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## Recent findings of alien insects in citrus and olive groves in Italy: new risks for integrated pest management (IPM)

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### Abstract

In recent decades, the number of alien insects found in the Mediterranean basin has increased considerably. This increase occurred above all in the milder climate regions of the central and southern sector. In this context, citrus and olive groves see their productions and even their existence at risk.

Here the focus is on some invasive alien species recently found on the Italian territory on species of the genera *Citrus* and *Olea*.

After its first discovery in southern Italy in 2008, the white thorny citrus fly, *Aleurocanthus spiniferus* Quaintance (Hemiptera, Aleyrodidae) was reported for Sicily at the end of 2020 in the provinces of Catania and Syracuse. In addition to citrus groves, infestations have also been observed in urban areas. Being a quarantine pest included in EPPO A2 list, phytosanitary containment measures are in place to limit its spread.

During recent surveys on leafhoppers in urban and agroecosystem areas in Europe the Oriental *Hishimonus diffractus* Dai, Fletcher & Zhang (Hemiptera, Cicadellidae) has been found. This species, described from China and Thailand, was first reported in Europe in 2022 in the following countries: France, Portugal (Madeira), Spain, Gibraltar, United Kingdom, and Italy (Sicily). *H. diffractus* has been found associated with *Jasminum* and *Olea* (Oleaceae), *Citrus* (Rutaceae), *Pittosporum* (Pittosporaceae), *Rubus* (Rosaceae), *Nerium* (Apocynaceae) and *Vitis* (Vitaceae).

The following allochthonous predators have also been reported in recent years: in agroecosystems and urban areas the Nearctic *Zelus renardii* (Kolenati) (Hemiptera, Reduviidae), in citrus groves the Neotropical *Delphastus catalinae* (Horn) and the Eastern *Serangium* sp. (Coleoptera, Coccinellidae). Here the presence of the opportunist predator *Zelus renardii* is also reported in olive groves of the Sicilian Ionian coast.

The increasing number and diffusion of alien parasites linked or potentially harmful to the genera *Citrus* and *Olea* in Italy must alert and worry, especially for those species capable of transmitting diseases for which no phytosanitary remedies are yet known. The adoption of an integrated supra-regional surveillance and monitoring system is therefore essential.