

# कृषिवानिकी समाचार पत्र Agroforestry Newsletter

राष्ट्रीय कृषिवानिकी अनुसंधान केन्द्र, झाँसी-284 003 (उ.प्र.)  
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## हिन्दी सप्ताह

राष्ट्रीय कृषिवानिकी अनुसंधान केन्द्र, झाँसी में दिनांक 13-21 सितम्बर, 2013 के दौरान हिन्दी सप्ताह मनाया गया। दिनांक 13 सितम्बर, 2013 को डा. एस. के. ध्यानी, निदेशक की अध्यक्षता में हिन्दी सप्ताह का शुभारम्भ किया गया। डा. शंकर शरण तिवारी, पूर्व विभागाध्यक्ष (हिन्दी), नेहरू महाविद्यालय, ललितपुर इस कार्यक्रम के मुख्य अतिथि थे। प्रभारी अधिकारी (राजभाषा) ने हिन्दी सप्ताह की व्यापक रूप-रेखा एवं कार्यक्रमों की जानकारी प्रस्तुत की। कार्यक्रम में माननीय कृषि मंत्री, भारत सरकार, का हिन्दी दिवस पर संदेश तथा महानिदेशक, भारतीय कृषि अनुसंधान परिषद, नई दिल्ली का सरकारी कामकाज में राजभाषा का अधिक से अधिक कार्य करने की अपील पढ़ी गई। डा. एस. के. ध्यानी ने अपने उद्बोधन में कहा कि भारत सरकार के गजट में इस केन्द्र का नाम "क" क्षेत्र में है, इसलिए केन्द्र में सभी को अपना प्रशासनिक कार्य शत प्रतिशत हिन्दी में करना है तथा उन्होंने केन्द्र पर राजभाषा में किये जा रहे कार्यों की सराहना की, विशेषतय: बुन्देलखण्ड के भूमि संरक्षण अधिकारियों, स्वयं सहायता समूहों के प्रतिनिधियों एवं किसानों के लिए विषयवस्तु एवं प्रशिक्षण पूर्णतया हिन्दी माध्यम से आयोजित करने की चर्चा की। कार्यक्रम में डा. राजेन्द्र प्रसाद, डा. इन्द्र देव, प्रधान वैज्ञानिक तथा श्री के.पी. शर्मा ने भी अपने विचार व्यक्त किये।



सप्ताह के दौरान विभिन्न प्रतियोगिताओं का आयोजन किया गया। दिनांक 16.09.2013 को जलवायु परिवर्तन एवं कृषिवानिकी विषय पर वाद-विवाद प्रतियोगिता का आयोजन किया गया तथा दिनांक 17.09.2013 को निबन्ध प्रतियोगिता का आयोजन किया गया जिसका शीर्षक "देश की अर्थ व्यवस्था में कृषि का योगदान" था। इन प्रतियोगिताओं में केन्द्र के वैज्ञानिकों, अधिकारियों, कर्मचारियों, शोध अध्येता, शोध छात्र एवं छात्राओं ने भाग लिया। दिनांक 18.09.2013 को केन्द्र के तकनीकी एवं प्रशासनिक श्रेणी के अधिकारियों एवं कर्मचारियों के लिए सुलेख, इमला एवं अनुवाद प्रतियोगिता का आयोजन किया गया। दिनांक 19.09.2013 को कुशल सहायक कर्मचारियों के लिए इमला एवं अवकाश प्रार्थना पत्र प्रतियोगिता का आयोजन किया गया। इसके उपरान्त अहिन्दी भाषी क्षेत्र के कार्मिकों के लिए पत्र लेखन/प्रार्थना पत्र प्रतियोगिता का आयोजन किया गया। दिनांक 20.09.2013 को वैज्ञानिकों के लिए हिन्दी में शोध पत्र (पोस्टर प्रतियोगिता) का आयोजन किया गया, जिसमें 05 पोस्टरों का प्रदर्शन किया गया। दिनांक 20.09.2013 को एक वर्ष (अक्टूबर, 2012 से सितम्बर, 2013) के दौरान प्रशासनिक वर्ग से 20,000 या उससे अधिक शब्द हिन्दी में लिखने के लिए निर्णायक मण्डल द्वारा श्री हूबलाल, वैयक्तिक सहायक को प्रथम, श्री जय जनार्दन सिंह, सहायक को द्वितीय एवं श्री महेन्द्र कुमार, सहायक को तृतीय पुरस्कार हेतु चयनित कर नगद पुरस्कार दिया गया।

