



PFMD UPDATE

A BULLETIN FROM THE PESTICIDE AND FERTILIZER MANAGEMENT DIVISION

SEPTEMBER 2023

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Director’s Notes

Joshua Stamper, Director, Pesticide and Fertilizer Management Division

Water (among other things) flows downhill. Water flowing rapidly across the land will carry both water soluble and sediment bound nutrients and chemicals. This is a fact that is behind many best management and conservation practices that the Minnesota Department of Agriculture (MDA) promotes to protect water quality and prevent fish kills. If we can limit or slow overland flow of water, water quality will be improved, and summertime fish kills can be reduced. We know this is true because the years that we see the least amount of sediment, nutrient, and chemicals in our surface water quality monitoring, are the years when we have the lowest amount of stream flow. If there is not runoff, then there is no overland transport mechanism of nutrients or chemicals.

This is one of the reasons why the MDA developed the Runoff Risk Advisory Forecast to provide a “heads up” to growers and commercial applicators when local conditions favor runoff. This is a tool that can be especially helpful for folks that land apply manure or ag chemicals in southeast Minnesota or are adjacent to streams and rivers. All you do is sign up and list the locations that you want to get updates from, and if the model finds that soils are not capable of catching the forecasted amount of rain, you will get a notice sent to you. Visit the Runoff Risk Advisory Forecast at www.mda.state.mn.us/rraf.

Vegetative cover is the other “ace in the hole” when it comes to agriculture protecting water quality and preventing fish kills. Vegetative cover helps dissipate and diffuse the energy of water as it flows downhill. It filters out sediment and improves infiltration. It also allows that rain to infiltrate and recharge groundwater. Continuous living cover, like grass water ways and stream buffers, are great examples of in field scale conservation that can be a part of any agricultural enterprise.



A Message from Commissioner Thom Petersen

Weather Adds to Agriculture's Stress

Minnesota weather. It's a topic that's always up for discussion around dinner tables, at local coffee shops, and over the fence rows. Unfortunately, this year's weather talk is often filled with grim stories as the state faces another year of drought conditions, despite some rain relief in August.

As Commissioner of Agriculture, I've toured the state over the past several months to see and hear how the drought has impacted farmers and ag businesses. Farmers and ranchers have been making tough decisions regarding the status of their hay and pastures, balancing that with the wellbeing of their livestock.

While we can't make rain, there are several steps Governor Tim Walz's Administration has taken to help those impacted by the drought. The Statewide Drought Plan has been activated, including a convening of the Drought Task Force, a panel of state, federal, tribal, regional, and local experts with water-related responsibilities. The Minnesota Department of Agriculture (MDA) has a seat at the table and has been active in the task force's work.

The Rural Finance Authority has disaster recovery funds available in the form of zero-interest loans for Minnesota farmers whose operations are suffering from lack of rain and live in a county or adjacent county declared a drought disaster by USDA Secretary Tom Vilsack.

As we transition seasons, we hope that we'll have better news to share during our weather chats with friends and family. Much rain is needed to replenish what we've lost over the past year. However, the MDA will continue to work with all those in agriculture to help with the continued drought or whatever weather situation may come next.

For drought-related resources and to find the Statewide Drought Plan, visit the MDA's website at www.mda.state.mn.us.

PFMD Update

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The purpose of this newsletter is to provide comprehensive, accurate information about the MDA Pesticide and Fertilizer Management Division's events, programs, policies and regulations. No endorsement is intended or implied of products or companies mentioned within. Printing and postage is paid for by the Pesticide Regulatory Account.

The PFMD Update is, and will continue, to be mailed to all licensed pesticide and fertilizer applicators. Use the QR Code to sign up to receive electronic copies of the PFMD Update newsletter.



www.mda.state.mn.us/chemicals/pfmdupdate

In accordance with the Americans with Disabilities Act, this information is available in alternative forms of communication upon request by calling 651-201-6000. TTY users can call the Minnesota Relay Service at 711.

