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**Project ID: FY09-IM-043**

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**Research Category: MGMT**

**Duration of Award: 1 Year**

**Project Title: Integrated Management Strategies for FHB and DON in New York.**

## **PROJECT 2 ABSTRACT**

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As part of a multi-state Coordinated Project, field experiments will be conducted to investigate the effects of variety resistance and fungicide/biocontrol application on FHB and DON accumulation in winter wheat under natural conditions. Overarching project objectives are to 1) Evaluate the integrated effects of fungicide and genetic resistance on FHB and DON in all major grain classes in different cropping systems; 2) Conduct a quantitative synthesis of the integrated effects of fungicide and resistance on FHB/DON and the influence of region-specific factors on the overall efficacy of this integrated approach; and 3) Develop “*best-management practices*” for FHB and DON. Two independent experiments will be conducted at the Cornell University Musgrave Research Farm in New York in 2010 so that integrated management is examined under two different cropping environments that are common in New York. One experimental environment will involve planting wheat in late September into soybean stubble. The second experimental environment will involve no-till planting of wheat into corn stubble following grain corn harvest in late October. This will provide two contrasting environments in terms of exposure to within-field inoculum (expected to be greater in corn debris) as well as to different weather conditions at the time of flowering and early grain development. The experimental design for each experiment will be a split plot, with four varieties as the whole-plots and four spray treatments as the sub-plots. There will be four replicate blocks. In each main plot within each block, there will be four randomized sub-plots of spray treatments: 1) Prosaro (6.5 fl oz/A + 0.125% Induce); 2) Bacillus subtilis TrigoCor 1448 + 0.125% Induce; 3) Bacillus subtilis TrigoCor 1448 + 0.125% Induce + Prosaro (6.5 fl oz/A); and 4) not treated. Fungicide and biocontrol application will be made at the time of early anthesis (Feekes GS 10.5.1) for each variety. Each of the four varieties chosen for two years of study is being grown commercially in New York.