भाकृ अनुप
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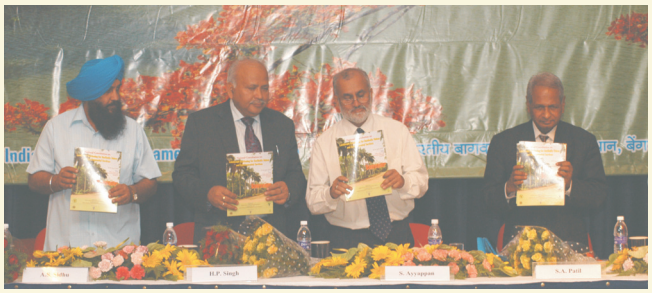
HIGHLIGHTS

EVENTS

National Consultation on Landscape Gardening for Aesthetic Values and Environmental Services - 2010

The Indian Institute of Horticultural Research, Bangalore and Indian Society of Ornamental Horticulture, New Delhi jointly organized a National Consultation on Landscape Gardening for Aesthetic Values and Environmental Services – 2010 on April 29-30, 2010 at the Indian Institute of Horticultural Research, Bangalore for an in depth discussion on the emerging challenges and opportunities with an objective of getting insight for augmenting landscape gardening on scientific lines. Dr. S. Ayyappan, Secretary DARE & DG, ICAR, New Delhi inaugurated the National Consultation.



Dr. Ayyappa releasing the Souvenir. Dr. A.S. Sidhu, Dr. H.P. Singh and Dr. S.A. Patil are also seen

Addressing the participants Dr. Ayyappan emphasized the need of scientific research in landscape gardening which is emerging as a new and dynamic field. Presiding over the function, Dr. H..P.Singh DDG (H), ICAR, New Delhi delivered the Key Note address and enumerated the importance and scope of landscape gardening in today's changing life styles and it's aesthetic values in the physical and spiritual wellbeing of human kind. Dr. S.A. Patil, Former Director, IARI, New Delhi and presently the Chairman, Karnataka Agricultural Mission, Bangalore was the Guest of Honour. Dr. A. S. Sidhu, Director, IIHR, Bangalore welcomed the guests and the participants. More than 150 participants representing leading national floricultural organizations, scientific community, nursery industries, builders, developers, entrepreneurs, progressive farmers, students and an international delegate participated

Dr. Ayyappan planting a tree sapling at IIHR Campus

in the event. Dr Ayyappan presented the Lotus Puraskar to Dr. Ramesh Kumar, PAU, Ludhiana for his significant contribution to the field of ornamental horticulture and Rose Puraskar to Dr. N.B.Gaddagimath, MD, Sarpan Hybrid Seeds Pvt. Ltd., Dharwad for his significant contribution to the field of Floriculture industry instituted by the Indian Society of Ornamental Horticulture, New Delhi. Dr. C. Aswath, Dr. T. Manjunath Rao and Dr. Sangama, IIHR, Bangalore were inducted as Fellows of the Indian Society for Ornamental Horticulture for the year 2010.

Group Discussion on Whiteflies

A one day Group Discussion on Whiteflies was organized under the ICAR funded project, 'Out Reach Programme on Sucking Pests of Horticultural Crops' jointly with the Association for Advancement of Pest Management in Horticultural Ecosystem (AAPMHE), Bangalore on the May 17, 2010 at the Indian Institute of Horticultural Research, Hessaraghatta, Bangalore.

Dr. Vasantaraj David being falicitated

More than 65 entomologists from networking centers of the Out reach programme, ICAR institutes, State Agricultural Universities and representatives from private sector and students actively participated in the deliberations.

Status papers on the on going research in the areas of whitefly species complex, diversity, molecular systematics,

biotypes, endosymbionts, ecology, physiology, whitefly transmitted plant viruses and IPM were delivered by experts working on whiteflies. Deliberations and discussions were also held on emerging issues, gap identification and strategies to manage the pest. Dr. Vasantaraj David, a renowned entomologist who worked on whiteflies for over five decades was felicitated by the AAPMHE, Bangalore on the occasion.

Demonstration of Self Propelled Harvesting cum Pruning Platform

A field demonstration was organized on May 27, 2010 to demonstrate the Self Propelled Harvesting cum Pruning Platform Machinery, imported from Israel by the National Horticulture Board, Gurgaon and supplied to IIHR, Bangalore for rejuvenation of senile orchards of mango as per the recommendation made in a meeting held on May 11, 2010 with Dr. Avri Bar Zur, Counsellor International Cooperation ,(Mashav) Science & Agriculture, Embassy of Israel , National Horticulture Board and Department of Horticulture, Tamil Nadu that IIHR and The Embassy of Israel will identify the areas of interest for mutual cooperation in development of horticulture in India. The machine will be supplied to Krishnagiri and Chennai, Tamil Nadu for demonstration of pruning for rejuvenation of senile orchards. Accordingly the machine was demonstrated in a field day attended by more than 200 progressive farmers from Karnataka and Tamil Nadu, at IIHR, Bangalore.

Demonstration of self propelled harvesting cum pruning platform

Addressing the farmers on the occasion, Dr. H.P.Singh, Deputy Director General (Horticulture), Indian Council of Agricultural Research, New Delhi stressed upon the necessity of pruning for rejuvenation of old senile orchards and Dr. YTN Reddy, Principal Scientist, Division of Fruit Crops, IIHR, Bangalore explained the protocol of pruning for rejuvenation. Shri, Bijay Kumar, MD, NHB, Gurgaon explained the various schemes available for the farmers from NHB. Shri. S.C.Mandhar, Principal Scientist, Agricultural Engineering, IIHR, Bangalore explained the need of mechanization of horticultural operations to save labour, cost and for timely operation. The machine was also demonstrated to the farmers by pruning the old senile mango orchards at IIHR, Bangalore.

XI Group Meeting of Mushrooms

The XI Group meeting of the workers of All India Co-coordinated Research Project on Mushrooms was held at the Indian Institute of Horticultural Research, Bangalore on May 31- June1, 2010. The Group Meeting was inaugurated by Dr. Hans Raj Bharadwaj, His Excellency the Governor of Karnataka. Addressing the gathering, Dr. Bharadwaj stressed the need to formulate alternative horticultural strategies like mushroom cultivation which can play a pivotal role in converting the colossal amount of agricultural waste generated in the country into a protein rich food. He also emphasized on the urgent need to diversify agricultural/ horticultural activities to generate employment particularly in rural areas in which mushroom production can play an important role to provide valuable nutrition with medicinal values.

Dr. H.P. Singh, DDG (Hort.), ICAR, New Delhi chaired the function and delivered the Key note address. In his address, Dr. Singh emphasized on the role of mushrooms in agro waste management, betterment of nutrition, generation of employment and betterment of environment.

Dr. H.R. Bharadwaj, H.E. releasing a publication, Mrs. Prafulata Bharadwaj, the First Lady is also seen

Dr. Hans Raj Bharadwaj also released a publication entitled 'Utilization of spent mushroom substrate' and Mrs. Prafulata Bharadwaj, the First Lady, released the 'Annual Report 2008-09' of AICRP on Mushroom. A publication entitled 'Cultivation technology of Reishi mushroom (*Ganoderma lucidum)*' was released by Dr. H.P.Singh on the occasion. In the beginning Dr. A.S. Sidhu, Director, Indian Institute of Horticultural Research, Bangalore welcomed the guests followed by presentation of a brief overview of AICRP (Mushroom) by Dr. Manjit Singh, Director, Directorate of Mushroom Research, Solan.Twenty participants from 16 states and four mushroom growers from four states attended the workshop. The function ended with vote of thanks by Dr. Umesh Srivastava, ADG (Hort.) New Delhi.

Dr. R.P. Singh presenting a lead paper

The workshop was followed by National seminar on 'Research and Development Status of Mushrooms in India' on June 2, 2010. The seminar was chaired by Dr. Amrik Singh Sidhu, Director, IIHR, Bangalore. Lead talks on 'Present status and future prospects of mushroom research in India by Dr. R.P. Tewari, Former Director, DRM, Solan, 'Medicinal

mushrooms' by Dr. R.P. Singh, President, Mushroom Society of India and 'Strategies to enhance consumption of mushrooms in India' by Dr. Manjit Singh, Director, DRM, Solan were presented. The seminar was concluded with the formulation of recommendations pertaining to the enhancement of consumption, production and diversification of mushrooms in India.

