

कृषिवानिकी समाचार पत्र Agroforestry Newsletter

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World Congress on Agroforestry 2014 Trees for life: Accelerating the impact of Agroforestry

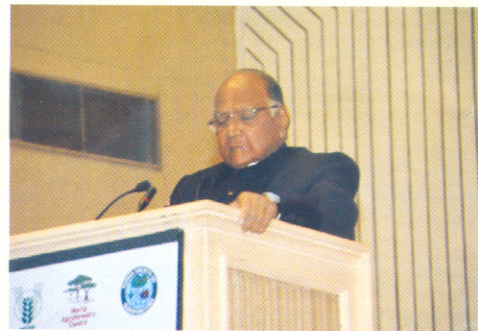
The 3rd World Congress on Agroforestry (WCA 2014) was organized during 10th to 14th February in Delhi. The Congress was jointly organized by the World Agroforestry Centre, Indian Council of Agricultural Research, Indian Society of Agroforestry and Global Initiatives. Earlier, the second Congress was held at Nairobi (Kenya) in 2009 and the first at Orlando, Florida, USA, in 2004. The main theme of the Congress was "Trees for life: Accelerating the Impact of Agroforestry".

The main aim of the Congress was to expand global agroforestry, share the current status of knowledge and practices of agroforestry, consolidate its research base, build support for agroforestry within governments, companies, academia, NGOs and media and increase the engagement of private sector.

The World Congress was inaugurated by the Hon'ble President of India, Shri Pranab Mukherjee at Vigyan Bhavan in New Delhi on February 10th, 2014. The President termed agroforestry as a promising sector which is emerging as a major domain in environmentally sustainable food production systems. Agroforestry system produces food, fuel and fibre; contributes to food and nutritional security; sustains livelihoods; helps in preventing deforestation; increases biodiversity; protects water resources, and reduces erosion. He pointed out that carbon sequestration of agroforestry farms is a low-hanging fruit for climate change mitigation, justifying greater investment in it. He also said that Agroforestry is also an important alternative to meet the target of increasing the vegetation cover to 33% from the present level of less than 25%. The President highlighted the research work being conducted by ICAR on agroforestry through its All India Coordinated Research Project (AICRP) on Agroforestry and National Research Centre for Agroforestry (NRCAF). The President mentioned about the National Agroforestry Policy which was approved by the Cabinet on 6th February, 2014.



Shri Sharad Pawar, Union Minister of Agriculture and Food Processing Industries, in his address said that Agroforestry has been a way of life in India for centuries and it has the potential to address issues such as employment generation, livelihood, resource conservation and optimization of farm productivity. A global 'agroforestry transformation' is required to mobilize resources to overcome the constraints that impede its widespread application. The Indian Council of Agricultural Research and World Agroforestry Centre, Nairobi along with other partners are poised to foster such an agroforestry transformation, which will promote an "evergreen revolution" in agriculture and natural resource management arena, especially in the developing countries. Shri Pawar released special issue of the 'Indian Farming' (ICAR) and the 'Indian Journal of Agroforestry' and presented first copy to the Hon'ble President of India.

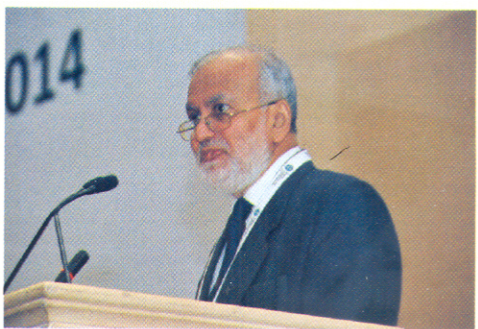


Dr. M. Veerappa Moily, Union Minister of Environment and Forests highlighted the important role of trees in the Indian sub-continent since centuries by providing food, fuel, fibre, fruit and timber. He said that Indian farmers are growing trees on farm lands as a dynamic system of agricultural sustainability for enhancing profitability and productivity. He hoped that the National Agroforestry Policy will pave way for new era of agroforestry in the country.



Dr. Anthony J. Simons, Director General, World Agroforestry Centre elaborated upon the theme of WCA-2014, Trees for Life-Accelerating the Impact of Agroforestry. He said that organization of WCA in this part of world is important as it feeds more population than other parts but has less number of trees in comparison. Dr. Simons said that agroforestry strives for green society rather than green economy.

