NEW AND UNUSUALLY REPORTS

Alternaria alternata (Fr.) Keissler – New Pathogen on Sugar Beet Leaf in Slovakia

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The fungus Alternaria alternata (Fr.) Keissler is a widespread facultative pathogen of many important plants, mainly of sunflower (GODIKA et al. 2000), tomato (MORRIS et al. 2000), pepper, eggplant (OUF et al. 1998) and many others. Recently the fungus has been described as an important pathogen of sugar beet causing Alternaria leaf spot in some countries (EL-KHOLI et al. 1994; RAGAB et al. 1994). Wild beet can be a source of inoculum of A. alternata for other crops, for example cotton. Some isolates pathogenic to both crops may occur (BASHAN et al. 1991).

For the first time in 2000 and 2001, the occurrence of Alternaria leaf spot (ALS) on sugar beet was observed in Slovakia, at Bučany and Nitra. According to keys (FASSATIOVÁ 1979; SAMSON et al. 1995), Alternaria alternata (Fr.) Keissler (syn. A. tenuis C.G. Nees) was identified as the causal agent of these spots. This agrees with results of EL-KHOLI et al. (1994). The fungus is commonly widespread as a facultative pathogen on sunflower and other crops, also in Slovakia. It is a member of the seed mycoflora of many crops, including sugar beet seed and a causal agent of storage spoilage (KOWALIK & LECHOWICZ 1984). The form of host attack found now (ALS symptoms) is completely new for Slovakia. Alternaria brassicae on sugar beet leaves has also been mentioned as a secondary pathogen, but none of our isolates was this species.

EL-KHOLI et al. (1994) described typical dark brown irregular spots. The ALS symptoms we observed on sugar beet leaf were rather different: the size of spots was 0.3–1 cm, rarely larger. They were mostly oval, at first light brown and dark brown to black brown with age. The typical concentric circles were observed in the centre of the spots, and a dark layer of sporulation under moist conditions. The spots appeared on the margin of leaves, but some were also observed in the centre. Sometimes there was fusion between spots. In general, according to the results of EL-KHOLI et al. (1994) and RAGAB et al. (1994), ALS occurs on flavescent and older leaves. But under our conditions, the spots occurred on healthy and young leaves as well, suggesting a higher aggressiveness or virulence of the pathogen.

A reduction of chlorophyll, sugar and carotene in the leaves, and different sensitivity of cultivars were observed. The severity of disease depends on the number of infected plants and on the degree of assimilatory surface reduction (RAGAB et al. 1994). Under our conditions, the occurrence of ALS on sugar beet was sporadic only, consequently the severity of the disease was low. Screening for the pathogen is necessary, to monitor its occurrence and virulence.

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