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## **Illinois Fertilizer & Chemical Association**

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August 28, 2017

On August 2, 2017, the IFCA Board and staff at the IFCA sent a dicamba management survey to our ag retail members only, and asked them to respond to the survey by August 11, 2017. We used the SurveyMonkey platform for the survey.

IFCA has 178 ag retail companies as members. There are 491 individual members linked to the main company membership. These individual members include individuals who are the general managers of an ag retail entity, plant managers, agronomy managers and commercial applicators. Our ag retail members include company owned organizations, regional cooperatives, large, mid-size and small independent retailers and mid-size and small cooperatives. IFCA's ag retail members in Illinois are a varied blend of ownership and management styles, and all support the mission of the IFCA which is *to assist and represent the industry and promote the sound stewardship and utilization of agricultural inputs*.

We received 124 responses to the survey. In many cases, the main ag retail office replied on behalf of all their branches and applicators, thus in many cases one response reflected the experiences of dozens of branch offices and applicators. We are very pleased with the response rate to this survey.

In addition to this survey, IFCA staff fielded many calls over the summer from our members expressing concern with the issues they were dealing with relative to the use of dicamba on soybeans, and asking IFCA for assistance and guidance on the issue.

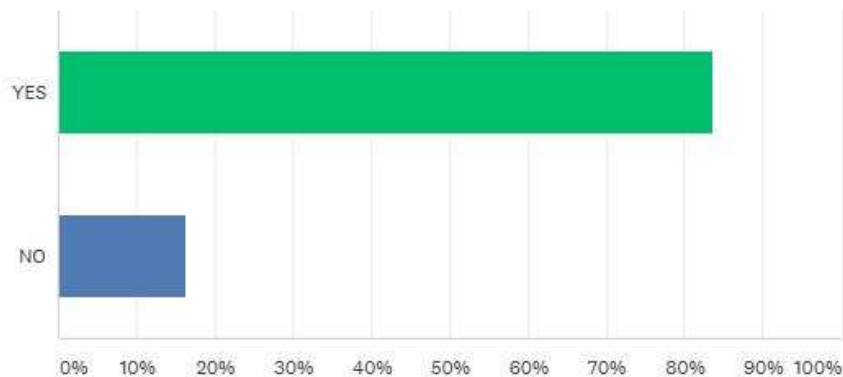
The survey responders answered the questions, but also provided extensive written comments. The IFCA Board and staff evaluated all the written comments provided by the retailers; we have summarized the most common suggestions and statements provided by our retail members following each survey question.

IFCA will share this report with our members, with key stakeholders including farm groups and with our partners in the pesticide policy and regulatory arena. Our members clearly wish to improve the use of this new technology not just for these particular dicamba herbicides, but to ensure sound stewardship and policy relative to all pesticide uses. IFCA is committed to providing leadership toward the development of methods that will enhance a trained applicator's ability to make the best possible decisions based on scientific data and a practical regulatory framework. IFCA members are very cognizant of their stewardship responsibilities, and aware of the expectations of farmer customers and the public relative to how we successfully manage all pesticides, and nutrients. Society rightfully expects the pesticide industry to successfully co-exist in increasingly diverse rural and urban communities.

Please direct questions about this survey to Jean Payne, IFCA President, at (309) 827-2774 or [jeanp@ifca.com](mailto:jeanp@ifca.com). Visit our website at [www.ifca.com](http://www.ifca.com) for an overview of the programs and issues managed by IFCA on behalf of our members. The IFCA dicamba management survey results follow.

If you applied dicamba to soybeans, did you experience any instances of symptoms in adjacent sensitive soybean fields? If NO, please provide the approximate number of soybean acres you treated with dicamba. Then proceed to question #26 to provide information on your experience with the product.

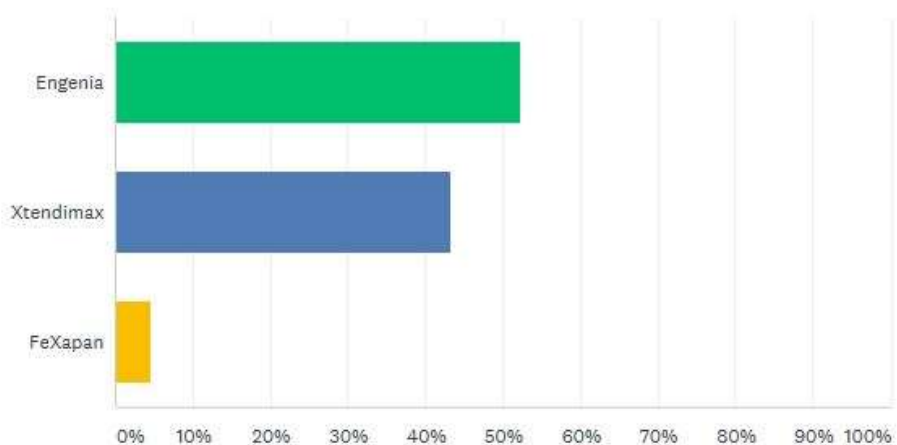
Answered: 116 Skipped: 6



The retailers applied anywhere from 100 acres to 25,000 acres, it was very mixed. The majority fell in the 350 to 3,500 acres applied category.

What formulation of dicamba did you primarily use on soybeans?

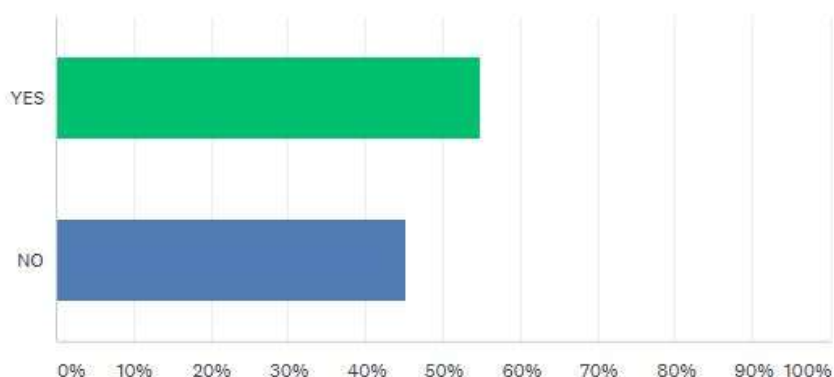
Answered: 111 Skipped: 11



**Comments:** Retailers felt the performance of the products were similar in terms of effective weed control and in terms of issues with symptomology in sensitive soybeans. Several retailers commented they used all three, and observed movement of the product in all three.

