

Department of Horticulture

College of Agriculture G.B. Pant University of Agriculture & Technology Pantnagar-263145, Uttarakhand Achievements

Faculty awards/honours:

The competent faculty has been awarded with various awards like, Rafi Ahmed Kidwai award, Shanti Swarup Bhatnagar award, Hari Om Ashram trust award, Jawahar Lal Nehru award, Dr. Rajendra Prasad award and the Best Citizens of India award

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| • Rafi Ahmed Kidwai Award | Dr. Sant Ram |
| • Shanti Swarup Bhatnagar Award | Dr. Sant Ram |
| • Hari Om Ashram Trust Award | Dr. Sant Ram |
| • ICAR Team Award | Dr. J.P. Tiwari |
| • Jawahar Lal Nehru Award for outstanding PG Research | Dr. L.D. Bist |
| • Jawahar Lal Nehru Award for outstanding PG Research | Dr. R.L. Arora |
| • Dr. Rajendra Prasad Award for Book | Dr. Sant Ram |
| • Dr. Rajendra Prasad Award for Book | Dr. K.K. Misra |
| • The best citizens of India award | Dr. K.K. Misra |

Distinguished Scientist Award

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| • Gold Medal of the Academy of Plant Sciences, India | Dr. Ganesh Kumar |
| • Govind Ballabh Pant Medal of Pantnagar | Dr. Sant Ram |
| • Dr. Ranjan Srivastava was awarded Netherlands Government Fellowship award (Nuffic) | |
| • Dr. Shant Lal, Professor, Horticulture as member Research Advisory Committee of the CISH, Lucknow. | |
| • Dr. Ranjan Srivastava was awarded Fellow, Hill Horticulture Development Society, India | |
| • Dr. Prabhat Kumar Asstt. Prof., Horticulture awarded with DR. AMBEDKAR YOUNG FELLOW AWARD 2010 by Scientific & Applied Research Centre, Meerut. | |
| • Dr. Prabhat Kumar Asstt. Prof., Horticulture awarded with ISOH-Fellowship | |
| • Dr. Prabhat Kumar Asstt. Prof., Horticulture honoured as Editor, Progressive Horticulture and Annals of Horticulture. | |
| • SDSH fellow Award 2011 by CISH, Lucknow | Dr. C.P. Singh |
| • Award of appreciation under AICRP- Sub tropical fruit | Dr. A.K. Singh |
| • Best Teacher Award to Dr A.K. Singh | |
| • Dr. Santosh Kumar ISOH Fellowship award for outstanding contribution to horticulture with special reference to floriculture by Indian Society of Ornamental Horticulture at NAU, Navsari, Gujrat on the occasion of National workshop on Floral Craft held on April 21, 2012. | |
| • Dr. Ranjan Srivastava Best paper presentation award in National Seminar on Protected Cultivation of Vegetables and Flowers- A Value Chain Approach” organized by department of Vegetable Science, G.B.P.U.A. & T., Pantnagar. From 11-12 January, 2012. | |
| • Dr. K.K Misra was Awarded by “Fellowship of Horticultural Society of India”, 2013. | |

- Dr. Ranjan Srivastava is Nominated as Member (Expert) of State Level Finance Committee of National Horticulture Board
- Dr. D. S. Mishra and Dr. R.L. Lal were appreciated by Director NRC-Litchi, Muzaffarpur for successful organizing the visit of QRT of Litchi.
- Dr. V.P. Singh received Young Scientist Award during National Conference on Emerging Problems and Recent Advances in Applied Sciences: Basic to Molecular Approaches held at Ch. Charan Singh University, Meerut (U.P.) w.e.f. Feb. 8-9, 2014.

Varieties released

- Lemon - Pant Lemon-1
- Papaya - Pant Papaya-1 and Pant Papaya-2
- Bael - Pant Shivani
- Guava - Pant Prabhat
- Pear - Pant Pear-3 and Pant Pear-17
- Karonda - Pant Manohar
- Peach - Pant Peach-1
- Plum - Pant Plum-1
- Gladiolus - Shubhangini

Text books:

