>
<td>Description of Technologies</td>
</tr>
<tr>
<td>-------</td>
<td>--------</td>
<td>---------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>26</td>
<td>Guava</td>
<td>Management of Guava kajji bug</td>
<td>Application of two sprays of L-cyhalothrin (0.5 ml/l) when fruits are marble size and 15 days after first spray significantly effective for management of guava kajji bug as compared to Dimethoate 30EC @ 1.70 ml/l.</td>
</tr>
<tr>
<td>27</td>
<td>Tomato</td>
<td>New insecticides against <em>Helicoverpa armigera</em> Hübner in tomato</td>
<td>Spraying of Flubendiamide 39.35EC @ 0.1 ml/l spray at 30, 45 and 60 days after transplanting resulted in effective management of <em>Helicoverpa armigera</em> Hübner in tomato.</td>
</tr>
<tr>
<td>28</td>
<td>Tomato</td>
<td>Integrated management of tomato leaf miner</td>
<td>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 @ 2 ml/l, Chlorantraniliprole 18.5 SC @ 0.15 ml/l and Lambda cyhalothrin 5 EC @ 0.6 ml/l spray at 30, 45 &amp; 60 DAT respectively effectively controls the tomato leaf miner.</td>
</tr>
<tr>
<td>29</td>
<td>Coconut</td>
<td>Newer insecticides against red palm weevil</td>
<td>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.</td>
</tr>
<tr>
<td>30</td>
<td>Coconut</td>
<td>Olfactory conditioned larval parasitoid (<em>Goniozus nephantidis</em>) against <em>Opisina arenosella</em></td>
<td>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.</td>
</tr>
<tr>
<td>31</td>
<td>Coconut</td>
<td>Pheromone lures for management of rhinoceros beetle, redpalm weevil and black headed caterpillar in Coconut</td>
<td>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.</td>
</tr>
<tr>
<td>32</td>
<td>Coconut</td>
<td>Management of Coconut Black Headed Caterpillar in Coconut garden</td>
<td>Spraying of Chlorantraniliprole 18.5 SC% @ 0.10 ml/l or Dichlorovas 76 % EC 1 ml/l, Root feeding with Azadirachtin 5% @ 7.5 ml/palm at half yearly interval + PCI lure + Soil application of Neem cake 2.5 kg/palm/year + Four release of <em>Goniozus nephantidis</em> @ 20/palm at 15 days interval.</td>
</tr>
<tr>
<td>33</td>
<td>Coconut</td>
<td>INM package for management of eriophyid mite in coconut</td>
<td>1. Adoption of phytosanitary measures in coconut gardens</td>
</tr>
<tr>
<td>SL.No</td>
<td>Crop</td>
<td>Title of the Experiment</td>
<td>Description of Technologies</td>
</tr>
<tr>
<td>-------</td>
<td>----------</td>
<td>-----------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2.</td>
<td>gardens</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>3.</td>
<td>gardens</td>
<td></td>
<td>3. Recycling of biomass generated within the coconut system by vermicompost method or by using Lignin degrading fungus.</td>
</tr>
<tr>
<td>4.</td>
<td>gardens</td>
<td></td>
<td>4. Raising of green manure crops in the coconut basins (sunnhemp, cowpea, Calapagonium)</td>
</tr>
<tr>
<td>5.</td>
<td>gardens</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>6.</td>
<td>gardens</td>
<td></td>
<td>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)</td>
</tr>
<tr>
<td>34</td>
<td>Cabbage</td>
<td>Rynaxypyr for Cabbage diamond back moth management</td>
<td>Spraying of rynaxypyr 18.5 Sc @ 0.5 ml/l of water is effective against diamond back moth in cabbage.</td>
</tr>
<tr>
<td>35</td>
<td>Black pepper</td>
<td>Bio-inoculants for nursery production in Black pepper</td>
<td>For every 1 kg 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.</td>
</tr>
<tr>
<td>36</td>
<td>Coriander</td>
<td>Management of powdery mildew of Coriander</td>
<td>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.</td>
</tr>
<tr>
<td>37</td>
<td>Black pepper</td>
<td>Phosfik 8-Potassium Phosphonate for management of foot rot (Phytophthora capsici) of black pepper</td>
<td>Mono &amp; 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 (5-10l/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.</td>
</tr>
</tbody>
</table>
B3 iii) : Funds received through external competitive grants (Excluding ICAR development, KVK and AICRP grants)

