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First report of *Eurytoma plotnikovi* Nik. (Hymenoptera, Eurytomidae), a seed parasite of pistachio, in Sicily (Italy)

Abstract - The pistachio seed wasp, *Eurytoma plotnikovi* Nik.(Hymenoptera, Eurytomidae), is a new pest recently arrived in pistachio orchards in central-western Sicily (Italy). Information on the damaging effects of this seed wasp in the affected areas is provided.

Riassunto - *Prima segnalazione di* Eurytoma plotnikovi *Nik. (Hymenoptera, Eurytomidae), dannoso per il seme di pistacchio in Sicilia (Italia)*

La presenza di *Eurytoma plotnikovi* Nik. (Hymenoptera, Eurytomidae) in alcuni pistacchieti della Sicilia centro-occidentale viene segnalata per la prima volta. Vengono inoltre fornite informazioni sul danno prodotto dall'imenottero, nelle aree infestate.

Key words: pistachio seed wasp, new record, *Megastigmus pistaciae*.

Edible pistachio (*Pistacia vera* L.) nuts infested with larvae of an unidentified wasp were collected during an insect survey conducted in spring 2011 in pistachio orchards in central-western Sicily (latitude 37°51' 01" N; longitude 13°52'64" E). The wasp larvae, reared under laboratory conditions, developed into adults that were identified as *Eurytoma plotnikovi*, an indigenous pest of inedible nuts of the ornamental pistachio (*P. chinensis*) in China (Qin *et al*., 2007; Tian *et al*., 1994). The occurrence of this pistachio seed wasp in Sicily is a new record for Italy. In the surveyed orchards, *E. plotnikovi* was associated with another wasp, the pistachio seed chalcid, *Megastigmus pistaciae* Walker that is native to the Mediterranean region. In addition to China, the pistachio seed wasp is present in Tunisia (Jarraya & Helali, 1978), Iran (Basirat & Seyedoleslami, 2000), Israel (Izhaki, 1998), Turchia (Doğanlar *et al*., 2009), Greece (Mourikis, *et al*., 1998) and in other pistachio producing countries in the Middle East. A total of 553 nuts were collected in the infested Sicilian pistachio orchards and dissected for wasp infestation. All the nuts presenting the wasp larvae (254) were isolated under laboratory conditions waiting for the eclosion of the adults. An association of 177 and 77 specimens of *E. plotnikovi* and *M. pistaciae* Walker, respectively was produced. The damage induced by *E. plotnikovi* in the surveyed orchards has been noticed since 2009 by the growers

Eurytoma plotnikovi Nik.: lateral (top) and dorsal view (bottom) of adult.

who confused it with that caused by *M. pistaciae*. According to the literature, this new pistachio seed wasp completes one generation per year. The insect overwinters as a full grown larva inside the infested pistachio nuts which remain on the tree or fall to the ground. Adult emerges from the seeds in late April early May. The newly emerged females search for unripe pistachio nuts left on the trees or on the ground to deposit their eggs. The hatched larvae feed on the nuts until all or almost all the seed embryo is consumed and then enter diapause usually by July (Braham, 2005). According to Basirat and Seyedoleslami, (2000) each pistachio nut allows the development of only one wasp specimen. However, studies conducted in Iran and Tunisia, where the two pistachio wasps are present, indicate that *E. plotnikovi* is able to outperform *M. pistaciae* displacing it and becoming the dominant species infesting pistachio orchards (Basirat and Seyedoleslami, 2000; Braham, 2005). The early emergence (about one month earlier) of *E. plotnikovi* adults, compared to *M. pistaciae,* favors its spread and rapid colonization of pistachio nuts (Jerraya and Bernard, 1971; Braham, 2005). Poor management practices of the wasp infestations may also influence the spread of *E. plotnikovi* in pistachio orchards (Wu *et al*., 2009). The results of chemical control trials reported in the literature indicate that stem injections of neonicotinoids are the most effective measures for managing infestations of *E. plotnikovi*, providing better results than spray and drench applications of this product. Taking into consideration the importance of the pistachio industry as an economic resource in eastern Sicily, the only Italian region where pistachios are grown, biological and ecological studies of *E. plotnikovi* in the environmental conditions of Sicily are needed to prevent the spread of this pest from west into east Sicily (Bronte Municipality) and, in general, all over the country.

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