

# APPROVED DICAMBA FORMULATIONS

FOR USE IN THE ROUNDUP READY® XTEND CROP SYSTEM

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NEW INFORMATION FOR 2021

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2021

SYSTEM BENEFITS,  
WEED MANAGEMENT RECOMMENDATIONS &  
EDUCATION ON APPLICATION REQUIREMENTS

# AGENDA

THE FOLLOWING TOPICS WILL BE COVERED

- Roundup Ready® Xtend Crop System Benefits
- Label Requirements
- Keeping Pesticides On-Target
- Weed Management Recommendations

# IMPORTANT INFORMATION

This presentation is for educational purposes only. Attendance or participation does NOT satisfy the need for mandatory dicamba or auxin-specific training as required by the U.S. EPA labels for dicamba products labeled for use in the Roundup Ready® Xtend Crop System.

- You will NOT receive a completion certificate after viewing this presentation
- To find and register for a mandatory dicamba training that will meet the label requirement for training, please go to:

[RoundupReadyXtend.com/Training](https://RoundupReadyXtend.com/Training)

# Roundup Ready® Xtend Crop System

#1 trait platform  
planted by farmers<sup>1</sup>

## Outstanding Agronomic Performance

### Soybeans

- Built on the high-yielding Roundup Ready 2 Yield® technology that farmers know and trust
- When using Roundup Ready 2 Xtend® soybeans as part of the Roundup Ready® Xtend Crop System, farmers see a **3.5 Bu/A advantage** vs. Enlist™ Weed Control System<sup>2</sup> in farmer managed herbicide systems trials
- Top volume XtendFlex® soybeans have a **4+ Bu/A advantage** vs. Enlist E3® soybeans<sup>3</sup> in germplasm trials

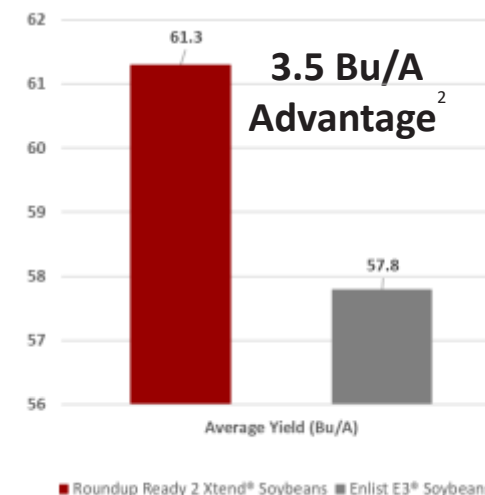
### Cotton

- Designed to provide the highest level of performance and control
- Bollgard® 3 XtendFlex® cotton has a **87 lbs./A advantage** vs key competitors in head-to-head testing<sup>4</sup>

## Superior Weed Control & Soil Activity

- **Controls more weeds** than any other system<sup>5</sup>
- **Up to 14 day of soil activity** on certain small-seeded broadleaf weeds<sup>6</sup>
- **Proven performance with 95% satisfaction rate** on average over the last four years by farmers who used XtendiMax® herbicide with VaporGrip® Technology, a restricted use pesticide<sup>7</sup>

### 2020 Summary Farmer Managed - Soybean Trials Roundup Ready® Xtend Crop System vs Enlist™ Weed Control System



**XtendFlex**  
SOYBEANS

**PRE:** Warrant® Ultra herbicide (48 fl oz/A) + XtendiMax® herbicide with VaporGrip® Technology (22 fl oz/A)



**Enlist E3® Soybeans**

**PRE:** Enlist One® herbicide (24 fl oz/A) + Sonic® herbicide (4 oz/A)

**Location:** Renville, MN **Planting Date:** 5/1/2020 **Application Date:** 5/2/2020  
**Photos taken:** roughly 6 weeks after the PRE on 6/12/2020

<sup>1</sup>Based on number of traited acres per Bayer internal estimates

<sup>2</sup>2020 Farmer Managed Soybean System Trials (57 locations in 2020 reporting data located with 5-IA, 4-IL, 8-IN, 4-KS, 1-KY, 3-MI, 9-MN, 2-MO, 4-ND, 5-NE, 4-OH, 2-PA, 6-SD). Significant at P ≤ 0.05 LSD at 1.0 Bu/A as of 11/23/2020. Roundup Ready® Xtend Crop System data = Roundup Ready 2 Xtend® soybeans with a farmer-selected weed control program that may include dicamba, glyphosate and various residual herbicides. Enlist™ Weed Control System data = Enlist E3® soybeans with a farmer-selected weed control program that may include glyphosate, Enlist One® herbicide, Liberty® 280 SL herbicide and various residual herbicides.

<sup>3</sup>Data as of October 22, 2020. 2020 Bayer Commercial Germplasm Trials (94 locations in 2020 reporting data located in IL, IN, IA, KS, MD, MI, MN, MO, NE, OH, SD, TN, and WI) Bayer Commercial Germplasm Trials = 9 of the top 10 volume forecasted XtendFlex products.

<sup>4</sup>Data as of February 4, 2020. Yield advantage calculated comparing top 3 Bollgard® 3 XtendFlex® varieties by region to top planted Phytogen WideStrike® 3 with Roundup Ready® Flex and Enlist™ varieties by region (USDA – Varieties Planted report – 2019). Texas regions include DP 1820 B3XF, DP 1845 B3XF, DP 1948 B3XF, DP 1835 B3XF, DP 1916 B3XF vs. PHY 250 W3FE, PHY 300 W3FE, PHY 330 W3FE, PHY 350 W3FE, PHY 480 W3FE, PHY 490 W3FE. Midsouth region includes CG 9608 B3XF, DG 3520 B3XF, DG 3570 B3XF vs. PHY 320 W3FE, PHY 330 W3FE, PHY 350 W3FE, PHY 430 W3FE, PHY 580 W3FE. Southeast and Carolinas region includes DG 3615 B3XF, CG 9608 B3XF,

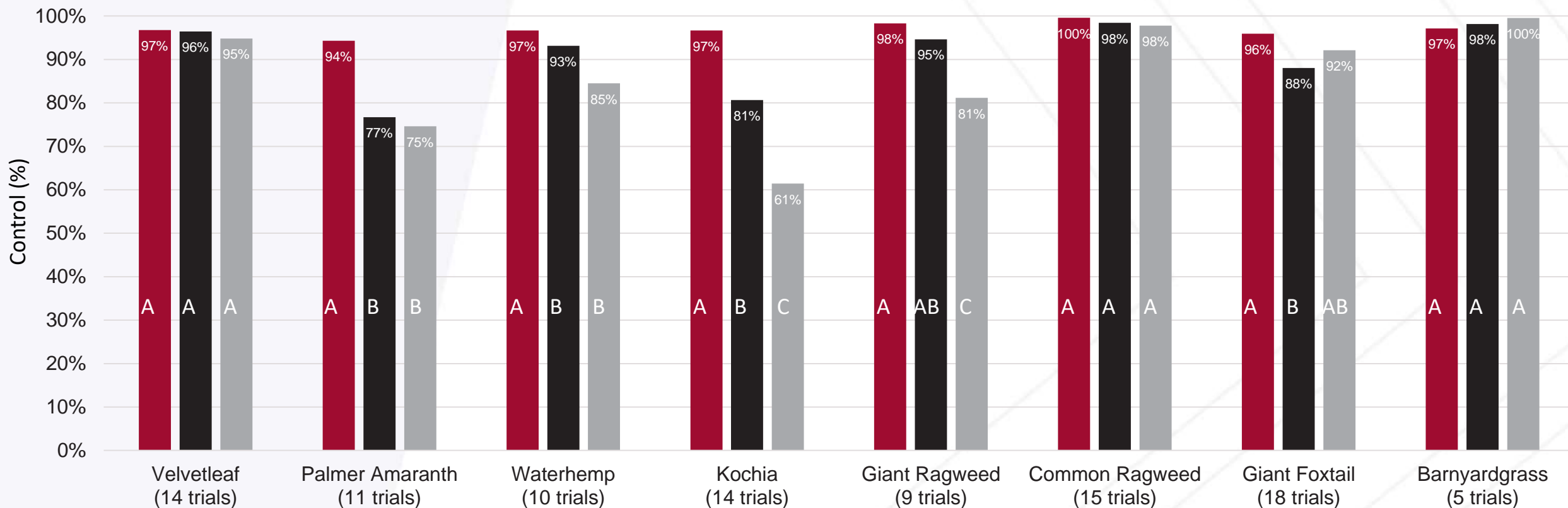
DG 3753 B3XF vs. PHY 300 W3FE, PHY 320 W3FE, PHY 330 W3FE, PHY 340 W3FE, PHY 350 W3FE, PHY 430 W3FE, PHY 440 W3FE, PHY 480 W3FE, PHY 580 W3FE. N= 503 trials (Bayer internal trials and Public Testing) 2017-2019.

<sup>5</sup>Based on approved EPA herbicide labels for the herbicides recommended for use in each system as of Oct. 2020

<sup>6</sup>Results may vary, depending on rainfall and soil type. Always use dicamba with residual herbicides in pre-emergence and postemergence applications that have different, effective sites of action, along with other Diversified Weed Management Practices.

<sup>7</sup>Grower Surveys – August 2017, September 2018, September 2019, October 2020 – All growers surveyed were required to have 50+ acres of Roundup Ready 2 Xtend® soybeans and treat at least some acres with XtendiMax with VaporGrip Technology to qualify. Average of 95% based on results of 97% in 2017, 93% in 2018, 96% in 2019 and 94% in 2020.

# Roundup Ready® Xtend Crop System Controls More Weeds Than Any Other System<sup>1</sup>



## ■ Roundup Ready® Xtend Crop System

- **PRE:** XtendiMax® herbicide with VaporGrip® Technology (22 FL OZ/A) + Warrant® Ultra herbicide (48 FL OZ/A)
- **Early POST:** XtendiMax® herbicide with VaporGrip® Technology (22 FL OZ/A) + Roundup PowerMAX® herbicide (32 FL OZ/A) + Warrant® herbicide (48 FL OZ/A)
- **Late POST:** Liberty® herbicide (32 FL OZ/A) + AMS (2.5% V/V)

## ■ Enlist™ Weed Control System

- **PRE:** Enlist One® herbicide (24 FL OZ/A) + Sonic® herbicide (4 FL OZ/A)
- **Early POST:** Enlist One® herbicide (24 FL OZ/A) + Liberty® herbicide (32 FL OZ/A) + Dual II Magnum® herbicide (16 FL OZ/A) + AMS (2.5% V/V)
- **Late POST:** Durango® DMA® herbicide (36 FL OZ/A) + AMS (2.5% V/V)

## ■ LibertyLink® System

- **PRE:** Verdict® herbicide (5 FL OZ/A)
- **Early POST:** Durango® DMA® herbicide (36 FL OZ/A) + Liberty® herbicide (32 FL OZ/A) + Outlook® herbicide (12 FL OZ/A)

## Plot Design

- **Design:** Single Rep Strip trials
- **Traits:** Split in blocks w/ 3 varieties each
- **Rep:** 1 rep/ variety/ trait
- **Herb:** 1 herbicide program / trait
- **Some at PPO-resistant sites**
- **Plot size:** 10/25' x 300'
- **Buffer:** minimum 1 planter pass between blocks
- **Map with FieldView**

Means within a colored column followed by the same letter are not statistically different (α=0.1)

Bayer and Academic Soybean System Comparison Trials. 27 locations with reporting data as of 11/10/2020 located in MO, MN, WI, IN, IL, IA, KS, NE, SD, ND, MN, MI, OH, MS, AR, OK, TN, NC, and SC.

<sup>1</sup> Based on approved EPA herbicide labels for the herbicides recommended for use in each system as of Oct. 2020





For full program requirements, details, qualifying products and applications visit:  
[www.roundupreadyxtend.com/SprayEarly](http://www.roundupreadyxtend.com/SprayEarly).

New

***Built On  
Customizable Weed  
Management  
Best Practices***

***Start Clean  
21 Day Pre/At  
Planting Weed  
Control Guarantee***

**Up to \$15/A<sup>1</sup> for broadleaf weeds  
for an additional application**

***Stay Clean  
30 Day Post-  
Emergence Weed  
Control Guarantee***

**Up to \$15/A<sup>2</sup> for broadleaf weeds &  
grasses for an additional application**

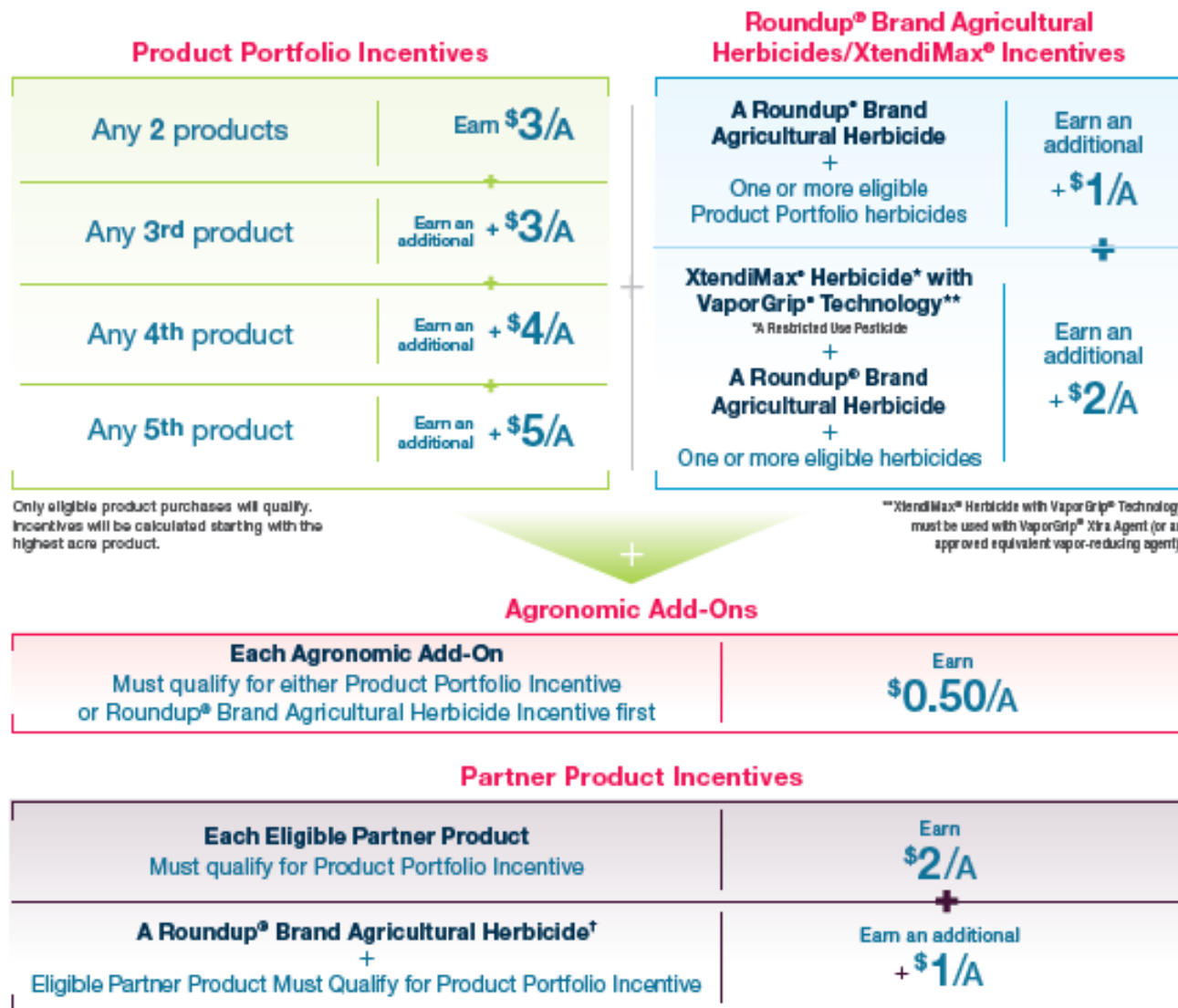
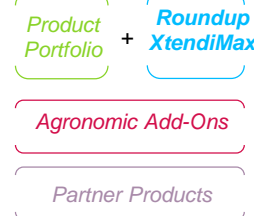
<sup>1</sup> Start Clean - If a farmer experiences less than commercially acceptable performance on labeled weeds within 21 days after the PRE/At Planting application while following all program requirements, Bayer will pay up to \$15/acre for broadleaf weeds or up to \$12/acre for broadleaf weeds when Warrant® or Warrant Ultra® is not included, to assist in a second PRE/At Planting application on the affected acres (only if respray occurs to manage an additional flush of weeds).

<sup>2</sup> Stay Clean - If a farmer experiences less than commercially acceptable performance on labeled weeds within 30 days after the post-emergence application while following all program requirements, Bayer will pay up to \$15/acre (up to \$10/acre for broadleaf weeds and up to \$5/acre for grasses) or for the North Central Region up to \$12/A for broadleaf weeds and grasses when glufosinate is substituted for a labeled PPO-inhibiting herbicide to assist in a post-emergence application on the affected acres (only if respray occurs to manage an additional flush of weeds).



# Bayer PLUS Rewards Enables Maximum Choice

There are four ways growers can earn rewards



Only eligible product purchases will qualify. Incentives will be calculated starting with the highest acre product.

\*\*XtendiMax® Herbicide with VaporGrip® Technology must be used with VaporGrip® Xtra Agent (or an approved equivalent vap or-reducing agent).

