

SOYBEAN CASE STUDY

“THE IMPORTANCE IN PLANNING & EXECUTION”

August 21, 2018

At AgriSecure a critical principle for our clients’ success is communicating best practices across our network – including learnings from difficult experiences. During the 2018 crop year, the Rhea Brothers operation encountered weed management challenges across two soybeans fields, which highlighted the importance of planning, proactive execution, and in-season issue management in organic

BACKGROUND

During the 2018 crop year, Rhea Brothers planted 800 acres of soybeans in Washington, Cuming and Thurston counties in Nebraska. This case study focuses on the Thurston (North) and Washington (South) county fields. Participants from the 2018 AgriSecure Field Day may recall the South field containing weeds which exceeded the target range for AgriSecure. Despite receiving similar weather, the North field had more than adequate weed control. The variance in results was largely due to initial weed management efforts, which were heavily impacted by planning oversights and limited equipment bandwidth.

SIDE-BY-SIDE COMPARISON

Activity	North Field (Clean)	South Field (Dirty)
Fall Crop	Both fields had fall planted oats & wheat, which were cut in the spring prior to fertility/planting	
Fertility	<ul style="list-style-type: none"> • Poultry litter incorporated with field cultivator • Field cultivator delivered effective early season weed kill 	<ul style="list-style-type: none"> • Poultry litter incorporated with vertical tillage (due to cultivation bandwidth constraints) • Vertical tillage provided limited weed kill and created a compaction layer
Field Work	<ul style="list-style-type: none"> • A 2nd pre-plant pass with the field cultivator-maintained weed control • Favorable rainfall conditions allowed 3 rotary hoe passes for aggressive weed management • As insurance, a weed flamer pass was conducted in mid-July and walkers were used in mid-August (\$100/acre) 	<ul style="list-style-type: none"> • Planting was done immediately after litter incorporation & vertical tillage • Rainfall prevented pre- & post-plant tillage passes and delayed the 1st rotary hoe pass until after weed germination (reducing kill rate) • Overall total cultivation/tillage passes were reduced to 3 (vs. 5 planned) • A weed flamer pass reduced weeds & “walkers” pulled a large number of weeds (\$200/acre)

OUTCOME

Going into pod filling the soybeans in the North field looked good with a strong canopy established to prevent late-season weed growth – as a result Rhea Brothers anticipate a yield of 55 bushels or higher. The South field; however, continued to experience challenges with weed management – and estimated yield was 40 bushels per acre.

Activity	North Field (Clean)	South Field (Dirty)
Yield	55	40
Revenue*	\$1,190	\$920
Expenses	\$750	\$875
Margin	\$440	\$45

* Revenues include \$200 per acre for wheatgrass.

Despite significant challenges, Rhea Brothers still anticipates making a profit of \$45.00 per acre in the South field.

KEY LEARNINGS – PLANNING, PROACTIVE EXECUTION, IN-SEASON ISSUE MANAGEMENT

This experience emphasizes the importance of having a comprehensive field plan, maintaining a proactive approach to solving in-season issues, and ensuring the availability of “excess” operational capacity to rapidly deploy on problem fields. Although untimely rainfall cannot be prevented, AgriSecure will work with clients to be prepared for similar situations. Specifically, either (a) ensuring adequate resources for spring tillage relative to the acres or (b) adjusting field plans if effective tillage capacity is not available. For example, Rhea Brothers is evaluating the purchase of additional tillage equipment to increase capacity. Or if only vertical tillage available, AgriSecure may recommend a delayed planting and/or alternative crop options.

Finally, organic soybeans must be done properly as an inflated weed bank can be an unintended short- and mid-term consequence of poor management (i.e., “Do it well or don’t do it at all.”). Rhea Brothers is currently evaluating a new plan of action for the South field due to this year’s challenges.

See Field Images on the following Page

North Field (Clean)



South Field (Weedy)