In your experience evaluating fields following the application of dicamba on soybeans, did the date of application appear to have an impact on symptoms shown in nearby non DT soybeans?

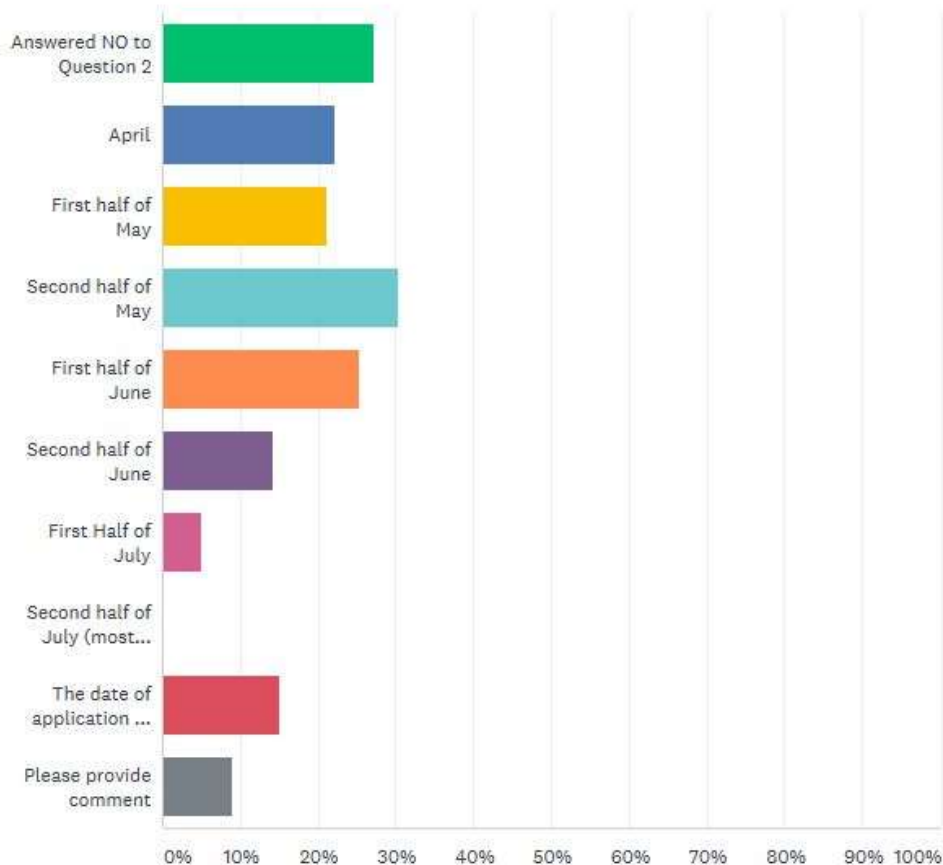
Answered: 106 Skipped: 16



**Comments:** Many stated they had no issues with use of dicamba as a burn down product. Several stated that for earlier application on beans planted in April, they had no issues. Many acres were treated toward the end of June and that is when problems started, 7-10 days later. Beans started showing symptoms in late June and it increased from that point forward. Many retailers stated they applied the majority of acres in the 3<sup>rd</sup> week of June, as they felt the weather (wind speeds) finally enabled what they felt was a condition conducive to safe application. But then they observed symptoms about two weeks later. Majority of commenters stated that heat and humidity correlated with symptoms and complaints, but some commented they had problems no matter what date they applied the product.

If you answered YES, what general date of application seemed to be most effective in limiting the impact to non DT soybeans? Check all that apply.

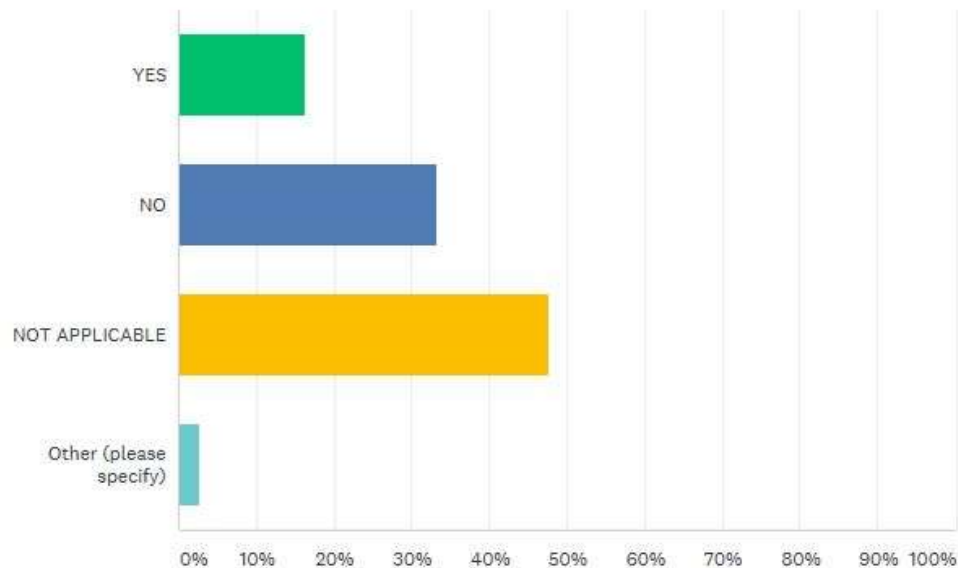
Answered: 99 Skipped: 23



**Comments:** As shown in the graph above, when they felt that temperatures at the time of application was a variable in the off target movement of the product, the majority felt that the 2<sup>nd</sup> half of May, up to mid June, was the best time to apply to minimize problems.

Did you apply, or were you requested to apply, dicamba on double crop soybeans in Southern Illinois even when nearby non DT soybeans were in or nearing reproductive stage?

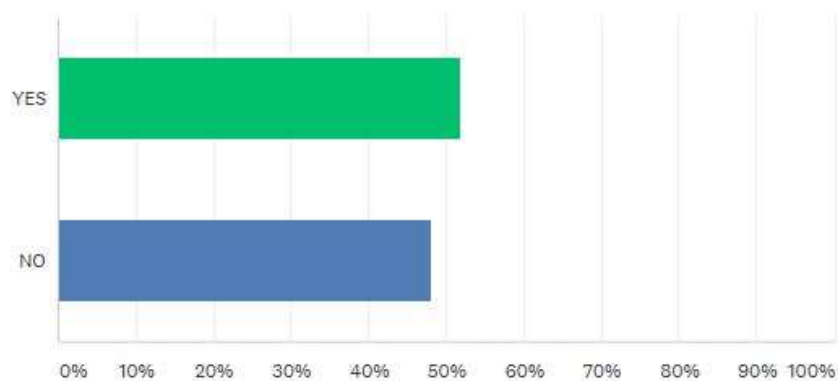
Answered: 111 Skipped: 11



**Comments:** Retailers from southern Illinois cited significant symptoms of damage in the far southern counties of Illinois. Some commented they were asked to treat double crop soybeans but refused to do so based on the already problematic issues they were encountering with symptoms on sensitive soybeans.

