



November 21, 2017

Mr. Dave Fredrickson
Minnesota Department of Agriculture
625 Robert Street North
Saint Paul, MN 55155-2538

Dear Commissioner Fredrickson,

The production and profitability of all soybean farmers (conventional, organic, identity preserved, or commodity) is important to the Minnesota Soybean Growers Association (MSGA). All deserve to be heard and have a seat at our table. They all have a voice. Thus, MSGA formed the Drift Task Force to investigate the use of dicamba applied to dicamba tolerant soybeans.

Dicamba registered for use in dicamba tolerant soybeans represents the latest tool designed to manage herbicide resistant weeds. Where present, these herbicide resistant weeds can severely impact soybean yield and quality, ultimately making soybean production unfeasible. Soybean growers have a limited number of weed control options compared to corn and wheat growers. Without the development of other new chemistry/technology, genetically modified soybeans that are resistant to previously unusable compounds are currently the most feasible solutions.

The use of dicamba in dicamba tolerant (DT) soybeans is not a solution without risk. Conventional (non dicamba tolerant) soybeans are extremely sensitive to dicamba. Off-target movement of dicamba onto conventional soybeans from any source (physical drift, vapor drift, sprayer contamination) will result in some level of damage. Off-target movement occurs via mistaken direct application, sprayer contamination, physical (particle) drift and/or vapor (volatility) drift. Of the four off-target movement modes, vapor drift is the most concerning. Over the years, dicamba applicators, chemical industry personnel and educational support teams have made great strides in reducing off target movement. Strict implementation of the new EPA label should control off target movement from physical drift. However, dicamba, even extremely low volatility dicamba, is still subject to vapor drift.

Soybean planting in 2017 was difficult. Minnesota Extension publications indicate the optimum Minnesota soybean planting window is May 1—May 14. April was warm and dry; however a wet and cold period started in very late April and continued for two-plus weeks. Consequently, some soybeans were planted early; most were planted late.

During the planting season, weed seeds continued to germinate. Although May and early June was warm, late June/July were cool. Weed seed continued to germinate and grow rapidly. Dicamba herbicide was applied to weeds that escaped the pre-emergent weed program. Some applications were made after soybeans had moved into reproductive stage. In some cases, off-target movement of dicamba occurred. The movement occurred in a variety of ways and is not easily documented.

This movement mainly impacted non dicamba tolerant soybeans. Economic impact is not easily determined. Numerous reports from the field indicate various levels of highly variable economic loss did occur.

This impact from off-target movement is disturbing and demonstrates the need to revise the Minnesota label for soybean dicamba applications. We applaud the recent Environmental Protection Agency (EPA) label as a first

attempt at solving these problems. The EPA increased product and drift education requirements, increased record keeping requirements and decreased acceptable wind speed limitations. These label changes should reduce off-target movement, effectively solve particle drift and sprayer cleanout issues. However, MSGA does not feel the EPA's label adequately protects Minnesota soybean producers from vapor drift.

We recognize several important dicamba facts.

- First, all dicamba is not equal in volatility. Low volatile products do exist, but low volatile dicamba does not equal “no” volatility.
- Vapor (volatility) drift is more difficult to control than other forms of off-target movement. Volatility increases as air temperature increases and humidity decreases.
- Daytime temperature is the primary driver of increased volatility. Mueller (2013) found 60% of the variation associated with dicamba vapor drift attributed to increased temperature, especially above 85°F.
- Dicamba is most effective when applied to short (2 inches or shorter) broadleaf weeds.
- In row crops, dicamba is most effective when used with a properly implemented pre-emergent herbicide program.
- Dicamba drift yield damage is greater when susceptible soybeans are exposed at the reproductive stage.
- Dicamba damage will still occur if susceptible soybeans are exposed during the vegetative stage in the form of delayed flowering and canopy closure.
- Dicamba drift research also reveals dicamba vapor (volatility) drift occurs with increased air temperature, with increased intensity of temperature inversions and with increased product rate.

We also recognize several important Minnesota facts.

- Resistant weeds are a fact.
 - Herbicide resistance is common (waterhemp, tall ragweed, etc.)
 - Cultivation resistant weeds are still present (quackgrass, etc.)
 - Weed control will always be essential to successful farming.
 - Any attempt to remove any weed control tool from the soybean grower will impact the industry.
- Minnesota weather is not easily predicted.
 - Daily temperatures in June can range from near freezing to above 95°F across the state.
 - Temperature inversions in the growing season are frequent.
 - University of Minnesota Extension climatologist Mark Seeley stated 2/3 of June nights are subject to some form of inversion.
 - Rainfall frequency and intensity is unpredictable.
 - Weather variability is so great across the state that, in any one year, it can be warmer in the north than the south, east than west, and vice versa.
- Minnesota soybean management is impacted by weather.
 - Optimum planting window is first two weeks of May regardless of location in MN. Northern farmers actually planted earlier than many southern farmers in 2017. In many years, this is reversed (cool soils).
 - Soybeans planted in May usually reach growth stage R1 (the start of the reproductive growth stage and highly susceptible to dicamba damage) near July 4.

We feel the system (Minnesota Agriculture) needed more time to learn how to properly use these products. The companies should have launched the products in smaller regional units, learned lessons about the product, educated the system and then moved to nationwide distribution and utilization system.

In addition, resistance management should be prominent on the label and included in all educational programs: Rotate chemistry, not just crops.

With the previously discussed information in mind, MSGA recommends the following:

1. Adapt New EPA label for Minnesota
 - a. Grower will use this product as part of a total weed management program that includes a full rate pre-emergent herbicide package.
 - b. A cutoff date should be determined, collaboratively with industry, University of Minnesota and MDA, and then implemented.
 - c. Adaptation would include the temperature cutoff statement.
 - i. Do not apply if predicted, or actual temperature, high is 85°F or above.
2. Initiate educational opportunities for proper use and stewardship of these products immediately.

Minnesota farmers want to embrace new technologies while continuing to be good neighbors with other farmers and good stewards of the land. We feel these changes will help our farmers accomplish both goals while preventing weed resistance issues through the certified use of new technologies. We respectfully request a discussion on the contents and recommendations of this letter with the Commissioner's Office.

Sincerely,

A handwritten signature in black ink, appearing to read "Bob Worth". The signature is fluid and cursive, with a large initial "B" and "W".

Bob Worth, Drift Task Force Chairman
Minnesota Soybean Growers Association