






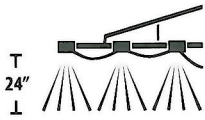

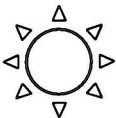


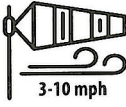


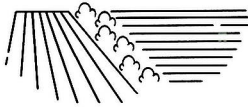


# ENGENIA<sup>®</sup>, XTENDIMAX<sup>®</sup>, AND FEXAPAN<sup>®</sup> APPLICATION QUICK GUIDE

*Always read and follow all product labels.*

PPP-119

			
<p><b>TRAINING</b></p>	<p><b>RECORD KEEPING</b></p>	<p><b>SUSCEPTIBLE CROPS</b></p>	<p><b>NOZZLES</b></p>
<p>Everyone who makes applications must attend dicamba-specific, state-approved training.</p>	<ul style="list-style-type: none"> <li>You must keep more than just RUP application records.</li> <li>You must record temperature, wind speed, and direction before and after each application for each field.</li> </ul>	<ul style="list-style-type: none"> <li>You must consult DriftWatch before each application.</li> <li>You must scout adjacent and neighboring fields for sensitive/susceptible crops (DriftWatch doesn't map non-DT soybeans).</li> </ul>	<p>Only use the nozzles specified on the products' websites.</p>
			
<p><b>TANK MIX PARTNERS</b></p>	<p><b>REQUIRED PPE</b></p>	<p><b>GROUND SPEED</b></p>	<p><b>BOOM HEIGHT</b></p>
<p>Only tank mix with products listed on the products' websites — including adjuvants.</p>	<p>Long-sleeved shirt, pants, shoes, socks, and waterproof gloves.</p>	<ul style="list-style-type: none"> <li>Never exceed 15 mph ground speed.</li> <li>5 mph recommended in downwind field edges.</li> </ul>	<p>Set spray booms above the canopy 24 inches or less.</p>
			
<p><b>SETBACKS</b></p>	<p><b>APPLICATION TIMING</b></p>	<p><b>TEMPERATURE</b></p>	<p><b>RAIN</b></p>
<p>Do not mix these products within 50 feet of wells, sinkholes, streams, and rivers (some exception for impervious pads).</p>	<p>Only apply between sunrise and sunset.</p>	<p>Do not apply if a temperature inversion exists.</p>	<p>Do not apply if rain is predicted (51% chance or greater) within 24 hours.</p>
			
<p><b>WIND SPEED</b></p>	<p><b>SPRAYER CLEANING</b></p>	<p><b>SPRAY VOLUMES</b></p>	<p><b>DOWNWIND BUFFERS</b></p>
<ul style="list-style-type: none"> <li>Apply only when wind speeds are 3–10 mph, including gusts.</li> <li>You cannot apply at all when the wind is blowing toward a neighboring sensitive crop.</li> </ul>	<p>Clean all traces of AMS from equipment before application, and clean all traces of dicamba from equipment after application according to label directions.</p>	<p>Minimum spray solution per acre:</p> <ul style="list-style-type: none"> <li>BASF Engenia<sup>®</sup> — 10 gallons</li> <li>Monsanto Xtendimax<sup>®</sup> — 15 gallons</li> <li>DuPont FeXapan<sup>®</sup> — 15 gallons</li> </ul>	<p>You must always maintain a downwind buffer in your field except when next to DT beans, corn, sorghum, small grains, proso millet, and fields prepared for planting.</p> <p>The buffers are:</p>
<p>BASF Engenia<sup>®</sup> — 110 feet</p> <p>Monsanto Xtendimax<sup>®</sup> — 110 or 220 feet (depending on rate)</p> <p>DuPont FeXapan<sup>®</sup> — 110 or 220 feet (depending on rate)</p>	<p>Reference in this publication to any specific commercial product, process, or service, or the use of any trade, firm, or corporation name is for general informational purposes only and does not constitute an endorsement, recommendation, or certification of any kind by Purdue Extension or Office of Indiana State Chemist. Individuals using such products assume responsibility for their use in accordance with current directions of the manufacturer.</p>		

