



MSU EXTENSION SUPPORTS AGRICULTURE'S NUTRIENT MANAGEMENT EFFORTS FOR CLEAN WATER

444

Fertilizer Cost Comparison Decision tool downloads in 2022

99,712

views of MSU Extension-authored nutrient-based articles in 2022

PRIORITY

A R E A S

Having clean water is important to our health and the health of the world around us. Farmers can use nutrient management to help keep nutrients in the soil and out of the water where it can cause problems such as harmful algal blooms and fish kills.

IMPACTS

Michigan State University (MSU) Extension works to increase farmers' success while protecting the environment, ensuring food safety, reaching new markets and advancing agriculture through applied research. Agriculture is now one of the fastest growing sectors of the Michigan economy.

“The program ... put together in St. Johns today was fabulous from start to finish. I learned a ton, and it seemed like the other attendees did as well. A very powerful set of tools for helping farmers make critical decisions.”

• Nutrient management program participant

NUTRIENT MANAGEMENT WORKSHOP ADDS UP TO MORE SUSTAINABLE AGRICULTURE

A team of MSU educators held a workshop to train 42 other educators, technicians and conservation professionals about the basics of nutrient management planning. The workshop focused on state laws concerning nutrient management and manure, working with the Natural Resources Conservation Service for conservation planning, using the nutrient management planning worksheet, nutrient financials and helpful tools like the Sensitive Area Identification System. The workshop used several hands-on scenarios to prepare the participants to work with farmers on this topic.

Ninety-five percent of respondents said that they increased their knowledge of nutrient management as a result of the program and that they will or may change the recommendations they give to producers based on the program. Participants report that they reach between 900 and 6,000 farmers each year. This magnification of impact is significant to reach farmers in Michigan with nutrient management information that enables the farm, the farmer and the environment to be sustainable now and in the future.



Christina Curell provides guidance to workshop participants as they play a game designed to teach the principles of nutrient management.

MICHIGAN MANURE HAULER CERTIFICATION PROGRAM

The Michigan Manure Hauler Certification Program, a voluntary training program, helps prevent manure application problems before they occur through increased nutrient management plan implementation and responsible manure application. It creates a clear pathway for farms and for-hire manure application firms to move from training, to certification, to third-party audit — incentivized by reductions in insurance premiums — without implementing a mandatory program.



An example of manure spill response practices taught to manure applicators who are certified through the Michigan Manure Hauler Certification Program. Photo credit: K. Erb

The facts just cited show the scope and scale of what the certification program needs to accomplish over the next 10 years in certifying farms and firms and reducing manure discharges into the waters of the state. In 2022, 24 farms and firms completed the online Manure Hauler Certification D2L Level 1 course. There is a lot of work yet to do to get more farms and firms certified.



Manure haulers certified by the Michigan Manure Hauler Certification Program are less likely to have a significant manure discharge like the one illustrated in this picture. Photo credit: D. Shaw

In 2008, MSU Extension educator Charles Gould estimated that 14 for-hire manure applicators applied 823 million gallons of manure on Michigan cropland. The number of applicators and volume of manure applied stayed relatively constant through 2014. However, from 2014 through 2021, three of the largest manure applicators retired and sold their equipment, and new applicators took their place. He

now estimates there are 20 firms commercially applying manure but is unsure of the volume of manure applied by those firms. According to United Dairy Industry of Michigan (2023), just over 900 dairy farm families care for over 445,000 cows. According to the Michigan Ag Council (2022), there are around 2,000 hog farms in Michigan. In 2021, there were 163 Right to Farm program nuisance complaints involving farms (Michigan Department of Agriculture and Rural Development, 2021). It is unclear, however, how many complaints resulted from manure application.

“We are excited to be partnering with MSU Extension and Farm Bureau Insurance to launch this important program. Our hope is that anyone who hauls and applies manure will find value in participating in this voluntary training and certification program.”

