0203-SO-048 Fusarium Head Blight Resistant Wheat Variety Development - Cornell.

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PROJECT ABSTRACT
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Significant crop losses to FHB occur every year in New York State and the surrounding region due to the humid wet climatic conditions and high inoculum load that is normally present at flowering time. Consequently, a comprehensive breeding program for development, evaluation and release of FHB resistant wheat cultivars is critical for this region.

Objectives:
1) Evaluate locally adapted wheat varieties and elite germplasm for resistance to FHB.
2) Hybridize elite lines and varieties to new sources of FHB resistance.
3) Select and evaluate lines possessing superior resistance to FHB by combining resistance genes from different sources.

This project is composed of three major activities that include evaluation of the Uniform Winter Wheat FHB Nursery, evaluation of the Cornell FHB nursery, and selection and hybridization of FHB resistant lines and varieties to elite, locally adapted, genotypes.

Evaluation continues to be labor-intensive and somewhat unpredictable; however, there has progress towards improving the reliability and accuracy. In our trials, rankings of relative resistance to FHB are consistent over years and locations among the wheat lines we have used as resistant and susceptible checks. Incidence and severity of infection varies considerably among trials and modifications in methodology address this problem. Our evaluation nursery has the capability to test up to 200 genotypes in 6 replicates planted in 2 meter row plots. Infected corn kernel inoculum is spread in the alleys just before heading time. New crosses from last year are again planted for generation advance and single plant selections from this season are being evaluated.