



## Friends of Minnesota Scientific & Natural Areas

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Minnesota Department of Agriculture  
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Commissioner Petersen,

Thank you for the opportunity to submit comments regarding the adequacy of the Minnesota Department of Agriculture regulation in regard to neonicotinoid-treated crop seeds. Friends of Minnesota Scientific and Natural Areas writes to share information supporting the position that existing regulations of neonicotinoid-treated seeds have proven inadequate to protect the native flora and fauna of Minnesota.

Friends of Minnesota Scientific and Natural Areas is a Minnesota non-profit, tax-exempt ["501(c)(3)"] corporation organized to protect and enhance Minnesota's Scientific and Natural Areas (SNAs). There are over 165 SNAs in Minnesota distributed throughout the state. These public lands may include populations of rare species, native plant communities, relic flora and fauna, and habitat providing for the concentration of animals. Although neonicotinoid-treated crop seed is not used within these specific sites, many SNAs are in agricultural areas where treated crop seeds are being planted.

There are several pieces of information that point to the need to strengthen the regulation governing the handling as well as the use of neonicotinoid-treated seeds because of its impact on the environment.

Contamination of surface water attributed to spring planting of treated seed. Minnesota Department of Agriculture (MDA) monitoring data of streams and rivers have shown seasonal peaks in the concentrations of neonicotinoids that coincide with the spring planting of treated seeds. MDA 2018-2022 summary report states "water quality and planting progress data suggest that the planting of treated seeds is the primary source of neonicotinoids in Minnesota river and streams within agricultural areas, excluding central and east-central Minnesota." (1)

In 2020, MDA designated two neonicotinoids, clothianidin and imidacloprid, as 'surface water pesticides of concern'. The reasoning behind this designation was that MDA monitoring results from 2010 through 2019 indicated that clothianidin and imidacloprid

concentrations in several rivers approached or exceeded the EPA's Aquatic Life Benchmark. (2)

Consumption of treated seed by birds and mammals.

A 2016-2017 Minnesota Department of Natural Resources (MDNR) study indicated that birds and mammals can potentially ingest significant quantities of neonicotinoids treated seed during spring planting. Utilizing field cameras at simulated spill sites, several species of birds and mammals were observed consuming treated seed. (3)

Observations of crop fields during spring planting revealed that 35% of the 71 fields observed had seeds on the soil surface. In addition, 329 seed spills were documented in the 76 townships surveyed. Extrapolating data from these field observations suggests that the occurrence of field seed spills can be significant, over 15,000 spills statewide on an annual basis. (3)

Labels for clothianidin and imidacloprid, products that are applied to crop seed, state that treated seed coated with these pesticides can be hazardous to birds and mammals if the seed is exposed on the soil surface. The labels indicate that treated seed needs to be sown below the soil surface. Also, treated seeds spilled must be collected. (4, 5)

MDNR studies have documented the exposure of white-tailed deer, greater prairie-chickens, and sharp-tailed grouse to neonicotinoids. (3, 11)

Exposure of non-target insects to neonicotinoids from treated seed dust.

Treated seeds put in crop seed planters can give off "seed dust" as the coating is abraded. This seed dust can drift across farm fields and into nontargeted areas. These dust clouds can affect insects that fly through these dust clouds as well as insects that land on plants where the neonicotinoids have drifted. Use of neonicotinoid-treated seeds was strongly correlated with declines in Midwestern Monarch butterflies from 1998-2014. (6) Increased neonicotinoid use nationwide is considered "a major driver of changes in occupancy across hundreds of wild bee species." (7)

Minnesota regulation is inadequate to address these environmental impacts for several reasons.

Lack of information on neonicotinoid-treated seed sales and use

Neonicotinoid-treated seed sales and use are not tracked in Minnesota. (8) As stated by MDA, "the lack of neonicotinoid seed treatment use information (active ingredient, amount, crop type, regional use patterns, etc.) limits the interpretation of the water quality data. Without specific use information, it can be difficult to determine if changes in water quality data are related to changes in use patterns." (1) Also, MDA indicated that "Due to the lack of treated seed use reporting, the environmental load of neonicotinoids and potential associated risks in Minnesota are reasonably unmeasurable." (8)

#### Lack of clarity on treated seed label enforcement

Minnesota treated seeds are required to have a general precaution statement. However, it is unclear who is responsible for enforcing treated seed tag label use restrictions. As stated by MDA, “Increasing enforceable language and clear guidance on who is responsible for enforcing treated seed label language could enhance stewardship and lead to more judicious use of treated seed in Minnesota.” (8)

#### Lack of mechanism to make best management practices for neonicotinoid-treated seed mandatory rather than voluntary.

Minnesota Department of Agriculture has developed *Stewardship Guidelines and Best Management Practices (BMPs) for pesticide-targeted seed* (9) and *Water Quality Best Management Practices for Agricultural Use of Clothianidin and Imidacloprid* (10). These BMPs include adopting an Integrated Pest Management approach to determine when treated seed use is necessary; calibration and maintenance of planter equipment to reduce seed dust; consideration of weather conditions and location of pollinator-friendly habitat to ensure no drift to those habitats as well as following any seed label requirements. These best management practices should be adopted but are voluntary.

The Minnesota legislature passed a law in 2023 that added MN Statutes 18B.075.

MDA stated that “this law authorizes the MDA to prevent unreasonable adverse effects of pesticide-treated seed on the environment while still not classifying pesticide-treated seed as a pesticide” (8). MDA needs a comprehensive regulatory framework for pesticide-treated seed to determine where adverse effects are occurring and prevent them from happening.

Sincerely,  
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#### REFERENCES

(1) Minnesota Department of Agriculture. Detection Patterns of Neonicotinoid Insecticides in Minnesota Rivers and Streams 2018-2022.

(2) Minnesota Department of Agriculture. 2020. Summary of MDA Imidacloprid, Clothianidin, and Thiamethoxam Water Quality Data Collected from Rivers and Streams.

(3) Roy et al. NEONICOTINOIDS ON THE LANDSCAPE: EVALUATING AVIAN EXPOSURE TO TREATED SEEDS IN AGRICULTURAL LANDSCAPES (2016-2017).

(4) Pesticide label for Poncho 600 (clothianidin active ingredient) EPA Registration Number 7969-458.

(5) Pesticide label for Gaucho 600 Flowable (imidacloprid active ingredient) EPA Registration Number 264-968.4L ST

(6) Van Deynze et al. 2024. Insecticides, more than herbicides, land use, and climate, are associated with declines in butterfly species richness and abundance in the American Midwest. PLoS ONE 19(6): e0304319. <https://doi.org/10.1371/journal.pone.0304319>

(7) Guzman et al. Aug. 2024. Impact of pesticide use on wild bee distributions across the United States, *Nat Sustain* 7, 1324–1334, <https://doi.org/10.1038/s41893-024-01413-8>.

(8) Letter from MDA to EPA regarding the Minnesota Department of Agriculture comments on the US Environmental Protection Agency's request for information and comment on requirements applicable to treated seed and treated paint products. 2024

(9) Minnesota Department of Agriculture Stewardship Guidelines and Best Management Practices (BMPs) for pesticide-targeted seed.

(10) Minnesota Department of Agriculture Water Quality Best Management Practices for Agricultural Use of Clothianidin and Imidacloprid.

(11) Carstensen et al. Assessing Neonicotinoid Exposure in Free-ranging White-tailed Deer in Minnesota. Presentation to MN Senate Committee of the Environment, Climate, and Legacy. March 14, 2023.