

Adopt What?

Describing Louisiana wheat producers' level of adoption of soil health management practices



Maureen Victoria, Holli R. Leggette, Jamie L. Foster, Haly Neely, Clark Neely, Katie Lewis, Perejitei Bekewe, & Jean Parrella

Introduction

- Assessing the influences of adoption of soil health management practices (SHMP), such as reduced tillage, cover cropping and/or double cropping, is necessary to measure agricultural producers' ability to implement SHMP (Carlisle, 2016, Adusumilli & Wang, 2018).
- The conservation and management of soil require informed decisions by producers in Louisiana's subtropical climate (Meng et al., 2021).
- To improve soil conditions and management of nutrients, targeted communication and educational programs for wheat producers can aid in the SHMP adoption process.

Theoretical Framework

- Rogers (2003) Five Adopter Categories: Innovators, early adopters, early majority, late majority, and laggards, which we used to guide the analysis of our data.

Purpose

- To investigate the factors that influence producer's ability to adopt SHMP based on Rogers' (2003) five adopter categories.

Method

- Qualitative interviews with 6 Louisiana wheat producers.
- Purposive Sampling: Louisiana State University Parish Extension Agents helped us identify the sample through purposive sampling (Patton, 2002).
- Recorded and transcribed the interviews for unitization.
- Secondary review of each of the five categories to ensure the data were analyzed for alignment with the framework (Patton, 2002).
- We accomplished validity through analyst triangulation (Patton, 2002).



Findings

Innovators: Pose exceptional views of technology in the field and were highly interested in receiving the latest practice and equipment information.

- “We have to be into technology, we have to stay up to date or we get left behind.”

Early adopters: Discreet in their adoption of innovations.

- “Most people around here still do a lot of conventional plowing and they make good yields so minimal till is not necessarily something I am doing solely for yield.”

Early majority: Those who adopt only after a significant amount of time and decision making (Rogers, 2003).

- “Through years of intense management, we have built soil up that didn't yield before, and our soil yields great now.”

Late majority: Adopt innovations given the guaranty of finance and yield increases. They also lacked the necessary information to adopt.

- A participant in our study wants to “...try cover crops but [he] would like to stay in business with what the farm has.”

Conclusions

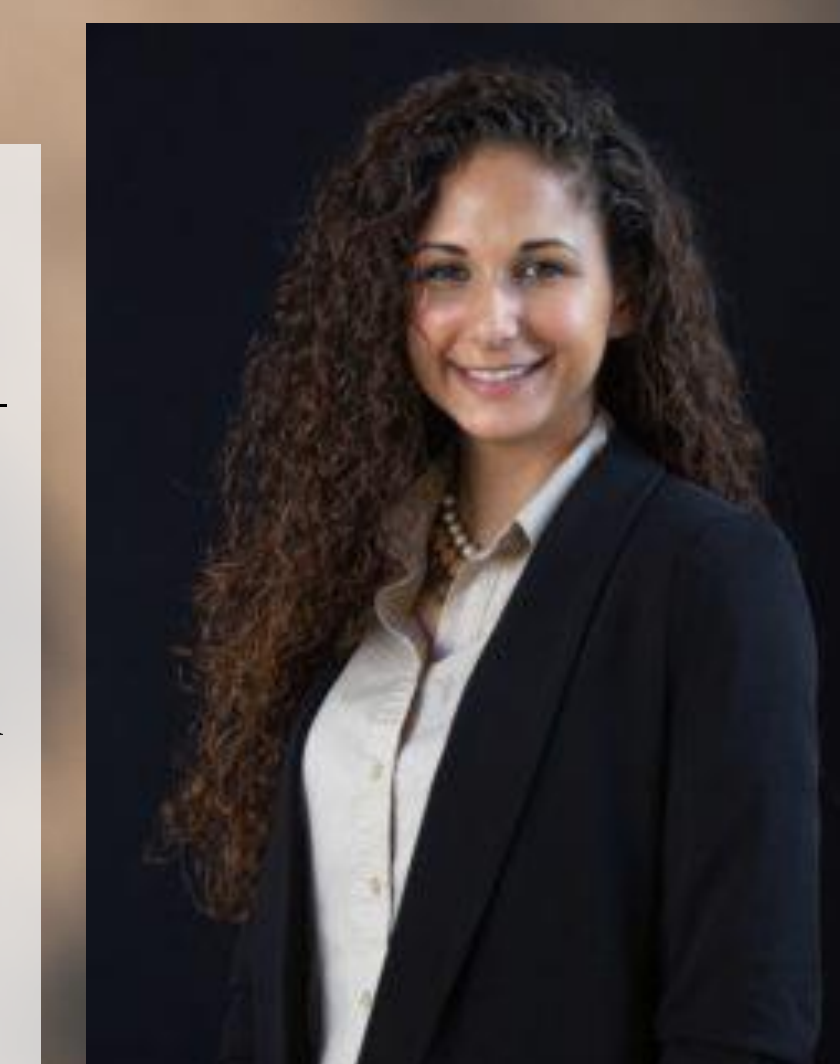
- Most participants in our study are willing to adopt soil health management practices given the appropriate information, climate, soil conditions, and timing of implementation.
- Innovators in our study are close followers of scientists and stay current with the latest technological innovations.
- Rigorous monitoring of soil and crop health help producers (early majority and late majority) make adoption decisions regarding SHMPs.
- Participants in our study did not necessarily align with the characteristics of laggards due to the lack of suspicion surrounding innovative SHMPs.

Implications and Recommendations

- These findings reveal the need for region-specific scientific information to be appropriately disseminated to wheat producers.
- The varying climate and soil conditions may affect the adoption and implementation of management practices.
- Adoption of SHMPs could improve data-driven information delivered through Extension-hosted trainings.
- This study follows data collected from Texas and Oklahoma producers. We plan to study the desired communication and education methods that would benefit wheat producers in all three states.

References

- Adusumilli, N., & Wang, H. (2018). Analysis of soil management and water conservation practices adoption among crop and pasture farmers in humid-south of the United States. *International Soil and Water Conservation Research*, 6(2), 79–86. <https://doi.org/10.1016/j.iswcr.2017.12.005>
- Carlisle, L. (2016). Factors influencing farmer adoption of soil health practices in the United States: A narrative review. *Agroecology and Sustainable Food Systems*, 40(6), 583-613. doi:10.1080/21683565.2016.1156596
- Meng, Y., Wang, J. J., Wei, Z., Dodla, S. K., Fultz, L. M., Gaston, L. A., Xiao, R., Park, J-h., Scaglia, G. (2021). Nitrification inhibitors reduce nitrogen losses and improve soil health in a subtropical pastureland. *Geoderma*, 388, 114947. <https://doi.org/10.1016/j.geoderma.2021.114947>
- Patton, M. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage Publications, Inc.
- Rogers, E. (2003). *Diffusion of innovations* (5th ed.). Free Press.



*This material is based upon work supported by the Natural Resources Conservation Service, U.S. Department of Agriculture, under number NR183A750008G013