PFMD UPDATE

A BULLETIN FROM THE PESTICIDE AND FERTILIZER MANAGEMENT DIVISION

APRIL 2023

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DEPARTMENT OF AGRICULTURE

Director's Notes

Joshua Stamper, Director, Pesticide and Fertilizer Management Division

Arthropods (insects, spiders, and the like) make up about half of the animal biomass on this planet. To put that into perspective, arthropods outweigh every cow, chicken, and pig on earth ten times to one. There are more insects on this planet than all other forms of animal life combined. To put it mildly, there are a lot of bugs, and what they do is important both ecologically and economically.

Pollinator insects are a relatively small percentage of all insects, but they play a huge role in our food systems. In fact, close to 75 percent of the world's crops producing fruits and seeds for human consumption depend, at least in part, on pollinators for sustained production, yield and quality (Why bees matter, www.fao.org/3/i9527en/i9527en.pdf). However, these major food crops will often have pesticides applied to them to protect them from economic levels of insects or diseases. Knowing this, it's incredibly important that pollinators have a safe place to be when food and feed crops are not flowering. Habitat is that safe harbor for pollinators, and its increasingly difficult to find.

Habitat can take many forms, but the key is that it remains undisturbed or is managed in such a way as to not disrupt the life cycle of the pollinators. There are numerous programs for rural and urban landowners meant to expand the amount of habitat available to pollinators. Protecting and expanding pollinator habitat and using pesticides judiciously are two of the most important ways we can assure that future generations have the same access to wholesome and nutritious food that we do today. If you are interested in creating or preserving pollinator habitat, check out the resources below.

Pollinator & Biodiversity Toolbox
Minnesota Board of Water and Soil Resources
(https://bwsr.state.mn.us/pollinator-toolbox)

Promote Pollinators in Agricultural Landscapes (PDF)
(www.mda.state.mn.us/sites/default/files/inline-files/pollinatorsagland.pdf)

Strengthening Pollinator Habitats on Rural Land
Video with Commissioner Thom Petersen
(www.youtube.com/watch?v=kYbsMD6AqKQ)

A Message from Commissioner Thom Petersen

Pesticides are powerful tools for those in and out of the agriculture industry. Sometimes, one of those chemicals gains attention — attention that isn't always positive.

Each year since 2017, the first year dicamba was registered for use on dicamba-tolerant soybeans, the Minnesota Department of Agriculture (MDA) has fielded complaints of off-site movement onto neighboring property.

The MDA wishes to preserve this tool for farmers. But we must recognize the continued registration of dicamba products labeled for this use is dependent on these products being used without impacts on their neighbors' homes, farms, and gardens.

The MDA will again implement state-specific use restrictions for Minnesota during the 2023 growing season. These restrictions are the same ones implemented in 2022 when we saw a major decrease in complaints of off-target movement from 2021.

The 2023 label requirements for the products include a date cutoff of June 12 south of Interstate 94 and June 30 north of Interstate 94. There is also a temperature cutoff if the air temperature of the field at the time of application is over 85° or if the National Weather Service's forecasted high temperature for the nearest available location for the day exceeds 85°. The temperature restriction is statewide.

These restrictions are based on scientific evidence from our drift investigations. The peak of our complaints in the 2020 and 2021 growing seasons happened on approximately June 30. Symptoms of dicamba off-target movement usually show up on plants 2-3 weeks after application. Therefore, a June 12 cutoff date can help stop a repeat of complaints.

We saw evidence that these cutoff dates and temperature restrictions work when, in 2022, the MDA received 25 formal complaints and eight responses to an informal survey, all alleging off-target movement. This was a major decrease from 2021, which saw a total of 304 formal complaints and survey responses.

The restrictions are also supported by the Minnesota Soybean Growers Drift Taskforce and the University of Minnesota Extension, and we will continue our work with the U of M on research to better understand how these products can move off target. Our ability to gather as much data as we can on these products is critical for their continued use in the future.

It is also important for famers and applicators to understand that we will continue our enforcement of the use of these products by examining application records. Remember, accurate recordkeeping is also the best tool applicators have to prove they are following this complex label.

Remember: The label is the law. You are breaking the law by willfully or accidentally using dicamba, or any pesticide, without following the label language.

Lime Licensing Program Update

Jane Boerboom, Facility Management Supervisor

Information on program requirements can be found at www.mda.state.mn.us/pesticide-fertilizer/agricultural-liming-materials-ag-lime. If you have questions on licensing or tonnage reporting requirements, please contact Jane Boerboom at 612-214-6843 or Aglime.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. The MDA is an equal opportunity employer and provider.

MDA has BMPs to Help Protect Water and the Bees!

Kathleen Hall, Research Scientist

Neonicotinoid insecticides are useful tools for managing insect pests in both agricultural and non-agricultural settings; however, these insecticides can pose a risk to water quality and pollinators. To help address environmental concerns, the MDA encourages pesticide users to adopt best management practices (BMPs). The available BMPs list actions to prevent contamination of water resources and protect pollinators from exposure to neonicotinoids.