Minnesota Ag Weather Network expansion

Stefan Bischoff, Hydrologist

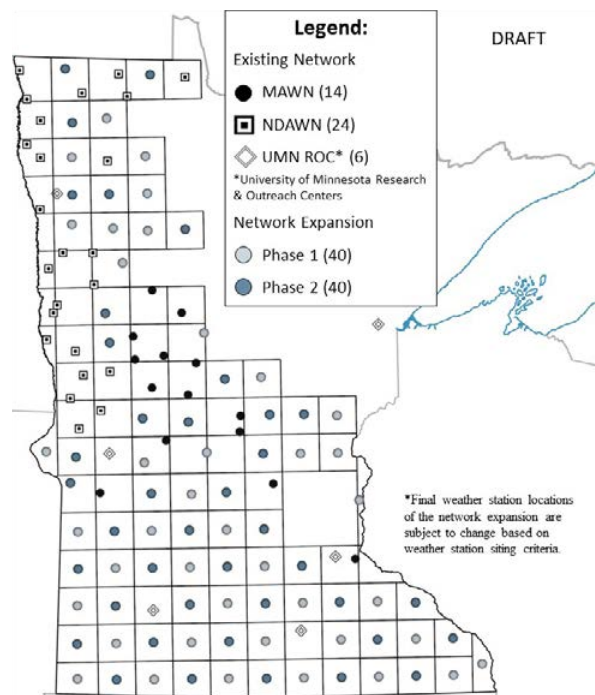
The MDA and local partners are currently operating 14 weather stations in the Minnesota Ag Weather Network, which is integrated into the North Dakota Ag Weather Network (NDAWN) to provide farmers with local ag weather information and tools to guide management decisions.

The MDA received \$3 million from the Clean Water Fund this past legislative session to expand the network to agricultural areas statewide. Approximately 40 additional weather stations will be installed over the next three years. The goal is to have a station within 20 miles of most agricultural land, which may require around 80 stations to complete the network.

Local and timely weather data is necessary for many precision agriculture technologies, and this will help farmers optimize the timing of manure, irrigation, fertilizer, and pesticide applications while reducing leaching and runoff. This improves farm profitability, reduces loss of agricultural inputs, and protects surface water and groundwater.

The MDA is developing weather station siting criteria to determine suitability of new locations. The MDA will be seeking applications from public and private landowners/cooperators who are interested in volunteering to host new stations. This information, along with how to apply, can be found at www.mda.state.mn.us/minnesota-ag-weather-network.

For more information, please contact Stefan Bischof at 218-396-0720 or Stefan.Bischof@state.mn.us



Neonicotinoid insecticide occurrence in rivers increases after planting

Dave Tollefson and Matt Ribikawskis, Hydrologists

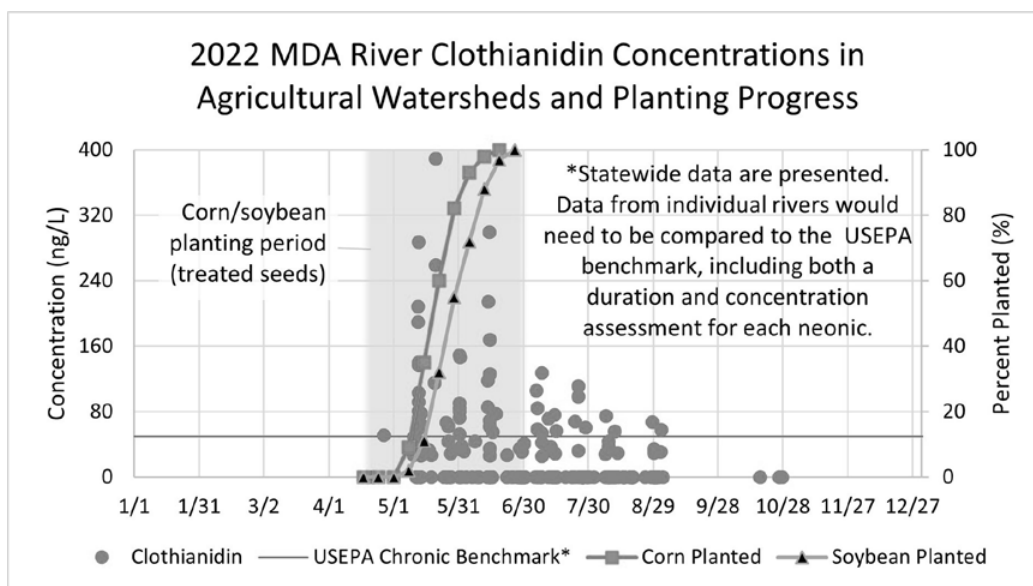
Neonicotinoid insecticides (neonics) are used as a seed treatment for crops and as a broad-spectrum insecticide in both agricultural and urban areas. It's estimated that most neonic use in Minnesota is on corn and soybean seed. Neonics are soluble in water and highly mobile after application.

