

Among over 800 species of *Phomopsis* the pathogenic abilities towards plants was demonstrated for approximately 60 representatives of this kind. Among other *Phomopsis* species are saprotrophs, endophytes and fungi causing health problems of people and animals. *P. prunorum* previously described as *P. mali* has been isolated for the first time in Poland during the research conducted by the years 2010-2012 on the occurrence of the *Phomopsis* on shoots of fruit plants in Lubelskie and Świętokrzyskie (apple, pear, cherry, plum, wild cherry, peach, walnut, hazel). During the research the knowledge of the biology and the life cycle of *P. prunorum* was acquired. Furthermore, the results of the research showed competitive abilities of the fungus in comparison to the other fungi commonly colonize the stems of the orchard plants. The pathogenic nature of *Phomopsis prunorum* towards the tested fruit plants was also demonstrated. Additionally, the possibility of limiting the growth of the isolates of *Phomopsis* using selected chemicals and biotechnical preparations was determined.

It is worth noting that during the own research, the *Phomopsis* spp. were isolated also from the shoots without visible symptoms of disease which may indicate the endophytic or saprotrophic nature of some *Phomopsis* isolates. It is known from the literature that some species of *Phomopsis* acting as a plant pathogen was also isolated as endophytes from healthy tissue of the same or other host plants, and from dead tissue as saprotrophs. Endophytic strains of *Phomopsis* are a rich source of a variety of bioactive secondary metabolites such as phomopsolid, sydowinin, sydowinol, cytosporon, phomopsolidon A-D, phomol, phomopsin A-D, polyketides, terpenes and mixed compounds such as cytochalasin, showing the antibiotic, fungicidal and even anticancer activity.

Although in recent years a large number of metabolites produced by various species of *Phomopsis* spp. was isolated and described however, there is no information on natural compounds produced by *Phomopsis prunorum* (*P. mali*). Considering the fact that both in Polish and foreign literature there are no reports of such research it was considered purposeful to conduct the biochemical analyzes to characterize the compounds secreted by this fungus.

Furthermore, because of the practical difficulties in identifying the *Phomopsis* to the species, most strains producing valuable metabolites are identified only at the kind level. Thus the identification of tested isolates to the species have been also planned based on the comparative analysis of the sequences of the ITS regions (ITS1, 5.8S rDNA ITS2) with the sequences available in the NCBI database. The characteristics of the profiles of metabolites produced by the tested *Phomopsis* isolates together with molecular analysis will facilitate the identification of these fungi on the species level and will complement the classical methods.

The results will form the basis to start in the future, more advanced research on the possibility of isolating the compound in order to its practical application for example in the integrated plant protection as an alternative to chemicals used which is in accordance with the European Union requirements regarding the use of integrated plant protection (Rozporządzenie (EC) No 1107/2009, Dyrektywa 2009/128/EC).

Grant entirely relates to new problems associated with the production of metabolites by *Phomopsis prunorum* isolates obtained from different host plants.