The MDA recently developed new water quality BMPs for the agricultural use of two neonicotinoid insecticides: clothianidin and imidacloprid. Examples of promoted practices include:

- Scouting fields regularly and using economic thresholds to help determine if, when, and where to apply;
- Minimizing seed dust generation and drift by avoiding planting treated seed during windy conditions (>15 mph) and when the wind is blowing toward nearby waterbodies; and
- Maintaining grass or vegetation buffers near tile outlets, in drainage ways, and along field boundaries.

The MDA also has a series of BMPs focused on pollinator protection for soil and foliar applications of neonicotinoids, use of neonicotinoid-treated seed, and home and residential use of neonicotinoids.

All pesticide BMPs are available on the MDA website at www.mda.state.mn.us/pesticide-fertilizer/pesticide-best-management-practices.

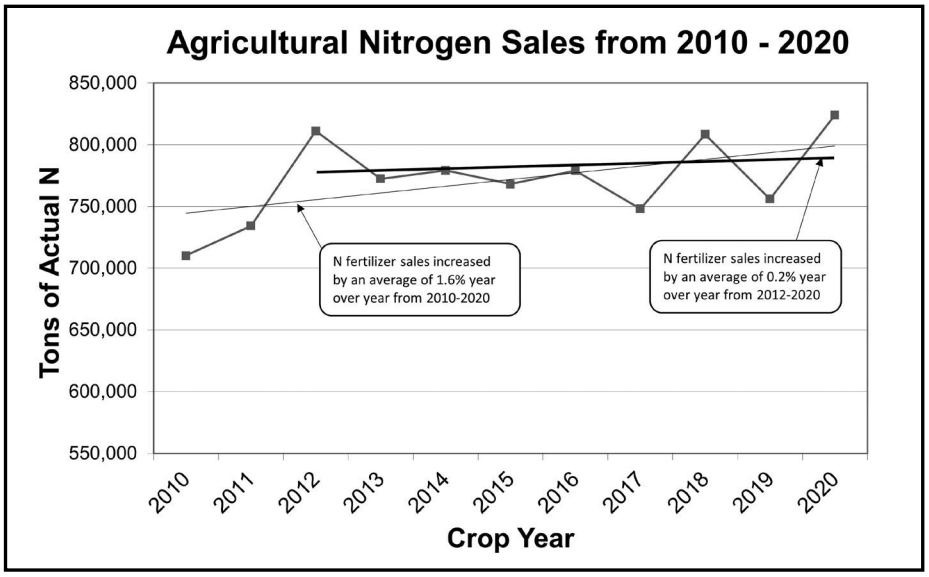
For more information, please contact Kathleen Hall at 651-201-6267 or Kathleen.Hall@state.mn.us.

Nitrogen Sales in Minnesota: 2010-2020

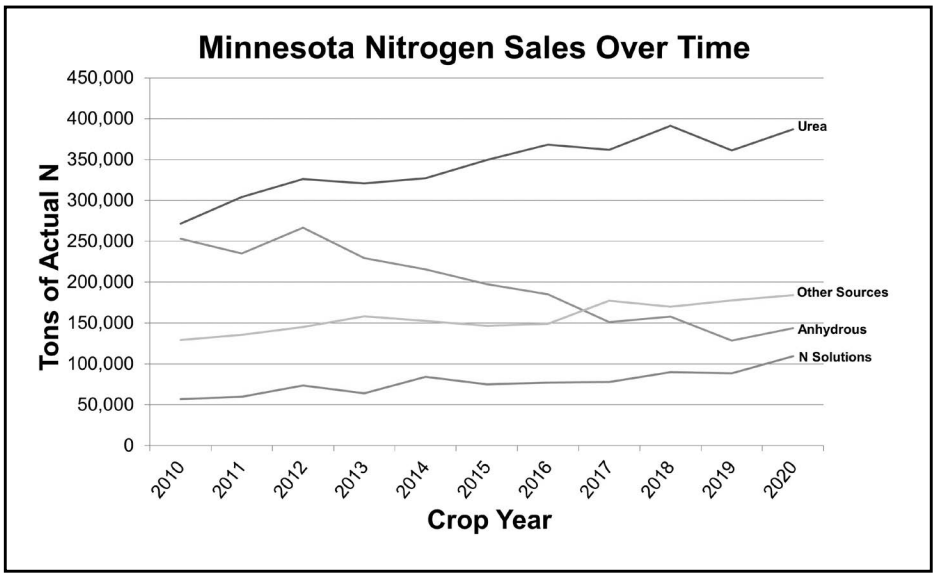
Thomas Bolas, State Program Administrator

Minnesota dealers have been reporting fertilzer sales since the 2010 crop year. A crop year begins July 1 and ends June 30.

During this eleven year time period, fertilizer sales have shown a slight average increase of approximately 1.6% per year. However, if we exclude 2010 and 2011, the average increase in sales drops to 0.2% per year. The year to year variability in sales is impacted by weather conditions, the prices of nitrogen and corn, and changes in crop acres, especially corn. Much of the fertilizer sold in Minnesota is used on corn.



