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Evaluating the Biological Control of ACP in the Rio Grande Valley of Texas

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Tamarixia radiata, a species specific ectoparasitoid of the Asian citrus psyllid (ACP), *Diaphorina citri*, was imported from Pakistan and permitted by the PPQ Permitting Unit for field release in Texas. Over 130,000 parasitoids have been released in the Lower Rio Grande Valley with establishment confirmed at 39 locations. Both open and closed releases are conducted and used to assess establishment and efficacy. Closed releases made in fine-mesh sleeve cages indicate parasitism levels at 10.4%. When compared to the controls, host mortality is reported at 64.9% in cages with parasitoids present versus 4.4% in cages with parasitoids absent. Further investigations into the host mortality of ACP nymphs have been explored by conducting visual observations on the behavior of female parasitoids (n = 30) for one-hour periods in arenas with suitable hosts. Data indicates that females will mount 3.1 $\pm$ 0.5 nymphs per hour. The parasitoid will either oviposit the nymph on the ventral side (36.5% of the time) or probe the nymph on the dorsal side (63.5% of the time). After probing, the parasitoid will either walk away (87.9% of the time) or host feed (12.1% of the time). Host feeding was documented at 0.43 $\pm$ 0.1 nymphs per hour. All nymphs that were host-fed were found to be eventually dead. Host mortality (64.9%) and parasitism rates (10.4%) combined can reduce ACP populations by 75.3%. Studies are still ongoing to help reduce both ACP populations and the incidence of citrus greening disease.