## Required Records for Engenia, Xtendimax, FeXapan Applications

Personal Information			
Name & license number of certified applicator			
Name (and RT number if applicable) of person making application (if different from above)			
Dicamba training (mm/dd/yy, city, CCH or PARP number)			
Pre-application		Date(s) (mm/dd/yy)	
Checked DriftWatch for nearby sensitive sites/crops			
Checked registrant website for tank-mix partners			
Dicamba purchase (include the receipt)			
Sprayer cleaned of all traces of AMS			
Application			
Date (mm/dd/yy)			
Target crop			
Field location/description			
Field size			
Pre- or post-emergent (check one)	<input type="checkbox"/>	Pre-emergent	<input type="checkbox"/> Post-emergent
Date crop planted (mm/dd/yy)			
List all pesticide trade names applied (include EPA registration numbers)			
Nozzle (Make/Model, Pressure)			
List all adjuvant trade names			
Downwind buffer (check one)	<input type="checkbox"/> 100% my field	<input type="checkbox"/> _____ ft. in my field + _____ ft. in adjacent property	<input type="checkbox"/> 100% adjacent property
Application Weather Conditions			
	Start of Application		End of Application
Time			
Temperature at boom height			
Average wind speed of 2-minute span, facing wind at boom height			
Average wind direction over 2-minute span (0-360 degrees preferred over N, S, SW, etc.)			
Method or equipment used to measure weather			
Post-application			
Date sprayer cleaned of all dicamba residue (mm/dd/yy)			
Cleanout method according to label directions			

### Websites

- BASF Engenia® Herbicide Tank Mix: [www.engeniatankmix.com](http://www.engeniatankmix.com)
- Monsanto Xtendimax® Application Requirements: [www.xtendimaxapplicationrequirements.com](http://www.xtendimaxapplicationrequirements.com)
- DuPont FeXapan® Application Requirements: [www.fexapanapplicationrequirementsdupont.com](http://www.fexapanapplicationrequirementsdupont.com)
- DriftWatch: [driftwatch.org](http://driftwatch.org)
- Office of Indiana State Chemist Dicamba Update (downloadable PDF available here): [www.oisc.purdue.edu/pesticide/dicamba.html](http://www.oisc.purdue.edu/pesticide/dicamba.html)

# Precautions for Dicamba Use in Xtend Soybeans

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## Dicamba use in soybean - general information

Ohio, Indiana, and Illinois are heavily infested with weeds resistant to glyphosate (group 9), PPO inhibitors (group 14), and ALS inhibitors (group 2). This has greatly reduced the number of effective postemergence herbicides for controlling these weeds in Roundup Ready 2 (RR2) soybeans. Adoption of Roundup Ready 2 *Xtend* (glyphosate and dicamba resistant – RR2 Xtend) soybeans and use of dicamba-based herbicides is one option for managing resistant weed populations. Keep in mind that selection for dicamba resistance occurs each time dicamba is applied, and over reliance on this technology will lead to the development of dicamba-resistant weed populations.

Concurrent with the development of dicamba-resistant soybean varieties, Monsanto and BASF developed new formulations of dicamba herbicides for use in RR2 Xtend soybeans that are supposed to be lower in volatility compared with previous dicamba products. These products are Xtendimax (Monsanto), FeXapan (same thing as Xtendimax, but sold by DuPont), and Engenia (BASF). The federal labels for these herbicides contain very detailed application instructions to reduce risk of off-target movement. However, in 2017, there were thousands of cases of off-target movement affecting millions of acres throughout the soybean growing region of the US. As a result, we provide information here to help reduce risk of off-target movement of dicamba applied to RR2 Xtend varieties. The information provided here is not necessarily inclusive, or meant to replace a thorough knowledge of herbicide labels and other information provided by manufacturers.

In early October 2017, the EPA approved revised labels for Xtendimax, FeXapan, and Engenia. All three products are now restricted use pesticides, meaning an applicators license must be held in order to purchase and apply these products. The labels now also require applicators to attend an annual dicamba or group 4 herbicide-specific training prior to using the products. In addition to becoming restricted use pesticides, these revised labels have more restrictions outlining how the products should be applied. The language regarding buffers and applications near sensitive crops has also been rewritten for clarification on what constitutes sensitive areas and crops, and how the products should be applied.

