

Wheat Research Progress Report

Project #: 3061-3670

Title: Enhancing Resistance to Snow Mold Diseases in Winter Wheat

Researchers: T. D. Murray, Plant Pathologist, WSU
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Progress Report Year: 2008

Accomplishments:

This is the first year of a project designed to transfer new snow mold resistance genes from Münstertaler into PNW-adapted winter wheat varieties using marker-assisted selection and growth chamber tests for resistance developed in previous WWC-sponsored research. The snow mold resistant parent Münstertaler and adapted winter wheat varieties Masami, Xerpha, Eltan were grown in the greenhouse and the first crosses were made in July. Because of poor seed set, additional crosses are being made now. F1 seed from these crosses will be planted and backcrossed to the adapted varieties to produce BC1F1 seed in the greenhouse. Seed from these crosses will be used to establish lines for development of recombinant inbred populations. With establishment of the new doubled haploid lab at WSU, F1 seed from these crosses will also be used to produce a doubled-haploid population that can also be used for mapping and transfer of snow mold resistance genes to adapted winter wheat varieties.

Publications:

Nishio, Z., N. Iriki, K. Takata, M. Ito, T. Tabiki, and T.D. Murray. 2008. Influence of Cold-hardening and Soil Matric Potential on Resistance to Speckled Snow Mold in Wheat. *Plant Disease* 92:1021-1025.

Murray, T.D. 2008. Snow Rot. *in*: *Compendium of Wheat Diseases and Insects*, W.W. Bockus, R.L. Bowden, R.M. Hunger, T.D. Murray, R.W. Smiley, and W. Morrill, eds., Third Edition. APS Press, Minneapolis. (SUBMITTED).

Murray, T.D. 2008. Speckled Snow Mold (Typhula Blight). *in*: *Compendium of Wheat Diseases and Insects*, W.W. Bockus, R.L. Bowden, R.M. Hunger, T.D. Murray, R.W. Smiley, and W. Morrill, eds., Third Edition. APS Press, Minneapolis. (SUBMITTED).

Publications in progress:

Nishio, Z., N. Iriki, M. Ito, M. Tanio, T. Tabiki, and T.D. Murray. 2008. Mapping QTL for speckled snow mold disease resistance in winter wheat. *Plant Breeding* .