Fungi colonizing various organs of caraway *Carum carvi* L.

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Abstract

The research on fungi colonizing plants of caraway of the variety Konczewicki have been conducted by the Authors since 2001. The percentage of plants with disease and etiological symptoms is determined, especially in the case of obligatory parasites. The fungi – facultative parasites are isolated from superficially disinfected roots, bases of stems, stems, leaves, umbels and schizocarps on the malt agar medium. Identification of the obtained isolates is conducted on PDA or on standard media by using light and scanning microscope SEM. It was shown that the plants of caraway may be inhabited by a complex of various species of fungi, i.e. pathogenic and saprotrophic ones. The fungus *Septoria carvi,* causing septoriosis of caraway, had an epidemic significance in the years 2001-2003, 2007-2008 and 2011. Few isolates of *Phomopsis diachenii* were obtained, and *Colletotrichum dematium* and *Colletotrichum gloeosporioides* were isolated more frequently in recent years. On the underground parts of plants as well as on the stems, *Sclerotinia sclerotiorum* was detected. *Erysiphe umbelliferarum* occurred in hot and humid growing seasons.

The studies showed that the culture conditions significantly influenced the appearance of colonies, the sporulation time, and even the size of the conidia of *Septoria carvi*. It was established that the optimal temperature for the growth of the fungus colony and for the formation of pycnidia is from 20^{o}C to 25^{o}C, while for the formation of spores it ranged from 25^{o}C to 30^{o}C. That indicates that hot vegetation seasons in combination with the high relative air humidity favour the occurrence of septoriosis on caraway. At the temperature from 0^{o}C to 5^{o}C and from 30^{o} C to 35^{o}C the pathogen got degenerated. The demonstrated poor competitive abilities of *S. carvi* indicated that the fungus can be isolated from plant tissues only during the early stage of the disease progress. Malt agar and malt agar with a decoction of leaves or schizocarps of caraway are recommended for this purpose. On the other hand, the above mentioned media and PDA are appropriate for the culture for diagnostic purposes. It was shown that the growth of the fungus was inhibited by biotechnical preparations, i.e. Biosept 33SL and Biochikol 020 PC.