

Agroforestry

Newsletter

National Research Centre For Agroforestry, Jhansi-284 003

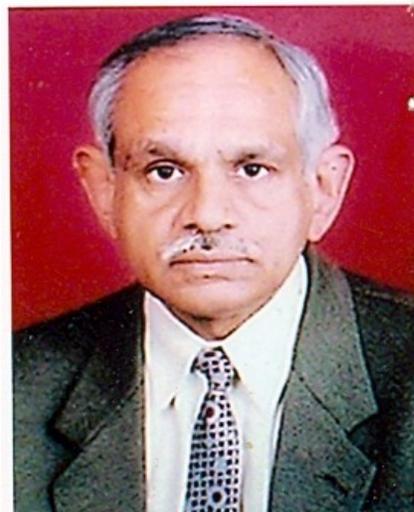
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October-December, 2007

CONGRATULATIONS

Dr. A.K. Singh Deputy Director General (NRM), ICAR, New Delhi

Dr. A.K. Singh, an internationally reputed agricultural scientist, joined as Deputy Director General (NRM), ICAR, New Delhi on September 28, 2007. Dr. Singh is an able administrator with a brilliant academic record. Prior to joining as Deputy Director General (NRM) he served ICAR in different capacity as Scientist / Sr. Scientist /Principal Scientist/Project Director, Water Technology Centre, IARI, New Delhi. He humbly started his career as Scientist S-1 through the Agricultural Research Service in 1976. Besides his Ph.D. in Agricultural Physics from IARI, New Delhi, he conducted Post Doctoral Research in University of Hohemheim, Stuttgart, Germany and obtained Diploma in “On Farm Water Management” from University of Arizona.



Dr. Singh was instrumental in formulation and initiation of Water Science and Technology degree programme at IARI, New Delhi and has been a Faculty Member in discipline of Agricultural Physics and Water Science & Technology since 1977. He has guided several Ph.D. and M. Sc. students and their work has received recognition through awards, like ICAR Jawaharlal Nehru Award for PG Agricultural Research, Indian Science and Congress Association ‘Young Scientist’ Award, IARI, Ph.D. Medal and Student Fellowship Award by the Soil Conservation Society of India. His teaching excellence was recognized as he was bestowed Best Teacher Award by IARI in 2005.

Dr. Singh has been widely recognized for his contribution and been awarded fellowship by number of professional societies, organized professional meets in various capacity at International level throughout his career. Dr. Singh has more than 240 publications on various aspects of Soil-Water-Plant-Nutrient relationship and use of modern tools in water management.

Staffs of NRCAF and AICRPAF welcome him.

ICAR SIGNS WORKPLAN WITH ICRAF FOR COLLABORATION IN AGROFORESTRY

Dr. Mangala Rai, Secretary, DARE & Director General, ICAR and Dr. Dennis P. Garrity, Director General, ICRAF signed the Workplan on behalf of ICAR and ICRAF respectively on 19th November, 2007, at NASC Complex, New Delhi. Sh. A.K. Upadhyay, Additional Secretary, ICAR, Dr. A.K. Singh DDG (NRM), Dr. P.D. Sharma, ADG (Soil), Dr. P.S. Minhas, ADG (IWM) Dr. A.K. Gogoi, ADG (Ag.) Dr. S.K. Tandon, ADG (Engg.), Dr. S.K. Dhyani, Director, NRCAF, Director (TC) DARE, from ICAR and Dr. Hennig Baur, Regional Coordinator Eastern Africa, Dr. Ramni H. Jamnadas, Global Project Leader, Dr. V.P. Singh, Regional Representative from ICRAF participated in the ceremony.

The Work Plan is signed for four-year for collaborative research on agroforestry, primarily for dealing with the climate change effects and to provide assured livelihood systems to small and marginal farmers in various part of the country. The collaboration will strengthen the NARS.

