Nursery and Plantation Management (Speaker – Dr. M. Kundu)

In the opening remarks of the monthly seminar held on 29.11.2017, Dr. N.Roychoudhury, Director of the institute informed the house that the institute has released two new varieties of *Rauvolfiaserpentina* as improved varieties and for this remarkable achievement.He presented certificate issued by ICFRE, Dehradun to Dr. Yogeshwar Mishra and his team.

On the acassion of monthly seminar at institute level first lecture was delivered by Dr. MaitrayeeKundu, Scientist Fon the topic of **"The Role of Nursery and Plantation"** under the theme of **"How to improve quality of forest".** During the talk she emphasized on the need of nursery and plantation management in the present day scenario and compared the indegenoussilviculture practices with overseas ones.As of now there if no complete nursery package of most of the tropical species, therefore, it is felt that nursery technique with plantation technique to be developed for improving the quality of forest. She also mentioned about the development of certification criterion for better seedling quality. The indicators for quality seedlings for their survival and growth should also be linked with the certification criterion. She also opined that under the nursery technology sowing time, sowing depth, soil and nutrient status, irrigation and interaction of other factors have to be taken in to consideration before establishing a nursery.

Recommendations

1. Nursery and plantation technique of most of the tropical species are available, like *Dalbergiasissoo, D. latifolia, Albiziaprocera, A.lebbeck, Gmelinaarborea, Tectonagrandis*etc.,therefore, it is needed to focus on the other lesser known tree and wild species so that the species could be conserved through nursery development and followed by post care plantation management.
2. While developing nursery and plantation management biotic factors i.e. fungus and insect should be taken into account.
3. For quality seedling production important parameters like SLA (Specific Leaf area), LAI (Leaf Area Index) should also be considered.
4. Silviculture lab and nursery should be equipedwell with modern equipmentslike growth chambers, mist chambers, sprinklers etc. for better seedling growth.

5. During the course of seed collection, the source of phenotypically superior treesshould be identified and marked for future plantation.
6. Above all it was suggested that research need for the today's presentation should be explored and future strategy and road map need to be develped.

Research Need

1. Certification criteria for seedling quality to be standardized for individual species.
2. Complete nursery package for important species.
3. Vegetative propagation technique for important species should be developed.

Road map and Networking Research

- Inter-instiutional project can be formulated in the light of above research need for development of protocols for production of different species at nursery stage and post plantation care.
- The multi-disciplinary and intergatedapproach of forestry research can be developed to achieve a more effective interface between silviculture and other discipline.

Development of high biological and economic yielding varieties of *Rauvolfia serpentine*Benth. (Speaker – Dr. Yogeshwar Mishra)

Second talk for the same theme was delivered by Dr. Yogeshwar Mishra, Scientist F and Head of Silviculture Division. During the talk Dr. Mishra presented the detailed account of the procedure adopted for varietal development of medicinal plants by ICFRE as per present guidelines. During the presentation Dr. Mishra informed that two new varieties of *Rauvolfiaserpentina*should be considered for commercial cultivation asthese improved varieties are higher in terms of high reserpine content, root yield and total alkaloid. The variety named as TFRI-RS 1 contains high root yield whereas TFRI-RS 2 contains high alkaloid and reserpine as compared to check varieties viz, RS-1(JNKVV, Indore) and CIM-Sheel (CIMAP, Lucknow). He emphasised that this research was carried out to find high yielding and resilient varieties of *Rauvolfiaserpentina*. For the varietal development of this plant, 25 germplasm samples from 11 states were collected. For multi-location trial the plant varieties were cultivated for screening in Chandrapur (Maharashtra), Raigarh (Chhatisgarh) and Jabalpur (Madhya Pradesh). The main aim of this NMPB funded project was to develop cultivar that had high quality root system and high reserpine content. Dr. Mishra informed that before release of variety two level of team were constituted at institute level namely (1) Implmentation Team and (2) Regional Variety Testing

Committee (RVTC). After approval of these two committee the proposal for release of new cultivars were propsed at VRC (Variety Release Committee) and got the approval in the month of February 2017.

Recommendations

1. While constituting implementation team one expert from protection division should be incorporated.
2. There should be inclusion of wild counterparts of the species in the multi-locational trial as check.
3. Clonal identity of the developed variety must be maintained.
4. It was suggested to give extension material like brochure or Technical Bulletin to extension division on the topic of varietal development of *Rauvolfiaserpentina* so as to disseminate the information, as soon as possible.