Abstracts

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Parasitic wasps for on-farm control of a coleopteran pest feeding within stored grains

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The potential of parasitic wasps (parasitoids) for on-farm control of a coleopteran pest feeding within stored grains is investigated. This pest, the bruchid Acanthoscelides obtectus, infested the beans in 80% of the observed cases already in the field in Colombia. This infestation is typically not recognized by the farmers at harvest, as the pest population is in its larval stage, hidden within the grain. A larval parasitoid (parasitic wasp) of the genus Dinarmus which is also known from Europe, was isolated from infested legume grains in a local store, reared and added to the harvested beans. It proved to be superior to Anisopteromalus calandrae, a parasitoid which is often tested for pest control in storage. Dinarmus basalis produced a higher number of progeny and had a longer reproductive lifetime. In a long-term storage trial, it suppressed the bruchid population considerably. Host feeding added an interesting aspect to biological control as it contributes to a rapid elimination of the pest population. As certain characteristics of the plant may selectively favour the parasitoid, combinations of the parasitoid and of beans enriched with the storage protein arcelen were evaluated. The benefits of such integrated control programs is discussed.

Index terms: storage, parasitoid, bruchid, host plant resistance.