## Precautions for Dicamba Use in Xtend Soybeans

### Important label restrictions

- 1) **Use only approved dicamba products** - As of early November 2017, there were only three dicamba-containing products approved for preplant, preemergence, or postemergence use in Roundup Ready Xtend soybeans. The approved products are Xtendimax, FeXapan, and Engenia. It is a violation of federal and state law to use anything but approved formulations of dicamba on Roundup Ready Xtend soybeans. Other dicamba products can be used at least 14 days preplant, if the appropriate waiting interval is followed per the label for non-Xtend soybeans.
- 2) **Wind direction** – The labels state that a buffer is required if wind is blowing towards a sensitive area, and that dicamba should not be applied at all if the wind is blowing toward a sensitive crop. In 2017, it appeared that many applicators did not follow this restriction, perhaps because a specific distance to the sensitive area was not specified and sensitive areas and crops were not well defined. Realistically, if the sensitive crop is within a 0.5 mile or less of the target field, common sense would suggest it might not be a good idea to apply to that field. If wind is blowing towards extremely sensitive vegetation, such as non-Xtend soybean varieties, we recommend not to spray until the wind is blowing away from the sensitive crop on the day of application, and also for the next 2 to 3 days after application.
- 3) **Wind speed** - The labels allow spray applications when wind speeds are between 3 and 10 mph, and these wind speeds are to be measured at the boom height. This is more restrictive than in 2017 when applications could be made when wind speeds were up to 15 mph, depending on the product used. In 2017, a key aspect overlooked by many was the speed of wind gusts, and many applicators may have focused more attention on average wind speed rather than wind gust speed. As a result, many spray applications were made during days when average wind speeds were less than 15 miles an hour, but in many instances wind gusts were in excess of 15 miles an hour. We strongly recommend not applying on days when wind gusts exceed 10 miles an hour even if sustained wind speeds are less than 10 miles an hour. It is not always easy to find a window with these lower wind speeds. The reality is that some years can be challenging to make applications of dicamba products that have very strict label precautions with regard to wind.
- 4) **Time of day** – The labels now allow applications to be made only between sunrise and sunset. This is to restrict applications to when temperature inversions are less likely to occur. If the time of day restriction was in place in 2017, there would have been substantially fewer hours in June where applications could be made. Accounting for conditions that allowed equipment traffic, West Central Indiana would have had only 48 hours in June with wind speeds between 3 and 10 mph between the hours of sunrise and sunset.
- 5) **Temperature inversion** - During a temperature inversion, very small spray droplets remain suspended in the air and do not settle on plants or the soil surface. These droplets will move when wind speed increases later in the day. We strongly recommend that you use an app like Spray Smart or something similar to determine whether or not a temperature inversion exists. If there is a temperature inversion, do not spray until the inversion has lifted.
- 6) **Buffers** - Another frequent violation of the label in 2017 was failure to implement buffers near sensitive areas. Many applicators took the approach that if the wind was blowing away from the sensitive crop, dicamba could be applied right up next to the sensitive crop. University research in 2017 demonstrated that even the new formulations of dicamba can volatilize and move on dust particles for up to three days following application. Wind directions can change on day two or day three and move volatilized dicamba or dicamba dust to sensitive vegetation. So the establishment of buffers is extremely important if you are near a sensitive area.
- 7) **Nozzles** - Consult the websites for the respective herbicides to find the list of approved nozzles and spray pressures to apply the approved dicamba products to Xtend soybeans.

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## Precautions for Dicamba Use in Xtend Soybeans

- 8) **Spray additives and tank-mix partners** - The list of approved spray additives changes frequently, so it is important to regularly check the websites. All approved dicamba products require the use of a drift control agent from the list of approved drift control agents on their respective website. The addition of any other product, including foliar fertilizers, insecticides, herbicides, or fungicides, that is not listed on the website for the respective herbicide constitutes a label violation. Finally, do not add ammonium sulfate or anything containing ammonium sulfate as this produces more of the volatile form of dicamba. There are approved non-ammonium sulfate based water conditioners to reduce hard water antagonizing glyphosate that is tank-mixed with an approved dicamba formulation.

