Evaluation of Fusarium Head Blight Resistance from Triticum turgidum L. var. dicoccoides in a Synthetic Hexaploid Background. (C01-hartel194418-Oral)

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Abstract:

Fusarium head blight (FHB) continues to significantly impact grain production of barley (Hordeum vulgare L.) and wheat (Triticum aestivum L.) throughout the world. Incorporating host plant resistance from secondary gene pool species such as Triticum turgidum L. var. dicoccoides, may result in the transfer of new sources of FHB Type II resistance. The quantitative trait locus, Qfhs.ndsu-3AS, on T. dicoccoides chromosome 3A, explains approximately 55% of the genotypic variance for FHB resistance. Expression of Qfhs.ndsu-3AS in synthetic hexaploids and utilization of the tightly linked microsatellite marker, Xgwm2, for future marker-assisted selection, may expedite the integration of this new source of resistance into hexaploid cultivars. Forty-five synthetic hexaploids were developed from crosses between seven individuals of a recombinant inbred chromosome population of the Langdon-dicoccoides chromosome 3A substitution line and eight accessions of Triticum tauschii. Forty lines, derived from four synthetics, were screened for Type II resistance in 2002 spring and summer greenhouse evaluations, and 28 synthetics were screened in a 2002 field FHB nursery.

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