Celebration of World Environment Day

With the basic objective of making people aware of the worldwide environmental upheavals and focus the attention and action of everyone towards environmental conservation, June 5 of every year is observed as World Environment Day and the United Nation has appealed world wide to all the governments, NGOs and people at large to celebrate World Environment Day by organizing various promotional activities and programmes. IIHR, Bangalore celebrated World Environment Day on June 4, 2010 by planting tree saplings in the Field Gene Bank of RET at its Hessaraghatta campus. Dr. T. Vasantha Kumar, Principal Scientist, Section of Medicinal Crops, briefed the gathering about the theme of this year's World Environment Day.

Dr. N. Ramachandran, Director in Charge, IIHR, Bangalore was the Chief Guest and spoke about the need of tree planting to sustain the environment. Later the staff members gathered at the function took up mass tree planting.

Dr. N. Ramachandran planting tree sapling in the Field Gene Bank of RET at institute campus

The Krishi Vigyan Kendra, Hirehalli, Tumkur organized the World Environment Day on June 5, 2010 by planting the trees in the campus and organizing popular lectures on the theme. All the staff members of the Kendra, around 15 progressive farmers and students participated in the event.

RESEARCH

1. New Varieties/Hybrids/Selections

The following varieties/hybrids developed at the IIHR, Hessaraghatta, Bangalore have been identified for release at the Institute level.

i) Arka Swadishta a white onion (WPL- 434) suitable for lactic acid fermentation/ fermented preservation has been developed. It has TSS 20%, dry matter content 19%, uniform white, oval globe shape, edible bulb 98.32%, weight 35-40g, diameter 3.5 cm, bulb yield 18 t/ha, and duration 105 days.

ii) Arka Ujjwal is a seed propagated improved multiplier onion line MLT -436 developed by the institute. It gives bulb yield of 25 t/ha, bulb weight 45g, compound bulb diameter 5 cm, number of bulblets 3-4/ bulb and duration 85 days. It has TSS 18% and dry matter conten19%. It has dark red bulb colour.

The following varieties developed at the Central Horticultural Experiment Station, Bhubaneswar have been identified for release at the Institute level.

iii) Arka Neelachal Kunkhi (CHIG-15): A promising genotype of ivy gourd for salad purpose has sequential fruiting habit and fruit develops by means of vegetative parthenocarpy. Hence, there is no need of male plants for pollination and more number of female plants can be accommodated per unit area. A single plant produces yield of 20 kg fruits in one growing season.

iv) Arka Neelachal Sabuja (CHIG-33): A high value culinary variety of ivy gourd has dark green fruits which store well for 2-3 days and can withstand transport shock also. The plants are vigorous and produce high yield. The fruits contain high pulp and soft seeds

v) Arka Neelachal Kirti (CHPG-15): A high yielding pointed gourd variety with solid core, weighs 45-50 g at appropriate harvesting stage and one plant produces more than 28 kg fruits in one season of 10-11 months. With better management practices, 50-60 tonnes/ha fruit yield (2500 plants/ha) can be obtained.

vi) Arka Neelachal Shree (CHSG-28): An elegant spine gourd variety, is high yielding (4-5kg/plant). This variety has good appearance and high market preference. The vine of this variety is thin and spreading which grows very well on three line wire trellis system.

vii) Arka Neelachal Gaurav (CHTG-2): A soft seeded teasel gourd variety has dark green, oval fruits with small spines. The fruit measures 6.0cm long and 3.8cm thick (diameter at centre) with an average 50g fruit weight. The plant produces 230-250 fruits in full cropping season with sufficient pollination. The variety needs hand pollination for assured yield which varies between 12-15kg per plant per year.

viii) Arka Neelachal Kesri (CHM-7): An early maturing mango clone has been identified for extra early fruit maturity by March 20, attractive yellow colour with red blush on the shoulders, very good fruit yield (70-110kg/plant) and freedom from fruit fly under coastal Orissa condition. The fruit weighs 200-250 gm, pulp content 50-52% and TSS of 18-22^0 Brix

2. Registration of lines

- Three unique rose advance lines, viz., IIHRP-2-28-1, IIHRP-3-18-2 and IIHRP-13 were registered with NBPGR, New Delhi. These lines have been provided with national identity IC0584135, IC0584136, IC0574579 and registration number INGR10070, INGR10071 and INGR10072 respectively.
- Three promising gladiolus hybrid selections viz., IIHRG-5 -florets purple with pale yellow blotch IC0584125 (INGR10067), IIHRG-9- florets slightly ruffled, yellow with red blotch IC0584126 (INGR10068), IIHRG-10 – florets red (46.D) having red (45.B) margin and white (155.B) line on tepals with yellow (2.C) blotch IC0584127 (INGR 10069) were registered with NBPGR, New Delhi .

HUMAN RESOURCE DEVELOPMENT

Post Graduate Education

- Dr. Manjunatha Rao, T., Principal Scientist (Hort) and Dr. Dhananjay, M.V. Scientist, Senior Scale, have been recognized as Chairman and member respectively in the Advisory Committee of the post graduate student, Mr. Varun S. Amingad (PHK 907), M..Sc. (Hort.) in Floriculture and Landscape Gardening, Dept. Horticulture, UAS, G.K.V.K., Bangalore.
- Dr. Sujatha A. Nair, Senior Scientist has been recognized as a PG Teacher in the Department of Horticulture by the UAS, Bangalore.

Training of IIHR Staff

Abroad

- Dr. K.S. Shivashankara, Senior Scientist, Division of Plant Physiology and Biochemistry, was deputed to Canada for training from March 01-May 31, 2010 under NAIP on Nutraceuticals (Horticulture**)** at Lethbridge research centre, Agriculture and Agri food Canada, Lethbridge, Canada.
- Dr. M.R. Dinesh, Principal Scientist, Division of Fruit Crops was deputed to Peoples Republic of China to participate in the IX International Mango Symposium (IMS) during April 8-12, 2010, Sanya, Hainan Province, Peoples Republic of China
- Dr. P.E. Rajasekharan , Senior Scientist, Division of PGR was deputed for training under NAIP component -1 to the International training on Plant variety protection course:DL-205 Introduction to the UPOV System of Plant Variety Protection (1/2010) at Wageningen Naktuinbouw, organized in collaboration with Wageningen International, part of Wageningen University and Research Center (WUR**)** from June14 -25**,** 2010.

India

- Ms. Radha R Banakar, Subject Matter Specialist(Home Science), KVK, Hirehalli was deputed for the training programme entitled Spawn (Mushroom Seed) Production on June 17 – 19, 2010 and Mushroom Cultivation on June 21- 25, 20102 at IIHR, Bangalore.
- Shri K.Gouri Sankara Rao,T-3 (Computer), CHES, Bhubaneshwar was deputed for training on 'Applied Multivariate Data Analysis for Biological and Social Sciences' from June 28- July 2, 2010 at CTCRI, Bhubaneswar.

Participation in Seminar/Symposium/Conference/ Workshop etc.

The following Scientists/Officers of the institute were deputed to participate in various Seminar / Symposium / Conference/Workshop etc.

1. Dr. B Narayanaswamy and Shri. K. V. Veerendra Kumar, KVK, Gonikoppal - *Pre-Action Plan Meeting of KVKs, Zone VIII, UAS (B), Hebbal, Bangalore on April 7-9, 2010 and presented the Preliminary Action plan for Kodagu for the year 2010-11.*
2. Drs. C. Gopalakrishnan and A.K. Saxena, - *National Seminar on Pomegranate Plant Nutrition, Protection and Post Harvest Management organised by Maharashtra State Pomegranate Growers Research Association, Pune, at Krushi Viklas Sahakari Sanstha Ltd., Sangola, Solapur District, from April 9-11, 2010.*
3. Dr. B Narayanaswamy and Shri. K. V. Veerendra Kumar, KVK, Gonikoppal - *Action Plan Meeting of KVKs, Zone VIII, Zonal Project Directorate, Hebbal, Bangalore on April15-17, 2010 and presented the Action plan of*

Kodagu for the year 2010-11.