### Websites for the approved dicamba products:

[www.engeniatankmix.com](http://www.engeniatankmix.com)

[www.xtendimaxapplicationrequirements.com](http://www.xtendimaxapplicationrequirements.com)

[www.fexapanapplicationrequirements.dupont.com](http://www.fexapanapplicationrequirements.dupont.com)

### Additional suggestions to reduce offsite movement

The following are a number of additional suggestions to implement if you are concerned about offsite movement. Keep in mind that one can do everything “per the label” but still have offsite movement. This happens because: 1) even these new dicamba formulations have the capability of volatilizing and moving on dust particles; 2) fine spray particles can remain suspended in inversions; and 3) dicamba can move with runoff water after heavy rainfall events. To reduce the probability of both primary and secondary dicamba movement events, consider the following recommendations:

- 1) Do not spray when the forecast indicates wind gusts will exceed 10 mile per hour. It is impossible to predict when a gust of this magnitude will happen nor how long it will last. Gusts that reach 30 mph can move spray particles and vapor for great distances.
- 2) Reduce boom heights to the extent practically possible, in order to get close to the 24- inch boom height limit specified on the label. Simply reducing the boom height from 48 to 24 inches has been shown to reduce the distance traveled by drift particles by 50%. One of the most effective ways to safely lower the boom height without running the boom into the ground is to reduce sprayer travel speed. Also remember that any travel speed over 15 mph is off-label. The labels also now recommend that travel speeds be reduced to 5 mph when making applications on the field edges.
- 3) Avoid application when temperature exceeds 80 degrees. Assuming that these dicamba products have some potential for volatility, the risk of this occurring increases with temperature.
- 4) Consider applying dicamba only preplant, preemergence, or very early postemergence. Over 90% of the offsite movement complaints resulted from postemergence applications. Our assumption is that applications earlier in spring will have less likelihood to cause problems even where dicamba moves, due to the absence in many cases of any developed vegetation to injure. Temperatures are also likely to be lower when applied preplant/preemergence versus postemergence, possibly reducing the risk of movement via volatility.
- 5) Have conversations with neighbors to know what crops and technologies are being planted around Xtend soybean fields. Many offsite movement cases in 2017 occurred where neighbors planted Xtend and non-Xtend soybean adjacent to each other. Knowing what sensitive crops are in the vicinity of your Xtend fields will enable better decision-making about use of dicamba in a given field.

Find the latest weed management information and tools from Purdue: <https://ag.purdue.edu/btny/weedscience>

Find the latest weed management information and tools from Ohio State: <https://u.osu.edu/osuweeds/>

Find the latest weed management information and tools from Illinois: <http://extension.cropsciences.illinois.edu/fieldcrops/weeds/>

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**2018**  
**Guidance for Interpreting Dicamba Labeling Terms & Phrases**

**OFF-TARGET MOVEMENT:**

“Do not allow herbicide solution to mist, drip, drift or splash onto desirable vegetation because severe injury or destruction to desirable broadleaf plants could result.”

“Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that may be damaged or the crops thereof rendered unfit for sale, use or consumption.”

*These restrictions would apply to any off-target movement to any desirable vegetation by means of drift, including drift resulting from application during a temperature inversion. It would not apply if it can be determined that off-target movement was from volatility, runoff, or exposed windblown soil particles.*

**TEMPERATURE INVERSIONS:**

“Do not apply this product during temperature inversion, as the off-target movement potential is high.”

“Do not apply Engenia when temperature inversions exist at the field level.”

“Do not apply this product between sunset and sunrise.”

“Apply only during the following period: sunrise until sunset.”

*Sunrise shall be defined as time of sunrise, and sunset shall be defined as time up to 30 minutes after sunset, as recorded by a reliable weather recording service. Temperature inversions shall be identified by reliably recorded calm or 0-3 mph winds during application.*

**SENSITIVE and SUSCEPTIBLE CROPS:**

“Do not apply when wind is blowing in the direction of neighboring sensitive crops.”

“Do not apply this product when wind is blowing toward adjacent non-dicamba tolerant crops, this includes non-dicamba tolerant soybeans and cotton.”

“Sensitive and susceptible crops include, but are not limited to non-DT soybeans and cotton, cucumber and melons (EPA crop group 9), flowers, fruit trees, grapes, ornamentals including greenhouse-grown and shade house-grown broadleaf plants, peanuts, peas and beans (EPA crop group 8), peppers, tomatoes, and other fruiting vegetables, potato, sweet potato, tobacco, and other broadleaf plants.”

