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Project ID: FY07-TU-135 **FY06 ARS Agreement #: NA**

Research Area: **GET** **Duration of Award: 1 Year**

Project Title: ***Wheat transformants containing DON resistant versions of wheat L3 ribosomal protein***

PROJECT 1 ABSTRACT

(1 Page Limit)

The goal of the work in this proposal is to develop wheat germplasm with host plant resistance to Fusarium head blight (FHB), the most cost-effective way to control this disease. *Fusarium*-infected grain is contaminated with potent mycotoxins, especially deoxynivalenol (DON), which poses a great threat to human and animal health. DON belongs to the group of trichothecene toxins, which target ribosomal protein L3 at the peptidyltransferase site of eukaryotic ribosomes and inhibit protein synthesis. The work in this proposal comprises continuation of a collaborative project with Nilgun Tumer (Rutgers University) to make wheat more resistant to DON, and thus to FHB. Specifically, using constructs provided by the Rutgers' group, I will make wheat transformants that contain either the N-terminal 99 amino acids of the wheat L3 ribosomal protein or one of two different DON resistant versions of the full-length protein. The Rutgers' group will evaluate these transformed plants for expression of the transgenes and for their resistance to DON in a seed germination assay. The results of this collaborative work will show whether or not high levels of DON-resistant forms of L3 can protect wheat from the effects and accumulation of DON during *Fusarium* infection and ultimately, if such protection provides FHB resistance.

For more detail on the entire project see Abstract submitted by Nilgun Tumer for project entitled "Modification of the Ribosomal Target to Enhance Resistance to Trichothecene Mycotoxins".