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FY04 ARS Agreement #: 59-0790-0-F076

Research Area: GIE

Duration of Award: 1 Year

Project Title: Novel Sources of FHB Resistance in Durum Wheat Through Use of Wild Relatives.

PROJECT 2 ABSTRACT

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Objective:

Overall goals are identify and acquire tetraploid new sources of FHB resistance, and facilitate the utilization of resistant germplasm of cytogenetic stocks. While progress in hexaploid wheat has been good, there is no report of FHB resistance in durum wheat gene pool studied to date. Thus, it is essential to find some source of resistance using any means. Systematical and efficient screening of a number of durum wheat lines, and also wild tetraploid wheat in CIMMYT that have been collected from the world is the first priority and has to be done in short time.

Approach:

Systematic search of primary gene pool in CIMMYT gene bank (largest global collection of wheat and wheat relatives) for novel resistance in durum wheat and other tetraploid wheats. Increase confidential level of resistance by evaluating germplasm at FHB hotspot(s) in Mexico and globally through the CIMMYT International Wheat Improvement Network, to identify highly resistant elite durum wheat germplasm. Establish a global platform for FHB to facilitate germplasm exchanges and introduction of highly resistant durum wheat germplasm from international programs via CIMMYT's international network. Selection of backcross derivatives between Sumai#3 and elite durum wheats applying the markers for the 3BS of Sumai#3 resistance. Resistance from other relevant genomes in cytogenetic stocks will be moved into durum wheat.