GRAFTING OF *Jatropha curcas* ON *J. gossypifolia* TO INDUCE DROUGHT HARDINESS AND ADAPTABILITY

Jatropha curcas (Ratanjyot), Euphorbiaceae is an important tree borne oil species as focused by Planning Commission, Government of India due to its potential to meet our future energy demand. Growing of *Jatropha curcas* in the available wastelands provide immense potential for the economic as well as social upliftment in rural areas and also in the form of tremendous job opportunities. Among the 175 known species of *Jatropha*, *Jatropha curcas* and *J. gossypifolia* are the two exotics occupy Indian literature and farmer's field since long back. *J. curcas* is having potential to grow well in waste/marginal land but the natural abundance of *J. gossypifolia* in dry areas of Bundalkand region has proved its drought hardiness and local adaptability over *J. curcas*. The fruits of *J. gossypifolia* are small, but the traits like male female ratio (11:1), total number of fruits per plant (>150), early flowering of seedlings and the fruiting nature throughout the season provide ample scope for exploitation. In order to increase adaptability and drought hardiness of *J. curcas* the grafting compatibility between the species was studied (*in-situ*) on the farm of NRCAF, Jhansi during July – August, 2007.

The cleft grafting by taking *J. gossypifolia* as root stock and *J. curcas* as scion and the vice-versa was done in *in-situ* (temperature ranges from 34° – 44°C) conditions. The success of grafting in the first case (*J. gossypifolia* as root stock and *J. curcas* as scion) was 80 % and union was achieved within a short period (21 days) whereas in second case (*J. curcas* as root stock and *J. gossypifolia* as scion) also 80% success was achieved in 35 days. The grafting success by *J. gossypifolia* as rootstock and *J. curcas* as a scion is a potential technique, which can be exploited to incorporate more hardiness and adaptability in *J. curcas* for the Bundalkand region. The success of grafting union in the single stem / early stage is also higher (80 %) than the matured / multi stem stage (40 %). The field evaluation of the grafted plants will be done on large scale to test the suitability

of this technology. The technique will help in developing large scale *Jatropha* cultivation in the region by utilizing existing population of *J. gossypifolia*. Thus precious time in establishment of new plantation of *J. curcas* can be saved

P. Ratha Krishnan, R.V. Kumar, A.K. Handa and V. K. Gupta
National Research Centre For Agroforestry, Jhansi

ANALYTICAL STUDY OF PUBLISHED RESEARCH ON HARDWICKIA IN INDIAN PERSPECTIVE: A DATABASE APPROACH

Hardwickia binata is a moderate to large sized tree, up to 24-30 m tall, girth 1.8-3.0 m with a clean cylindrical bole up to 12-15 m, graceful, drooping slender branches, characteristically found in teak forests, dry savannah and degraded dry deciduous forests. The tree is distributed in isolated patches, varying in extent in the drier parts of the Indian Peninsula. Leaves contain about 9% crude protein, but the amount varies with the age of the leaves. *H. binata* provides excellent firewood and good charcoal. The bark yields a strong fibre largely employed for making ropes. The wood is perhaps the hardest and heaviest in India, used for beams and mine props, bridge and house construction, agricultural implements, carts and wheel work. *H. binata* has a deep-rooting habit, hence competes minimally with arable crops.

Substantial amount of research (intercropping, seed studies, chemical composition, growth and yield performance etc.) has been carried out in India from early 70's on *Hardwickia binata*. However, this research work is scattered and available in the form of reports, bulletins, newsletter, articles etc. An attempt has been made at NRCAF, Jhansi in this direction to compile all the published research information at one platform in the form of a database, so that it is easily accessible to researchers, planners, policy makers etc. This bibliographic research database has been hosted at the server of Indian Agricultural Statistics Research Institute (IASRI), New Delhi and these dynamic web pages are fully functional and one can visit at URL <http://mirror.inaris.gen.in/net>. To view, browse and download information on the subject.

Synthesis of published information on Madhuca in India (1977-2006):

Year wise:

- The database covers 127 Indian *Hardwickia* research records in all from 1977 to 2006, with maximum records published in 1999(15) followed by 1998(9) records.

Species wise: During the reported period i.e. 1977-2006, research records could be traced on one species namely *Hardwickia binata*.

Journal wise: The database includes 58 Journals. Maximum papers have been published in Range Management and Agroforestry (16) followed by Indian Forester (12) and Indian Journal of Forestry (11).

Author wise: The database conceals 212 Indian authors who have researched on *Hardwickia*.

Institute wise: The database consists of 48 Indian Institutes/ Universities/ Organizations researching on *Hardwickia* with maximum records from Indian Grassland and Fodder Research Institute, Jhansi (19), followed by National Research

Centre for Agroforestry, Jhansi, (17) and 12 records from Central Arid Zone Research Institute, Jodhpur.

