



Pesticide Management Plan Committee

Member Comments

2024

Minnesota Department of Agriculture
Pesticide and Fertilizer Management Division

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Protecting, Maintaining and Improving the Health of All Minnesotans

September 9, 2024

Kathleen Hall, Ph.D.
Minnesota Department of Agriculture
625 N. Robert Street
St. Paul, Minnesota 55155

RE: Meeting of the Pesticide Management Plan Committee, June 2024

Dear Dr. Hall:

Thank you for the opportunity to review and comment on the data and findings in the Minnesota Department of Agriculture's (MDA's) 2023 Water Quality Monitoring Report (the "Report") and the information provided to the Pesticide Management Plan Committee (PMPC) during the committee meeting on June 17, 2024. I prepared the following responses to MDA's charge questions on behalf of the Minnesota Department of Health (MDH).

I. Groundwater

A. Charge Question 1: Is there a need for new Minnesota Department of Agriculture determinations (i.e., Common Detection) that would trigger development of pesticide water quality best management practices (BMPs) or related actions for groundwater?

To respond to this question, MDH reviewed the 2023 groundwater data for pesticides and/or their degradates that currently do not have a "common detection" designation using the guidelines provided by MDA for common detection status evaluation (bolded below and in the enclosed document)¹. *Table 1 in this letter provides a summary of my review for Guidelines 2 - 4 and 7.* To select pesticides for review, MDH used MDA's minimum threshold of $\geq 15\%$ detection frequency overall or in PMR 4 (Section 2.5 of the Report: "Analysis of additional pesticides") as a lower limit to characterize pesticide detections as potentially "common". MDA found the following analytes met the $\geq 15\%$ detection frequency threshold: bentazon, 4-hydroxychlorothalonil, clothianidin, dimethenamid, fomesafen, imazamox, imidacloprid, sulfentrazone, and thiamethoxam.

¹ Cyanazine and its degradates were excluded from this exercise since cyanazine use was cancelled in 2002.

Guideline 1. The scientific validity of the data upon which the evaluation is based

No validity issues were identified that would impact an evaluation of “Common Detection” pesticides. Of the analytes in Section 2.5 of the Report, MDA identified 4-hydroxychlorothalonil as a “marginally performing analyte”, meaning the associated QC recovery was outside of the lab’s acceptable range. Three 4-hydroxychlorothalonil groundwater results were flagged for the QC recovery issue, with recovery <40% in all three cases (i.e., reported concentrations are considered underestimates).² All three results were less than the method reporting limit.

Guideline 2. The frequency of detections and concentrations reported in the groundwater monitoring data and any associated trends over time

Frequency of Detections

Of the pesticides with at least 15% detection frequency, bentazon, 4-hydroxychlorothalonil, clothianidin, total dimethenamid, fomesafen, imidacloprid, and sulfentrazone were also detected ≥25% of samples in at least one PMR.

Concentrations

To characterize magnitude of concentration, MDH flagged pesticides that exceeded 1,000 ng/L as a lower limit and considered whether maximum concentrations exceeded 10% of a health-based guidance value (HBGV).

- Maximum concentrations were >1,000 ng/L for bentazon, 4-hydroxychlorothalonil, clothianidin, total dimethenamid, fomesafen, sulfentrazone and its 3-carboxylic acid degradate, and thiamethoxam.
- Maximum concentrations were ≥10% of their HBGVs for bentazon, 4-hydroxychlorothalonil, fomesafen, imidacloprid, and sulfentrazone.
 - The 90th percentile concentration of 4-hydroxychlorothalonil was also ≥10% of its HBGV and concentrations of this analyte exceeded the HBGV in eleven samples.
 - In 2023 targeted monitoring of 19 private wells in two PMR 4 counties, 4-hydroxychlorothalonil was detected in 32% of samples with 11% of wells exceeding 50% of the HBGV. The maximum concentration in these wells was 78% of the HBGV (Report Section 4.1.2).

Trends Over Time

Statistically significant increasing trends in detection frequency and/or concentration over time were reported for bentazon, clothianidin, dimethenamid+degradates, fomesafen, and sulfentrazone (Report Section 2.5).

- While 4-hydroxychlorothalonil was not assessed for trends, both detection frequency and maximum concentrations in PMR 4 have increased over time: Detection frequency=

² Personal communication with MDA (K. Hall), 7/18/24

25% (2020), 28% (2021), 29% (2022), and 32% (2023); maximum concentrations=4,040 ng/L (2020), 4,630 ng/L (2021), 11,000 ng/L (2022), and 12,700 ng/L (2023).

Guideline 3. The extent of use and general use profile of the pesticide

As an indicator of use, MDH evaluated MDA's pesticide sales data³.

- Of the pesticides in Section 2.5 of the Report, chlorothalonil, dimethenamid, and sulfentrazone rank in the top 25 for most pounds crop chemical sold.
 - Since seed treatment is excluded from MDA's sales reporting, pounds sold data cannot be used as an indicator of use for thiamethoxam, clothianidin and imidacloprid. Treating seed with these neonicotinoids is known to be common for corn and soybeans, two major Minnesota crops.
- All pesticides in Section 2.5 of the Report (i.e., bentazon, chlorothalonil, clothianidin, dimethenamid, fomesafen, imazamox, imidacloprid, sulfentrazone, and thiamethoxam) are used on at least one major Minnesota crop.

Guideline 4. The existence of a Health Risk Limit (HRL) for the pesticide or breakdown product set by the Minnesota Department of Health; and

Guideline 7. If a pesticide found in groundwater which is not a pollutant (i.e., it does not have an HRL) would be determined to be a common detection if an HRL existed.

Of the analytes in Section 2.5 of the Report:

- Bentazon, clothianidin, fomesafen, imidacloprid, and thiamethoxam have gone through MDH full chemical review, resulting in a Health Risk Limit (promulgated value) or Health Based Value (non-promulgated value).
- In the absence of degradate-specific review, MDH presumes bentazon AIBA has the same HBGV as the parent.
- 4-hydroxychlorothalonil, dimethenamid ESA, dimethenamid OXA have also gone through full MDH chemical review resulting in "risk assessment advice" (RAA) values. These values are generally based on more limited toxicological information than HBVs and HRLs. It is typical for pesticide degradates to have less available toxicology information compared to parent compounds, based on United States Environmental Protection Agency (U.S. EPA) testing requirements.
 - For 4-hydroxychlorothalonil, the short-term RAA value is based on a No Observed Adverse Effects Level (NOAEL) in a rat developmental study on the degradate itself. The endpoint (reduced body weight in pups) and Lowest Observed Adverse Effect Level (LOAEL) in this study were consistent with results from another 4-hydroxychlorothalonil developmental study, increasing confidence in the NOAEL on which the short-term RAA is based. The doses at

³ Sales data available: https://www2.mda.state.mn.us/webapp/lis/chemsold_default.jsp through year 2022

which adverse effects were seen in longer-term studies suggest that the developmental toxicity endpoint is likely to be a more sensitive endpoint. A database uncertainty factor of 10 was applied for insufficiently detailed reporting in the available EPA health risk summaries.

