

Publication

Aphid infestation promotes survival of a seed predator : observations and experiments on a tritrophic community module

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

ID 986194

Author(s) Szentesi, Arpad; Schmera, Denes

Author(s) at UniBasel [Schmera, Dénes](#) ;

Year 2011

Title Aphid infestation promotes survival of a seed predator : observations and experiments on a tritrophic community module

Journal Arthropod-plant interactions

Volume 5

Number 4

Pages / Article-Number 319-330

Keywords Ants, Community structure, Herbivory, Indirect interactions, Parasitoids, Leguminosae

We investigated whether aphid presence and abundance influence the survival of an endophagous pre-dispersal seed predator of the same host plant. We studied a terrestrial community module consisting of one plant (*Laburnum anagyroides*) and four insect species/groups (an aphid, *Aphis cytisorum*, a pre-dispersal seed predator bruchid, *Bruchidius villosus*, aphid-attending ant species, and parasitoids of the bruchid). Two complementary investigations were carried out in parallel: (a) a plant-aphid-ant complex was experimentally manipulated by excluding aphids, ants, or both for 5 years to assess their impacts on the seed predator's survival and parasitism rate; and (b) different aphid infestation levels on randomly selected infructescences were correlated with plant traits, nutrient allocation pattern, and variables of seed predator's survival, such as the number of eggs laid and adults emerged influenced by parasitoid activity, for 7 years. We found that ants did not affect bruchid oviposition negatively, but egg-parasitism was significantly decreased by their presence. Plant traits, such as the number of seeds and seed mass, as well as seed predator performance were negatively affected by heavy aphid infestation. Seed predator-infested seeds had no effect on the mass of remaining seeds in the pods. This study suggests that aphids were nevertheless promoting bruchid abundance and survival, depending on their infestation rate.

Publisher Springer

edoc-URL <http://edoc.unibas.ch/dok/A6001684>

Full Text on edoc No;

Digital Object Identifier DOI 10.1007/s11829-011-9136-5

ISI-Number WOS:000297341900007

Document type (ISI) Article