

SCIENTIFIC NOTES

**NEW RECORD OF A NATURAL ENEMY ON MULBERRY
WHITE FLY, *DIALEUROPORA DECEMPUNCTA*
(QUAINTANCE & BAKER) IN ASSAM****Yumnam Debaraj*, S. N. Gogoi*,
T. K. Biswas* and B. B. Bindroo****

* Regional Sericultural Research Station, Jorhat-785005, INDIA. E-mail: yumnamdebaraj@yahoo.com

** Central Sericultural Research and Training Institute, Berhampore-742101, INDIA.

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In Eastern and North Eastern regions of India, the banded winged whitefly, *Dialeuropora decempuncta* (Quaintance & Baker) (Homoptera: Aleyrodidae) is a serious pest of mulberry and responsible for loss of about 24% mulberry leaf yield production during post-monsoon season (Bandyopadhyay et al., 2000, 2001; Rajkhowa & Chakravorty, 2004). The Economic Threshold Level of whitefly is found to be 20 nos./plant. Due to heavy infestation leaf quality deteriorates resulting chlorosis, leaf curl, depletion of leaf moisture, dryness of leaves in the initial stages and causing sooty mould on the later stages of the infestation (by nymphal stages). These entire symptoms make the leaves unfit for silkworm rearing. Eggs are deposited on the lower surface of leaves. Nymphs suck the juice and secrete honeydew which acts as a medium for the growth of sooty mould fungus, ultimately forms a black coating on the upper surface of mulberry leaves. This affects the photosynthesis of mulberry leaves and results in low nutritive value, renders them unfit for silkworm rearing. From the previous studies, it is established that due to whitefly infestation, crop loss in mulberry silkworm rearing was upto 5 kg cocoons/ 100 dfl (disease free layings).

For the management of this pest, different chemical insecticides (0.1% dimethoate/ 0.1% dichlorvos/ 0.02% monocrotophos) are recommended. However, due to indiscriminate use of the chemical insecticides the pests develop resistance and pose serious threat to the environment and mulberry ecosystem particularly the natural enemies of the whitefly (Bandyopadhyay et al., 2005).

Maximum incidence of the pest was found during autumn season, during which the most favourable silkworm crop is being conducted due to congenial climatic conditions in this region. Farmers used to rear high yielding silkworm races / breeds during this crop. Unless these breeds are supplied with good quality mulberry leaves, the silkworm crop may not be succeeded.

A total of 10 native predators and two Hymenopteran parasitoids were recorded on whitefly as natural enemies. The incidence of whitefly and its natural enemies was studied in West Bengal (Bandyopadhyay & Santhakumar, 2001-02). The biology and feeding efficacy of two native predators of whitefly viz, *Micraspis discolor* and *Brumoides suturalis* (Coleoptera: Coccinellidae) have been worked out (Santhakumar & Bandyopadhyay, 2001-02). However, no studies have been conducted about the coccinellid predators as bio-control agent against whitefly in Assam and North East India. Hence, an attempt was made in the present study to

survey and identify the efficient predators for the management of white fly on mulberry.

In view of the serious threat posed by the pest in mulberry ecosystem, a regular survey was conducted in Jorhat district of Assam, India in 2009-2011 in the mulberry fields for collection of natural enemies of whitefly. The grubs and adult predators were collected from the mealy bug and whitefly colonies infesting mulberry along with the infested shoots. These grubs and adults were reared in the laboratory providing sufficient food for adult emergence and further observation. The newly emerged adult was identified as *Scymnus posticalis* Sicard (Coleoptera : Coccinellidae). This is the first report of the predator as new record feeding on mulberry whitefly, *Dialeuropora decempuncta* in Assam (Fig. 1-4).

The adult predator beetles are small and dark brown in colour. Males are 1.88×1.16 mm and females are 2.56×1.24 mm in sizes. Eggs are light yellow in colour. There are four instars in the grub stages with thick white waxy covering. The size of a matured grub was 3.49×1.60 mm. The grub stage was followed by prepupal and pupal stages. The larval period was completed in 13.71 days. The life cycle from egg to adult was completed in 28.0 days. The biological studies of the predator can be taken up in the laboratory for management of whitefly in mulberry.

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Figures 1-4. Life stages of *Scymnus posticalis*. 1) Matured larva, 2) Pupa, 3) Enlarged view of pupa, 4) Adult.



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Figures 5-6. 5) Mulberry leaf infested by whitefly nymphs, 6) Heavily infested tender leaves by adult whitefly.