

## Reproductive traits of *Monochamus galloprovincialis* (Coleoptera: Cerambycidae) under laboratory conditions.

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### Abstract

The pine sawyer *Monochamus galloprovincialis* (Olivier) is the vector of the introduced pine wood nematode *Bursaphelenchus xylophilus* (Steiner & Bühner) Nickle in Portugal, and until recently was considered a secondary forest insect. Under laboratory conditions, a study of biological and reproductive traits of 37 insect pairs was conducted. The longevity of both sexes was similar, being 61.2±6.5 days for males and 64.0±6.3 days for females (mean±SE). Sixteen small-sized insects (22% of the population) died within 20 days and before starting to reproduce. The sexual maturation period (without egg laying) was 20.4±0.7 days (mean±SE), while the oviposition period lasted 54.0±4.2 days (mean±SE). The oviposition rate increased very quickly during the first weeks of life, peaking to almost two eggs per day during days 30-44, and gradually dropping in the following weeks. The females laid an average of 67.0±5.96 (mean±SE) eggs through their lives. The hatch rate was 92.6±1.0% (mean±SE). There were large individual variations in longevity and fecundity parameters, and principal component analysis based on 16 morphological and biological parameters separated the breeding insects into four distinct groups. Almost half of the reproducing beetles were large-sized insects, with high longevity and fecundity traits. Overall, the reproductive potential of the Portuguese population of *M. galloprovincialis* seems to be smaller than that described for other *Monochamus* vectors of the pine wood nematode both in North America and Japan.