- Imazamox and sulfentrazone have not undergone MDH full chemical review and only have MDH “rapid assessment” values. Sulfentrazone is already on MDH’s 2024 chemical review workplan.

Guideline 5. All other associated land use factors which may be considered unique or unusual such as agronomic, meteorologic, or hydrologic events.

MDA did not report any agronomic, meteorologic, or hydrologic factors or events that may have contributed to unusually elevated pesticide detections or concentrations during the 2023 monitoring period. The Minnesota Department of Natural Resources reported that more than 90% of the state had below-normal precipitation in June, July, and August 2023⁴, which is consistent with Figure 1-2 of the Report. While many factors determine the likelihood of a pesticide reaching groundwater, including hydrologic and hydrogeologic conditions such as the amount and duration of precipitation, pesticide dilution and degradation, aquifer characteristics, etc., no specific conditions were attributed to unusually elevated pesticide detections in groundwater in the Report.

Guideline 6. Detections are not due to misuse of unusual or unique circumstances.

MDA did not report any misuse or unique circumstances that may have contributed to unusually elevated pesticide detections or concentrations during the 2023 monitoring period.

B. Charge Question 1 Response

Based on MDA’s guidelines for common detection evaluation, MDH recommends the following in response to Charge Question 1:

- Place chlorothalonil in Common Detection status. Not only is 4-hydroxychlorothalonil commonly detected in PMR 4 monitoring wells (32% detection frequency in 2023), but it is found at levels above its HBGV. Levels of 4-hydroxychlorothalonil were also above 50% of its HBGV in 11% of private drinking water wells during 2023 investigative sampling in two PMR4 counties.
- Consider placing bentazon, clothianidin, fomesafen, and imidacloprid in Common Detection status.
- Once MDH’s HBGV for sulfentrazone is released (expected early 2025), MDA should provide the PMPC with a summary of concentration results relative to the new HBGV.

⁴ <https://www.dnr.state.mn.us/climate/journal/2023-weather-and-climate-review.html>

C. Charge Question 2: Is there a need for pesticide product restrictions to protect water quality as a condition for registration?

Minnesota statute directs the Commissioner of Agriculture to impose restrictions on a pesticide to prevent “unreasonable adverse effects on the environment”. Unreasonable adverse effects on the environment" is defined in statute as any unreasonable risk to humans or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide or seed treated with pesticide.

D. Charge Question 2 Response

Based on the extent of 4-hydroxychlorothalonil contamination in PMR 4 monitoring wells and limited monitoring from private wells, MDH recommends that MDA develop a groundwater mitigation strategy for chlorothalonil that considers the need for product restrictions (e.g., reduced rates) and the potential implications of these actions (e.g., ability to control potato diseases, increased use of other fungicides). As U.S. EPA has already identified unacceptable risks from drinking water sourced from groundwater in its own chlorothalonil risk assessment, U.S.EPA’s 2023 proposed mitigation actions for chlorothalonil can be used as a starting point⁵.

E. Additional Groundwater-related Recommendations

- Since no chemical has been designated as a Common Detection pesticide since 2003, MDH recommends that MDA update the guidance and guidelines provided to the PMPC to ensure committee members are making useful and meaningful recommendations to MDA on whether to place pesticides in Common Detection status.
- MDA should assess the utility and feasibility of adding additional chlorothalonil degradates that have an intact cyano group to the current list of analytes. These degradates are considered to have similar toxicity profiles as chlorothalonil.
- Mancozeb is a broad- spectrum fungicide that is commonly used on potatoes. MDA has never monitored groundwater for its main degradate, ethylene thiourea (ETU), because it cannot be incorporated into existing MDA laboratory methods. However, ETU has a concerning toxicological profile (reflected in a relatively low MDH rapid assessment value) and mancozeb is in the top 10 pesticides currently sold in the state. While this lack of data alone is an information gap, any future state and/or federal actions to reduce chlorothalonil groundwater contamination may increase use of other fungicides on potatoes, including mancozeb. MDH recommends that MDA conduct targeted monitoring for ETU in monitoring wells located in potato-growing regions and contract with an outside lab to carry out the analysis.

⁵ Chlorothalonil: Proposed Interim Registration Review Decision. September 2023. Available on regulations.gov in docket number: EPA-HQ-OPP-2011-0840.

- Pyroxasulfone is an herbicide used on corn and soybeans, among other sites. MDA currently monitors for the parent and the M1 degradate. MDA should assess the feasibility of adding the M3 degradate to its analyte list, as it is also considered a major degradation product and was identified by U.S. EPA as a residue of concern in drinking water.

Surface Water

A. Charge Question 1: Is there a need for new MDA determinations (i.e., surface water pesticide of concern) that would trigger development of pesticide water quality best management practices (BMPs) or related actions for surface water?

MDA's five guidelines for determination of "Surface Water Pesticide of Concern" are similar to those for groundwater except Guideline 4 instructs the PMPC to consider concentrations relative to existing water quality standards or guidelines (see enclosed document). MDH's review focused on Guideline 4 and the pesticides in Section 3.5 of the Report, which provides information on pesticides with detections $\geq 10\%$ of their lowest numeric reference value over the past five years⁶.

Guideline 4. Trends and concentrations of the pesticide in surface waters and the relationship of the detected concentrations relative to a water quality standard, water quality criterion, or water quality guideline.

Of pesticides not currently designated as surface water pesticides of concern, metolachlor had the most detections $\geq 10\%$ and $\geq 50\%$ of its reference value (n=147 and 10 respectively) from 2019-2023, but only one result has been above the reference value and no increasing trend in detections greater than 10% of the reference value is seen in Table 3-22. Metolachlor sales have increased every year over the past ten years, from about 2,000,000 pounds active ingredient sold in 2012 to nearly 7,000,000 pounds active ingredient sold in 2022³. With its current extent of use, it is important to continue to closely monitor metolachlor in surface water.

There have been 100 detections of pyroxasulfone $\geq 10\%$ of its reference value in the past five years. MDA did not evaluate the degradate pyroxasulfone M1 because no surface water reference value was identified for M1. The maximum 2023 pyroxasulfone M1 concentration alone is 22% of the reference value used for the parent compound and it had a higher detection frequency and storm flow concentration than the parent in surface water.

Wide fluctuations in overall precipitation over the past few growing seasons have made it challenging to identify and interpret trends over time. MDA reported drought conditions in 2021 and 2023 and normal or above normal precipitation in 2020 and 2022 (Report pg. 3-57). In

⁶ The duration component of the reference values cannot not be considered by the PMPC in making comparisons to pesticide concentrations.