†Grower must match acres with a Roundup® brand agricultural herbicide.

See Sales Collateral for listing of all eligible products, requirements and other program Terms & Conditions.

# APPROVED FORMULATIONS OF DICAMBA

## AS OF DECEMBER 2020

The following formulations of dicamba are approved for use in the Roundup Ready® Xtend Crop System and are discussed herein:

XtendiMax® herbicide with VaporGrip® Technology (**Bayer**)

Tavium® Plus VaporGrip® Technology herbicide (**Syngenta**)

Engenia® Herbicide (**BASF**)

The application requirements discussed herein apply to all labeled uses of these products and any future dicamba products labeled for use in the Roundup Ready® Xtend Crop System.

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Some slides contain language from XtendiMax® label; other product label language may vary. Always read and follow the specific product label.

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To be used by certified applicators only; NOT to be used by uncertified persons working under the supervision of a certified applicator, except that uncertified persons may transport containers.

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These labels expire 12/20/2025.

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# PRODUCT STEWARDSHIP

## OUR SHARED RESPONSIBILITY

- Product stewardship of dicamba products includes the responsible use of only approved, low-volatility formulations of dicamba in the Roundup Ready® Xtend Crop System and following all application requirements on product labels
- Proper product stewardship helps enable continued access to important weed control technologies
- **Use of any dicamba product that is not approved for over-the-top use in the Roundup Ready® Xtend Crop System is strictly prohibited by Federal and State laws**
- To report any misuse of dicamba products, including the use of unapproved formulations, or if you have any questions related to the proper use of low-volatility formulations of dicamba, contact your Bayer representative or call 1-844-RRXTEND

# PRODUCT LABELS

ALWAYS FOLLOW ALL LABELING FOR PRODUCT BEING APPLIED

\* Website addresses are extensions of each product label and are subject to change. Certified Applicators are required to visit these website addresses no more than 7 days prior to application of respective product. The information on these websites is not a substitute for reading and following all product labelling.

XtendiMax<sup>®</sup> Herbicide with  
VaporGrip<sup>®</sup> Technology (**Bayer**)

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

Tavium<sup>®</sup> Plus VaporGrip<sup>®</sup>  
Technology herbicide (**Syngenta**)

**Stewardship:**

[www.syngenta-us.com/herbicides/tavium-application-stewardship](http://www.syngenta-us.com/herbicides/tavium-application-stewardship)

**Tank Mix:**

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

Engenia<sup>®</sup> Herbicide (**BASF**)

**Stewardship:**

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

**Tank Mix:**

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



# GENERAL LABEL INFORMATION

**FOR RETAIL SALE TO AND USE ONLY BY  
CERTIFIED APPLICATORS**

Refer to specific state and local labeling/rulemaking for possible additional labeling information or for certification process.

**ALL APPLICATORS MUST COMPLETE  
ANNUAL DICAMBA TRAINING PROVIDED BY:**

State-  
Provided  
Mandatory  
Training

OR

State-  
Authorized  
Provider

OR

Registrant  
Provided  
Training

# TOPICS COVERED HEREIN



**LABEL  
REQUIREMENTS**



**KEEPING  
PESTICIDES  
ON-TARGET**



**WEED  
RESISTANCE  
MANAGEMENT**

# USE RESTRICTIONS



**DO NOT APPLY  
THIS PRODUCT:**

Aerially.

Through any type of irrigation equipment. Do not treat irrigation ditches or water used for crop irrigation or domestic purposes.

To crop under stress due to environmental factors, herbicide injury, mechanical damage, insect pressure, etc.



**DO NOT TANK  
MIX WITH:**

Products not found on the application requirements website.

Products containing ammonium sulfate (AMS).



**DO NOT MAKE  
APPLICATION:**

If rain that may exceed soil field capacity and result in runoff is expected in the next **48 hours** (For prevention of potential runoff when excessive rain may occur).

Without including required Drift Reduction Adjuvant (DRA) and Volatility Reduction Adjuvant (VRA) as listed on the application requirements website.

Approved dicamba formulations may **ONLY** be applied to crops with Roundup Ready 2 Xtend® Technology or XtendFlex® Technology up to and including **June 30 for soybeans** and **July 30 for cotton**.





# RECORD KEEPING

## REQUIREMENTS

- Required for each application of these products.
- The certified applicator must keep required documentation for a period of two years; records must be generated as soon as practical but no later than **72 hours** after application.
  - e.g., if 10 fields are sprayed, 10 sets of records are required, including if the same field is sprayed twice
- Copies of receipts for required VRA and DRA purchases are required and the amounts used in each tank load must be recorded.

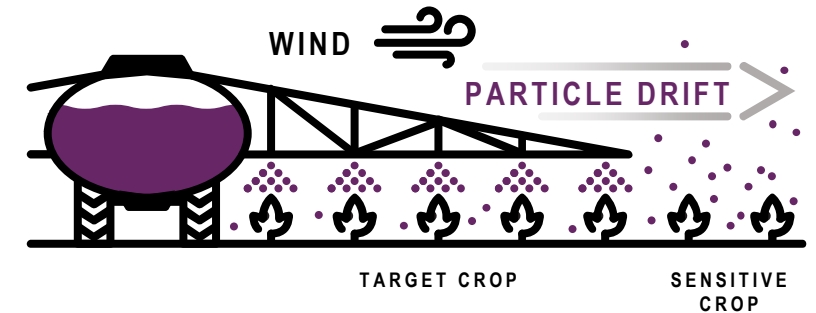
Records must be made available to State Pesticide Control Official(s), USDA and EPA upon request.



# TYPES OF OFF-TARGET MOVEMENT\*

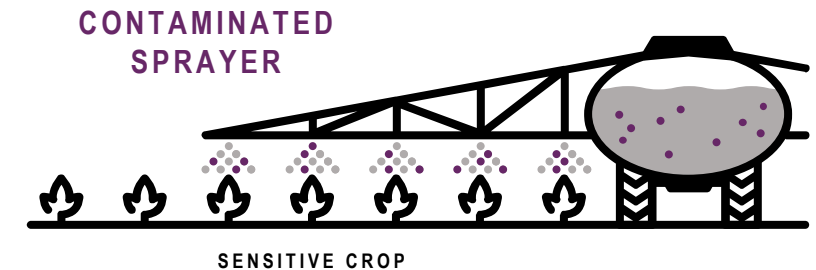
## PHYSICAL DRIFT

Physical movement of spray particles **during** spray application



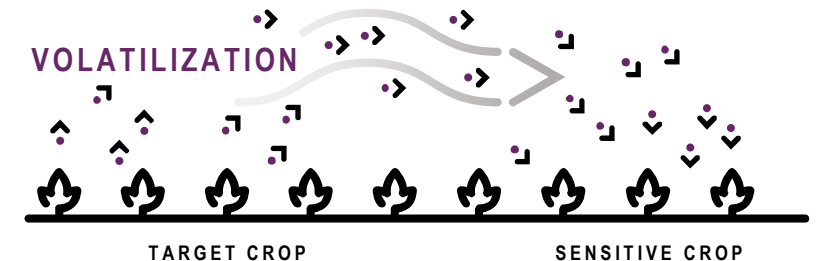
## SPRAYER CONTAMINATION

Off-target movement from herbicide residue remaining in sprayer components



## VOLATILITY

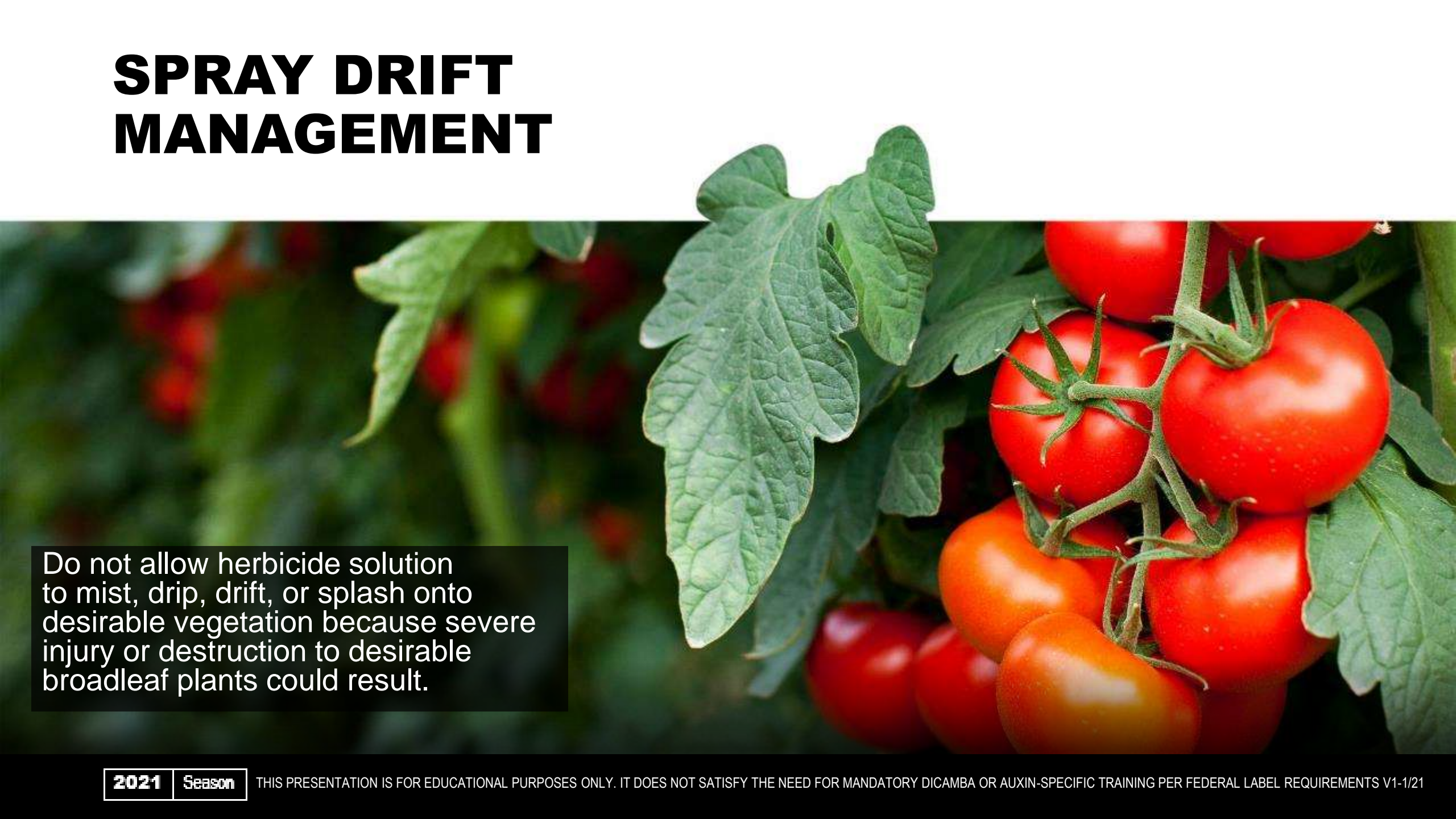
Movement of an herbicide as a gas or vapor **after** spray application.



\*Movement through surface runoff or soil is another form of off target movement. Applicators must be aware of weather forecasts and avoid applications if rainfall that may exceed field capacity is expected in the next 48 hours.



# SPRAY DRIFT MANAGEMENT



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.

# APPLICATION EQUIPMENT AND TECHNIQUES

## KEEPING TRACK OF THE WIND SPEED AND DIRECTION

**Measure wind speed at boom height with an anemometer.**

Recommended 2 minute sustained average.  
(Federal Aviation Administration, 2012)

It is important for the applicator to be aware that wind direction may vary during the application. If wind direction shifts such that the wind is blowing toward adjacent non-dicamba tolerant sensitive crops, the applicator **must STOP** the application.





# APPLICATION EQUIPMENT AND TECHNIQUES



## ONLY USE

approved nozzles within the pressure ranges listed on the application requirements website

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



Applicators are required to consult the application requirements website no more than 7 days before application for a complete list of nozzles, VRAs, DRAs, drift reduction technology (DRT) and other herbicides, pesticides, and additives approved for use with these products

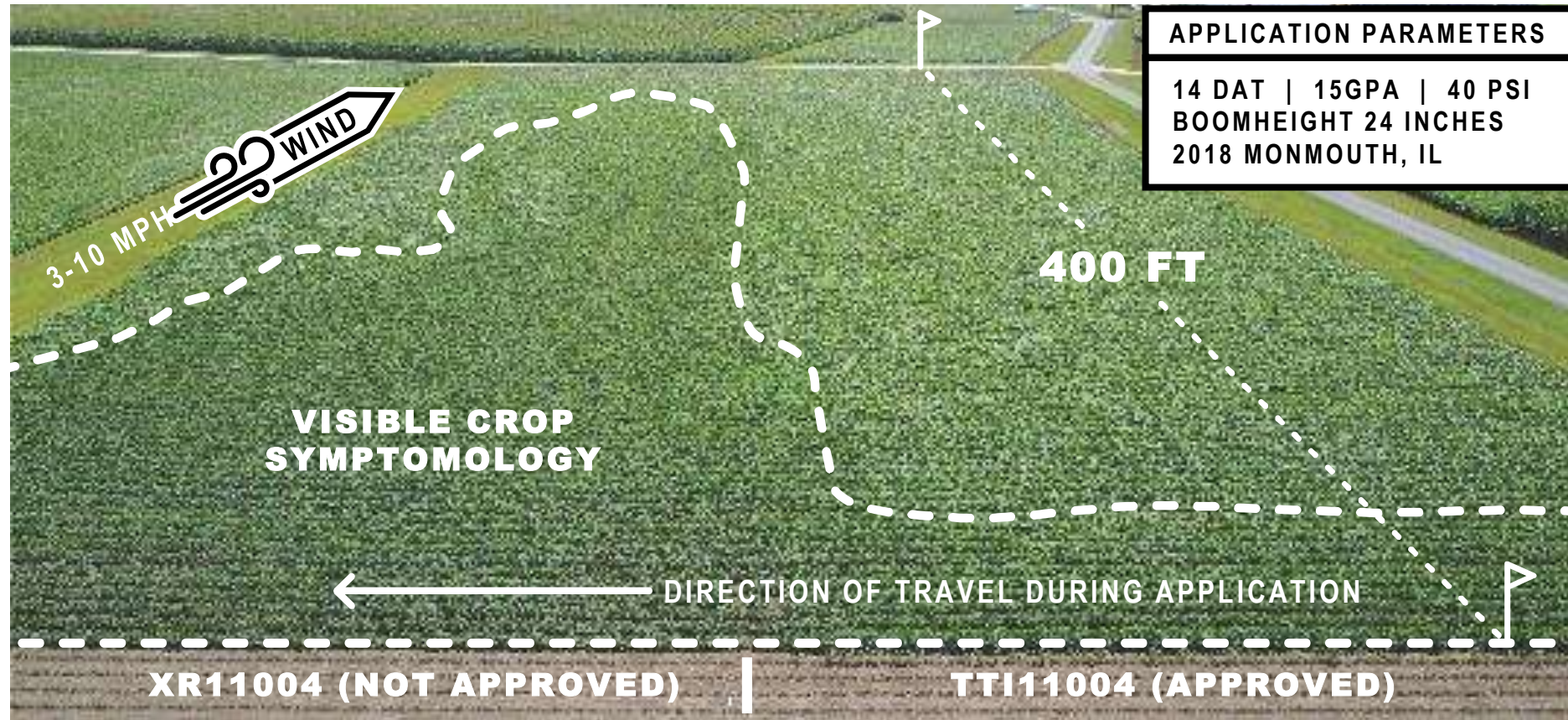
2021

Season

THIS PRESENTATION IS FOR EDUCATIONAL PURPOSES ONLY. IT DOES NOT SATISFY THE NEED FOR MANDATORY DICAMBA OR AUXIN-SPECIFIC TRAINING PER FEDERAL LABEL REQUIREMENTS V1-1/21

# DEMONSTRATION ON IMPORTANCE OF PROPER NOZZLES

## Nozzle Tip Impact on Drift



# APPLICATION EQUIPMENT AND TECHNIQUES



## SPRAY BOOM HEIGHT

Maximum boom height is 24 inches from target crop or pest canopy



## WIND SPEED

Apply when wind speeds are between 3 - 10 mph

It is important for the applicator to be aware that wind direction may vary during the application. If wind direction shifts such that the wind is blowing toward adjacent non-dicamba tolerant sensitive crops, the applicator **must STOP** the application.



## GROUND SPEED

Do not exceed a ground speed of 15 mph

Provided the applicator can maintain the required nozzle pressure, it is recommended that tractor speed is reduced to 5 mph at field edges



# APPLICATION EQUIPMENT AND TECHNIQUES



## SPRAY VOLUME

Require minimum 15 gallons of spray solution per acre

Use 20 gallons per acre or greater when treating dense weed canopy/vegetation



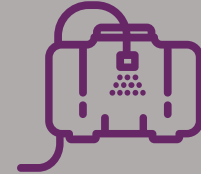
## TEMPERATURE INVERSION

**DO NOT APPLY** this product during a temperature inversion



## APPLICATION TIMING

Apply this product only between **one hour after sunrise and two hours before sunset**



## HYGIENE

Failure to properly clean the **entire** system can result in inadvertent contamination of the spray system

# OPTIONAL USE OF DRIFT REDUCTION TECHNOLOGY (DRT)

- May be used to reduce off-target movement of spray particles.
  - Example: Hooded/shielded spray boom.
- Qualified DRT and approved nozzles are listed on the application requirements websites.
  - e.g. [www.xtendimaxapplicationrequirements.com](http://www.xtendimaxapplicationrequirements.com)
- Applications using qualified DRT may benefit from reduced restrictions, such as decreased downwind buffer distance.