- Mishra, K.K.. 2012. Phal Utpadan. Fifth edition.
- Singh, C.P., Singh, P.K., and Mishra, D.S. 2012. Advances in Precision HORTICULTURE. PFDC, GBPUAT, Pantnagar. 100p.
- Singh, A.K., Singh, C.P., Chauhan,P. and Dhama, V. 2012. Naye bagon ki sthapna avam prabandhan. Vikrant Offset, Haldwani. 18p.
- Tripathi, Shailesh and Dev, R. 2012. Medicinal Coeus- A remunerative crop of Indian Origin. LAP LAMBERT Academic Publishing Gmb H & Co. Germany CISBN: 978-3-659-10381-0.
- Misra, K.K. and Mishra, N.K. 2014. Social and Farm Forestry in India. Agro India Publications, Allahabad.
- Misra, K.K. 2014. Text book of Advance Pomology. Biotech Books, New Delhi
- Singh, D., Singh, C.P., Singh, A.K., Maurya, S.K., Arora, Indu and Dhama, Vandana. 2013. Proceeding: National workshop cum seminar on use of plastic in horticulture. Vikrant offset, Haldwani. 208 pp.
- Mishra, D.S., Singh, C.P., Singh, P.K., Singh, D, Singh, V. P. and Dhama, V. 2014. Recent Plasticsulture Approaches Towards Precision Horticulture. Vikrant offset, Haldwani. 178 pp.
- Singh, C. P., Lal, S., Kumar, S. and Mishra, D. S. 2013. Hi-tech Technologies for enhancing Productivity, Nutritional quality and value addition in fruits and flower production. Deptt. of Horticulture, GBPUAT, Pantnagar. pp 245.
- Misra, K.K. 2013. Bag Prabandh. I.C.A.R., New Delhi.
- Mishra, N.K., Misra, K.K. and Satish Chand. 2013. Aushdhiya Paudhe. Biotech Books, New Delhi.
- Mishra, D.S., Kumar, P. and Dohre, V. K. 2010. Neebu Vargeeya Phalon Ki Utpadan Takneek,, Directorate of Extension, GBPUAT, Pantnagar, p.20.
- Kumar, P., Dohrey, V.K., Umrao, V.K. and Rathore, A.C. 2010. Vaivharik Puspotpadan. Directorate of Extension, GBPUAT, Pantnagar, p.111.

- Tiwari, S.K., Rajesh Kaushal, V.K. Doharey, Prabaht Kumar and P.M. Dhakatey 2010. Kisanopayogi Krishivaniki Vriksha Prajatiyo Ka Vaivaharik Utpadan. Directorate of Extension, GBPUAT, Pantnagar, p.111
- Singh, P.N. and Bist, L.D. 2011. Seb. Publ.Univ. Press, Pantnagar, pp.22.
- Singh, P.N., Chakraborty, B. and Parihar, V.B.S. 2011. Aadu. Publ.Univ. Press, Pantnagar, pp.20.
- Misra, K.K. 2011. Subtropical Fruit Culture. Kalyani publishers, Ludhiana, 521p.
- Phal Utpadan. Fifth edition. 2012. Edited by K.K. Mishra.
- Singh, C.P., Singh, P.K., and Mishra, D.S. 2012. Advances in Precision HORTICULTURE. PFDC, GBPUAT, Pantnagar. 100p.
- Tripathi, Shailesh and Dev, R. 2012. Medicinal Coeus- A remunerative crop of Indian Origin. LAP LAMBERT Academic Publishing Gmb H & Co. Germany CISBN: 978-3-659-10381-0.
- Misra, K.K. and Mishra, N.K. 2014. Social and Farm Forestry in India. Agro India Publications, Allahabad.
- Misra, K.K. 2014. Text book of Advance Pomology. Biotech Books, New Delhi
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- Mishra, D.S., Singh, C.P., Singh, P.K., Singh, D, Singh, V. P. and Dhama, V. 2014. Recent Plasticulture Approaches Towards Precision Horticulture. Vikrant offset, Haldwani. 178 pp.
- Singh, C. P., Lal, S., Kumar, S. and Mishra, D. S. 2013. Hi-tech Technologies for enhancing Productivity, Nutritional quality and value addition in fruits and flower production. Deptt. of Horticulture, GBPUAT, Pantnagar. pp 245.
- Misra, K.K. 2013. Bag Prabandh. I.C.A.R., New Delhi.
- Mishra, N.K., Misra, K.K. and Satish Chand. 2013. Aushdhiya Paudhe. Biotech Books, New Delhi.
- Lal, R.L.; Lal, Shant, Shukla, P. Uniyal, S. 2012. Litchi. Directorate of Experiment Statio. GBPUAT, Pantnagar. 18p.
- J.P. Tiwari and Ranjan Srivastava 2006. (Eds) Integrated Crop Management in Subtropical Fruits. Agrotech Publishing Academy, Udaipur
- Srivastava, Ranjan, Ram Chandra and Singh, Babita. 2008. “व्यावसायिक फूलों की उन्नत खेती” SEMITI, Uttarakhand, Directorate of Extension, Pantnagar
- Anil Kumar, Ranjan Srivastava and B.R. Singh (Eds). 2009. Padap Vridhi Niyamak- Kab, Kyu aur Kaise

Lab manual:

