

irritans (L.), black dump fly (*Hydrotaea aenescens* (Weidemann)) (Diptera: Muscidae) and a flesh fly (*Sarcophaga bullata* Parker) (Diptera: Sarcophagidae). *M. raptor*, *S. cameroni*, and *S. endius* readily attacked and produced progeny on all five host species, with substantially lower production from *S. bullata* than from the muscid hosts. Rates of host attacks by *S. nigroaenea* and *S. gemina* were similar on house fly, stable fly and black dump fly hosts, with lower rates on horn fly; almost no progeny were produced by *S. nigroaenea* on *S. bullata* hosts. *D. himalayanus*, a large-bodied chalcidid parasitoid, had highest rates of host attacks and progeny production on *S. bullata* and *H. aenescens*, followed by stable fly and house fly hosts; very few progeny were produced by this species on horn fly hosts. Overall differences among different geographic strains of parasitoids (from Russia, Kazkhstan and Florida) were generally small, although the Florida strain of *M. raptor* was superior to the two Eurasian strains. The results with horn fly hosts support field survey data suggesting that several of these species may be promising biological control agents for this pest.

Session 13: Predicting Natural Enemy Host Ranges: Strengths and Limitations of Lab Assays

EVALUATION OF THE EFFICIENCY OF AN ECOPARASITOID OF CYDIA SPECIES – IMPORTANCE OF LAB BIOASSAYS!

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The oriental fruit moth (*Cydia molesta* (Bousck) and the codling moth *Cydia pomonella* L. (Lepidoptera: Tortricidae)) are important pests in apple orchards. Since current control methods are not always successful in controlling these pests, alternative solutions are needed. The use of antagonists as biological control agents might be a suitable approach to complement existing IPM strategies, particularly in regard to pest population reduction and anti-resistance strategies.

The parasitic wasp *Hyssopus pallidus* (Askew) (Hymenoptera: Eulophidae) is a gregarious ectoparasitoid of larval instars of *Cydia* species (*C. pomonella* & *C. molesta*). Caterpillars are parasitized inside the apple and larvae develop by feeding on the caterpillar's body, resulting in the death of the caterpillar. Thus, reduction of primary *Cyda* infestation in early summer could help to prevent heavy infestation later in the season.

In this study, comparative life history traits of *H. pallidus* reared on the two different *Cydia* sp. was assessed and evaluated in regard to the optimal condition for effective mass rearing systems. The implications for biological control are discussed. Furthermore, behavioural aspects of the host location mechanism and parasitism success in mixed infestations are elucidated in order to optimize field release. Accomplished parasitism rate will help to exploit the parasitoid's biocontrol potential in reducing *Cydia* population.