Refer to the application requirements websites for a complete list of approved nozzles, operating pressures, drift reduction technologies and required buffer distance.

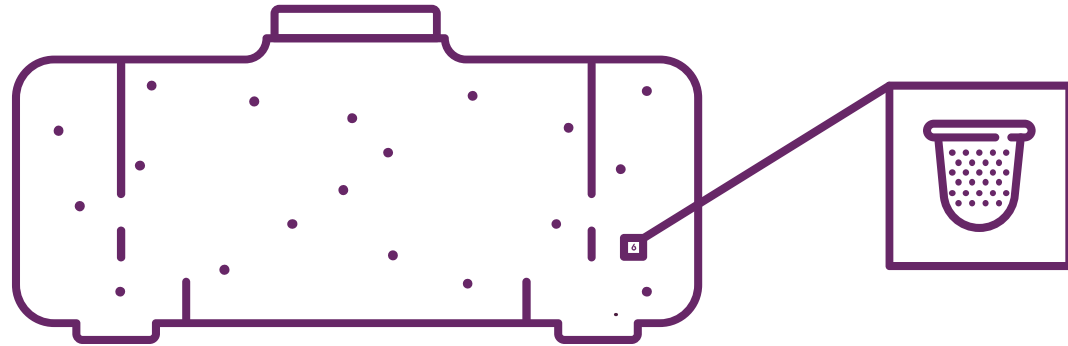


# SPRAY SYSTEM CLEANOUT

Dicamba contamination may cause injury to non-dicamba-tolerant soybeans and other sensitive crops and certain plants

**HOW MUCH  
DICAMBA CAN  
CAUSE  
SYMPTOMOLOGY IN  
SOYBEANS?**

**THE EQUIVALENT OF A THIMBLE FULL  
OF FORMULATED DICAMBA PRODUCT  
IN A 1,000 GALLON SPRAY SOLUTION**



# MIXING, HANDLING, TRANSPORT AND SPRAY EQUIPMENT CLEANOUT CONSIDERATIONS



## TANKS

Drain unused spray mix before cleanout

Ensure all surfaces are cleaned for each rinse

Drain all rinse water between each rinse



## VALVES/LINES/HOSES

All valves should be cycled during cleaning

Flush loading ports

Clean flowmeters & associated lines/hoses



## SCREENS/BOOMS/NOZZLES

Clean all in-line strainers and suction filters

Clean all nozzles and screens

Flush dead ends and end caps

Flush unused nozzle bodies, pressure check valves and nozzle turrets

**Refer to the dicamba product label for a complete listing of required sprayer cleanout procedures.**

**Consider using dedicated equipment for dicamba products.**

**All rinse water must be disposed of as per state and local guidelines.**

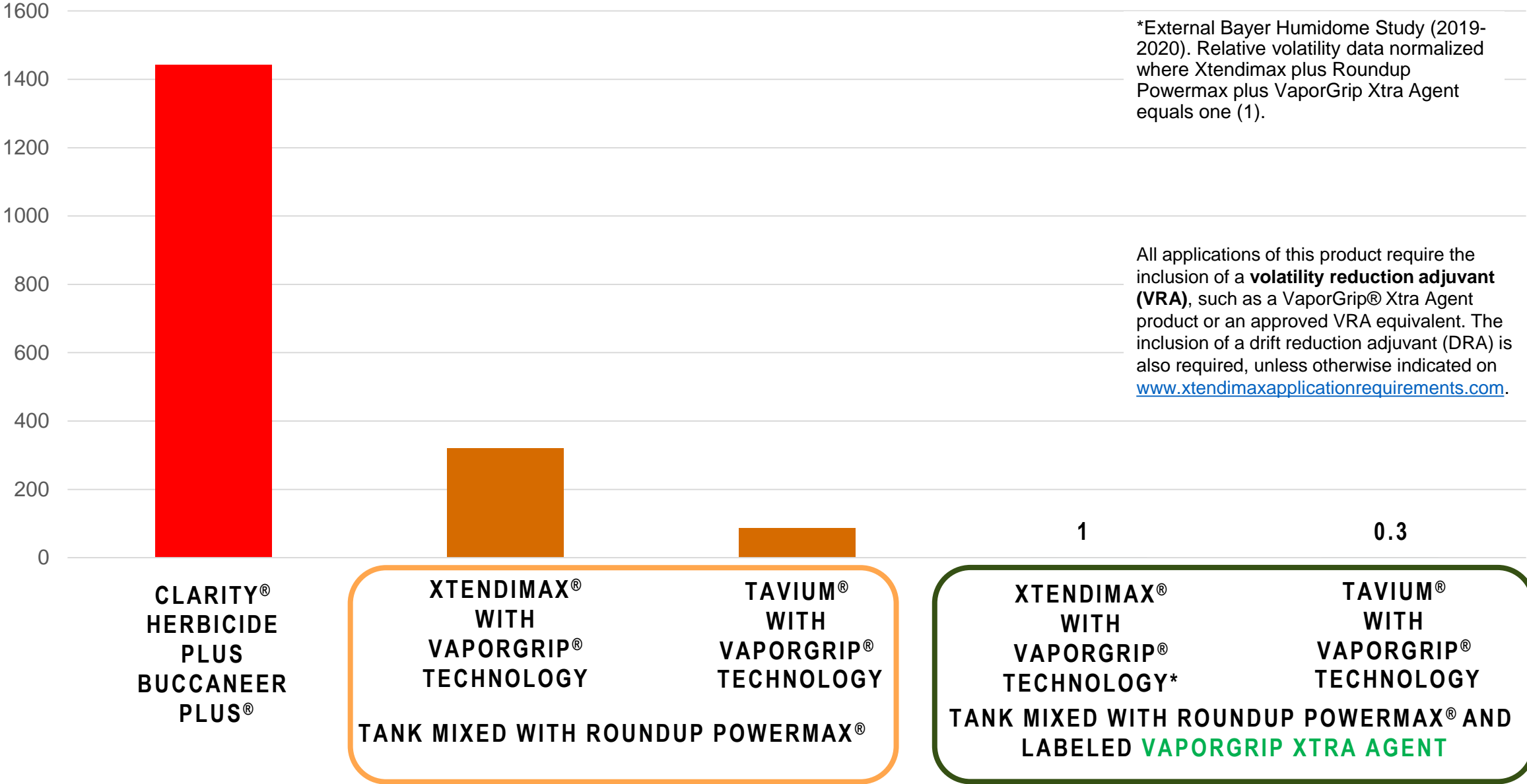
# TANK MIX PARTNERS MAY IMPACT VOLATILITY AND OFF-TARGET MOVEMENT POTENTIAL



All applications of this product require the inclusion of a **volatility reduction adjuvant (VRA)**, such as a VaporGrip® Xtra Agent product or an approved VRA equivalent. The inclusion of a drift reduction adjuvant (DRA) is also required, unless otherwise indicated at [www.xtendimaxapplicationrequirements.com](http://www.xtendimaxapplicationrequirements.com).

# IMPACT OF VOLATILITY REDUCTION AGENT AND DICAMBA FORMULATION

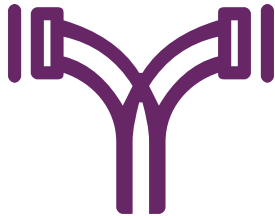
RELATIVE DICAMBA VOLATILITY\*



# TANK MIXING INSTRUCTIONS

## PRODUCT WEBSITES

All applications of this product require the inclusion of a **volatility reduction adjuvant (VRA)**, such as a VaporGrip® Xtra Agent product or an approved VRA equivalent. The inclusion of a drift reduction adjuvant (DRA) is also required, unless otherwise indicated on [www.xtendimaxapplicationrequirements.com](http://www.xtendimaxapplicationrequirements.com).



TANK MIX  
PARTNERS

Websites show approved nozzles, pressure ranges, VRAs, DRAs, tank mixes, and Drift Reduction Technologies (DRTs).

Approved tank mix partners and **Required VRAs** and **DRAs** are included on the application requirements websites

Applicator must check the list of approved products no more than 7 days before applying

XtendiMax® Herbicide with VaporGrip® Technology (Bayer)

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

Engenia® Herbicide (BASF)

Stewardship: [www.engeniastewardship.com](http://www.engeniastewardship.com)

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

Tavium® Plus VaporGrip® Technology herbicide (Syngenta)

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



# PROTECTING ADJACENT SENSITIVE CROPS AND CERTAIN PLANTS

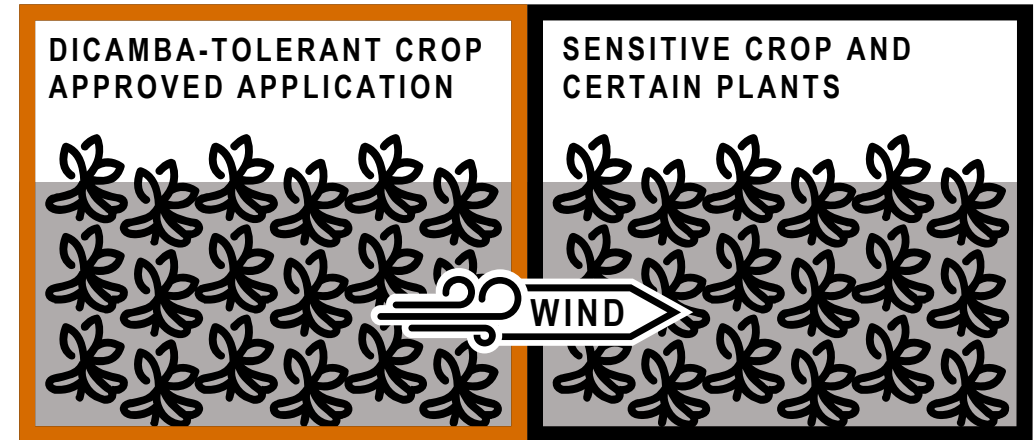


# PROTECTION OF ADJACENT SENSITIVE CROPS AND CERTAIN PLANTS

**DO NOT APPLY** this product when the wind is blowing toward adjacent sensitive crops and certain plants; **this includes NON-DICAMBA TOLERANT SOYBEAN AND COTTON.**

**Sensitive crops and/or certain plants** include, but are not limited to, tomatoes and other fruiting vegetables (EPA crop group 8), fruit trees, cucurbits (EPA crop group 9), grapes, beans, flowers, ornamentals, peas, potatoes, sunflower, tobacco and other broadleaf plants, including if these plants are in a greenhouse.

## DO NOT SPRAY



Contact with foliage, green stems, or fruit of crops, or any desirable plants that do not contain a dicamba tolerance gene or are not naturally tolerant to dicamba, could result in severe plant injury or destruction.

# CONFIRM AND DOCUMENT ADJACENT SENSITIVE CROPS AND CERTAIN PLANTS

TAKE TIME TO KNOW YOUR NEIGHBORS AND YOUR SURROUNDINGS

## Confirm sensitive crops and certain plants

Preseason consult with neighboring growers on all sides

Susceptible/sensitive crop registry, website, app, etc.

Follow-up prior to application to determine if there are any changes in intentions

Document in the application records that a sensitive crop registry (registry name and date) was consulted AND that adjacent areas were surveyed for sensitive crops and certain plants prior to application



\*Registry examples; consult your state authority for other crop registries. Contact Bayer at 844-RRXTEND for questions.

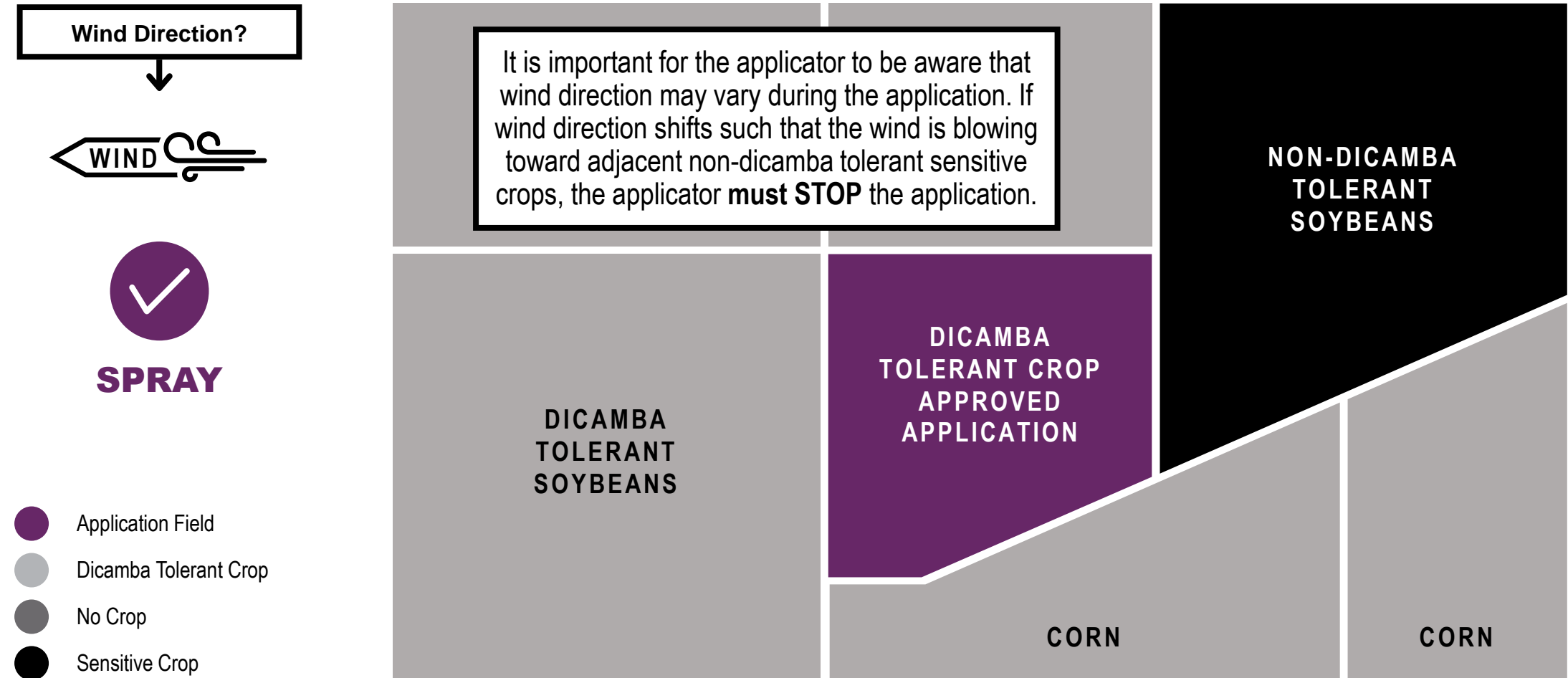
# ADDITIONAL EXAMPLES OF DICAMBA SENSITIVE CROPS

| VISUAL SYMPTOMOLOGY SCALE FOR DICAMBA   |  |   |   |
|---|--|---|---|
| <b>LOWER</b><br>Broccoli<br>Collards<br>Cabbage<br>Kale<br>Mustard<br>Pecan<br>Turnip<br><br>>1/75X | <b>MODERATE</b><br>Cantaloupe<br>Canola*<br>Cucumber<br>Peach<br>Peanut<br>Squash<br><br>1/75-1/300X | <b>SEVERE</b><br>Cotton<br>Pepper<br>Tomato<br>Watermelon<br><br>1/300-1/800X | <b>EXTREME</b><br>Grapes*<br>Lima Bean<br>Southern Pea<br>Snap Bean<br>Soybean<br>Sweet potato*<br>Tobacco*<br><br>< 1/800X |

**Herbicide Rate of Visually Detectable Symptomology:** For relative comparison, tomato, squash, and watermelon response to glyphosate for visual symptomology would be in the “lower” category.

Information adapted from Dr. Stanley Culpepper, University of Georgia Cooperative Extension. Categories indicate sensitivity of listed plants to glyphosate exposure; not the degree of symptomology  
\*Data from literature; all other data generated in over 72 UGA field experiments | Source: GA-018\*.

