

Study the bioethology of a quasi social parasitoids as a first step in biological control

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Biological control is an important component of integrated pest management (IPM) because it mainly attempts to manage invasive pests through the introduction of natural enemies such as predators, parasitoids or pathogens. Due also to the increase in limitation of the use of phytosanitary products imposed by law for their disproportionate use in the past and side effects in the environments, biological control has been recently re-adopted. Xylophagous insects are among the most difficult plant pests to control, especially with traditional chemicals, as they spend most of their life cycle inside natural wood or wood packing materials. *Psacotha hilaris hilaris* (Pascoe) (Coleoptera, Cerambycidae, Lamiinae, Lamiini), the yellow-spotted longhorn beetle that causes damages to plants in the family Moraceae, is one of the exotic beetles imported into Europe in the last decades and whose distribution is slowly expanding. For its control, parasitoids assume a key role, becoming the subject of numerous studies. However, potential biocontrol agents must be screened prior to release, paying particular attention to their bioethology, to optimize their application. The quasi-social parasitoid *Sclerodermus brevicornis* Kieffler (1906) (Hymenoptera: Bethyridae) is able, thanks to its morphology, to enter the galleries of xylophages in search of the host larva, and several females are able to cooperate to paralyze and ovideposit on larger hosts. Furthermore, as it is very difficult to observe *S. brevicornis* in nature as its lifecycle is spent mostly inside wood galleries, studies of bioethology in laboratory finalized to balance the number of parasitoids with the hosts (intraspecific competition) and the interaction with other parasitoids (intraguild parasitization) become an essential starting point for the use as control agents.