



Characterization of *Phomopsis* strains isolated from fruit plants

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Abstract

Recently, diseases caused by *Phomopsis* spp. have become an increasing problem in the orchard regions of the world. Among the pathogenic species the most frequently recorded are: *P. perniciosa*, *P. ambigua*, *P. amygdali*, *P. mali*, *P. ampelina*, *P. juglandina* and *P. oblonga*. They cause nonspecific symptoms associated with bark necrosis, shoot blight and canker, wilting, decay, fruit rot and mummification.

Since 2010 the studies have been conducted on the occurrence and harmfulness of *Phomopsis* spp. for shoots of apple, pear, cherry and plum grown in chemically protected and not protected orchards in south-eastern Poland.

It was shown that *Phomopsis* isolates have been obtained from all tested fruit plants, both from the shoots with visible symptoms of disease as well as from the apparently healthy ones. They mainly came from the orchards where there was no plant protection applied. *Phomopsis* strains showed similarity in appearance and the growth rate of the cultures regardless of the host plant species. Suitable conditions for the mycelial growth was observed within the range from 16^oC to 25^oC, while the optimum temperature for sporulation was 25^oC. All the tested strains formed alpha (α) and beta (β) conidia with the dimensions 6.3 – 8.6μm x 1.7-3.2μm and 19.5-45.6μm x 1.2 -3.1μm, respectively. It was also found that the fungal communities colonizing the shoots of fruit plants limited the development of *Phomopsis* spp, as reflected by the positive summary biotic effects within the two years of research. Results of cross-inoculation tests proved the pathogenic abilities of *Phomopsis* strains towards the tested plant species. The analysis of RAPD products indicated the similarity within the studied population of *Phomopsis* regardless of the origin of isolates, suggesting that the tested strains may represent the same species of fungus.