Identification of DNA Markers for Fusarium Head Blight Resistance of Wheat line Huapei 57-2. (C01-bourdoncle071707-Poster)

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Abstract:

Marker assisted selection is particularly attractive for traits with low heritability and whose characterization is costly. One of them is scab or Fusarium head blight in wheat (Triticum aestivum L.). To identify DNA markers for Fusarium head blight resistance, a population of 163 recombinant inbred lines was developed by single seed descent from the cross between the resistant line 'Huapei 57-2' and the moderately susceptible cultivar 'Patterson'. All lines including parents were evaluated in one field experiment and two greenhouse tests for resistance to spread of disease (type II resistance). Based on phenotypic data, extreme lines were selected to initiate bulked segregant analysis using microsatellites. Markers suggesting association with a putative quantitative trait locus (QTL) were then tested on the entire population to confirm the linkage. Single marker analysis was first used. Then, simple and composite interval mapping were implemented to define more precisely the location and effect of QTLs. A major QTL was identified on the short arm of chromosome 3B in a region well known from previous studies. Additional QTLs of lesser importance were also found on chromosomes 3A and 5B. More SSRs are being screened to, hopefully, obtain markers tightly linked to these QTLs.

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