2021 and the most current year of data, below normal precipitation likely resulted in lower detection frequencies and concentrations due to limited runoff and storm flow conditions in rivers and streams. A higher proportion of samples than typical had to be collected during baseflow conditions as well.

B. Charge Question 1 response

As shown in Figure 3-23 and Table 3-21 of the Report, MDA has applied the “Surface Water Pesticide of Concern” designation to the pesticides with the most detections $\geq 50\%$ of their lowest reference values over the past five years. MDH does not see a need for new determinations of “Surface Water Pesticides of Concern” at this time. To improve the PMPC’s ability to respond to this charge question in the future, MDA should:

- Compare pyroxasulfone M1 results alone or summed with the parent compound to a numeric reference value or look for other ways to provide context to the M1 detections. MDA could also request that U.S. EPA develop Aquatic Life Benchmarks (ALBs) for pyroxasulfone M1 (and M3 if MDA plans to add this to its analyte list).
- Improve its capability to assess and interpret trends in pesticide surface water concentrations and reference value exceedances over time by accounting for statewide annual or May-August precipitation variability. This could be done visually in figures or by using multivariable statistical methods that adjust for overall meteorologic conditions, such as annual precipitation departure from normal.

C. Charge Question 2: Is there a need for pesticide product restrictions to protect water quality as a condition for registration?

To respond to this charge question, MDH considered the need for product restrictions to protect surface water quality for the pesticides that are currently designated as “Surface Water Pesticides of Concern”. Neonicotinoid pesticides stand out as having the most detections $\geq 50\%$ of, and above, their applicable reference values and the highest number of 21-day periods with average concentrations greater than their chronic benchmarks in the past five years. In contrast to clothianidin, there have been many detections and 21-day periods with average imidacloprid concentrations greater than the EPA ALB in urban areas/PMR 10. In these areas, 90th percentile concentrations are increasing over time.

D. Charge Question 2 response

Neonicotinoids (including thiamethoxam which degrades rapidly to form clothianidin) should remain a focus of MDA’s efforts to mitigate potential adverse ecologic impacts in rivers and streams in agricultural areas. Imidacloprid should be a specific focus of mitigation efforts in urban/suburban areas.

MDH recommends that MDA:

- Determine whether strategies beyond Best Management Practices are needed to address current levels of neonicotinoid surface water contamination in agricultural areas.
- Investigate and provide more information to the PMPC on drivers of imidacloprid surface water detections and concentrations in the urban network and PMR 10. This would assist the PMPC in responding to the charge question on need for product restrictions.

MDH commends MDA on its rigorous monitoring program which continues to be valuable in identifying water quality concerns and protecting Minnesota's water resources. Thank you for the opportunity to provide comments. If you have questions about the comments, please contact me at (651) 201-4922 or deanna.scher@state.mn.us.

Sincerely,



Deanna Scher, Ph.D.
Environmental Surveillance & Assessment Section
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cc: David Liverseed, Manager, MDH Environmental Surveillance and Assessment Section

Enclosure: Pesticide Management Plan Committee Comment Guidance

Table 1. Evaluation of need for new Common Detection designations based on 2023 data for pesticides with ≥15% detection frequency in at least one PMR

	>25% detection frequency ²	Increasing trend in detection frequency and/or concentration ³	Ranks in top 25 for lbs. sold ⁴	Use on major MN crop ⁵	Conc. > 1,000 ng/L	HRL, HBV, or RAA available	Max conc. ≥10% HBGV ⁶	Max conc. ≥50% HBGV or exceeds HBGV ⁶
Bentazon ¹	Yes	Yes	No	Yes	Yes	Yes	Yes	No
4-hydroxy chlorothalonil	Yes	Time series graph and trend test not provided. Detect. freq. and max conc. have increased consecutively over past 4 yrs.	Yes	Yes	Yes	Yes	Yes	Yes
Clothianidin	Yes	Yes	N/A due to seed treatment use	Yes	Yes	Yes	No	No
Total dimethenamid	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Fomesafen	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Imazamox	No	No	No	Yes	No	No	No ⁷	No
Imidacloprid	Yes	No	N/A due to seed treatment use	Yes	No	Yes	Yes	No
Sulfentrazone ⁸	Yes	Yes	Yes	Yes	Yes	No	Yes ⁷	No
Thiamethoxam	No	No	N/A due to seed treatment use	Yes	Yes	Yes	No	No

¹ Bentazon and its major degradate should be summed together based on the assumption of equivalent toxicity in absence of degradate-specific data and/or assessment. Since summed concentrations were not provided to the PMPC, only the parent compound is considered in Table 1.

² Based on 2023 data statewide or in a specific PMR.

³ Statistically significant increasing trend in detection frequency, median, or 90th percentile concentration. Trend tests for pesticides not in common detection status were only provided to the PMPC for PMR 4.

⁴ Based on crop chemical pounds sold in 2022 from MDA pesticide sales database search: http://www2.mda.state.mn.us/webapp/lis/chemsold_default.jsp

⁵ Major crops defined as corn, soybean, wheat, dry edible beans, oats, potato, hay, alfalfa, and sugar beet.

⁶ *Comparison of concentrations to health-based reference values is not a guideline for making Common Detection determinations in the Minnesota Pesticide Management Plan.*

⁷ HBGV based on a MDH Rapid Assessment (“RA”) value.

⁸ Sulfentrazone and its major degradate should be summed together based on the assumption of equivalent toxicity in absence of degradate-specific data and/or assessment. Since summed concentrations were not provided to the PMPC, only the parent compound is considered in Table 1.

Pesticide Management Plan Committee

Comment Guidance

Pesticide Management Plan Committee (PMPC) members are invited to submit supplemental letters or materials to the Commissioner to elaborate on specific points or recommendations following the PMPC meeting.

Please submit comments by email to Kate Hall (Kathleen.Hall@state.mn.us) by [REDACTED]. Comments will be carefully reviewed and presented to the Commissioner.

Questions

In preparing your comments, we ask that you consider the following questions. Additional comments are also always welcome.

As a result of your review of pesticide and water quality data,

1. Is there a need for new Minnesota Department of Agriculture (MDA) determinations (i.e., common detection or surface water pesticide of concern) that would trigger development of pesticide water quality best management practices (BMPs) or related actions for groundwater or surface water?
2. Is there a need for pesticide product restrictions to protect water quality as a condition for registration?

Guidelines

The following guidelines are provided to help respond to the above questions.

Question 1

To answer Question 1, refer to the criteria to be considered in making “common detection” status determinations for groundwater and “surface water pesticide of concern” status determinations for surface water outlined in the [Pesticide Management Plan](#), Chapter 9 “Evaluation,” pp. 61-66 (summarized below).