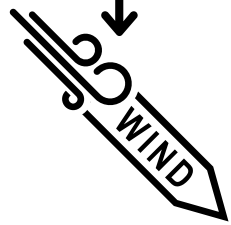
# PROTECTION OF ADJACENT SENSITIVE CROPS AND CERTAIN PLANTS









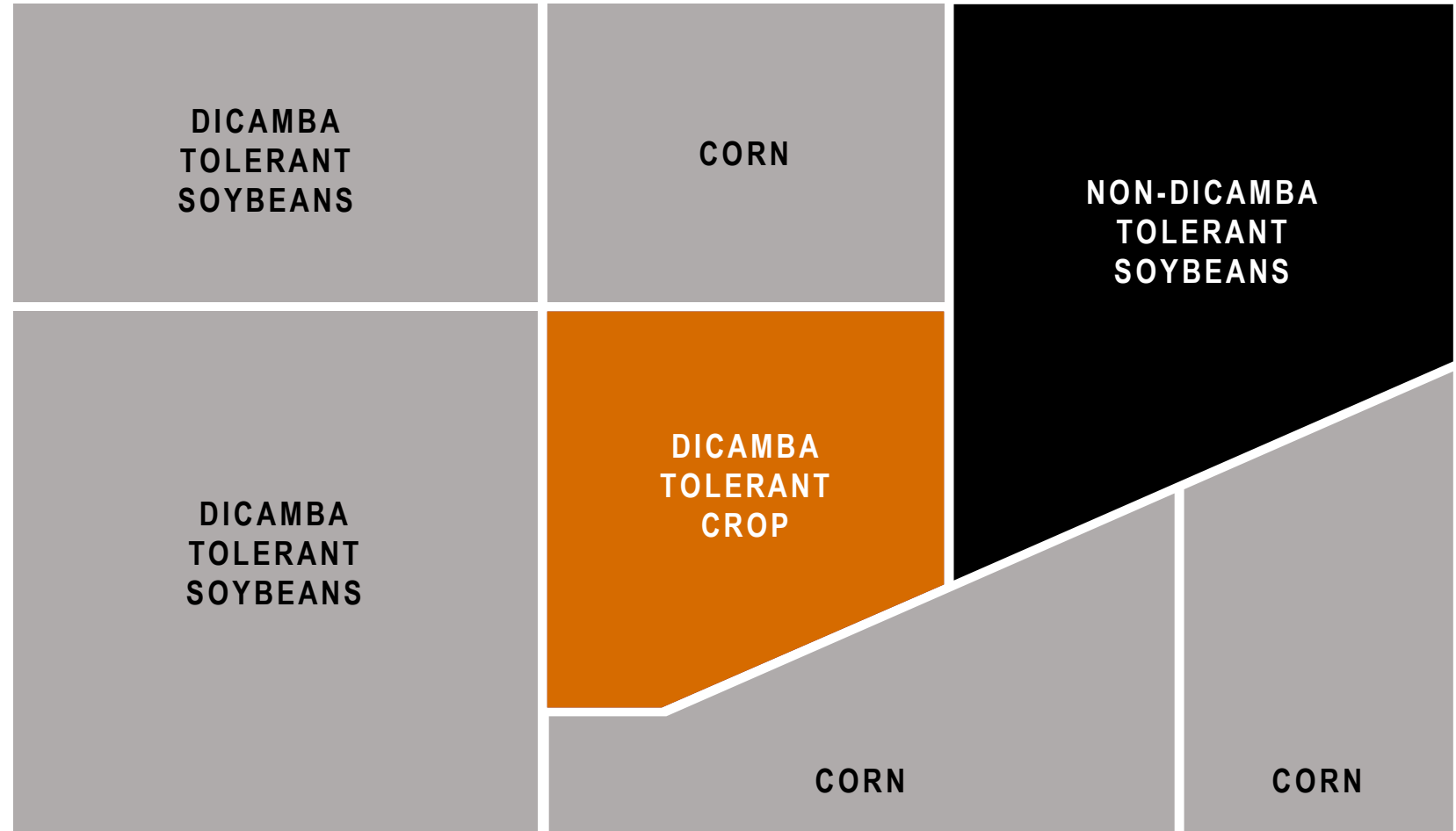
# PROTECTION OF ADJACENT SENSITIVE CROPS AND CERTAIN PLANTS

Wind Direction?

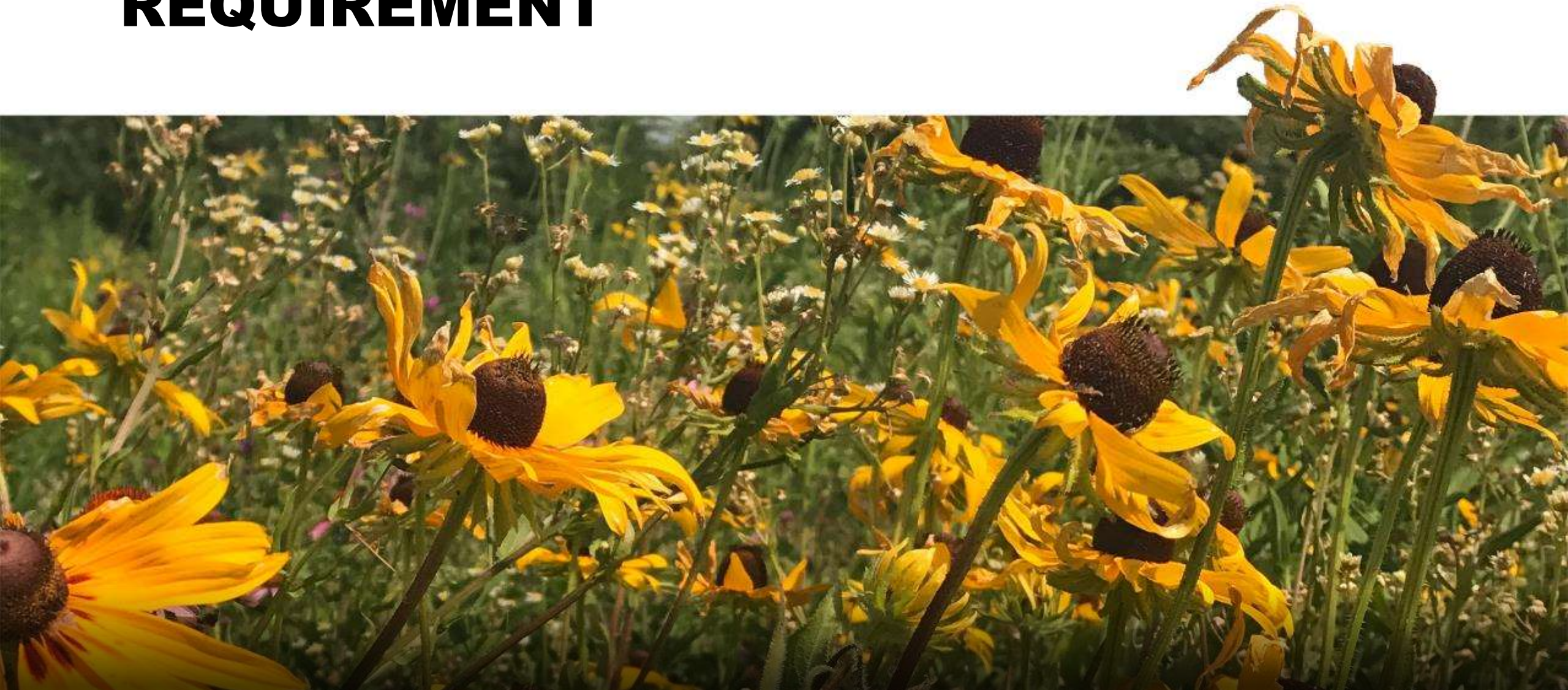


**DO NOT SPRAY**

-  Application Field
-  Dicamba Tolerant Crop
-  No Crop
-  Sensitive Crop



# **BUFFER REQUIREMENT**



**2021**

**Season**

THIS PRESENTATION IS FOR EDUCATIONAL PURPOSES ONLY. IT DOES NOT SATISFY THE NEED FOR MANDATORY DICAMBA OR AUXIN-SPECIFIC TRAINING PER FEDERAL LABEL REQUIREMENTS V1-1/21

# BUFFER DISTANCE REQUIREMENT

## DOWNWIND ADJACENT AREAS

The applicator **must always maintain** a downwind buffer between the last treated row and the nearest downwind field edge (in the direction the wind is blowing).

**240 feet** for open-boom sprayers

**110 feet** when using qualified Drift Reduction Technology (certain hooded/shielded broadcast sprayers) as listed on product specific websites

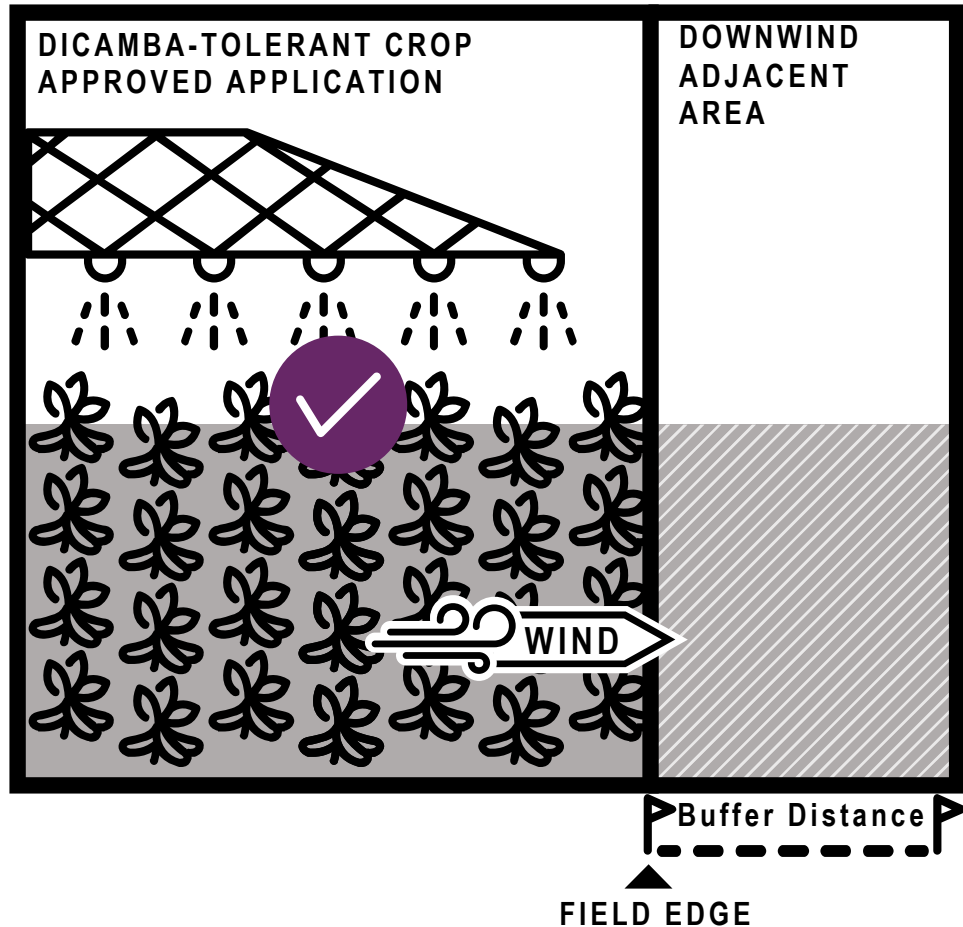
- When using qualified Drift Reduction Technology; certified applicator is required to visit [www.xtendimaxapplicationrequirements.com](http://www.xtendimaxapplicationrequirements.com) nor more than 7 days prior application to confirm approved equipment and application limitations/directions for specific Drift Reduction Technology employed.

**Downwind buffer is not intended for protection of downwind sensitive crops and certain plants**



# BUFFER COMPOSITION REQUIREMENT

## AREAS THAT MAY BE INCLUDED IN BUFFER DISTANCE COMPOSITION



Roads, paved or gravel surfaces, **mowed grassy areas adjacent to field**, and areas of bare ground from recent plowing or grading that are contiguous with the treated field.

Planted agricultural fields containing: corn, dicamba-tolerant cotton, dicamba-tolerant soybean, sorghum, proso millet, small grains, sugarcane and **other crops for which dicamba has a post-emergent approved use**.

If the applicator intends to include such crops as dicamba-tolerant cotton and/or dicamba-tolerant soybeans in the buffer distance composition, the applicator must confirm the crops are in fact dicamba tolerant.

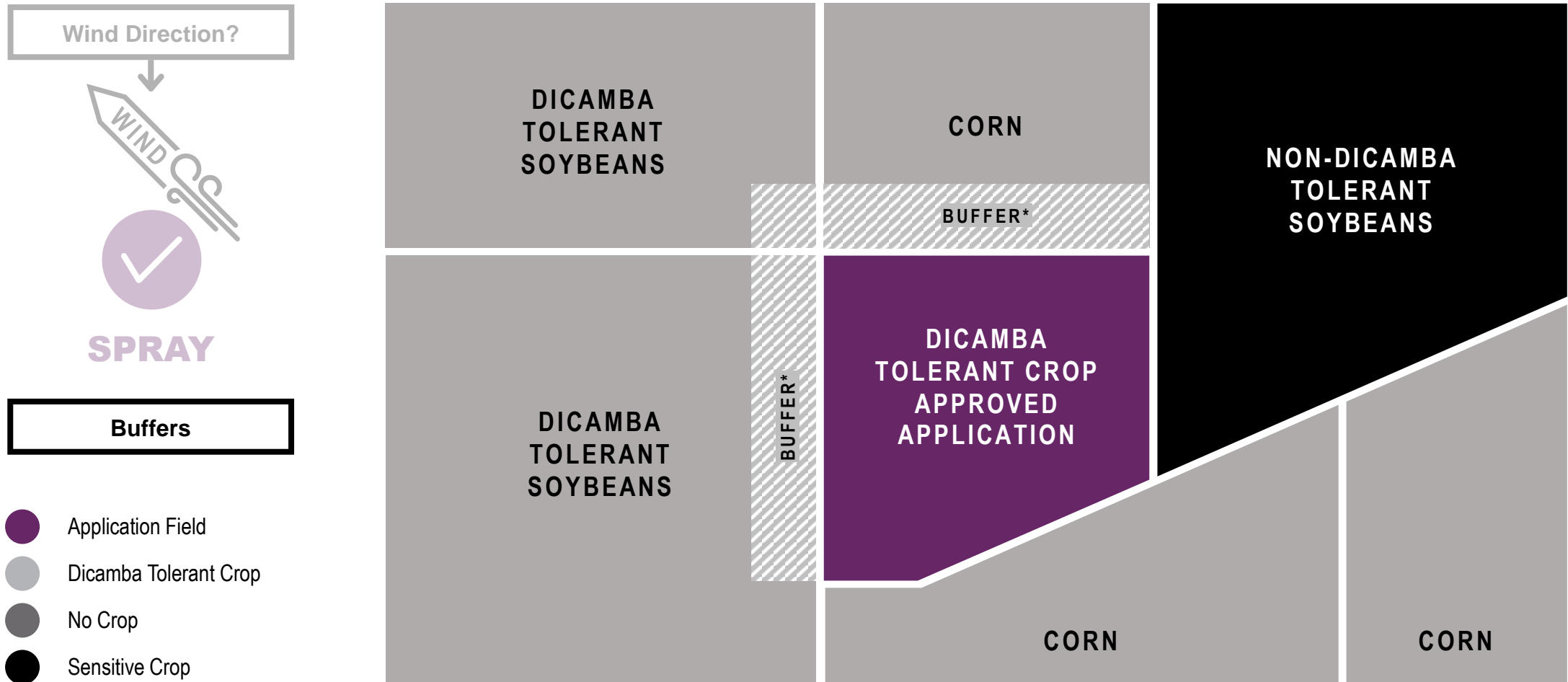
Agricultural fields that have been prepared for planting.

Areas covered by the footprint of a building, silo, or other man-made structure with walls and/or roof.



# BUFFER REQUIREMENT

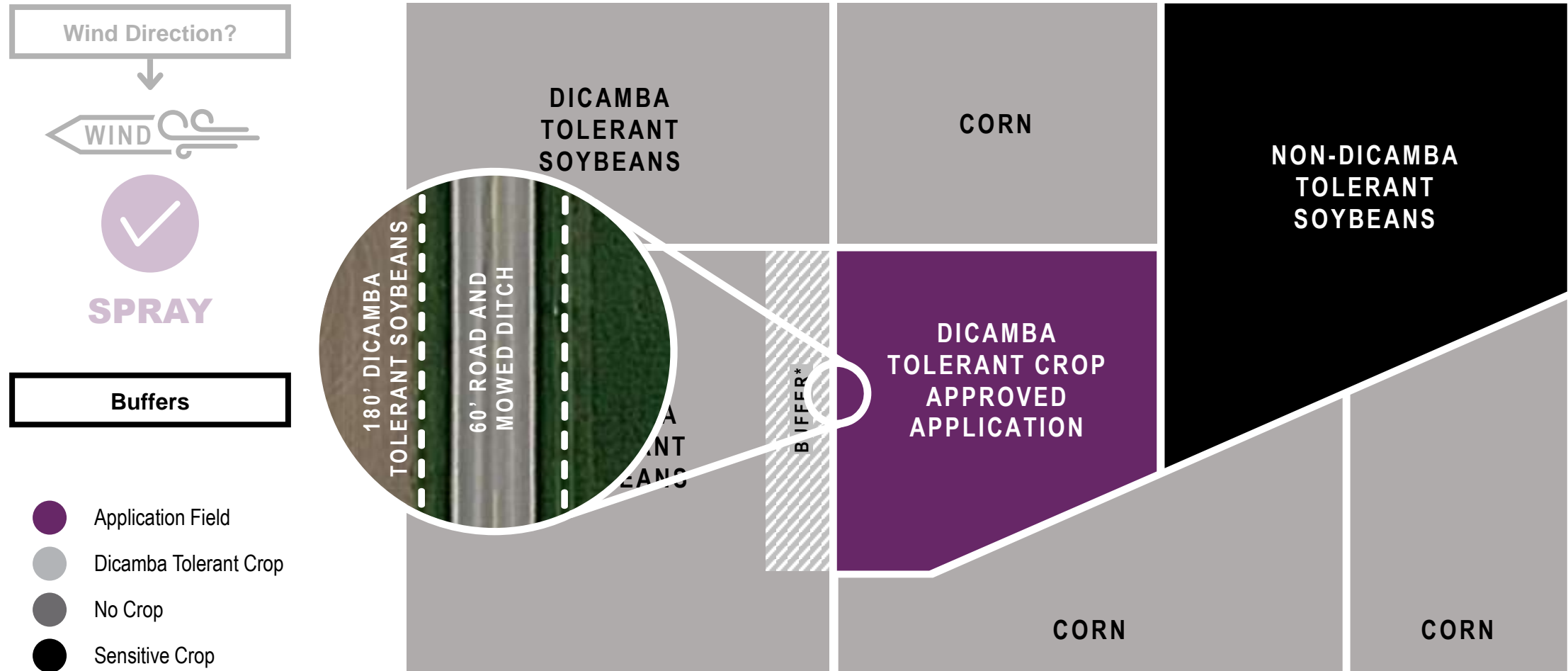
## DOWNWIND ADJACENT AREAS



\*BUFFER COMPOSITION IS 240'. MAY BE REDUCED WHEN UTILIZING QUALIFIED DRT.