हिन्दी सप्ताह के अन्तर्गत प्रतिदिन आयोजित प्रतियोगिताओं में प्रथम, द्वितीय, तृतीय एवं प्रोत्साहन पुरस्कार हेतु प्रतिभागियों का चयन किया गया। दिनांक 21.9.2012 को हिन्दी सप्ताह का समापन समारोह केन्द्र निदेशक डा. एस. के. ध्यानी की अध्यक्षता में सम्पन्न हुआ। समापन समारोह के मुख्य अतिथि श्री तेजी लाल मिश्र, सेवानिवृत्त राजभाषा अधिकारी, उत्तर मध्य रेलवे, झाँसी रहे। इस अवसर पर मुख्य अतिथि महोदय द्वारा प्रतियोगिता में विजयी प्रतिभागियों को पुरस्कार वितरित किये गये। कार्यक्रम में वार्षिक राजभाषा पत्रिका "कृषिवानिकी आलोक-2013" सप्तम अंक का विमोचन भी मुख्य अतिथि महोदय द्वारा किया गया। मुख्य अतिथि ने राजभाषा अधिनियम 1963 की धारा 3 (3) एवं राजभाषा नियमों, 1976 का उल्लेख करते हुए सभी से अपने दैनिक कार्यों में इसके अनुपालन करने की अपील की। समापन कार्यक्रम के दौरान डा. अनिल कुमार एवं डा. राम नेवाज ने भी अपने विचार व्यक्त किये। कार्यक्रम में डा. एस. के. ध्यानी ने वाद-विवाद, निबन्ध, सुलेख, इमला, अनुवाद, पत्र लेखन, शोध-पत्र पोस्टर प्रतियोगिताओं में पुरस्कृत प्रतिभागियों को बधाई देते हुए वैज्ञानिकों से अपील की कि वे केन्द्र में विकसित तकनीकियों को किसानों तक हिन्दी भाषा में पहुँचाने हेतु और अधिक प्रयास करें।

### Issues Highlights

- IRC - 2<sup>nd</sup> & 3<sup>rd</sup> July, 2013
- Van Mahotsav 17<sup>th</sup> July, 2013
- *Parthenium* awareness week 16<sup>th</sup> -22<sup>nd</sup> August, 2013
- हिन्दी सप्ताह (13-21 सितम्बर, 2013)

### Forthcoming Events

- Farmer's Innovation Day: 16<sup>th</sup> November, 2013.
- Institute Joint Staff Council / Women Cell's / PME Cell meetings.
- Painting and Essay Competition for Children as WCA-2014 activities.



## Parthenium Awareness Week

*Parthenium hysterophorus* L. (Asteraceae) commonly known as carrot weed, congress grass or *gajarghas* is a native of Central and Southern America and is a major weed of both agricultural and urban situations throughout India. The weed was spotted for the 1<sup>st</sup> time in India in 1955 and has now invaded about 35 million ha area in the country. *Parthenium* is an annual herb in which flowering occurs in about a month after germination. A single plant can produce about 5000-25000 seeds and can produce even up to 100,000 seeds in its lifecycle. Its seeds do not have a dormancy period and are capable of germinating anytime when moisture is available. The highest germination rates are at temperatures ranging from 12 to 27 °C. It is a neotropical weed, which also constitutes a serious health hazard due to its allergic properties. The pollen grains, air borne pieces of dried plant materials and roots of *Parthenium* can cause allergy-type responses like hay fever, photodermatitis, asthma, skin rashes, etc. Infestation by *Parthenium* degrades natural ecosystems. It can be controlled by adopting mechanical measures (uprooting during monsoon season before flowering), sowing of *Cassia tora* seeds in the heavily infested areas, application of glyphosate (1-1.5%) before flowering. One of the best methods to eradicate this weed is through the release of bioagent Mexican beetle "*Zygotogramma bicolorata*" during monsoon season.