Subject category wise: One of the important finding of the work is that maximum research has been reported on agroforestry (agrisilviculture + silvipastoral studies) 21 records followed by growth performance and biomass production consisting of 5 records, each.

State wise: Maximum research has been reported from the state of Uttar Pradesh (41), Karnataka (24) followed by Rajasthan (16).

**Ajit, Nighat Jabeen, A. K. Handa, Rajeev Tewari and Uma
National Research Centre for Agroforestry, Jhansi**

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- **WINTER SCHOOL**
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Centre organized 21 days winter school on “Advances in Agroforestry for Livelihood Security, Sustainable Development and Biodiesel Production” from 28th November to 18th December, 2007. The 21 days training programme broadly covered lectures on 10 themes, *i.e.* Agroforestry and agroforestry systems for different regions in India- An overview; Designs, systems dynamics, databases and growth models in agroforestry; Biotic and abiotic management through agroforestry; Carbon sequestration, carbon budgeting and CDM through agroforestry; Application of biotechnology and bio-informatics in agroforestry; Role of Remote Sensing and GIS in assessment of natural resources under agroforestry systems and plantations outside forest areas; Prospects and potential for sustainable production of tree borne oilseeds (TBOs) under agroforestry for biodiesel production; Knowledge management and market intelligence in agroforestry for sustainable development, socioeconomic upliftment and livelihood support; Agroforestry for rehabilitation and restoration of degraded lands and Future thrust for Agroforestry research. There was overwhelming response out ultimately 25 participants representing SAUs, ICAR institutes, NGOs TFRI and state Govt. were selected for the programme. Lecture notes in the form of compendium were distributed to the participants.

All the participants attended lectures, laboratory exercises, field visits and excursion tour enthusiastically. The participants appreciated the successful organization of the winter school.

Dr. O.P. Kandari, Pro. V.C. Bundelkhand University, Jhansi inaugurated the Winter School and Dr. Arun Verma, Ex. ADG (AN), Project Advisor, NIAW, was the chief guest during the Valedictory function.

**Invitation for Annual Dr K.G. Tejwani Award for
Excellence in Agroforestry Research and Development
(2007 – 2008)**

The President, Indian Society of Agroforestry (ISAF) invites application from Indian citizens engaged in research and development of agroforestry (age 35 years and above) for “**Dr. K.G. Tejwani Award for Excellence in Agroforestry Research and Development (2007 - 2008)**”. The award consists of cash prize of Rupees Ten Thousand and a Citation. The eligible persons should submit four copies of duly filled in Nomination Form along with a Bank Draft of Rs 100/- in favour of ISAF, Jhansi payable at SBI, Jhansi. The last date for receiving applications is **15th April, 2008**. The application is to be addressed to

The Secretary,
Indian Society of Agroforestry,
National Research Centre for Agroforestry,
Gwalior Road, Jhansi - 284003
E. mail : secretaryisaf@gmail.com

The nomination forms can be downloaded from the website of NRCAF, Jhansi (<http://www.nrcaf.ernet.in>)

QUINQUENNIAL REVIEW TEAM (QRT) VISIT NRCAF.

Dr. R. P. Awasthi, Ex. Vice Chancellor, Dr. Y. S. P. U. H. & F, Solan (H. P.) & Chairman of third QRT (2002-2006) along with other team members visited NRCAF, Jhansi from 29th September to 1st October, 2007 and prepared the final reports (NRCAF as well as AICRPAF).

THIRD QRT SUBMITES ITS REPORTS

Dr. R.P. Awasthi, former Vice Chancellor, Dr. YSPUH & F, Solan, Chairman, 3rd QRT alongwith Dr. S.K. Dhyani, Director, NRCAF, presented the report to Dr. Mangala Rai, Secretary DARE & Director General, ICAR, on October, 10th 2007 at Krishi Bhawan, New Delhi.

WORKSHOP ON GIS AND REMOTE SENSING

A workshop of DST project on “Application of GIS and Remote Sensing in Agroforestry” was held on Nov.30, 2007 at this Centre. In this workshop Dr. V. S. Katiyar, Head, CSWCR&TI Regional Centre, Datia and Dr. J.P. Singh, Sr. Scientist, IGFRI, Jhansi was invited as experts. All the Scientists of the Centre participated in this workshop.