The MDA has an extensive water quality monitoring program and tests for over 180 pesticide compounds. Three neonics, clothianidin, imidacloprid, and thiamethoxam, are detected each year in rivers. In 2022, clothianidin and imidacloprid were detected at concentrations greater than the United States Environmental Protection Agency (EPA) chronic aquatic life benchmark values in 16% and of 13% of river samples, respectively. Most other pesticides are rarely detected over their respective benchmark or standard.

Statewide corn and soybean planting progress were compared to the neonic concentrations measured in rivers since 2018. An annual pattern emerged with few detections prior to the start of planting. Concentration and detection frequency tended to peak during and just after corn and soybean planting each year, with detections falling through the growing season to non-detect levels in the fall. The 2022 clothianidin graphic is below.

These data suggest that neonics used as seed treatment are an annual source of detections in rivers.

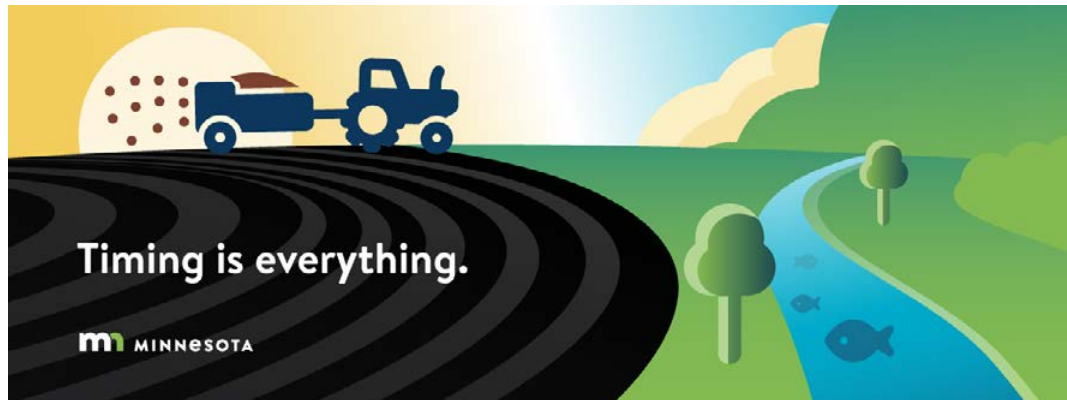
For more information, please contact Dave Tollefson at 507-206-2882 or David.Tollefson@state.mn.us.



New campaign to reduce pollution runoff, protect water and fish in SE Minnesota

Bill VanRyswyk, Monitoring Section Manager

The Minnesota Pollution Control Agency (MPCA), the MDA, and the Department of Natural Resources (DNR) have launched a new public awareness campaign to help protect water quality and reduce pollution runoff in southern Minnesota. The campaign, which aims to educate residents and agricultural landowners by highlighting best management practices related to land applications, was prompted by recent incidents of fish kills in trout streams.



The geography of southeast Minnesota makes the region especially vulnerable to fish kills from pollution runoff. Understanding risk factors may help residents take proactive measures to minimize runoff to maximize soil value and reduce fish kills.

