

2017 Survey of Cover Crop Production in Nebraska Soybeans, Field Corn and Seed Corn

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Introduction

The purpose for this survey was to evaluate cover crop management strategies adopted by Nebraska soybean, field corn, and seed corn producers and agronomists. The survey was conducted during the 2017 Cover Crop Conference held at the Eastern Nebraska Research and Extension Center, Ithaca, NE on February 14, 2017. A total of 82 growers and agronomists, representing 28 counties (mainly from eastern Nebraska), completed the surveys (Figure 1).

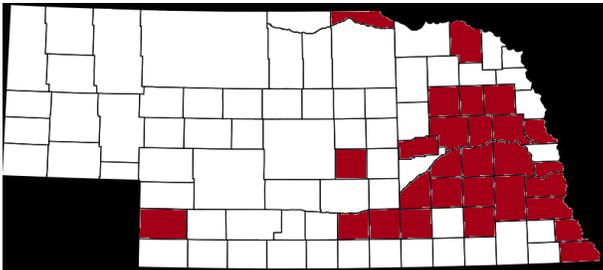


Figure 1. Nebraska counties represented by survey respondents.

Participant Demographics

Of the 82 individuals that participated, 66 identified themselves as growers and 7 as agronomists/consultants. Eighty-seven percent of survey participants adopt cover crops at part of their cropping systems (72 individuals). The total acres farmed/managed by respondents was 369,005, with 59,892 acres planted with cover crops. Of the growers/consultants that reported planting cover crops, the percent of their total acres planted to cover crops varied from 2.5-100%, with an average of 32%.

Cover Crop Seeding and Species Selection

Of the survey participants that establish cover crops in **soybean** years, 27% seed prior to harvest while 73% after crop harvest (Figure 2).

Drilling after crop harvest is the main method of seeding cover crops in soybean years (72%) followed by aerial seeding (28%). Cereal rye is used by 43% of the respondents while a cover crop mix (at least 2 species) is used by 57% (cereal rye plus oats, radishes, and/or vetch were common answers). Of the respondents that seed cover crops in **field corn** years, 27% seed prior to harvest while 73% seed after crop harvest. Drilling after crop harvest is the main strategy for planting cover crops (66%) followed by aerial seeding (26%; typically done when crop reaches maturity), and interseeding (8%). Cereal rye is used by 47% of the respondents, while a mix of species was used by 53% (cereal rye plus radishes, and/or vetch were common answers). Amongst respondents that seed cover crops in a **seed corn** year, 85% plant prior to harvest while 15% plant after harvest. Interseeding cover crops after male rows destruction is the main seeding practice in seed corn years (77%), followed by aerial seeding (15%) and drilling (8%). A mix of species is used by 100% of the respondents in this system (radishes, turnips and cereal mix was a common answer).

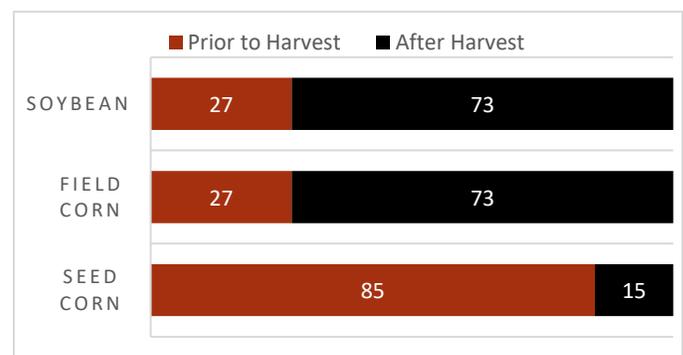


Figure 2. Percent of growers that seed prior to versus after harvest in soybeans, field corn, and seed corn.