For in crop applications, do you feel the air temperature during the time of application affected the performance of the product relative to impact on non DT soybeans?

Answered: 108 Skipped: 14



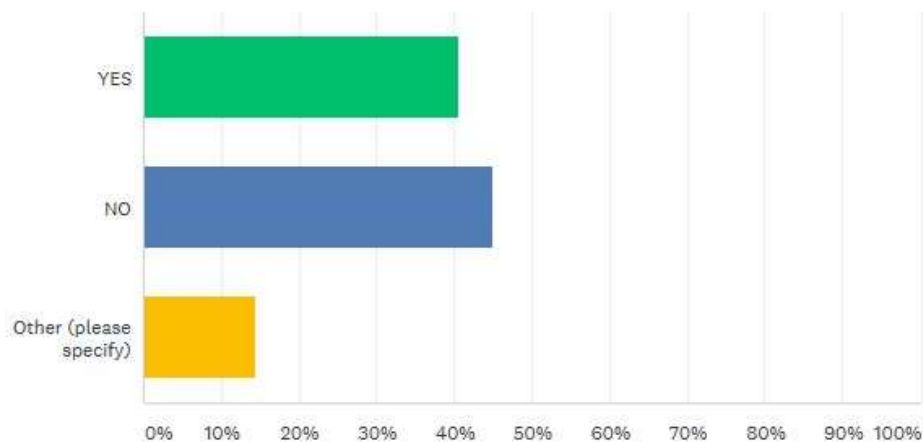
**Comments:** Retailers were split on the temperature at the time of the application, but many commented that higher temps in weeks following they felt attributed to problems in nearby sensitive soybeans.

If you answered YES, at what air temperature during the season do you feel is the maximum air temperature to mitigate off target impact on nearby non DT soybeans?

**Comments:** The majority of those responding suggested that between 80-85 degrees should be a cutoff temperature for a safe application. Many noted that temps above 90 degrees days to weeks following application were very problematic. More than a few suggested 80 degrees during the application and in the days following was the temperature at which they observed the fewest problems.

Do you believe that early morning applications made to avoid potential windy conditions later in the day attributed to possible inversion movement of the herbicide that caused off target movement?

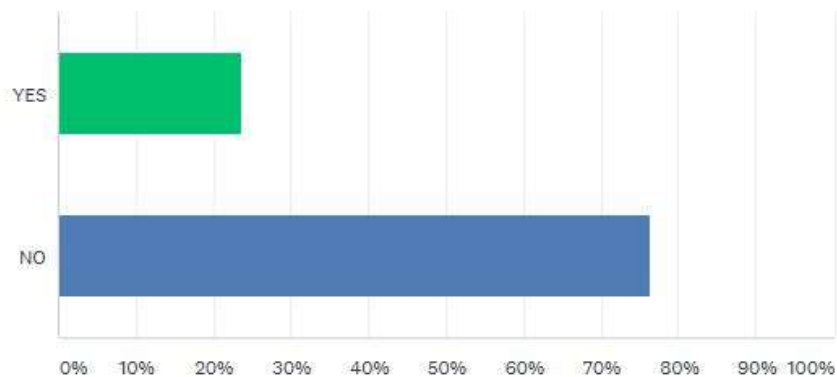
Answered: 111 Skipped: 11



**Comments:** Many commented that early morning applications did not occur because winds were less than 3 mph so it would be off label. Some commented that waiting later in the day to avoid inversions made it very difficult to comply with the wind speed restrictions especially in central Illinois where 3-10 or 3-15 mph days are hard to come by.

Do you believe that night time applications were occurring either by commercial or private applicators?

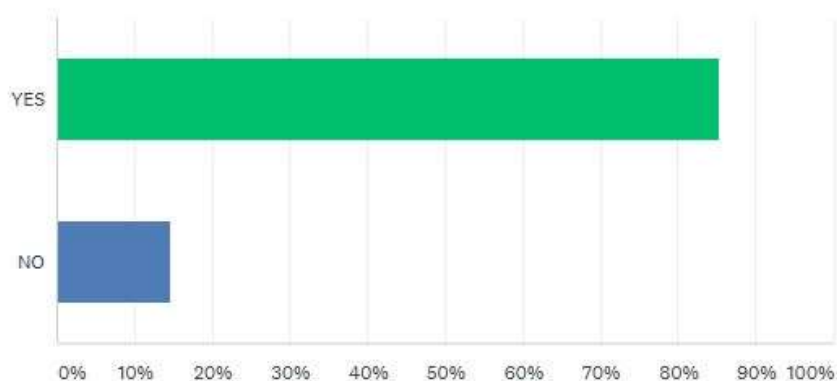
Answered: 106 Skipped: 16



**Comments:** A few commented they witnessed some farmers and a few retailers applying after 5 pm but before dark. The majority said they were not aware of night time spraying occurring.

Did you see symptoms in adjacent fields of non DT soybeans even when the wind was not blowing toward that field during the time of application?