Although nitrogen sales have been relatively flat, with less than an average 2% per year increase in actual nitrogen, the sources of nitrogen used in Minnesota have changed significantly. In the most recent data published, there were 824,000 tons of actual nitrogen sold. Sales of actual nitrogen from anhydrous ammonia have declined 43% from 2010 to 2020. Meanwhile, sales of actual nitrogen from urea, N Solutions (UAN), and other sources have increased by 42%, 92%, and 43%, respectively, over the same time.

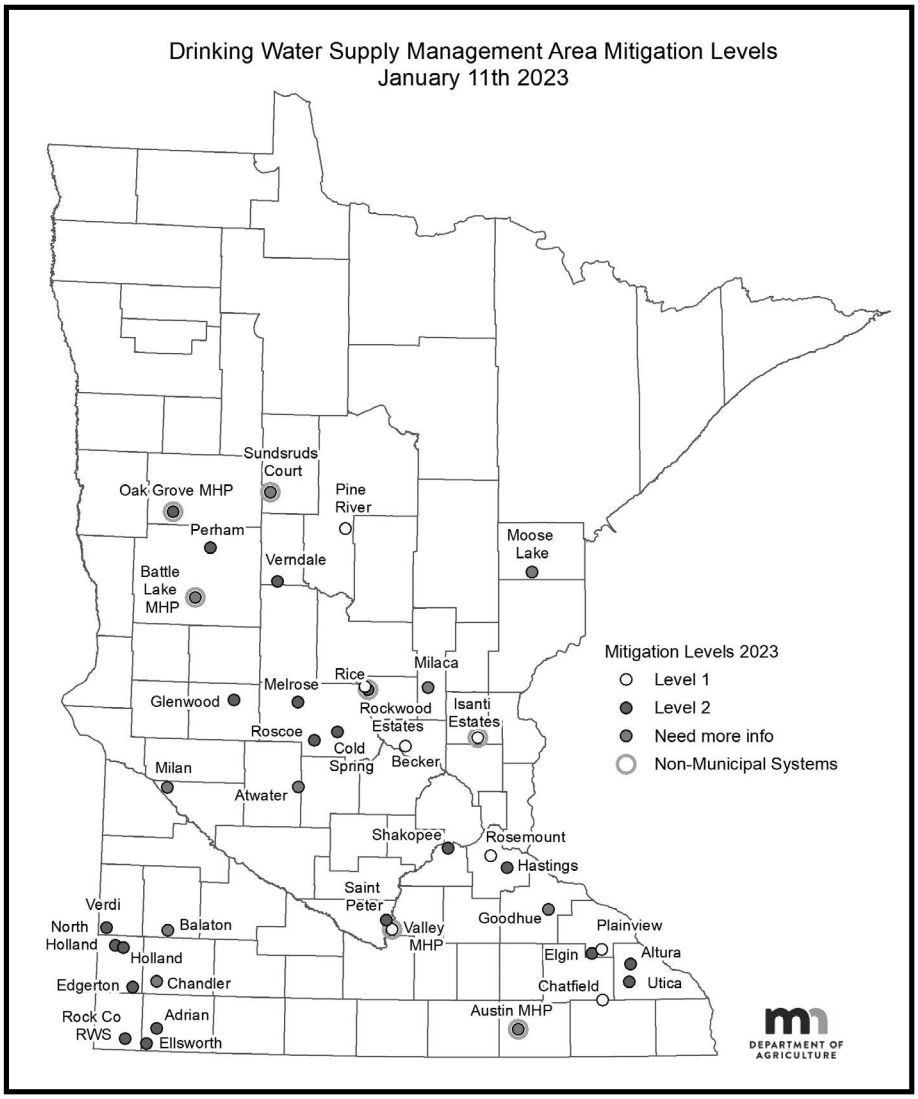


For more information, please contact Tom Bolas at 651-201-6336 or Thomas.Bolas@state.mn.us. Individual fertilizer sales reports can be found at www.mda.state.mn.us/pesticide-fertilizer/fertilizer-use-sales-data.

Groundwater Protection Rule and Fall Fertilizer Restrictions

Margaret Wagner, Fertilizer Nonpoint Source Section Manager

On January 15, the MDA issued an updated map that will help farmers across the state comply with the Groundwater Protection Rule. The rule restricts fall application of nitrogen fertilizer in areas vulnerable to contamination, and it outlines steps to reduce the severity of contamination in areas where nitrate is already elevated in public water supply wells.



The MDA has made changes to the Fall Nitrogen Fertilizer Application Restrictions map, which is accessible on the MDA website. Fall application restrictions in vulnerable areas begin each year on September 1. Farmers are encouraged to check the new map prior to the fall of 2023 to determine if their fields are subject to these restrictions. View the map at: www.mda.state.mn.us/vulnerableareamap.