Earlier, Dr. S. Ayyappan, Secretary, DARE and DG, ICAR welcomed the dignitaries and delegates and hoped that this conference would deliberate on road map for the agroforestry for the next couple of decades. He said that the Congress will achieve its goal to accelerate the financial, environmental and social impacts of agroforestry on the development.



Dr. A.K. Sikka, Deputy Director General (NRM), ICAR proposed the vote of thanks. About 1100 participants, including about 500 foreign participants from more than 80 countries, representing researchers, policymakers, and major businesses with concerns for sustainable development, NGOs, farmers and youth groups participated in this World Congress.

On the last day, Dr. Anthony J. Simons, DG, World Agroforestry Centre, Nairobi, Kenya, presented the draft Congress declaration entitled "The New Delhi Declaration on Agroforestry" at the plenary session. Draft was based on the observations, deliberations, recommendations, discussions and affirmations of about 1,100 global delegates and abstracts, posters and papers presented at the congress and lays emphasis on practice of agroforestry for the coming 5 years and beyond, and to fully harness the vital contribution that trees make to human well-being. Further, the declaration calls for the various groups to work closely together to accelerate the impact of agroforestry.

Shri Salman Khurshid, Minister of External Affairs, Government of India delivered valedictory address on the concluding day of World Congress on Agroforestry. While appreciating the efforts of World Agroforestry Centre and Indian Council of Agricultural Research for organizing this event of global importance, he urged to domesticate fruit and medicinal plants in the homestead for nutritional security. He said that this is historical event with reference to Indian context as today we are looking beyond success of green revolution to sustain the food production. In the era of climate change, trees can do a lot of rescue work for us due to their innate ability to sequester carbon from atmosphere.



India could effectively showcase the diversity in the agroforestry practices adopted throughout the length and breadth of this vast country through the oral and poster presentations during the Congress. About 1100 abstracts covering diverse regions, disciplines, species and components related to agroforestry were submitted at the Congress and the maximum number was from India. An oral, 25 posters and six blogs were contributed by NRCAF. In addition there were more than a 100 posters displayed by the scientists from AICRP on Agroforestry network.

In order to harness the strength of electronic and social media in land-use practices like Agroforestry, Blog posts were organized for the WCA-2014. Forty seven blog posts from 19 countries were submitted to the Congress website, out of which maximum were from India. These blog posts received a total of 23,991 online voters and 2,262 comments. The blog post on "Agroforestry: Attracting youth to farming and transforming rural India" contributed by N. P. Chaudhary, a young farmer from Uttar Pradesh was adjudged the best and bagged jury blog award. In addition, four out of five prize winning blog posts were from India.

As part of Pre-Congress activities events like National Agroforestry Day (May 8th), plantations in different parts of the country by school children, farmers and others; satellite seminars, brain storming session, consultation meet, programs on television and radio and children painting and essay competition were organized.



Four post Congress visits to demonstrate rich diversity in agroforestry in the country were also organized for the delegates that included Agra (Uttar Pradesh) for silvipasture systems and ravine agroforestry systems, Yamuna Nagar (Haryana) for commercial and industrial agroforestry, Jaipur (Rajasthan) for arid & semi-arid agroforestry systems and Kodaguru (Karnataka) for coffee based agroforestry systems. There was overwhelming response from the delegates for post Congress visits.

[Contributed by National Research Centre for Agroforestry & Indian Society of Agroforestry]

महिला प्रकोष्ठ

दिनांक 03 जनवरी, 2014 को केन्द्र निदेशक डॉ एस. के. ध्यानी की अध्यक्षता में महिला प्रकोष्ठ की त्रैमासिक बैठक सम्पन्न की गयी। बैठक में महिला प्रकोष्ठ की अध्यक्ष डॉ (श्रीमती) एस. विमला देवी, डॉ (श्रीमती) साधना पाण्डेय, वरि. वैज्ञानिक, भा.च. एवं चा. अनु. सं., झाँसी एवं अन्य महिला सदस्य उपस्थित रहीं। इसके अतिरिक्त बैठक में महिला प्रकोष्ठ के अन्य सदस्य, कर्मचारी एवं शोध छात्रा उपस्थित रहे। बैठक में निदेशक महोदय के दक्ष प्रशासन काल में महिलाओं से संबंधित कोई समस्या/शिकायत नहीं होने पर संतोष प्रकट किया गया। निदेशक महोदय ने अपने उद्बोधन में कहा कि भविष्य में महिलाओं की कोई भी माँग होने पर उस पर सुविचार किया जावेगा तथा इस विचार को डॉ (श्रीमती) साधना पाण्डेय ने भी समर्थन किया। साथ ही केन्द्र में शत-प्रतिशत महिलाओं के अनुकूलित वातावरण बनाने का लक्ष्य रखा गया। अंत में कार्यालय प्रमुख डॉ इन्दर देव ने धन्यवाद ज्ञापन किया।