NRCAF observed the "*Parthenium* awareness week" during 16<sup>th</sup> -22<sup>nd</sup> August, 2013. 50 boxes of bioagent Mexican beetle "*Zygotogramma bicolorata*" were procured from DWSR, Jabalpur as a gift in a move to save the land and environment from *Parthenium*. Each box was containing about 400-500 beetles. During the *Parthenium* awareness week, NRCAF organized lectures, demonstrations, meetings etc. to spread the message. During the week's awareness movement a *Parthenium* awareness programme was organized at Parasai (Parasai-Sindh Watershed) in Babina Block of Jhansi district on 17<sup>th</sup> August, 2013. This programme was organized in collaboration with ICRISAT, Hyderabad and DWSR, Jabalpur. The awareness programme started with the welcome address and brief introduction about the watershed by Dr. Ramesh Singh, Principal Investigator, Parasai-Sindh Watershed project. On this occasion Dr. Sushil Kumar, Principal Scientist, DWSR, Jabalpur, the expert of *Parthenium* management was the key speaker. Dr. Sushil Kumar explained about *Parthenium*, its biology and control and also the efforts being done by DWSR, Jabalpur in its management. In his address he explained in detail about the biological control of *Parthenium* with Mexican beetle. On the occasion Dr. S. K. Dhyani stated that community level awareness and participation is needed to control this weed through various methods viz., chemical, biological control and mechanical and its indirect control through its utilization as compost. Thereafter, a practical demonstration was given on how to release the Mexican beetle on *Parthenium*. Mexican beetle "42 boxes" were distributed to the farmers of three villages' viz., Parasai, Chhatpur and Bachhauni (Parasai-Sindh Watershed); subsequently these beetles were released by the farmers in their fields in the presence of watershed team. The awareness programme was attended by about 120 farmers, farmwomen, school children as well as the watershed committee of Parasai-Sindh Watershed.



Director, NRCAF, Jhansi and Dr. Sushil Kumar, DWSR, Jabalpur speaking on *Parthenium* and its management during *Parthenium* Awareness Week at Parasai (Parasai-Sindh Watershed), Jhansi.





Director, NRCAF, Jhansi demonstrating the release and gifting of Mexican beetle to the farmers



*Zygotogramma bicolorata* (Mexican beetle) feeding on Parthenium

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## Use of Ethephon for Inducing Gummosis in Trees: Effects on Gum Yield and Health of *Anogeissus pendula* E. in Bundelkhand, Central India

Gum and resin form an important group of non-wood forest products. The industrial applications of gum and resin have expanded tremendously in recent years. They are used in many industries such as paper, textile, petroleum, pharmaceutical, cosmetics, food, varnishes, lacquers and soaps. *Anogeissus pendula* is a gum producing tree occurring naturally in arid and semi-arid areas, particularly in Bundelkhand region and offers livelihood options through its potential uses. The main constraint is that it exudes negligible quantity of gum in nature, which can be overcome by the use of gum inducer. For enhancing gummosis, ethephon (2-chloroethylphosphonic acid), a synthetic chemical compound which releases ethylene in plant tissue has been used as gum inducer in several plants (Bhatt and Mohan Ram, 1990). However, its unscientific application for tapping gum leads to the death of plants. Therefore, a study was undertaken at the Centre aiming standardization of proper dose and season of application of ethephon for optimizing gum yield from *A. pendula* without affecting tree health. The field trial consisting of three doses viz., 390, 780 and 1170 mg of active substance of ethephon was conducted on 15 years old plantation of *A. pendula* at Central Farm and 4 ml solution of each dose was injected at base of tree-trunk (Plate 1) in a hole made by tree borer. After injecting ethephon solution, hole was plugged with mud ball. Each dose was applied on 4 trees and trial was repeated every month throughout the year. In each month ethephon was applied on new trees. The exuded gum (Plate 2) was collected within 15 days of ethephon application. Trees receiving ethephon were monitored for any defoliation, dryness or casualty and sugar content of wood was analyzed before and after one month of application of ethephon to assess tree health.

It was observed that the dose of ethephon as well as season had significant influence on gummosis in *A. pendula*. The data on gum exudation as affected by use of ethephon has been depicted in (Fig 1). During rainy season (July and August) exudation in *A. pendula* was not observed. During summer months (April, May and June) gummosis was noticed only with ethephon dose 1170 mg tree<sup>-1</sup>. On an average, maximum gum yield (65.3g tree<sup>-1</sup>) was obtained in the month of October with the ethephon dose of 1170 mg tree<sup>-1</sup>.

