

## ABOUT THE SURVEY

The data in the journal article are based on a 192-question survey developed through focus group interactions with farmers from Iowa, Minnesota, and Illinois that had at least three years of cover crop experience. While more than 300 responses were received, many were excluded from the analysis due to various circumstances, such as a lack of cover crop experience or incomplete information, leaving 79 usable responses. Accordingly, the information in this study is limited due to the small number of usable responses, a self-selection bias, and a potential unrepresentativeness of the sample.

Two-thirds of survey respondents lived in Iowa, Illinois, or Minnesota and the average respondent had 3.94 years of experience with cover crops. Eighty percent of farms were larger than 500 acres and the median cumulative acreage of cover crops since the first time using cover crops was 540 acres. The most common cover crop was cereal rye, though almost half of the respondents reported using cover crop mixes of three or more seeds. Drilling was the most common method of planting.

To estimate revenue changes due to yield differences, a price of \$3.35/bushel was used for corn and \$9.55/bushel was used for soybeans. Additional management hours were assigned a rate of \$15/hour.

The results of the survey can be broken down into four categories: (a) herbicide-terminated cover crops followed by corn; (b) herbicide-terminated cover crops followed by soybean; (c) herbicide-terminated cover crops in a corn/soybean rotation (annual average); and, (d) winter-kill cover crops.



Photo courtesy of Practical Farmers Of Iowa

## PARTIAL BUDGETS FOR COVER CROPS IN MIDWEST ROW CROP FARMING

**DESPITE HAVING PROVEN** benefits, cover crops have a very low adoption rate in the Midwest—recent estimates show cover crops having been grown on anywhere from 2%–11% of farmland in the last five years, depending on location. One of the most frequent reasons given for the low adoption rate is cost—more than half of farmers responding to the 2015 Iowa Farm and Rural Life Poll said profit margins often make it difficult to invest in cover crops.

Using farmer survey data, we develop partial budgets and investigate the return on investment for cover crops and find a negative return when herbicide-terminated cover crops are followed by corn and a positive net return when herbicide-terminated cover crops are followed by soybeans. For most farmers, cost-share payments are insufficient to cover all private costs associated with cover crop

use, but are a critical incentive to support this practice.

The full findings are detailed in the journal article “Partial Budgets for Cover Crops in Midwest Row Crop Farming,” and will be available in May 2018 at <http://www.asfmra.org/resources/asfmra-journal/journal-archives>.

### HERBICIDE-TERMINATED COVER CROPS FOLLOWED BY CORN

Farmers that planted corn following herbicide-terminated cover crops averaged a negative net return of \$20.76 per acre. Full survey results show a 25% chance of realizing a net loss of \$65.15 per acre, a 50% chance of a \$5.90 per acre loss, and a 25% chance of a positive net return of \$19.59. Without cost-share payments, the average loss is \$46.09 per acre.

The average yield of corn following herbicide-terminated cover crops was 2.7 bushels per acre lower than

in fields with no cover crops, an average loss of \$9.18 per acre.

### **HERBICIDE-TERMINATED COVER CROPS FOLLOWED BY SOYBEANS**

Farmers that planted soybeans following herbicide-terminated cover crops averaged a positive net return of \$25.13 per acre.

Full results show a 25% chance of incurring a \$22.86 per acre loss, a 50% chance of incurring a \$4.31 per acre loss, and a 25% chance of a positive net return of \$60.15 per acre. Without cost-share payments, the average farmer saw a net economic loss of \$2.95 per acre.

The average per acre yield in a field of soybean following herbicide-terminated cover crops was 3.19 bushels higher than in fields with no cover crops, an average increase of \$31.74 per acre.

### **HERBICIDE-TERMINATED COVER CROPS IN A CORN/SOYBEAN ROTATION**

Assuming a 50/50 corn/soybean rotation, the calculated returns to herbicide-terminated cover crops amounted to a net economic loss of \$11.78 per acre. Full results show a 25% chance of incurring a \$56.19 per acre loss, a 50% chance of incurring a \$6.81 per acre loss, and a 25% chance of a positive net

return of \$25.33 per acre. Without cost-share payments, the net loss for the average farmer was \$42.92 per acre.

### **WINTER-KILL COVER CROPS**

Farmers that planted either corn or soybeans (not in rotation) after winter-killed cover crops realized an average net profit of \$6.43 per acre. Full results show a 25% chance of incurring a \$21.39 per acre loss, a 50% chance of deriving a \$17.05 per acre profit, and a 25% chance of deriving a \$28.31 per acre profit. Without cost-share payments, the average farmer saw a net economic loss of \$37.41 per acre.