Journal of Eco-friendly Agriculture 14(2): 45-46, 2019

Efficacy of different management practices on the incidence of guava bark eating caterpillar, *Indarbela* sp.

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ABSTRACT

Bark eating caterpillar is a polyphagous insect pest causing considerable damage to various fruit crops. Very high incidence of this pest has been noticed in unmanaged guava orchards. Keeping in the view the importance of this pest, different management practices were evaluated under field conditions at ICAR-Central Institute for Subtropical Horticulture, Rehmankhera farm Lucknow. Among the treatments tested, swabbing of insecticide acephate on guava trunk reduced the bark eating caterpillar infestation effectively with no new ribbon formation by the caterpillar, it was followed by swabbing of profenophos, *Beaveria bassiana* and combination of dichlorovos sealer cum healer (IIHR product) +/- copper oxychloride, respectively. The results of the effect of *Beaveria bassiana* were most significant in the experiment as it not only reduced the incidence but also colonized in the guava trunk.

Key words: Guava, bark eating caterpillar, *Indarbela*, management

Bark eating caterpillar is a polyphagous insect pest that damages many fruit crops, avenue trees and ornamental trees (Ali *et al.*, 2007). The incidence of this pest could be observed by the presence of an elongated zigzag ribbon like messy web or galleries made of fragments of bark pieces and silk excreta, near the stem or branch angles (Patil and Deshpande, 1990). Two species of bark eating caterpillar, i.e., *Indarbela quadrinotata* walker and *I. tetraonis* Moore, are commonly recorded on guava (Haseeb, 2005). The incidence of this pest varied from 56 to 82 per cent in orchards surveyed in guava growing regions of Uttar Pradesh (Anonymous, 2000, 2001, 2002, 2003). The life cycle of this pest is annual. The larvae is the damaging stage which bores into the trunk or branches, usually at forks or angles, to a depth of 15-25 cm. Stem damage by the pest results in an interruption in the translocation, leading to the inhibition of growth and adverse effects on fruiting capacity of the tree, while severe cases of infestation lead to complete death of young trees (Butani, 1979). The occurrence of bark eating caterpillar on guava is regular and its infestation is found throughout the year (Verma and Khurana, 1978). Under Gujarat conditions, the initial incidence of pest was reported during the first week of July, peak incidence was observed during the second week of November (Patel and Patel, 2008). Whereas in Uttar Pradesh (Lucknow) conditions, its initial incidence was observed during the second week of April and its peak incidence was during the first week of October (Haseeb, 2005). Population of bark eating caterpillar was found negatively correlated with the minimum temperature (Patel and Patel, 2008). Relatively high incidence of this pest has been recorded in the subtropical conditions in recent years. Different management practices were also developed for this pest by various workers, however, studies on effect of botanicals and entomopathogenic fungi for management of bark eating caterpillar in guava are scanty. Hence, this study was undertaken to evaluate different management practices against guava bark eating caterpillar under field conditions.

MATERIALS AND METHODS

The study was conducted at the experimental farm of ICAR-Central Institute For Subtropical Horticulture, Rehmankhera, Lucknow. The 10 years old guava trees cv. Allahabad Safeda were selected for the study. The experiment was conducted in randomized block design with 15 treatments replicated thrice. The treatments were, *viz.*, T_1- swabbing of dichlorvos (5 ml L^{-1}) + Sealer cum healer (s/h) + copper oxychloride (3g L^{-1}) (COC) on trunk, T_2- swabbing of chlorpyriphos (2 ml L^{-1}) on trunk, T_3-swabbing of profenophos (2 ml L^{-1}) on trunk, T_4- swabbing of dichlorovos (5 ml L^{-1}) + COC (3g L^{-1}) on trunk, T_5- swabbing of acephate (2g L^{-1}) on trunk, T_6- swabbing of chlorpyriphos (2 ml L^{-1})+ s/h + COC (3g L^{-1}) on trunk, T_7- swabbing of profenophos (2ml L^{-1}) + s/h + COC (3g L^{-1}) on trunk, T_8- swabbing of dichlorovos alone, T_9- swabbing of sealer cum healer alone, T_{10} – swabbing of COC (3g L^{-1}) alone on trunk, T_{11}- swabbing pine oil alone on trunk, T_{12}- swabbing of linseed oil (3 ml L^{-1})+ neem oil (5ml L^{-1}) on trunk, T_{13}- swabbing of neem oil (5ml L^{-1}) alone, T_{14}- swabbing of entomopathogenic fungi *Beauveria bassiana* (2×10^8) @ 5g L^{-1} on trunk and T_{15} – control. The treatments were imposed during the last week of October 2015, when the peak incidence of the pest was observed. The observations were recorded before imposition of the treatments and 30, 45 and 60 days after the treatments. The number of ribbons formed by the caterpillar on the guava trunk was visually counted and recorded at each interval. After each observation, ribbons formed on trunk were