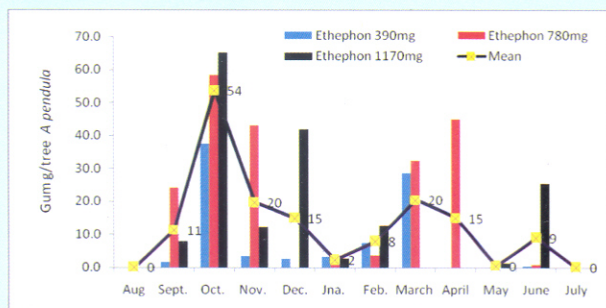


Fig. 1. Effect of use of ethephon on gum yield from 15 year old trees of *A. pendula*



Plate 1. Hole at base of tree-trunk for injecting ethephon solution



Plate 2. Gum-bead exuded after ethephon application



The exuded gum presented variety of forms viz. globular, tear shaped or irregular masses and of good quality. Use of ethephon did not show any negative effect on tree health in term of defoliation, wilting or drying. The injury caused due to boring a hole for injecting ethephon solution also got healed in 3-4 months. Doses of ethephon had no effect on sugar content of wood. However, on an average, wood sugar increased significantly from 3.38 to 4.45 mg g<sup>-1</sup> after one month of ethephon application (Table1).

**Table 1. Effect of Ethephon on sugar content of wood of *A. pendula***

Treatment	Sugar (mg g <sup>-1</sup> )
Ethephon dose	
390 mg	3.9
780 mg	3.82
1170 mg	4.16
Level of significance	NS (P=0.285)
Sugar content before ethephon application	3.38
Sugar content after one month of ethephon application	4.45 (31.7%)
Level of significance	** (P=6.54E-09)

Study concluded that in view of negligible amount of gum oozing from *A. pendula* in nature, application of ethephon @ 1170 mg tree<sup>-1</sup> in the month of October will enhance gummosis and gum yield and provide livelihood options for people of semi-arid and arid region in general and poverty stricken Bundelkhand region in particular.

### Reference

Bhatt, J.R. and Mohan Ram, H.Y. (1990). Ethephon induced gum production in *Acacia senegal* and its potential value in the semi-arid regions of India. *Current Science*, 59(23): 1247-1250.

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### NRCAF Technologies Adopted by Line Departments and NGOs

In India, the needed increase in food grain production to meet increasing demand has to come largely from 94 m ha of rainfed areas, as there is little scope to expand large-scale irrigation in the country. In turn, Government of India has to invest huge sum towards rainwater harvesting structures to augment water availability in such regions. Therefore, any efforts for cost effective design of rainwater harvesting structure and extending the life of existing structures through leak proofing leads to significant saving of public money. NRCAF developed appropriate technologies for designing Cost-effective Rainwater Harvesting Structures (RHS) and leak proofing technique for existing structures. A brief note of adoption of these technologies is give here.

The technique of construction of low cost RHS was applied in the checkdams constructed in the Garhkundar-Dabar and Parasai-Sindh watersheds. These checkdams are serving the community efficiently for more than seven years without any repair and maintenance. The technique can potentially reduce 15-25% cost of construction without affecting efficacy and life of RHS particularly checkdams.

- 1 This technique was popularized through trainings/workshops/exposure visits/lectures etc. A number of government agencies/NGO successfully adopted the technology and therefore, saved significant amount of government exchequers.
2. Rainwater harvesting was in practice in Bundelkhand region since ages and it was done through construction of large structure across the flow of water. Rainwater stored against such structure was used for drinking, irrigation and ground water recharge. Usually, site of such structure was very strategic. Large areas draining between two adjacent hillocks were ideal for construction of such structure. The two hillocks were joined together with huge earthen structure and fortified with stone masonry. Water accumulates on the upstream.



Usually such structures were provided with masonry spillway to drain out excess water for safety of structures. The submergence area of such structures ranged from 50 to 500 ha. Large structures were never completely drained. They were used for fish culture and sometimes for cultivation of water chestnut and lotus. Such huge structures were even equipped with canal for providing irrigation in downstream. Small to medium structures were completely drained off in October to facilitate growing of wheat/gram/peas/mustard during *rabi* season in impounded bed area. It was observed that spillway of small to medium structures, with time, started leaking. Similarly checkdams constructed in water courses to store small quantities of rainwater in drains were also found leaking due to faulty construction particularly below ground. Thus, the very purpose of construction of such structures was lost. Therefore, it was thought essential to develop a technology to check leakage. The Center developed a technique to check leakage of such old structure, while working in Garhkundar-Dabar watershed and advocated the use of this technology at various platforms by line departments engaged in soil and water conservation.

