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PROJECT 1 ABSTRACT

(1 Page Limit)

Use of resistance is critical for the success in reducing the impact of Fusarium head blight (FHB) on durum wheat and hexaploid common wheat. However, lack of sources with high levels of FHB resistance in durum wheat is a problem for developing durum varieties with good FHB resistance. Wild and domesticated tetraploid wheats, including the emmer wheats (*Triticum turgidum* L. 2n=28, AABB) and the timopheevii wheats (*Triticum timopheevii*, 2n=28, AAGG), are good potential sources of resistance to many diseases, including FHB. Although emmer wheats have been screened for FHB resistance and accessions with some level of FHB resistance have been identified, systemic evaluations of the timopheevi wheats have not been conducted for their reactions to FHB. The USDA National Small Grains Collection (NSGC) at Aberdeen, Idaho, currently maintains 306 accessions of timopheevii wheats, including 42 accessions of *Triticum timopheevii* subsp. *timopheevii* and 264 accessions of *Triticum timopheevii* subsp. *armeniacum* (Jakubz.) Slageren. Our overall goal is to screen these materials in order to identify new sources of FHB resistance and ultimately introgress the resistance genes into the cultivated durum varieties to reduce the threat of the FHB disease. The specific objectives are to: 1) **Screen 300 accessions of timopheevii wheats for resistance to FHB in greenhouse; 2) Re-evaluate those accessions exhibiting high levels of resistance in the greenhouse and field nurseries.** We will use the point inoculation method to identify the type II resistance in these materials in the greenhouse and further confirm the potential resistance sources in greenhouse and field experiments. The FHB timopheevii wheat accessions identified to be resistant to FHB will be used for durum wheat breeding programs.