Common Detection Status in Groundwater

Consider the language in [Minn. Stat. § 103H](#) regarding common detection:

Common detection. ‘Common detection’ means detection of a pollutant that is not due to misuse or unusual or unique circumstances, but is likely to be the result of normal use of a product or a practice. [‘Pollutant’ means a chemical or substance for which a health risk limit has been adopted.]

Evaluation of Detection of Pollutants. Subdivision 1. Methods. (a) The commissioner of agriculture for pollution resulting from agricultural chemicals and practices and the Pollution Control Agency for other pollutants shall evaluate the detection of pollutants in groundwater of the state. Evaluation of the detection may include collection technique, sampling handling technique, laboratory practices, other

quality control practices, climatological conditions, and potential pollutant sources. (b) If conditions indicate a likelihood of the detection of the pollutant or pollutant breakdown product to be a common detection, the commissioner of agriculture or the Pollution Control Agency must begin development of best management practices and continue to monitor for the pollutant or pollutant breakdown products.

The Pesticide Management Plan also offers the following guidelines for common detection status evaluation:

Consider...

1. The scientific validity of the data upon which the evaluation is based.
2. The frequency of detections and concentrations reported in the groundwater monitoring data and any associated trends over time.
3. The extent of use and general use profile of the pesticide.
4. The existence of a Health Risk Limit (HRL) for the pesticide or breakdown product set by the Minnesota Department of Health. In the absence of an HRL, an analysis will be conducted to request an HRL, if one has not already been requested.
5. All other associated land use factors which may be considered unique or unusual such as agronomic, meteorologic, or hydrologic events.
6. If conditions indicate a likelihood of the detections of the pollutant or pollutant breakdown product to be a common detection as defined in [Minn. Stat. § 103H.005 subd. 5](#) (i.e., detections are not due to misuse of unusual or unique circumstances).
7. If a pesticide found in groundwater which is not a pollutant (i.e., it does not have an HRL) would be determined to be a common detection if an HRL existed.

Surface Water Pesticide of Concern Status in Surface Water

As with common detection status in groundwater, the Pesticide Management Plan offers the following guidelines for evaluation for determination of surface water pesticides of concern:

Consider...

1. The scientific validity of the data upon which the recommendations are based.
2. The extent of use and general use profile and the anticipated status of registration of the pesticide.
3. The existence of a water quality standard, water quality criterion, or water quality guideline for the pesticide or breakdown product set by the Minnesota Pollution Control Agency. In the absence of a standard, an analysis will be conducted to determine whether to request a standard, if one has not already been requested.
4. Trends and concentrations of the pesticide in surface waters and the relationship of the detected concentrations relative to a water quality standard, water quality criterion, or water quality guideline.
5. All other associated land use factors which may be considered unique or unusual such as agronomic, meteorologic, or hydrologic events.

Question 2

To answer Question 2, refer to the [Pesticide Management Plan](#), Chapter 10 “Mitigation,” pp. 79-80 (summarized below) and [Minn. Stat. § 18B.26 subd. 5.](#):

(a) The commissioner may not deny the registration of a pesticide because the commissioner determines the pesticide is not essential.

(b) The commissioner shall review each application and may approve, deny, or cancel the registration of any pesticide. The commissioner may impose state use and distribution restrictions on a pesticide as part of the registration to prevent unreasonable adverse effects on the environment.

(c) The commissioner must notify the applicant of the approval, denial, cancellation, state use or distribution restrictions.

(d) The applicant may request a hearing on any adverse action of the commissioner within 30 days after being notified.

(e) The commissioner may exempt pesticides that have been deregulated or classified as minimum risk by the United States Environmental Protection Agency from the requirement of registration.

“Unreasonable adverse effects on the environment” are defined in [Minn. Stat. § 18B.01 subd. 31.](#):

“Unreasonable adverse effects on the environment” means any unreasonable risk to humans or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide.

August 5, 2024

SENT VIA EMAIL

Commissioner Thom Petersen
Minnesota Department of Agriculture
625 Robert Street North
St. Paul, MN 55155

RE: Meeting of the Pesticide Management Plan Committee, June 2024

Dear Commissioner Petersen:

Thank you for the opportunity to participate in the Minnesota Department of Agriculture's (MDA) Pesticide Management Plan Committee (PMPC) meeting on June 17, 2024. My staff and I have reviewed the meeting materials, including the 2023 Water Quality Monitoring Report, and are happy to provide the following comments.

Specific to the responsibilities of the PMPC, the MDA has asked members to consider the following:

As a result of your review of pesticide and water quality data,

1. Is there a need for new Minnesota Department of Agriculture (MDA) determinations (i.e., common detection or surface water pesticide of concern) that would trigger development of pesticide water quality best management practices (BMPs) or related actions for groundwater or surface water?
2. Is there a need for pesticide product restrictions to protect water quality as a condition for registration?

The Minnesota Pollution Control Agency (MPCA) commends the annual work of the MDA to monitor and report pesticides detected in surface and groundwater throughout the state. We strongly support MDA's efforts to maintain both its monitoring efforts and analytical capabilities; these are critical to all our ongoing work to protect human health and the environment from any adverse impacts of pesticides. At this time, we do not see a need for new determinations of common detection pesticides or surface water pesticides of concern.

The MPCA is working closely with MDA staff to address delisting of sites impaired by chlorpyrifos. As chlorpyrifos was removed from most agricultural uses in 2022, it is encouraging that no detects for chlorpyrifos were reported in the 2023 Monitoring Report. The next draft impaired waters list is anticipated to be public noticed in the fall 2025 and submitted to the U.S. Environmental Protection Agency for approval in April 2026. However, as EPA has rescinded those restrictions on chlorpyrifos it is likely that new detects of the pesticide will be reported during the 2024 growing season.

In regard to impairments, the MDA implementation of the Chlorpyrifos Response Plan that serves to address existing impairments and detects of chlorpyrifos, and more recently, a plan for outreach to address an acetochlor impairment in the Silver Creek watershed are great efforts to deal with these issues.

Commissioner Petersen

Page 2

August 5, 2024

Neonicotinoid pesticides may be one group of insecticides used in lieu of chlorpyrifos, and the MPCA remains concerned about the increased detection in surface waters of these pesticides, both individually and as a class. The MDA's decision to designate imidacloprid and clothianidin as "pesticides of concern" and implementing BMPs for surface water provides an important means for addressing the increased detections of these chemicals. The MPCA is considering development of water quality standards for both imidacloprid and clothianidin and has assigned staff to this effort. The on-going monitoring work done by MDA to evaluate the occurrence and trend of these neonicotinoids in surface water will be an important element in prioritizing water quality standards development.

Thank you again for the opportunity to comment. If you have any questions about our comments, please contact me at 651-757-2788 or william.cole@state.mn.us.

Sincerely,

Bill Cole

This document has been electronically signed.

