

Effect of Sanitary Measures on the Survival of *P. ramorum* in Soil.

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In May 2003, a *Phytophthora ramorum* infested garden in the surroundings of Nijmegen, the Netherlands, was cleared of infected *Rhododendron* shrubs by cutting the plants back at 30 cm. In an experiment the remaining parts of the approximately 70 years old *Rhododendron* plants were treated with (1) thiofanate-methyl, (2) glyphosate or (3) untreated. The regrowth and occurrence of new infections were monitored.

In the same experiment, the effect of additional fytosanitary measures, removal of (a) plant debris and humus or (b) plant debris only, was compared to the effect of (c) leaving plant debris and humus on the soil surface. Soil samples were taken monthly at 20 cm depth and at soil surface and tested for the presence of *P. ramorum*, from July 2003 onwards. A baiting was used as test, using freshly picked leaves of *Rhododendron catawbiense* 'Cunningham's White'. This was followed by a real-time PCR assay to detect *P. ramorum* in the baiting material.

Two months after cutting back, development of new shoots was observed in all objects. The lowest numbers were in the glyphosate treated object. This regrowth indicates that the treatment was not effective. A number of the new shoots was infected from the initial growth onwards by *P. ramorum*. These infections proved that the remaining parts of the stems were already infected. The different treatments had no influence on the percentages infected shoots.

The detection of *P. ramorum* in soil samples showed that the pathogen seems to be present more abundantly at 20 cm depth than at the soil surface. This is probably due to a higher variation of environmental conditions in the upper soil surface. In the samples taken from the soil surface, *P. ramorum* was mainly found in samples from plots where both humus and plant debris were present. The recovery of *P. ramorum* in the samples taken from 20 cm depth was independent of the soil coverage.

The results indicate that *P. ramorum* is capable of surviving in sandy soil for at least one year. Furthermore, in this experiment cutting back *Rhododendron* shrubs at 30 cm was not sufficient.