

**SUMMARY OF RESEARCH FINDINGS FOR THE PAST FIVE YEARS
(2012 – 2013 to 2016 – 2017)
RESEARCH WING OF TAMIL NADU FOREST DEPARTMENT**

RESEARCH FINDINGS DURING THE YEAR 2012 - 2013

- ❖ Seedling seed orchard of *Pterocarpus santalinus* is performing well in Southern Zone
- ❖ Progeny trial of *Azadirachta indica* is performing well in Southern Zone
- ❖ Germplasm Bank of *Santalum album* is performing well in Madurai District
- ❖ *Diospyros ebenum* is performing well in Madurai District
- ❖ *Adansonia digitata* performing well in Rameswaram (Ramanathapuram District)
- ❖ *Bridelia retusa* is suitable for Pudukottai and Ariyalur Districts
- ❖ *Tectona grandis* is suitable for agro forestry plantations in Trichy District
- ❖ *Bambusa vulgaris* & *Bambusa nutans* are suitable for as intercrop in agricultural field in Dharmapuri District
- ❖ *Avicennia marina*, *Rhizophora mucronata* and *Bruguiera cylindrica* are showing good growth by administration of Azospirillum, Phosphobacteria and VAM.
- ❖ Seedling seed orchard of *Melia dubia* established well in Theni District

RESEARCH FINDINGS DURING THE YEAR 2013 - 2014

- ❖ The cultivation of *Casuarina junghuhniana* 196 clone in private lands may fetch Rs.16436/Ha / annum as profit
- ❖ The study of *Melocanna baccifera* in Southern Zone (Sivagangai District) indicates that this species is not suitable for this tract
- ❖ The *Dendrocalamus calostachysis* best suitable for Varattupallam (Erode District) with 88% survival and vermicastings enhances the growth and survival. Hence this species is recommended for cultivation in the District of Erode
- ❖ *Khaya senegalensis* is suitable in Varattupallam (Erode District). Hence it may be cultivated in District of Erode

- ❖ With Vermicasting the species like *Simarouba glauca*, *Ceiba pentandra* and *Gmelina arborea* performed well but in poultry manure the performance is poor. Hence the species like *Simarouba glauca*, *Ceiba pentandra* and *Gmelina arborea* may be grown with Vermicasting
- ❖ By applying spent wash on Natural Forest Cover, it is observed that nitrogen and potassium content is reduced and phosphorus increased
- ❖ The Rock Afforestation technique for *Ficus* species, Gunny bag technique is recommended as it is cost effective
- ❖ The eradication of weed *Ulex europaeus* have been found cost effective in Treatment cutting and clearing all grose growth down to ground level and uprootal of stumps were done manually.

RESEARCH FINDINGS DURING THE YEAR 2014 - 2015

- ❖ The local variety of *Dalbergia sissoo* performed better than Kanpur (UP) variety
- ❖ *Mimusops elengi* is suitable in the District of Kancheepuram
- ❖ *Bixa orellana* is not suitable in the District of Kancheepuram
- ❖ *Caesalpinia sappan* is not suitable in the District of Trichy
- ❖ *Boswellia serrata* is not suitable in the District of Erode
- ❖ *Gyrocarpus jacquini* is suitable in the District of Erode
- ❖ *Chukrasia tabularis* is not suitable for Coimbatore District
- ❖ *Melia dubia* and *Chukrasia tabularis* are suitable for Coimbatore District
- ❖ *Melocanna baccifera* is not suitable for Kancheepuram District
- ❖ *Bursera delpechiana* is not suitable for Kancheepuram District
- ❖ All provenance of *Casuarina junghuhniana* have performed well in the District of Erode
- ❖ *Albizia lebbeck* performed well in Threi area of Tuticorin District
- ❖ *Ochlandra travencorica* is not performing in Trichy District
- ❖ *Adansonia digitata* seeds germinated well in boiling water (temperature upto 80°C)
- ❖ The RET species *Litsea chinensis* germinated well in Gibberellic acid 1000ppm.

- ❖ Eco-friendly bio-degradable poly bags are suitable for nursery operation. Cost is viable and comparable with ordinary polybags.
- ❖ Jatropha oil extract of 5% is good for controlling pest in forest nursery
- ❖ 'V' notch pits is good for Soil water conservation for majority of forestry species
- ❖ Staggered trench food for Soil moisture conservation of *Melia dubia*
- ❖ Neem seeds collected from North Eastern Zone (Kancheepuram District) produce higher oil content.

