

PROJECT PROFILE

Title of the Project	:	Standardization of bio control mechanism for disease control in Forest nurseries
Principle Investigator	:	Dr. A. Karthikeyan
Co Investigators	:	Nil
Duration of Project (Start & End)	:	1 Year and Seven months 01-08-2018 to 31-03-2020
Objectives	:	Multiplication and application of, Bio control agents in the planting stocks at central nurseries for health and bio mass improvement
Funding agency	:	Kerala Forest Department
Summary/Achievements	:	<p>Kerala Forest Department is maintaining five central nurseries located at Nilambur Kulathupuzha, Chalakudi, Munnar and Kannur. The major seedlings propagated in these nurseries are <i>Tectona grandis</i>, <i>Swietenia mahogany</i>, and <i>S. macrophylla</i>, etc. These seedlings are used for various afforestation programmes by Kerala Forest Department in Kerala. The seedlings/planting stocks are often infected by various root pathogens and other climatic factors. To identify and control the diseases by bio control mechanism the disease incidence was assessed and recorded. In the Central nursery Nilambur, <i>Tectona grandis</i> and <i>Swietenia macrophylla</i> were propagated in root trainers. 22.8 % of <i>T. grandis</i> seedlings were affected by leaf rust disease caused by <i>Olivia tectonae</i>. 21.3 % seedlings were affected by leaf blight disease caused by <i>Colletotrichum gleosporoides</i>. This pathogen also caused 22.6 % of leaf blight disease in <i>S. macrophylla</i> seedlings. In Munnar, the central nursery was temporarily closed during the study period however in the Shola forest nursery at Devikulam, Munnar only leaf spot diseases were observed and identified as <i>Fusarium oxysporum</i>. Whereas in Kannur central nursery the seedlings of <i>T. grandis</i> showed very healthy and observed less than 4.5 % caused by diseases. In Chettikulam, Chalakudy nursery, mostly <i>Saraca asoka</i> seedlings were observed with blight disease caused by <i>F. oxysporum</i> only with 2.2%. Similarly, in the central nursery at Kulathupuzha, 1.8 % leaf rust disease was noticed in <i>T. grandis</i> seedlings. To control these diseases the bio control agent <i>Trichoderma viride</i> was used under laboratory conditions and found an antagonistic effect against the soil pathogens such as <i>Colletotrichum gleosporoides</i>, <i>Olvia. tectonae</i> and <i>Fusarium oxysporum</i>. The biocontrol agent <i>T. viride</i> was multiplied and distributed to all the central nurseries. The forest staffs were also trained to apply the <i>T. viride</i> to the diseased seedlings thereof.</p>