Monoclonal Anitobies to Fusarium graminearum. (C04-hill134316-Oral)

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Abstract:

Monoclonal antibodies were elicited to, and screened for specificity to Fusarium graminearum. In Exp. 1 wheat plants of different genotypes were grown in a field nursery inoculated with a mixed culture grain spawn containing 16 F. graminearum isolates. Plants were harvested at the soft dough stage of maturity and spikes scored for severity of Fusarium Head Blight (FHB). Spikes were ground through a 1-mm sieve and analyzed for F. graminearum via ELISA with each antibody. Exp. 2 was essentially the same but with wheat grain. Grain samples with scabby kernels were from field trials where natural infection by F. graminearum had occurred. Grain was harvested, scored for scabby kernels, and DON analyzed by GC-MS. F. graminearum proteins from spikes and grain were analyzed by ELISA. ELISA values of both antibodies had a low correlation (0.446) to FHB scores but ELISA absorbance values for the antibodies were highly correlated (0.993) in exp. 1. FHB and DON were correlated (0.65) in exp. 2, but ELISA values had low correlation to FHB (0.15-0.25) or DON (0.44-0.46). ELISA values for the 2 antibodies were highly correlated (0.91-0.96).

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