# BUFFER REQUIREMENT

## DOWNWIND ADJACENT AREAS



\*BUFFER COMPOSITION IS 240'. MAY BE REDUCED WHEN UTILIZING QUALIFIED DRT.

# PROTECTING ENDANGERED SPECIES

Obtain bulletins no more than six months before using these products

Go to <https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins>

**OR call** 1-844-447-3813

You must use the Bulletin valid for the month in which you will apply these products

## Applications within Pesticide Use Limitation Areas must follow the requirements contained in the Endangered Species Protection Bulletin

### Bulletins Live! Two -- View the Bulletins

For assistance in using Bulletins Live! Two, [view the tutorial](#). Also see [background](#), [notes](#) and a [quick start guide for BILT](#).



**Current View: November 2020**

**Find Address or Place**

**Map Layers**

- Pesticide Use Limitation Area (PULA)
- Explanation
- No legend

**INSTRUCTIONS** **RESULTS**

**Protecting Endangered Species**

**Directions:** This search tool provides Pesticide Use Limitation Areas (PULAs) for pesticide active ingredients and products with active Bulletins. To access Endangered Species Protection Bulletins from this search tool:

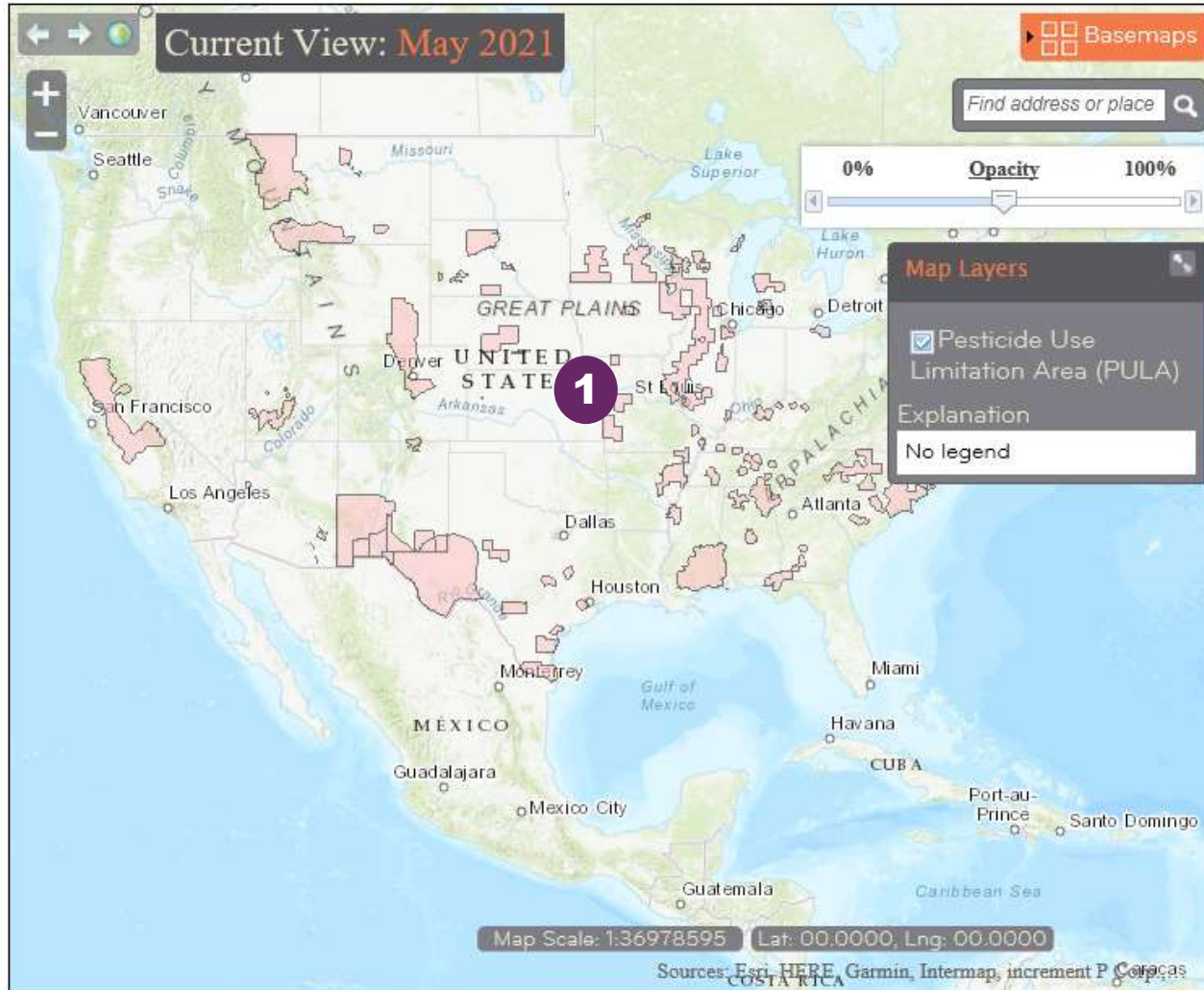
1. Zoom to your intended pesticide application area:
  - a. Manually zoom to a location by dragging the map to your location and using the "+" and "-" buttons to zoom in and out; or
  - b. Enter your intended pesticide application area into the Location Search Tool to automatically zoom to that location.
2. Select your Application Month.
3. Optional: Refine your search by entering a specific active ingredient or product and click the "Search" button. (Default is all active ingredients and products).
4. Click on the PULA within your intended pesticide application area to activate the Results Tab with the associated limitations and print your Bulletin. If no PULA is present, click the "Search" button to activate the "No Limitations" dialog box and print your Bulletin.
5. To complete an additional search, use the "Clear All" button to clear your current results.

**Application Month:**  
November 2020

# INSTRUCTIONS

## OBTAINING A BULLETIN

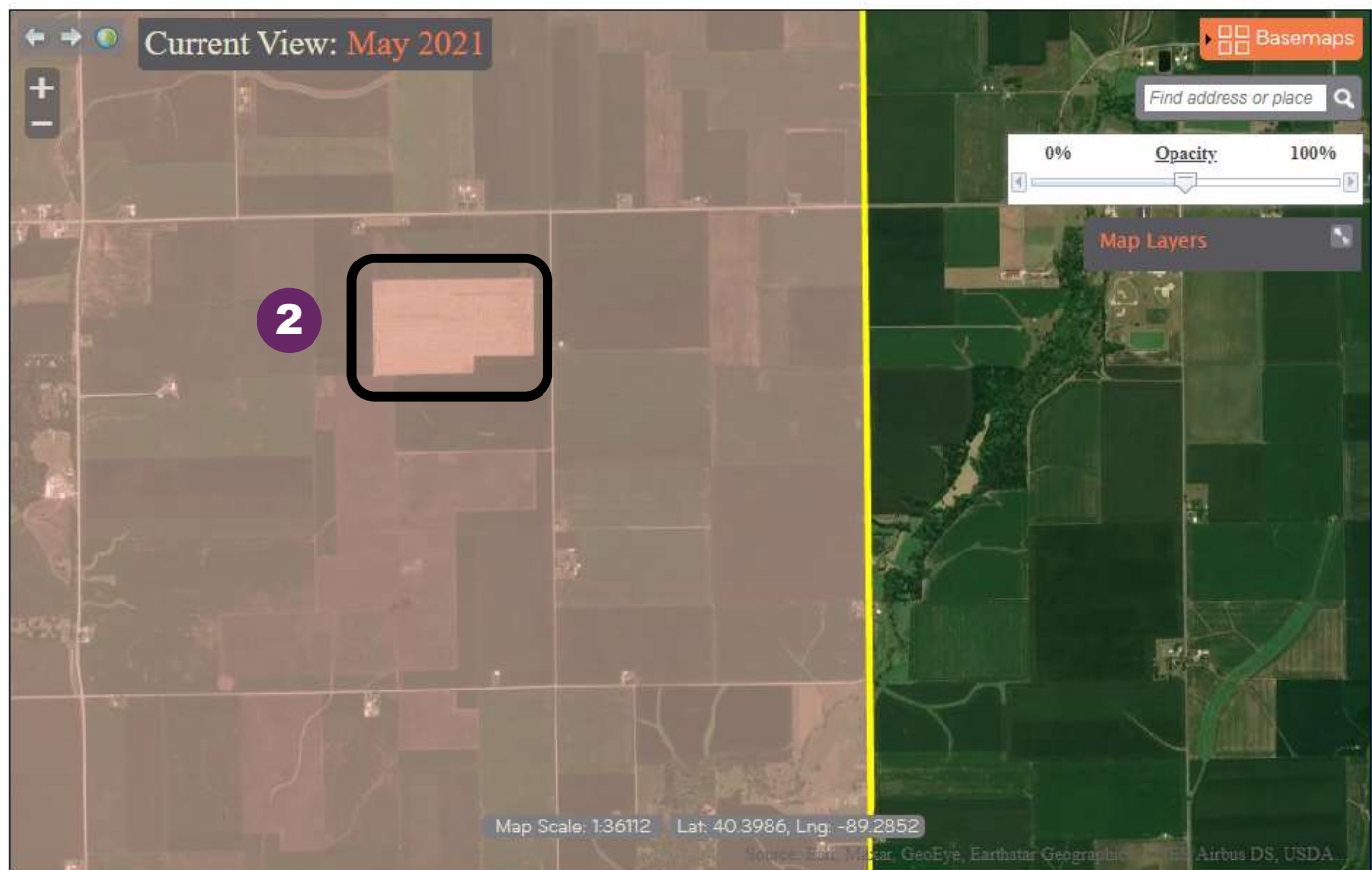
- 1 Zoom in or search to locate your field
  - Satellite image available in basemaps if needed





# Bulletins Live! Two -- View the Bulletins

For assistance in using Bulletins Live! Two, [view the tutorial](#). Also see [background](#), [notes](#) and a [quick start guide for BLT](#).



## INSTRUCTIONS

### OBTAINING A BULLETIN

- 1 Zoom in or search to locate your field
  - | Satellite image available in basemaps if needed
- 2 If your field is pink, click on the area (if not colored, **No ESA Limitation**)
  - | Outline of area should highlighted

The screenshot shows a web application interface for a "Location Search Tool". It has two tabs: "INSTRUCTIONS" (active) and "RESULTS". The instructions list five steps. Below the instructions are three input fields: "Application Month:" with a dropdown menu showing "May 2021", "Active Ingredient:" with a dropdown menu showing "All", and "Product Name:" with a text input field containing "Start typing Product name". Below these is a separator "-- OR --" and then "Product Registration Number:" with a text input field containing "Type Product Registration #". At the bottom right are two buttons: "SEARCH" (highlighted with a black box) and "CLEAR ALL".

**1** (Callout pointing to the map area)

**2** (Callout pointing to the "Application Month:" dropdown)

**3** (Callout pointing to the "SEARCH" button)

# INSTRUCTIONS

## OBTAINING A BULLETIN

- 1** Zoom in or search to locate your field
  - | Satellite image available in basemaps if needed
- 2** If your field is pink, click on the area (if not colored, **No ESA Limitation**)
  - | Outline of area should be highlighted
- 3** Designate application month, e.g. "May 2021"
  - | Search

INSTRUCTIONS

RESULTS

4

Effective Date: May 2021

Pesticide Use Limitation Summary Table

| AI/Product                                     | Use                      | App Method   | Formulation | Code |
|--|--------------------------|--------------|-------------|------|
| XTENDIMAX WITH VAPORGRIP TECHNOLOGY [264-1210] | Dicamba-Tolerant Soybean | Ground spray | Liquid      | D120 |

Codes and Limitations Table

| Code | Limitation   |
|------|--|
| D120 | To protect federally listed threatened and endangered species, both a 310-foot in-field wind-directional spray drift buffer and a 57-foot omnidirectional in-field buffer are required. If applying to dicamba-tolerant soybeans with a qualified hooded sprayer, both a 240-foot in-field wind-directional spray drift buffer and a 57-foot omnidirectional in-field buffer are required to protect federally listed threatened and endangered species. Please see the label for a link to the website(s) with your product's qualified hooded sprayers. The following areas may be included in the buffer distance composition when directly adjacent to the treated field edges: 1. Roads, paved or gravel surfaces, mowed grassy areas adjacent to field, and areas of bare ground from recent plowing or grading that are contiguous with the treated field. 2. Planted agricultural fields containing dicamba-resistant plantings of cotton and soybeans. 3. Areas covered by the footprint of a building, silo, or other man made structure with walls and or roof. |

Printable Bulletin

# INSTRUCTIONS

## OBTAINING A BULLETIN

- Zoom in or search to locate your field
  - Satellite image available in basemaps if needed
- If your field is pink, click on the area (if not colored, **No ESA Limitation**)
  - Outline of area should highlighted
- Designate application month e.g. "May 2021"
  - Search
- Look to the right at **Results\***
  - If dicamba products are listed, See Limitations

\*All approved pesticides for applications in the PULA will be listed. This example only shows XtendiMax® Herbicide with VaporGrip® Technology for illustration purposes.

# BUFFER REQUIREMENTS SUMMARY

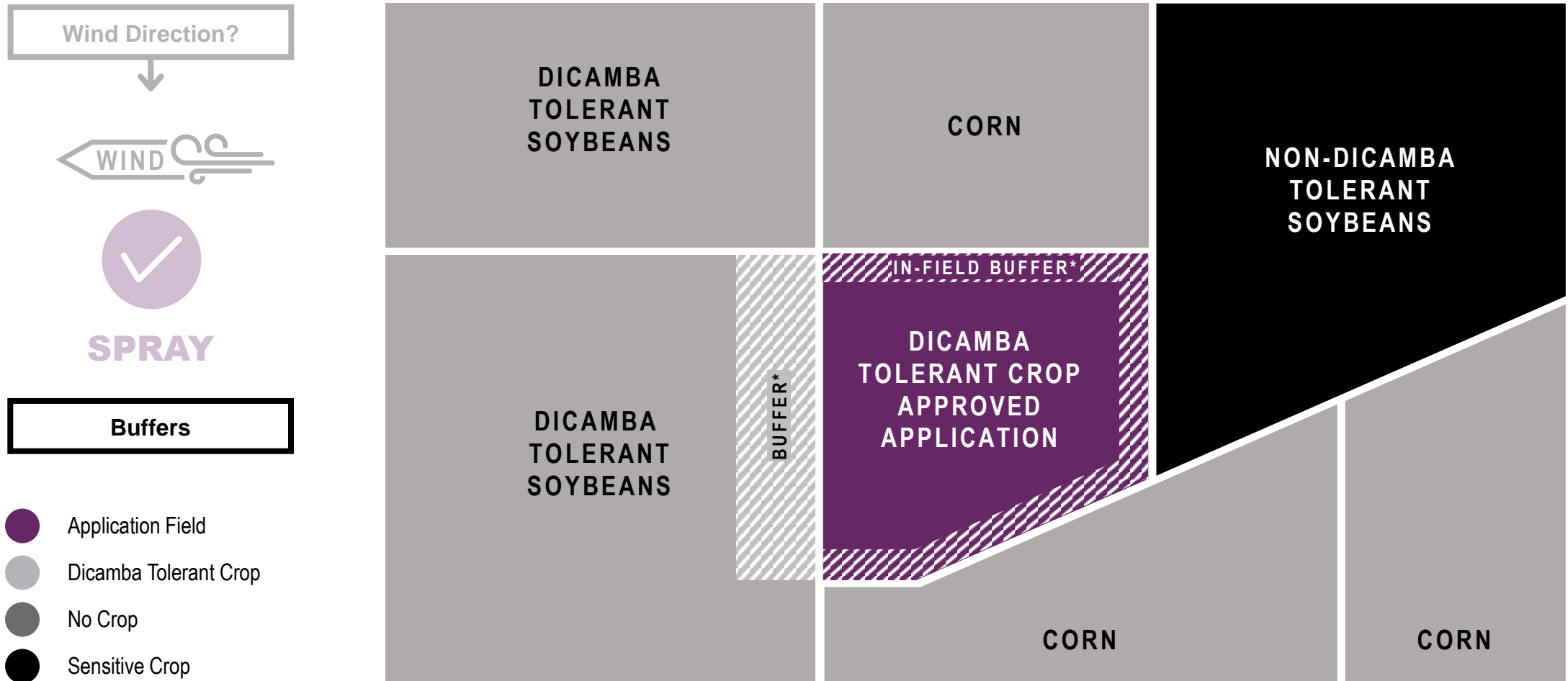
## COUNTY REQUIRING OMNIDIRECTIONAL BUFFER

- To protect federally listed threatened and endangered species, both a **310-foot in-field wind-directional** spray drift buffer and a **57-foot omnidirectional in-field buffer** are required.
  - **If applying with a qualified hooded sprayer**, both a **240-foot** in-field wind-directional spray drift buffer and a 57-foot omnidirectional in-field buffer are required to protect federally listed threatened and endangered species. Please see the label for a link to the website(s) with your product's qualified hooded sprayers.
- The following areas may be included in the buffer distance composition when directly adjacent to the treated field edges:
  - Roads, paved or gravel surfaces, mowed grassy areas adjacent to field, and areas of bare ground from recent plowing or grading that are contiguous with the treated field.
  - Planted agricultural fields containing dicamba-resistant plantings of cotton and soybeans.
  - Areas covered by the footprint of a building, silo, or other man-made structure with walls and or roof.