*Sensitive crops shall also include the above-suggested crops being grown in a home garden.*

**NEIGHBORING and ADJACENT:**

*Neighboring and adjacent fields/areas referenced on these labels shall mean those non-target areas immediately next to the target field, including those that butt up to or touch the target field. The term shall also include fields or sites separated by nothing more than a vegetative strip, fence row, tree row, farm lane, driveway, street, county road, state road, interstate road, railway corridor, residential area, drainage ditch, body of water, known habitat for threatened or endangered species, natural area, wooded lot, and other similar field boundaries.*

*Specifically, not included in this definition are Conservation Reserve Program (CRP) lands that are not currently being utilized in agricultural production.*

*Although the proceeding legal definition of neighboring and adjacent shall be applied to these labels, University weed scientists and researchers strongly recommend that no-spray restrictions be extended to any sensitive crop within ½ mile of the downwind edge of the target treatment field.*

**BUFFER REQUIREMENTS:**

“The applicator must always maintain a 110-foot (or 220-foot) downwind buffer between the last treated row and the nearest downwind field edge (in the direction the wind is blowing). The following areas (*acceptable out-of-field buffers*) may be included in the buffer calculation when directly adjacent to the treated field edges:”

“Maintain a 110-foot buffer when applying this product from the downwind outer edges of the field, less the distance of any of the adjacent areas specified below (*acceptable out-of-field buffers*).”

*If the application is not otherwise prohibited, a downwind buffer is always required for every application. Buffers will often be required on two or more downwind sides of a target field if wind direction is not constant and non-target sites are not positioned completely perpendicular to one another. A 45-degree wind direction would require a buffer on two downwind sides.*

**ACCEPTABLE OUT-OF-FIELD BUFFERS:**

“Roads, paved, or gravel surfaces; agricultural fields that have been prepared for planting; planted agricultural fields containing asparagus, corn, DT cotton, DT soybeans, sorghum, proso millet, small grains, and sugarcane; areas covered by the footprint of a building, silo, shade house, feed crib, or other manmade structure with walls and a roof.”

*The above listed out-of-field areas can be used as part of the 110' or 220' buffer calculation, resulting in a buffer that: 1) will be completely (100%) within the target field, 2) partially within the target field and partially from the list of acceptable adjacent areas, or 3) completely within the acceptable adjacent areas listed above.*

*It should be noted that the use of “roads” as part of the acceptable buffer calculation is somewhat misleading in that most Indiana roads have a vegetative roadside shoulder area between the target field and the paved/gravel road surface. Therefore, the vegetative roadside area cannot be used as part of the buffer calculation area, so the required buffer would need to come from within the target field.*

March 8, 2018

## FREQUENTLY ASKED QUESTIONS

### Dicamba Use & Mandatory Training in INDIANA

The following FAQs are in response to issues raised throughout the 2018 mandatory dicamba training season. Updates will be posted at <http://www.oisc.purdue.edu/pesticide/dicamba.html>.

#### 1. Who needs mandatory dicamba training?

**IMPORTANT:** Only three dicamba products are approved for post-emergent use on dicamba-tolerant soybeans in Indiana:

- Engenia (*BASF is the registrant*)
- XtendiMax with Vapor Grip Technology (*Monsanto is the registrant*)
- FeXapan with Vapor Grip Technology (*DuPont is the registrant*)

These products are Restricted Use Pesticides and can only be purchased and used by certified applicators (*private applicators and commercial applicators*). Prior to applying or using any of these three dicamba products, the applicator must complete dicamba training. For private applicators (farmers) this includes the person who holds the private applicator license and any person who works under the private applicator's supervision when applying the product. For commercial applicators, both the licensed commercial applicator and the registered technician who works under the supervision of the commercial applicator must have the training before applying the product. This training requirement applies to applications made to soybeans and to applications on any other crops listed on these product labels.

#### 2. Do mixers, loaders, handlers, and spray equipment cleaners need training?

Yes, anyone who is responsible for any part of the application process which includes mixing, loading, application, or cleaning dicamba application equipment must attend the training. The training is required whether you are a certified applicator or not. Workers involved in nothing more than transportation of unopened dicamba containers are not required to be trained.

#### 3. Do I need to complete training before I purchase these products?

No, certified applicators (both private and commercial) do not need to complete training to purchase the products, but you must complete training before applying the products.