4. Dr.T. V. Ananthanarayanan - *FAO sponsored workshop on 'Global Plan of Action for the Conservation and Sustainable Utilisation of Plant Genetic Resources for Food and Agriculture in India' convened by the Department of Agriculture and Cooperation, Government of India and the NBPGR, New Delhi on April 17-18, 2010 at New Delhi.*
5. Dr. Vishal Nath, CHES, Bhubaneshwar - *Twenty First Institute Management Committee Meeting at CRRI, Cuttack on April 26,2010.*
6. Drs. P. C. Tripathi and K.Shivaramu, CHES, Chettalli - *CAFNET at College of Forestry, Ponnampet on April 27, 2010.*
7. Drs. Amrik Singh Sidhu, M.R.Hegde, Meenakshi Srinivas, T.M.Rao, Tejaswini, Sujatha A.Nair, Rajiv Kumar, M.V.Dhananjaya, H.P.Sumangala, Chithirai Chelvan, C.Vasugi, N.Mohan, T.S.Aghora, Anil Kumar Nair, Sangama, S.Bhuvaneswari N.Ramachandran, N.K.Krishna Kumar, Jhansi Rani, S.C.Kotur, N.K.Srinivasa Rao, C.Aswath, T.M.Gajanana, D.Sreenivasa Murthy, S.D.Doijode, Nita Khandekar, B.Balakrishna, and Shri P.B.Gaddagimath - *National Consultation on Landscape Gardening for Aesthetic Values and Environmental Services, on April 29-30, 2010 at IIHR, Bangalore*
8. Drs. C.K. Narayana and K.P. Gopalakrishna Rao - *Brainstorming Session on Post Harvest Technology organized by Central Institute of Post Harvest Engineering and Technology (CIPHET), Ludhiana on May 1 -2, 2010.*
9. Dr. G. Naik, CHES, Bhubaneshwar - *State Level Research Council Meeting on June 02-05, 2010.*
10. Dr. T.S.Aghora - *Central Sub Committee Meeting on Crop Standards, Notification and Release of Horticultural Crops on May 4, 2010 at the KAB II, ICAR, PUSA, New Delhi under Chairmanship of DDG (Horticulture).*
11. Dr. T. Vasantha Kumar - *National Symposium on Garcinia Genetic Resources:Linking Diversity, Livelihood and Management, May 8-9,2010, College of Forestry, Sirsi, Karnataka*
12. Dr. R.Veere Gowda - *First All India Net work Research Programme on Onion and Garlic at Central Institute of Temperate Horticulture (CITH), Srinagar, Jammu and Kashmir on May10 -11, 2010 organised by CITH, Srinagar, Directorate of Onion and Garlic Research, Rajagurunagar and ICAR.*
13. Dr. B Narayanaswamy and Shri. K. V. Veerendra Kumar, KVK, Gonikoppal - *Bio Fuel Mela & Seminar organized by the Karnataka State Bio Fuel Task Force and College of Forestry, UAS(B), Ponnampet on May 14, 2010.*
14. Dr. R.Venugopalan - *Group Meeting/Discussion of ORP on Sucking Pests: Thrips, Leafhoppers, Aphids, Whiteflies etc May 16-17, 2010, Bangalore.*
15. Shri. Prasanth, KVK, Hirehalli - *National Seminar on Conservation of Bio-Diversity of Jackfruit at UAS, Bangalore on May 21 - 22, 2010.*
16. Dr. S.Ganeshan - *National Consultation on Agro-biodiversity Management organized by NBPGR/ICAR New Delhi on May-26-27, 2010.*
17. Drs. Amrik Singh Sidhu, M.R. Hegde, , M. R. Dinesh, Prakash Patil, A.T.Sadashiva, M. Prabhakar, R Veeregouda, B. Varalakshmi, N.Mohan, T.S.Aghora,, Anil Kumar Nair, T.M.Rao, Sujatha A.Nair, Rajiv Kumar, M.V.Dhananjaya H.P.Sumangala, T. Vasantha Kumar, Sangama, Soudamini Mohapatra, C.Aswath S. Ganeshan, Anuradha Sane, S.C.Mandhar, S.D.Doijode, T. M. Shivananda, Balakrishna, Achala Paripurna, Saju George, P.B.Gaddagimath, Vishal Nath, and H.S.Singh, (CHES, Bhubaneshwar), P C Tripathi, and K.Shivaramu, (CHES, Chettalli), B Narayanaswamy and K. V. Veerendra Kumar, (KVK, Gonikoppal), L.B.Naik, K.N. Jagadish and J.M.Prasanth (KVK, Hirehalli) - *Swadeshi Prem Jagruthi Sanghosthi 2010-National Conference on Horticultural Biodiversity for Livelihood, Economic Development and Health Care, May 28-31, 2010, Bangalore.*
18. Dr. R.Venugopalan - *Group Meeting of NAIP Project on Strengthening Statistical Computing for NARS, June 2-3, 2010 at UAS, GKVK, Bangalore.*
19. Dr. R.Venugopalan - *Orientation Training Program under NAIP on Strengthening Statistical Computing for NARS , June 21-22, 2010 at UAS, GKVK, Bangalore*
20. Dr. M.R. Dinesh and Smt. C. Vasugi - *National Conference on Mango Biodiversity for Livelihood at CISH, Lucknow, June25-28, 2010.*

TRANSFER OF TECHNOLOGY

Field Day on Protected Cultivation of Coloured Capsicum

A Field Day on Protected Cultivation of Coloured Capsicum was organized on June 4, 2010 at the farm of Shri. Ashok of Railway Gollahalli, Nelamangala, Bangalore North Taluk, Bangalore, a progressive farmer cultivating coloured capsicum in more than 2 ha. of poly house under the guidance of IIHR scientists under the NABARD project 'Demonstration of improved technologies for production of quality and safe vegetables under low cost net houses'.

Farmers inside poly house

More than 100 participants comprising 50 farmers from five districts (Bangalore, Tumkur, Ramanagara, Kolar, Chitradurga and Mysore) of Karnataka and 10 farmers from Hosur Taluk, Krishnagiri district, Tamil Nadu engaged in production and marketing of coloured capsicum and few of them producing high value vegetables (such as sweet cucumber, pole beans, bottle brinjal etc.) under poly/ shade net- house, two officers of NABARD, Bangalore, four persons involved in marketing of exotic vegetables from different states, input agencies/dealers, scientists from IIHR, Bangalore and about 20 other farmers from local village along with the project team members participated in the field day.

A view of the gathering during field day

Dr. B.Balakrishna Principal Investigator of the project gave a bird's eye view of the importance and usefulness of poly house cultivation, particularly in enhancing the yield and quality of vegetables and introduced the farmers of different areas who are the beneficiaries of the ongoing NABARD project and the technology of poly house cultivation of coloured capsicum. Dr .S. S. Hebbar, Division of Vegetable Crops, IIHR, Bangalore briefed about the nature of advice and guidance given by IIHR in promotion of protected cultivation of vegetable crops. Shri. Ashok, the host farmer of the field day shared his experience of understanding the technology being adopted by him in enhancing the quality production of coloured capsicum and explained about how the technology of IIHR provided by the scientists was useful in enhancing the quality and yield of coloured capsicum.

Sri.P.P. Desai, Deputy General Manager, NABARD, Bangalore briefed about the promotional schemes and projects of NABARD being implemented in Karnataka for the development of agriculture and rural development. He also emphasized the role of few important innovations being promoted by the NABARD for the benefit of farmers in conservation of energy and other natural resources and for enhanced production and productivity. He appreciated the role of IIHR particularly the scientists involved in the NABARD project for their painstaking efforts in promotion of protected cultivation of vegetables. Sri Ajaya Sahu, Assistant General Manager, NABARD, Bangalore, addressing the participants, emphasized the need for such innovations in improving the effective linkage between various institutions (developmental department, marketing agencies, farmers group etc.)

The guests and resource persons in discussions

The participating progressive farmers shared their experiences, particularly the constraints faced by them and how the suggestions of the project peer group scientists of IIHR and the consultants were useful in overcoming their problems. The success story of the field day at Shri. Ashok's farm was telecasted by Doordarshan Kendra, Bangalore on June 17, 2010 at 6.00 P.M. and June 18, 2010 at 5.30 A.M.

Field Day on Nutrient Feeding of Banana Bunch

The institute organized a field Day on Nutrient Feeding of Banana Bunch on June11, 2010 in the banana garden of Shri B.K. Jagadish of Chikka Byalakere, North Bangalore district who had adopted the institute developed technology of feeding nutrients blended in cow dung through the distal end of banana bunch . Dr K. Sudhir, Professor of Soil Science, UAS, Bangalore was the Chief Guest and Dr A.S. Sidhu, Director, IIHR, Bangalore presided over the function. Shri Suresh Chandra, Deputy Director (Horticulture), and other officials of Karnataka State Department of Horticulture, Subject Matter Specialists from KVK, Hirehalli and Hadonahalli and over 60 farmers from Anekal, Kolar, Doddaballapur, Hesaraghatta and Hirehalli participated in the field day.

