

PRELIMINARY STUDIES ON RED PALM WEEVIL AS POTENTIAL RISK FOR PALM TREES IN MEDITERRANEAN BASIN

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The impacts of insect invasive species on human health and on agriculture have attracted worldwide attention. However, researchers and policymakers rarely directly address the connection between invasive species and loss in natural and cultural heritages. Various attempts have been made to address the plants that are affected by invasive species but the links between these and loss in natural biodiversity and heritage in botanical and historical gardens are largely lacking in the literature.



Fig. 1 Larvae, pupa and adults of *R. ferrugineus*

We report a study on the Red Palm Weevil (RPW), *Rhynchophorus ferrugineus* (Oliv.) (Fig. 1) (Coleoptera, Curculionidae) which is the most important pest of the palm date trees in many countries. RPW is a large polyphagous insect native to southern Asia and Melanesia and one of the most important pests of several palm species. It reached Italy in 2004 and now is wide spread in Sicily but also in almost all Mediterranean, through *Phoenix dactylifera* and *P. canariensis* (Fig. 2).

In Europe for the first time was established the RPW-*P. canariensis* interaction. As a result of RPW attack, the palm is destroyed and the tree collapses and dies.

A high density of RPW, developed in *P. canariensis*, is now present despite to the control measures, in Sicily. Palm trees represent in Mediterranean area an important part of cultural heritage in cities, botanical and historical gardens, which conserve many different palm species. In addition Mediterranean flora is also characterized by the presence of the native palm specie *Chamerops humilis*. In order to understand if the *C. humilis* is a suitable host of RPW, we investigate the natural infestation of RPW on this native palm. Moreover we analysed the morphological and molecular characters of RPW populations collected from *C. humilis* and *P. canariensis*. The study highlights the necessity to correlate the degree of genetic differences in the population of invasive species, as RPW, to predict the impact on natural flora and on other hosts.



Fig. 2 *P. canariensis* infested by RPW