The campaign includes direct mail to agricultural landowners, radio spots, a news release, and digital media efforts to reach residents in eight counties in southeast Minnesota: Dodge, Fillmore, Goodhue, Houston, Olmsted, Rice, Wabasha, and Winona counties.

Community partners, agricultural groups, and other organizations are encouraged to download resources from an online toolkit that includes posters, social media graphics, and newsletter stories.

This campaign is funded by the Clean Water Fund, which enables the protection and restoration of Minnesota's waters. Promotional support from water and agricultural partners will also extend the campaign efforts.

This communication campaign is one of several efforts Minnesota's agencies are undertaking to reduce pollution from runoff. To learn more, visit www.pca.state.mn.us/business-with-us/minimizing-fish-kills-in-minnesota



BMPs published for three Drinking Water Supply Areas under the Groundwater Protection Rule

Margaret Wagner, Fertilizer Nonpoint Source Section Manager

The MDA published best management practice (BMP) lists for three Drinking Water Supply Management Areas (DWSMA) under the Groundwater Protection Rule. These include the cities of Adrian, Verndale, and Hastings.

Formal evaluations to determine if these practices have been adopted in each DWSMA can occur after no less than three growing seasons. This could occur as soon as the fall of 2026 for these three DWSMAs. If practices are not adopted on 80% of the cropland (excluding soybean acres) or water quality gets worse, that area can move to a regulatory level under the rule.

Each BMP list is specific to the soil types and cropping systems in the area. The BMPs are based on guidance from the University of Minnesota, and each list was developed in consultation with a local advisory team that included local farmers, crop advisors, and key project partners. In addition to the BMPs, each advisory team also discussed alternative management tools or AMTs. AMTs are practices and activities that go beyond traditional nitrogen fertilizer BMPs and help protect groundwater.

The MDA's goal is to work with farmers to provide technical support and funding for practices and encourage them to follow the BMPs. In addition, the MDA encourages them to evaluate, and eventually adopt, the AMTs that are the best fit for their land and operation.

More information can be found at:

- www.mda.state.mn.us/adrian-dwsma
- www.mda.state.mn.us/hastings-dwsma
- www.mda.state.mn.us/verndale-dwsma

Or by contacting Margaret Wagner at 651-201-6488 or Margaret.Wagner@state.mn.us.

Water quality best management practices for acetochlor herbicide

Naworaj Acharya, Research Scientist

Acetochlor containing products such as Tripleflex, SureStart, Warrant, and Harness are commonly used to control weeds in corn, soybeans, sugarbeets, and other crops. Acetochlor has the potential to leach to groundwater and run off to surface water and negatively impact water quality. To minimize these risks, it is important to follow the best management practices (BMPs) for acetochlor products. Some important BMPs for agricultural use of acetochlor for water quality protection are listed below:

1. Scout fields for weeds and follow integrated weed management practices.
2. Consider split or layered acetochlor applications to improve control and reduce run off potential.
3. Rotate and combine acetochlor with herbicides with different sites-of-action such as atrazine and mesotrione.
4. Maintain mixing/loading and application setback distances from water, tile inlets, wells, and sink holes as required or recommended on the product label.
5. Follow label requirements/recommendations on use of nozzles, spray boom height, wind speed, and buffer width to reduce spray drift.
6. Maintain vegetative filter strips between treated areas and points where field run-off enters surface water, tile inlets, and sink holes.
7. Adopt conservation tillage practices appropriate for your cropping system and farm's topography.

You can find the full list of water quality BMPs for acetochlor and other pesticides on the MDA's website mda.state.mn.us/pesticide-fertilizer/pesticide-best-management-practices.

For more information, please contact Naworaj Acharya at 651-201-6029, Naworaj.Acharya@state.mn.us

Select MDA Pesticide & Fertilizer Management Division enforcement actions

Corinne du Preez, Agricultural Consultant

McIntire, IA

An agricultural operation with Minnesota certified private pesticide applicators paid a \$2,250 penalty for applying pesticides inconsistent with the product labels, including Balance Flexx herbicide, a restricted use pesticide, in a prohibited Minnesota county, and Laudis and Willowood Sulfentrazone 4SC herbicides when winds were greater than 10 mph.