Dr Kotur explaining about the usefulness of the technique

Dr S.C. Kotur, Principal Scientist, Division of Soil Science and Agriculture Chemistry, the inventor of the technology explained various aspect of the technology to the farmers and highlighted about the cost effectiveness of the technique. Shri Chandrashekhar of Agrahara and Shri Umesh of Gopalapur villages who also have adopted this technology, informed the participants that the bunch yield increased by 1-3 kg in 'Elakki' and by 2-5 kg in 'Robusta' banana besides improving the quality of the bunch. Tying the plastic bag enriched with 2.5g each of urea and sulphate of potash to the distal end of the recently set bunch of 'Ney Poovan/Elakki' banana was demonstrated by Shri Jagadish for the benefit of the farmers. In the interaction session between scientists and the farmers the queries raised by the farmers in respect of nutrition of banana were replied to by the scientists of IIHR.

Training

The following training programmes were organised by the institute during the period.

At IIHR, Hessaraghatta, Bangalore

Sl. No.	Name of the programme	Date	No. of participants	Revenue Generated (Rs.)
1.	Advances in production technology of horticultural crops (Doordarshan officials of various states)	March 30 to April 5, 2010	14 Nos	200000.00
2.	Advances in production technology of horticultural crops (Doordarshan officials of various states)	April 20 to 26, 2010	14 Nos	200000.00
3.	Advances in production and post harvest management of mango (Govt. of Karnataka under RKVY programme)	May 25 to 29, 2010	20 Nos	75000.00
4.	Advances in production and post harvest management of mango (Govt. of Karnataka under RKVY programme)	June 22 to 26, 2010	20 Nos	75000.00
5.	Entrepreneurship development through spawn production	June 17 –19, 2010		
6.	Entrepreneurship development through mushroom cultivation	June 21-25, 2010		
	Total			**5,50,000.00**

At the Stations

The CHES, Bhubaneshwar organized the following training programmes

a) Training programme for the horticultural resource persons of DULAL, an NGO based in Baripada of Mayurbhanj district (Orissa) from May 23-27, 2010.

b) Training programmes for Agriculture Officers, WDTs (Ag) and Village Volunteers (Ag) sponsored by OTELP, Bhubaneswar from June12-14, 2010 and from June 27-29, 2010.

At Krishi Vigyan Kendra, Hirehalli

The Krishi Vigyan Kendra, Hirehalli organized the following training programmes

Sl. No.	Name of the programme	Date	No. of participants
1.	Integrated Pest Management in arecanut for officials of Department of Horticulture, Govt. of Karnataka.	May 26, 2010	32
2.	Improved production practices on aster for farmers of Gollarhatti, Hirehalli Panchayat, Tumkur.- Group Approach	May 26, 2010	12
3.	Office campus training programme on ragi based cropping system at Theerty, Kortegere Taluk, Tumkur	June 21, 2010	30
4.	Office campus training programme on improved cultivation practices in brinjal and okra at Theerty, Kortegere Taluk, Tumkur	June 22, 2010	31
5.	Office campus training programme on commercial flower production - aster and chrysanthemum at Ajjaihalli, Kortegere Taluk, Tumkur	June 23, 2010	28

At Krishi Vigyan Kendra, Gonikoppal

The following on campus and off campus trainings were organized by KVK, Gonikoppal to the practicing farmers, farm women and rural youths.

Sl. No.	Type of Training	No.	Duration	No. of Participants		
				Male	Female	Total
1	On campus	05	01	04	64	68
2	Off campus	03	01	63	25	88
3	Vocational	02	20	-	9	9
	Total	**10**		**67**	**98**	**165**

Other Training Programmes

Training imparted

- Dr. D.V. Sudhakar Rao, imparted training cum demonstration on 'Low cost ripening technology of fruits' to the farmers and fruit traders (60 nos) at Krishi Vigyan Kendra, Baramati, Maharashtra on June 30, 2010.
- Dr. R.Veere Gowda was deputed as a resource person for the Special Training Programme on Improved Varieties of Onion and Production Technologies for Trained Commodity Interested Group of Farmers organized by Department of Agriculture Training Centre (DATC), Babbur farm,Hiriyur, Chitradurga on May 20-22, 2010.
- Dr. K. Madhavi Reddy was deputed as resource person

for the Farmers' Meet organized by Sabji Utpadak Sangh–Vegetable Growers Association, Chhattisgarh on April 15-17, 2010 and delivered a talk on 'Advances in production technology and recently released chilli varieties/ hybrids'.

Other Extension Activities

- **Soil testing campaign:** The KVK, Gonikoppal organized soil testing campaign on June 4, 2010 at Thuchamakeri village during which. 48 soil samples collected were tested and based on the results advisory services were offered to the farmers.
- **Campaign on starting of vermicomposting:** The KVK, Gonikoppal organized a campaign on starting of vermicomposting on June 3, 2010 at Thannimani village. On this occasion 28 kgs of live earthworms (*Eudrilus euginae*) were distributed to 28 farmers having vermicompost structures. More than 75 farmer and farm women participated in the campaign.
- **Education tour for farming community:** One day education tour to CHES, Chettalli and NGO (SWASTHA), Suntikoppa was organized by KVK, Gonikoppal for 20 elite farmers on May 21, 2010.

Technology Transfer

- The fruit beverage/concentrate technology of mango, pineapple and amla developed by the Division of Post Harvest Technology has been transferred to M/s Pee Pee Agri and Food Products Ltd., Chennai, Tamil Nadu.
- The technology of osmotic dehydration of mango, pineapple, aonla and papaya and mango fruit bar developed by the Division of Post Harvest Technology has transferred to M/s. Pee Pee Agri and Food Products Ltd., Chennai, Tamil Nadu.

Field Demonstration

The following field demonstrations were laid out in the farmers' fields on various technologies developed by the institute.

Sl. No.	Title of Demonstrations	Location	No. of Demon-strations
1.	IPM in tomato	Bangalore Rural	4
2.	Management of collar net din Peas	Pemmanahalli (Tumkur)	1
3.	Safe & quality production of coloured capsicum under shade net/polyhouse	Bangalore, Kolar Ramanagar and Mysore Districts	8
4.	Demonstration of China aster variety - Kamini	Gollahalli, Mysore	4
5	Mango fruit fly management and Vegetable Special	Reddampally	1

Front Line Demonstrations (FLDs): The KVK, Gonikoppal initiated 6 FLDs in different villages covering all the three talukas of the Kodagu district as detailed below

Sl. No.	Name of the FLD	No. of demos	Village
1	Popularization of Passion fruit squash	20	Karkalli,
2	Soil Test Based Fertilizer Application in Arecanut	2	Hosur
3	Soil Test Based Fertilizer Application in Pepper	20	Begoor
4	Management of Nut splitting in Arecanut	20	Dhanugala
5	Popularization of Paddy var. IET 13901	20	Ariyur
6	Popularization of Paddy var. IET 7191	20	Kottageri

- The Institute laid out demonstration of IIHR technologies during National Conference on Horticulture Biodiversity for Livelihood, Economic Development and Health care at UHS Bagalkot's PG and Hi-tech Research Centre Campus, Vidyaranyapura, Bangalore on May 29 - 31, 2010.
- Dr. Abraham Verghese and Dr. T. N. Shivananda conducted an interaction and demonstration of fruit fly trap to the mango growers of Soraba, Shikaripura, Kolar,Dharwad and Shimoga.

Field Visits

- Drs. R. Chithiraichelvan, and Y.T.N. Reddy, Division of Fruit Crops visited CHES, Bhubaneshwar from May 12-13, 2010 for observing the performance of different fruit crops under various experiments.
- Drs. R. Chithiraichelvan, and Y.T.N. Reddy, Division of Fruit Crops visited Chennai on June16, 2010 to finalise issues related to pruning of mango orchards in Tamil Nadu organized by Tamil Nadu Horticulture Development Agency, Chennai.
- Drs.V.V. Sulladmath, Y.T.N. Reddy and P. Sampath Kumar, Division of Fruit Crops visited the Attur farm of National Bureau of Agriculturally Important Insects, Bangalore on 29.6.2010 and offered suggestions for improvement of fruit crops.