Answered: 110 Skipped: 12

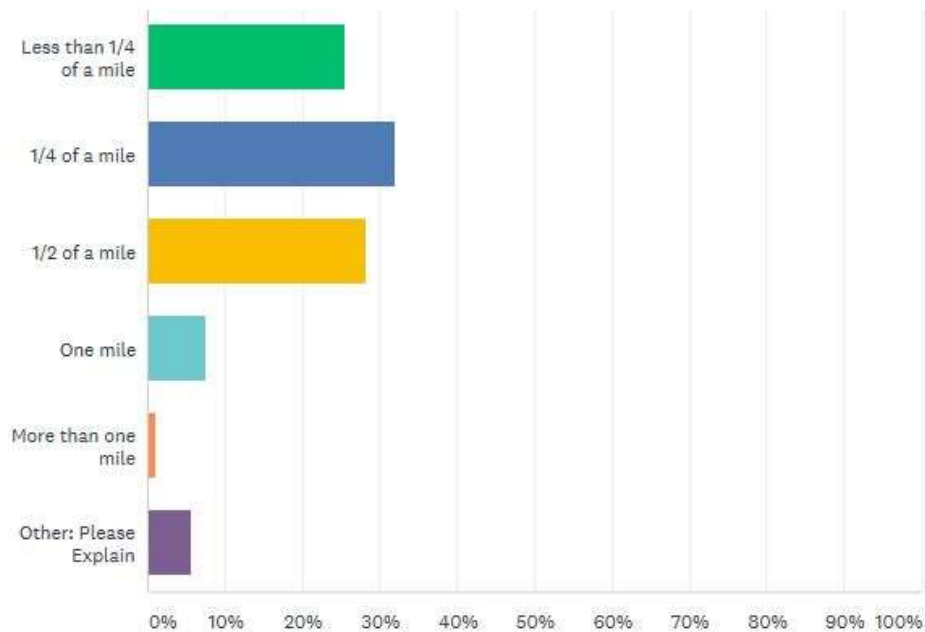


**Comments:** Retailers provided extensive comments on this question. They stated that many of their problems occurred in non DT soybean fields that were in the opposite direction of the Xtend fields at the time they made the applications. They cited volatility and vapor drift as their main suspicions for the damages since they were especially careful to choose days to apply when winds were in the opposite direction of the sensitive soybeans. They expressed strongly they had followed the label and put their best applicators on the job and observed symptoms when winds shifted towards the sensitive fields days later, and especially in hot conditions. They also wondered if an inversion event days later caused the product to move from the applied field.



If you saw symptoms in non DT soybeans, even when the product was applied in accordance with rate, pressure, boom height, wind speed and buffer requirements, at what distance do you note the symptoms from the field of application?

Answered: 106 Skipped: 16



**Comments:** As the chart indicates from ¼ to ½ mile was nearly 60% of the responses we received, with less than ¼ mile getting 25% response.

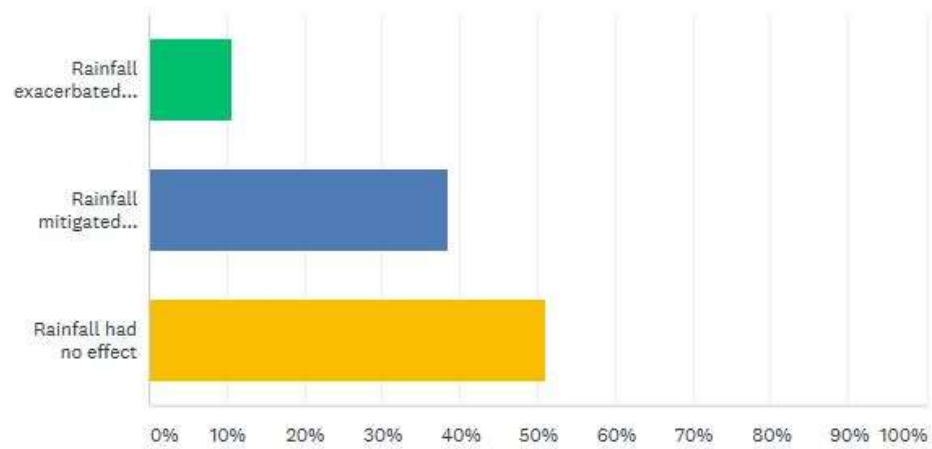
What % of non DT soybeans in the vicinity of an application on Xtend soybeans did you observe had symptoms of dicamba exposure?

**Comments:** Most of written responses (105 responses) to this question stated that 50% of the fields near an Xtend field that received an application showed symptoms. Some said it ranged from 15-30%. When the field was immediately adjacent to the applied field, many stated they observed damage more than 50% of the time. Some noted it was quite variable, from 10% in some fields to entire fields in some cases.



With regard to rainfall, please answer the impact you feel rainfall had on symptoms in non DT soybeans:

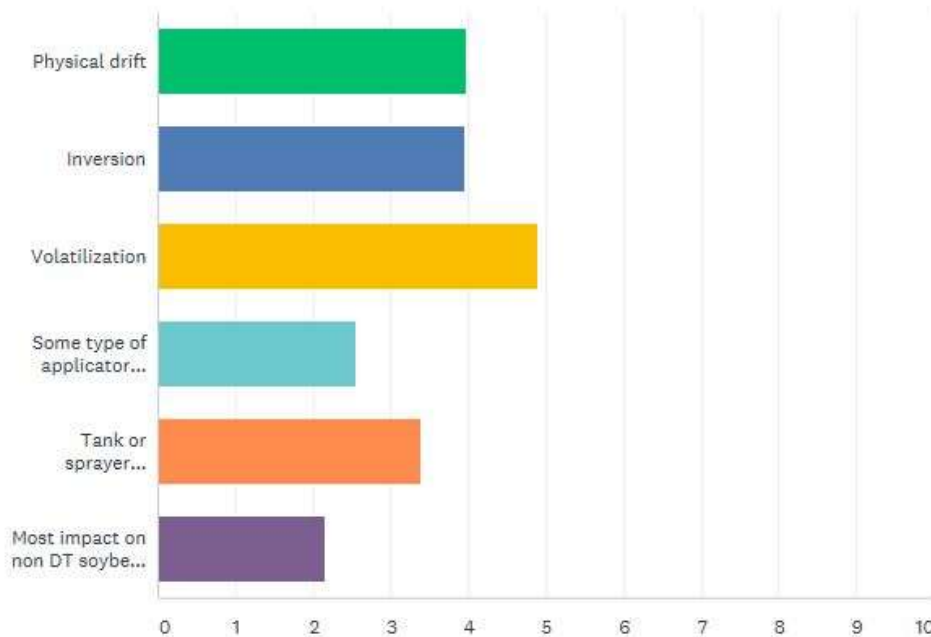
Answered: 104 Skipped: 18



**Comments:** The commenters stated that rainfall in many cases did not occur for up to 3 weeks after application which they felt stressed the soybeans with symptoms and also prolonged the farmer concerns. Many also stated they observed no connection between rainfall in subsequent days to the application. They noted rain was helpful to new growth on the affected beans.

If you saw symptoms in non DT soybeans , please rank the factors that you believe were the primary cause of symptoms based upon your experience as an applicator. Click on the arrow next to each factor and rank these factors with #1 being highest, to #6 being lowest.

