P19 – 'Roesleria' and the need to breed

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Abstract

The root rotting fungus *Roesleria subterranea* causes serious damage to viticulture in several wine-growing regions in Germany. The ascomycete affects roots and obstructs the water-transport vessels leading to the dieback of vines. No treatment or cure are available and *R. subterranea* is persistant in soil for years even after removing affected vines, leading to infection of newly planted material.

Although there have been various reports of this disease, there are still no reliable estimates of the geographic distribution and the severity in Germany and worldwide. To close this gap of knowledge the spread of *R. subterranea* in three German wine-growing regions (Palatinate, Rheingau and Rheinhessen) was analyzed using aerial photographs. The suspected areas were checked on site for infestation with *R. subterranea*. With this newly developed method, 10 % of the respective regions were examined. All three wine-growing regions are demonstrably affected, but to very different degrees.

All rootstock varieties commonly used in viticulture are affected by the disease and no resistance or defense mechanisms are known to date. Investigation is needed wether less susceptible or even resistant genotypes exist and consequently could be used for breeding.

Therefore, a project was started to test a broad genetic base of wild *Vitis* species from Asia, Europe and America for their response to an artificial inoculation with *R. subterranea*. This wide range of genotypes was selected because the origin of the fungus is unknown and accordingly it is unknown where potential resistances could have co-evolved with the pathogen.

This project lays a foundation for future breeding projects, both, by identifying candidate genotypes for breeding and by providing reliable estimates of infestation to call attention to the "need to breed" to tackle *R. subterranea*.

Keywords: *Roesleria subterranea*, root rot, rootstock breeding, wild *Vitis* species