Cover Crop Termination and Herbicide Program

Of the respondents, more than 95% use herbicides for cover crop termination. Where herbicides are used, 100% of respondents use glyphosate for cover crop termination. 2,4-D, paraquat (e.g., Gramoxone), and glufosinate (e.g., Liberty), are used by 50%, 9%, 6%, of the participants, respectively, as part of the tank mix with glyphosate for cover crop termination. According to participants 33%, 21%, and 44% apply pre-emergent herbicides at cover crop termination, at crop planting, and at both cover crop termination and crop planting respectively.

Impact of Cover Crop Adoption in Production Systems

According to respondents, reduced soil erosion has been the main benefit observed where cover crops are adopted (45%) followed by weed suppression (29%), increased soil organic matter (24%), increased soil tilth (19%), increased soil water infiltration (10%), and improved soil fertility (5%; Figure 3). Additional described benefits were reduced pesticide use, increased grazing ability, and uniform yields (2%). A few producers reported reduced crop yields and increased erosion where cover crops have been adopted (2%). (Figure 3)

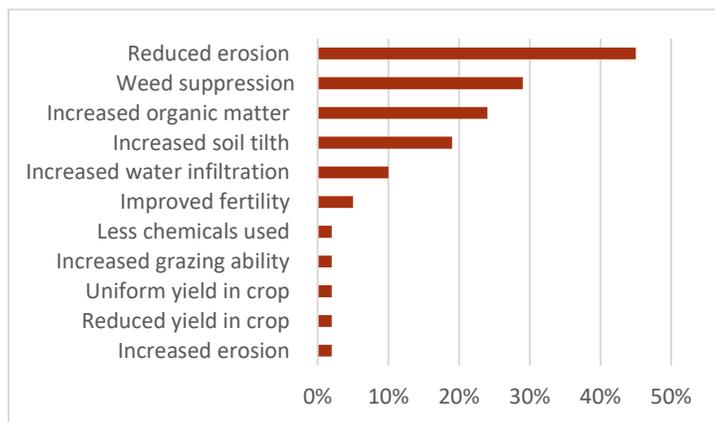


Figure 3. Production factors affected by the incorporation of cover crops according to survey participants.

Challenges With Incorporating Cover Crops

According to those adopting cover crops, the biggest challenge has been planting and establishing a stand before winter due to the lack

of growing season left, time and/or equipment (56%). Termination of cover crops in the spring was ranked as the second biggest challenge (37%). Herbicide carryover impeding cover crop establishment in the fall (7%), cost (5%), and crop yield reduction (2%) were the remaining challenges reported by the participants (Figure 4).

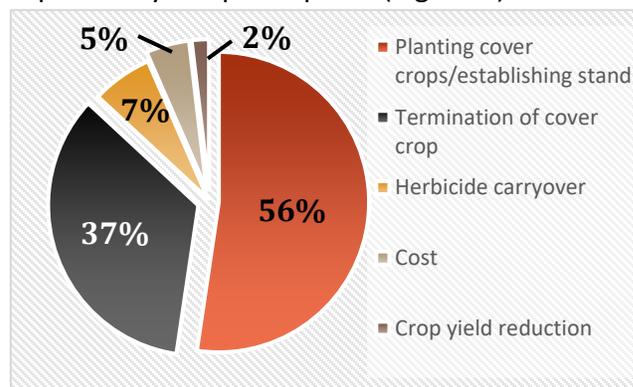


Figure 4. Challenges that accompany the incorporation of cover crops according to survey participants.

Conclusion

The adoption of cover crops is increasing across Nebraska. There are many ways cover crops can be incorporated in cropping systems and the results of this survey highlight the main strategies, and benefits and challenges observed by cover crop adopters in Nebraska.

When deciding how best to use cover crops, it is important to consider the ultimate goal. Is it to increase soil organic matter, increase nutrient availability to subsequent crops, reduce soil compaction, supply forage for livestock, and/or suppress weeds? Answering these questions will help identify the cover crops strategies that offer the best chance of success for meeting the goal. For additional cover crop information check the NebGuide G2284.

Acknowledgments

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