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Research Area: VDUN

Duration of Award: 1 Year

Project Title: Fusarium Head Blight Resistant Wheat Variety Development - Cornell.

PROJECT 1 ABSTRACT

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Variety development is a long term activity that requires integration of many kinds of information. Resistance to FHB is just one trait of importance among many that contribute to the success of a variety. This project has allowed us to integrate an effective selection component into our conventional breeding program that would otherwise be too costly. Crosses with sources of FHB are used for both marker assisted selection and conventional selection. Early generation materials are integrated into our bulk breeding program where selections are made and then tested over years and locations for all important agronomic traits. Any variety that is released has to exhibit high grain yield, regardless of whether it has resistance to FHB. Each year we have refined our evaluation and selection techniques in ways that improve accuracy and reduce cost; however, severity of infection has sometimes been less than desired and some sort of mass selection is needed. As a part of our educational mission, we hire students for the summer and they gain practical experience in plant breeding and learn about projects such as the USWBSI.

We are currently using our third generation mist system which performs flawlessly. In addition, we have increased the capacity and reliability of the system. It is completely portable and currently we rotate two field locations for the FHB nurseries so that we can plant a cover crop in alternate years to reduce pressure from other pathogens.