PI: Yuen, Gary Y. **PI's E-mail: GYUEN1@unl.edu**

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PROJECT 2 ABSTRACT

(1 Page Limit)

Biological agents have been demonstrated in greenhouse tests to have promise for controlling Fusarium head blight (FHB), but it has been difficult to achieve consistent high-level control in the field using any agent. While environmental variation likely contributes to variable performance, the manner in which biocontrol agents are applied might also be an important factor. Spray application conditions may be of even greater importance when biological control agents are applied using commercial field spray equipment. This project will assess the compatibility of biological control agents with current commercial fungicide application technology. The objective in this project is to determine the effects of commercial ground spray application systems on viability of representative biological control agents. A selection of biological control agents, representing a wide range of microorganism types, will be investigated, and thus results and conclusions from this study could be applicable to biological control agents in general. The primary hypothesis is that each stage of a spray application (i.e., transport of cell suspension in tank; pumping of cell suspensions through the spray line; and discharge of cell suspension as droplets through nozzles) will affect the population of the biocontrol agent. A standard commercial spray system with a roller pump and a modified system with an alternative pump and nozzles will be used to apply the agents, and survival of each agent will be assessed. This project is collaborative, involving PIs from two institutions and collaborators from four others, and interdisciplinary, incorporating expertise in plant pathology, microbiology, and engineering. It addresses two priorities in the CBCC research area: 1) Biocontrol ecology, and 2) Application technology.