

Studies on the bioethology of *Sclerodermus brevicornis* to improve biological control strategies

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Parasitoids have a key role in the control of xylophagous species that spend most of their life cycle inside wood, and thus are difficult to reach by chemicals. *Psacotha hilaris hilaris* (Pascoe) (Coleoptera, Cerambycidae, Lamiinae, Lamiini), is an Asiatic beetle detected in Italy in 2006 that causes damages to plants belonging to Moraceae, in particular mulberry and fig plants. The Hymenoptera *Sclerodermus brevicornis* Kieffler (1906) (Hymenoptera: Bethyridae) appears as a good candidate for its biological control. In order to optimize its release, it is crucial to screen in detail its bioethology, in particular life cycle, reproduction and behavioural strategies. *S. brevicornis* is a quasi-social parasitoid, and it is known that usually behavioural studies must take into account that the interactions become more intense as the degree of sociality increases. In addition, it is very difficult to observe *S. brevicornis* in nature as its lifecycle is spent mostly inside wood galleries. For these reasons, studies of bioethology in laboratory were aimed at balance the number of parasitoids with the hosts (intraspecific competition), analyze the interaction with other parasitoids (intraguild parasitization) and the possibility to find an alternative host for mass rearing.