Warner Robins, GA

A pesticide registrant paid a \$1,500 penalty for distributing pesticides in Minnesota prior to registering the pesticides. Pesticides are regulated by the Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and must be registered with the state before they can be sold or used in Minnesota.

Janesville, MN

An agricultural operation with a Minnesota commercial pesticide applicator paid a \$6,600 penalty for applying Engenia herbicide after the Minnesota application cutoff date of June 12, 2022, failing to complete dicamba specific training and measure the wind speed at boom height, and incomplete application records.

Choiko, MN

An agricultural operation paid a \$1,000 penalty for applying Enlist One herbicide inconsistent with the product label by failing to maintain a 30-foot downward buffer when the wind direction was blowing toward a sensitive area, and in a manner resulting in drift.

Ulen, MN

An agricultural operation with a Minnesota certified private pesticide applicator paid a \$3,250 penalty for applying a pesticide beyond the boundaries of the target site for a second time, and for applying XtendiMax herbicide inconsistent with the product label by failing to measure wind speed in the field of application at boom height, record the name of the sensitive crop registry consulted and the volume of products tank mixed.

Grand Meadow, MN

An agricultural facility with an MDA fertilizer license and anhydrous ammonia (NH₃) permit paid a \$2,450 penalty for NH₃ equipment and storage violations, including failure to lock main tank shut-off valves when the installation was unattended.

Zillah, WA

A vegetation management company paid a \$500 penalty for applying pesticides without a Minnesota commercial pesticide license.

Andover, MN

A lawn care facility with a Minnesota commercial pesticide applicator license paid a \$2,500 penalty for improperly handling pesticides and disposing of pesticide rinsate inconsistent with the product labels, resulting in adverse effects on the environment. A shop drain with an outlet to an adjacent property was used for washing pesticide application vehicles.

Alden, MN

An agricultural facility with an MDA fertilizer license and anhydrous ammonia (NH₃) permit paid a \$250 penalty for failing to immediately report a transportation incident involving NH₃ to the Minnesota Duty Office or the MDA.

Lake Lillian, MN

An agricultural operation paid a \$500 penalty for applying restricted use pesticides without a valid license or certification.

Janesville, MN

An agricultural facility with a Minnesota commercial pesticide applicator paid a \$2,000 penalty for applying Engenia herbicide inconsistent with the product label by applying more than two postemergence applications to a portion of a field thereby exceeding the label rate.

Plastic pesticide container recycling

Jane Boerboom, Facility Management Supervisor

Since the Ag Container Recycling Council (ACRC) began its work in Minnesota, ACRC has collected and recycled more than 7.1 million pounds of ag chemical container plastic, averaging more than 320,000 pounds annually.

G. Phillips & Sons collects containers from retailers, applicators, and farmers across Minnesota as part of a nationwide network of contractors working with ACRC. Containers are typically chipped, washed, and then used in a range of end use products approved by the ACRC. Field drainpipe, nursery pots, and landscaping edging are all examples of new uses for the recycled materials. All non-refillable, high-density polyethylene (HDPE) plastic containers used for agricultural chemicals in sizes 55 gallons and smaller are accepted at pick-up locations. Farmers and professional applicators can participate by triple or pressure rinsing empty containers and aggregating them for collection by ACRC contractors at specific sites established by the contractors.

It is important to triple rinse your containers before they are collected for recycling because it is required by EPA regulations. By properly rinsing your containers, not only do you save money by using all your chemical product, but it also keeps your property clean and keeps yourself and your employees safe.

Contact G. Phillips and Sons at 248-961-3360 or gphillipsandsons.com for drop-off locations or to dispose of plastic containers and totes larger than 55 gallons.



On-farm liquid fertilizer storage requirements

Matthew Parins, Agricultural Chemical Consultant

The MDA issues permits for dry and liquid bulk fertilizer differently. Bulk storage permits are required for any amount of dry bulk fertilizer; however, farmers are allowed to store up to 6,000 gallons of bulk liquid fertilizer without containment permitted by the MDA.