Dynamics of soil organic carbon decomposition in agroforestry systems in semi-arid Bundelkhand region

In various ecosystems soil organic carbon (SOC) is the largest reservoir of carbon that interacts with the atmosphere. In agricultural lands, plant cover is usually removed every year, carbon sequestration means increased carbon content of the soil. Therefore, it is of paramount importance to adopt tree based land use system and other agricultural practices that sequester organic carbon in soil. A high level of SOC is beneficial for soil fertility and soil structure. Agroforestry land use greatly influences SOC storage. However, considering dynamic nature of soil carbon, it is important to evaluate contribution of different components of agroforestry, their stability, decomposition rates and turnover time. Hence, the dynamics of soil organic carbon decomposition was studied in *Hardwickia binata*, *Embilica officinalis* and *Acacia senegal* based agroforestry systems, and in open crop field. All agroforestry systems and sole crop field had red soil except *H. binata*-I where soil was black. To study the dynamics of soil organic carbon decomposition a laboratory experiment was conducted under constant temperature (25°C) and moisture (70% of water holding capacity) for 90 days. The 100g soil sample was incubated in glass jars. The jars were normally closed but opened periodically to maintain moisture/aerobic conditions. The evolved CO₂ was trapped in 20 ml 0.5 N NaOH solution and precipitated by addition of BaCl₂ and measured by titration of residual NaOH to pH 7.0 with 0.5 N HCl. The evolved CO₂ was measured daily for 3 days, every 3-4 days in the following two weeks and every 7 days (week) till end of the incubation period *i.e.* 90 days. The change curve of daily mineralization of organic carbon was obtained by using the total burst of CO₂ during interval of measured time divided by days (Fig 1).

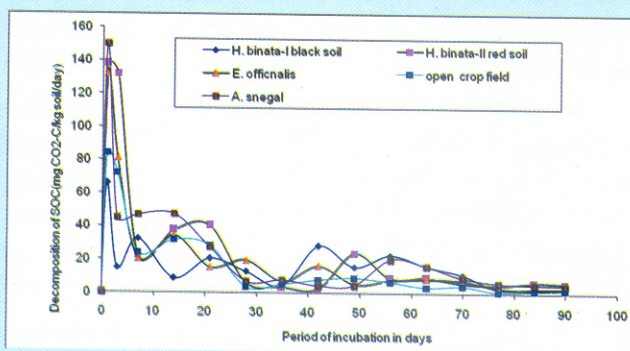


Fig 1. Decomposition rate of SOC in different agroforestry systems and open crop field

The results indicated by change curve revealed that irrespective of different agroforestry systems, there were two distinct bursts of CO₂ when soil organic carbon was released. The first was rapid decomposition and the other was slow decomposition. Duration of rapid decomposition was short, however accumulated for a large quantity of decomposition. The slow decomposing accumulated for relatively smaller quantity and took long time.

Total release of CO₂-C varied from 265.1 to 452.6 mg CO₂-C kg⁻¹ soil in different agroforestry systems which accounted for 4.1 to 8.0% of SOC (Table 1). Maximum fraction total SOC mineralized in open crop field (8.0%) while minimum in *H. binata* (black soil) based AF system (4.1%). In *H. binata* based agroforestry system more SOC mineralized in red soil than black soil. In general more fraction of total SOC was mineralized in open crop field than different AF system. In terms of percentage of total SOC mineralization the order of different AF systems was *H. binata* (red soil), *A. senegal*, *E. officinalis* and *H. binata* (black soil). Conclusively, the findings indicate that SOC in open crop field had large active pool which decomposed rapidly in short time whereas; AF system relatively contained proportion of slow pool decomposing steadily over a long period. It signifies that organic carbon sequestered in AF systems through tree litter contributes toward slow decomposition and resistant carbon pool in soil.