T.V. / Radio Programme

The following television and radio programmes on the technologies developed by the institute were telecasted / broadcasted during the period;

T.V. Programme			
Sl . No.	**Topic**	**Resource person**	**Telecast/ Broadcast date**
1.	Managing of fruit flies and stoneweevil (Kannada)	A. Verghese	13.04.2010
2.	Crushed tomato: Preparation and demonstration	K.P.G Rao and Mrs. Sarojini Jalali	06.05.2010
3.	KVK in service of farming community	B Narayana swamy	27.05.2010
Radio Talk			
1.	"Entrepreneurship Developments	B Narayana swamy	01.04.2010
2.	Quick wilt disease management in Pepper"	K.V. Veerendra Kumar	3.06.2010
3.	Production technology of Sapota	Mr. B Prabhakar	14.06.2010
4.	Long horned Grass hopper outbreak-farmers need not be panic	B Narayana swamy	22.06.2010

Exhibitions

The main institute at Hessaraghatta, Bangalore, its regional stations and the KVKs participated in the following exhibitions:

Sl. No.	Name of the Exhibition	Venue	Period
1.	National Consultation on Landscape Gardening for Aesthetic Values and Environmental Services - IIHR,Hessaraghatta, CHES,Chettalli and KVK, Hirehalli	IIHR, Bangalore	April 29, 2010
2.	National Conference on Horticultural Biodiversity for Livelihood, Economic Development & Health Care- IIHR,Hessaraghatta, CHES,Chettalli and KVK,Hirehalli	Hitech Research and PG Centre of UHS, Bagalkot, Vidyaranyapura Bangalore	28 – 31, May 2010
3.	XII Annual Group Meeting of the All India Coordinated Research Project on Mushrooms	IIHR, Bangalore	May 31, 2010
4.	Krishi Utsava 2010 - KVK, Hirehalli	Gubbi Veeranna Sabangana, Tumkur District	June1- 3, 2010
5.	District Horticultural Flower Show Exhibition – KVK, Gonikoppal	Madikeri	May 1-3, 2010

ATIC Sales

An amount of Rs.5, 47,704/- was realized through ATIC by sale of various technological products and publications of the institute during the period.

PUBLICATIONS

Research Papers

- Ahuja AK and Mohapatra S (2010) Persistence of mancozeb residues in /on papaya *Indian Journal of Agricultural Sciences*. **80**(6): 532-533.
- Gajanana TM, Sudha M, Saxena AK and Dakshinamoorthy V (2010) Post harvest handling, marketing and assessment of losses in papaya. *Acta Hort*. (ISHS) **851**:519-526
- Jalikop SH, Venugopalan R and Kumar R (2010) Association of fruit traits and aril browning in pomegranate (*Punica granatum* L.), *Euphytica*, **174**:137–141.
- Jalikop SH (2010) Association of fruit traits and aril browning in pomegranate (*Punica granatum* L.), *Euphytica*, **174**:137-141.
- Jalikop SH (2010) Tree and fruit traits of progenies from the cross between (*Annona cherimola* Mill. x *A. squamosa* L.)x *A.reticulate* L.and approaches for the introgression of valuable genes from *A. reticulate* L., *Euphytica*, **173**:161-171.
- Kamala Jayanthi PD and Verghese A (2010) Severe incidence of tetranychid mite, *Oligonychus mangiferus* on mango, *Insect Environment* **15**(4) :182.
- Kamala Jayanthi PD and Verghese A (2009) Incidence of pyralid fruit borer, *Heterographis bengalella* (Ragonot) on custard apple, *Annona squamosa* L. *Insect Environment* **15**(1) 15-16.
- Kamala Jayanthi PD and Verghese A (2010) Establishment of sapota seed borer, *Trymalitis margarias* Meyrick, an invasive species in India: Exigencies involved in limiting the spread. *Karnataka Journal Agriculture Science* **23**(1) : 165
- Kavitha P, Vasantha Kumar T, Rajesekharan PE, Abdul Kareem and Rao VK (2010) Camptothecin and 9-.methexy camptothecin, anti- cancer alkaloids in *Nothapodytes nimmoniona* from Western Ghats, India, *Journal of Medicinal and Aromatic Plant Sciences*, **32** (2): 129-132.
- Keshavareddy G and Verghese A (2009) Biology of *Xylosandrus crassiusculus* (Eichhoff) reared on custard apple *Annona squamosa* L, *Insect Environment* **15**(1) 46-47.

- Mohapatra S, Deepa M, Jagadish GK, Rashmi N, Kumar S and Prakash GS (2010) Fate of fipronil and its metabolites in/grapes leaves, berries and soil under semi arid tropical climatic conditions. *Bulletin of Environmental Contamination and Toxicology*. **84**(5): 587-591.

- Mohapatra S, Ahuja AK, Deepa M, Jagadish GK, Rashmi N and Sharma D (2010) Studies on abamectin residues in cabbage and soil. *Indian Journal of Plant Protection*. **37** (1&2): 74-77.

- Mohapatra S and Ahuja AK (2010).Persistence and dissipation of lambda cyhalothrin in/on mango (*Mangifera indica*).*Indian Journal of Agricultural Sciences*. **80** (4): 306-308.

- Poon TB, Rao TM, Kumar DP, Venugopalan R.and Dhananjaya MV,(2009). Study on floral biology of gladiolus genotypes, *Nepal Journal of Science and Technology* **10**: 37-43.

- Rajasekharan PE, Ravish BS and Vasantha Kumar T(2010). Optimization of protocols for the *in vitro* multiplication and conservation of *Acorus calamus*, an endangered medicinal plant, Proceedings of the International Symposium on Acclimatization and establishment of micro-propagated plants (Ed. J.Prakash), *Acta Hort*. **865**: 37-41.

- Rajesekharan PE, Abdul Kareem VK and Vasantha Kumar T (2010). Optimization of protocols for the *in vitro* multiplication and conservation of *Northapodytes nimmoniana*, an endangered medicinal plant, Proceedings of the International Symposium on Acclimatization and establishment of micro-propagated plants (Ed. J.Prakash), *Acta. Hort.* (ISHS) **865**: 53-58.

- Ravishankar H, Karunakaran G and Srinivasamurthy (2010) Performance of Coorg Honey Dew papaya under organic farming regimes in the hill zone of Karnataka. *Acta Hort*. (ISHS) **851**:259-262

- Ravishankar KV, Aghora TS, Mohan N, Naveen AH and Krishna Reddy M (2010).Identification of RAPD marker linked to Mung Bean Yellow Mosiac Virus resistance in French bean, .*J .Hort. Sci*,167-169

- Rudresh S, Keshavareddy G and Verghese A (2009). Incidence of *Amrasca splendens* Ghauri on different mango cultivars. *Insect Environment* **15**(1) 47-48

- Sharma D, Krishna Moorthy PN and Krishnamoorthy A (2009) Comparative study of pesticide residue pattern in vegetables grown using IPM and non-IPM practices. *J. Hortl. Sci*., **4**(2):191-194

- Sreenivasa Murthy D, Prabhakar BS, Hebbar SS, Srinivas V and Prabhakar M (2010). Economic feasibility of vegetable production under poly house: A case study of capsicum and tomato, *J.Hort. Sci*.**4**(2):148-152

- Sridhar V and Jhansi Rani B (2010) Outbreak of common yellow butterfly, *Eurema hecabe* L. (Lepidoptera: Pieridae) on Molucca bean, *Caesalpinia crista* L. – A medicinal shrub. *Insect Environment*, **15** (4): 164.

- Veena SS and Meera Pandey (2010) Effect of spawn substrate and spawn rate on cultivation of *Ganoderma Lucidum J. Mycol. Pl. Pathol*, **40**(1) : 158-161

- Venugopalan R and Pitchaimuthu M (2009) Statistical models for stability analysis in watermelon. *J. Hort. Sci*. **4** (2):153-157

- Verghese A, Manivannan S, Kamala Jayanthi PD, and Soumya CB (2010). Can ethyl acetate be a substitute for insecticide in male annihilation technique of fruit flies. *Insect Environment* **15**(4): 171.

Books/Book Chapters

- Hima Bindu K, Suryanarayana MA and Vasantha Kumar, T(2010).Evaluation of *Garcinia indica* Choisy for floral and yield traits. ***In*** Garcinia Genetic Resources. Linking Diversity, Livelihood and Management, National Symposium on Garcinia Genetic Resources, pp.no. 87-90 (Eds: R.Vasudeva. B.S.Janagoudar, B.M.C.Reddy, Bhuwan Sphabit and H.P.Singh), College of Forestry, Sirsi, Karnataka.

- Sudhamoy Mandal, Ramesh C Ray (2010) Induced systemic resistance in biocontrol of plant diseases. *In*: Singh A, Parmar N, Kuhad RC, eds. Bioaugmentation, Biostimulation and Biocontrol. Springer, Heidelberg. (Accepted for Publication).

- Sudhamoy Mandal, Ramesh C Ray (2010) Reactive Oxygen Species and Antioxidative Mechanisms during Tomato-Pathogen Interactions. *In*: Aubé ED, Poole FH, eds. Tomatoes: Agricultural Procedures, Pathogen Interactions and Health Effects (ISBN: 978-1-60876-869-1). Nova Science Publishers, Inc., New York, USA. pp.161-172.