RESEARCH FINDINGS DURING THE YEAR 2015 - 2016

- ❖ *Syzygium densiflorum* is the suitable species which can be grown under wattle in high altitude Hilly Zone.
- ❖ In Agro forestry model *Gmelina arborea* in Southern zone is performing well with Agri crop pumpkin and gives high profit.
- ❖ In Agro forestry model in Southern Zone *Tectona grandis* is performing well with Agri crop Brinjal and gives high profit.
- ❖ *Casuarina junghuhniana* and *Bambusa tulda* are the suitable and appropriate species for intercropping in District of Salem.
- ❖ *Bambusa tulda* and *Melia dubia* can be grown in Agro silvi model in the District of Erode.
- ❖ Nursery technique for *Hildegardia populifolia*, *Syzygium travancoricum* have been standardized.
- ❖ *Khaya senegalensis*, ideal spacing is 2.25m X 2.25m.
- ❖ Bamboos can be used partially as reinforcement material instead of steel.
- ❖ Various timber properties of eight immature species namely *Khaya senegalensis*, *Lannea coromandelica*, *Anthocephalus cadamba*, *Gmelina arborea*, *Artocarpus integrifolia*, *Albizia lebbek*, *Ailanthus malabaricum* and *Alstonia scholaris* have been assessed.
- ❖ The 26 species of Heritage trees have been identified

RESEARCH FINDINGS DURING THE YEAR 2016 - 2017

- ❖ Bamboos can be used as a reinforcement material partially replacing steel which is cost effective too.
- ❖ In problematic sites plants in soil crevices performed well with better growth in the District of Dharmapuri.
- ❖ Best progenies for *Albizia lebbbeck*, *Syzigium cumini*, *Maduca longifolia*, *Azadirachta indica* were identified.
- ❖ Beehive fence, Biological Eco friendly and low cost fence was introduced to reduce Elephant – Human conflict.
- ❖ *Khaya senegalensis* is suitable for Chengam area. It is a very good timber for making furniture.
- ❖ Best clones were evaluated in Teak, Sandal, *Pterocarpus santalinus* and *Dalbergia latifolia*.
- ❖ Successful Agro forestry models with Brinjal and Ladies finger as intercrops fetched more profit in the District of Coimbatore.
- ❖ Suitable species were identified for MINE sites. The main species recommended in District of Salem are *Azadirachta indica* and *Ficus benghalensis*.
- ❖ *Bassia latifolia* is suitable for Southern zone (i.e District of Madurai).
- ❖ *Caesalpinia sappan* is suitable for High Rainfall zone (i.e District of Kanyakumari).
- ❖ Sandal is not suitable for Perumalmalai area (Madurai District).
- ❖ *Anthocephalus cadamba*, *Dalbergia latifolia* are not suitable for Perumalmalai and Managathy (Madurai and Perambalur Districts).
- ❖ *Terminelia arjuna*, *Dalbergia sissoo* are the suitable species that can thrive well in sewage water in the District of Madurai.

❖ 6000 Nos. of important Medicinal plants were produced. The Main species of the medicinal plants were *Orthosiphon thymiflorus*, *Centella asiatica*, *Centratherum punctatum*.

16000 Nos. of economically important tree species were produced for farmers. The Main species were *Azadirachta indica*, *Bamboos*, *Pterocarpus marsupium*, *Swietenia mahogany*.

❖ Fruit Tree Park, comprising 20 species was established at SFRI Kolapakkam.

❖ To increase green lungs in urban areas, strip plantation model was developed in Poondamalli High way (Kanchipuram District).

❖ It is found that *Holoptelia integrifolia*, *Derris indica*, *Albizia lebbek*, *Samanea saman*, *Azadirachta indica* are the most suitable species for cement factory polluted area in the District of Ariyalur.

❖ *Khaya senegalensis*, *Butea monosperma*, *Adina cordifolia* are suitable for Cauvery Delta Zone (I.e Districts of Pudukkottai and Nagappattinam)

❖ *Anthocephalus cadamba*, *Bridelia retusa* *Holoptelia integrifolia* *Pterocarpus santalinus*, *Adina cordifolia*, *Prosopis cineraria* are not suitable for Lingamalai of Pudukkottai District.

❖ *Adansonia digitata* is suitable for Amayavaram of Trichy District.

❖ Successful, profitable Agro forestry models were formulated with Pumpkin, Ashgaurd, Ground nut, Gingelly, Tapioca, Maize, Drumstick, Green gram as inter crop in the Districts of Trichy and Ariyalur

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