# BUFFER PROTECTION

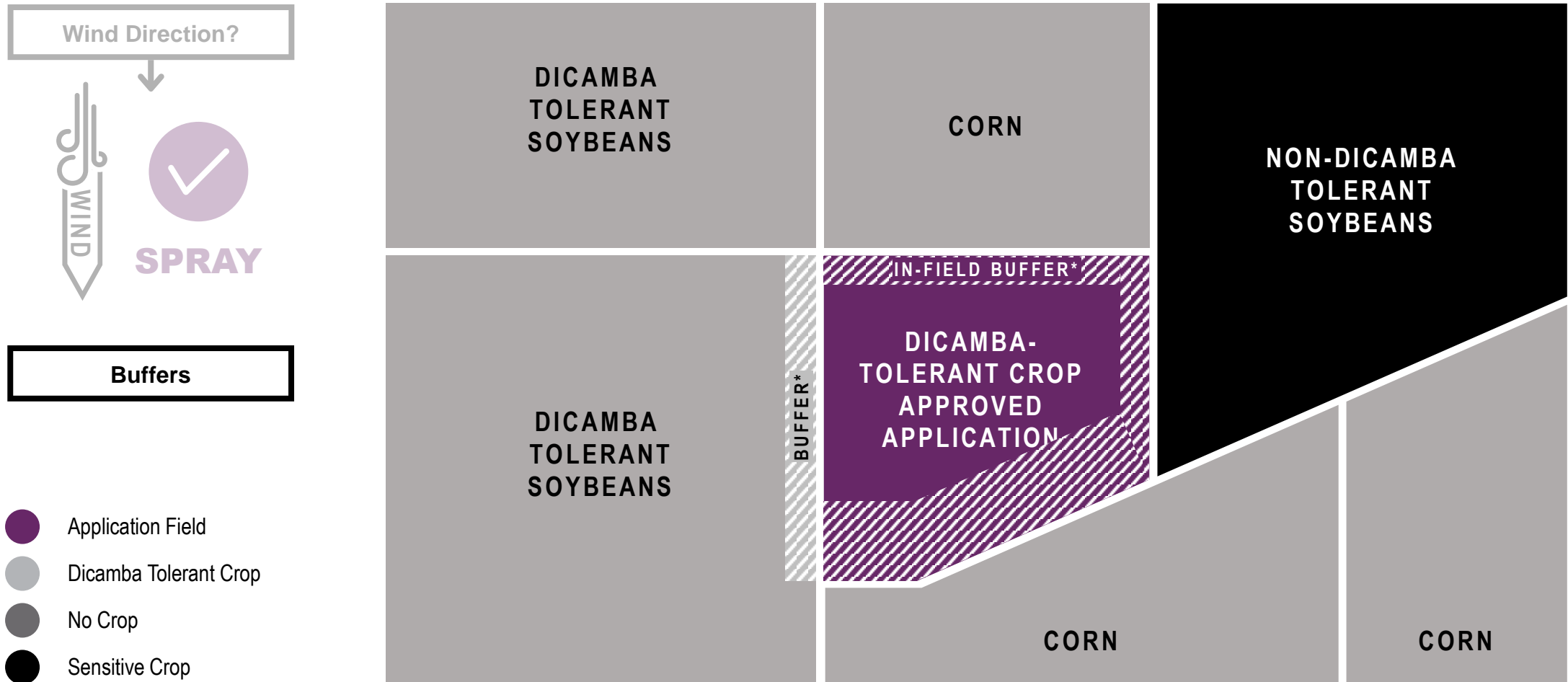
COUNTY REQUIRING OMNIDIRECTIONAL BUFFER



\*BUFFER COMPOSITION IS 310' DOWNWIND (MAY BE REDUCED WHEN UTILIZING QUALIFIED DRT) WITH 57' OMNIDIRECTIONAL.

# BUFFER PROTECTION

COUNTY REQUIRING OMNIDIRECTIONAL BUFFER



\*BUFFER COMPOSITION IS 310' DOWNWIND (MAY BE REDUCED WHEN UTILIZING QUALIFIED DRT) WITH 57' OMNIDIRECTIONAL.

# WEED RESISTANCE MANAGEMENT



# PRINCIPLES OF WEED RESISTANCE MANAGEMENT



**Long-term  
Strategy**

**Long-term herbicide resistance management requires more than weed control aimed at minimizing yield loss in a single year**

**Adopt a multi-year approach**

- Knowing existing resistance
- Crop rotation

**Effective herbicide resistance management combines:**

- Proper scouting (before and after applications)
- System approach to chemical application
  - Multiple Sites of Action
  - Overlapping residuals
- Ensure effective chemical applications
  - Timely applications (< 4 inch weeds)





# PRINCIPLES OF WEED RESISTANCE MANAGEMENT



## Use Cultural As Well As Chemical Practices for Weed Management

- Crop rotation
- Cover crops/crop residue
- Sound agronomic practices to increase crop competition
  - Row spacing (example left)
  - Pest management
  - Soil health



\*University of Wisconsin, R. Werle, 2020. 140K population, planted same day.

# PRINCIPLES OF WEED RESISTANCE MANAGEMENT

Multiple sites of action that are effective against the most troublesome weeds

- Choosing effective site of action is key
- Knowing if herbicide is active preemergence, postemergence, or both is important to understand
- Whenever practical, Multiple Sites of Action should be applied in the same application for PRE and POST weed control



<https://iwilltakeaction.com/uploads/files/2020-take-action-herbicide-classification-chart.pdf>

**HERBICIDE CLASSIFICATION**

Repeated use of herbicides with the same site of action can result in the development of herbicide-resistant weed populations.

**by MODE OF ACTION (HRA) listed in parentheses**

The chart provides information on the mode of action (HRA) of herbicides. The HRA is a number that identifies the herbicide's mode of action. The chart is organized into columns for 'MODE OF ACTION (HRA)', 'PREEMERGENCE', and 'POST-EMERGENCE'. It lists various herbicide names and their corresponding HRA numbers. The chart is color-coded by HRA: 1 (Orange), 2 (Red), 3 (Pink), 4 (Purple), 5 (Blue), 6 (Teal), 7 (Green), 8 (Yellow), 9 (Light Green), 10 (Dark Green), 11 (Light Blue), 12 (Dark Blue), 13 (Light Green), 14 (Dark Green), 15 (Light Blue), 16 (Dark Blue), 17 (Light Green), 18 (Dark Green), 19 (Light Blue), 20 (Dark Blue), 21 (Light Green), 22 (Dark Green), 23 (Light Blue), 24 (Dark Blue), 25 (Light Green), 26 (Dark Green), 27 (Light Blue), 28 (Dark Blue), 29 (Light Green), 30 (Dark Green), 31 (Light Blue), 32 (Dark Blue), 33 (Light Green), 34 (Dark Green), 35 (Light Blue), 36 (Dark Blue), 37 (Light Green), 38 (Dark Green), 39 (Light Blue), 40 (Dark Blue), 41 (Light Green), 42 (Dark Green), 43 (Light Blue), 44 (Dark Blue), 45 (Light Green), 46 (Dark Green), 47 (Light Blue), 48 (Dark Blue), 49 (Light Green), 50 (Dark Green), 51 (Light Blue), 52 (Dark Blue), 53 (Light Green), 54 (Dark Green), 55 (Light Blue), 56 (Dark Blue), 57 (Light Green), 58 (Dark Green), 59 (Light Blue), 60 (Dark Blue), 61 (Light Green), 62 (Dark Green), 63 (Light Blue), 64 (Dark Blue), 65 (Light Green), 66 (Dark Green), 67 (Light Blue), 68 (Dark Blue), 69 (Light Green), 70 (Dark Green), 71 (Light Blue), 72 (Dark Blue), 73 (Light Green), 74 (Dark Green), 75 (Light Blue), 76 (Dark Blue), 77 (Light Green), 78 (Dark Green), 79 (Light Blue), 80 (Dark Blue), 81 (Light Green), 82 (Dark Green), 83 (Light Blue), 84 (Dark Blue), 85 (Light Green), 86 (Dark Green), 87 (Light Blue), 88 (Dark Blue), 89 (Light Green), 90 (Dark Green), 91 (Light Blue), 92 (Dark Blue), 93 (Light Green), 94 (Dark Green), 95 (Light Blue), 96 (Dark Blue), 97 (Light Green), 98 (Dark Green), 99 (Light Blue), 100 (Dark Blue).

**by PREEMERGENCE**

The chart also provides information on the preemergence/postemergence status of herbicides. The chart is organized into columns for 'PREEMERGENCE' and 'POST-EMERGENCE'. It lists various herbicide names and their corresponding status. The chart is color-coded by status: PRE (Orange), POST (Red), PRE & POST (Pink).

For more information and tools to establish reserves, visit [www.IWillTakeAction.com](https://iwilltakeaction.com)

This action is supported by the following organizations:

Logos of supporting organizations: Bayer, BASF, Corteva, FMC, Gowan, John Deere, Mosaic, Nufarm, Syngenta, Valent, and others.



# WEED EXAMPLES



## COMMON WATERHEMP

*Amaranthus rudis*

SEEDS/PLANT  
**250K**

| SITE OF ACTION                 | 1<br>ACCASE INHIBITORS | 2<br>ALS INHIBITORS | 2<br>ALS INHIBITORS | 4<br>SYNTHETIC AUXINS | 5<br>PHOTOSYSTEM II INHIBITORS | 9<br>EPSP SYNTHASE INHIBITOR | 14<br>PPO INHIBITORS | 27<br>HPPD INHIBITORS | AIN TORS | 22<br>PHOTOSYSTEM I ELECTRON DIVERTER | 27<br>HPPD INHIBITORS |
|--------------------------------|------------------------|---------------------|---------------------|-----------------------|--------------------------------|------------------------------|----------------------|-----------------------|----------|---------------------------------------|-----------------------|
| PRODUCT EXAMPLES (Trade Name®) | Assure II, Select Max  | Class Pursu         |                     |                       |                                |                              |                      |                       | ess      | Gramoxone®, (paraquat)                | Callisto, Laudis      |
| KNOWN RESISTANCE               |                        |                     |                     |                       |                                |                              |                      |                       |          |                                       |                       |



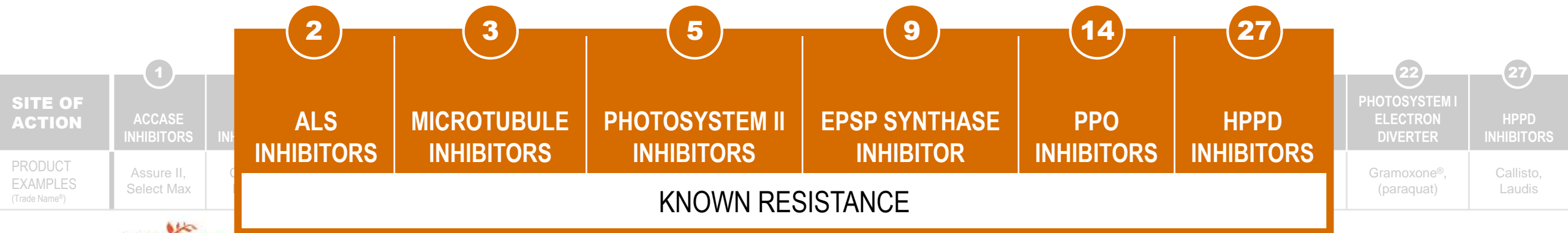
# WEED EXAMPLES



## PALMER AMARANTH

*Amaranthus palmeri*

SEEDS/PLANT  
**600K**



**2021**

**Season**

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# EFFECTIVE APPLICATIONS

## WEED HEIGHT



\*2018. Tennessee.  
Palmer Pigweed

**FOR BEST RESULTS, SPRAY WEEDS THAT ARE 4 INCHES OR SHORTER**

**2021**

**Season**

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# APPLICATIONS OF LOW-VOLATILITY FORMULATIONS OF DICAMBA

## WEED RESISTANCE MANAGEMENT



Use **LABELED RATE** for in-crop applications (0.5 lb ae/A)



Consider **ENVIRONMENTAL FACTORS** for applications

| BRAND   | RATE                |
|---|---------------------|
| XtendiMax® Herbicide with VaporGrip® Technology (Bayer) | <b>22 fl oz/A</b>   |
| Engenia® Herbicide (BASF)                               | <b>12.8 fl oz/A</b> |
| Tavium® Plus VaporGrip® Technology herbicide (Syngenta) | <b>56.5 fl oz/A</b> |

**+** Approved VRA, and DRA if required\*

\* see product label website for approved tank-mix (eg [www.xtendimaxapplicationrequirements.com](http://www.xtendimaxapplicationrequirements.com) )

4 hour rainfast period

Drought and cold stress can reduce effectiveness

Spray while weeds are actively growing



# PRESSURE IMPACT ON WEED COVERAGE

SPRAY PRESSURE SHOULD BALANCE WEED COVERAGE AND PRODUCTION OF FINE SPRAY PARTICLES

**1** Both pressures shown below are within approved range; yet higher PSI improves coverage

**2** Ensure appropriate sprayer ground speed and operating pressure

**30 PSI - INCOMPLETE PATTERN**



**60 PSI - FULL PATTERN**



Approved Dicamba + Approved Glyphosate + Approved DRA (0.5% v/v) + Approved VRA  
Applied at 15 GPA

# CROP SPECIFIC RESTRICTIONS

IN THE ROUNDUP READY® XTEND CROP SYSTEM

Approved dicamba formulations may be applied to crops with Roundup Ready 2 Xtend® Technology or XtendFlex® Technology up to and including June 30 for soybeans and July 30 for cotton.

## PRE-EMERGENT/BURNDOWN:

Apply 0.5 lb ae/acre in single application

Two applications maximum before crop emergence

## IN-CROP:

Apply 0.5 lb ae/acre in single application

Two applications maximum after emergence

Maximum seasonal use rate allowance for dicamba products is 2 lbs ae/acre.

Refer to specific product labels for product rates and growth stage timings for crop response concerns; e.g. R1 for soybeans with XtendiMax® Herbicide with VaporGrip® Technology.



# EXAMPLE OF GOOD WEED MANAGEMENT SYSTEM



ROUNDUP READY 2 XTEND® SOYBEANS\*

Overlapping residual herbicides are important along with multiple sites of action

| TIMING                 | PRACTICE   | EXAMPLE RECOMMENDATION**   |
|------------------------|--|--|
| Before Planting        | Burndown or Start Clean with Tillage                             | Roundup PowerMAX® Herbicide (32 oz) + XtendiMax® Herbicide with VaporGrip® Technology (22 oz) + labeled Drift Reduction Adjuvant (DRA) + <b>labeled Volatility Reduction Adjuvant (VRA)</b>                |
| At Planting            | Pre  | Valor® EZ Herbicide (2 oz), Valor® XLT Herbicide (3 oz), Fierce® Herbicide (3 oz) or Warrant® Herbicide (3-4 pt) + metribuzin (0.25 lb)  |
| Post 1<br>Over-the-top | Post 1<br>< 4" weeds and within 20-30 days after PRE Application | Roundup PowerMAX® Herbicide (32 oz) + XtendiMax® Herbicide with VaporGrip® Technology (22 oz) + labeled DRA + <b>labeled VRA</b><br><b>Warrant® Herbicide (3-4 pt) or Warrant® Ultra Herbicide (50 oz)</b> |
| Post 2<br>Over-the-top | Post 2   | Cobra® Herbicide (10 oz) + COC (1% v/v) to control any weed escapes prior to R6  |

\*Check with your local dealer or representative or U.S. EPA and your state pesticide regulatory agency for the product registration status and additional restrictions in your state.

\*\*Contact your local retailer, company representative or extension service for specific regional weed management recommendations.

# EXAMPLE OF GOOD WEED MANAGEMENT SYSTEM

XTENDFLEX® SOYBEANS\*



Overlapping residual herbicides are important along with multiple sites of action

| TIMING                 | PRACTICE   | EXAMPLE RECOMMENDATION**  |
|------------------------|--|---|
| Before Planting        | Burndown or Start Clean with Tillage                             | Roundup PowerMAX® Herbicide (32 oz) + XtendiMax® Herbicide with VaporGrip® Technology (22 oz) + labeled Drift Reduction Adjuvant (DRA) + <b>labeled Volatility Reduction Adjuvant (VRA)</b>         |
| At Planting            | Pre  | Valor® EZ Herbicide (2 oz), Valor® XLT Herbicide (3 oz), Fierce® Herbicide (3 oz) or Warrant® Herbicide (3-4 pt) + metribuzin (0.25 lb)   |
| Post 1<br>Over-the-top | Post 1<br>< 4" weeds and within 20-30 days after PRE Application | Roundup PowerMAX® Herbicide (32 oz) + XtendiMax® Herbicide with VaporGrip® Technology (22 oz) + labeled DRA + <b>labeled VRA</b><br>Warrant® Herbicide (3-4 pt) or Warrant® Ultra Herbicide (50 oz) |
| Post 2<br>Over-the-top | Post 2   | Liberty® Herbicide (29 oz) to control any weed escapes up to R1 growth stage  |

\*Check with your local dealer or representative or U.S. EPA and your state pesticide regulatory agency for the product registration status and additional restrictions in your state.