These technologies *viz.* cost effective design of RHS and leak proofing were adopted by govt. and non-governmental agencies for the benefit of stakeholders. A list of line departments those adopted and narrated success of technologies with location is given below :

### List of agencies adopted technologies developed by NRCAF, Jhansi

S. No.	Name of agencies	Village Panchayat (Nos)	Name of Tehsil/ District	State
1.	Deptt. of Land Development and Water Resources, Govt. of U.P.	12	Jhansi	U.P.
2.	Dept. of Agriculture, Govt. of U.P.	11	Mahoba (in Kulpahad, Charkhari and Mahoba tehsils)	U.P.
3.	Development Alternatives (DA), Taragram Pahuj, Jhansi (NGO)	07 (43 structures)	Datia and Jhansi	M.P. and U.P.

A number of agencies are approaching NRCAF for training and demonstration of these technologies.

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### New Scientist

Dr. Mahendra Singh joined the Centre as Sr. Scientist (Agril. Economics).

### Van Mahotsava

NRCAF organized Van Mahotsava at Parasai- Sindh Watershed, Jhansi on 17<sup>th</sup> July, 2013. About 1200 plants of various species of Teak, Bamboo, Citrus and Guava were planted on farmland as agroforestry plantation by the farmers, ITC trainees and staff members of the Centre.



### Farmers' Training Programmes on Ber Budding

A three days training programme on Ber budding was organized by the NRCAF during 26<sup>th</sup>-27<sup>th</sup> & 29<sup>th</sup> July, 2013 at Parasai, Chhatpur and Bachhauni in Babina block of Jhansi district. The programme was coordinated by Dr. R. P. Dwivedi, Pr. Scientist (Agril. Extension) and Dr. Ramesh Singh Sr. Scientist (SWCE). Total 13 farmers were trained in ber budding. Extension and training tools and approaches were used to conduct the training programme.





## Institute Research Council

Institute Research Council (IRC) meeting was held on 2<sup>nd</sup> & 3<sup>rd</sup> July, 2013. All the Scientists of the Centre participated in the meeting and presented the progress and significant findings of their projects as well as new research proposals.

## PME Meeting

A meeting of the Prioritization, Monitoring and Evaluation (PME) cell was held on 7<sup>th</sup> August, 2013 and was attended by all the Scientist of the Centre.

## Trainings on Agroforestry

Centre organized three days training from 15<sup>th</sup> to 17<sup>th</sup> July, 2013 on “Agroforestry Models for Improving Soil Health by Promoting Vegetation in M.P.” coordinated by I T C, Bhopal for different NGOs working on watersheds in Malwa and Mahakaushal region of M.P. In the training 29 participants participated. The programme was coordinated by Dr. Inder Dev, Pr. Scientist and Dr. K. B. Sridhar, Scientist.



Two Training programmes (2<sup>nd</sup> to 4<sup>th</sup> and 16<sup>th</sup> to 18<sup>th</sup> August, 2013) for officers/officials of Watershed Project Implementing Agency, WDT members, members of Watershed Committee, members of SHGs, grassroot level workers and farmers from Banda–II on Planning and Execution of Watershed project under IWMP Scheme were organized. 62 participants from Banda district participated in the training. These two training programmes were coordinated by Dr. Ramesh Singh, Sr. Scientist; Dr. C. K. Bajpai, CTO; Dr. Inder Dev, Pr. Scientist and Sh. S.P.S. Yadav, Tech. Officer.

## हिन्दी कार्यशाला

केन्द्र में दिनांक 13 सितम्बर, 2013 को हिन्दी सप्ताह के उद्घाटन सत्र के उपरान्त एक हिन्दी कार्यशाला का भी आयोजन किया गया, जिसका विषय “हिन्दी भाषा का उद्भव, विकास एवं विशेषतायें” था। कार्यशाला के मुख्य वक्ता डा. शंकर शरण तिवारी थे। डा. तिवारी ने प्राचीन भाषाओं संस्कृत, प्राकृत तथा पाली की चर्चा करते हुए हिन्दी भाषा के उद्भव पर प्रकाश डाला। हिन्दी की विकास यात्रा की चर्चा करते हुए उन्होंने क्षेत्रीय तथा प्रान्तीय भाषाओं की चर्चा की। शोध लेखन में हिन्दी के प्रयोग की चर्चा करते हुए उन्होंने तकनीकी शब्दों के सरल रूप में प्रयोग करने की वैज्ञानिकों से अपील की। हिन्दी भाषा की विशेषताओं की चर्चा करते हुए उन्होंने बताया कि हिन्दी में एक शब्द के अनेक समानार्थी शब्द मौजूद हैं। अतः शोध लेखन में प्रचलित शब्द का प्रयोग कर लेखन को सरल बनाया जा सकता है।

