

0203-SC-095 Drying, formulation and field testing of a yeast product for biocontrol of FHB.

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PROJECT ABSTRACT

(1 Page Limit)

The transition of effective biological control agents from laboratory discovery to commercial products for the agricultural market is a complex process. In critical steps towards completing this transition, we have discovered, utilized and successfully field tested commercially feasible, large-scale biomass production protocols to create a frozen liquid product composed of our best biocontrol agent, *Cryptococcus nodaensis* OH 182.9, that is effective in reducing Fusarium head blight (FHB). An equally important step in making this transition is the development of drying and formulation techniques that maintain biocontrol strain viability and efficacy at high levels since dry formulated biocontrol products are easier and more economical to transport, store and handle. The overall goal of our USDA-ARS and Ohio State University research team is to develop strategies and microorganisms to play a key role in the integrated management of FHB. In the currently proposed research, our primary objective will be to discover osmo- or cryoprotectant compounds and develop liquid culture fermentation protocols that, in concert with freeze drying, spray drying or air-drying techniques, foster the production of a dried product that maintains superior levels of viability and efficacy over time. The dried product resulting from this research will then be field tested as part of the USWBSI's Uniform Fungicide Trial. Additionally, formulations of this dried product will be devised that include UV protectants and complexes with reduced levels of fungicides that further enhance product utility, ease of use and effectiveness in greenhouse and field trials in Peoria, IL and Wooster, OH. Upon completion of this research, a first generation biocontrol product based on our yeast *C. nodaensis* OH 182.9 and active against FHB on wheat and barley will have rapidly reached a stage of development from which commercial development and distribution to farmers can commence.