- Plant Propagation and Nursery Husbandry: Ranvir Singh & C.P. Singh
- Fundamentals of Horticulture : J.P. Tiwari, K.K. Misra, R.L. Lal & P.N. Rai
- Ornamental Horticulture: K.K. Misra, Santosh Kumar, Shant Lal, Ranjan Srivastava
- Fruit and Plantation Crops: L.D. Bist

Technical Bulletin:

- संतोश कुमार, सी0पी0 सिंह, बिनायक चक्रवर्ती एवं वन्दना धामी, गुलाब की संरक्षित खेती
- संतोश कुमार, सी0पी0 सिंह, एवं वन्दना धामी झरबेरा की संरक्षित खेती
- संतोश कुमार, सी0पी0 सिंह, एवं वन्दना धामी ग्लैडियोलस की खेती

Research papers:

Research Papers (number during last 5 years)

	YEAR				
	2010-11	2011-12	2012-13	2013-14	2014-15
No of papers	40	38	37	30	26

Students awards/achievements:

- Ms Meenakshi Basoli awarded with ICAR-SRF.
- Fifteen students of the department cleared the NET/ASRB-2010 examination
- Mr. Vikas Yadav selected as Development Officer in Tea Board of India under ministry of Commerce and Industry.
- Mr. Veer Bhadra Singh Parihar selected as Forest Ranger through MPPCS.
- Mr. Ravi Kumar Maurya, Mr. Pramod Kumar Yadav and Mr. Himanshu Ghildiyal were selected as Agriculture Officer in Oriental Bank of Commerce.
- Mr. Deepak Chandra Kapri selected as Agriculture Officer in Corporation Bank.
- Dr Babita Singh qualified ARS services
- Dr Gaurav Sharma selected as Assistant Professor, IGAU, Raipur
- 11 students of the department qualified for National eligibility test conducted by ASRB.
- One student selected for Senior research Fellowship.
- One student selected for DST Scholarship and one for Rajiv Gandhi National Fellowship.
- Four students have been selected for Banks as Agriculture Officer.
- Seven students of this department have been selected for Assistant Agriculture Officer in Uttarakhand PCS.
- Dr. Rajkumar and Mr. Rahul Dev selected as ARS-2012
- 9 students of the department selected as Assistant Agriculture Officer-PCS Uttarkhand
- Dr. Vikas Yadav selected as Asstt. Ag. Marketing Advisor-PCS UP.
- Mr. Vir Bhadra Singh Parihar selected as Forest Ranger
- Mr. Vishal Mehandiratta and Mr. Deepak Chandra selected as Agriculture Officer in Corporation Bank
- Mr. C. P. Jain selected as Agriculture Officer in Union Bank of India
- Mr Sanjeev Miglani selected as Agriculture Officer in Allahabad Bank.
- Mr Laishram Hemanta, Ph.D. student has been selected as Assistant Professor in Central University, Nagaland and Four students of the department selected as Agriculture Officer in National Banks

Significant contribution (National/state level):

RESEARCH ACHIEVEMENTS

- High density orcharding, control of biennial bearing in mango, crop regulation in guava, use of growth regulators in pear, control of fruit cracking and post harvest management in litchi, pollinizers in lemon, peach, pear and plum, standardization of micropropagation protocols in many horticultural crops, standardization of leaf sampling techniques in crops, etc
- Project: Quality flower seed production in marigold, Antirrhinum and statice.
 - Establishment of nursery block and seedlings of different crops were done at Model Floriculture Centre and MRDC to maintain isolation distance.