Table 1: Total soil organic carbon mineralization in AF systems

Agroforestry System	SOC (g kg ⁻¹ soil)	Total SOC mineralization (mg CO ₂ -C kg ⁻¹ soil)	Percentage of total SOC mineralization accounted for SOC (%)
<i>H. binata</i> - I (black soil)	6.45	265.09	4.11
<i>H. binata</i> -II (red soil)	7.32	452.55	6.19
<i>E. officinalis</i>	7.45	369.99	4.97
<i>A. senegal</i>	7.14	405.52	5.68
Open crop field	3.55	284.81	8.02

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Investigation on Carbondioxide Sequestration at M/s JSW Steel Ltd. through Green Belt Development

JSW Steel Ltd. is one of the premier steel producer in India with a production capacity of 10 million tons of steel per annum at its Vijayanagar Plant in the Bellary district of Northern Karnataka. It is the largest steel plant in India at a *single location*. Significant efforts were taken in the recent past for reduction in CO₂ emission through improvements in energy efficiency at JSW Steel Limited. Even with many of the new state-of-the-art facilities, the CO₂ emission from Vijayanagar Plant is about 22- 25 MT of CO₂ per annum. In this scenario, the management of JSW Steel Limited has taken a policy initiative to take up a major R & D Programme on “Carbon Dioxide Capture and Sequestration”. The main initiative aimed at quantifying the CO₂ sequestered through green belt development activities in the Plant (Vijayanagar Works) through quantitative modeling and suggesting plantation options for future land usage with a view to maximize CO₂ sequestration using the terrestrial sequestration approach.

JSW Steel Ltd requested National Research Centre for Agroforestry (NRCAF), Jhansi (UP) to actualize this process. In this study detailed investigations were carried out on the impact of pro-active measures taken by JSW Steel Ltd. in CO₂ sequestration through green belt development within the steel plant premises and its various residential colonies at Vidyanagar, V. V. Nagar and Shankar Guda.

In the recent past researchers in Europe have tried to develop a standard methodology for carbon sequestration potential for different plant species. The most significant development is the CO₂FIX model which is a comprehensive simulation modeling tool developed through joint funding from the European Commission (EC), Dutch Government and the Mexican National Council of Science & Technology under the Carbon Sequestration in Forested Landscapes (CASFOR II) Project. Scientists from the National Research Centre for Agroforestry, Jhansi have extensively used and parameterized CO₂FIX model for Indian conditions to simulate carbon sequestered under tree based systems. Accordingly, the carbon sequestered under various existing greenbelt configurations at JSW Steel Ltd. was assessed using CO₂FIX modeling simulations.

The carbon sequestration potential of existing green belt (block plantations) in 4MT, 7MT, 10MT and township areas of JSW campus was estimated to the tune of 2.65, 1.63, 3.01 and 3.71 tons C ha⁻¹yr⁻¹ (or converting into CO₂ equivalent of 9.71, 5.97, 11.03 and 13.60 tons CO₂ ha⁻¹yr⁻¹, respectively).

The carbon sequestration potential of existing avenue/road-side plantations in 4MT, Main-Gate, VV Nagar, Shankarguda and Vidhya Nagar areas of JSW campus was estimated to the tune of 1.28, 0.61, 0.24, 0.15 and 0.89 tons C ha⁻¹yr⁻¹ (or converting into carbon dioxide equivalent of 4.69, 2.23, 0.88, 0.55 and 3.26 tons CO₂ ha⁻¹yr⁻¹, respectively).

When results of all the nine study areas of JSW plant and residential campuses were put together, the overall carbon sequestration potential of existing plantations varied from 0.15 to 3.71 tons C ha⁻¹yr⁻¹. The simulation results of this study also seems reasonably acceptable in the light of the reported values of carbon sequestration potential of many tree species (namely *Syzyium cumini*, *Gmlina arborea*, *Tectona grandis*, *Acacia auriculiformis*, *Dalbergia latifolia*, *Terminalia chibula* and *Hardwickia binata* with tree densities varying from 157 to 1112 trees ha⁻¹) planted in Hosakaote Research Station of Bangalore Research Circle (Central Karnataka Zone) ranging from 0.14 to 3.50 tons C ha⁻¹yr⁻¹. Moreover, the results of this study are comparable with the other published studies in India as well as in other parts of the world.

