

BOOK of ABSTRACTS

5th INTERNATIONAL CONFERENCE ON PLANT BIOLOGY

24th SPPS Meeting

3-5 OCTOBER 2024
SREBRNO JEZERO
SERBIA



Serbian Plant Physiology Society

**Institute for Biological Research "Siniša Stanković" – National Institute
of the Republic of Serbia, University of Belgrade**

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Oxalic acid production and aggressiveness of *Sclerotinia* spp. isolates

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Sclerotinia sclerotiorum and *Sclerotinia minor* are two necrotrophic fungal species that cause white mould disease in many crops. Oxalic acid, secreted by *Sclerotinia* species, is recognized to be a major virulence factor involved in the induction of cell death in host plants during infection establishment. The aim of this study was to determine relationship between oxalic acid production in *S. sclerotiorum* and *S. minor* isolates and their aggressiveness toward lettuce as a model plant. Ten isolates of *S. sclerotiorum* and ten isolates of *S. minor*, derived from diseased lettuce plants, were tested simultaneously for their ability to produce oxalic acid and to cause necrosis in an inoculation experiment. Oxalic acid production was measured spectrophotometrically in a liquid medium, while the inoculation test was conducted on lettuce leaf discs. As a control, sterile liquid medium and PDA (Potato Dextrose Agar) plugs were used, respectively. Higher production of oxalic acid was recorded in *S. minor* isolates, ranging from 19 to 96.3 µg oxalic acid mg⁻¹ dry mycelium weight, while *S. sclerotiorum* isolates produced significantly lower amount of oxalic acid (21.9 to 29.9 µg oxalic acid mg⁻¹ dry wt). All *Sclerotinia* spp. isolates were able to establish infection in inoculated leaf disks. On average, the diameter of necrosis was slightly higher for *S. minor* isolates (11.7 mm), although the difference between species was not statistically significant. Correlation between aggressiveness and oxalic acid production among *Sclerotinia* spp. isolates was not recorded, suggesting the contribution of some other factors to the necrosis establishment and spreading.

Keywords: virulence factor, lettuce, white mould disease

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