Permitting includes installation of a proper secondary containment adequate to hold potential spills. Containment areas usually consist of concrete, metal, or synthetic lined earth, metal, wood, or concrete. In addition, tanks storing bulk liquid fertilizer must follow all well setback requirements. Ultimately, the farmer is responsible for any environmental damage caused from a fertilizer spill to the environment and must immediately report the release to the MN Duty Officer at 1-800-422-0798.

An MDA permit is required to store more than 6,000 gallons of liquid fertilizer or to store fertilizer for distribution. The permit must be reviewed and approved by the MDA before construction or storage can begin. A permit application requires drawings of the secondary containment and a \$100 application fee.

The MDA permit application to store dry fertilizer or more than 6,000 gallons of liquid fertilizer is available online:

www.mda.state.mn.us/bulk-fertilizer-storage

For more information, please contact Matthew Parins at 651-201-6587, Matthew.Parins@state.mn.us

Free waste pesticide disposal

Jane Boerboom, Facility Management Supervisor

The Waste Pesticide Disposal Program is operated by the MDA in partnership with county household hazardous waste programs and is funded from a surcharge paid by pesticide registrants.

The statewide yearly totals for waste pesticide collections have been approximately 660,000 pounds per year over the past several years. Over 10 million pounds of waste pesticide has been collected and safely disposed of since the program's inception in 1990.

Minnesota pesticide users can bring their waste pesticides to any of these events and dispose of up to 300 pounds free of charge. For amounts greater than 300 pounds, call the MDA at 612-214-6843. These events are for WASTE PESTICIDE ONLY. Pesticide tank mixes, rinsates, fertilizer, crop oils or spray markers, and treated seed are NOT accepted.

Visit www.mda.state.mn.us/wastepesticideschedule to find a drop-off schedule and location near you.

If there is not a location listed for your county, you may drop items off at the MDA collection event held in 2024. Details will be posted on the website. You may also contact your surrounding counties; they may accept the waste pesticide if there is not a collection opportunity in your county.

For more information, please contact Jane Boerboom at 612-214-6843 or Jane.Boerboom@state.mn.us.



Chemigation: Fertilizers or pesticides applied by irrigation

Jeff Lorentz, Chemigation Program Consultant

Do you apply fertilizers and/or pesticides through an irrigation system that is connected to a water supply (groundwater, surface water, or public water system)? If YES, you must obtain a chemigation permit from the MDA.

The chemigation permit requires the installation and maintenance of anti-pollution backflow devices to prevent fertilizers or pesticides from contaminating the water supply. If you are applying pesticides, review the pesticide label to determine if chemigation is an approved application method for the product you are using. Pesticides must be applied according to the label requirements.

The MDA conducts random compliance inspections at permitted sites and will inspect sites making applications without a permit. Violations discovered can result in enforcement actions which can include a financial penalty.

Chemigation permits require a one-time application/non-refundable fee (Fertilizer only = \$50, Fertilizer & Pesticide = \$250). You can apply online or mail in a paper application.

- 1. Apply On-Line:** Visit www2.mda.state.mn.us/webapp/erenewal/apply.jsp to apply.
- 2. Apply with a Paper Application:** Mail the completed form and check payment to the MDA. Visit www.mda.state.mn.us/chemigation-permit-program for chemigation information and to download a form.

For more information, please contact Jeff Lorentz at 320-223-6547 or Jeffrey.Lorentz@state.mn.us.



Private pesticide applicator certification or noncommercial pesticide license

Robyn Frederick and Brian Clark, MDA Recertification Project Managers
and Tana Haugen-Brown, UMN Extension Educator and Co-Coordinator

A private pesticide applicator certification or noncommercial pesticide license is needed to apply Restricted Use Pesticides (RUPs) on a family farm. See the table below to determine which one is required for your operation.

