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## Determination of Possible Agronomic Controls for the Suppression of Sweet Corn Tillers in Seed Production Systems

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# **Determination of Possible Agronomic Controls for the Suppression of Sweet Corn Tillers in Seed Production Systems**

By

Clayton Schmith

A creative component submitted to the graduate faculty  
in partial fulfillment of the requirements for the degree of  
MASTER OF SCIENCE

Major: Seed Technology and Business

Program of Study Committee:

Dr. David Dornbos, Major Professor

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## Abstract

Hybrid sweet corn seed production can come with many challenges. Maintaining a high-quality standard of % hybridity allows my company to meet consumer demands and expectations. To achieve this, we must cross-pollinate two varieties. In doing so, it takes diligent work during the pollination window to make sure that the harvestable seed was not self-pollinated. This is accomplished through the detasseling process, which removes the pollen-carrying tassels from the seed parent prior to pollen shed. Sweet corn, through generational breeding efforts, has an abundant supply of pollen that can come from the tassel on top of a plant and through a prolific network of tillers down in the sub canopy. Often, these tillers can be easily missed during the detasseling process because of their smaller size and location on the plant. If not removed in a timely manner, the tillers can self-pollinate the seed parents, thus lowering the hybridity percentile and quality of the seed lot. In order to ensure proper tiller removal, farm labor crews are often sent through the seed field multiple times. The more time the crew is in the field, the higher the cost of goods produced. The utilization of agronomic controls to suppress tiller proliferation in hybrid sweet corn seed production fields could lower the amount of time a crew needs to be in a seed field and thus reduce the cost of goods produced.

My research examines some of these agronomic controls through two growing seasons and four replications. In this disquisition, I reveal the trial design and procedures used, present the results found, and discuss what they signify. I conclude with my recommendations moving forward. My data suggests a strong association between some of these controls and tiller suppression; and assesses the effect that these controls have on the yield.

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