

Evaluation of Pathogenicity of *Botrytis* Species Isolated from Different Legumes

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Abstract. Fungi of genus *Botrytis* are important pathogens of legumes, causing gray mould and chocolate spot diseases. The use of molecular methods to identify pathogens has resulted in the discovery of several new *Botrytis* species and new associations of pathogens with diseases. Thus, chocolate spot of faba bean is now associated with at least four species: *B. fabae*, *B. cinerea*, *B. pseudocinerea* and *B. fabiopsis*. Species of *Botrytis* differ in host plant, pathogenicity, fungicide resistance and other relevant properties that affect disease control.

The aim of this study was to identify the species of *Botrytis* isolated from different legume crops and to evaluate their *in vitro* pathogenicity.

Between 2014 and 2019, 278 isolates of *Botrytis* were obtained from infected legumes in Latvia. A phylogenetic analysis was carried out by sequencing three nuclear genes, RPB2, HSP60, and G3PDH, considered to be diagnostic for species in this genus. A set of 21 representative isolates was selected for pathogenicity tests on detached leaves of faba bean, field pea, lupin and soybean using 5-mm mycelium-agar plugs. The diameter of the formed lesions under the inoculated plug was measured crosswise each day. The datasets were subjected to analysis of variance with the split-plot design of the experiment and repeated-measures model.

Six species were identified: *B. cinerea*, *B. fabae*, *B. pseudocinerea*, *B. fabiopsis*, *B. euroamericana* and *B. medusae*. In addition to the expected combinations of host and pathogen, naturally occurring infections of *B. fabiopsis* were found on chickpea, *B. euroamericana* on faba bean and *B. medusae* in lupin seeds. Species and isolate had significant effects on pathogenicity on all crops tested. Several isolates were pathogenic on two or more host species: two of *B. pseudocinerea*, two of *B. cinerea*, two of *B. fabiopsis* and the one of *B. medusae*. One isolate of *B. pseudocinerea* and two of *B. fabiopsis* caused primary lesions on all five host species. The results show that these *Botrytis* species have a broad host range that should be borne in mind when planning crop sequences and rotations.

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