Molecular Characterization of QTL for Slow Leaf Rusting Traits in Wheat. (C07-bai151654-Poster)

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Abstract:

Coleoptile length (CL) of wheat plays an important role in seedling emergence under drought condition where wheat has to be deeply sowed. To identify germplasm with long coleoptile, about 160 wheat cultivars including these from the southern Great Plains (SGP) and several other countries were evaluated for CL by wrapping wheat seeds in wet germination paper and incubating in a moist incubator for 6 days each at 15 C and 22 C respectively. Significant variation in CL was observed among cultivars, ranging from 44.2 mm to 117.1 mm. Coleoptile was long for most of Chinese cultivars but short for most cultivars from SGP. Inheritance of CL was investigated in the F8 recombinant inbred population derived from Wangshuibai/Alondra's'. In addtion, Rht8 gene in these germplasm was surveyed by analyzing the diagnostic SSR marker Xgwm 261. The SSR marker appeared in most of Chinese cultivars, but only in 6% of cultivars from SGP which usually have short coleoptiles. Since germplasm from SGP usually have a short coleoptile and lack of Rht8 gene, Chinese cultivars with long coleoptiles and the Rht8 gene should be important sources for enhancing CL of wheat in this region.

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