

The Economics of Cleaning the Boot Pit

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Cleaning the boot bit of the elevator leg is a notoriously unpleasant and unpopular job. Just like the father that reminds his kids that he walked 10 miles to school, cooperative managers remind new employees that they started at the bottom, cleaning the boot pit. I recently came across some research on the economics of boot pit sanitation. The study introduced various populations of stored grain insects into a boot pit at a pilot scale elevator. After various incubation times, grain was moved through the facility and the outgoing grain was sampled for insects using the same procedures as a terminal elevator. Typical grain discounts were applied and if live insects were detected in the out-going truck samples, the cost of transporting the grain back to the country elevator for fumigation was modeled. The study compared three strategies: no treatment, chemical treatment of the boot pit and boot pit sanitation (cleanout) every 30 days.

Cleaning the boot pit every 30 days resulted in a much lower probability of insects being detected in the outgoing loads. In most cases zero insects were detected. The chemical spray treatments reduced insect damage and insect numbers (relative to the control of no treatment) but still resulted in rejected loads. After accounting for chemical costs and the labor costs of cleaning the boot pit, cleaning the boot pit every 30 days resulted in the highest net income.

The pilot scale elevator study was modeled to represent a situation where an elevator received on-farm stored grain such that insects could be introduced at any point in time. Under that assumptions, cleaning the boot pit once a month is optimal. Stored grain insects are not believed to be present in field delivered grain, so boot pit sanitation might not be as important during some periods of the year in Oklahoma elevators. The research results do show that the payoff more than offsets the labor costs, although perhaps not the unpleasantness.

If an economist was telling the story he would say: "When I was in your position I calculated the economic threshold and found that the partial budget for boot pit sanitation was positive!" I guess that's why economists make poor motivational speakers!

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