

Ramularia rubella - A Potential Mycoherbicide to Control *Rumex* weeds¹

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Abstract

Ramularia rubella (= *Ovularia obliqua*; Deuteromycetes) is an indigenous leaf pathogen on *Rumex* spp. It was propagated under laboratory conditions, but mass-production of conidia for inoculations in the field was not reached. In submerged liquid culture the fungus did not form any conidia, but mycelial production was good enough. Hyphal fragments could be used as inoculum; they are infectious by penetrating the stomata. The host range of *R. rubella* is restricted to the subgenus *Rumex* (= *Lapathum*). Among the most susceptible species are the troublesome weeds *R. crispus*, *R. obtusifolius* and *R. pulcher*. Several isolates of *R. rubella* from different host species were collected in the Swiss plain and in the alpine region. The aggressiveness of 12 strains was compared on the host species *R. alpinus*, *R. crispus* and *R. obtusifolius*. The strains were most aggressive on the species they had been isolated from. *R. alpinus* was the most resistant host species and the strains from it were mostly of low aggressiveness. The strains from *R. obtusifolius* caused severe symptoms not only on this species but on *R. crispus* as well. *R. obtusifolius* plants were inoculated weekly with a spore suspension of an aggressive strain of *R. rubella*. To quantify the damage, number of leaves, dry weight of the leaves and the roots were determined. The number of leaves could not be reduced significantly, because the plants replaced the attacked leaves very efficiently. But the nutritional supply of the roots was drastically consumed: after five inoculations the dry weight of the roots was reduced to 60% compared with that of healthy plants. It would be interesting to investigate the damage of *R. rubella* in combination with other stress factors to *R. obtusifolius* under field conditions.

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