SHORT COMMUNICATIONS

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REAPPEARANCE OF *PHOMOPSIS LEPTOSTROMIFORMIS* ON YELLOW LUPINE IN POLAND

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Key words: *Phomopsis leptostromiformis*, *Lupinus luteus*, occurrence

Lupinus luteus and *L. angustifolius* are the main lupine species cultivated in Europe, and also in Poland (Paszkiewicz 2007, Stawiński 2007). Polish breeders released several new cultivars which were evaluated for several traits in tests performed at the Experimental Stations of Research Centre for Cultivar Testing, in fields suitable for lupine production. Since 2002 the occurrence of diseases on different lupine species have been noted in Bobrowniki and Wiatrowo (n. Wągrowiec), Świebodzin, Wyczechy (n. Szczecinek), Słupia Wielka (n. Poznań) – in north-western Poland, Sulejów – in central Poland, and Marianowo (n. Łomża), Krzyżewo (n. Łapy) and Cicibór (n. Biała Podlaska) – in north-eastern part of the country. Observations were performed by the end of blooming stage (usually end of June and beginning of July). Wilting of plants caused by *Fusarium oxysporum* f.sp. *lupini* was the main disease noted. Lupine anthracnose, a very destructive disease, an epidemic of which occurred in Poland in the nineties of the last century (Frencel 1997) was found in the fields of Wyczechy, Wiatrowo, Słupia Wielka and Sulejów in 2002 and 2003. In Sulejów the disease occurred also in 2005.

In the 2007 growing season on some yellow lupine plants in Sulejów elongated whitish-greyish patches covered with black stromatic conidiomata were visible on lower stem parts above the soil. Mycological study of the conidiomata revealed that *Phomopsis leptostromiformis*, the anamorph of *Diaporthe woodii*, was responsible for the disease. The identification was performed according to the description of Punithalingam and Gibson (1975) and Marcinkowska (2003).

Infected plants occurred in a post-registration experiment. The experiment covered 10 genotypes which were tested for their susceptibility to Fusarium wilt pathogen. Sometimes on blighted stems, besides patches with conidiomata characteristic of *P. leptostromiformis*, also sporodochia of *F. oxysporum* f.sp. *lupini* were found. The surface of discolorations (blighted areas) caused by either of the patho-

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gens on stems differed for various plants. The tested genotypes reacted also differently to *P. leptostromiformis*. Plants of lines: PRH 81/05, WTD 2606, and cultivars: 'Juno', 'Mister', 'Markiz' were most often infected by the latter fungus.

Phomopsis leptostromiformis is the fungus responsible for Phomopsis stem blight of lupines, reported for the first time by Kühn in 1880 (Fischer 1893) in Germany. The disease was first found in Poland on yellow lupine plants in early fifties of the twentieth century by Kochman (1957). After half a century Phomopsis stem blight of yellow lupine was noted again by the author of this communication.

Kochman (1957) described on infected stems only stromatic conidiomatal stage of the fungus, called pycnidium at that time (Marcinkowska 2003). The perfect stage was described by Punithalingam and Gibson (1975) who named the teleomorph *Diaporthe woodii*. The fungus used to appear from time to time in some countries of Europe (Strukčinskas 1971), also in the USA (Ostazeski and Wells 1960), Africa, and Australia (Punithalingam and Gibson 1975). The pathogen could kill lupine at any age, but seedling infection below cotyledons was most destructive (Kochman 1957). Kochman (1957) noted the greatest damage of plants infected before flowering. Infection experiments performed in Poland under controlled conditions revealed high aggressiveness and pathogenicity of *P. leptostromiformis* to *Lupinus albus, L. angustifolius, L. polyphyllus* as well as to *L. luteus* (Kochman and Kubicka 1974).

The pathogen was also found to be seed-borne in white and yellow lupines (Ostazeski and Wells 1960, Strukčinskas 1971) as well as in seeds of *L. angustifolius* (Nowicki 1995). But Nowicki (1995) in Poland isolated *P. leptostromiformis* only sporadically (0.1%) from one cultivar in a sample of 20,000 seeds.

The pathogen is also a threat to sheep, since lupine infected with *D. woodii* eaten by these animals proved toxic to them (Punithalingam and Gibson 1975) due to a toxin, Phomopsin A, produced by the fungus (D'Mello and Macdonald 1998).

Reappearance of the fungus in yellow lupine fields, especially on new Polish cultivars, might be a threat of *P. leptostromiformis* epidemic occurrence. On the other hand, the presence of the fungus on the same plants as *F. oxysporum* f.sp. *lupini* seems to be very interesting. Further studies on the relationship between both fungi, the causing agents of lupine blight, should be recommended.

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