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DISEASE NOTE

# First observation of Verticillium wilt on *Ailanthus altissima* in the Eastern Italian Alps (Trentino-South Tyrol)

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*Ailanthus altissima* Mill. Swingle, commonly known as the tree-of-heaven, is an invasive species in urban and natural ecosystems across Europe, including Italy. Declining and dead specimens of *A. altissima* were first observed by the local Forest Service in July 2017 at Silandro, Province of Bolzano (46.370842 N, 10.451608E) in a stand between cultivated areas. Plants ranging from regeneration to canopy trees displayed foliage wilting, vascular discoloration, and epicormical shoots on affected stems, followed by tree death. Almost a hectare of surface was interested by the phenomenon. Similar symptoms were detected in September 2017 in a recent colonization (about 20 young trees) along a roadside near Rovereto, Province of Trento (45.877166 N, 11.026681E). The observed symptoms were the same as those described by Rebbeck et al. (2013) and Maschek and Halmschlager (2016). To identify the causal agent, affected branches and stems were collected in both areas. After superficial disinfection, fragments of subcortical browning tissue (3–5 mm large) were excised and plated on Potato Dextrose Agar (PDA) (Difco, USA) and incubated in the dark at 22 ± 1 °C for two weeks. The obtained colonies (10% to 60% of positive isolations out of 6 sampled trees for area), resembling *Verticillium dahliae* Kleb. for mycelium, characteristic conidiophores and conidia dimension (mean ± SD = 5.09 ± 0.9 × 3.9 ± 0.7 μm), were identified by DNA sequencing using primer pair ITS1 and ITS4 Internal Transcribed Spacer (ITS). A BLAST search at VertShield database resulted on 100% homology with *Verticillium dahliae*, including ex-epitype NR_126124. The sequences obtained in this study have been deposited in GenBank with Accession Nos. MH607412–13. Inoculations of potted *Ailanthus* seedlings in the greenhouse established that isolates of both the areas were capable of produce wilting, confirming Koch postulates, by means of re-isolation and re-identification of *Verticillium* strains. Not inoculated seedlings remained asymptomatic. To our knowledge, this is the first report in Italy of Verticillium wilt on *A. altissima*, and confirms the spread of the disease on the southern side of the Alps.

## References

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