- Seeds of all the crops have been produced using standard agro-techniques.
- Seed harvesting, drying, packing and storage of seed have been done.
- Production of more than 40 kg Pusa Narangi Gainda seed and 04 kg Antirrhinum and static seed in 2006-07 against the total target of 43 kg.
- More than 200 farmers of Uttarakhand and Uttar Pradesh are provided with the seed material of marigold for commercial cultivation.
- Project: All India Coordinated Floriculture Improvement Project – Pantnagar
 - As many as 83 cultivars belonging to Hybrid Tea, Floribunda and Miniature roses have been collected from different parts of the country and are being maintained at Model Floriculture Centre.
 - Breeding and testing of new cultivars for cut flowers for domestic use and export (testing only)
 - Genotype Lady-X exhibited maximum plant spread (92.70 cm).
 - Pusa Gaurav was earliest to enter reproductive stage.
 - Genotype Super Star exhibited maximum flower diameter (10.35 cm).
 - Genotype Ranisahiba produced maximum number of petals/flower (50.62).
 - During first flush, cultivar Arjun produced maximum number of flowers (11.22).
 - Genotype Raktagantha had maximum shelf life of 14.06 days.
 - In Laher variety, 50% Recommended Dose of fertilizers + Vermicompost (500 g/m² + 3% Manchurian Tea + 3% Panchyagavya resulted in maximum plant height, length of primary branch, total number of branches and total number of leaves.
 - In Laher variety, 50% Recommended Dose of fertilizers + 3% Manchurian Tea + 3% Panchyagavya showed maximum number of flowers per plant, flower length and flower stem length.
 - In Laher variety, Common Basal Dose + 3% Manchurian Tea + 3% Panchyagavya resulted in maximum plant spread, length and diameter of secondary branches.
- Project- Multiplication of quality planting materials of Jackfruit
 - 1500 air layered plants have been multiplied.
 - About 6000 inarched plants of jackfruit will be ready up to July 2012.
 - About 8000 seedling are been raised for grafting purpose.
- Project- Technology Transfer of Crop Regulation in Guava
 - Guava orchards selected for demonstration of crop regulation technique in guava
 - Imposed seven demonstration at various places of district U.S. Nagar, Nainital, Haridwar and Dehradun.
 - Visited selected orchards for inspection of demonstrations
 - One day training was organised at HRC, Patherchatta, on “Quality production of guava on November, 2, 2011” in which 35 participant were participating from various locality.
- In totality 202 germplasms/accessions are being maintained at HRC, Patharchatta GBPUA&T, Pantnagar centre, out of the total germplasm, 15 accessions were collected from HETC, Saharanpur and CISH, Lucknow
- The potential areas of Uttarakhand have been surveyed and being surveyed for selection of superior seedlings of mango. Eight (8) mango superior seedlings (as PMSS-1 to PMSS-8) have been identified and being observed at farmer’s field for collection of its bud wood.
- Two superior clones of Dashehari (PMCS-1 and PMCS-2) have been identified and being observed.
- Under the trial testing of two superior clones of Dashehari it has been observed that the “Dashehari-51” performed well.
- In totality twelve new hybrids/selections and two exotic varieties (Mohmood Bahar, A.U. Rumani, Swaran Jahangir, Neeluddin, Neeleshan, Neelgoa, Sindhu, Ratna, Arka Nilkiran, Ambica, Arunika, Tomy Atkins, Eldon, Pusa Arunima and Pusa Surya)of mango have been collected.

- Under the trial planting system cum high density planting the Double Hedgerow system of planting is found suitable for higher fruit yield (per hectare basis) with maintained quality and shelf life of fruits.
- Under the trial Pruning for rejuvenation for over crowded orchards, the maximum yield plant-1 with maintained quality was found with the treatment of 20 cm heading back of terminal shoots, biennially and immediately after fruit harvest, whereas the fruit quality was observed better with no pruning and application of paclobutrazol.
- The treatment of K_2HPO_4 (1%) + Thiourea (1%) found effective for increasing the annual growth, internodal length and panicle length of mango. Whereas, the treatment of K_2HPO_4 @1% + KNO_3 @1% proved very effective for increasing the percentage of flowering shoot, hermaphrodite flowers, fruit set, yield and quality.
- The Pre-harvest application of borax @ 1.0 % + mulching proved very effective for increasing fruit weight, yield and quality of mango fruits, whereas the reduced physiological loss in weight and more marketable fruits were observed with the treatment of $CaCl_2$ (6%) + mulching.
- The treatment of boric acid @ 0.02 % + sorbitol @ 2.0 % was found very effective for increasing the fruit set, yield and quality of mango fruits.
- Root training in litchi: after separation from mother plants, air layers were subjected to root training by planting in root trainers which produced thinner first order lateral roots and resultantly enhanced survival of air layered plant in the field.
- Planting system: Doble hedge row sytem of planting (222 plants/ha) was found to be high yielding (117 q/ha) in litchi in comparision to traditionl planting system i.e. square system (100 plants/ha) which produced 65 q fruits per ha. Guava is pruning responsive crop, therefore, coming up well under duble hedge row (453 plants/ha) system of planting (344 q/ha) as compared to square(204 plants/ha) system (215 q/ha).
- Crop regulation: Crop regulation technique for taking winter season crop of guava through shoot pruning (One leaf pair pruning) is imposed during last week of April to first week May. Application of Paclobutrazol (1ml/meter of canopy) has produced regular crop of irregular bearing Dashehari mango while in case of litchi pruning of bearing branches along with removal of new flushes in Nov.-Dec. produced a crop of good harvest.
- Rejuvination of old and senile orchards: Rejuvenation of old and unproductive orchards of mango and litchi have been standardized.
- Extending harvesting period of litchi: Harvesting period of litchi is quite short, 7 to 10 days. Foliar spray of GA 20 and 40 ppm delayed the harvest date for 2 and 5 days respectively while BA (20 and 40 ppm) delayed the harvest date for 5-6 days when sprayed 15 days before harvest.
- Meadow orcharding in guava: Newly planted meadow orchard of Pant Prabhat guava spaced at 2x1 (5000 plants/ha) and 2x2 (2500 plants/ha) is coming up well.