

SEASONAL POPULATION DYNAMICS OF GLASSY-WINGED SHARPSHOOTER EGG PARASITOIDS: VARIABILITY ACROSS SITES AND HOST PLANTS

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ABSTRACT

The California Department of Food & Agriculture (CDFA) has a number of sites in southern California where they are releasing egg parasitoids of Glassy-winged Sharpshooter. To date, species released include *Gonatocerus ashmeadi*, *G. fasciatus*, *G. morrilli*, and *G. triguttatus*. Two South American *Gonatocerus* species are scheduled for release in 2005 (pending host specificity studies and release permits) and a strain of *Anagrus epos* from Minnesota may also be included in future releases (also pending such work). CDFA monitors for parasitoid establishment and population dynamics at release sites. This project is intended to complement and expand the scope of this monitoring with an eye towards improving our understanding of the benefit of releasing alternative parasitoid species and how well they are surviving, dispersing, and impacting GWSS populations.

INTRODUCTION

One of CDFA's parasitoid release sites in southern California is Field 7H on the UC Riverside campus. A two-year field study in and around this release site was conducted to examine the temporal and host plant distribution of *Homalodisca* oviposition and associated egg parasitism (Al-Wahaibi 2004). In the current project, we plan to expand on this study and monitoring done by CDFA to attempt to improve our understanding of the population dynamics of endemic and released parasitoids in and around release sites. Although control programs appear to be effective at reducing Glassy-winged Sharpshooter populations, biological control is a more sustainable and environmentally friendly means of contributing to vector reduction and may have to suffice in much of California where chemical control is either impractical (e.g., urban areas) or economically unfeasible.

OBJECTIVES

Monitor GWSS egg parasitoids in several areas in southern California in and around CDFA's parasitoid release sites and across several host plants.

RESULTS

In the two-year study around CDFA's release site on the UC Riverside campus by Al-Wahaibi (2004), parasitism was due to a total of eight parasitoid species with *Gonatocerus ashmeadi*, *Ufens principalis* (previously *Ufens* A, Al-Wahaibi et al. 2005), *Ufens ceratus* (previously *Ufens* B), and *G. morrilli* being the most abundant. *Ufens* spp. were dominant on jojoba while on other plants, *Gonatocerus* species tended to dominate. Across all ten host plants sampled, ranked percent parasitism was *G. ashmeadi* (27.4%), *U. principalis* (19.8%), *U. ceratus* (2.9%), *G. morrilli* (2.1%), *G. incomptus* (0.4%), *G. novifasciatus* (0.3%), *G. triguttatus* (0.1%), and *G. fasciatus* (0.01%). Note, however, that these data may be biased by the proximity of nearby hosts harboring smoketree sharpshooter and high levels of *Ufens* spp. on jojoba.

We are in the process of expanding our sampling program outside of the UC Riverside campus.

CONCLUSIONS

We are only 3 months into this project so it is too early to draw conclusions at present.

REFERENCES

Al-Wahaibi, A.K., 2004. Studies on Two *Homalodisca* Species (Hemiptera: Cicadellidae) in Southern California: Biology of the Egg Stage, Host Plant and Temporal Effects on Oviposition and Associated Parasitism, and the Biology and Ecology of Two of their Egg Parasitoids, *Ufens* A and *Ufens* B (Hymenoptera: Trichogrammatidae). Ph.D. Dissertation, University of California, Riverside. 435 pp.

Al-Wahaibi, A.K., Owen, and J. G. Morse. 2005. Description and Behavioural Biology of Two *Ufens* Species (Hymenoptera: Trichogrammatidae), Egg Parasitoids of *Homalodisca* Species (Hemiptera: Cicadellidae) in Southern California. Bull. Entomol. Res. (Submitted).

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