Answered: 106 Skipped: 16

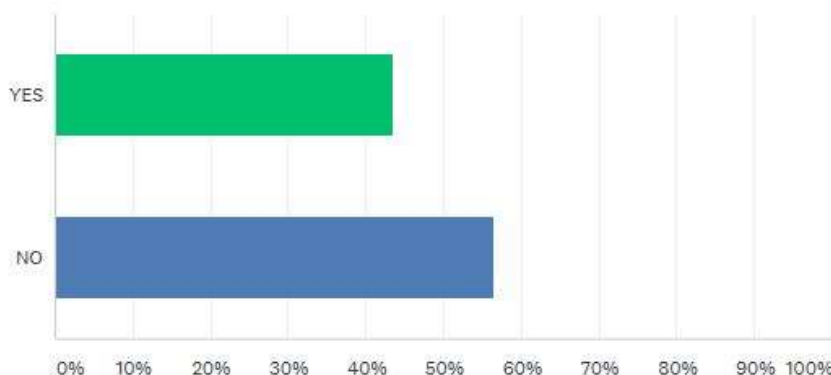


**Comments:** There was no opportunity to comment on this question; IFCA's observation of the responses indicates that retailers are very aware of the various potential causes of off target movement and were honest in admitting that while volatility ranked highest, that there are also other issues that need to be addressed.

The last ranking (in purple) was that they also observed symptoms on soybeans from dicamba applications made to corn, since many acres of corn were replanted while soybeans were also planted or developing at the same time as the corn. In verbal conversations with retailers, they believe that soybean planting will continue to occur earlier and it is a challenge as a retailer to treat both soybeans and corn in the same time period (it used to be they sprayed corn first, then switched over to beans). Trends are now for soybeans to be planted earlier and many farmers have two planters, enabling many to plant both crops at the same time.

In the previous questions, if you cited tank contamination as a possible cause, do you feel that tank cleanout, using generally accepted tank clean out practices in our industry, is effective in removing dicamba from the closed system?

Answered: 101 Skipped: 21

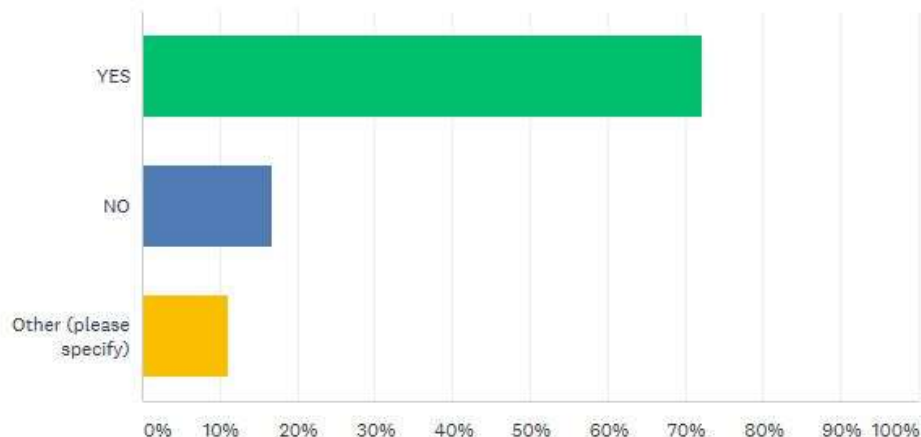


**Comments:** Over 50% commented that standard cleanout methods that have been effective in the past do not work well with removing dicamba from the system. Some retailers said that injection systems on the sprayer helped, but mixing hot loads at the agrichemical facility for farmer applicators was an issue as the chemical plant, as they felt later that they could not clean their mixing/loading equipment adequately to remove all traces of dicamba and thus even these minute amounts caused symptoms in subsequent applications to non DT beans. They also wondered if a build up of clay based products such as atrazine caused the “holding” of dicamba in parts of the sprayer system, which simple flushing of the system will not easily address. Many questioned whether drift reduction agents attributed to the volatility of the dicamba. While many noted that injection units on the sprayers can help, they expressed concern about tying up one machine just for dicamba from a return on investment standpoint.

**Tank Mix Partners:** They cited the most common tank mix partners as Roundup Powermax, Weathermax, Glyphosate and Warrant. A few mentioned they just used water, nothing else. Abundit, Intact, Astonish, Outlook and Zidua made up the remainder of tank mix partners mentioned.

Do you believe that the nozzles required on the label were effective in the performance of the product in terms of weed management?

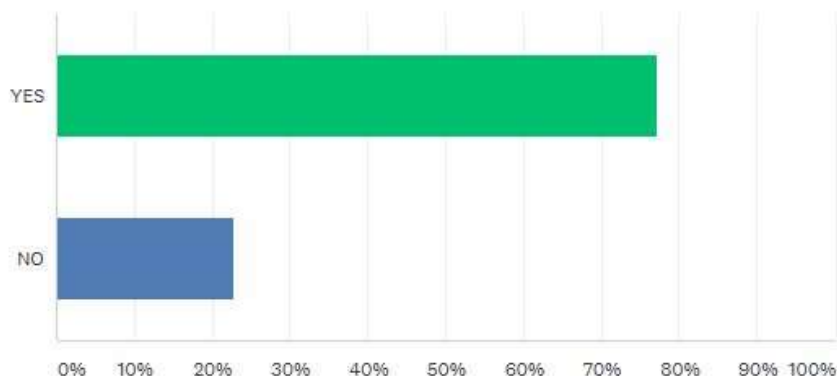
Answered: 108 Skipped: 14



**Comments:** Many mentioned using the higher side of the PSI on the label seemed to help, and also using 20 GPA. They commented there were some escapes on small broad leaves, grasses and volunteer corn.

Do you believe the nozzles required on the label were effective in the performance of the product in terms of mitigating off target movement?

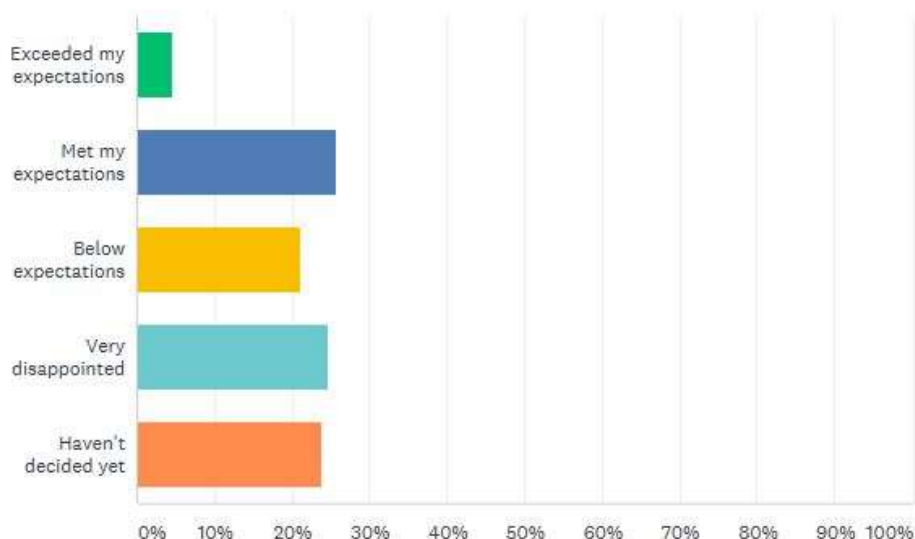
Answered: 105 Skipped: 17



**Comments:** Many stated they had no problems with physical drift and a few even indicated that using these nozzles would likely improve dicamba control when used in corn. But they felt the nozzles did nothing to combat the volatility issues because volatility is not a particle that can be mitigated by a nozzle.