## Human Resource Development

- Dr. K. B. Sridhar, Scientist participated in one week management training programme on “Consultancy Project Management” during 1<sup>st</sup> -7<sup>th</sup> August, 2013 held at NAARM, Hyderabad.
- Dr. Ramesh Singh, Sr. Scientist (Soil and Water Conservation Engineering) attended All India Seminar on “Recent Advances in Watershed Development Programme (RAWDEP)” organised by Institution of Engineers, Ahmednagar Local Centre, Maharashtra at Padamashri Dr. Vitthalrao Vikhe Patil College of Engineering, Ahmednagar, during 5<sup>th</sup> & 6<sup>th</sup> September, 2013 and presented research paper.
- Dr. Badre Alam, Sr. Scientist participated in a National Workshop on “Building Awareness about the Need and Nature of National Fund for Basic, Strategic and Frontier Application Research in Agriculture (NFBSFARM)” during 6<sup>th</sup> to 7<sup>th</sup> September, 2013 held at NDRI, Karnal.



- Dr. Ajit, Pr. Scientist participated in the “Partner's Meet and 4<sup>th</sup> Installation-cum- Training Workshop for SAS-Nodal-Officers” during 17<sup>th</sup> & 18<sup>th</sup> September, 2013 held at IASRI, New Delhi.
- Dr. A. K. Handa, Pr. Scientist delivered an invited lecture on “Agroforestry Role in Integrated Farming System Approach” organized by Zonal Project Coordinator III at Guwahati on 18<sup>th</sup> September, 2013 for Scientists from KVKs of Zone III.
- Dr. Ramesh Singh, Sr. Scientist (Land and Water Management Engg.) and Dr. K. B. Sridhar, Scientist attended “Asia Pacific Workshop on Forest Hydrology: Water and Forest-Beyond Traditional Forest Hydrology” organised by FRI, Dehradun, APAFRI, Malaysia and KFRI, Korea at FRI, Dehradun during 23<sup>rd</sup>-25<sup>th</sup> September, 2013. Dr. Ramesh Singh presented a research paper entitled “Influence of Land Use on Water Yield in Drought Prone Bundelkhand Region of Central India” authored by Ramesh Singh, R. K. Tewari and S. K. Dhyani
- Dr. Ramesh Singh, Sr. Scientist (Land and Water Management Engg.) delivered lectures on “Integrated Watershed Interventions for Climate Resilient Agriculture in Semi-Arid Tropics-A Case Study of Garhkundar-Dabar watershed” on the request of IIT, BHU, Varanasi, at Rajeev Gandhi South Campus, Barkachha, BHU, Varanasi on 21<sup>st</sup> September, 2013. The talk was attended by all the students and faculties of RGSC, Barkachha, BHU, Varanasi.

### Visit Abroad

Dr. S.K. Dhyani, Director participated in the 22<sup>nd</sup> International Grassland Congress in Sydney, Australia during 15<sup>th</sup> to 19<sup>th</sup> September, 2013.

### Internal Inspection by the Team of IPAI

Internal Inspection was conducted by the Team of Institute of Public Auditors of India (IPAI), for 2012-13 of the Centre during 2<sup>nd</sup> to 9<sup>th</sup> September, 2013.

### Pre WCA-2014 Activity: Plantation Programmes Organized by the AICRP on AF Centers



S K Nagar (Gujarat)



Hisar (Haryana)



Dharwad (Karnataka)



Bhuvaneshwar (Orissa)





# World Congress on Agroforestry, 10<sup>th</sup>-14<sup>th</sup> February, 2014 New Delhi

Organized by:



World  
Agroforestry  
Centre



भारत  
अनुप  
ICAR



Global initiatives

## Painting and Essay Competition for Children

(Cash prize and trophy/medal)

Age group for painting competition: 6-12 years

Age group for essay competition: 13-18 years

## Painting and Essay theme: Trees for Life

Award will be given on 10 February, 2014

For Important information for Painting and Essay competition visit [www.nrcaf.ernet.in](http://www.nrcaf.ernet.in)

The painting and essay must reach on or before 30.12.2013 through registered/speed post to  
**President, Indian Society of Agroforestry (ISAF), National Research Centre for Agroforestry,  
Gwalior Road, Jhansi-284003 (Uttar Pradesh). The essay may also be sent through email  
(email address: [isaf.secretary@gmail.com](mailto:isaf.secretary@gmail.com); [isaf.nrcaf@rediffmail.com](mailto:isaf.nrcaf@rediffmail.com))**

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