ENVIROMENTAL EFFECTS OF EXOTIC ENCARSIA SPECIES INTRODUCED INTO EUROPE FOR WHITEFLY CONTROL

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Biological control of whitefly pests is a key component of sustainable horticulture across the world. Every year billions of exotic parasitoids (Encarsia formosa and Eretmocerus eremicus) are released to control the tobacco whitefly, Bemisia tabaci and the greenhouse whitefly Trialeurodes vaporariorum. The impact of these mass-releases of exotic parasitoids on the native insect fauna, whiteflies and parasitoids, is currently evaluated in a case study in different climatic zones emphasizing reproductive (hyperparasitic male) strategies, life history characteristics, dispersal abilities and overwintering strategies, host selection and host specificity and interspecific competition.

DISPLACEMENT OF AN INDIGENOUS NATURAL ENEMY BY AN INTRODUCED EXOTIC PARASITOID?

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In Switzerland, the exotic generalist egg parasitoid Trichogramma brassicae is mass released annually against the European Corn Borer (Ostrinia nubilalis). These mass releases coincide with the oviposition period of known native hosts of the native tachinid larval parasitoid Lydella thompsoni. In the case study presented here, we investigated whether egg parasitoids that disperse from the maize fields into the adjacent native habitats may compete with L. thompsoni for non-target hosts and whether, as a consequence, the mass-releases of the egg parasitoid negatively affect the population density of the larval parasitoid.

ARE RARE NATIVE BUTTERFLIES AT RISK BY MASS RELEASES OF TRICHOGRAMMA BRASSICAE? ERBIC - PARTNER 2

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Trichogramma egg parasitoids are used worldwide on several million ha as inundative biological control agents against a range of pests in many different crops. In Switzerland, Trichogramma brassicae (TB) is mass released against the European Corn Borer (Ostrinia nubilalis) (120,000 females/ha on average) but it is known that they are not host-specific. Adults to a certain degree emigrate from the maize fields thus potentially threatening a range of non-target butterflies which occur in nearby habitats. Here we present results of our studies on the host-specificity of Trichogramma brassicae and we evaluate potential significant impacts on butterfly populations in the field.