- Tusar K Behera, Snigdha Behera, Bharathi, LK, Joseph John K, Philipp W Simon and Jack E Staub. (2010) Bitter gourd: Botany, Horticulture, Breeding. *In:* Horticultural Reviews Vol. 37 (ed. Jules Janick) published by Wiley-Blackwell, pp. 101-141

Popular Articles

- Aghora TS, and Mohan N (2010). Hosa hasiru batani tali, (Kannada), *Samyukta Karnataka* daily news paper, 9.6.(2010).

- Aghora, TS and Mohan N (2010). Batanige bele-Arka Ajit,(Kannada),.*Hosa Diganth* daily news paper ,7.6.(2010).

- Aghora TS and Mohan N (2010) Arka Anoop evam Arka Suvidha-Nayi unnat French bean kisme, (Hindi*) Bagwani*, 26-28

- Doreyappa Gowda I.N (2010) Fruit and vegetable beverages:*Hannu mathu tarakarigala peyagalu* (Kannada). *Hosadiganta* daily news paper , date 24-5-2010.

- Gajanana TM, D Sreenivasa Murthy, M Sudha and V Dakshinamoorthy (2010) Mango production, export and constraints – economic analysis, (Kannada), *Krishi Pete*, **36**(6):5-7

- Ganeshan S and Vasantha Kumar T (2010) Prospecting conservation, cultivation and sustainable use of medicinal plants in the Indian context, *"Shodh Chintan", Souvenir*, National Conference on Horticultural Biodiversity, UHS, Bangalore, May 28-31, 2010.

- Gopalakrishna Rao KP and Sarojini Jalali (2010) Crushed Tomato: A*adugege siddavada areda tomato* (Kannada) *Krishipete* **36** (7): page 27.

- Gopalakrishnan C, Saxena, AK and Kirthishree, SP (2010) Management of bacterial blight disease of pomegranate - Demonstration trials, *Dalimvratta, 2010, pp.* 146-148.

- Hima Bindu, K Suryanarayana MA and Vasantha Kumar T (2010) Role of sacred groves and gardens in conservation of medicinal plants, *"Shodh Chintan", Souvenir* , National Conference on Horticultural Biodiversity ,UHS, Bangalore, May 28-31, 2010.

- Hima Bindu K (2010) Herbs as design elements in landscaping, *Souvenir* "National consultation on landscape gardening for aesthetic values and environmental services", April 29-30, IIHR, Bangalore, pp70.

- Jhansi Rani B, Sridhar V and NK Krishna Kumar (2010) Pest management in landscape gardening, *Souvenir*, National Consultation on Landscape Gardening for Aesthetic Values and Environmental Services, April 29-30, (2010), IIHR, Bangalore, pp. 78-84.

- Mohan N and Aghora TS (2010) Roga nirodhaka hosa batani(Kannada), *Praja Vani(Agricultural section)* daily news paper 17.6.2010.

- Narayanaswamy B (2010) Mobile message service to the faming community by ICAR. *Sujatha* Kannada monthly, **16**(9):4.

- Narayanaswamy B (2010) Kodagu KVK in service of farmers. *Uthara Desham* - Kannada Daily (20.05.2010).

- Veena SS and Meera Pandey (2010) Cultivation technology of the medicinal mushroom *Ganoderma lucidum, IIHR Extension folder no.65-10*

- Veere Gowda R (2010) Bandhide Sihi Erulli (Kannada) Vijay Karnataka daily news paper, 10-5-2010.

- Veere Gowda R (2010) Erulliya Sudharita Taligalu , Annadhata, page 48-49.

- Veere Gowda R (2010) Erulliya Sudharitha Thaligalu (Kannada), Somyuktha Karnataka daily news paper,12-5-2010.

- Veere Gowda R (2010) Erulliya Sudharita Taligalu (Kannada), *Praja Vani* daily news paper, 13-5-2010**.**

PAPERS PRESENTED IN SEMINAR / SYMPOSIUM / CONFERENCE ETC

IX International Mango Symposium (IMS), April 8-12, 2010, Sanya, Hainan Province, Peoples Republic of China.

- Dinesh MR - Assessment of genetic diversity of mango (*Mangifera indica* L.) cultivars from Indian peninsula using Sequence Tagged Microsatellite Site (STMS) markers

- Dinesh MR - Genetical studies in mango (*Mangifera indica* L)

- Dinesh MR - Morphological characterization *vis-a-vis*, molecular characterization; nomenclature ambiguity in Indian mangoes

Workshop and Interactive Session on PPV and FR Act 2001, April 27, 2010, UAS, GKVK, Bangalore.

- Rajasekharan PE - Farmers' rights and varieties under Indian PVP and FR act.

National Consultation on Landscape Gardening for Aesthetic Values and Environmental Services, organized jointly with Indian Society of Ornamental Horticulture New Delhi, April 29-30, 2010, IIHR, Bangalore.

- Dhananjaya MV and Tejaswini - *Dianthus* and its utility as component in landscape gardening

- Ganeshan S - Interior & exterior designing & landscaping using plant systems based on Chinese and Japanese garden models

- Jhansi Rani B, Sridhar V and Krishna Kumar NK - Pest

management in landscape gardens – Environmental friendly approaches

- Prabhakar M. - Irrigation and fertigation in landscape turf grass management.
- Rajiv Kumar and Sujatha A Nair. - Beautification of undulating terrains.
- Sidhu AS and Sumangala HP — Native ornamentals for landscaping
- Srinivas K and Meenakshi Srinivas. - Irrigation in landscape gardening – An overview.
- Sujatha A Nair and Sujatha K - Xeriscaping – An approach for water conservation.
- Sujatha K.and Sujatha A Nair - Landscape plants-Selection for functional and aesthetic appeal.
- Sumangala HP - The Taj Mahal: imaginary gardens
- Tejaswini and Dhananjaya MV. - Rosary to beautify landscape.

Swadesh Prem Jagruti Sangosthi 2010 - National Conference on Horticultural Biodiversity for Livelihood, Economic Development and Health Care organized by Lt.Amit Singh Memorial Foundation and UHS, Bagalkot, May 28-31, 2010 , Hitech Horticultural Research and Post Graduate Centre, Vidyaranyapura, Bangalore.

- Anuradha Sane, Jaya Jhawar and Aswath C - Molecular characterization of crossandra cultivars/hybrids/species using ISSR markers.
- Doijode SD - Germplasm conservation in certain native vegetable crops.
- Ganeshan S and Vasantha Kumar T - Prospecting, conservation, cultivation and sustainable use of medicinal plants in the Indian context.
- Mohan N. and Aghora TS - Identification of pole type Indian bean (*Lablab purpureus* L.) for photo insensitive trait
- Nagamani S, Devaraju PJ, Rame Gowda, Veere Gowda R and Yogeesha HS- Effect of chemo priming on growth and bulb yield in onion.
- Prabhakar M and Sidhu AS - New horticultural innovations and technologies for adoption.
- Sadashiva AT - Sensitization for registration of farmer's varieties for vegetables
- Singh HS and Vishal Nath - Biodiversity enrichment for orchard pest management
- Soudamini Mohapatra - Pesticide residues in fruits and ways to minimize it.
- Veere Gowda, R - Exploitation of agro biodiversity for crop improvement in alliums
- Veere Gowda R -Exploitation of indigenous and exotic agro biodiversity for crop improvement in carrot (*Daucus carota* L)
- Veere Gowda R and Pathak CS - Studies on genetics of seed production in F_1 hybrid and parents of onion (*Allium cepa* Lin.)
- Veere Gowda R, Saraswathi KM and Joshi S - Studies on male sterility and its utilization in F_1 hybrid development in onion (*Allium cepa* Lin.).
- Veere Gowda R -Studies on influence of intrinsic factors associated with commercialization of F_1 hybrid seed production in onion (*Allium cepa*.L).
- Venugopalan R, Krishna Kumar NK and Thippeswamy S-Nonlinear statistical models for assessing thrips damage in capsicum.
- Vishal Nath, Sudhamoy Mandal, Singh HS, Bharathi LK and Naik G. - Biodiversity of horticultural crops in eastern India: Lead taken by CHES, Bhubaneswar for its conservation and utilization.

National Conference on Invasive Alien Insects and Emerging Pests Threatening Agriculture, Horticulture and Forest Ecosystem,.University of Agricultural Sciences, Dharwad, Karnataka.

- Kamala Jayanthi PD and Verghese Abraham - Establishment of sapota seed borer, *Trymalitis margarias* Meyrick, an invasive species in India: Exigencies involved in limiting the spread.
- Krishna Kumar NK, Ranganath HR, Verghese A and Reddy PVR.-Invasive pests of agriculture, horticulture and forest ecosystems.

Lectures Delivered

- Aghora T. S - Recent advances in quality seed production of tomato, brinjal, French bean and cow pea at the National Training on Production and Marketing of Vegetables Seeds on May 24-28, 2010 organized by NSC Regional Office, Bangalore.