#### 4. Who can provide training?

Only OISC-approved trainers can provide this training in Indiana. This training is being provided at all 2018 Private Applicator Recertification Programs (PARPs) and at many of the Continuing Certification Hour (CCH) trainings. All approved trainings will include a reference to MANDATORY DICAMBA TRAINING. Approved trainers include staff from CES, OISC, and select trained trainers from the application industry.



## **5. How long is the training?**

The training will last approximately 60 minutes depending upon the number of questions and audience participation.

## **6. What does the training cover?**

The training will cover the product application requirements, recordkeeping requirements, weed management practices, buffer requirements and protection of susceptible crops, chemistry, mixing and handling, window of application, equipment preparation, special considerations, and compliance and enforcement challenges from the 2017 spray season.

## **7. Do I have to take an exam?**

No, the class is instruction, review and open question and answer session.

## **8. Will I receive a certificate after completing the training?**

No, the program sponsor will maintain a roster of those attending the training and will collect provide that information to OISC. However, it is important that you keep a record of the date, location, and PARP or CCH meeting number so you can add those to your application records.

## **9. Do I have to be certified and licensed to attend these PARP or CCH programs?**

No, anyone, certified or not, can attend dicamba training to meet this label requirement. If you are not currently a certified applicator, you will not get PARP or CCH credit, but you will get credit for attending dicamba training.

## **10. Do I have to attend the entire PARP or CCH program to get dicamba credit?**

No, you must attend the entire dicamba portion of the program, but participation in the rest of the program applies to getting PARP or CCH credit. Our hope is that if decide to leave after dicamba training, you wait for a scheduled break so as to not disrupt other meeting participants. It is important, however, that you make sure the program sponsor has recorded your attendance which will be filed with OISC.

## **11. Will dicamba training from another state count as dicamba training in Indiana?**

No, anyone using one of these dicamba products in Indiana must attend the mandatory dicamba training offered as part of one of the OISC-approved PARP or CCH programs. It is our understanding that dicamba training offered in the other contiguous states of Ohio, Michigan, Illinois, and Kentucky is being presented by the product manufacturers/registrants. Registrant training has not been recognized as meeting the state training requirement in Indiana.

## **12. Will OISC-approved dicamba training in Indiana count in other states?**

OISC has been in communication with the State Department of Agriculture from the states of Ohio, Michigan, and Illinois. Each have indicated that they will accept Indiana dicamba training for applicators who apply dicamba in their respective states. We have not yet heard from Kentucky. It is important to note that label-required dicamba training is separate from and in addition to applicator certification. Therefore, reciprocal certification agreements between states do not apply to dicamba training.

## **13. Is training one-time or do I need training every year?**

If these products continue to be registered for use after 2018, training may be an annual requirement. U.S. EPA will have to approve the continued use of these products after December 2018, and the training requirement may be revisited at that time. For now, you must complete training to use these products in 2018.

## **14. Will my applicator license be amended to show that I've received training?**

No. You are responsible for retaining your training information for completing your application records, but OISC will have access to the dicamba training records. Pesticide dealers are not required to see the proof of training prior to selling the product to certified applicators.

## **15. Will OISC check my records?**

OISC has the authority, under the Indiana Pesticide Use and Application Law, to request to see your record of pesticide purchases, application, and as part of any dicamba application of these products, the proof of training record. The practice of checking these records is normally associated with a misuse investigation, but OISC may also do some routine purchase or application record checks.

## **16. Does the 2018 Guidance for Interpreting Dicamba Labeling Terms & Phrases document distributed at training qualify as legal guidance?**

Yes, this guidance document and other guidance developed as part of this mandatory Indiana dicamba training has been created through consultation with U.S. EPA and the product registrants/manufacturers. Just like other questions about label interpretation, OISC has been trying to address questions about these dicamba labels, as they are raised. Since OISC is the state lead agency for pesticide regulation in Indiana, they will be the ultimate authority for legal compliance decisions.

## **17. Are downwind buffers required next to in-field grass/vegetative waterways?**

No, downwind dicamba buffers would not be required next to these areas. U.S. EPA and OISC have concluded that grass waterways should be treated the same as Conservation Reserve Program (CRP) areas. Since both CRP and grass waterways include agricultural areas that could

otherwise be used for cropland production, buffers will not be required to protect these voluntary positive conservation practice areas.

