Dicamba Tolerant Soybean Technology – Managing Dicamba Drift

The Situation
North Dakota planted 8M acres of soybean in 2017. Dicamba Tolerant (DT) soybean technology was registered in 2017 and approximately 2M acres of DT soybean were grown in ND. Dicamba drifted off-site and caused significant damage on non-DT soybean and other crops. A ND Dept. of Agriculture survey of 215 responses indicated that:
- crop damage was reported in 28 counties in ND
- 207 people reported soybean damage
- 163,204 acres (3,623 soybean fields) damaged
- dicamba volatilization was the main source of drift

At industry sponsored training during winter meetings growers were given information that dicamba would not drift beyond a 220 foot buffer by following label recommendations.

Extension Response
Beginning July 1, growers affected by dicamba drift contacted county, area, and state Extension specialists to correctly identify injury symptoms and to understand why dicamba drift happened. Many Extension personnel had limited experience with dicamba drift. Extension State specialists prepared education material and conducted conference call and webinar training sessions to help with grower information requests.

Impacts
Growers and the agricultural community were not given adequate information by herbicide registrants to answer the question of why dicamba drifted off-target. Growers sought unbiased information from the NDSU Extension Service. Beginning July 1, the Extension Weed Specialist received 590 phone calls, over 1,000 emails, 55 office visits, over 35 field visits, and analyzed 54 soybean plant samples concerning dicamba injury. Most of these inquiries involved dicamba injury. Information was discussed in the following areas to answer grower questions of why dicamba drifted:

1. High soybean acreage and 30% adoption rate of DT soybean resulted in more dicamba treated acres
2. The rate of dicamba use in soybean is 2X to 4X the rate used in wheat and corn.
3. Soybean is extremely susceptible to dicamba as compared to other crops.
4. Precipitation decreases after late June preventing trapping of dicamba in the soil.
5. Higher temperatures in July result in more dicamba volatilization.

Research indicates a 4 to 40% soybean yield loss from dicamba depending on stage of growth and herbicide concentration. From the ND DOA survey and additional reports, it is estimated that at least 250,000 acres of soybean were injured by dicamba. Given a 40 bu/A ND soybean yield average X 10% (ave) yield loss from dicamba = 1M bu yield loss. Correct use of dicamba in 2018 will allow growers to prevent loss of 1M bu X $10 bu (ave) = $10M.

Feedback
Stakeholders responded that information provided by Extension did more to answer the question why off-site movement happened than other sources. This information significantly helped them plan for cropping and herbicide use in 2018.

Public Value Statement
The proper use of dicamba and knowing the risks associated with dicamba application will ensure the continued availability of this EPA-licensed technology and enhance ND producers’ efforts to feed the world.

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