

# EFFECTIVE CONTROL OF CHROMOLAENA ODORATA BY AN INSECT

*Chromolaena odorata* (L.) K. and r. is a perennial shrub belonging to Asteraceae (composite). It originated in the Caribbean, Central and South America, and is now widespread in the warmer regions of the world. Among the weed shrubs *Chromolaena* is one of the most troublesome that dominates the understory of young coconut plantations. It was reported as a dangerous weed in Sri Lanka in 1944. "Podisinghomarang" or "Lokkan-nattan" are common names in Sri Lanka for *Chromolaena*. It is a vigorously growing perennial shrub with a life span of more than three years. It flowers during the first half of December. Seed production per shrub could be high as 80,000 - 90,000 seeds per year. The seeds are effectively dispersed by wind during April and early May. Thus new areas are colonized every year. It will be very important to keep this weed under control using possible methods.

The possibilities of biological control are considered promising. An exotic phytophagous Lepidopteron insect *Pareuchaetes pseudoinsulata* Rego Barros was introduced to Sri Lanka from the Commonwealth Institute of Biological Control (CIBC), Trinidad in December 1973 for the control of *C. odorata*. This leaf eating caterpillar was mass bred throughout the year in the laboratories at the Coconut Research Institute. First consignment of 2500 larvae was released close to Bandirippuwa Estate, Lunuwila and at several other sites. Successful defoliation had been achieved by *P. pseudoinsulata* in Sri Lanka. Many areas have been completely defoliated by this insect. All the leaves and sometimes buds including stems have been observed eaten by the larvae, leaving only the hard stem and the tender vegetative buds at several release points. Nor-

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mally it takes about 2 months to cause intensive defoliation after release. Due to repeated defoliation, plants completely die. However, it has not successfully established at every release point. In most of the defoliated areas, population of this



Caterpillars feeding on  
*Chromolaena Odorata*

insect did not persist to cause repeated defoliation in order to bring the weed under control. As a result, the defoliated plants produced new shoots with the onset of rains. In a few locations there had been reemergence of larvae at former release points a few months after the initial defoliation. The results obtained so far in the control of *C. odorata* by this insect and its economic impact, make it a prospective candidate for biological control.

The female moth after 2-4 days of emergence, lays about 150-250 eggs in clusters (20-25 egg masses) on the underside of leaves. After 4-8 days, the eggs hatch and the tiny larvae start feeding on the leaves during day and night up to the third instar stage (they have 4 instars). After the 3rd instar, they tend to be nocturnal feeders. Most caterpillars crawl down from the plants at sunrise and hide in debris and dried leaves un-

der the plant. They climb up the plant and feed during the night. A single larva eats up around 184 cm<sup>2</sup> of leaves during its growth period. Larval stage basis is normally for 17 days. By day they hide amongst debris at the base of the plant and finally pupate. This insect takes 40-60 days to complete its life cycle.

The larvae also feed on Maduruthala (*Agrotum conyzoides*) leaves, as an alternative to Chromolaena.

Predatory insects such as ants and birds (Crows, Mynhas) have been reported to be the major cause for decreasing field populations of *P pseudoinsulata* in certain areas.

Growers interested in obtaining this predatory insects, are kindly requested to write to Director, Coconut Research Institute, Lunuwila.

## PLANT GROWTH HORMONES FROM COCONUT WATER

The Department of Science and Technology in the Philippines has developed a technology to extract plant growth hormones from coconut water. The recovered plant growth hormones are extremely useful in tissue culture, particularly in propagating roots, stems and tissues as well as in the germination of seeds and in the flowering of plants. The technology for plant growth hormone is a simple process and involves filtration, adsorption and desorption. It added that the technology provides a way to convert wastes of coconut factories into value-added products, thus control environmental pollution posed by coconut factories.

Source : Cocomunity, VOI. XXV No. 19 (1995)