

Occurrence and Management of the Needle Feeder, *Lymantria ampla* Walker (Lepidoptera: Lymantridae) in Casuarina Plantations in Coastal Tamil Nadu, India

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Abstract

Casuarina cultivation is an important source of livelihood in coastal areas of Tamil Nadu and Puducherry States of India. Though *Casuarina equisetifolia* is a hardy species generally free from major insect pest problems in India, infestation by the bark feeder, *Indarbela quadrinotata* and the needle feeder, *Lymantria ampla* is causing economic loss in the recent years. While the bark feeder is a polyphagous insect commonly found on Casuarina species both in inland and coastal areas, infestation by the needle feeder is restricted to the coastal districts, Villupuram and Cuddalore of Tamil Nadu and Puducherry. The attack occurs annually beginning normally in June/July and lasts up to March next year. Hairy caterpillars of the insect feed on young needles at the lower branches and as they grow move to the upper branches of the trees. Voracious feeding of needles puts the trees under stress and affects their growth. The incidence of pest attack was found severe during the low rainfall years and more prevalent in younger plantations aged between 6 months and 3 years than old plantations. Studies on the ecology of the pest conducted for a period of two years revealed that the pest remained in the plantations throughout the year except during April and May and September to November was the peak period of attack. The caterpillars complete the larval period and descend to the ground and pupate underneath the dry needles spread on the plantation floor. Gravid wingless female emerges out of the pupa ascends the stem and lays the eggs. Male is winged, dark brown and less active during the day and time normally seen resting on the needles and branches. A species of pentatomid predator and three species of parasites (species of braconid, apanteles and dipteran) were found to be the natural enemies of this pest. Occurrence of a species of entomopathogenic fungus (*Beauveria*) and 12 isolates of entomopathogenic bacteria (*Bacillus thuringiensis*) were also recorded. Integrated methods of management of the pest involving cultural, mechanical, botanical and chemical measures were standardized and the effect of naturally occurring microbial pathogens like *B. thuringiensis* and entomopathogenic fungus against the pest was evaluated.