Bill Cole

Supervisor

Water Quality Standards Unit

Environmental Analysis and Outcomes Division

BC:kj

Attachment

cc: Kathleen Hall, MDA (w/attachment)
Paul Pestano, MPCA (w/attachment)
Phil Monson, MPCA (w/attachment)



Jason Garms, Agricultural Program Liaison
DNR Government Relations Unit
500 Lafayette Road
Saint Paul, MN 55155

July 30, 2024

Commissioner Thom Petersen
Minnesota Department of Agriculture
625 Robert Street North
Saint Paul, MN 55155

Dear Commissioner Petersen,

The Minnesota Department of Natural Resources (DNR) appreciates the opportunity to provide comments on the Minnesota Department of Agriculture's (MDA) 2021 Water Quality Monitoring Report. We would also like to acknowledge the significant effort that goes into monitoring Minnesota's ground and surface waters for agricultural chemicals. Understanding and managing the potential risks to Minnesota's water resources is essential for the quality of life for all who live, work, and enjoy the outdoors in this state.

The DNR would like to support the ongoing implementation of the State Pesticide Management Plan. To that end, there are a couple areas of collaboration worth noting:

- 1) Recognizing that another DNR observation well was added as monitoring sites in 2023, there may be additional opportunities to share resources. The DNR is open to considering how DNR observation wells and other DNR administered resources can contribute to MDA's network of sampling locations.
- 2) In recent years, neonicotinoid insecticides have garnered significant attention due to the implications for pollinators and other wildlife. With responsibilities for monitoring the health of Minnesota's wildlife, DNR researchers have collected data on potential neonicotinoid exposure to certain avian species and white-tailed deer. As the DNR continues to explore the potential impacts of neonicotinoids, and other pesticides, it may behoove our agencies to occasional share status updates. I would be more than willing to coordinate such updates when the opportunity and interest presents itself.

I will be renewing my seat on the PMPC and appreciate the opportunity to continue in that capacity. As always, I am available to help coordinate any collaborative efforts between the DNR and MDA.

Sincerely,

Jason Garms

DNR Agricultural Program Liaison
Minnesota Department of Natural Resources

July 31, 2024

Commissioner Thom Petersen
Minnesota Department of Agriculture
625 Robert Street North
St. Paul, MN 55155

RE: MN Pesticide Management Plan Committee

Dear Commissioner Petersen,

I would like to thank you for the opportunity to participate in the Pesticide Management Plan Committee and the invitation to provide comments regarding pesticide management in relation to the MDA's 2023 Water Quality Monitoring Report. I would like to commend the Minnesota Department of Agriculture on the significant effort that goes into monitoring the ground, surface, and rainwaters for agriculture chemicals.

In response to the question asked of this committee as to whether there is a need for the MDA to make a new determination for common detection that would trigger development of pesticide water quality best management practices (BMPs) or related actions for groundwater or surface water, the answer is yes. I would like to make the recommendation for the analyte Metolachlor to be added to the list of "surface water pesticide of concern". Metolachlor had a detection frequency of 61% with the metolachlor ESA and metolachlor OXA having a detection frequency of 89%. The reference values were not exceeded for this analyte and its degradates. Metolachlor was detected in every PMR.

Recommendation of 2,4-D being added to list of "surface water pesticide of concern" and have BMPs implemented. 2,4-D was detected in every PMR and at every rainfall station with a 76% detection frequency. This is decreased from last year but still a high detection rate. The levels have not exceeded reference levels. I theorize that 2,4-D in the surface water is contributing to the 2,4-D in the atmospheric deposition through evaporation. Implementation of BMPs could potentially mitigate the detections of 2,4-D in the surface water and rainwater.

Recommendation that there is a need for BMP's of chlorothalonil in PMR 4 Central Sands. There were no detections of chlorothalonil in any of the regions. In Region 4 Central sands, the analyte 4-Hydroxy-chlorothalonil had a detection frequency of 18%. This is an 8% increase in detection frequency in Region 4. The immediate concern is with the level. The RAA22 reference value is 2,000 ng/L. The maximum concentration of 4-Hydroxy-chlorothalonil was at 12,700 ng/L and increased from 11,000 ng/L last year. This is more than 5 times the reference level. This is potentially due to the hydrological soil types in that region. There is a need for BMPs for this analyte in PMR 4. Recommendation of BMPs for sandy soils to mitigate leaching of chlorothalonil and degradates into groundwater especially for areas and regions that are not currently being monitored.

Recommend assessing merit and feasibility of testing for triclopyr degradate TCP (3,5,6-Trichloro-2-pyridinol). Triclopyr has been detected in every PMR that is currently monitored with a 10% detection frequency. TCP is a major initial product of degradation for triclopyr and chlorpyrifos. The EPA has established aquatic life benchmarks for the degradates of triclopyr including TCP. Based on the draft ecological risk assessment for registration review, the TCP degradate is several orders of magnitude more chronically toxic compared to triclopyr acid and triclopyr triethylamine salt (TEA). As a result of that assessment, the reference values for the degradate TCP are significantly lower than the reference values for the parent compounds¹.

I would also like to recommend additional sampling analysis. Review of the pesticide sales and use data shows that there are high numbers of sales and use of pyrethroids but there is no detection of pyrethroids in surface or ground water. I believe this to be attributed to the hydrophobic properties of those analytes. I recommend developing passive sampling methods for analytes. There are passive sampling methods available that can capture hydrophobic analytes over time.

Recommendation of sediment sampling for analytes that have a high octanol log KOW. Especially for analytes that have a log KOW of 5 or 6. These analytes are typically not found in the water common and can be missed as they will bind to organic material that is present. Doing just base flow sampling is potentially missing analytes that are present. Recommendation of an increasing Tier 3 sampling.

Atrazine and degradates continue to be of concern for surface water. Atrazine was detected in 59% of surface water samples and every PMR that is monitored. Hydroxyatrazine was detected in 95% of samples. Atrazine had a maximum detection of 16,400 ng/L. This is above the Minn. 7050 Chronic T value of 10,000 ng/L. Review of labels of various Atrazine products shows that there is language for the protection of surface and ground water. Recommendation of making current BMPs listed by the MDA as part of the Atrazine labels to decrease the amount of Atrazine that is entering surface and ground water. The addition of BMPs as part of the label would make it a requirement as opposed to a voluntary practice.

¹ Triclopyr Interim Registration Review Decision Case Number 2710 December 2020

<https://nepis.epa.gov/Exe/ZyNET.exe/P1012S1U.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2016+Thru+2020&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C16thru20%5Ctxt%5C0000025%5CP1012S1U.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL>

I would again like to thank you for this opportunity to be involved in the Pesticide Management Planning Committee and submit recommendations for the protection and monitoring of Minnesota's valuable water resources.