- Gopalakrishna Rao, K. P - Pre-and post harvest management of vegetables at the training programme on Post Harvest Management of Horticultural Crops organized by International Institute of Horticulture Management, Bangalore on June 23 - 26 , 2010.

- Madhavi Reddy, K - Hybrid seed production techniques in chilli and bell pepper at the National Training on Production and Marketing of Vegetables Seeds on May 24-28, 2010 organized by NSC Regional Office, Bangalore.

- Mohan, N - Seed production in garden pea and Dolichos at the National Training on Production and Marketing of Vegetables Seeds on May 24-28, 2010 organized by NSC Regional Office, Bangalore.

- Narayana, C.K - Post harvest management of horticulture crops-present scenario and future strategies at the training programme on Post Harvest Management of Horticultural Crops organized by International Institute of Horticulture Management, Bangalore on June 23 - 26 , 2010.

- Sangama- Pre and post harvest management of ornamental crops at the training programme on Post Harvest Management of Horticultural Crops organized by International Institute of Horticulture Management, Bangalore on June 23 - 26 , 2010

- Shivashankara, K.S. - Effect of processing and storage on the fruit and vegetable antioxidants at Lethbridge research centre, Agriculture and Agri food Canada, Lethbridge, 5403, 1st Avenue South, Lethbridge, Alberta, T1J4B1, Canada on March 17, 2010.

- Shivashankara, K.S. - Effect of processing and storage on the fruit and vegetable antioxidants at Pacific Agri-Food Research Centre at Summer Land, BC, Canada on May 13, 2010 and it was relayed to another Research Centre at Agassi in BC, Canada through video conference.

- Sudhakar Rao, D.V. - Pre-and post harvest management of horticulture crops at the training programme on Post Harvest Management of Horticultural Crops organized by International Institute of Horticulture Management, Bangalore on June 23 - 26 , 2010

- Veere Gowda, R. - Quality seed production in onion and carrot in National Training on Production and Marketing of Vegetable Seeds on May 24-28, 2010 organized by NSC Regional Office, Bangalore.

- Verghese Abraham – IPM of mango to the farmers of Soraba, Shikaripura, Shimoga on May 25, 2010.

- Verghese Abraham - IPM of mango to a farmer group [150 nos] at Srinivasapura on April 6, 2010.

HONOURS/RECOGNITIONS

- Dr. Manjunatha Rao, T. has been inducted as Fellow of the Indian Society of Ornamental Horticulture -2010 in recognition of his outstanding contribution to the science of floriculture. The citation was presented by Honorable S. Ayyappan, Secretary DARE & DG, ICAR, New Delhi during National Consultation on Landscape Gardening for aesthetic Values and Environmental Services on April 29, 2010 at IIHR, Bangalore.

- Dr. Sangama, has been inducted as Fellow of the Indian Society of Ornamental Horticulture -2010 in recognition of his outstanding contribution to the science of floriculture. The citation was presented by Honorable S. Ayyappan, Secretary DARE & DG, ICAR, New Delhi during National Consultation on Landscape Gardening for aesthetic Values and Environmental Services on April 29, 2010 at IIHR, Bangalore

- Dr. C. Aswath has been inducted as Fellow of the Indian Society of Ornamental Horticulture -2010 in recognition of his outstanding contribution to the science of floriculture. The citation was presented by Honorable S. Ayyappan, Secretary DARE & DG, ICAR, and New Delhi during National Consultation on Landscape Gardening for aesthetic Values and Environmental Services on April 29, 2010 at IIHR, Bangalore.

- Dr. Prakash Patil was awarded the H.S. Mehta Memorial Young Scientist Award – 2010 instituted by the Mehta Foundation, Salem, Tamil Nadu, for his outstanding work on Research Coordination dring the Swadesh Prem Jagriti Sangosthi 2010 at Bangalore on April 29, 2010.

- Dr. Sudhamoy Mandal, CHES, Bhubaneshwar has been recognized as peer-reviewer for the following international journals:

  1) Crop Protection (Elsevier)

  2) Physiological and Molecular Plant Pathology (Elsevier)

  3) Genes, Genomes and Genomics (Global Science Books)

- Dr. Sudhamoy Mandal has been recognized as a member in its FACULTY 1000 by International Journal of Plant Physiology and Biochemistry (Academic Journals).

- Dr C.Aswath, was nominated as a member of the committee for development of research projects and also for constitution of a task force for effective controlling of bacterial blight and other diseases of pomegranate of the University of Horticultural Sciences, Bagalkot.

- Dr C.Aswath, was nominated as a member in a committee to finalize syllabus for B.Tech Biotechnology course of Sharda University, Greater Noida .

- Mrs. Sumangala, H.P., served as Organising Secretary for National Consultation on Landscape Gardening for aesthetic Values and Environmental Services held at IIHR, Bangalore, April 29-30, 2010.

- Dr. C. Gopalakrishnan, acted as the Chairman of the Technical Session – III - Pest and Disease Management during the National Seminar on Pomegranate Plant Nutrition, Protection and Post Harvest Management organised by Maharashtra State Pomegranate Growers' Research Association, Pune, at Krushi Viklas Sahakari Sanstha Ltd., Sangola, Solapur District, from April 9-11, 2010.

- Dr. Vasantha Kumar, T Chaired a Technical session in Symposium on Garcinia Genetic Resources, May 8-9,College of Forestry, Sirsi, Karnataka.

PERSONALIA

New entrants

Scientific

1. Dr. Prakash Chandra Tripathi, Principal Scientist, Directorate for Research on Women in Agriculture, Bhubaneswar, Orissa has been selected by ASRB as Head at CHES, Chettalli, Kodagu, Karnataka and joined on 17-04-2010

2. Dr. G.C. Satisha, Sr. Scientist joined IIHR, Hessaraghsatta on April 23, 2010 on transfer from Directorate of Oil Palm Research, Pedavegi, Andhra Pradesh.

Technical

1. Sh. Gundappa Manoji , T-1 (FT) at IIHR, B'lore w.e.f. 11.05.2010 (FN)

2. Sh. N. Muniraju, T-1 (FT) at IIHR, B'lore w.e.f 11.05.2010 (FN)

3. Smt. D. Vimala, T-1 (LT) at IIHR, B'lore w.e.f 12.05.2010 (FN)

4. Smt. S.V. Venkatalakshmamma, T-1 (LT) at IIHR, B'lore w.e.f 12.05.2010 (FN)

5. Sh. H.J. Vinodkumar, T-1 (FT) at IIHR, B'lore w.e.f 12.05.2010 (FN)

6. Sh. N. Naveen Kumar, T-1 (FT) at IIHR, B'lore w.e.f 12.05.2010 (FN)

7. Sh. B. Avinash ,T-1 (FT) at IIHR, B'lore w.e.f 12.05.2010 (FN)

8. Sh. H.V. Puneeth , T-1 (FT) at IIHR, B'lore w.e.f 12.05.2010 (FN)

9. Sh. T.N. Nagaraju , T-1 (FT) at IIHR, B'lore w.e.f 20.05.2010 (FN)

10. Sh. Sanjeev Kengare , T-1 (FT) at CHES, Hirehalli w.e.f 24.05.2010 (FN).

11. Sh. G.M. Prashanth Kumar , T-3 (FT) at CHES, Chettalli w.e.f 20.05.2010 (FN)

Promotions

Scientific

1. Dr. T.S. Aghora, Sr. Scientist, IIHR, B'lore, has been promoted to the next higher grade of Principal Scientist (Hort.) w.e.f. 11.03.2008.

2. Dr.T.M. Gajanna, Sr. Scientist, IIHR, B'lore, has been promoted to the next higher grade of Principal Scientist (Ag. Econ.) w.e.f. 05.08.2008.

3. Dr. P. Sampath Kumar, Sr. Scientist, IIHR, B'lore, has been promoted to the next higher grade of Principal Scientist (Hort.) w.e.f. 04.09.2008.

4. Dr. (Mrs.) Sudha Mysore, Sr. Scientist, IIHR, B'lore, has been promoted to the next higher grade of Principal Scientist (Ag. Econ.) w.e.f. 07.11.2008

5. Dr. D.V. Sudhakara Rao, Sr. Scientist, IIHR, B'lore, has been promoted to the next higher grade of Principal Scientist (Hort.) w.e.f. 03.12.2008.

6. Dr. T.Saktivel, Scientist (SS), CHES, Chettalli has been promoted to next higher grade as Senior Scientist (Hort), w.e.f. 16-12-2008 under Assured Carrer Progression Scheme

Supporting

1. Sh. M. Raghu, Skilled Support Staff, CHES, Chettalli has been promoted to the post of T-1 (FT) under 33 $^{1}/_{3}$ % promotion quota and has reported for duty on11.05.2010.

