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Department of Soil, Plant and Food Sciences - UNIBA Aldo Moro DiSSPA - Entomology and Zoology Section, Via Amendola, 165/A - 70126 BARI - ITALY

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Tel. +39/0805442874 - +39/0805442880

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G. MAZZEO, A. RUSSO, P. SUMA, S. LONGO

University of Catania, Department of Agriculture, Food and Environment, Via Santa Sofia 100, 95123 Catania,
Italy, e-mail: gamazzeo@unict. it.

The history of *Dactylopius coccus* (Costa) (Hemiptera: Dactylopiidae) in the Mediterranean basin: the Sicilian episode

ABSTRACT

Dactylopius coccus (Costa) belongs to the family Dactylopiidae (Hemiptera: Coccoomorpha), that includes species that live exclusively on Cactaceae and are native in America as well as their host plants. From the dried body of the females, rich in carminic acid, can be extracted the red carmine dye used primarily for food, clothing and cosmetic coloring. In Mexico this species was already reared for that purpose by native people before the discovery of America. The Spanish conquistadors continued the rearing of the cochineal and adopted strong control measures setting up a monopole of the production and commercialization of the colorant. After the decay of their domination, the insect and its hostplants, i. e. various Cactaceae of *Opuntia* and *Nopalea* genera, were introduced to other territories (Africa, Mediterranean basin and Canary Islands) with the purpose to obtain the precious dye. The acclimation of both plant and insect was sometimes unsuccessful. It is the case of Italy, where repeated attempts were carried out to rear *D. coccus* for the carmine dye production, introducing strains in areas with mild climate (e. g. Sardinia and Sicily) but only the hostplant was able to find suitable conditions of life. In Sicily, the prickly pear *Opuntia ficus-indica* was subsequently widely cultivated and appreciated for the edible fruit.

More recently, at the end of 90s in Sicily, another attempt of rearing the cochineal on cultivated prickly pear plants in glasshouse conditions was carried out. Based on the achieved results, it was possible to conclude as the high level of mortality of the nymphal stages of the scale, that hindered the maintaining of the population, was related with the relative humidity values, although low temperatures (till 0° C) were tolerated by crawlers that survived, by entering quiescence. Technically *D. coccus* could be reared for commercial purposes in the Mediterranean area only if temperature and humidity can be controlled (e. g. in glasshouse), avoiding any eventual threat related to its natural dispersal as occurred with other *Dactylopius* spp. that can compromise the fruit production.

Key words: cochineal dye; Italy; Cactaceae; rearing.

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