Miigwech,

A handwritten signature in black ink, appearing to read "Renee Keezer". The signature is written in a cursive style with a horizontal line drawn through the middle of the letters.

Renee Keezer

MS Environmental Science

BS Environmental Health and Toxicology

BA Indigenous Studies

Kathleen Hall
Minnesota Department of Agriculture
625 Robert Street North
St. Paul, MN 55155
Kathleen.Hall@state.mn.us

Thank you for the opportunity to be a part of the PMPC process and be involved with these valuable discussions. The steps the MDA and this group have taken over the years continue to provide successes. The data and monitoring report from this year was well done and extensive.

I encourage the MDA to prioritize education to the community and industry partners, as it is vital for future successes. As an industry, they need to be aware of this data, and fully consider alternative products and practices. As a small part of the agriculture industry, turf managers continue to highlight the professionalism and stewardship efforts our industry demonstrates.

The new interactive maps will be helpful, as we need more information and data on the sampling locations. It's hard to compare these numbers when we are only assuming the current land use of each site, based on PMR location. Especially in regard to 4-hydroxy, and its prevalent use on potatoes. As we discuss its use on turf further, we need to differentiate between the use sites as we analyze degradate numbers. As we analyze this data each year, understanding the sampling sites further is crucial to making more appropriate comments.

The two questions we were charged in addressing are:

1. Is there a need for new Minnesota Department of Agriculture (MDA) determinations (i.e., common detection or surface water pesticide of concern) that would trigger development of pesticide water quality best management practices (BMPs) or related actions for groundwater or surface water?
2. Is there a need for pesticide product restrictions to protect water quality as a condition for registration?

Based on the most recent data, there is no need to add any new Common Detection or Surface Water Pesticides of Concern. Overall, most data show levels well below reference values, apart from already identified analytes, of which trend data seems consistent and without large trend changes upward. Analytes above the 10% threshold still maintain relatively low maximums relative to reference values.

4- Hydroxychlorothalonil: With it only being found in PMR 4, and not enough data for a trend analysis, no further status need be considered as of yet. Potentially in the future, but more needs to be known about this particular degradate. The maximum shown in PMR is significantly higher than the 90th percentile (12,700 vs. 2,380), what are the additional factors in this sample? Expanded sampling is necessary, especially since this is not yet found in other PMR's.

Thank you again allowing me to represent the turf industry throughout this review process.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Aumock". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Chris Aumock
Executive Director
Minnesota Golf Course Superintendents Association
Maple Grove, MN



David Flakne
Syngenta Crop Protection LLC
Head, US State Affairs
9472 Greyhawk Trail
Naples, FL 34120
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August 6, 2024

Commissioner, Thom Peterson
Minnesota Department of Agriculture
625 Robert Street North
St. Paul, MN 55155

Re: MN Pesticide Management Plan Committee Mtg (PMPC) 6/17/24 – Comments & Recommendations.

As the Industry Representative on the PMPC, I have the following observations and comments following the 6/17/24 PMPC Meeting. First, I would like to thank the MDA staff for their preparation and professionalism while hosting the “virtual” PMPC meeting. The presentations and review of the 2023 Water Quality Monitoring Report (WQMR) were well prepared, and the summaries of the data were helpful. In addition, I appreciated that MDA staff has expanded the tables to display longer term monitoring trends. The data presented now goes back to the early 2000’s (ranging from 2002-2006). This helps to display the success of the industries prevention efforts. The MDA monitoring data dates back even further, which would show an even steeper declines, however this improvement in the displayed graphs is welcomed and appreciated.

This annual review to solicit comments from stakeholders continues to be an extremely valuable process. The Minnesota Department of Agriculture continues to have one of the most robust groundwater and surface monitoring programs in the nation. We sincerely appreciate the leadership of MDA management and staff concerning their monitoring programs, BMP development and education efforts to protect MN’s water quality. These annual monitoring reports continue to demonstrate the success of the MDA’s pesticide management and prevention efforts. Concentrations detected in MN Ground Water and Surface Water are generally very low relative to standards and concentration trends are generally stable and/or show slight fluctuations at very low concentrations relative to water quality standards. MDA data dating back into the 1990’s clearly shows long term declines associated with the pesticides in Common Detection. More recently, newly registered products when detected can be expected to have an increasing detection trend. These trends can be expected to level off over time, as has been the case with compounds monitored over the longer term. In addition, MDA’s analytical ability has improved significantly in recent years and MDA now has detection limits in the parts per trillion. Therefore, any detection must be put into context with the established water quality standards.

I wanted to thank MDA staff for their presentations of the 2023 GW and SW monitoring results. The presentations and data were presented with a clear comparison to established water quality standard. In most cases detections are very low and are frequently orders of magnitude below the established water quality reference values. This is in large part due to the success of MDA’s prevention efforts and the voluntary BMP education that has been promoted by the MN Dept of Agriculture, University of Minnesota Extension, Pesticide Registrants and the entire agricultural industry.

The 2023 monitoring data continue to document variations in detected concentration, such as those that can be attributed to variations from year to year based on drought and other localized weather events. The detections as mentioned above continue to be very low relative to established standards with very few exceptions. Key items of note:

1. Table 2-1 displays the maximum concentrations detected in groundwater for all monitored pesticides. Detected concentrations are generally very low relative to established reference values and standards. In fact, in most cases when an analyte is detected, concentrations are orders of magnitude below their reference value.

2. 4-Hydroxychlorothalonil (4-HCL) was the only analyte detected over its water quality benchmark (RAA value) in groundwater (11 detections in region 4). The RAA is a screening value and MDA should work with MDH to determine if an HRL should be developed for 4-HCL. The MDA noted that the laboratory identified 4-HCL as a marginally performing analyte in 2023. Steps should be taken to ensure that the laboratory methods and results are further refined.
3. Imidacloprid and Clothianidin are detected in groundwater, primarily in PMR Region 4, having maximum concentrations up to 10% of their established HRL. While frequency of detection has increased since these products were introduced the detection levels remain very low relative to the established reference values.
4. Table 3-1 displays the maximum concentrations detected in surface water for all monitored pesticides. Detections are generally very low relative to established reference values. In fact, in most cases concentrations are orders of magnitude below their respective reference value.
5. The five current Surface Water Pesticides of Concern (SWPC) accounted for 96% of the detections greater than 50% of a reference value. Dicamba had 1 detection and metolachlor had 2 detections above 50% of their reference value in a storm water sample. These detections are not time weighted for duration. Therefore, these detections would undoubtedly be much lower than 50% when accounting for duration. Detections of these analytes are historically so infrequent that they do not warrant SWPC listing. No additional pesticides or analytes warrant SWPC listing at this time.
6. Chlorpyrifos was not detected in 2023 as use on food crops were restricted by US EPA in 2022. These uses could return given recent legal developments and MDA should continue to follow these developments and continue BMP promotional efforts should these uses resume.

