Limited quantities of seed of each germplasm line are available from the Seedstocks Project, Dept. of Crop and Weed Sciences, North Dakota State University, Fargo, ND 58105.

References and Notes

The work of D.E. Parfitt and G.J. Fox in the initial stages of development of these germplasm lines is gratefully acknowledged.


Registration of Russian Wheat Aphid Resistant Hard Red Spring Wheat Germplasm

Fourteen F1 hard red spring wheat (Triticum aestivum L.) lines which are resistant to Russian wheat aphid, Diuraphis noxia (Mordvilko) have been released by the Montana Agricultural Experiment Station. The source of resistance is PI372129, a tall, soft white winter wheat from eastern Europe (1). Resistant lines descend from two backcross populations, PI372129/2*Pondera and PI372129/2*Newana. Pondera and Newana are both semidwarf hard red spring wheats adapted to Montana. Lines derived from the cross PI372129/2*Pondera include MTRWA92-91, MTRWA92-93, MTRWA92-114, MTRWA92-115, MTRWA92-120, MTRWA92-121 and MTRWA92-123 (Reg. no. GP-367 through GP-373, PI564247 through PI564253). Lines derived from the cross PI372129/2*Newana include MTRWA92-145, MTRWA92-149, MTRWA92-150, MTRWA92-155, MTRWA92-160, and MTRWA92-161 (Reg. no. GP-374 through GP-380, PI564254 through PI564260).

Initially, 343 F1-derived F2 lines from the two backcross populations and additional single cross populations were screened for resistance to Russian wheat aphid in a growth chamber in 1991 by infesting 10 seedlings (2–3 leaf stage) per line with approximately five aphids per plant. Lines which were uniformly resistant, showing no leaf curling or chlorotic streaking, were noted. These F2 lines were retested in a field trial at Bozeman, MT, in 1992. The trial was a two-replicate randomized complete block with each plot consisting of hills of six plants each. Plants were infested with the buzzooka insect applicator (2). Each replication included 176 entries, consisting of 169 F1 lines, susceptible checks Newana, Pondera, 'Lew', 'Fortuna', and 'Hi-Line', and resistant winter wheat checks PI372129 and PI294994. Plots were screened for damage five weeks after infesting by evaluating leaf rolling and leaf chlorosis (3). F3 progeny from resistant lines were retested in the growth chamber as before.

The 14 released lines were rated as uniformly resistant in both growth chamber trials and both replications of the field trial. Damage ratings averaged over two replications for these lines are shown in Table 1. All lines are spring habit and have red kernels. In addition to height and heading date variation (Table 1), lines may differ for quality, disease reaction, and other agronomic characters, providing justification for the release of several lines.

These lines are intended to provide a source of resistance to the Russian wheat aphid for spring wheat breeding programs. Small quantities of seed will be provided upon request to the corresponding author. It is requested that appropriate recognition be made if this germplasm contributes to the development of a new cultivar.

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References and Notes

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Registration of MT88005 Hard Red Winter Wheat Germplasm Resistant to Wheat Stem Sawfly

MT88005 hard red winter (HRW) wheat (Triticum aestivum L.) (Reg. no. GP-366, PI564588) was released by the Montana Agricultural Experiment Station in 1992. MT88005 was released as wheat stem sawfly (Cephus cinctus Norton)-resistant germplasm based on