PROJECT PROFILE

Title: ***In vitro* production of secondary metabolites from tree species of Dasamoola through hairy root cultures**

Principle Investigators: Dr. Rekha R. Warrier, Scientist-E

Duration: 2014 – 2019

Objectives:

1. To assess variations in secondary metabolites in the natural populations through quantitative assessment of biomolecules.
2. To develop hairy root culture protocols for the bioproduction of secondary metabolites / biomolecules.

Funding Agency: National Medicinal Plants Board

Summary

- Hairy root initiation studies were carried out in *Aegle marmelos, Gmelina arborea, Oroxylum indicum, Premna interifolia and Nicotiana tabaccum* with nodal and leaf explants.
- Co-cultivation was carried out with different Agrobacterium strains. The roots produced were observed for GFP expression. Transformed roots showed fluorescence.
- *Aegle marmelos, Oroxylum indicum and Gmelina arborea* explants developed hairy roots when infected with A4wild, A4pHKN29, A4RS, A4RSpHKN29 strains.
- Co cultivation experiments are being carried out using A4RSpHKN29 *Agrobacterium rhizogenes* strain to evaluate the efficacy of A4RS strain in generating hairy roots in *Aegle marmelos.*
- Co cultivation was done by injured method, the explants were infected using 2ml syringe and the inoculated on 1/2 MS medium containing 100µM of acetosyringone. At 16.5ºC temperature cocultivation was done. After 7 days the explants were kept in 1/2 MS medium containing 500mg/L cefotaxime for the production of hairy root.