

5.2 Test Comparisons

The results from both the warm germination and cold germination tests were analyzed to determine if there was a difference between transport systems operating at recommended conditions. Each individual transport system was then compared against itself to determine how the operating conditions of the system affected the seed germination. All results were compared against the control, which received no treatment.

5.3 Warm Germination Results

The data from the warm germination tests showed that there was not a statistical difference in germination rates across the different transport system types. The means of the germination rates did trend towards an effect caused by the transport systems. The control germination rate mean was higher than that of the transport systems. The control and plastic auger had similar means, while the conveyor, steel, and brush auger show a similar mean to each other but decreased from the control mean rate.

Comparison of the individual transport systems at different operating conditions showed some instances of statistical significance. The steel and brush augers both showed significant decreases in germination rates versus the control when operating at a faster rotational speed than the recommended. Overall, there did not tend to be a significant effect on germination rates caused by the operating conditions of the individual transport systems.

The following interval plots are designated by speed and flow rate for the transport system type. A designation of 525-10 indicates a rotational speed of 525 revolutions per minute and mass flow rate of 10 bushels per minute. For the belt conveyor, the first number designates the linear speed of the belt in feet per second.

5.3.1 Transport System Comparison

Comparison of the different transport systems operating at the recommended speed and flow rate showed no statistical difference in warm germination rates.

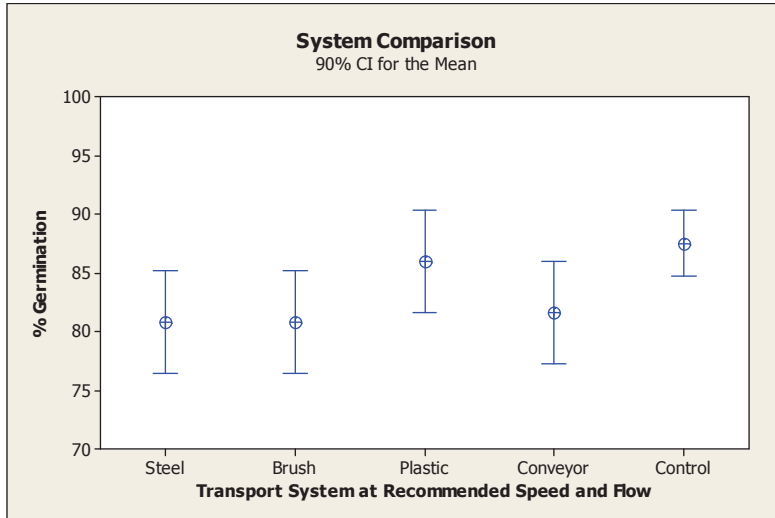


Figure 5.1 Interval Plot for Transport System Comparison

5.3.2 Belt Conveyor Analysis

The belt conveyor analysis showed no statistical difference between operating conditions.

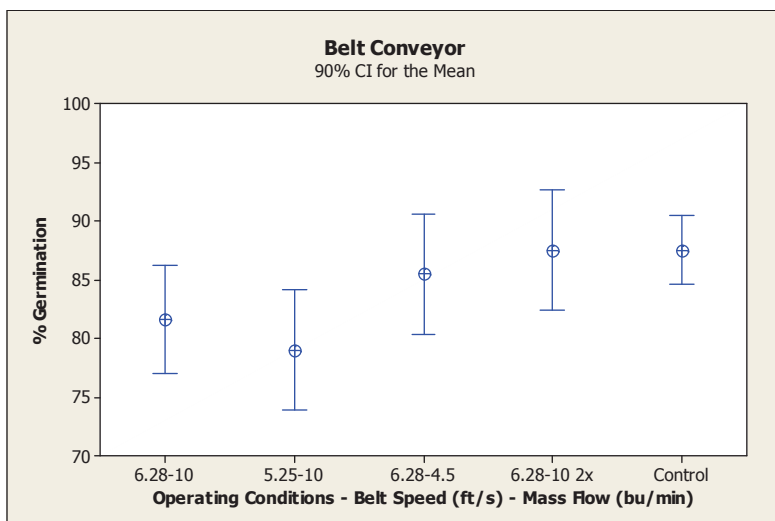


Figure 5.2 Interval Plot for Belt Conveyor Analysis