- Tess Van Gorder, Michigan Farm Bureau associate policy and regulatory analyst

Encouraging farms and firms to become certified manure applicators through the Michigan Manure Hauler Certification Program was written into the updated version of the Generally Accepted Agricultural and Management Practices for Manure Management and Utilization (Manure GAAMPs) (<https://bit.ly/41v41iG>). The Manure GAAMPs state:

Training and education about manure application can help minimize the possibility of spills, accidents, and environmental risk. One resource available for both farmers and custom manure haulers to receive training and education is the Michigan Manure Hauler Certification Program, which offers online training modules and in-person equipment inspection to improve understanding and management of manure from storage to transport to land application. More information on this program is available at: <https://tinyurl.com/MIManureCert>. (Michigan Commission of Agriculture and Rural Development, 2023. p. 16)

Having the certification program referenced in the Manure GAAMPs is significant. It legitimizes the program in a way no other endorsement ever could. It is evidence of the impact people in the agriculture community think the program will have in reducing manure spill risk and increasing proper nutrient application.

“Farm Bureau Insurance recognizes that farms involved in this program value the need to protect their employees and the environment. The partnership between MSU Extension, Michigan Farm Bureau and Farm Bureau Insurance on this certification shows that we all value safety on the farm.”

- Ken Milliman, Farm Bureau Insurance inspector, director of farm and agribusiness

NAVIGATING THE DOLLARS AND CENTS OF NUTRIENT MANAGEMENT

The nutrient management effort began with promoting and educating the Fertilizer Cost Comparison Decision tool, a cross-discipline effort between members of MSU Extension. The first version of the tool has seen 308 downloads in 2022 (329 downloads in 2021) and led to additional versions being made available for forage, fruit and vegetable growers. All four versions of the tool have been downloaded a combined 444 times in 2022.

The educational component focused on presenting the decision tool to 169 participants at four different program events – the National Farm Business Management Conference, Ag Action Day, Michiana Irrigated Corn and Soybean Conference and the Nutrient Management Workshop. At all events, participants highlighted that they increased their understanding of nutrient management and associated costs. Ninety-five percent of participants in the Nutrient Management Workshop indicated they increased their knowledge and would change their recommendation approach when working with producers.

The Nutrient Management Workshop featured a presentation based on a beginning farmer bulletin *Introduction to Fertilizer Planning*. The materials focused on understanding fundamentals of developing a nutrient plan and breaking down product costs to identify that plan's overall cost. The bulletin is available at <https://www.canr.msu.edu/resources/e-3412-introduction-to-fertilizer-planning>. It has been viewed 247 times and downloaded another 34 in 2022. The same materials were used as the basis of a module in the Nutrient Smart+ MSU online course that had 17 enrolled students for the 2022 year.

DEMaND



Are you planning to be the next generation farm operator? Whether you represent the transition of generations, or that of employee to owner or as a new entrant to the business, a fresh look at management will be necessary. Michigan State University Extension (MSU) offers help to beginning farmers with this transition through the Beginning Farmers DEMaND series offering articles, workshops and additional resources.

Introduction to Fertilizer Planning

Jonathan LaPorte, Michigan State University Extension

E3412 February 2021

As a young or beginning farmer, you may be raising crops to reduce feed costs or to sell on the market. One of the important decisions in crop production is deciding how much fertilizer you should apply. Fertilizer application focuses on meeting the nutrient needs of the crop you'll grow. Too much fertilizer and potential profits are reduced. Too little fertilizer and there is not enough production. To meet the nutrient needs and produce a profitable crop, you'll need to create a fertilizer plan.

The latter part of 2022, fertilizer prices began to recede, but with continued volatility in corn and natural gas markets. Corn and natural gas are highly correlated to fertilizer prices, particularly to nitrogen. The volatility has led to an uncertainty of whether fertilizer purchases should be made now or wait until spring when traditionally they are much higher. This led to developing an input purchasing plan strategy based largely on concepts seen in developing grain marketing plans. The idea of the purchasing plan is to strategically purchase key inputs based on quantity, purchasing opportunities and price-saving tools as well as to utilize on-farm storage at key timeframes. The materials were presented to 39 participants in a November 2022 webinar *Strategies for 2023 Farm Inputs*. It was also presented during a featured breakout session at the Integrated Crop and Pest Management Update in December with over 350 participants attending.

MSU Extension educators wrote numerous articles on the topic of maximizing nutrient needs while minimizing costs that reached a total of 99,712 readers through MSU Extension, Michigan Farm News, Michigan Farmer, The Farmer's Exchange Newspaper and Morning Ag Clips.

REFERENCES

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