

**Agroforestry  
Newsletter**

**National Research Centre for Agroforestry, Jhansi-284 003**

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**BIOMASS, CARBON AND NITROGEN DYNAMICS AS AFFECTED BY  
DIFFERENT PRUNING REGIMES IN *ALBIZIA PROCERA* BASED  
AGRISILVICULTURE SYSTEM**

Management of the tree component in agroforestry systems at suitable age intervals is of vital importance to optimize the biomass production of understorey vegetation. Canopy pruning is a necessary management practice in agroforestry systems for reducing both above and belowground competition with associated crops. A field experiment was conducted during 2005 – 07 at the Research Farm of National Research Centre for Agroforestry, Jhansi (UP), India to quantify the role of canopy pruning on biomass, carbon and nitrogen dynamics in *Albizia procera* (Roxb.) Benth. based agrisilviculture system. The experiment consisted of three pruning regimes viz., 70% canopy pruning, 50% canopy pruning and control (unpruned tree), two crop sequences viz., blackgram (*Vigna mungo* Roxb.) – mustard (*Brassica juncea* L. Czern. & Coss.) and greengram (*Vigna radiata* Roxb.) – Wheat (*Triticum aestivum* L. emend. Friori & Paol.), sole tree and sole crop. The experiment was conducted in split plot design with three replications.

Growth of *Albizia procera* (dbh and height) increased with tree age and increment in dbh and height was almost stable at 5.0, 6.0 and 7.0 years age. Tree biomass also increased with age with a mean annual increment of 6.30 t ha<sup>-1</sup> year<sup>-1</sup>. Allocation of biomass in different tree components was in the order of branch > root > main bole > foliage. The annual increment in carbon accumulation was 2.46 to 3.45 t C ha<sup>-1</sup> year<sup>-1</sup> at different age of the tree. Of the total carbon accumulation, above and belowground biomass accounted for 68.7% and 31.3%, respectively. The concentration of nutrients (N, P, K, Ca and Mg) among tree components was generally graded in the following order: leaves > fine root > coarse root > branch > main bole. Total nutrient storage in tree biomass was in the order of N > Ca > K > Mg > P.

Biomass, carbon and nutrient accumulation in trees with blackgram – mustard crop sequence was comparatively higher than green gram – wheat crop sequence but differences were not significant. Among the pruning regimes, biomass, carbon and nutrients were in the order of control (unpruned) > 50% canopy pruning > 70% canopy pruning. Tree growth, biomass, carbon and nutrient accumulation of sole tree was less than trees in the agrisilviculture system.

The biomass, carbon and nutrient accumulation in blackgram, green gram, wheat and mustard increased with the advancement of crop growth but increment was almost stable at all the growth stages. However, biomass, carbon and nutrient accumulation varied between the crop. Component wise biomass and carbon of herbaceous layer was in the order of crop > weed > root > floor litter. Nutrient accumulation in herbaceous biomass was in the order of N > K > Ca > P > Mg, except N in wheat, which increases upto 60 DAS and then slightly declined. The crop grown with 70% canopy pruning had accumulated higher biomass, carbon

and nutrients than 50% canopy pruning and control (unpruned). Sole crop accumulated higher biomass, carbon and nutrients than that of the agrisilviculture system, except weed biomass in *rabi* season.

The growth, yield and yield attributing characters of intercrops were significantly higher in 70% canopy pruning than 50% canopy pruning and control (unpruned). In sole crop, growth, yield and yield attributing characters of intercrops were comparatively higher than that of the agrisilviculture system.

Soil microbial biomass C ( $C_{mic}$ ), N ( $N_{mic}$ ) and  $C_{mic}$ -to- $N_{mic}$  ratio was higher before sowing of kharif crop as compared to after harvesting of *rabi* crop. Soil microbial biomass C and N was significantly higher in 70% canopy pruning than 50% canopy pruning and control (unpruned). However, soil  $C_{mic}$ -to- $N_{mic}$  ratio was higher in control (unpruned) than 50 and 70% canopy pruning. In the agrisilviculture system, soil microbial biomass C and N was comparatively higher than pure crop (without tree) whereas soil  $C_{mic}$ -to- $N_{mic}$  ratio was less than pure crop (without tree).