There have been changes to the Drinking Water Supply Management Areas (DWSMAs) where the Groundwater Protection Rule applies:

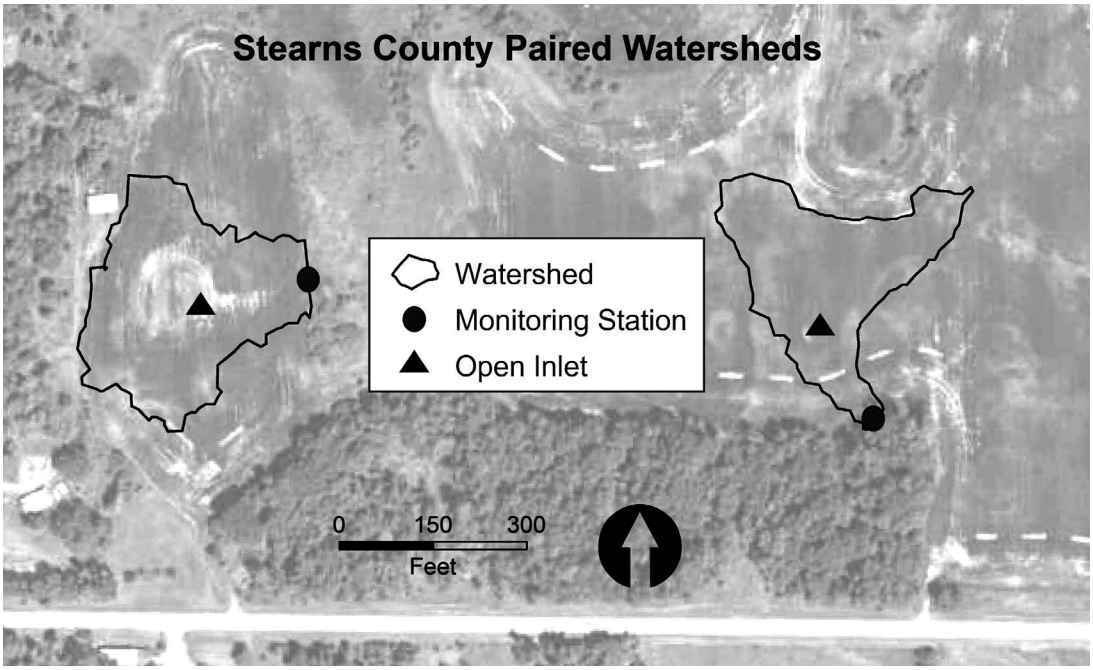
- Austin Mobile Home Park was added under “needs more info” and the MDA is evaluating information on the nearby landfill and other possible point sources.
- Isanti Estates and Valley Mobile Home Park were previously listed under “needs more info” and, based on a point source review, have moved to a Level 1 designation.
- Rockwood Estates met the criteria for Level 2 designation. A Local Advisory Team is being established in this area.
- Perham and Glenwood were previously listed under Level 1 and have met the criteria for a Level 2 designation. Local Advisory Teams are being established in these areas.
- Sauk Rapids was removed based on results from point source review and analysis.
- The boundaries for the Edgerton and Altura DWSMAs were changed by the Minnesota Department of Health.

The list of DWMSAs that are subject to the Groundwater Protection Rule is available at www.mda.state.mn.us/pesticide-fertilizer/mitigation-level-determination.

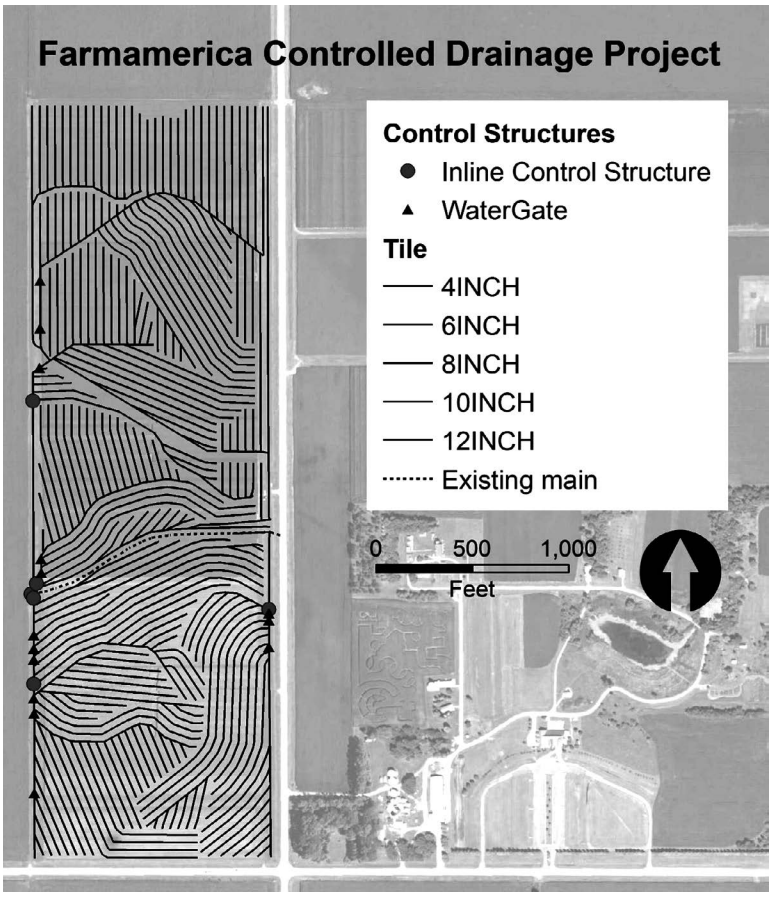
Discovery Farms Minnesota Expands with Two New Farms