Dr. Katiyar delivered lecture on “Perspective of Hydrological Modeling in GIS” and covered various aspects of run-off modeling in watershed through GIS. Dr. Singh shared his expertise on “Potential of GIS & Remote Sensing in Land Use Planning” and

described about spatial analysis of remote sensing image through GIS. Dr. S.K. Dhyani, Director, NRCAF pointed out the fields of Agroforestry such as assessment of area under Agroforestry systems, estimation of biomass and carbon sequestration where GIS and Remote Sensing technologies can be applied. He opined that the DST project would be a starting point in this direction. Dr. R.H. Rizvi, PI of the DST project briefed about the objectives, study area and scope of this project. He also acknowledged the Department of Science and Technology, Ministry of Science & Technology for providing financial support.

RESEARCH ADVISORY COMMITTEE

Fourteenth RAC meeting was held on 7-8 December 2007 at IGFRI, Jhansi under the chairmanship of Dr. Arun Verma, Ex-ADG (AN), ICAR, and New Delhi. Chairman welcomed all the participants and appreciated the fieldwork particularly work on neem and database development. Dr. A. K. Gogoi emphasized need to initiate work on control of invasive weeds in the natural ecosystem. He further emphasized to step up research on issues like climate change, resource conservation and environmental issues. At outset Dr. S. K. Dhyani, Director, NRCAF presented the action taken report on the earlier RACs (12th and 13th). After that, all the programme leaders of the NRCAF presented the significant research finding of their programmes. The committee appreciated the work presented by programme leaders.

INSTITUTE MANAGEMENT COMMITTEE (IMC)

Eleventh Institute Management Committee (IMC) meeting was held on 18th December, 2007 at NRCAF Jhansi under the chairmanship of Dr. S. K. Dhyani, Director, NRCAF, Jhansi. The meeting was attended by the following members/invitees:

1. Dr. V K Gupta, Pr. Scientist, NRCAF, Jhansi	Member
2. Dr. M. M. Roy, Pr. Scientist, IGFRI, Jhansi	Member
3. Dr. O.P. Chaturvedi, Pr. Scientist, NRCAF, Jhansi	Member
4. Dr. S. P. Ahlawat, Sr. Scientist, NRCAF, Jhansi	Member
5. Sh. A. V. Joseph, Sr. FAO, IGFRI, Jhansi	Member
6. Dr. Rajeev Tiwari, Sr. TO, NRCAF, Jhansi	Member
7. Sh. D. K. Awasthi, AAO NRCAF, Jhansi	Member

At the outset Dr. S K Dhyani welcomed the members and presented a brief introduction on the recent achievements of the Centre. The following agenda items were placed and discussed in the meeting:

- Confirmation of the proceedings of the 10th IMC meeting held on 19th August, 2007.
- Action taken report on the recommendation of the 10th IMC.
- Brief report on the utilization of the funds for the year 2006-07.
- Discussion on the XI Plan proposals of the Centre.

NOBLE CAUSE

The Staff of the Centre generously donated for medical assistance to the ailing daughter Ms. Priya Kamble of Late Mrs. Shantibai Kamble, Ex. SSG employee of CIFE, Versova Mumbai. A sum of Rs. 4650/- was collected and handed over to the concerned

PROMOTION

- Dr. Anil Kumar, Sr. Scientist (Plant Pathology) promoted to Pr. Scientist from 27.July, 2006 under the provision of Revised Career Advancement Scheme.
- Dr. R. K. Tewari, Sr. Scientist (Horticulture) promoted to Pr. Scientist from , 2006 under the provision of Revised Career Advancement Scheme.

VISIT ABROD

Dr. V.K. Gupta, Pr. Scientist of the Centre participated in the International Training Workshop on “Delivering Trees To Farmers: Improving Strategies For Germplasm Supply” from 29th October to 2nd November, 2007 at ICRAF, Nairobi, Kenya.