The improvement in soil fertility was seen in *A. procera* based agrisilviculture system after two years of the study. There was slight increase in soil EC, OC, N, P, and K and decrease in pH in comparison to the state before experimentation.

**Shabir Ahmad Dar (Ph. D. Scholar)**  
**Supervisor Dr. Ram Newaj,**  
**Principal Scientist (Agronomy),**  
**National Research Centre for Agroforestry, Jhansi**

## **20okW LFKkiuk fnol**

dsUnz ds 20 osa LFKkiuk fnol ds volj ij 08 ebZ] 2008 dks izkr% 6-30 cts ls 8-00 cts rd dsUnz ds oSKkfud] vf/kdkjh rFkk deZpkfj;ksa us izHkkr Qsjh dh rFkk Jenku fd;kA dk;Zdze dh v/;{krk dsUnz funs"kd Mk- f"kodqekj /;kuh us dhA mUgksaus vk/kqfudrk dh nkSj esa izHkkr Qsjh ,oa Jenku ds foyqIr gksrs tkus ij fpUr trkbZ rFkk oSKkfud] vf/kdkjh ,oa deZpkfj;ksa dk vkgOkkgu djrs gq, dgk fd izHkkr Qsjh ,oa Jenku ls "kjhj ,oa eu nksuksa LoLF; jgrs gSa rFkk bls euq'; dh dk;Z{kerk c<+rh gS ftlls dk;kZy; ,oa ifjokfjd nksuksa {ks=ksa dk fodkl gksrk gSA funs"kd egksn; ds }kjk xhr ^^dne&dne feyk;s tk] [kq"kh ds xhr xk;s tk^^ dks IHkh ykx izHkkr Qsjh esa xkrs tk jgs FksA chp&chp esa :d dj ukjs tSlS ^^ ydM+h pkjk Qy vkSj vUu] d`f'kokfudh gS thou^^ dks cqyUnh ls nksgjk;k x;kA izHkkrQsjh dsUnz ds vkoklh; ,oa dk;kZy; iflj esa lqcg 6-30 ls

7-30 cts rd gqbZA izHkkr Qsjh ds mijkUr Jenku dk dk;Zdze gqvK ftlesa oSKkfud] vf/kdkjh rFkk deZpkfj;ksa us ikS/kjksi.k gsrq xM~<+s [kksns rFkk vkxkeh cjLkr esa bu xM<+ksa esa mDr oSKkfud] vf/kdkjh RkFkk deZpkjh vius [kksns gq, xM<+ksa esa ikS/kk yxk;saxs rFkk mudh ns[kHkky djsaxSA funs"kd egksn; us dgk fd Ik;kZoj.k larqyu] dks cuk;s j[kus gsrq cqUnsy[k.M esa o`{kkjksi.k dh cgqr gh vko";drk gSA bl mnns"; dh iwfrZ ds fy, o`gn Lrj ij o`{kkjksi.k ds ckjs esa tkx:drk ykuk t:jh gS ftlls i;kZoj.k dks gjk Hkjk fd;k tk ldsA

08 ebZ] 2008 dks 20okW LFkkiuk fnol dk;Zdze ds eq[; vfrfFk Jh oh- ds- feRry] dqyifr] cqUnsy[k.M fo"ofokj;] >Wklh jgsA eq[; vfrfFk Jh feRry us vius mn~cks/ku esa dgk fd d`f'kokfudh }kjk gh ,d frgkbZ Hkwfe dks o`{kksa ls vkPNkfnr fd;k tk ldrk gS ,oa d`f'kokfudh }kjk fdlku dks mldh t:jr dh lHkh oLrq;sa tSls ydM+h] bZ/ku] pkjk rFkk Qy bR;kfn ,d gh LFkku ls izkIr gksrs gS tks fd fdlkuksa dks thfodksiktZu ,oa jkstxkj fnykus eas l{ke gSA dk;Zdze esa eq[; vfrfFk }kjk dsUnz }kjk izdkf"kr d`f'kokfudh lekpkj i= dk foekspu fd;k x;kA