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हिन्दी कार्यशाला

डा. एस. के. ध्यानी केन्द्र निदेशक की अध्यक्षता में दिनांक 29 मार्च, 2014 को हिन्दी कार्यशाला सम्पन्न हुई। कार्यशाला के मुख्य वक्ता डा. आर. के. तिवारी, प्रधान वैज्ञानिक एवं कार्यक्रम प्रमुख, मानव संसाधन विकास, राष्ट्रीय कृषिवानिकी अनुसंधान केन्द्र, झाँसी थे। उन्होंने अपना व्याख्यान “परिणाम फ्रेमवर्क दस्तावेज की उपयोगिता” पर दिया। डा. तिवारी ने व्याख्यान देते हुए परिणाम फ्रेमवर्क दस्तावेज की उपयोगिता के विज्ञान, मिशन, उद्देश्य एवं कार्यों के बारे में विधिवत जानकारी दी। उन्होंने बताया कि भारत सरकार के विभिन्न मंत्रालयों तथा विभागों की प्रगति की समीक्षा करने के लिए प्रधानमंत्री कार्यालय में प्रगति मोनिटरिंग डिवीजन की स्थापना की गयी है। यह डिवीजन विभिन्न विभागों की वर्षवार समीक्षा करती है। समीक्षा के लिए विभागों से अपना लक्ष्य निर्धारित करने की अपेक्षा की जाती है। स्व निर्धारित लक्ष्य के अनुरूप उपलब्धियों की माहवार समीक्षा की जाती है, जिससे विभागों के कार्यों में

गतिरूपता बनायी जाती है। इस प्रकार की समीक्षा कार्य की गुणवत्ता तथा मात्रात्मक प्रगति को दर्शाती है और कार्य क्षमता बढ़ाने में मददगार होती है। उन्होंने प्रमुख उद्देश्यों, सफलता संकेतकों एवं लक्ष्यों के बीच आंतरिक प्राथमिकताएं तथा सफल संकेतकों का विवरण भी प्रस्तुत किया। कार्यशाला के दौरान मंचासीन केन्द्र के कार्यालय प्रमुख, डा. इन्दर देव, प्रधान वैज्ञानिक एवं कार्यालय प्रमुख ने शासकीय कामकाज में राजभाषा को बढ़ावा देने पर बल देते हुए सभी से अपना प्रशासनिक कार्य हिन्दी में करने की अपील की। उन्होंने यह भी अवगत कराया कि अधिकतर परिपत्र, कार्यालय आदेश तथा फाइलों पर टिप्पणियां हिन्दी में लिखी जा रही हैं। डा. सी. के. बाजपेयी, प्रभारी अधिकारी, राजभाषा ने केन्द्र के समस्त वैज्ञानिकों, अधिकारियों एवं कर्मचारियों का स्वागत करते हुए कार्यशाला की उपयोगिता पर प्रकाश डाला। कार्यशाला में केन्द्र के वैज्ञानिकों, अधिकारियों तथा कर्मचारियों ने भाग लिया गया।

Institute Joint Staff Council Meeting

Institute Joint Staff Council (IJSC) meeting was held on 8th January, 2014. Various issues related to welfare of the staff were discussed.

ICAR Industry and Agricultural Education Day

ICAR Industry and Agricultural Education Day was organized at NRCAF, Jhansi on 28th February, 2014. About 150 participants including 30 post-graduate students along with faculty member from Bipin Bihari Post Graduate College, Jhansi, SRF, RA, M.Sc. dissertation students and Ph.D. Scholars participated in the Function, besides scientific technical, administrative and SSS staff of the Centre. Lectures on Agricultural Education Scenario in India and status of agri-based industries at Jhansi were delivered. Discussions were held on opening of consultancy services using GIS and remote sensing as business module by trained/educated young entrepreneurs. Possibilities of promoting agri-based and agroforestry-based enterprises in Bundelkhand region were also discussed. Present scenario of agri-based industries in the region is bleak and mostly confines to sale of produce



and agri-inputs. Scope of fruit and vegetable preservation, value addition, creating alternate livelihood support systems through cultivation of lac, gum/resin, medicinal/aromatic plants and floriculture in Bundelkhand region was discussed at length. Bamboo/Date palm based small cottage industry need promotion in the region as they are commonly found in wastelands and under agroforestry system on field bunds. NRCAF, Jhansi can contribute in this direction by way of identifying quality germplasm and ensuring availability of mother plants, imparting training on lac cultivation, fruit and vegetable preservation, vermi composting etc. However, agri-based industry development requires greater input from various state agencies, NGO and private sector.