**18. Is a downwind buffer required if my field is bordered by a wooded lot that I own?**

Yes, the requirement to protect sensitive areas like wooded or vegetative areas that may serve as habitat to an endangered species, regardless of who owns the area to be protected, is part of each of these labels. Therefore, even an adjacent wooded lot that you own or control is required to have a no-dicamba spray buffer.

**19. Are adjacent or neighboring organic crops considered sensitive or susceptible?**

Yes, although certified organic crops are not specifically listed as examples of sensitive or susceptible crops on these labels, the fact remains that any pesticide residues in these crops, whether damaging or not, might make these crops unfit for sale, use, or consumption as organic. Therefore, certified organics are considered sensitive or susceptible crops. The restrictions prohibiting application when wind is blowing toward the certified organic crops do apply.

**20. I have a spray injection system that allows me to keep my dicamba and my other on-sprayer herbicides and adjuvants in separate tanks. The point of injection for each tank is at the spray boom. Can I use the same spray system for dicamba and other herbicides or adjuvants if those other products are not on the list of label-approved tank mixes?**

No, you can't use the injection spray system to circumvent the tank mix restrictions. The labels of these products require that the entire spray system, including tanks, pumps, booms, lines, screens, and nozzles be cleaned according to label directions, both before and after application. Therefore, since it is impossible to clean the spray booms before or after injection of these dicamba products, this type of application would be prohibited. Even very small amounts of dicamba left in spraying systems have caused significant cross contamination and non-target impact issues.

**21. Is there any guidance on what to do or not do with these dicamba products that have been mixed for application but then the weather changes abruptly, preventing legal application?**

Purdue University has not yet done storage stability studies with the new formulations of dicamba. Therefore, we have no definitive guidance on product stability. However, currently lacking supporting data, you may be able to store a mixed load for 24-48 hrs without any problems provided you agitate it once in a while (every 4-8 hrs). Don't add a water conditioner unless an approved product is on the label. If you need to spray elsewhere, store the dicamba as a hot load (pump it into a storage tank, labeled appropriately) and clean out the sprayer before spraying a sensitive crop. If weeds get to be bigger than 4 inches, make sure all your sprayer application parameters are on label to give the herbicide the best chance to work and don't expect 100% control.

**22. Will I be required to document my application parameters and conditions somehow beyond keeping a record, as required on the label?**

No, legally you are only required to keep a record to document things like application start and end times, boom height temperatures, wind speeds, wind directions, nozzles, boom height, ground speed, etc. If OISC is required to investigate a complaint involving your application, they will ask for a copy of your complete application records, but will also try to verify the accuracy of certain record elements, including but not limited to, wind speeds and directions. If you choose to support your records with such things as time and date stamped photographs of weather recording instruments at boom height, those supplemental materials would certainly be considered during the investigation.

**23. The application record keeping form I got at the required dicamba training did not have a space for recording “nozzle selection”. Are nozzle type and nozzle pressure required parts of the record?**

Yes, both application nozzle brand/type and nozzle spray pressure used are required records to be kept for every application of Engenia, FeXapan, and Xtendimax. The updated (2-23-18) record keeping form, including the nozzle selection information space, has been posted at both <http://www.oisc.purdue.edu/pesticide/dicamba.html> and <https://ppp.purdue.edu/private-applicators/educator-resources/>.

**24. I heard the rumor that if I apply these new dicamba products as a pre-plant burndown before April 16<sup>th</sup>, no downwind buffer is required. Is that true?**

No, that is not true. All three of these labels require a 110 foot or 220 foot downwind buffer for every application, whether the application is pre-emergent or post-emergent, regardless of the application date.