Scott Matteson and Katie Rassmussen, Hydrologists

Discovery Farms Minnesota is a farmer-led effort to gather field-scale water quality information from farming systems across Minnesota. This year marks the 13th year of monitoring, with the addition of two new farms.



The first addition is in Stearns County and will be a paired watershed with both surface and subsurface tile monitoring. The fields are in a corn silage-soybean-wheat rotation with cover crops and manure application. Following the initial calibration phase, cover crops will be removed from one basin to assess the impacts cover crops have on nutrient movement in a field with manure application.



The second farm is a subsurface tile monitoring project located at Farmamerica. A 120-acre field was newly pattern-tiled in late fall 2022. This new tile configuration allows for the monitoring of four subsurface drainage watersheds. The field is split into a corn-soybean rotation and there will be two replicated paired watersheds, with two watersheds in conventional drainage and two with controlled drainage. The Farmamerica location will provide an excellent setting for showcasing conservation drainage in southern Minnesota.

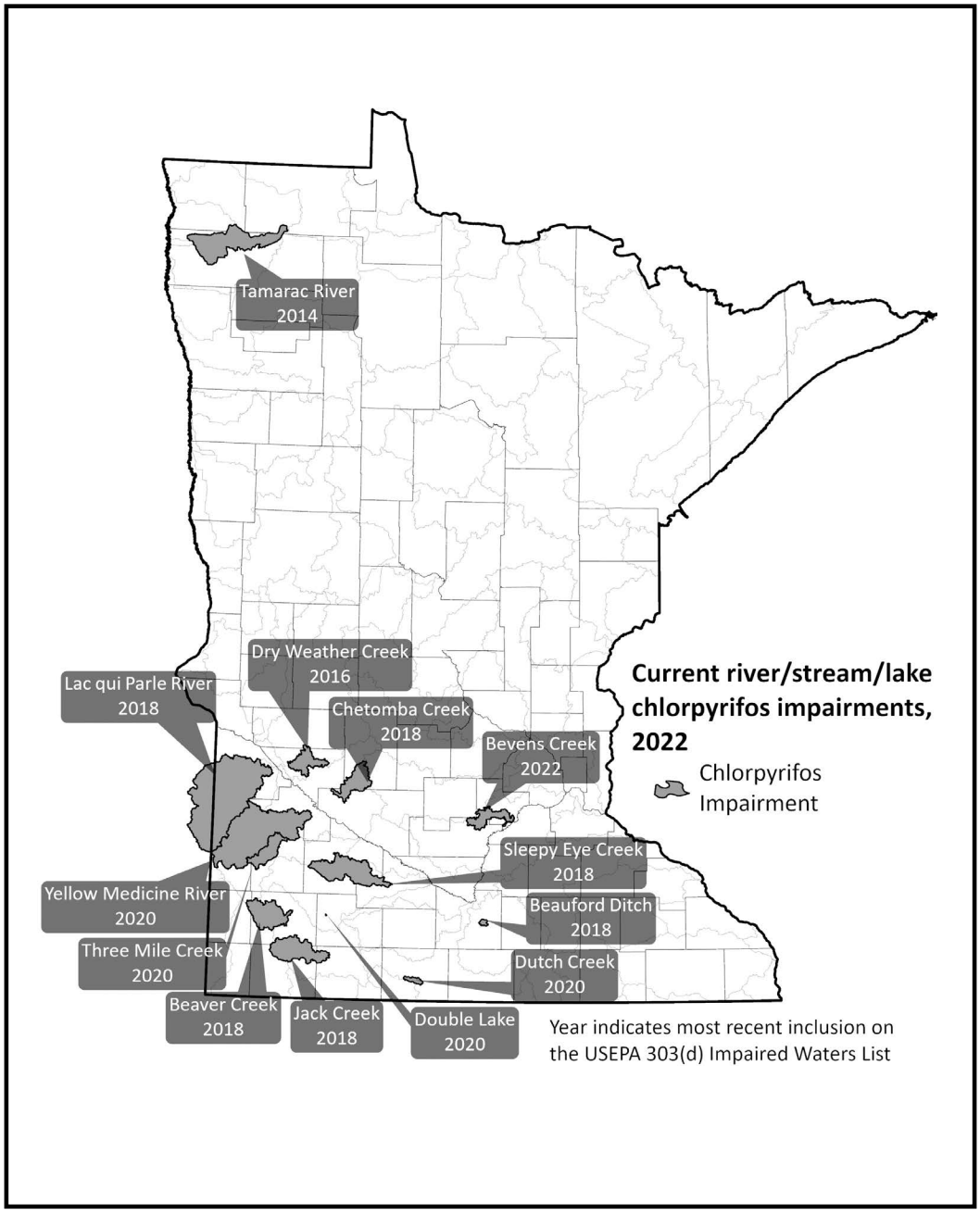
Once instrumented, all real-time data from the new farms will be available from the MDA's Contrail website at mda.onerain.com (click on Dashboards, then Discovery Farms Minnesota).