Students were taken to laboratory visit followed by research farm visit. Students were encouraged to opt agriculture as career development activity. It was emphasized that country needs trained manpower in agriculture to sustain agriculture production, enhance income from available produce/resources.

Training Programme on "Protection of Plant Varieties and Farmers Rights Act"

An awareness cum training programme on "Protection of Plant Varieties and Farmers Rights Act" was assigned to the National Research Centre for Agroforestry, Jhansi, during the financial year (2013-2014) by the PPV & FR Authority. The purpose of training was to bring awareness about provisions of Protection of plant varieties and Farmers Rights Act, its Authority and its activities to the notice of breeders, developmental workers, researchers, scientist, progressive farmers and other farming communities in and around the domain area of the institute.

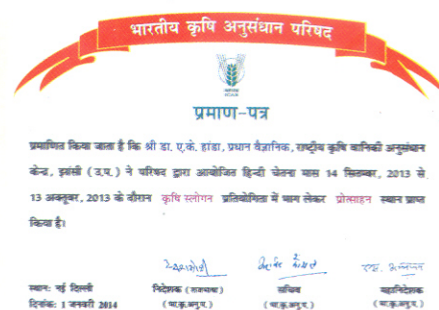


Accordingly, a one day training programme was organized on 28th February 2014 at the Centre. The plant breeders, developmental workers, researchers, scientist, technical staff and research scholars of NRCAF, lecturers and research students of Bundelkhand university, progressive farmers and other farming communities of Jhansi, Mauranipur and Datia, besides of KVK, Bharari, Jhansi attended the training program. A total of 100 participants registered for the training. The chief guest of the program was Dr. R. V. Kumar, Head, GSM Division, IGFR, Jhansi. Dr. Sippy Dassani, Lecturer, BB College, Jhansi was present as special invitee.

During the training program detailed information was given on Plant Variety Protection and Farmers Rights- An Introduction and Their Objectives- by Dr. A. K. Handa; Importance of IPR in agriculture- By Dr. Inder Dev and Plant protection rights and Farmers rewards and recognitions - by Dr. S. Vimala Devi. The presentation covered the plant variety development process and uses, local land races and extant varieties, farmers rights and their protection, objectives of PPVFR Act, protection of varieties, plant varieties and farmers rights, breeders rights, registration and duration of protection under act, depositing the samples, Indian plant variety journal, notification of varieties, gene bank, profit sharing, national gene fund, submission of application, Recognition and rewards, etc. Besides, all this information in printed form was also provided to each participant. The questions raised by the participants were satisfactorily answered by the experts. The importance of the training was realized by the scientist, development workers, research scholars and farmers. The training programme was coordinated by Dr. A.K. Handa, Dr. S. Vimala Devi, Dr. Inder Dev, Mr. Rajarajan and Dr. Rajeev Tiwari.

पुरस्कार

- केन्द्र के डॉ. अरुण कुमार हाण्डा, प्रधान वैज्ञानिक को भारतीय कृषि अनुसंधान परिषद, नई दिल्ली द्वारा वर्ष 2013 में आयोजित हिन्दी चेतना मास के दौरान उनके द्वारा लिखित स्लोगन को सांत्वना पुरस्कार दिया गया। यह पुरस्कार नास कॉम्प्लैक्स, नई दिल्ली में 1 जनवरी, 2014 को आयोजित कार्यक्रम में सचिव, डेयर द्वारा प्रदान किया गया।
- Dr. Inder Dev received the 3rd best poster presentation award during ISTS-IUFRO Conference (13th-15th March, 2014 on "Sustainable Resource Management for Climate Change Mitigation and Social Security" held at Chandigarh. He presented the research poster entitled "Participatory evaluation of groundnut as a tool to enhance productivity under SAT region of Central India" authored by Inder Dev, Ramesh Singh, Kaushal K. Garg, R. K. Tewari, S.K. Dhyani, R.H. Rizvi, K.B. Sridher, R. P. Dwivedi, Rajendra Singh and R.K. Singh.



Promotion

- Dr. Badre Alam, Sr. Scientist (Plant Physiology) promoted to Principal Scientist from 7th August, 2012 under the provision of Career Advancement Scheme.