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Title of the Project</th>
<th>Funding Agency</th>
<th>Year of Sanctioned</th>
<th>Budget alloted (Rs. In Lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Establishment of Centre for Research &amp; Development on Potato and Sweet potato under UHS-Bagalkot in collaboration with International Potato Centre</td>
<td>RKVY</td>
<td>2018-19</td>
<td>600.00</td>
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<td>2</td>
<td>Zero Budget Natural Farming (ZBNF)</td>
<td>Dept. of Agriculture</td>
<td>2018-19</td>
<td>341.00</td>
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<tr>
<td>3</td>
<td>An energy application in Horticulture</td>
<td>Pranic Healing Mysuru</td>
<td>2018-19</td>
<td>02.70</td>
</tr>
<tr>
<td>4</td>
<td>Production, Standardization and utility of organic neem seed production in north eastern transitional zone of Karnataka (Zone-1)</td>
<td>Zilla panchayat, Bidar</td>
<td>2018-19</td>
<td>05.00</td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
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<td><strong>948.70</strong></td>
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</table>
C2 : Extension workers award at State / National Level

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Name of the Scientist</th>
<th>Award</th>
<th>Sponsor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Dr. Vijaymahantesh, Asst. Professor of Agronomy, Directorate of Extension, UHS, Bagalkot</td>
<td>Dr. S. B. Dandin, Best Extension Scientist Award</td>
<td>UHS, Bagalkot during 10th Foundation Day on 22nd Nov, 2018.</td>
</tr>
</tbody>
</table>
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: 9480496387

C3: Quality input supplied by the University during 2018

CERTIFICATE

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.

<table>
<thead>
<tr>
<th>SI No</th>
<th>Particulars</th>
<th>Quantity (Nos./kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Seeds</td>
<td>9353.00</td>
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<tr>
<td>02</td>
<td>Planting materials</td>
<td>3533.00</td>
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<tr>
<td>03</td>
<td>Bio agents (kgs)</td>
<td>34600.00</td>
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<tr>
<td>04</td>
<td>Predators/Parasitoids (Nos)</td>
<td>155000.00</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>552326.00</strong></td>
</tr>
</tbody>
</table>

Director of Research
UHS, Bagalkot

Director of Research
University of Horticultural Sciences
Udyanaagiri, Navanagar
BAGALKOT-587103(Karnataka)
C4 : Soil sample

UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOT
Dr. N Basavaraja
Director of Research
Tel.No.08354-201353
Cell: 9480696387

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

CERTIFICATE

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.

<table>
<thead>
<tr>
<th>SI No</th>
<th>Samples analysed</th>
<th>Quantity (Nos.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Soil samples</td>
<td>80,700.00</td>
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<tr>
<td>02</td>
<td>Water samples</td>
<td>50,600.00</td>
</tr>
<tr>
<td>03</td>
<td>Plant samples</td>
<td>55,700.00</td>
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<tr>
<td></td>
<td>Total</td>
<td>1,87,000.00</td>
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</table>

Director of Research
University of Horticultural Sciences
Udyanagiri, Navanagar
BAGALKOT-587103(Karnataka)
C5 : Revenue Generated

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Total revenue generated</th>
<th>Total budget of university</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>55377000</td>
<td>787301000</td>
<td>07.03 %</td>
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</tbody>
</table>

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

UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOT

Office of the Controller, Udyamagiri, Navanagar, Bagalkot – 387 104
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.

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Revenue generated*</th>
<th>Amount in lakhs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Consultancies</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Certification</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Testing</td>
<td>8231000</td>
</tr>
<tr>
<td>4</td>
<td>Tuition fee</td>
<td>14651000</td>
</tr>
<tr>
<td>5</td>
<td>Licensing</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>Training</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>Sale of inputs</td>
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<tr>
<td>8</td>
<td>Commercialization of technologies</td>
<td>-</td>
</tr>
<tr>
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<td>Any other (Please specify)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td></td>
</tr>
</tbody>
</table>

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

CERTIFICATE

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


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


IV. Collaboration with IIHR, NRCs, AICRPs, SAUs, MIDH, NNM, NHB, Spice Board, NIBB, 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.
CERTIFICATE

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

<table>
<thead>
<tr>
<th>SL. No</th>
<th>Organizations</th>
<th>Areas of collaboration</th>
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<tbody>
<tr>
<td>1</td>
<td>K. J. Somatya Institute of Applied Agricultural Research, Samserwadi, Mudhol Tq., Bagalkot, District</td>
<td>Sugarcane based farming systems, and disease and pest management in sugarcane based agri-horti farming system</td>
</tr>
<tr>
<td>2</td>
<td>Hain Future Natural Products Pvt. Ltd., Gurgaon, Haryana</td>
<td>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)</td>
</tr>
<tr>
<td>3</td>
<td>Vanasara foods private limited, Udupi</td>
<td>Development/Popularisation, multiplication and seedling production of elite varieties of Jack fruit</td>
</tr>
<tr>
<td>4</td>
<td>Premanath agricultural Science foundation, United Nations (FAO)</td>
<td>Project on “Morphological and molecular diversity of south Indian lannaces of mangalore southekey (Cucumis melo var. crenonm)”</td>
</tr>
</tbody>
</table>
# C8 : Exchange of faculty

**UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOT**

Director of Extension  
Cell No. 9480596381  
E-mail: dir@uhsbagalkot.edu.in

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.

