

The non-native thousand cankers disease (TCD) is a cause of black walnut mortality in Tuscany

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Thousand cankers disease (TCD) is caused by the fungus *Geosmithia morbida* M. Kolařík, E. Freeland, C. Utley & N. Tisserat (Ascomycota, Hypocreales) and its insect vector, the walnut twig beetle (WTB), *Pityophthorus juglandis* Blackman (Coleoptera, Curculionidae). This lethal disease is native to the south-western United States and northern Mexico, but has recently also become a concern to Italy being first reported in 2013, the only country where it is known to occur outside North America. The disease was initially found only in northern Italy, and was not thought to occur south of the barrier of the northern Apennines. To test this assumption, a beetle/pathogen monitoring programme was undertaken in some black walnut (*Juglans nigra*) and English walnut (*Juglans regia*) plantations in Tuscany. A number of plantations were visually inspected for TCD during the growing season, and were examined for WTB using funnel traps baited with the beetle pheromone. In the course of this activity the disease was found in a plantation at Rosano (43°46' N, 11°24' E), about 20 km from Florence. The plantation (about 6000 m² and 100 m above sea level) consisted mainly of black walnut, sporadically intermixed with English walnut. Only black walnut was attacked by this beetle-pathogen complex; English walnut trees were all found to be TCD-free, even when they grew in close proximity to heavily infected black walnut. The incidence of TCD in the disease focus was high, with a massive infestation of WTB, of which 7964 individuals were caught in two traps during April-December. However, in our monitoring programme TCD was confined to this plantation. The disease outbreak was eradicated in January 2019, during the WTB overwintering period, by clear-cutting of all the trees and the destruction of all the wood debris. It is advisable to monitor for other disease foci in neighbouring areas of Tuscany, as well as in other parts of the country, where TCD spread would pose a serious threat to walnut fruit and timber production.