

Risk of introduction and establishment of exotic plant pathogens and insects harmful to Mediterranean plant biodiversity

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Introduction of an exotic pathogen or insect in a region may not guarantee its establishment. The rapid evolution of climatic changes coupled with an increase in trade over the last ten years has resulted in a predictable but underestimated increase in introduction of plant and animal parasites in many regions of the Mediterranean basin. In addition to the damage to plant crops, the threat to wild biodiversity is also significant.

Although insular areas such as Sicily and Malta are protected by the presence of the sea as a natural barrier, the presence of several seaports represent a major weakness in harmful parasite and pathogen introductions. Moreover these islands can often serve as a ‘bridge’ in the introduction of organisms to and from the European continent. This communication will discuss two case studies of invasive species introduction. The first concerns the introduction in Sicily of the grapevine phytoplasma agent, *flavescence dorée*, a bacterial disease, on *Spartium junceum* (Spanish broom). Entire populations of this species have been destroyed and replaced by the autochthonous *Genista aetnensis* (Mount Etna broom) in the Etna area while in other sites, such as the Aeolian Islands, it is simply disappearing with no replacement. The disappearance of this species is detrimental for soil erosion since it had an important function for soil stability. The second example concerns *Hypocryphalus scabricollis*, a scolytid beetle which is a fig tree pest, reported for the first time in Europe from Malta. It has recently been introduced in Sicily where it is causing serious damage to fig trees.

In light of these and many other examples, predictive and preventive approaches to control the spread of exotic invasive species, such as evaluation and foresight of introduction pathways and percentage of risk of establishment need to be seriously considered to aid in the worldwide preservation of plant health and biodiversity.

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