

NEW PROJECTS INITIATED DURING 2008-09

PLAN PROJECTS

Project 1 : Evaluation of productivity of maize in *Dalbergia sissoo* (Shisham) and *Zea mays* (Maize) Agroforestry system. [133/TFRI-2008/Agro-I (15)].

Status: One year old *Dalbergia sissoo* seedlings were planted in 21 plots of size 10 x 10m each at 3 different spacings of 4 x 4m, 5 x 5m and 6 x 6m. Hybrid maize seeds were sown at a spacing of 60 x 20cm with tree to crop line spacing of 60 and 120cm following Randomized Block Design. The maize crop was harvested and yield data were recorded, tabulated and analysed statistically. Tree distance 5 x 5 m with 60 cm tree to crop line spacing proved best for maximum yield of maize crop. Growth parameter i.e. collar diameter and height of each *Dalbergia sissoo* plant was recorded at the time of planting and harvesting of maize crop and soil samples were collected from each block at the time of planting and harvesting of maize crop and pH, EC, organic carbon, available N,P,K, and Ca⁺⁺, Mg⁺⁺ were determined.



An overview of *sisioo-Zea mays* agroforestry system.

Project 2: Studies on diseases of important medicinal plants and their bio-control. [129/TFRI-2008/Patho-1(13)]

Status: Periodical survey of Seoni, Chhindwara, Dhar, Bilaspur, Raipur, Bhopal, Neemach, and Pachmarhi were conducted and diseases infesting *Rauvolfia serpentina*, *Withania somnifera* and *Chlorophytum borivillianum* were recorded and identified. Disease causing organism of *R. serpentina* were identified as *Lasiodiplodia theobromae*, *Phoma jolyana* *Colletotrichum dematium* and *Cladosporium* sp. Leaves and roots of *W. somnifera* were observed to be infested by *Pseudocercospora withanae* and *Fusarium oxysporum*, whereas *C.borivillianum* was recorded to be infested by *Colletotrichum dematium*, *Phoma* sp. and *F. oxysporum*. Comparative studies of systemic fungicide Bavistin, a non-systemic fungicide, Thirum, a biopesticide (cow urine + leaves of *Azadirachta indica* + *Ailanthus excelsa* + *Calotropis procera*) and antagonistic organisms (*Streptomyces* sp.) and *Bacillus firmus* were performed in the laboratory against pathogenic fungi, *L. theobromae* and *F. oxysporum*.

Project 3: Studies on wood decay and its control in stored tropical timber. [130/TFRI-2008/Patho-2(14)]

Status: In all 30 wood depots of MP and Chhattisgarh (Dhuma, Narsinghpur, Jabalpur, Gadasarai, Karanjia, Rasaiyadona, Mandla, Sizora, Chilpi, Kalpi, Sohagpur, Taku, Budni, Timarni, and Kherkia, Ralamandal, Chandrakesar, Sanavat, Katghora, Nagri, Kota, Dhamtari, Chilpi, Pithora, Gariaband, Kaker, Sargipal, Kondagaon, Bhanupratapur, Korar, and Ballod)

were surveyed and 650 samples of wood decaying fungi collected. 25 cultures of wood decaying fungi were prepared from collected samples and maintained in the laboratory. A total of 20 genera and 34 species of wood decaying fungi were identified. Out of these, 4 genera viz. *Hapalopilus*, *Ceriporiopsis* (Fig-1), *Schizophora*, and *Postia* and 7 species viz. *Hapalopilus nidulans*, *Ceriporiopsis merulinus*, *Trametes ochraceae*, *Postia placenta*, *Schizophora paradoxa*, *Pycnoporus coccineus*, and *Pycnoporus cinnabarinus* (Fig-2) recorded for the first time. All the collected samples of wood decaying fungi are maintained in the herbarium.



Fig.1. Wood decay fungus, *Pycnoporus cinnabarinus* fruit bodies on sal, from Gariyaband, Raipur (CG) and Fig. 2., *Ceriporiopsis unicolor* fruit bodies on *Peltophorum*, from Sargipal, Jagdalpur (CG).

Project 4: Studies on endogenous auxin level and its relationship with adventitious rooting potential in *Dalbergia latifolia* Roxb. [131/TFRI-2008/Gen-1(17)]

Status: Ten phenotypically superior trees of *Dalbergia latifolia* were selected. Seeds were collected from the selected trees and seedlings raised. Sixty four seedlings from each tree were planted in separate blocks in field and maintained. Spectrophotometric method for estimation of IAA in *Dalbergia latifolia* was standardized (Stoessel and Venis, 1970). Further work is in progress.

Project 5: Development of an information system for forest tree species associated insect and their management". [I.D. No. 132/TFRI-2008/IT Cell- 1(1)]

Status: Data on distribution, host range, nature of damage, period of occurrence and management techniques of two tree species viz. sal and sissoo were collected. The photographs of different insects and the nature of damage caused by them were taken. Work is in progress.