For more information, please contact Katie Rassmussen at Katie.Rassmussen@state.mn.us or Scott Matteson at Scott.Matteson@state.mn.us, and visit www.discoveryfarmsmn.org.

No Chlorpyrifos Detections in Minnesota Rivers and Streams in 2022

Dave Tollefson and Matt Ribikawskis, Hydrologists

The MDA has monitored for chlorpyrifos in rivers since the 1990's. While chlorpyrifos detections have been relatively rare (<3% annual detection frequency since 2005), 13 waterbodies are listed on the Environmental Protection Agency (EPA) Impaired Waters List for not meeting Minnesota chlorpyrifos water quality standards. Detections and associated impairments occurred most frequently in southwest and south-central Minnesota.



In August 2021, the EPA published its final rule revoking all chlorpyrifos tolerances, effectively canceling all food and feed uses. While this change does impact most chlorpyrifos use in Minnesota, nonagricultural uses on golf course turf, industrial sites, greenhouse and nursery production, sod farms, and wood products were unaffected by the label changes. Water quality data collected by the MDA did not impact the EPA's decision to end food and feed tolerances.

For the first time since 2004, chlorpyrifos was not detected in 2022. Removal of a waterbody from the EPA Impaired Waters List occurs after several years of monitoring showing that the stream is meeting the water quality standard(s). Assuming no additional detections occur, the MDA is anticipating the chlorpyrifos impairments will be proposed for delisting by the MPCA over the next few years.

For more information, please contact David Tollefson at 507-206-2882, David.Tollefson@state.mn.us; or Matt Ribikawskis at 507-316-4650, Matthew.Ribikawskis@state.mn.us.

A Refresher on Pesticide Application Record Keeping Requirements

Brian Clark and Robyn Frederick, Recertification Project Managers

It is always good to refresh your knowledge of important pesticide licensure requirements. One important topic is recordkeeping, and it differs slightly by license type.

License Type	Requirement
Noncommercial Applicators	Record all Restricted Use Pesticide (RUP) applications
Noncommercial Applicators (on a golf course)	Record all treatments (general use and RUP)
Commercial and Structural Applicators	Record all treatments (general use and RUP)

Only one application record is required when it is the same applicator, same customer, same day, and same tank mix. If any of these items change, a new record is required.

Record templates are available online (see link below). These templates give the minimum mandated requirements. Companies can add additional information, if needed.

Commercial and Noncommercial Application Records should include:

- Location of the site where pesticide was applied
- Date of application
- Time of application (start and finish)
- Temperature, wind speed, and wind direction (record it at the time and exact location of application)
- Applicator name, license number, and company name and address
- Pesticide information (brand name, EPA registration number, and rate used)
- Number of units treated
- Create record within 5 days of treatment and retain it for five years, and give a copy of the record to the customer

For more information and to access record templates visit www.mda.state.mn.us/licensing/licensetypes/pesticideapplicator/pestrecords. Or contact Pesticide Licensing at 651-201-6615 or Pesticide.Licensing@state.mn.us.

Chemigation Permit Updates

Jeff Lorentz, Chemigation Program Consultant

Chemigation permits are issued by the MDA to operators who apply fertilizer and/or pesticide through an irrigation system that is connected to a water source. Operators are prohibited under state law from applying fertilizers or pesticides this way unless the permit application has been submitted to the MDA, required fees have been paid, and the required antipollution device(s) is installed.

In center pivot chemigation systems, another name for an antipollution device is a check valve. Please be aware that two check valves in a series must be installed in a center pivot chemigation system for the pesticide applications. A single mainline check valve may be used for the fertilizer applications.

Apply for a chemigation permit online at www.mda.state.mn.us/licenses. Fees are $50.00 for a fertilizer-only permit; $250.00 for a pesticide-only or combination pesticide/fertilizer permit.

PLEASE RESPOND IF APPLICABLE:

If you no longer operate or use your chemigation system, please send an email with the permit number asking that the permit be deactivated to Jeffrey.Lorentz@state.mn.us or call Jeff at 320-249-7392.

Additional Information on chemigation permit requirements is available at www.mda.state.mn.us/chemigation-permit-program.

