

A SECONDARY FERMENTATION OF DISTILLERS GRAINS BY *SCLEROTIUM* *GLUCANICUM* WILL ADD VALUE TO ETHANOL PRODUCTION BYPRODUCTS

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ABSTRACT

Adding value to ethanol production byproducts is an interest of the industry. Currently, the common process is to dry distillers' grains with solubles (DDGS) to a low-moisture, granular product that is typically fed in a confined feeding operation. Storage and handling of this product can be problematic due to crusting and bridging that can occur in bins, railcars, and trucks. One way to avoid these handling problems would be to pelletize DDGS. This would also permit open-range feeding of livestock, thereby opening additional markets. However, pelletizing would require that an adhesive be added to the DDGS. We have investigated several gum producing organisms to use in a secondary fermentation that would confer adhesive properties to DDGS. These microbes, *Sphingomonas paucimobilis*, *Sclerotium glucanicum* and *Xanthomonas campestris* were first acclimated to grow on whole stillage by incrementally increasing the amount of stillage (or stillage component) in the hybrid medium, while decreasing the level of the defined medium used. Lab scale (4 L) fermentations will be performed to identify the optimal medium formulation (including nitrogen supplementation rate), along with physical parameters such as agitation, aeration, and pH, in order to maximize gum production.