SEMINARS DELIVERED

S. No.	Seminar Topics	Name of the Speaker	Date
1	Propagation of Eucalyptus	Dr. P. Ratha Krishnan, Scientist (Forestry)	24.10.2007
2.	Impact of different regimes of shade on growth and physiology of crops under semi-arid region.	Ms. Rashmi Singh, Ph. D. Scholar	23.11.207
3	Delivering Trees to farmers: Improving strategies for germplasm supply	Dr V.K. Gupta, Pr. Scientist	11.12.2007

DOCTORATE DEGREE

Sh. R. H. Rizvi, Scientist (Computer Application) was awarded Ph. D. degree on the topic entitled “Prediction Models for Biomass and Volume of *Populus deltoides* Plantation in Haryana State of Northern- India” from Dr. B. R. Ambedkar University, Agra.

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INSTITUTE JOINT STAFF COUNCIL

Institute Joint Staff Council (IJSC) meeting was held on 22nd December 2007 under the Chairmanship of Director Dr. S. K. Dhyani.

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RETIREMENT

Sh. R. B. Sharma, AF & AO of the Centre retired on 30th November 2007. The staff members bid a grand farewell to the officer.

NEW SCIENTIST

Dr. Rajendra Prasad, Pr. Scientist (Soil Chemistry/Fertility/Microbiology) joined the Centre from CAZRI, RRS, Jaisalmer (Raj.).

SCIENTIFIC AUDIT

Office of the Principal Director of Audit (Scientific Wing Department), New Delhi conducted scientific audit for the period of 1 April 2001 to 31 March, 2007 of the Centre. Out of 9 Audit Para 8 Audit Para have been dropped during the special meeting held at DMR, New Delhi on 17th October, 2007.

HUMAN RESOURCE DEVELOPMENT

- Dr. S. K. Dhyani, Director of the Centre participated in the National Conference on “Climate Change and Indian Agriculture” from 12th to 13th October, 2007 at NASC Complex, New Delhi-110012.
- Dr. Badre Alam, Sr. Scientist (Pl. Physiology) participated in training programme on “Agribusiness and Market Intelligence” sponsored by ICAR, New Delhi from 6 to 15 October, 2007 at IASRI, New Delhi.
- Thirteen Scientists participated in National Symposium on “Rangeland and Forage Research in Changing Socio-economic scenario” organized by RMSI and IGFR, Jhansi from 15 to 17 November, 2007 and presented papers.
- Dr. V. K. Gupta, Pr. Scientist of the Centre participated in the 5th World Neem conference at Coimbatore from 21 to 24 November, 2007 and got 1st prize in poster presentation.
- Dr. R. P. Dwivedi, Sr. Scientist of the Centre participated in the National Seminar on “Appropriate Extension Strategies for Management of Rural Resources” from 18 to 20 December, 2007 at UAS Dharwad (Karnataka). Presented a paper on Capacity Building for Natural Resources Management and awarded best paper presentation award.

VISITORS

- Dr. R. P. Awasthi, Ex. Vice Chancellor & Chairman QRT, Dr.Y.S.P.U.H.& F., Solan (H. P.).
- Dr. P.L. Gautam, DDG (Crop Science), ICAR, New Delhi.
- Dr. Gautam Kalloo, Vice Chancellor, JNKVV, Jabalpur (M.P.)
- Dr. A.K. Mandal, Director, Tropical Forest Research Institute, Jabalpur (MP)
- Dr. V. K. Mishra, Ex-Dean & Head, Department of Forestry, Solan (H.P.).
- Dr. U.C. Sharma, Ex-National Coordinator, NATP, New Delhi.
- Dr. S. N. Shukla, ADG (Food & Forage Crops), ICAR, New Delhi.
- Dr. Arun Verma, Ex-ADG(AN), & Chairman RAC, B-4, Sector-12, Noida
- Dr. S. D. Rai, Rtd. ADG, ICAR, New Delhi.
- Dr. P.S. Pathak, Ex Director, IGFRI, Jhansi (U.P.).
- Dr. V.N. Sharda, Director, CSWCR&T, Dehardun (Uttaranchal).
- Dr. J.P.Chandra , 306, Avas Vikas, Rudrapur Distt. U.S. Nagar (Uttaranchal).
- Dr. A. K. Gogoi, ADG (Agroforestry), ICAR, K A B-II, New Delhi -110 001
- Dr. K. A. Singh, Director, IGFRI, Jhansi (U.P.).
- Dr. G.Vijay Kumar, Prof. & Head, Dept of Forages, Centre for Genetics & Plant Breeding, TNAU, Coimbatore(T.N.).