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of the Faculty</th>
<th>University/Organization</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Dr. S. Shashikumar</td>
<td>Karnataka Janpad Vishvidhyalay, Haveri, Karnataka</td>
<td>2017-2021</td>
</tr>
<tr>
<td></td>
<td>Associate Professor of Agril. Extension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Dr. Dinesh A Nagegowda</td>
<td>CSIR-CIMAPCentre, Allalasandra, GKV, Bengaluru</td>
<td>2018</td>
</tr>
<tr>
<td></td>
<td>Principle Scientist, Molecular Plant Biology and Biotechnology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Dr. M. K. Rajesh</td>
<td>ICAR- central Plantation Crops Research Institute Kasaragodu</td>
<td>2018</td>
</tr>
<tr>
<td></td>
<td>Principle Scientist Crop Improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Sreedhar, R. V.</td>
<td>CSIR-CFTRI, Mysuru</td>
<td>2018</td>
</tr>
<tr>
<td></td>
<td>Scientist and Assistant Professor Dept. of Lipid science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Dr. Preethi, P.</td>
<td>ICAR-Directorate of Cashew Research, Puttur-574202</td>
<td>2018</td>
</tr>
<tr>
<td></td>
<td>Scientist (Fruit Science)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Dr. Elain Apsara</td>
<td>ICAR- Central Plantation Crops Research Institute (CAR-CPCRI), Vittal, Bantwal Tq. Dakshina Kannada D.</td>
<td>2018</td>
</tr>
<tr>
<td></td>
<td>Principal Scientist (Horticulture-fruit Science)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Dr. Siddamma Savadi</td>
<td>ICAR-Directorate of Cashew Research, Puttur, Dakshina Kannada D.</td>
<td>2018</td>
</tr>
<tr>
<td></td>
<td>Scientist (Biotechnology)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Name</td>
<td>Designation/Institution/Role</td>
<td>University/Affiliation</td>
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<td>-----</td>
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<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>8</td>
<td>Dr. B.G. Humamatharaya,</td>
<td>Assistant Professor, Dept. of Horticulture,</td>
<td>University of Agricultural Sciences, GKVK, Bengaluru</td>
</tr>
<tr>
<td>9</td>
<td>Dr. G. C. Satisha,</td>
<td>Principal scientist (Soil Science), Division of Soil Science and</td>
<td>ICAR-IIHR, Hesaraghatta Lake post, Bengaluru-89</td>
</tr>
<tr>
<td></td>
<td>Principal scientist</td>
<td>Agricultural Chemistry,</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Dr. A.S. Gowda,</td>
<td>Professor and Head, Dept. of Plant Physiology,</td>
<td>College of Agriculture, JNKVV, Jabalpur-482004</td>
</tr>
<tr>
<td>11</td>
<td>Dr. N. M. Ganesh Babu,</td>
<td>Assistant Professor, T Plantation, Spices, Medicinal and</td>
<td>The University Trans-Disciplinary Health Sciences and</td>
</tr>
<tr>
<td></td>
<td>Plantation, Spices, Medicinal</td>
<td>Aromatic Crops</td>
<td>Technology (TDU), 74/2, Janakabande Kaval, Attur Post,</td>
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<td></td>
<td>and Aromatic Crops</td>
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<td>Yelahanka, Bengaluru-560064</td>
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<tr>
<td>12</td>
<td>Mrs. Nandini, D.</td>
<td>Consultant, Plantation, Spices, Medicinal and Aromatic Crops</td>
<td>The University Trans-Disciplinary Health Sciences and</td>
</tr>
<tr>
<td></td>
<td>Consultant</td>
<td></td>
<td>Technology (TDU), 74/2, Janakabande Kaval, Attur Post,</td>
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<td>Yelahanka, Bengaluru-560064</td>
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<tr>
<td>13</td>
<td>Dr. Shamusudheen</td>
<td>Mangalassery, Scientist (Soil science)</td>
<td>ICAR - Directorate of Cashew Research, Darbe (post), Puttur,</td>
</tr>
<tr>
<td></td>
<td>Mangalassery</td>
<td></td>
<td>Dakshina Kannada Dist.</td>
</tr>
<tr>
<td>14</td>
<td>Dr. M. Pappareddy,</td>
<td>Assistant Professor, Dept. of Genetics and Plant Breeding,</td>
<td>College of Sericulture, UAS, Bengaluru, Chintamani</td>
</tr>
<tr>
<td></td>
<td>Assistant Professor</td>
<td>Department of Genetics and Plant Breeding, College of</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sericulture, UAS,</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Dr. H P Maheshwarappa,</td>
<td>(Agronomy) Project Coordinator (Palms), All India Coordinated</td>
<td>ICAR Central Plantation Crops Research Institute,</td>
</tr>
<tr>
<td></td>
<td>(Agronomy)</td>
<td>Research Project on Palms, All India Coordinated Research</td>
<td>Kasaragodu, Kerala State</td>
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<tr>
<td></td>
<td>Project Coordinator (Palms),</td>
<td>Project on Palms,</td>
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<td></td>
<td>All India Coordinated</td>
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<tr>
<td></td>
<td>Research Project on Palms,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Dr. Basavaprahnu I. Patil,</td>
<td>Senior Scientist (Agri. Biotechnology),</td>
<td>Division of Biotechnology, ICAR-Indian Institute of</td>
</tr>
<tr>
<td></td>
<td>Senior Scientist</td>
<td></td>
<td>Horticultural Research (IIHR), Hesaraghatta Lake post,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bengaluru-560089</td>
</tr>
</tbody>
</table>