Training Programmes

- Centre organized Farmers training on "Agriculture and Horticulture Development" from 29th - 31st January, 2014. In this training programme 50 farmers of Datia (M.P.) district participated. Training was sponsored by Assistant Director of Horticulture, Datia under National Horticulture Mission.
- Three training programmes (20th to 22nd, 24th to 26th & 27th to 29th March, 2014) for officers/officials of Watershed Project Implementing Agency, WDT members, members of Watershed Committee, members of SHGs, grassroot level workers and farmers from Lalitpur, and Jhansi on Planning and Execution of Watershed project under IWMP Scheme were organized. Ninety participants participated in these training programmes.

Human Resource Development

- Dr. Ram Newaj, Pr. Scientist and Shri Chavan Sangram Bhanudas, Scientist participated in Carbon Footprint Meeting on 7th January, 2014 held at CRIDA, Hyderabad.
- Sh. Sunil Kumar and Sh. Rajendra Singh participated in Modal Training Course on "Integrated Nutrient Management for Quality Forage Production" sponsored by DAC, Ministry of Agriculture, GOI during 27th January to 3rd February, 2014 held at IGFR, Jhansi.
- All Scientists, Technical Officers, RAs and SRFs participated in the 3rd World Congress on Agroforestry held in New Delhi during 10th - 14th February, 2014.

- Dr. Inder Dev, Pr. Scientist, Shri K Rajrajan and Shri Chavan Sangram Bhanudas, Scientists participated in the ISTS- IUFRO Conference on “Sustainable Resource Management for Climate Change in Mitigation & Social Security” from 13th to 15th March, 2014 at Chandigarh.
- Shri Chavan Sangram Bhanudas, Scientist participated in the Simulation Modelling group meeting on 19th March, 2014 at NASC Complex, New Delhi.
- Dr. S Vimala Devi, Sr. Scientist participated National Conference on “Computational Techniques in Analysing” from 24th to 26th March, 2014 sponsored by DBT held at AKMU, IARI, New Delhi.

Dr. Brahma Singh is Honoured with Padma Sri

Dr. BRAHMA SINGH an eminent Horticulture Scientist and one of the founder members of the Indian Society of Agroforestry, Jhansi received the prestigious PADMA SRI from Hon'ble President of India, Shri Pranab Mukherjee on 26th April, 2014.

Dr. Singh born on December 15th, 1941 at Village Paladi, in Muzaffarnagar (U.P.) received M. Sc. Ag (Horticulture) degree from GBPUAT, Pantnagar and Ph. D. (Hort.) from IARI, New Delhi in 1966 and 1970, respectively. He served as Director, Directorate of Life Sciences, Defence Research and Development Organization, New Delhi; Defence Institute of High Altitude Research, Leh (Ladakh), Defence Research Laboratory, Tezpur (Assam) and Officer on Special Duty (Horticulture), Rashtrapati Bhawan, New Delhi during his 30-year career.



Dr Singh is known for greening of Leh and Nubra valleys by developing and popularizing agro-technologies making production of vegetables under sub-zero conditions and large scale plantation of willow and poplar. He pioneered research on protected cultivation in India resulting in vegetable cultivation in Leh and Nubra valleys. This has led to local farmers being able to meet fresh vegetable requirement of troops boosting the local economy and reducing air transport expenses of food material to Leh. Dr Singh is known for discovering the potential of sea-buckthorn in Ladakh and development of herbal beverage called 'Leh Berry' from sea-buckthorn berries, patented the technology, transferred it to industry promoting establishment of a now

flourishing industry resulting in a substantial income to tribal farmers, herbal health drinks to Siachen troops and foreign exchange to the country through export of sea-buckthorn seeds and pulp. Dr Singh established the first herbal garden at Leh. Earlier in his career, he contributed in the development of space food for first Indo-Russian space mission and six new varieties of vegetable crops being cultivated in high altitudes. He is recipient of a number of prestigious awards and fellowship of National Academies, Societies and Associations and is President of Indian Society for Protected Cultivation, New Delhi. Dr Singh has to his credit 4 patents, 6 books, 60 research papers in National & International Journals of repute, 7 book chapters and 6 technical bulletins.

Dr. Brahma Singh is a member of the Research Advisory Committee of the NRCAF. The Director and President of Indian Society of Agroforestry along with entire fraternity of the agroforesters congratulate Dr. Singh on this occasion.

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