\*\*Contact your local retailer, company representative or extension service for specific regional weed management recommendations.

# EXAMPLE OF GOOD WEED MANAGEMENT SYSTEM



COTTON WITH XTENDFLEX® TECHNOLOGY\*

Overlapping residual herbicides are important along with multiple sites of action

| TIMING          | PRACTICE  | EXAMPLE RECOMMENDATION **   |
|-----------------|---|---|
| Before Planting | Early Burndown or Start Clean with Tillage                | Roundup PowerMAX® II Herbicide (32 oz) + 2,4-D (16-32oz) or dicamba (0.25-0.5 lb)   |
| At Planting     | Pre   | Gramoxone® SL 2.0 Herbicide (2-4 pt) + Warrant® Herbicide (3 pt) + diuron (1.5 pt)  |
| Post            | Post 1<br>< 4" weeds and within 14-18 days after planting | Roundup PowerMAX® II Herbicide (32 oz) + XtendiMax® Herbicide with VaporGrip® Technology (22 oz) + Warrant® Herbicide (3 pt) + labeled Drift Reduction Adjuvant (DRA) + labeled Volatility Reduction Adjuvant (VRA) |
| Post            | Post 2<br>32-39 days after planting                       | Roundup PowerMAX® II Herbicide (32 oz) + XtendiMax® Herbicide with VaporGrip® Technology (22 oz) + labeled DRA + labeled VRA or Liberty® Herbicide (32 oz)  |
| Post            | Lay-by hooded sprayer                                     | Diuron (1.5 pt) + Roundup PowerMAX® II Herbicide (32 oz) or MSMA (2 lbs ai)   |

\*Check with your local dealer or representative or U.S. EPA and your state pesticide regulatory agency for the product registration status and additional restrictions in your state.

\*\*Contact your local retailer, company representative or extension service for specific regional weed management recommendations.

# WEED MANAGEMENT IN BUFFER AREA

Weed management in buffer areas should be unique to each situation, options include:

- Glufosinate in XtendFlex® soybeans/cotton
  - PPO or other herbicide options
- Use higher labeled rates of residual herbicides and additional SOA in possible buffer areas
- XtendiMax® Herbicide with VaporGrip® Technology may be applied in certain downwind buffer areas used in a previous application
  - Wait for change in wind direction, determine new buffer distances and adhere to all other application requirements (including endangered species restrictions)
- Contact your Bayer technical or sales representatives for local recommendations



# APPLICATIONS OF LOW-VOLATILITY FORMULATIONS OF DICAMBA

Contact the appropriate company if you:

- Experience poor performance on labelled weeds or suspect weed resistance
- Have off-target movement inquiries
- Have crop response inquiries
- Have questions about sensitive crop registries

XtendiMax® Herbicide with  
VaporGrip® Technology

1-844-RRXTEND

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

Tavium® Plus VaporGrip®  
Technology herbicide

1-866-796-4368

[www.syngenta-us.com](http://www.syngenta-us.com)

Engenia® Herbicide

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

# DISCLAIMER

- **Bayer is a member of Excellence Through Stewardship® (ETS).** Bayer products are commercialized in accordance with ETS Product Launch Stewardship Guidance, and in compliance with Bayer's Policy for Commercialization of Biotechnology-Derived Plant Products in Commodity Crops. Commercialized products have been approved for import into key export markets with functioning regulatory systems. Any crop or material produced from this product can only be exported to, or used, processed or sold in countries where all necessary regulatory approvals have been granted. It is a violation of national and international law to move material containing biotech traits across boundaries into nations where import is not permitted. Growers should talk to their grain handler or product purchaser to confirm their buying position for this product. Excellence Through Stewardship® is a registered trademark of Excellence Through Stewardship.

XtendiMax® herbicide with VaporGrip® Technology is part of the Roundup Ready® Xtend Crop System, is a restricted use pesticide and must be used with VaporGrip® Xtra Agent (or an equivalent vapor reducing agent). For approved tank-mix products (including VRAs and DRAs), nozzles and other important label information visit [XtendiMaxApplicationRequirements.com](http://XtendiMaxApplicationRequirements.com).

**ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** It is a violation of federal and state law to use any pesticide product other than in accordance with its labeling. NOT ALL formulations of dicamba or glyphosate are approved for in-crop use with Roundup Ready 2 Xtend® soybeans. NOT ALL formulations of dicamba, glyphosate or glufosinate are approved for in-crop use with products with XtendFlex® Technology. ONLY USE FORMULATIONS THAT ARE SPECIFICALLY LABELED FOR SUCH USES AND APPROVED FOR SUCH USE IN THE STATE OF APPLICATION. Contact the U.S. EPA and your state pesticide regulatory agency with any questions about the approval status of dicamba herbicide products for in-crop use with Roundup Ready 2 Xtend® soybeans or products with XtendFlex® Technology.

**B.t. products** may not yet be registered in all states. Check with your seed brand representative for the registration status in your state.

**The RRXtend Spray App provides** forecasts for locations within the contiguous United States. Do not use this app for forecasts outside the contiguous United States. Forecasts are for planning purposes only and are not a substitute for checking actual weather conditions at your location at the time of application and comply with the product label and other legal requirements.

**Performance may vary**, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields.

**Roundup Ready® 2 Technology** contains genes that confer tolerance to glyphosate. **Roundup Ready 2 Xtend® soybeans contain genes that confer tolerance to glyphosate and dicamba. Products with XtendFlex® Technology contains genes that confer tolerance to glyphosate, glufosinate and dicamba. Glyphosate** will kill crops that are not tolerant to glyphosate. **Dicamba** will kill crops that are not tolerant to dicamba. **Glufosinate** will kill crops that are not tolerant to glufosinate. Contact your seed brand dealer or refer to the Bayer Technology Use Guide for recommended weed control programs.

Insect control technology provided by **Vip3A** is utilized under license from Syngenta Crop Protection AG. XtendiMax® is a restricted use pesticide. Not all products are registered in all states and may be subject to use restrictions. The distribution, sale, or use of an unregistered pesticide is a violation of federal and/or state law and is strictly prohibited. Check with your local dealer or representative for the product registration status in your state. Bayer, Bayer Cross, Bollgard®, Respect the Refuge and Cotton Design®, Roundup PowerMAX®, Roundup Ready 2 Xtend®, Roundup Ready 2 Yield®, Roundup Ready®, Roundup®, VaporGrip®, Warrant®, XtendFlex® and XtendiMax® are registered trademarks of Bayer Group. Gramoxone® is a registered trademark of a Syngenta group company. Liberty® and LibertyLink® and the Water Droplet Design® are trademarks of BASF Corporation. Cobra®, Fierce® and Valor® are registered trademarks of Valent U.S.A. Corporation. Some of the product(s) discussed herein are restricted use pesticide(s) and may not be registered in all states. The distribution, sale, or use of an unregistered pesticide is a violation of federal and/or state law and is strictly prohibited. Check with your local dealer or product representative for the product registration status in your state. All other trademarks are the property of their respective owners. For additional product information call toll-free 1-866-99-BAYER (1-866-992-2937) or visit our website at [www.BayerCropScience.us](http://www.BayerCropScience.us). Bayer CropScience LP, 800 North Lindbergh Boulevard, St. Louis, MO 63167. ©2021 Bayer Group. All rights reserved.



# APPENDIX



# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



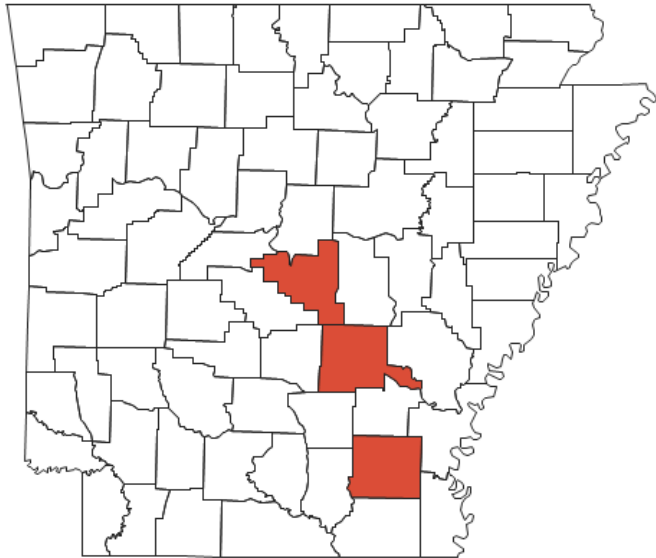
## ALABAMA

|          |          |           |
|----------|----------|-----------|
| Autauga  | Dallas   | Madison   |
| Baldwin  | DeKalb   | Marshall  |
| Calhoun  | Elmore   | Morgan    |
| Cherokee | Etowah   | St. Clair |
| Chilton  | Franklin | Sumter    |
| Colbert  | Jackson  |           |
| Cullman  | Lawrence |           |

\* = current as of December, 2020



# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



## ARKANSAS

Drew

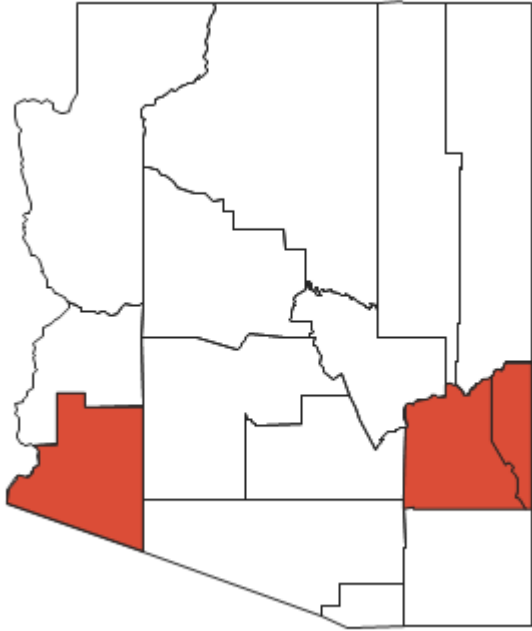
Jefferson

Pulaski

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*

## ARIZONA



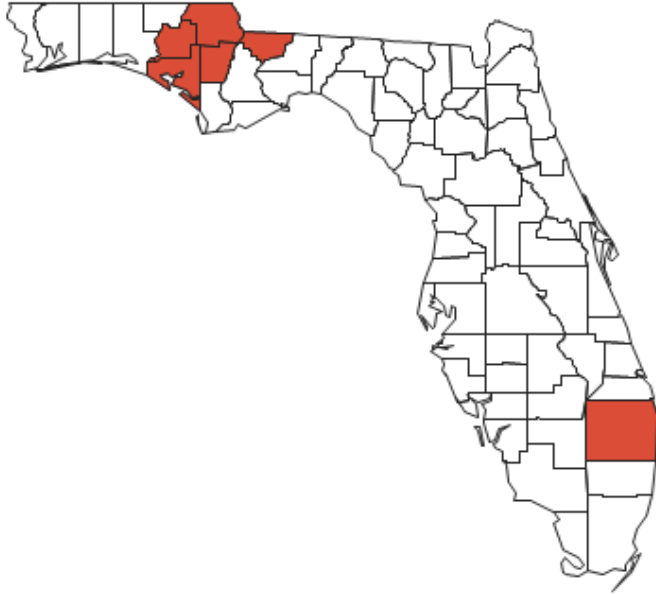
Graham

Greenlee

Yuma

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*

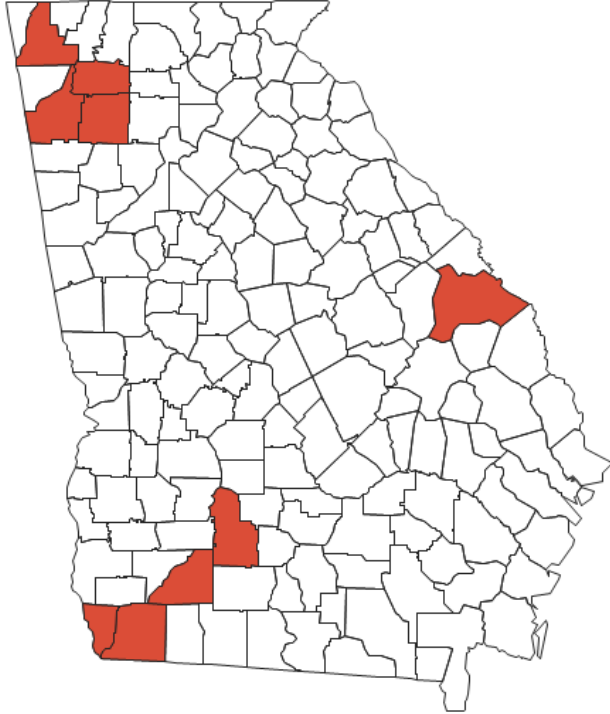


## FLORIDA

Bay  
Calhoun  
Gadsden  
Jackson  
Palm Beach  
Washington

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



## GEORGIA

Bartow

Burke

Decatur

Floyd

Gordon

Mitchell

Seminole

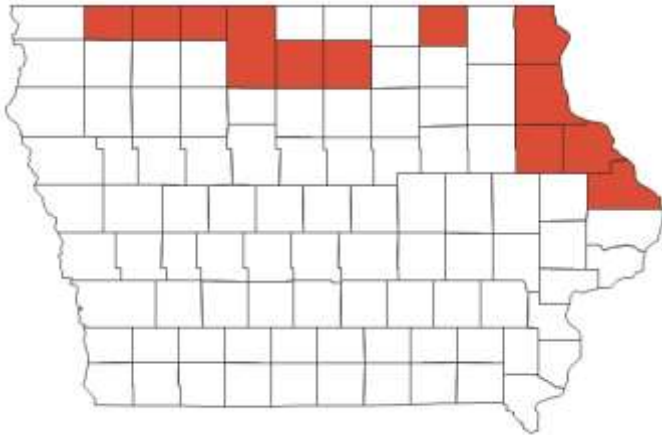
Walker

Worth

\* = current as of December, 2020



# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*

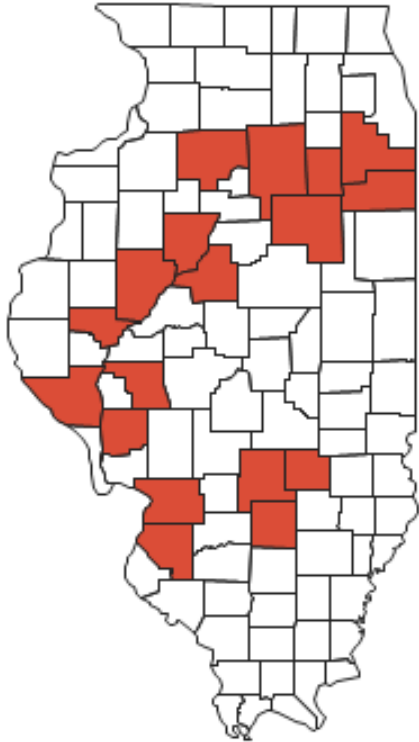


## IOWA

|             |         |
|-------------|---------|
| Allamakee   | Emmet   |
| Cerro Gordo | Hancock |
| Clayton     | Howard  |
| Delaware    | Jackson |
| Dickinson   | Kossuth |
| Dubuque     | Osceola |

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



## ILLINOIS

|           |            |           |
|-----------|------------|-----------|
| Bureau    | LaSalle    | Schuyler  |
| Effingham | Livingston | St. Clair |
| Fayette   | Madison    | Tazewell  |
| Fulton    | Marion     | Will      |
| Greene    | Morgan     |           |
| Grundy    | Peoria     |           |
| Kankakee  | Pike       |           |