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dk;Zdze ds lEekuuh; vfrfFk ,oa funs"kd] xzklyS.M Mk-ds- ,- flag] us vius mn~cks/ku esa vuqla/kku ,oa fodkl foHkkxksa ds chp leUo;u ij tksj nsrs gq, dgk fd d`f'kokfudh dh mi;ksfxrk fdlkuksa dks izfr bZdkbZ {ks= esa vkfFkZd vkenuh c<+kus ij gSA mUgksus taxy rFkk tehu ij tula[;k ncko ds c<+rs :Ik dks xaHkhjrk ls ysus dh ckr dghA

dk;Zde esas d`f`kokfudh ds funks`kd Mk- f`kodqekj /;kuh us vfrfFk;ksa dk Lokxr djrs gq, fiNys 20 o`kksZ esa dsUnz }kjk vftZr miyfC/k;ksa dks foLr`r :Ik esa izLrqr fd;kA mUgksus cqUnsy[k.M fo"ofok | ky;] >Wklh rFkk d`f`kokfudh dsUnz ds e/; "kS{kf.kd dk;Zdze ih- ,p- Mh- ,oa ,e-,l-lh- dk fooj.k izLrqr fd;kA Mk- /;kuh us tksj nsrs gq, dgk fd cqUnsy[k.M esa o`kkZ ty dk 11 izfr"kr ty gh tehu ds vUnj tkrk gS] ckdh cg tkrk gSA mUgksus o`kkZ ty dks psdMse ,oa tykxe }kjk nksgu djus ij tksj fn;kA

bl ekSds ij dsUnz] Hkkjrh; d`f`kokfudh lfer ,oa vkbZ-lh-vkbZ-lh-vkbZ- cSad }kjk izn"kJuh yxkbZ xbZA izxfr"khya d`kd Jh "kksHkkjke jktiwr] xzke o iksLV&i`Fohiqj u;k [ksM+k] Cykd&cchuk dks d`kd lEEkku i=] vax oL= rFkk JhQy eq[; vfrfFk }kjk nsdj lEekfur fd;k x;kA dk;Zdze esa mRrj izns"k ,oa e/; izns"k ds fofHkUu xkWo ls 34 d`kdks us "kkfey gq,A dk;Zdze esa Mk- vkj-ih f}osnh us dfork ikB d`f`kokfudh thounkf;uh "kh`kZd ij fd;k x;kA

LFkkiuk fnol ds nwljs l= ds eq[; vfrfFk Mk- izflf) jk;] iwoZ funks`kd] d`f`kokfudh jgs rFkk v/;{krk Mk- ,l- ds- /;kuh] funks`kd us dhA bl l= esa dsUnz ds izksxkze yHMjks us fofHkUUk dk;Zdzeksa tSlS ikni iztuu] d`fkou] ekuo lalk/ku rFkk d`f`k m|kfudh ,oa ou pjxkg dk fiNys 20 o`kksZ esa vftZr miyfC/kksa dks foLrkj ls izLrqr fd;kA bl l= esa eq[; vfrfFk Mk- jk; }kjk dsUnz ds oSKkfud] vf/kdkjh] deZpkjh]"kks/k Nk=ksa dks xr o`kksZ ds fofHkUUk iqjLdkjksa ls uoktk x;k ftlesa izfrd fpUg rFkk izek.k i= nsdj fotsrkvksa dks lEekfur fd;k x;kA eq[; iqjLdkjksa esa Mk- vkj- ,l- ;kno dks loksZsRre "kks/k i= ls uoktk x;k rFkk Mk- vks-ih- prqosZnh ,oa Vhe dks losZjs`B Vhe dk ,okMZ fn;k x;kA O;k[;kuekyk rFkk d`kdks ds lFk

fopkj&foe" kZ foLrkj ls fd;k x;kA d`kd iz"uksRrjh dk;Zdze esas  
fdlku HkkbZvksa ds iz"ukas dk lek/kku fo'k; fo"ks'kKksa }kjk  
fd;k x;kA dsUnz ds iz"kklfud vf/kdkfj;ksa] deZpkfj;ksa rFkk  
prqFkZ Js.kh ds deZpkfj;ksa ds iz;ksx"kkkyk Hkze.k dj;k x;kA  
ftls IHkh yksxksa us cM+h :ph ls ns[kk ,oa le>kA

