

Oat Resistance to *Pyrenophora avenae* Ito et Kurib.

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Pyrenophora leaf blotch of oat is the most harmful and widely distributed disease in Europe and Russia (Northwest, Central and the Volgo-Vjatsky regions of the Nonchernozem zone, the Far East) (Amelung, 1990; Šebesta et al., 1995; Šebesta et al., 2000; Ishkova et al., 2002; Petrova, 2004). The causal agent is an ascomycete fungus *Pyrenophora avenae* Ito et Kurib.; anamorph *Drechslera avenae* (Eidam) Scharif.

The breeding of resistance cultivars is the most effective and ecologically safe method of plant protection which realization is possible at presence of a collection of genetically various donors of resistance. The literature data shows the insignificant number of resistance accessions among the investigated oat collections. In conditions of artificial infection in a greenhouse and at an estimation in a field a number of resistance accessions were revealed: B 1-47-67 and Wisconsin hybrid X 279-1, (Earhard, Shands, 1952), Flamingsweiss II, Omeko Clinton, Bontram, 2411 (Müller, 1963), 7930-6, 8172-2, 8174-20, 8184-5, 8184-14, 8184-18 (Frank, Christ, 1988).

Resistance to crown rust and *Pyrenophora* leaf blotch appeared to be in Canadian and American oats (for example accessions: Garry, Abegweit, Rodney, Iowa 2052) (Grachev, 1961). By results of 5 years studying in the field conditions in North West region of Russia several resistance oat cultivars and accessions were determined (Eshibaev, 1993).

J. Šebesta et al. (1995, 2001) studied resistance of 68 oat cultivars and accessions to *Pyrenophora* leaf blotch in 12 countries of Europe (including Russia). In result the high level of resistance in majority Illinois lines (IL 86-1158, IL 86-6467, IL 86-4189, IL 85-2069, IL 86-6404 and IL 86-5698) and at other 24 cultivars (Maldwyn, Manod, Cc 3678, Pc 61, Pc 60, Cc 4761, Pc 67, Pc 58, Orlando, Pg 15, Pc 59, Pc 50, Rodney A, Pg 16, Cc 6490, Jostrain, Garland, Pc 50-2, Pc 55, Roxton, KR 3813/73, Pc 39, Pc 56 and Pc 50-4) has been revealed.

The resistance accessions were concerned to following oat cultivated species: *A. strigosa* Schreb., *A. strigosa subsp. brevis*, *A. sativa* L. and *A. byzantina* C. Koch. (Grachev, 1961; Kunovski, Breshkov, 1981; Frank et al., 1988; Lyzlov, 1992; Šebesta et al., 1999) and some wild species (Loskutov, 2003).

The given data testify that the world oat collection of Vavilov Institute of Plant Industry (VIR) was studied only in field conditions at the natural infections (Grachev, 1961; Eshibaev, 1993; Loskutov, 2002). The data on heterogeneity of *P. avenae* populations on virulence, a genetic variability of resistance and its nature are absence in literature. There are assumptions, that steady accessions have a high level of horizontal resistance (Frank, Christ, 1988).

http://wheat.pw.usda.gov/ggpages/oatnewsletter/v50/Helminosp_artic.html