How would you rate the technical support you received from the product manufacturers in 2017 when using this new technology or requesting assistance after application?

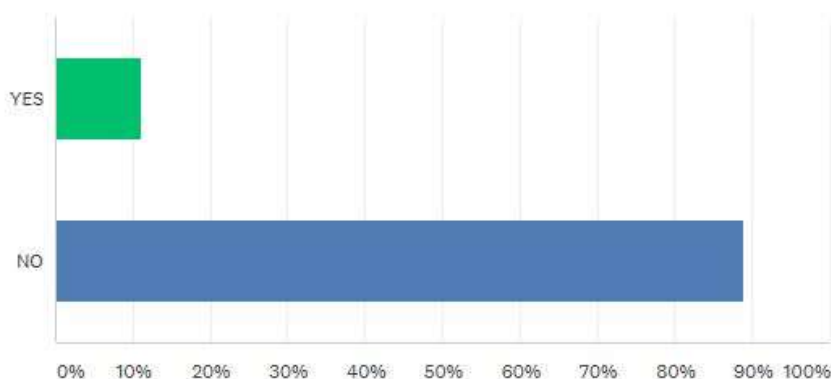
Answered: 109 Skipped: 13



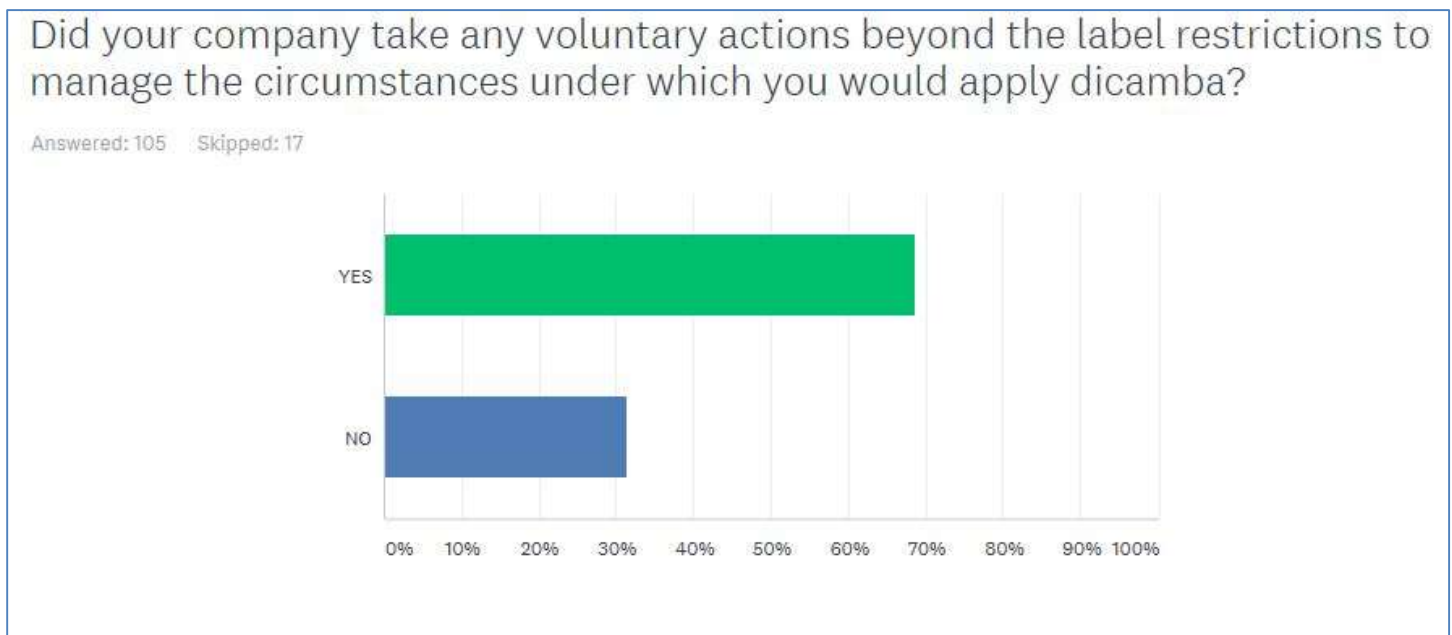
**Comments:** The retailers felt very much as they were on the front line for handling complaints; when a situation was controversial between farmer neighbors they felt the manufacturers were even more reluctant to get involved. They were disappointed the product reps could not even discuss what the retailers and farmers felt were obvious volatility issues. Some commented that their reps did the best job they could, but that the industry itself has not done enough work to thoroughly understand how to use this product effectively. More than a few comments mentioned their BASF rep was much more responsive than the other company reps.

Do you believe that the application of non-labeled dicamba formulations to soybeans was a major contributor in Illinois of injury to non DT soybeans?