## **ESTABLISHMENT OF GIS AND REMOTE SENSING LAB**

A GIS and Remote Sensing Lab was inaugurated by Dr. K.A. Singh, Director, IGFRI on the occasion of 20<sup>th</sup> foundation day of the Centre. Dr. S.K. Dhyani, Director and all the scientists of NRCAF were also present. This lab has been established under a DST project "Spatial and Temporal Analysis of Agroforestry Interventions in North-western India using GIS and Remote Sensing". Lab is equipped with A0 size scanner (H P Designjet 4500) with resolution of upto 1200 dpi, one strip scanner (DESKAN) with resolution upto 600 dpi, one high configuration workstation and one desktop computer with 22" TFT monitor. Besides this, one color laser printer is also available for color printing. Arc GIS 9.2, a GIS software and IDRISI Andes, an image processing software have been installed on workstation. For ground verification, a Global Positioning System (GARMIN MAP 76CSx) of less than 10m accuracy has been purchased and tested in the field.

## **INTERACTIVE WORKSHOP ON ADMINISTRATIVE AND FINANCIAL MATTER**

Dr. S. K. Dhyani, Director, Sh. D. K. Awashti, AAO and Sh. S. B. Sharma, AF&AO attended Special Interactive Workshop on Administrative and Financial Matters for the ICAR Institutes held at Zonal Coordinating Unit-I, ICAR, Ludhiana during 17<sup>th</sup> to 18<sup>th</sup> April, 2008.

## **HUMAN RESOURCE DEVELOPMENT**

- Dr. P. Rathkrishnan Scientist (Forestry) participated in ICAR Training Cum Workshop on "IP and Technology Management (Theme: Genetic Engineering)" at Indian Agricultural Research Institute, Pusa, New Delhi from 23<sup>rd</sup> – 25<sup>th</sup> April, 2008.
- Dr. V. K. Gupta, Pr. Scientist (Tree Breeding); Dr. O. P. Chaturvedi, Pr. Scientist (Agroforestry/Forestry); Dr. S. P. Ahlawat, Sr. Scientist (Plant Breeding); Dr. R. P. Dwivedi, Sr. Scientist (Agril. Extension); Dr. A. K. Handa, Sr. Scientist (Forestry); Dr. R. V. Kumar, Sr. Scientist (Plant Breeding); Dr. A. Venketesh, Sr. Scientist (Forestry); Dr. P. Rathkrishnan, Scientist (Forestry), Sh. Rajendra Singh, Technical Officer and Sh. C. Sivadasan, P S participated in the Annual Group Meeting of AICRPAF at BAU Ranchi from 26<sup>th</sup> to 28<sup>th</sup> April, 2008.
- Dr. O P Chaturvedi, Pr. Scientist (Agroforestry/Forestry), Dr. A K Handa, Sr. Scientist (Forestry) and Dr. A. Venketesh, Sr. Scientist (Forestry) participated in the meeting of Collaborative Research Project between IFGTBC (ICFRE), Coimbatore; NRCAF and TNAU, Coimbatore entitled "Demonstration of Agroforestry Techniques

for Enhancing the Livelihood Opportunities in Different Agroclimatic Zones of Tamil Nadu” from 13<sup>th</sup> to 14<sup>th</sup> May, 2008 at TNAU, Coimbatore.

## **LINKAGES**

NRCAF has contributed in preparation of Action Plan for Combating drought in Bundelkhand region in association with SIRD and district administration. The meeting on preparation of action plan was convening on 17<sup>th</sup> May 2008 under the chairmanship of DG SIRD in the presence of Commissioner Jhansi, District development authorities and delegates of NRCAF.

## **WOMEN CELL**

A meeting of Women Cell was held on 19<sup>th</sup> May, 2008 at NRCAF Jhansi. Km. Divya Sharma, Professional –I, Development Alternatives (NGO), Taragram, Orchha, Tikamgarh (M.P.) delivered a lecture on Gender Sensitization to all female RAs, SRFs and students of the Centre.