PRIVATE PESTICIDE APPLICATOR CERTIFICATION To apply RUPs on a Family Farm	NONCOMMERCIAL PESTICIDE LICENSE To apply RUPs on a Family Farm
<p>With one or two employees: The owner and all employees must be certified</p>	<p>With three or more employees: All employees* must have a noncommercial license in categories A (Core) and C (Field Crops Pest Management)</p> <p>*The owner may hold a private certification or noncommercial license.</p>
<p>Aerial application: Currently no aerial endorsement is available</p>	<p>Aerial application: A farmer or their employee(s) need a license in categories A (Core), B (General Aerial), and C (Field Crops Pest Management)</p>
<p>Apply, pay required fee, and pass an open book exam administered by University of MN Extension.</p>	<p>Apply, pay required fee, and pass a closed book monitored exam administered by the MDA.</p>

License or certification renewal requires pesticide applicators to attend a recertification workshop by due dates. Failure to attend the workshop will result in retest.

For more information, please contact the staff listed below.

Private Applicator Certification:

Tana Haugen-Brown, 763-260-4423 or tbrown@umn.edu
extension.umn.edu/pesticide-safety-certification-resources/private-pesticide-applicators

Noncommercial License:

Robyn Frederick, 651-201-6548 or Robyn.Frederick@state.mn.us
www.mda.state.mn.us/pesticide-fertilizer/pesticide-applicator-licensing

Soil Health Financial Assistance Program Equipment Grants in action

Jessica Jurcek, Program Development Specialist

Soil health practices, like no-till planting and cover cropping, provide key environmental benefits, including protecting water quality and sequestering carbon. However, these practices typically require specialized, expensive equipment, which can hinder practice adoption. The Soil Health Financial Assistance Program aims to accelerate the adoption of soil health practices in Minnesota by providing cost-share for soil health equipment.

The Kanabec Soil & Water Conservation District (SWCD) was awarded a soil health equipment grant to purchase a no-till drill, which they rent out to local producers to make testing no-till practices more accessible. Stephanie Paulson, District Technician at Kanabec SWCD, said the drill is helping producers achieve Minnesota Agricultural Water Quality Certification and improve soil health on their operations.

Eric Heins, who farms in Wabasha County, also received a grant to purchase a no-till drill. "The no-till drill will change the landscape of our farm drastically," Heins said. "We have a goal to cover crop almost all 300 acres of our farm this year with the help of this grant. This will allow us to provide cover to the soils, graze our livestock on more acres, and improve the overall soil health."

For more information visit www.mda.state.mn.us/soil-health-grant or contact Jessica Jurcek at 651-802-3059, Jessica.Jurcek@state.mn.us.



Study shows higher profits for Ag Water Quality Certified farms for fourth straight year

Danielle Isaacson, MAWQCP Operations Coordinator

Farmers enrolled in the Minnesota Agricultural Water Quality Certification Program (MAWQCP) have higher profits than non-certified farms, according to a recent study by the Minnesota State Agricultural Centers of Excellence. This marks the fourth year of data highlighting improved financial outcomes.



The "Influence of Intensified Environmental Practices on Farm Profitability" study examined financial and crop production information from farmers enrolled in the Minnesota State Farm Business Management education program. The 101 MAWQCP farms in the study saw 2022 net farm income an average of more than \$23,500 or 7.5% higher than non-certified farms. Looking at four years of data, the average income for MAWQCP farms was \$16,000 - \$40,000 higher. Other key financial metrics are also better for those enrolled in the MAWQCP, such as debt-to-asset ratios and operating expense ratios.

The four years of data serve as an indicator of a positive return on investment for whole-farm conservation management that farmers implement to become certified.

"For four years now, we see that farm operations in the Minnesota Ag Water Quality Certification Program have, on average, better economic outcomes on top of the known environmental benefits," said Agriculture Commissioner Thom Petersen. "There are many advantages to the MAWQCP, and I encourage all farmers and landowners to look into certifying their land and contact their local Soil and Water Conservation District for more information."

To find details on the economic study, visit: www.agcentric.org/farm-business-management/annual-fbm-reports.

Farmers and landowners interested in becoming water quality certified can contact their local Soil and Water Conservation District or visit MyLandMyLegacy.com.



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