Answered: 108 Skipped: 14



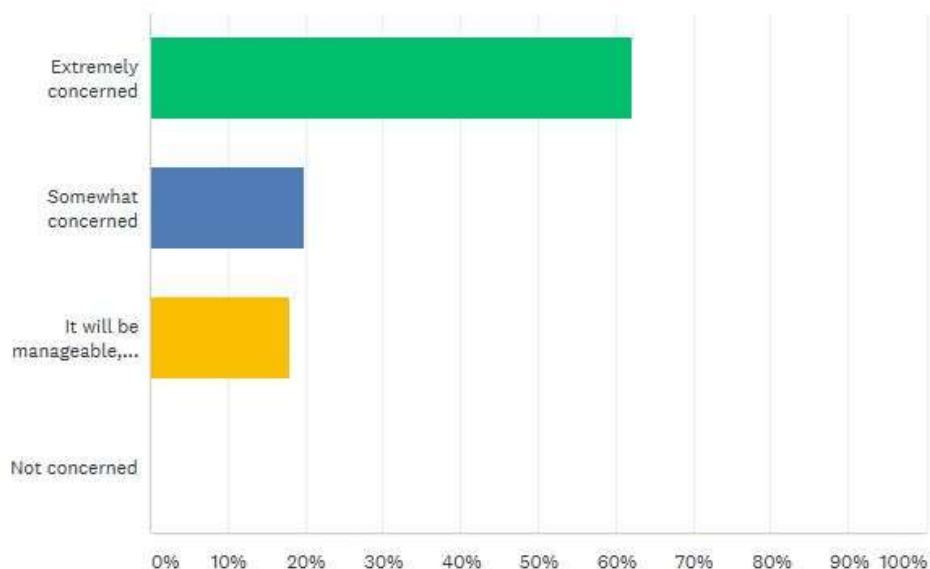
**Comments:** Retailers were adamant in their comments that they, and the farmers they sold product directly to, all used the new products on soybeans. A few suspected “tin sheds” and “brokers” of possible off label sales. Some mentioned again the dicamba issues from products applied to corn as having an early impact on some soybeans.



**Comments:** The most common comment was retailers stated they applied a cut off date for applications (most said they quit the last week of June and did not apply anytime in July) and turned down business after those dates. Several said they applied a buffer even when it was not indicated on the label during an upwind application toward a sensitive crop or doubled the buffer to a sensitive crop. Many stated they refused to apply if an orchard, vineyard or nursery was within one mile, or refused to spray at all in areas highly populated with homeowners. Some required their customers to identify all fields surrounding their Xtend field before the spray order would be considered. A few flagged sensitive fields. Many dedicated sprayers to dicamba or used injection units. A few who completed the survey stated they did not apply the product at all, just sold the seed.

Rate the level of concern you have regarding the future use of these products as the % of acres of DT soybeans increases, regarding their potential impact on sensitive crops other than soybeans (i.e. orchards, vegetable crops, gardens, trees, etc.)

Answered: 111 Skipped: 11



**Comments:** Many comments said they could improve upon drift and contamination occurrences but the volatility issues are beyond their control as an applicator. Many expressed that if the volatility issue is not addressed, that increased soybean acres being treated with dicamba will result in more homeowner and specialty crop damages. They stated that even with more Xtend acres next year, there will still be a lot of non-GMO, organic and Liberty Link fields that must be protected. If more farmers plant Liberty beans, there will be an even bigger problem. Some were anxious to see how yields would be impacted in fields with symptoms.

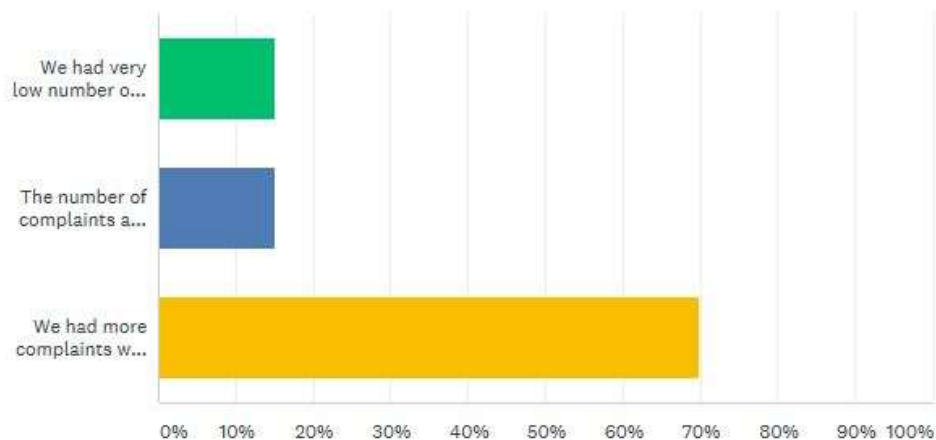
Many commented that the weed control was impressive, but there are so few optimum days to spray that they can't see how they are going to cover more acres given the narrow window of "perfect days" and even then the volatility afterwards is an issue. Many said there will simply not be enough optimum days to get the job done, but the farmers will still expect it to get done, putting intense pressure on commercial applicators.

Several stated they are very concerned about political repercussions if damage migrates to homeowners, vineyards and orchards if more acres are applied next year without addressing the problems that occurred this year. They feel in areas of the state where there are a lot of specialty crops and more populated areas, the liability to apply these products is simply too great for the applicator.



As of Aug 1, the IL Dept of Ag has received 143 formal complaints regarding dicamba use on soybeans. How did your experience with complaints, insurance claims or issues with dicamba use on soybeans compare to your general experience as a commercial applicator with other pesticide use issues in a given season?

Answered: 106 Skipped: 16



**Note:** As of August 24, 2017 the IDA is at 239 misuse complaints attributed to dicamba.

**Comments:** Retailers stated they did an incredible amount of hand holding with farmers, even on fields they did not commercially apply. It took up most of their summer. Many said the it most complaints they have handled by far, in their entire career. Many stated that they saw more issues with famer applied fields. Several stated there were very serious issues between farmers and in communities; most farmers did not call the IDA.

Several stated they have a few problems of their own, but a multitude of problems with farmer applied fields. Most were hoping the yields would not be impacted and claims would not be followed through on with insurance companies. Some stated that increased Xtend acres may help mitigate issues between farmers but there will still be issues with non-GMO, Liberty Link and other non-DT soybeans.

If there could be any changes on the labels for these products, what would you suggest to improve the use of these products in the 2018 season?

**Comments:** The most prevalent suggestion was to address temperature and humidity; the manufacturers need to figure out the conditions that lead to volatility and make necessary changes, or research these products more. Other comments, in order of the number of times these were suggested are as follows:

Designate a timeframe for spraying, and look at mid June as the cutoff and some suggested by mid May or end of May.

If temperature exceeds 85 degrees, require an additional setback to sensitive crops, such as ¼ mile, which could help protect a nearby sensitive field from any volatility issues.

The restrictions for applications near sensitive crops and areas needs to be increased; several suggested ¼ mile and up to 1 mile. Don't apply it at all if a sensitive soybean field is immediately adjacent on any side.

Make the tank mix partners consistent regardless of it being Xtendimax or Engenia; need more tank mix partners and more research in this area as to how tank mix partners impact the product volatility.

Restrict applications to only trained professionals; make it restricted use.

