Tailoring Extension Efforts for Promotion of Diversified Crop Rotation Systems

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Selected Poster prepared for presentation at the 2018 Agricultural & Applied Economics Association Annual Meeting, Washington, D.C., August 5-August 7

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OBJECTIVES

•To understand farmer preferred sources and formats to learn new farm practices.

•To evaluate key factors that influence farmers' adoption decisions.

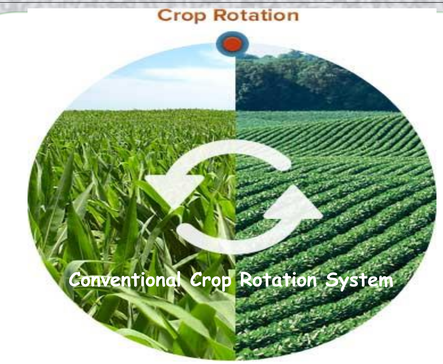
•To identify potential concerns regarding adopting diversified crop rotation system.

INTRODUCTION

- Diversified crop system has a great potential to decrease soil erosion and can reap benefits such as weed suppression, increased crop yields, and profits, as well as reduced needs for fertilizer and herbicide inputs.
- Reduced agrichemical inputs will also help reduce the number of nutrient pollutants in water. Yet these productivity and environmental benefits can be only reaped if farmers choose to adopt diversified crop production system.
- Extension educators need to understand farmers' perceptions about challenges related to the new conservation practices, farmer preferred sources and formats for learning about new practices, and key factors farmers consider when making adoption decisions.
- With its limited resources, it is critical for university extension to adopt the formats most conducive for farmers to learn new practices.

METHODS

- **3500** survey questionnaire were sent to selected agricultural producers from **Nebraska**, **South Dakota** and **North Dakota** of USA.
- To carry out the mail survey **'Dillman Method'** was adopted, with 5 waves of mailings taking place between mid-June and end July **2016**.
- Out of the **3,177** eligible survey sample, **672** were completed and returned. Therefore the survey response rate was **21.2**%.



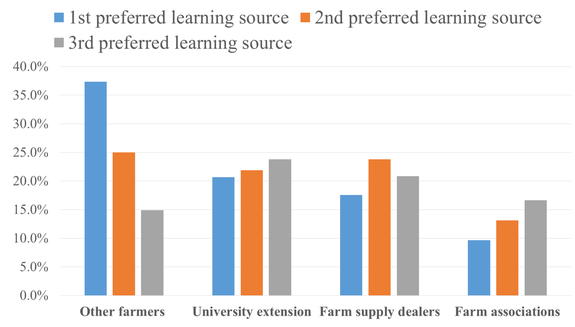


Figure 1. Percentages of Farmers Who Ranked Given Sources with Respect to Top 3 Most Preferred Sources for Learning New Farm Practices

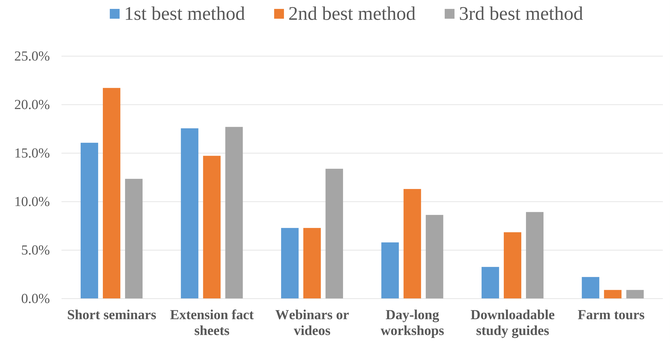


Figure 2. Percentages of Farmers Who Ranked Given Formats with Respect to Top 3 Best Formats for Learning New Farm Practices

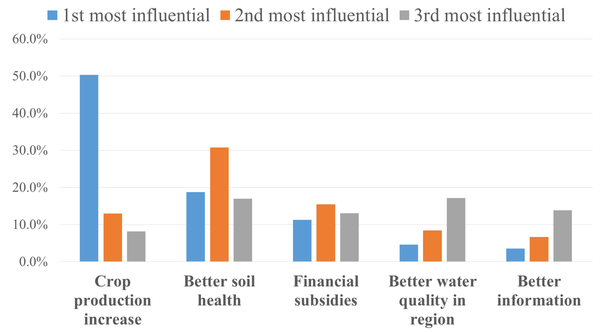


Figure 3. Percentages of Farmers Who Ranked Given Factors with Respect to Top 3 Most Influential Factors Affecting Adoption Decisions

RESULTS

Farmer-preferred Sources for Learning about New Farm Practices

- Almost **40%** of respondents ranked **Other Farmers** as the top preferred source for information, while **20%** ranked **University Extension** as their top choice (Figure 1).
- **Extension density** affects farmers' perception of extension service. In North Dakota where extension had the highest density, producers placed the highest ranking on extension service, followed by Nebraska, then South Dakota, which had the lowest extension density.

Most Preferred Formats for Learning about New Farm Practices

- Most farmers list **short seminars** or **extension fact sheets** as their top formats they would prefer to receive new information (Figure 2). Compared to short seminars, **day-long workshops** receive much less popularity, even though both belong to interactive learning category.

Top Three Factors That Affect Adoption Decisions

•The majority of producers (50%) ranked crop production increase as the first most influential factor (Figure 3).

•Farmers generally care more about the environmental aspect that can be converted into productivity. Better soil health was considered by most farmers as the second most influencing factor, while better water quality in the region was not viewed as nearly as influential.

•Financial subsidies lagged behind crop production increase and soil health. Even though one-time financial payments through the CSP or EQIP may help boost the adoption rate, producers usually give more consideration to continual benefits associated with the new practice.

ACKNOWLEDGEMENTS

This article is financially supported by United States Department of Agriculture-NIFA, Coordinated Agricultural Projects (CAP) under award number 2016-68004-24768.

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