Anhydrous Safety Should be Top Concern

The MDA offers safety tips for those working with anhydrous ammonia fertilizer

Jane Boerboom, Facility Management Supervisor

Many farmers and custom applicators will soon apply anhydrous ammonia (NH3) before, during, and after harvest. Even with a rush against time and the weather, safety should never be compromised. Accidents involving NH3 have proven how dangerous and deadly the fertilizer can be when not handled properly.

The MDA is providing the following tips to safely field apply NH3:

- Always wear NH3-rated goggles and gloves. Never wear contact lenses.
- Be sure to have a clean and accessible emergency water supply of at least 5 gallons available.
- Exercise caution when making connections and disconnections of transfer lines, treating them as if they always contain NH3.
- Stand upwind when connecting, disconnecting, bleeding lines, or transferring NH3. Also, close, bleed, disconnect, and secure valves and transfer lines when taking breaks or disconnecting lines, and be sure to handle hose end valves by the valve body.
- Position equipment away and downwind from homes, people, and livestock.

Safety is also key to those maintaining NH3 equipment, operating NH3 storage facilities, and transporting NH3. Never assume NH3 lines are empty, always wear the required protective safety equipment, and have access to safety water (NH3 storage facilities should have a minimum of one open top container holding 150 gallons of clean, accessible water or an accessible emergency shower with a plumbed eyewash. A 5-gallon container of clean, accessible water should accompany NH3 nurse tanks).

If an accident or spill occurs, seek medical care if needed, immediately call 911, and then the Minnesota Duty Officer at 1-800-422-0798 or 651-649-5451.

You can find more safety, storage, and transportation information on the MDA's website at www.mda.state.mn.us/nh3.

Acetochlor Herbicide Impairment in Silver Creek

Naworaj Acharya, Research Scientist

The MDA monitors surface waters such as rivers and streams for pesticides. If a waterbody fails to meet the state water quality standards, it may be added to the Environmental Protection Agency's impaired waters list. In 2016, the Minnesota Pollution Control Agency added Silver Creek, part of the Bevens Creek watershed in Carver and Sibley counties, to the impaired waters list because of acetochlor detections above the state chronic water quality standard (3.6 µg/L). Acetochlor is a commonly used herbicide in corn, soybean, and sugarbeet.

The MDA is working with partners on a response plan to address the acetochlor impairment in Silver Creek. The goal of this multiyear effort is for Silver Creek to be removed from the impaired waters list. The response plan includes promoting acetochlor Best Management Practices (BMPs), which include both mandatory label requirements and voluntary practices.

The MDA developed the BMPs to prevent and minimize the contamination of waterbodies from the use of acetochlor in agriculture. Using BMPs can protect water by reducing the amount of pesticide needed and by minimizing the movement of the pesticide from the site of application. Water quality BMPs for acetochlor are available at www.mda.state.mn.us/sites/default/files/inline-files/acetochlorbmps.pdf.

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

Select MDA Pesticide & Fertilizer Management Division Enforcement Actions

Corinne du Preez, Agricultural Consultant

Edina, MN

A structural pest control company paid a $5,000 penalty for applying pesticides to a residence inconsistent with the pesticide labels and in a manner resulting in residues on multiple surfaces throughout the residence, requiring professional cleaning and the use of air scrubbers/purifiers.

Grove City, MN

A Minnesota certified Private Pesticide Applicator paid a $2,100 penalty for applying XtendiMax herbicide inconsistent with the product label by applying when the wind was blowing towards non-dicamba tolerant soybeans, failing to measure wind speed in the field of application at boom height both prior to and after application (one of two measurements), and an incomplete pesticide application record.

Watkins, MN

An agricultural facility with a Minnesota Pesticide Dealer license paid a $750 penalty for selling a Restricted Use Pesticide (RUP) to an unlicensed or non-certified applicator and failing to record a RUP sale on the RUP sales report.

Buffalo, MN

A Minnesota certified Private Pesticide Applicator paid a $5,350 penalty for applying Engenia herbicide inconsistent with the product label by not measuring the wind speed at boom height and using an unapproved tank mix partner for multiple applications; for incomplete application records by not, in part, conducting and documenting a survey of all adjacent fields for any sensitive areas, crops, or residential areas surrounding the field prior to applications; and for not documenting a sensitive crop/specialty crop registry was checked.

Benson, MN

An aerial applicator company paid a $1,750 penalty for applying pesticides inconsistent with the label, resulting in pesticide drift and impact on several beehives in the area. The applicator's license was also under a previous employer's name.

Medford, MN

A Minnesota certified Private Pesticide Applicator paid a $3,250 penalty for applying Engenia herbicide inconsistent with the product label by not completing required dicamba-specific training, applying when an adjacent sensitive crop (non-dicamba tolerant soybeans) was downwind for two application dates, and for incomplete application records.

Wheaton, MN

A Minnesota certified Private Pesticide Applicator paid a $1,000 penalty for applying a pesticide inconsistent with the label, resulting in pesticide drift.

Montevideo, MN

An agricultural operation paid a $4,850 penalty for applying a Restricted Use Pesticide without a Minnesota pesticide applicator license or a private pesticide applicator certification, applying Engenia herbicide inconsistent with the product label by not completing required dicamba-specific training, applying when sensitive crop (non-dicamba tolerant soybeans) was downwind for multiple applications, and for incomplete application records.

