

GPS Technology in Weed Control

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Relevance

Many producers look for opportunities to decrease input costs, while still getting effective control. While many producers are using herbicide, not many have invested in precision technology. The Extension office frequently gets asked for options on GPS technology and if the technology is worth the investment.

Methods

A small acreage hay field was used that had a large brush pile near the center and easy to visualize fence rows. Jason Keller drove his tractor across half the field spraying on sight, using landmarks in the field, with the GPS monitor covered where he could not see it. For the remaining half of the field, he used the GPS guidance system.



“Using GPS to spray and broadcast is vital. It virtually eliminates over spraying and missed areas. It saves tons of fuel and chemicals. It also allows me to spray faster. I wouldn’t spray without it. We saved over \$4,700 last year due to less fuel and being able to use less chemical.”- Producer Jason Keller

Plots: Non-Guidance vs Guidance



No Guidance:
17% Overlap
5% Skips
Total: 22% Misapplied

Guidance:
0.2% Overlap
0.1% Skips
Total: 0.3% Misapplied

(GPS Unit Price) x (0.22-0.003)= Potential Annual Savings
(\$1500) x (0.217) = \$326/acre

Conclusions

Guidance systems (GPS Units) can help reduce cost through minimizing excessive skipping and overlapping of inputs. Often this savings is between 10-30% of total input costs. Purchase of a new unit is recommended when a break even can be achieved.

In this case, annual input cost of \$1,500 and misapplication of 25% results in a potential savings of \$375/acre. In 3 years, that would be \$1,125/acre. In 5 years, that would be \$1,875/acre. If this producer was spraying at least 4 acres, the GPS Unit would achieve break even.