## **RETIREMENT**

Sh. C. Shivdasan, P S to Director retired on 31<sup>st</sup> May 2008. The staff members bid a grand farewell.

## **PROMOTION**

Sh. A.K. Chaturvedi, Personal Assistant promoted to Personal Secretary to Director w.e.f.1<sup>st</sup> June, 2008.

Sh. Hoob Lal, Jr. Stenographer promoted to Personal Assistant w.e.f. 16<sup>th</sup> June,2008.

## **VISITORS**

- Sh. V. K. Mittal (IAS), Vice Chancellor, Bundelkhand University, Jhansi
- Sh. Ramendra Tripathi (IAS), Commissioner, Jhansi
- Dr. K. A. Singh, Director, IGRI, Jhansi
- Sh. S. K. Sharma, Chief Conservator of Forest, Jhansi

## **INSTITUTE JOINT STAFF COUNCIL**

Institute Joint Staff Council (IJSC) meetings were held on 19<sup>th</sup> May and 28<sup>th</sup> June 2008 under the Chairmanship of Dr. S. K. Dhyani, Director of the Centre.

# **fo"o Ik;kZoj.k fnol**

dsUnz ij fo"o Ik;kZoj.k fnol dk vk;kstu 05 twu] 2008 dks fd;k x;kA dk;Zdze ds eq[; vfrfFk Jh ,l- ds- "kekZ] eq[; ou

laj{kd] >Wklh] dkuiqj ,oa ckWnk IEHkkx jgsA dk;Zdze dh v/;{krk dsUnz funks"kd Mk- ,l- ds- /;kuh }kjk fd;k x;kA vius eq[; vfrfFk mn~cks/ku esa Jh ,l- ds "kekZ us dgk fd tyok;q ifjorZu ls gksus okys IEHkkfor [krjksa ls fuiVus ds fy, o`{kkjksi.k gh lcls ljj ,oa lLrk mik; gSA dk;Zdze ds v/;{k dsUnz funks"kd Mk- /;kuh us dgk fd bZa/ku dh [kir gesa de djuk gksxk rFkk cqUnsy[k.M esa o`{kkjksi.k ds fy, ;q) Lrj ij iz;kl djus gksxsaA mUgksus crk;k fd lu~ 1850 ls igys cqUnsy[k.M ouksa ls vkPNkfnr Fkka

dsUnz ds iz/kku oSKkfud] Mk- oh- ds- xqIrk us dgk fd gedksa vius ?kj ls gh "kq:vkr djuh gksxhA gesa vius vkl&ikl ds okrkoy.k dks LoPN cukus ds fy, ?kj ls gh iz;kl djus gksxsaA fo"o Ik;kZoj.k fnol ij Mk- vkj- oh- dqekj] ofj'B oSKkfud us viuk O;k[;ku tSo bZa/ku dk tyok;q ifjorZu ds nq'ikzHkko ls cpkus esa ;ksxnku ij foLr`r tkudkjh nhA mUgksus dkcZu V<sup>a</sup>sfMax] Dyhu MoyieaasaV esdsfute bR;kfn ij foLr`r tkudkjh nhA Mk- jes"k flag] oSKkfud ¼ofj'B osrueku½ us tykxe vk/kkfjr d`f'kokfudh ,oa Ik;kZoj.k larqyu ij viuk O;k[;ku izLrqr fd;kA mUgksus de [kpsZ esa psdMse cukus ds ckjs esa foLrkj ls tkudkjh nhA "kks/k Nk= Jh bfEr;kt vyh [kku us fo"o Ik;kZoj.k ds ckjs esa O;k[;ku fn;k rFkk fofM;ks fQYe izLrqr dhA dk;Zde esa Mk- lh- ds- cktis;h us tyok;q ifjorZu ds dkj.kksa ,oa mlls mRiUu leL;kvksa ij foLr`r izdk"k MkykA Jh Mh-ds- voLFkh }kjk fo"o Ik;kZoj.k ij viuh dfork i<+h xbZA dk;Zdze dh "kq:vkr esa la;kstd Mk- vkj- ih- f}osnh us lcdk Lokxr fd;k rFkk fo"o Ik;kZoj.k dss bfrgkl ds ckjs esa tkudkjh nhA