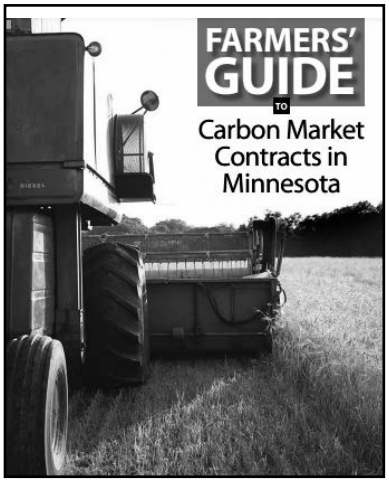
Water Quality Certification Program Supports Climate Smart Agriculture

Jess Jurcek, Program Development Specialist

Farming practices that protect water quality and reduce carbon emissions often go hand in hand. That is why the Minnesota Agricultural Water Quality Certification Program (MAWQCP) developed the Climate Smart Endorsement to recognize producers who excel at reducing their on-farm emissions through practices like cover cropping, no-till, establishing permanent vegetative cover, and more. Since it launched in 2021, more than 100 Water Quality Certified producers sought and earned the Climate Smart endorsement.

Climate Smart-endorsed producers are often excellent candidates to participate in agricultural carbon markets — agreements where companies pay farmers to implement practices that sequester carbon to offset their own emissions. However, these agreements are defined by contracts that can be confusing. To help Minnesota farmers navigate carbon market contracts, Minnesota Farmers Union (MFU), Farmers Legal Action Group (FLAG), and the MDA's MAWQCP released a Farmers' Guide to Carbon Markets. The Farmers' Guide uses information from actual carbon market contracts and helps equip producers for conversations with carbon market representatives.

"Carbon markets are like the 'Wild, Wild West' where everyone is shooting from the hip," said MFU member and MAWQCP certified producer Pat Lunemann of Twin Eagle Dairy. "No entity is there to assure that contracts are fair to both parties involved. Going forward, there is much potential for farmers to capture rewards for innovative practices on their farms, and the guide describes the opportunities and the obstacles that may be in front of us."



To view the Farmer's Guide to Carbon Markets, visit http://www.flaginc.org/2023/01/farmers-guide-carbon-market-contracts-in-minnesota-first-edition-january-2023/.

For more information, please contact Jess Jurcek at 651-802-3059 or Jessica.Jurcek@state.mn.us.

Minnesota Ag Weather Network Proposed Expansion

Stefan Bischof, Hydrologist

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

Ag commodity groups, farmers, researchers, and weather-related organizations have expressed the need and support for additional local weather information.

In cooperation with several partners and with their strong support, the MDA is proposing to expand the existing Minnesota Ag Weather Network across Minnesota's agricultural areas.

The proposed expansion will be completed in phases and take place over four to five years with approximately half (40) of the proposed stations installed in the first two years. The weather stations will be connected to the well-established and widely trusted NDAWN system.

The expansion of local and timely weather information will help farmers optimize the timing of manure, irrigation, fertilizer, and pesticide applications, as well as other inputs. More precise management will help to minimize leaching of nitrate to groundwater, minimize off-site movement of pesticides that can drift to nearby surface waters, and improve irrigation water use. Clean Water Land and Legacy Amendment funding for the expansion of the Minnesota Ag Weather Network is being considered during the 2023 legislative session.

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

DEPARTMENT OF AGRICULTURE

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Worker Protection Standard Webinar Series

Presented by the University of Minnesota and the MDA

Need to know more about the Worker Protection Standard regulations? Join a series of free one-hour webinars that cover aspects of who it applies to, how to comply, training and record-keeping requirements, and where to find resources.

Pre-register to receive a How to Comply manual and other resources by mail. All participants can also download the materials for free. Each session will include related information and resources, and will end with time for questions.

Audience: Anyone working in agriculture, producers, commercial & noncommercial applicators.

Registration: Upon registration, you will receive a link to join the webinar. Register for the webinars under "Related events" at https://extension.umn.edu/event/worker-protection-standard-how-comply-basics.

2023 Series Dates (10:30-11:30 a.m.)	Webinar Title
Monday, April 3	Worker Protection Standard: How to comply basics
Monday, May 8	Worker Protection Standard: Training requirements for handlers and workers
Monday, June 12	Worker Protection Standard: Central posting, record keeping, designated representative
Monday, July 10	Worker Protection Standard: Decontamination, PPE, emergency assistance
Monday, August 14	Worker Protection Standard: Respirator requirements
Monday, September 11	Worker Protection Standard: Restricted entry interval & application exclusion zone
Monday, December 4	Worker Protection Standard: Exemptions for immediate family & certified crop advisors

For more information, please contact Gregorio Mendez-Ortega at 507-344-3204 or Gregorio.Mendez-Ortega@state.mn.us.