0203-BL-115 Management of Fusarium Head Blight With Biological Control Agents.

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PROJECT ABSTRACT
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A field-screening trial for the effectiveness of bacteria acting as biological control agents in managing Fusarium head blight (FHB) will be conducted. Treatments will compare several bacterial strains used as biological control agents (BCAs) applied at various stages of crop development to an untreated control and a fungicide standard. Because it is difficult to guarantee FHB occurrence, the trial will be planted on a site with spring wheat residue and will be misted at flowering to increase the likelihood of disease development. Foliar application of wall-bearing cells of the bacterial BCAs will be used in the field at flowering. Also, if resources allow, at least one treatment will not receive foliar application but will involve seed infusion with a bacterial BCA before planting. Greenhouse trials will also be conducted involving both foliar spray application of selected BCAs at anthesis, and possibly seed treatment with bacterial BCAs.

Bacterial BCAs may offer a more environmentally friendly control option for plant diseases than some chemical fungicides. Questions of health risks to the consumer are minimized with suitable BCAs. By using bacterial BCAs isolated from wheat in a local environment, compatibility of the agent with the crop or success in establishing the agent on the crop should be more reliable. The ability of the bacterial BCAs to be used in this study to control both FHB and tanspot in the greenhouse and field has been shown in previous work. Results of this study will provide guidance in how best to use the agents in a commercial wheat system and how effective the BCAs may be in field situations. Additionally, the efficacy of seed treatment with bacterial BCAs may be compared to the efficacy of foliar spray treatment.