Trends With Cover Crops: Results of Two National Cover Crop Surveys

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SARE/CTIC Cover Crop Survey

• For the 2012-13 survey, 759 farmers who use cover crops completed the survey
  • Survey was done both online and through paper copies at Midwest farmer meetings

• For the 2013-14 survey, over 1500 farmers who use cover crops have completed the survey, representing 367,021 acres of cover crops; the survey also includes a smaller set of questions for farmers who have not yet used cover crops – over 500 responses
  • The 2013-14 survey is an online survey with wide national distribution
Average Cover Crop Acres per Respondent

Average Acres per Respondent in 2012/13 Survey

- 2008: 116 acres
- 2009: 133 acres
- 2010: 169 acres
- 2011: 228 acres
- 2012: 303 acres
- 2013: 421 acres
COVER CROP IMPACT ON CORN AND SOYBEAN YIELDS IN THE DROUGHT YEAR OF 2012
Impact of Cover Crops on Corn and Soybean 2012 Yields*

*Yields are for 2012 on farms where farmers had side by side fields with similar management and varieties, other than using cover crops or not.
States affected by the 2012 drought
Drought States Commodity Crop Yields as Impacted by Cover Crops in 2012

- Broke the data down to look at yield impact in seven of the states hit hardest by drought (specifically NE, KS, SD, MO, IA, IL, and IN)

<table>
<thead>
<tr>
<th>Group of respondents</th>
<th>Corn</th>
<th>Soybeans</th>
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<tbody>
<tr>
<td>All respondents with side-by-side field comparisons</td>
<td>9.6% Yield Increase</td>
<td>11.6% Yield Increase</td>
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<tr>
<td>Drought states (7 states)</td>
<td>11.0% Yield Increase</td>
<td>14.3% Yield Increase</td>
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How can cover crops help in a drought?

- Benefits that may occur from cover crop in first year
  - Deep rooting cover crops lead to deeper rooting cash crops
  - Residue blanket reduces evaporation
  - Possible changes in mycorrhizae and overall soil biology

- Long term benefits
  - Increased organic matter
    - Better rainfall infiltration
    - Better retention of moisture in the soil profile
  - Better soil health
  - Less restrictions to root growth
  - Use of cover crops is often accompanied by other changes, like the move to no-till (each tillage pass causes the loss of soil moisture)
COVER CROP IMPACT ON CORN AND SOYBEAN YIELDS IN 2013
Impacts of Cover Crops on Corn and Soybean Yields in 2013

Based on 570 Respondents

Based on 529 Respondents

Preliminary data from 2013-14 SARE/CTIC cover crop survey
YIELD IMPACT OF COVER CROPS

Based on two years of national surveys with data from hundreds of farmers, cover crops boosted corn and soybean yields with a 5 to 10% increase.
Preliminary data from 2013-14 SARE/CTIC cover crop survey
Cover Crop Species Used by % of Respondents

- Winter Cereal Grains: 69%
- Legumes: 51%
- Brassicas: 51%
- Annual Grasses: 50%
- Multi-species Mix: 31%
- Two-species Mix: 25%
- Summer Annual Broadleaf: 19%
- Other: 6%

Preliminary data from 2013-14 SARE/CTIC cover crop survey
Predominant Tillage System Used With Cover Crops in 2013

- Continuous No-till: 42%
- Rotational No-till: 13%
- Reduced Tillage: 16%
- Conventional Tillage: 23%
- Vertical Tillage: 6%

Preliminary data from 2013-14 SARE/CTIC cover crop survey
Primary Method of Seeding Cover Crops in 2013

- Drilling: 46%
- Broadcast Seeding with Light Incorporation: 24%
- Aerial Seeding: 14%
- Precision Seeding with Corn or Soybean Planter: 3%
- Broadcast Seeding with Seeds left on the Surface: 12%
- Seeding with Liquid Manure: 1%

Preliminary data from 2013-14 SARE/CTIC cover crop survey
Farmers Not Yet Using Cover Crops

Rating the Factors that May Limit Cover Crop Adoption

- Perception that cover crops make planting more difficult: 188
- Perception that cover crops are costly: 186
- Availability of planting equipment and service providers: 175
- Perception that cover crops are tough to terminate: 148
- Access to trusted technical assistance providers for cover crop advice: 139
- Perception that cover crops reduce yields in the following cash crop: 137
- General interest in cover cropping: 128
- Amount and availability of financial incentives: 124
- Amount and availability of cover crop information: 113
- Farm management / partner views on cover crops: 105

Preliminary data from 2013-14 SARE/CTIC cover crop survey
Cover Crops Role of Ag Retailers

- Helping assess and understand soil changes resulting from cover crop use
- Helping to adjust nutrient management plans to account for cover crop nutrient
- Providing cover crop termination advice and services
- Providing cover crop seeding services
- Advising farmers on what cover crop seed to purchase
- Encouraging farmers to plant cover crops

Non-Users vs Users

Preliminary data from 2013-14 SARE/CTIC cover crop survey
Median Cover Crop Seeding Costs

What farmers are paying or willing to pay ($/acre)

- Seed costs: $25.00
- Establishment costs (if you did pay somebody): $10.00
- Establishment costs (what you are willing to pay somebody): $10.00

Preliminary data from 2013-14 SARE/CTIC cover crop survey
Primary Cover Crop Termination Methods Used in 2013

- Herbicide: 45%
- Tillage: 20%
- Mowing: 10%
- I prefer to plant cover crops that winter-kill: 19%
- Other: 5%
- Roller - crimping: 1%

Preliminary data from 2013-14 SARE/CTIC cover crop survey.
Cover crop cost share

How Financial Assistance is Used

- Yes - I initially received cost-share but now I largely self-fund (14%)
- Yes, I have only planted cover crops using financial assistance (8%)
- Yes, I have periodically received and used financial assistance (15%)
- No - I have not received financial assistance to plant cover crops (63%)

Preliminary data from 2013-14 SARE/CTIC cover crop survey
If using cover crops would result in lower crop insurance premiums, how would that influence cover crop adoption?

- It would definitely increase cover crop use
- It may increase cover crop use
- It would not change cover crop use

Preliminary data from 2013-14 SARE/CTIC cover crop survey
What cover crop farmers would tell their neighbor

- It is a systems approach based on a return to the way nature is intended to work and therefore can be extremely successful.
- If you expect to be able to farm your land in 50 years, or have your child or grandchild farm it, then you need to use cover crops.
- There is a wide array of cover crops that can improve every rotation and soil with a little bit of planning.
- Keeping the soil covered year-round provides food for the life in the soil, which in turn provides nutrients for your crops.
- We must take better care of the soil we depend on.
Visit www.sare.org/covercrops for full survey results