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*

## INDIANA



Greene

Harrison

LaGrange

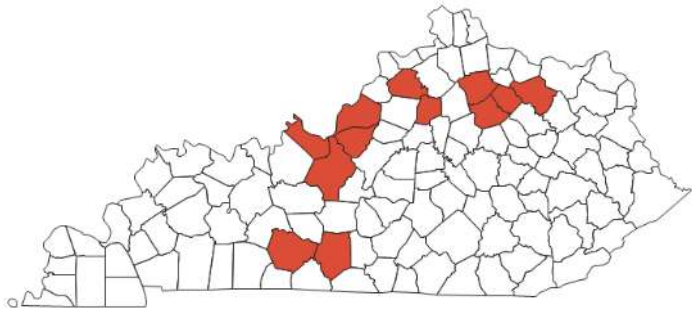
Lake

Porter

Posey

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



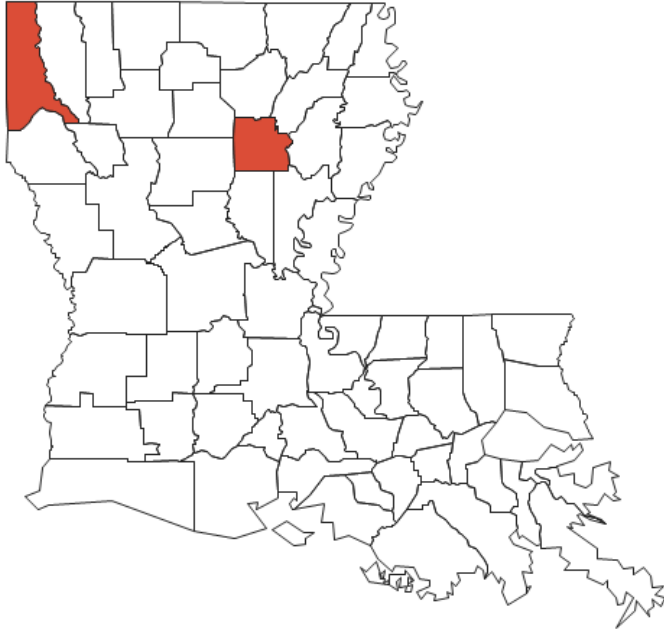
## KENTUCKY

|          |           |
|----------|-----------|
| Barren   | Harrison  |
| Bourbon  | Henry     |
| Bullitt  | Jefferson |
| Fleming  | Meade     |
| Franklin | Nicholas  |
| Hardin   | Warren    |

\* = current as of December, 2020



# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



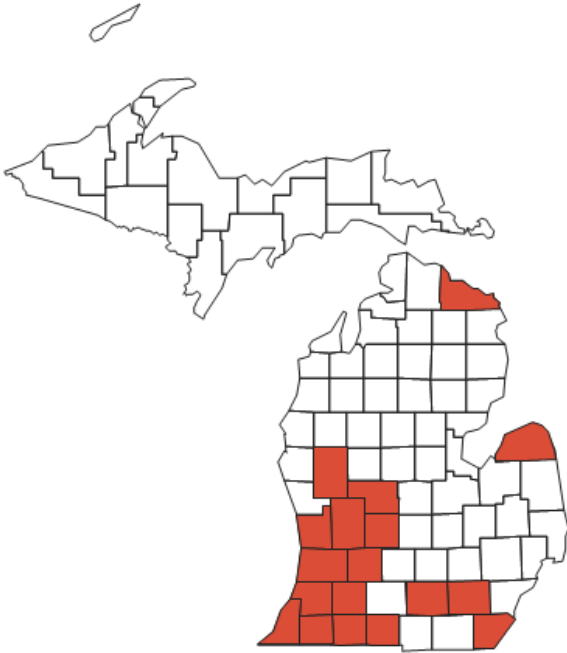
## LOUISIANA

Caddo

Caldwell

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*

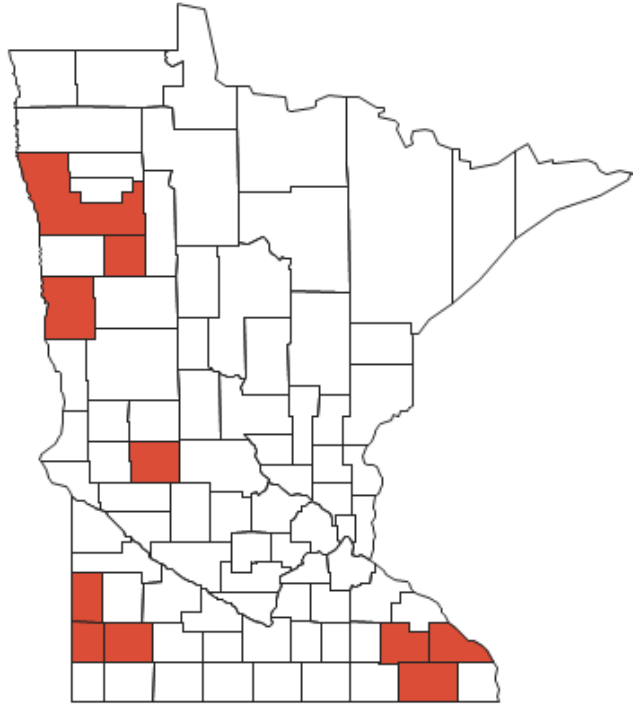


## MICHIGAN

|         |           |              |
|---------|-----------|--------------|
| Allegan | Ionia     | Newaygo      |
| Barry   | Jackson   | Ottawa       |
| Berrien | Kalamazoo | Presque Isle |
| Branch  | Kent      | St. Joseph   |
| Cass    | Monroe    | Van Buren    |
| Huron   | Montcalm  | Washtenaw    |

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



## MINNESOTA

|          |           |
|----------|-----------|
| Clay     | Olmsted   |
| Fillmore | Pipestone |
| Lincoln  | Polk      |
| Mahnomen | Pope      |
| Murray   | Winona    |

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



## MISSOURI

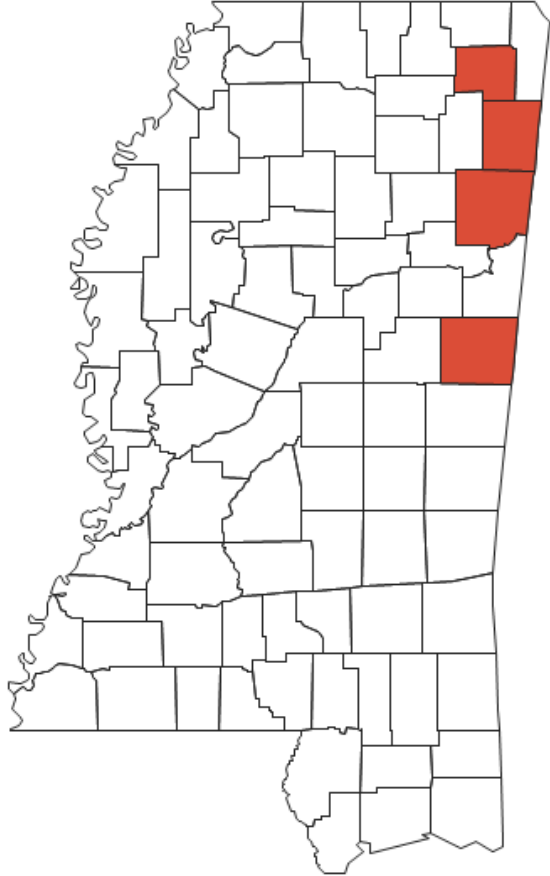
|                   |           |
|-------------------|-----------|
| Cape<br>Girardeau | Jasper    |
| Dade              | Lawrence  |
| Dunklin           | Lincoln   |
| Franklin          | Pike      |
| Henry             | St. Clair |

\* = current as of December, 2020



# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*

## MISSISSIPPI



Itawamba

Monroe

Noxubee

Prentiss

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*

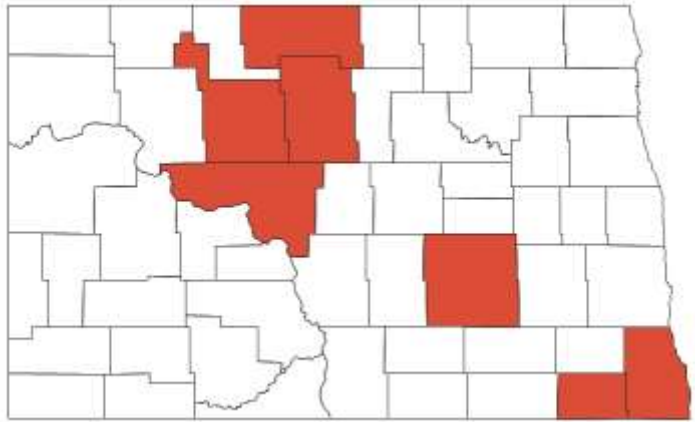


## NORTH CAROLINA

|           |            |           |          |            |        |
|-----------|------------|-----------|----------|------------|--------|
| Alexander | Caldwell   | Franklin  | Iredell  | Pender     | Stokes |
| Anson     | Catawba    | Gaston    | Johnston | Randolph   | Surry  |
| Beaufort  | Cleveland  | Granville | Lenoir   | Robeson    | Union  |
| Bladen    | Columbus   | Guilford  | Lincoln  | Rockingham | Wake   |
| Brunswick | Craven     | Hamett    | McDowell | Rowan      | Wilson |
| Buncombe  | Cumberland | Henderson | Nash     | Rutherford |        |
| Burke     | Davidson   | Hoke      | Onslow   | Sampson    |        |
| Cabarrus  | Forsyth    | Hyde      | Orange   | Stanly     |        |

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



## NORTH DAKOTA

Bottineau

McHenry

McLean

Richland

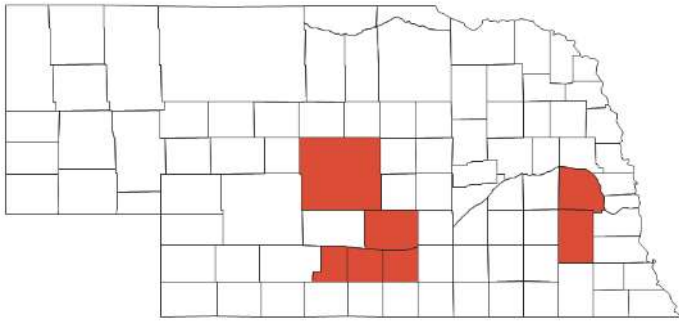
Sargent

Stutsman

Ward

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



## NEBRASKA

Buffalo

Custer

Gosper

Kearney

Lancaster

Phelps

Saunders

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*

## NEW JERSEY

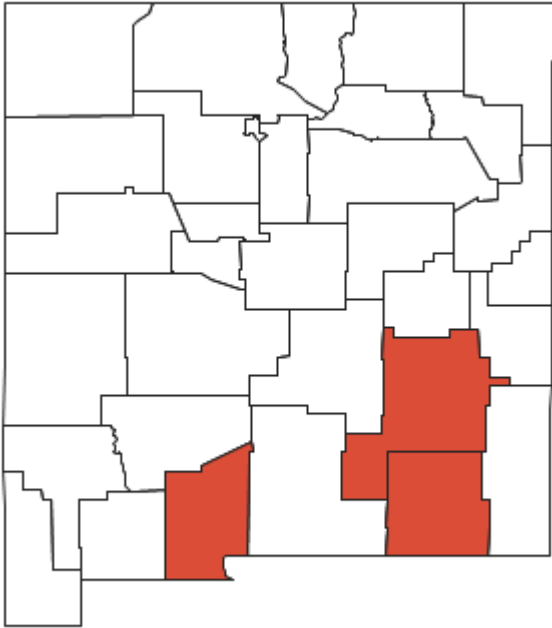
Salem



\* = current as of December, 2020



# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



## NEW MEXICO

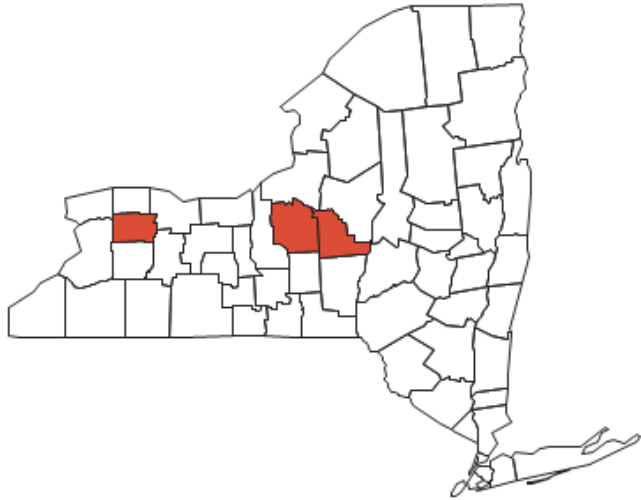
Chaves

Doña Ana

Eddy

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



## NEW YORK

Genesee

Madison

Onondaga

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



## OHIO

Erie

Ottawa

Portage

\* = current as of December, 2020

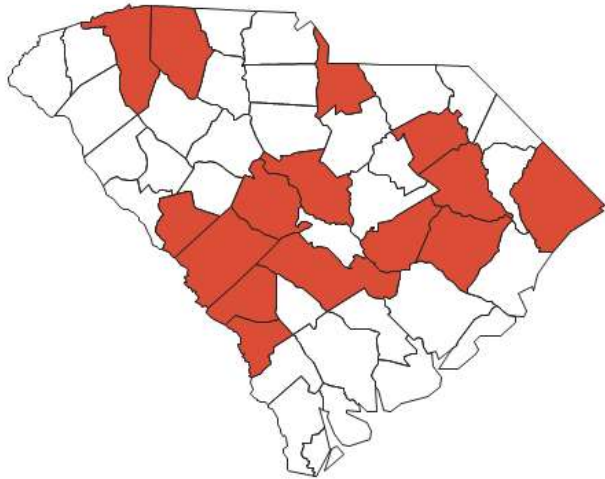
# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*

## OKLAHOMA

Osage

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



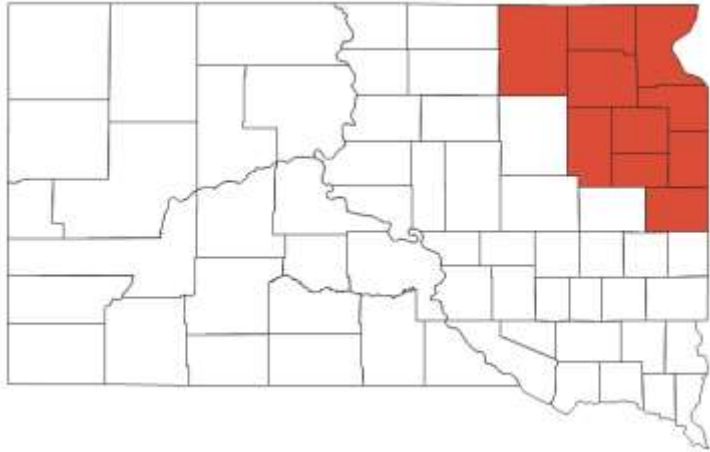
## SOUTH CAROLINA

|            |            |              |
|------------|------------|--------------|
| Aiken      | Edgefield  | Lexington    |
| Allendale  | Florence   | Orangeburg   |
| Barnwell   | Greenville | Richland     |
| Clarendon  | Horry      | Spartanburg  |
| Darlington | Lancaster  | Williamsburg |

\* = current as of December, 2020



# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*

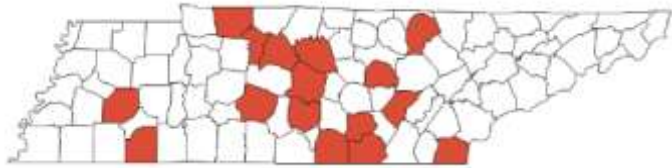


## SOUTH DAKOTA

|           |          |
|-----------|----------|
| Brookings | Deuel    |
| Brown     | Grant    |
| Clark     | Hamlin   |
| Codington | Marshall |
| Day       | Roberts  |

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*

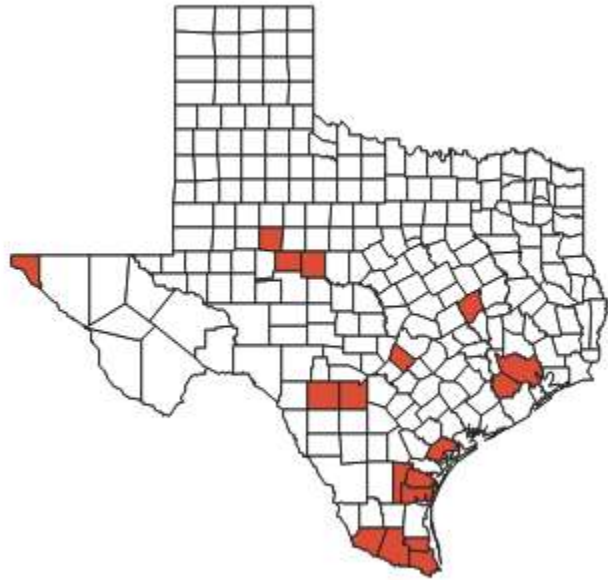


## TENNESSEE

|          |            |            |
|----------|------------|------------|
| Bedford  | Grundy     | Polk       |
| Bledsoe  | Madison    | Rutherford |
| Cheatham | Marion     | White      |
| Davidson | Maury      | Wilson     |
| Fentress | McNairy    |            |
| Franklin | Montgomery |            |

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



## TEXAS

|           |           |           |         |
|-----------|-----------|-----------|---------|
| Cameron   | Hays      | Mitchell  | Starr   |
| Coke      | Hidalgo   | Nueces    | Uvalde  |
| El Paso   | Jim Wells | Refugio   | Willacy |
| Fort Bend | Kleberg   | Robertson |         |
| Harris    | Medina    | Runnels   |         |

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



## VIRGINIA

Dinwiddie

Mecklenburg

\* = current as of December, 2020

# COUNTIES IMPACTED BY ENDANGERED SPECIES REQUIREMENT\*



## WISCONSIN

|          |            |           |           |
|----------|------------|-----------|-----------|
| Adams    | Eau Claire | Monroe    | St. Croix |
| Barron   | Grant      | Oconto    | Vernon    |
| Chippewa | Green Lake | Portage   | Waupaca   |
| Clark    | Jackson    | Richland  | Waushara  |
| Columbia | Juneau     | Sauk      | Wood      |
| Dane     | Manitowoc  | Shawano   |           |
| Dunn     | Marquette  | Sheboygan |           |

\* = current as of December, 2020