

BIOLOGICAL CONTROL OF *LYGUS HESPERUS* WITH INUNDATIVE RELEASES OF *ANAPHES IOLE* IN A HIGH CASH VALUE CROP

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ABSTRACT

The western tarnished plant bug (WTPB) *Lygus hesperus* Knight is a major pest in strawberries on the central coast in California. Nymphs and adults feed on the fruits, and as a result, the fruits are distorted or 'cat-faced', and are not acceptable in the fresh market. We evaluated the potential for inundative biological control of WTPB with the native *Anaphes iole* Girault in strawberries on the central coast in California. Being a high cash value crop, inputs into strawberry production are high, and an expensive control strategy such as inundative biological control has a high likelihood of being adopted if the program is effective. We released 15,000 *A. iole* in acre-sized plots every week at three sites, and observed a 64 % suppression of WTPB. In comparison, with the application of insecticides, growers achieved 44.7 % reduction in WTPB. In a separate trial that was conducted at four sites the following year, we modified the release strategy and doubled the release frequency to determine if parasitism levels could be increased substantially. While we achieved 51.1 % reduction in WTPB with weekly releases, the semi-weekly released provided only an additional 9.5 % reduction. Given that earlier research has shown that plant-related factors affect the performance of *A. iole* in strawberries, further modification of release numbers or timings are not likely to increase the level of suppression. Since the release program appears to provide 64 % or less suppression, we need to integrate inundative biological control of WTPB in strawberries with additional tactics aimed at reducing nymph densities. Integration with selective insecticides is an option if parasitoid release timings can be adjusted to reduce the negative impacts of insecticide residues.

Udayagiri, S., Welter, S. C. and Norton, A. P. 2000. Biological control of *Lygus hesperus* with inundative releases of *Anaphes iole* in a high cash value crop. *Southwestern Entomologist Supplement* 23: 27-38.

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