# ns"kh csj esa dkV & NkVV dk

## izf"k{k.k dk;Zdze laiUu

jk'V<sup>a</sup>h; d`f'kokfudh vuqla/kku dsUnz ds rRok/kku esa csj esa dkV&NkVV ij rhu fnolh; ¼28& 30 ebZ 2008½ izf"k{k.k dk;Zdze xzke iqukoyh dyk] Cykd cchuk esa vk;kssftr x;kA izf"k{k.k dk;Zdze esa xkWo ds d`kd Hkkb;ksa dks crk;k x;k fd cqUnsy[k.M esa fiNys 4 lkyksa esa lw[ks ls fuiVus ds fy, cqUnsy[k.M esa vklkuh ls mx jgs ns"kh csj rFkk >jcsjh ds ikS/kksa dks dyeh ¼iscanh½ csj cukus gsrq csj esa dkV&NkVV ij izf"k{k.k fn;k tk jgk gSA csj esa dkV&NkVV izf"k{k.k dk;Zdze dk eq[; mn~ns"; d`kdksa dks csj esa dkV&NkVV dh dkS"kyrk fl[kkuk rFkk d`kdksa esa ns"kh csj dks dyeh cukus gsrq tkx:drk iSnk djuk ,oa d`kdksa ds LoHkko o O;ogkj esa ldkjRed cnyko ykuk gSA

dk;Zdze esa d`f'kokfudh dsUnz ds funs"kd Mk- ,l- ds- /;kuh us vius lans"k ds }kjk fdlkuksa dk vkg~okgu fd;k fd cqUnsy[k.M esa csj ls fdlkuksa dks lw[ks dh fLFkfr esa vkfFkZd lgk;rk izkIr gksxhA Mk- vkj-ds- frokjh] iz/kku oSKkfud ¼m|ku½ us ns"kh csj dks dyeh cukus ds fy, dkV&NkVV dk egRo rFkk rduhdh ds ckjs esa fo'k; IEcU/kh foLr`r tkudkjh nhA dk;Zdze ds la;kstd Mk- vkj-ih- f}osnh us d`kdksa dks tkx:d dj izf"k{k.k ds mn~ns"; ds ckjs esa tkudkjh nh fd ;g izf"k{k.k dk;Zdze xkWoksa esa tkdj fdlkuksa dh Hkkxhnhkj ds lkFk gh fd;s tkrs gSaA bls xzkeh.k ;qokvksa dks xehZ ds eghus esa Lojkstxkj eqgS;k gksrk gS rFkk cjkr ds eghus esa bUgha ns"kh csj ds ikS/kksa ij dye ckW/kus dk izf"k{k.k fn;k tk;sxkk ftlls fdlku HkkbZ vius ns"kh csj dks iscanh esa rCnhy dj yssaxssa vkSj bls vkenuh feysxhA lewg&ppkZ ds nkSjku ;qokvksa] efgykvksa o d`kdksa us



c<+&p<+ dj fgLlk fy;kA dk;Zdze esa xzke iqukoyhdyka rFkk Mksekxksj ds 35 xzkeh.k d`kd] ;qok rFkk efgykvksa us Hkkx fy;kA

## ICAR-ICRAF AGROFORESTRY WORKSHOP

Dr. S. K. Dhyani, Director, Dr. V. K. Gupta, Pr. Scientist (Tree Breeding), Dr. O. P. Chaturvedi, Pr. Scientist (Agroforestry/Forestry), Dr. A. K. Handa, Sr. Scientist (Forestry) and Dr. R. V. Kumar, Sr. Scientist (Plant Breeding) participated in the ICAR-ICRAF Agroforestry Workplan Workshop on 19<sup>th</sup> - 20<sup>th</sup> April, 2008 at NASC Complex, D.P. Shastri Marg, Pusa Campus, New Delhi-110012.