**DIRECTOR OF EXTENSION**

UHS, BAGALKOT

Director of Extension
U. H. S. Bagalkot
### C9 : Number of Enterprises / start-ups promoted by the University

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Company</th>
<th>Facility for incubation</th>
<th>Product details</th>
<th>Security deposit</th>
<th>Occupant pay / Per Month</th>
<th>Royalty</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>M/s. Krishi Biosys, Bengaluru</td>
<td>Biological control laboratory, DR Office, UHS, Bagalkot</td>
<td>Trichoderma harzianum, Trichoderma viride, Pseudomonas fluorescens, Paecilomyces lilacinus, Pochonichlamydosporia, Arka KrishiAll-rounder</td>
<td>25,000</td>
<td>5,000</td>
<td>3%</td>
</tr>
<tr>
<td>2.</td>
<td>Natura Crop Care, Bengaluru</td>
<td>Biological control laboratory, DR Office, UHS, Bagalkot</td>
<td>Dharakshak, Dundanu Rakshak, Tricho Kavach</td>
<td>25,000</td>
<td>8,000</td>
<td>3%</td>
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<tr>
<td>3.</td>
<td>M/s. Agri. Bio Solutions, Bengaluru</td>
<td>Biological control laboratory, DR Office, UHS, Bagalkot</td>
<td>Arka Banana Special, Arka Vegetable Special, Arka Mango Special, IISR Ginger Rich, IISR Pepper Special, IISR Cardamom Special</td>
<td>25000</td>
<td>5,000</td>
<td>3%</td>
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<tr>
<td>4.</td>
<td>Natura Crop Care, Bengaluru</td>
<td>Haveli Farm UHS, Bagalkot</td>
<td>Arka Microbial Consortia liquid, Arka Microbial Consortia powder, Decomposer, Arka Neem soap, Arka Pongamia soap, Arka citrus special, Pheromone trap</td>
<td>-</td>
<td>-</td>
<td>3%</td>
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### C10 : Percentage of Students employed in public / private / banking sector

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of the College</th>
<th>Teaching</th>
<th>Banking</th>
<th>ICAR</th>
<th>NGO</th>
<th>Higher Edu.</th>
<th>Self Employed</th>
<th>Others</th>
<th>Teaching</th>
<th>Banking</th>
<th>ICAR</th>
<th>NGO</th>
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<th>Self Employed</th>
<th>Others</th>
<th>Total</th>
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<td>1.</td>
<td>COH, Bagalkot</td>
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<td>33</td>
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<td>02</td>
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<td>2.</td>
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<td>-</td>
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<td>COH, Munirabad</td>
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<td>-</td>
<td>-</td>
<td>06</td>
<td>07</td>
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<tr>
<td>6.</td>
<td>COH, Kolar</td>
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<td>07</td>
<td>09</td>
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<td>-</td>
<td>04</td>
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<td>7.</td>
<td>COH, Bidar</td>
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<td>-</td>
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<td>08</td>
<td>-</td>
<td>01</td>
<td>-</td>
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<td>2</td>
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<td>8.</td>
<td>KRCCH, Arabhavi</td>
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</table>

**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