**25. Why can't I use as part of my out-of-field downwind buffer neighboring sites such as vegetative roadsides, fence rows, noncropland farmstead, pasture, hay, rangeland, turf, and sod, if these and other dicamba products are labeled for intentional use in these types of areas?**

U.S. EPA is required by the federal Endangered Species Protection Act to consider potential impacts on threatened and endangered species and their habitat as part of every pesticide registration decision they make. That impact evaluation and risk assessment process is fairly lengthy and complex, and often requires the use of predictive models and assumptions when real data may not be available or applicable. In the case of the buffer requirements for these new products, some default assumptions were undoubtedly required when assessing potential exposure scenarios in non-target non-crop areas that could serve as habitat for threatened or endangered species. The environmental exposure calculations are understandably different when considering just exposure to target sites as compared to exposure to target sites plus many additional non-target sites resulting from off-target movement (drift, volatilization, runoff, etc.). So while certain label restrictions, at times, may seem contradictory with other parts of the label, there is a legal and scientific justification for some of those inconsistencies and decisions.

**26. Based on the response to the previous question, if I intentionally wipe out all of the vegetation in my fence row and the roadside shoulder vegetation with a targeted legal application of glyphosate, can I then use those now barren areas as part of my out-of-field buffer?**

No, the labels require a downwind buffer for all applications. The labels have a very specific list of adjacent areas that may be included in the out-of-field buffer calculation. That list includes:

1. Roads, paved, and gravel surfaces.
2. Agricultural fields that have been prepared for planting.
3. Planted agricultural fields containing asparagus, corn, DT cotton, DT soybeans, sorghum, proso millet, small grains, and sugarcane.
4. Areas covered by the footprint of a building, shade house, silo, feed crib, or other manmade structure walls and or roof.

Barren soil created by total vegetation control herbicides is not on the approved label list of acceptable buffer areas.

**27 If non-DT soybeans are especially sensitive to off-target exposure to dicamba, why am I not able to map my non-DT soybeans on the sensitive crop registry DriftWatch?**

As you may be aware, DriftWatch <https://in.driftwatch.org/map> is a voluntary mapping and communication tool to help pesticide applicators learn about pesticide sensitive specialty crops that may be located near agronomic row crop fields and sites. This registry is maintained by the not-for-profit organization FieldWatch. We asked the good folks at FieldWatch about mapping non-specialty crops such as non-DT soybeans that are now a concern due to the introduction of genetically engineered crops such as Xtendimax soybeans. We were advised, *"Thanks for your inquiry regarding non dicamba beans. We have received several inquiries about adding beans to the DriftWatch Specialty Crop Registry. It has been an agenda item at our board meetings as we discussed the scope of our registry. At this time, we are focused on providing a registry for specialty crops and apiaries. If your crops are certified organic or in transition to certified organic, then they may be mapped. In addition, we are considering a pilot program for beans, but it will not be available for the 2018 season."*

**28. I have a spray injection system that allows me to keep my dicamba and my other on-sprayer herbicides and adjuvants in separate tanks. The point of injection for each tank is at the spray boom. If the other tank mix partners (both herbicides and adjuvants) are approved for tank mixing on the dicamba label, can I turn off the dicamba flow to my spray boom and be legal while spraying the non-dicamba components of my tank mix to the required downwind buffer area?**

Yes, if the tank mix partners on your spray rig are approved for use with the new dicamba products and if you can successfully turn off the flow of dicamba before you get to the buffer area, you can spray the buffer without first cleaning out your spraying system according to label requirements. However, it is recommended that you turn off the flow of dicamba before you

actually get to the downwind buffer area to allow the dicamba left in the spray boom to purge itself from your spray rig.

**29. I understand that Indiana is not distributing certificates to trainees at the state-required mandatory dicamba training sessions. If I am in need of documentation that I attended one of the approved training programs, where might I get that?**

If you are a licensed applicator, go to the OISC website <http://www.oisc.purdue.edu/> , click on MY RECORDS, search on your name and license # (or last 4 digits of your SSN), click on the CONFERENCE NAME where you attended the dicamba training, and save/print a copy of that record.

**30. I have not yet attended an Indiana mandatory dicamba training program. How much longer will these state-required programs be offered?**

In addition to the CCH and PARP dicamba training programs already approved through the end of end of July, 2018, a PARP with dicamba training webinar has also been scheduled for **March 23, 2018** at 1:00 PM EST. This approved PARP plus dicamba training webinar will be broadcast in over a dozen of the County Cooperative Extension Service facilities statewide. Check the PARP Events website at <https://ppp.purdue.edu/> or with your county CES office for availability. In addition, the dicamba training portion of the webinar will be recorded and saved for individual or small group viewing at County CES facilities by appointment later in the year. Again check with your local CES office for availability.