## ANNUAL GROUP MEETING OF ALL INDIA COORDINATED RESEARCH PROJECT ON AGROFORESTRY

Annual Group meeting of All India Coordinated Research Project on Agroforestry (AICRPAF) was held during 26<sup>th</sup> to 28<sup>th</sup> May, 2008 at BAU, Ranchi. Dr. S.K. Dhyani, Director & Coordinator of the project organized this group meeting. Dr. A. K. Singh, DDG (NRM), ICAR, New Delhi, was the Chief Guest and Dr. V.P. Singh, Regional Representative South Asia Centre of ICRAF was the special invitee in the meeting. Dr. N. N. Singh, Vice Chancellor, BAU, Ranchi inaugurated the meeting. Officer- in-charge and scientists from 25 SAUs and one ICAR institute participated in the group meeting. Dr. K. R. Solanki, Ex. ADG (AF), ICAR, New Delhi and Dr. P. Rai, Rtd. Pr. Scientist of the Centre were the special invitees of the meeting. Besides inaugural and plenary session eight technical sessions were held.

## NEW EXTERNALLY FUNDED PROJECTS

S. No.	Title of Project	Principal Investigator	Associate
1	Network Project on “Harvest and Post Harvest Processing and Value Addition of Natural Resins, Gum and Gum Resins” Collaboration with IINRG, Ranchi	Dr. A. Venkatesh	Dr. Ajit, Dr. A.K. Handa Dr. R.S. Yadav, Dr. Ramesh Singh,
2	Sponsored Project on “Carbondioxide Sequestration Potential of Agroforestry System under Irrigated and Rainfed Conditions” Funded by Department of Science & Technology, New Delhi	Dr. Ram Newaj	Dr. Badre Alam, Dr. A. Venkatesh, Dr. R.S. Yadav, Dr. Ajit, Dr. .R.H. Rizvi,
3	Network Project on “Climate Change” Funded by ICAR, New Delhi	Dr. Ram Newaj	Dr. Badre Alam, Dr. A.K. Handa, Dr. Rajendra Prasad, Dr. Ajit, Dr. Ramesh Singh,

## fgUnh dk;Z'kkyk

fnukad 27-05-2008 dks dsUnz esa ,d fnolh; fgUnh dk;Z'kkyk dk vk;kstu Jh izse 'kadj fe] mi izcU/kd&jktHkk"kk] iatkc us'kuy cSad] e.My dk;kZy;] >Wklh ds eq[; vkfrF; esa lEiUu gqvka Jh izse 'kadj fe] mi izcU/kd&jktHkk"kk us viuk O;k[;ku ^^jktHkk"kk uhfr] fu;e ,oa izcU/ku\*\* ij fn;kA mUgksus crk;k fd Hkkjr ds lafo/kku ds vuqPNsn 343 esa ;g O;oLFkk nh xbZ gS fd la?k dh jktHkk"kk fgUnh vkSj fyfi nsoukxjh gksxh vkSj la?k ds 'kkldh; izk;kstuksa ds fy, Hkkjrh; vadksa dk varjkZ"Vh; :Ik iz;ksx esa yk;k tk;sxA mUgksus lafo/kku dh vkBoha vuqlwph esa fofufnZ"V Hkk"kkvksa ds ckjs esa foLrkj ls crk;kA jktHkk"kk vf/kfu;e 1963 ds ckjs esa crk;k fd bl vf/kfu;e dks 1967 esa la'kksf/kr fd;k x;k vkSj dqN fof'k"B dk;ksZ esa fgUnh ds lkFk&lkFk vaxzsth dk iz;ksx Hkh j[kk x;kA jktHkk"kk vf/kfu;e dh /kkjk 3(3) ds vuqlkj nLrkost vfuok;Zr% fgUnh vkSj vaxzsth esa ,d lkFk tkjh fd;s tk;sxsasA dsUnzh; ljdkj ds dk;kZy;ksa esa fgUnh fVIi.kh ds fy[ks tkus ds ckjs esa crk;k fd deZpkjh fdlh Qkby ij fgUnh esa fVIi.kh fy[k ldrk gSA fgUnh dk dk;Zlk/kd Kku izkIr deZpkjh fgUnh nLrkostksa ds vaxzsth vuqokn dh ekax ugh dj ldrkA dk;Zdze

dk lapkyu Mk- vkj-oh- dqekj] ofj"B oSKkfud ,oa izHkkjh  
vf/kdkjh fgUnh us fd;kA