

**ESTABLISHMENT OF *PAREUCHAETES PSEUDOINSULATA* Rego Barros
(=*AMMALOINSULATA* Walk.), AN ARCTIID CATERPILLAR, FOR THE
BIOLOGICAL CONTROL OF *CHROMOLAENA ODORATA***

Chromolaena odorata L. is a native of South America from where it has spread to other parts of the tropics. All over Kerala, *C. odorata* is one of the major species of terrestrial weed. Its capacity for rapid dissemination through seeds is remarkable. For the control of the weed, biological method is considered to be ideal, since chemical methods are much more expensive and hazardous to ecosystem. The mechanical methods of control over extensive impenetrable terrains is highly expensive, besides being very tedious.

A number of insect pests have been reported to occur on this weed. Of these, the two exotic insect species *Apion brunneonigrum* Beguin-Billicocq (Apionidae; Coleoptera) and *Pareuchaetes pseudoinsulata* Rego Barros (Arctiidae: Lepidoptera) were evaluated in the College of Horticulture, Vellanikkara, Trichur, Kerala. The former one failed to establish locally and the trial was, therefore, abandoned. Trials using the arctiid caterpillar was started way back in 1981 using the Trinidad strain of the moth. Some 2000 larvae and 100 moths were released in the field but these failed to establish on the weed.

Later, a new shipment of *Pareuchaetes* sp. was imported from Sri Lanka. These were multiplied in the laboratory and field releases of 36,000 larvae and 1000 moths were made from November 1984 onwards in the Kerala Agricultural University Estate at Vellanikkara and in the Veluppadam area of Trichur district. The insect has now become well established in the Vellanikkara campus and the progress of establishment at Veluppadam is under observation.

Preliminary studies on the biology of the insect carried out during September-October, 1985 showed that the egg, larval and the pupal periods and the adult life-span range from 2 to 4 days, 13 to 16 days, 11 to 15 days and 5 to 8 days respectively. The life-cycle was completed in about 32 to 42 days.

A single female lays 120 to 299 creamy-white eggs during its life-period. In Trinidad, Cruttwell (1968) recorded the mean fecundity as 150 to 259, the maximum being 580. The ovipositional period lasts for 4 to 6 days. The larvae preferred shaded areas and hot and humid weather conditions and they were more active during night. Pupation mainly occurred at the base of the plant within a loosely spun cocoon. The breeding of the arctiid was continuous throughout the year.

Studies of Giriraj and Bhat (1970) and Bennett and Cruttwell (1973) demonstrated the host specificity of *P. pseudoinsulata* on *Chromolaena odorata* and they recommended it as a suitable candidate for the biological suppression of the

weed. The establishment of *P. pseudoinsulata* on *Chromolaena* and their impact on weed population in the Vellanikkara campus of the Kerala Agricultural University bring out the potentialities of the insect as a successful bio-control agent.

College of Horticulture
Vellanikkara, Trichur, India

N. V. Satheesan
K. R. Lyla
P. J. Joy
D. Joseph

References

- Cruttwell, R. E. 1968. Preliminary survey of potential biological control agents of *Eupatorium odoratum* in Trinidad. *Proc. 9th Br. Weed Conf., Trinidad*, 836-841
- Giriraj, C. N. and Bhat, K. V. 1970. Supply of natural enemies of the 'Siam weed' *Eupatorium odoratum* (for Nigeria and Malaysia). *Rep. W. Indian Stn. Common w. Inst. Biol. Control, Trinidad*, 55-56
- Bennett, F. D. Cruttwell, R. E. 1973. Insects attacking *Eupatorium odoratum* in the Neotropics. 1. *Ammalo insulata* Walk. (Lepidoptera: Arctiidae), a potential biotic agent for the control of *E. odoratum*. *CIBC Tech. Bull.* (16) 105-115