These products should only be used for burn down, not on soybeans.

What type of specific educational sessions would you like IFCA to offer during the winter of 2017-2018 to help better understand the situation going forward?

**Comments:** Please give us honest answers on the volatility and how to manage this if these products are going to stay on the market. What were the conditions that reduced volatility?

Private applicators need a lot more education, who is going to educate them?

Put on sessions for farmers, they need to better understand herbicide symptoms and what is realistic in terms of when we can apply these products.

Help us with cleanout procedures for spray rigs, tenders, and mix plant. Manufacturers or researchers need to help us in this area. What level of dicamba can still be present to harm soybeans and how do we test for it in our cleanout methods?

Review the findings and investigations from this year and recommend ways to improve it. Give a report on what the IL Dept of Ag determined with their investigations.

More education on drift reduction additives.

More understanding on inversions, and also how inversions can impact the field days after application.

Will the manufacturers agree to step up to the plate and take some ownership and stewardship of this product, would like to hear more about what they are going to do to help the situation. Educate the manufacturers on the real world and what it is like to manage this product label with all the weather challenges and demands of our customers to get it done.

Please provide your observations on the conditions at the time of application that were conducive to an effective experience with these new products.

**Comments:** These are listed by the number of times they were mentioned with the first being the most mentioned and then in descending order of mention.

Apply earlier in the growing season in cooler temperatures.

If either corn or Xtend soybeans were surrounding the field we had very good experience and good weed control overall.

Ground must be dry, calm winds, 75-80 degree temps max and no non DT soybeans within a half mile or a mile away.

Low temperature and humidity during and after application.

Spray only when non DT soybeans are in early vegetative stages.

Between 65-85 degrees with humidity between 50-75% and winds below 10 mph.

The more water the better: 12.5 to 15 gallons per acre.

Use 20 gallons per acre.

Apply only after 8 am and quit at 3 or 4 pm: Spray during “bankers” hours.

Apply when rainfall is expected within a few days of application (but can’t control the weather!)

We followed the label exactly, tried to do everything right, and we still had problems.

Apply before the non DT soybeans or other sensitive crops emerge.

Please provide your observations about the conditions at the time of application that you believe attributed to problems encountered with the use of these new products.

**Comments: These are listed by the number of times they were mentioned with the first being the most mentioned and then in descending order of mention.**

Hot weather and humidity was a big problem. Also extended periods without rain after application was a problem.

We applied too late in the year.

Variable winds after application carried the product over fields after we applied. The change of wind within a few hours of application caused problems.

Wind that shifted after application moved the product a lot farther than I could have imagined.

When cool nights followed the application, we saw movement.

Fields where no residual was applied resulted in us spraying weeds using very large droplets and not catching the small weeds in the canopy.

Don’t spray too late in the evening.

Farmer applicators caused more problems than commercial applicators.

Winds at 4-6 mph blowing towards adjacent sensitive soybeans, even when we left the required buffer, still results in the non DT beans being damaged.

We thought we did everything right, but still had problems! Not sure what to suggest.

Extremely dry conditions in the weeks following the application caused problems.

What can be done about the product getting up and moving 7-10 days after application? The buffers didn't seem to make much difference; if the wind is blowing toward a non DT soybean field a 110 foot buffer doesn't seem to help.

Nitrogen in our system could have been an issue; sprayers used for Y drops and later for dicamba may have still contained small amounts of liquid nitrogen and maybe that unlocked the "vapor grip?" Not sure how little N it may take to cause problems with increasing product volatility.

Please provide any additional comments to IFCA on this issue. Thank you!

**We received many comments on this open-ended question. In no order, here are some of the responses.**

I hope we can use this technology responsibly with more help and answers from the manufacturers than we had this year. We need this product to manage weeds especially water hemp.

We need a task force of experts, independent from the manufacturers, to help the retailers and farmers and landowners when there are questions and problems. We are spending an incredible amount of time dealing with this with no return on our investment for the time spent handling issues that the manufacturers should be working to address and handle.

The manufacturers need to admit that there is still volatility with these products and that non-DT beans will be difficult to protect from these products.

This product and the marketing platform was pushed into the marketplace without adequate research. Go back to the drawing board and start over.

The problems we had this summer speaks for itself: we need this technology to remain available but we also need answers.

These products are important tools in the toolbox but more work must be done to figure out when it can be used and when to stop spraying dicamba.

This product worked well to control weeds. I hope that the symptoms do not result in reduced yield potential in fields that had symptoms.

We will not use these products again until science can assure us a product that will not get up and move out of the field. We will educate our growers to make a good fall burndown, a good early spring burndown, and a safe post program.

Our main issues were with tank and sprayer contamination, but the volatilization and inversion issues concern me a great deal.

I've never been stressed so much in 15 years as an applicator and it's going to continue through harvest. I'm ready for another career; however, when I see the weed control it provides I am hopeful we can improve upon the other issues going forward.

Tin sheds and brokers need to be addressed; the rules are so lax with the sale of these products.

Something with the label and formulations is not correct. When we applied the products during the seed production years and we had to use Clarity without AMS and with regular old spray tips and conditions, and we did not experience the cupping and damage issues we had this year using the new products, nozzles and following the new label.

IFCA should lobby to remove this product for use on soybeans. We need to ensure dicamba remains a viable product for use in burndown and in corn.

The use of this product is going to create resistance in 4 years or less in both corn and soybeans.

China needs to approve the Enlist trait, we need more choices.

The manufacturers rushed this product to the marketplace and placed all the liability on the applicators and his/her insurance company. If these claims continue we will not be able to afford insurance to operate.

Farmers thought everyone planted Xtend soybeans. Unless they buy from a reputable seed dealer they get no information on proper use of this product.

There is no way a responsible applicator can cover the acres of Xtend soybeans that will be planted with the wind, temperature, humidity and inversion issues. There aren't enough days or sprayers out there to apply this chemical according to the label on the few days that the environmental conditions allow for it.

I'm very glad we did not apply this product.

I am offended by the manufacturers and their lack of willingness to provide answers and solve the problems; instead they assign blame to poor buffers, illegal products, generic dicamba and tank contamination. They are more concerned about their quarterly earnings reports than the customers they serve.

Don't use roundup or surfactants in the tank; make a second application to get the grasses.

The manufacturers need to invest in a product that does not drift or volatilize. In most areas of Illinois, we have way too many homes and specialty crops to take the risk of using this product as it is today.

We need to protect this technology, but farmers also need to better understand herbicide crop response.

I can't thank IFCA enough for being proactive and searching for solutions to this problem.