2. Sh. A.A. Harishchandra, Skilled Support Staff, CHES, Chettalli has been promoted to the post of T-1 (FT) under 33 $^{1}/_{3}$ % promotion quota and has reported for duty on 11.05.2010.

Transfers

1. Sh. C.M. Mohan, Assistant has been transferred from CHES, Hirehalli, to CHES, Chettalli w.e.f. 01.05.2010.

2. Shri. L. Balakrishna, T-2 (JTA), has been transferred from CHES, Hirehalli to IIHR, B'lore w.e.f. 17.06.2010.

3. Shri. Janmay Jai Deveshwar, T (7-8) (TO) has been transferred from IARI, New Delhi to IIHR, Bangalore w.e.f. 28.06.2010.

Superannuation

1. Smt. K.P. Bollamma, Assistant, KVK, Gonikoppal retired from Council's service on superannuation on the afternoon of 30.04.2010.

2. M. Edward Raja, Principal Scientist & Head, Div. of Soil Science & Ag. Chem., retired from Council's service on superannuation on the afternoon of 31.05.2010.

3. Gourihari Naik, Principal Scientist, CHES, Bhubaneshwar retired from Council's service on superannuation on the afternoon of 31.05.2010

4. S.V. Joshi, T-9 (SMS), KVK, Gonikoppal retired from Council's service on superannuation on the afternoon of 31.05.2010.

5. Smt. S. Jagadambal, Assistant, IIHR, Bangalore, retired from Council's service on superannuation on the afternoon of 30.06.2010.

6. Shri. K. Mudderappa, Skilled Support Staff, IIHR, Bangalore, retired from Council's service on superannuation on the afternoon of 30.06.2010.

VISITORS

IIHR, Hessaraghatta, Bangalore

- Dr. S. Ayyappan, Director General, ICAR and Secretary, DARE, Government of India, New Delhi (29 .04. 2010)
- Dr. H .P. Singh, DDG (Hort.), ICAR, New Delhi (29.04.2010)
- Padmashree Dr. M. Mahadevappa , Former Chairman, ASRB, New Delhi (29 .04. 2010)
- Dr. S. A. Patil, Former Director, IARI, New Delhi and Presently Chaiman, Karnataka Agriculture Mission, Karnataka (29 .04. 2010)
- Dr. P. Rethinam, Former Executive Director, APCC (29 .04. 2010)
- Dr .S. B. Dandin, Vice-Chancellor, University of Horticultural Sciences, Bagalkot, Karnataka (29 .04. 2010)
- Dr .K. V. Peter , Former Vice Chancellor,KAU, Thrissur (29 .04. 2010)
- Dr. N. K .Dadlani (29 .04. 2010)
- Dr. Avri Bar Zur, Counsellor International Cooperation (Mashav) Science & Agriculture, Embassy of Israel, 3, Aurangzeb Road, New Delhi -110011 (11.05.2010)
- Sri Chandramohan, IAS, Director, Department of Horticulture, Government of Tamil Nadu (11.05.2010)
- Dr. D.K.A.Singh, Diector, IGFRI, Jhansi (18.05.2010).
- Ms.Melanic Chapman, Education Counsellor, New Zealand High Commission, New Delhi (15.06.2010)
- Ms.Cliff Love Michael Moshe Noy, Isreael(21.06.2010)
- Mr. Wais Kabir, Executive Chairman, Bangladesh Agricultural Research Council.(25.06.2010)
- Mr.A.Z.M.Shafiqul Alam, Additional Secretary, MInistry of Agriculture, Bangladesh (25.06.2010)
- Mr. Md. Abdur Razzqaue, Project Director, National Agricultural Technology Project, Bangladesh (25.06.2010).
- Shri. V.V. Bhat, Secretary to Govt. of India and Member Space, Atomic and Earth Commission (1.4.2010)
- Shri. B. S.Sajwan, Principal Secretary and Head, Forests, Govt. of Arunachal Pradesh and Ex. CEO, NMPB, New Delhi (11.6.2010).
- A total of 205 students from four groups and 516 farmers from 18 groups from different parts of the country visited the institute.

KVK, Hirehalli

- Dr. H.P.Singh, DDG, Horticulture, ICAR, New Delhi (03.04.2010).
- Dr. Amrik Singh Sidhu, Director, IIHR, Bangalore (03.04.2010).
- Mr.AZM Shafiqual Alam,Additional Secretary, Ministry of Agriculture, Government of the People's Republic of Bangladesh, Dhaka (25.06.2010)
- Mr. Md. Abdur Razzaque, Project Director, PCU,NATP, Ministry of Agriculture, Bangladesh Agricultural Research Council, Dakha (25.06.2010)

CHES, Chettalli

- Dr. Vishal Nath, Head, CHES, Bhubaneswar (31-05-2010).
- Dr. Rajesh Kumar, NRC for Litchi, Muzzaffarpur, Bihar(31-05-2010).

From Director's Desk

UNDERUTILISED AND RARE FRUIT SPECIES IN MILD TROPICS

India being rich in biodiversity, has many tropical fruit tree species, most of which are not commercially cultivated but are high in nutrition content and often provide a source of livelihood support for many rural communities. Because of their curative properties, some of these fruits have been used in Indian system of medicine such as Ayurvedic and Unani, since time immemorial. Apart from their nutritive and medicinal values, quite a few of these underutilized fruits have excellent flavour and very attractive colour. In spite of these quality attributes, their cultivation is very restricted and they grow mainly wild and while some of the edible fruit trees have been domesticated and commercialized, many are yet to be recognized and exploited. Many of these tropical fruits are labeled as "underutilized species" and also sometimes referred to as "underexploited" species. These are characterized by the fact that they are i) locally abundant, but restricted in their geographical dispersion and have a high use value, ii) there is a lack of scientific knowledge about them, and iii) their current use is limited relative to their economic potential. The broad spectrum of agro climatic regions in India, the adoptive capacity of these fruit trees and diversity in peoples' concept with respect to taste should make it possible to identify the right fruit or fruits for a given region for large scale production. Good market for many of these less known fruits in the fresh or processed form exists and some of them can even find place in international market.

Since 1986, as many as 60 rare and new fruit species belonging to 23 families were introduced from diverse indigenous and exotic agro-climatic regions to the Indian Institute of Horticultural Research, Bangalore. Their performance has been evaluated on sandy clay loam soils under mild tropics (13°58'N, 77°37'E; at 890 MSL; 850 mm rainfall) where the institute is located. Fairly good growth and fruit yield of species such as Bengal quince, avocado and mulberry (subtropics), strawberry (subtemperate), Jamaica plum and carambola (humid tropics), Surinam cherry (warm humid lowland) and arid fruits such as karonda, fig and phalsa have been obtained exhibiting their adaptability to mild tropics. Rose apple, passion fruit, water apple, Cape gooseberry, *Citrus azakara* were also found to grow well. However, the fruits of Southeast Asian rainforest- mangosteen, durian and rambutan exhibited leaf tip scorching in the young stage for want of high humidity and failed to put forth good growth. Inadequate chilling hours caused persimmon, kiwi, white sapota and even tropical apple to get into prolonged rest, delayed foliation with few leaves near the branch tip. In persimmon, longan, litchi and loquat (subtropical) vegetative growth was unhindered but flowering and the fruit quality was poor. Subtropical high land fruits, cherimoya, could not adjust well while atemoya as in its native, was a shy-bearer. Arid and semi arid fruits, such as Indian jujube, Indian gooseberry, sweetsop and a tropical lowland fruit-bullock's heart, did not yield the best quality fruits in our mild climate. Date palm, a hot arid region crop, failed to establish while butter tree, a moist plain land fruit, did not flower. Among recent introductions, Manila tamarind, Sweet and sour Carambola, bilimbi, sweet tamarind, Spanish plum, and ugurassa, small-seeded Java plum are performing satisfactorily. Inter-genotypic variation in performance of canistel and macadamia, a tropical nut crop, has been noted. Other recent introductions viz., *Chrysophyllum, Psidium littorale, Aporusa lindleyana, Psidium guineesen, Salacia beddomei, Syzygium zeylanicum, Antidesma* and *Pandanus* are under evaluation. Thus, research has established that adaptation plasticity varies with the crop/variety, which can be ascertained only by growing a given fruit in a new environment. The institute plans to strengthen research work for large scale production and utilisation of these underutilized fruits so that their vast potential can be exploited.

Bangalore

(Dr. Amrik Singh Sidhu)
Director

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