Committee members were asked to respond with our comments and recommendations to the Commissioner of Agriculture. MDA staff specifically asked committee members to address the following two questions:

1. Is there a need for: “New MDA determinations (Common Detection for Groundwater or Surface Water Pesticide of Concern determinations using the listing criteria articulated in statute and in the MN Pesticide Management Plan) that would trigger development of pesticide water quality BMP’s or related actions for groundwater or surface water?”
2. Is there a need for: “pesticide product restrictions to protect water quality as a condition of registration?”

As noted above, the success of the MDA’s pesticide management efforts and the implementation of generic and pesticide specific BMP education, as part of the MN PMP, have been well documented and very effective. These efforts have resulted in detected concentrations of pesticides which are generally very low relative to water quality standards in both groundwater and surface water. Furthermore, trend analysis over the longer term has shown that concentrations have declined or remain relatively stable at very low levels. The MN Department of Agriculture, pesticide registrants and MN farmers should be commended for their continued efforts to protect MN water resources. The current voluntary BMP education and outreach efforts are clearly working and should remain targeted toward the most vulnerable soils and geographic regions of the state.

Based on the monitoring data shared at the 6/17/24 PMP Advisory Committee meeting there is no need for additional declarations of “Common Detection” in ground water or “Surface Water Pesticide of Concern” determinations for surface water. Furthermore, given the continued success of the current BMP educational efforts there is no need or justification for further restrictions as a condition of registration for any of the pesticides reviewed. MDA should continue to evaluate any newly added analytes and detections over time relative to relevant HRL’s and appropriate WQ Standards. In addition, MDA should request development of a HRL or Acute and Chronic Aquatic Life Criteria when detections justify. The less refined and very conservative RAA (Rapid Assessment) values or Benchmarks values should only be used as an initial indicator and more refined standards should be developed for longer term evaluation of water quality.

The MDA should continue to promote both voluntary Generic & Pesticide Specific BMP’s which have proven effective at minimizing detected concentrations in both groundwater and surface water. Furthermore, the MDA should continue to look for opportunities to communicate the success of the MN PMP efforts with producers, dealers, and the public including key policy makers. It is important that the public understands how the agricultural industry and MN farmers continue to be good stewards of our land and water resources as they continue to produce a safe and abundant food supply.

Thanks again for the opportunity to comment and for the continued transparency and collaboration with stakeholders to ensure the continued availability of these important production tools.

Sincerely,

David Flakne

Head, US State Affairs

The Syngenta logo features the word "syngenta" in a blue, lowercase, sans-serif font. A small green leaf icon is positioned above the letter 'n'.

CC: Kathleen Hall, Josh Stamper, MDA
Warren Formo, MAWRC, Lee Helgen, MCPR, Adam Birr, MN Corn, Tom Slunecka & David Kee MN Soy, Dan Glessing MN Farm Bureau.

From: [LnH Markus](#)
To: [Hall, Kathleen \(MDA\)](#)
Cc: [MEP Pollinators](#); eialist@googlegroups.com; mnikes-eic@googlegroups.com
Subject: Re: PMPC Comments and Membership
Date: Monday, July 8, 2024 10:24:23 AM

Howard Markus, Ph.D., P.E. retired
PMPC member
Retired MPCA Research Scientist

My comments:

Found in the Pesticide Control Law [Minn Stat. 188; Minn Stat 188.01.31] is the following language: "**Unreasonable adverse effects on the environment**" is any unreasonable risk to humans **or the environment**, taking into account the economic, social, and **environmental costs** and benefits of the use of any pesticide or seed treated with pesticide.

As you know, the term "unreasonable adverse effects on the environment" appears throughout the Pesticide Control Law. For example, text related to pesticide review and registration ([Minn. Stat. 18B.26.5](#)) states that: "The commissioner shall review each application and may approve, deny, or cancel the registration of any pesticide. The commissioner may impose state use and distribution restrictions on a pesticide as part of the registration to prevent **unreasonable adverse effects on the environment.**"

Over the past 50 to 60 years, there has been a huge, significant decline in bird and insect populations and diversities, including economically important pollinators, mostly from pesticides and loss of habitat.

This very recent scientific journal article from 6/20/24 provides significant support for my statement:

Insecticides, more than herbicides, land use, and climate, are associated with declines in butterfly species richness and abundance in the American Midwest by Braeden Van Deynze, Scott M. Swinton, David A. Hennessy, Nick M. Haddad, Leslie Ries; Published: June 20, 2024 <https://doi.org/10.1371/journal.pone.0304319>

[I have included these excerpts specific to my comments:

We find community-wide declines in total butterfly abundance and species richness to be most strongly associated with insecticides in general, and for butterfly species richness the use of neonicotinoid-treated seeds in particular. This included the abundance of the migratory monarch (*Danaus plexippus*), whose decline is the focus of intensive debate and public concern.

"[W]e note that declines in total abundance and monarch abundance related to insecticide use begin in 2003 (Fig 4E), coincident with the initial deployment and rapid adoption of seed-treated neonicotinoids in corn and soybean plantings in the Midwest (Fig 2H). By contrast, the other two insecticide types saw relatively stable use during the same period (Fig 2I)."]

As both a professional aquatic ecologist and a retired Professional Engineer, I believe this very recent journal article is both compelling and trustworthy, and its message is clear – pesticides, especially neonicotinoids, are causing extreme, adverse, harm to native insects.

The MN Department of Agriculture [MDA] has been directed to prevent unreasonable impacts to the environment.

Both the 2023 Water Quality Monitoring Plan Report [<https://wrl.mnpals.net/node/4249>] and the MDA Pesticide Management Plan [PMP] [<https://www.mda.state.mn.us/sites/default/files/inline-files/pmp-nov2007.pdf>] have a singular focus on water quality and **human health** but data collection and studies about the environment have been completely lacking and the environmental component of the law is totally ignored. Neither the PMP nor the 2023 Monitoring Plan Report contains either data or measures of environmental health. It is clear that these two documents tell only half the story; the 'protecting unreasonable adverse impacts to the environment' portion is missing from both.

Clearly just collecting and analyzing water quality data [surface and groundwater] are a very poor guide as to how the environment is doing, since water quality/pesticide measures in the Report mostly meet MPCA water quality standards and MDH guidelines. Water quality data - surface and groundwater - aren't capturing the collapse of bird and insect community populations. The journal article cited above is just one of many scientific articles linking pesticide use with bird and insect population collapses. Clearly additional and much better measures of unreasonable adverse effects on the environment are needed if the MDA is to fully meet the Pesticide Control Law requirements.

