Study on the Expression of Stem Rust Resistance Gene Sr25 in Wheat. (C07-bai151159-Oral)

Authors:

- L.Bai* Dept. of Biology/South Dakota State University
- Y.Yen Dept. of Biology/South Dakota State University
- Y.Jin. Plant Science Dept/South Dakota State University

Abstract:

The infection-induced expression of stem rust resistance gene Sr25 was investigated in leaves of wheat near-isogenic lines Sr25 /9* LMPG and LMPG-6 (intermediate resistant and susceptible to the stem rust fungus Puccinia graminis f.sp. tritici) using differential display. The preliminary data showed several types of gene expression patterns: 1) Polymorphic ESTs present only in LMPG-6; 2) ESTs present only in Sr25/9*LMPG (both oil and pathogen inoculated); 3) ESTs present both in the pathogen inoculated LMPG-6 and Sr25/9*LMPG; 4) ESTs present only in oil inoculated Sr25/9*LMPG; 5) ESTs present only in pathogen inoculated Sr25/9*LMPG. 26 polymorphic ESTs from 200 bp to 1250 bp that are expressed only in the pathogen inoculated Sr25/9*LMPG samples of 2, 8, 24, 48 and 72 hour are found, and about 60% of them are duplicable after re-conducting reverse transcription and PCR. These ESTs are the most promising and possible ones that are specifically related to stem rust resistance conferred by Sr25. The ESTs of interest will be further identified, cloned and sequenced as well as further verified by Northern and Southern blots.

Corresponding Author Information:

Lanfang Bai Dept. of BIology,SDSU 1414B. 8th street Brookings, SD 57006 phone: 605-691-1022 e-mail: bailanfang@hotmail.com

Presentation Information:

Presentation Date: Tuesday, November 12, 2002 Presentation Time: 3:45 pm

Keywords:

Stem rust, resisance gene Sr25, expression, wheat