From the wording in the Law, there should be numerous analyses comparing the benefits of pesticides, especially neonicotinoids, versus the lost economic benefits of pollinators and the economic impacts of pesticides on these beneficial insects, but those analyses are missing. Unavailable is the balance between pesticides and the beneficial insects and birds. There are no assessments of **the environmental costs of the use of these pesticides**, and those assessments are a requirement of the Law as noted in the initial paragraph above. Those grave omissions must be rectified.

The actions of the MDA strongly suggest their significant preference for large-scale agriculture over small-scale agriculture, the apparent lack of concern about the struggles of pollinators to survive being a prime example. Small food farmers need pollinators and other beneficial insects to grow the food for healthy regional / local communities. This is another example of the environmental cost of the overuse of dangerous pesticides that is not being considered and discussed in either the Pesticide Management Plan or the data collected and assessed in the 2023 Water Quality Management Plan.

Additional comments follow:

My understanding is that neonicotinoid seed coatings on soybeans are both a waste of money and a needless addition to the environment of the type of pesticide most injurious to native insects (apparently there is a mistiming of the coating use and the soybean pest targets). It makes no environmental or economic sense to allow its use on soybeans.

For nonfood crops, such as for ethanol production, there is no need to maximize crop yield at the expense of the environment. For nonfood crops, MDA must require reduced pesticide use and must not allow neonicotinoid use, to lessen impacts to the environment.

Another issue that greatly concerned me but did not get much attention in the Monitoring Plan last year and this year was the pesticides detected atmospherically. In terms of environmental and human health, any airborne detection is too much. I believe the next Plan should spend much more attention to this pesticide issue.

As an additional note for Agency consideration, the loss of habitat includes currently unusable, unhealthy buffers. Millions of acres of potentially good habitat are available if protecting them can become an MDA goal. That seems to me to be a direct requirement of the Pesticide Control Law.

Please note I am cc'ing several pollinator-focused environmental groups that shares my concerns about the deadly impact of the use of pesticides, especially neonicotinoids. Both they and I will be very interested in the response that I receive from the MDA Commissioner to this comment letter.

Again, thank you for the opportunity to provide comments.

Howard Markus, Ph.D., P.E. retired
Pesticide Management Plan Committee member
Retired MPCA Research Scientist

From: [LnH Markus](#)
To: [Hall, Kathleen \(MDA\)](#)
Cc: [MEP Pollinators](#); eialist@googlegroups.com; mnikes-eic@googlegroups.com
Subject: Re: PMPC Comments and Membership
Date: Friday, August 2, 2024 4:44:29 PM

Good afternoon Kate - please add the following article to my comments as additional support:

<https://ehp.niehs.nih.gov/doi/10.1289/ehp13954>

Howard Markus, Ph.D., P.E. retired

July 29, 2024

Kathleen Hall, Ph.D.
Minnesota Department of Agriculture
625 Robert Street North
St. Paul, MN 55155
Kathleen.Hall@state.mn.us

Dear Dr. Hall,

Thank you for the opportunity to comment on the Minnesota Department of Agriculture's Pesticide Management Plan and the 2023 Water Quality Monitoring Report. As always, the information presented is comprehensive and informative. MDA's longstanding water quality monitoring program is an effort everyone in the state should be proud of.

1) Regarding the question, is there a need for new MDA determinations (common detection in groundwater or surface water pesticide of concern) that would trigger development of pesticides water quality best management practices (BMPs) or related actions?

I recommend that MDA designate Fomesafen as being in "Common Detection" in groundwater and designate Metolachlor as a "Surface Water Pesticide of Concern."

My recommendation for Fomesafen is based on Fomesafen's increasing number of detections, the number of PMRs in which MDA has detected it, its 90th percentile upward trend, and its maximum detection in 2023 (34% of the reference value). MDA's groundwater monitoring has detected it in all PMRs where MDA has sampled: in 2021 and 2022, MDA detected it in PMRs 1, 6, 7, 8, 9, and 10; in 2023, MDA detected it in PMRs 1, 4, 5, 7, 8, and 9.

My recommendation for Metolachlor (already in common detection for groundwater) is based on MDA's monitoring results for 2021-2023. MDA's sampling has detected Metolachlor and its primary degradates, Metolachlor ESA and OXA, in as many as 89% of surface water samples, in all PMRs where MDA has sampled, at levels as high as 92% of the reference value (parent compound, 2022). These results indicate that the Metolachlor best management practices designed to protect groundwater are not adequate to protect surface water and need to be expanded.

Year	Metolachlor: % of Samples with Detections	Metolachlor: Maximum Detection (% of Ref. Value)	Metolachlor ESA: % of Samples with Detections	Metolachlor ESA: Maximum Detection (% of Ref. Value)	Metolachlor OXA: % of Samples with Detections	Metolachlor OXA: Maximum Detection (% of Ref. Value)
2021	54%	34%	88%	< 0.02%	87%	< 0.03%
2022	77%	92%	89%	< 0.03%	89%	< 0.05%
2023	61%	76%	89%	< 0.03%	89%	< 0.03%

2) Groundwater Protection Rule monitoring

I recommend that MDA add periodic sampling for pesticides to the Groundwater Protection Rule monitoring program, which is primarily focused on monitoring for nitrate. I would include the groundwater “common detection” pesticides and degradates and the cyanazine degradates that MDA is sampling for in the Private Well Pesticide Sampling Project.

Thank you for your consideration.

Best wishes,

Jill V. Trescott
Randolph, MN

From: [Jon Peterson](#)
To: [Hall, Kathleen \(MDA\)](#)
Subject: Comments from PMPC meeting and report
Date: Monday, July 29, 2024 7:49:52 PM
Attachments: [image002.jpg](#)

Hi Kate,

This is my second meeting for the PMPC, and I am still learning so much. I appreciate the detail and the information that all the presenters provided.

From my perspective, I am interested and wanting to keep all of our ground water and surface water safe and free of pesticides and other pollutants.

Living in Hastings, I have recently heard more about the PFAS issues in our wells. I know that these are not pesticides, but does the Department of Agriculture partner with the Minnesota Pollution Agency in detections of any kind of pollutants such as PFAS?

As the District Operations Manager at MMCD, I am also aware of the control materials we use. I want to ensure the control materials that we use to not have any effect on water, now and into the future.

At MMCD, we also pay close attention to precipitation. Wetlands that we monitor on a regular basis are much wetter then they were the last three years. With this year, being much wetter, do you for see an increase in surface water contamination?

Lastly, in reviewing your comment guidance, I do believe that there should be restrictions to protect water quality, as a condition for registration. The water of Minnesota is one of most valuable resources. We (residents and the Department of Agriculture) are dealing with the pesticides and pollutants that the people before us used, but did not have the proper knowledge, or education, to know that they were bad. As we introduce new pesticides into our environment, ensure they will not have a negative impact is imperative.

Thank you again for the opportunity to serve on this committee.

Jon Peterson
District Operations Manager
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