

Dicamba Stewardship Training

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DICAMBA IS A SYNTHETIC GROWTH HORMONE

- Plants have hormones that control their growth and development.
- Metering out these hormones is a very exact and controlled process.
- The plant thinks dicamba is a hormone and gets overloaded. The result...it grows itself to death.





DICAMBA OPTIONS FOR CROP USE

XTENDIMAX[®]
with *VaporGrip[®]*
Technology

 **Tavium[®]**
Plus *VaporGrip[®]*
Technology

Engenia[®]
Herbicide

~~**FeXapan[®]**
Plus VaporGrip[®] Technology
HERBICIDE~~

OTHER DICAMBA PRODUCTS

- Other formulations are still available, just not for use over-the-top of dicamba cotton or soybeans



DICAMBA APPLICATION REQUIREMENTS

Some provide summary sheets, others provide interactive websites.

- <https://www.xtendimaxapplicationrequirements.com/#/>
- <https://www.roundupreadyxtend.com/Documents/xar-overview-icons-v8.pdf>
- <https://www.syngenta-us.com/herbicides/tavium-application-stewardship>
- <https://www.engeniastewardship.com/#/>

Visit [XtendiMaxApplicationRequirements.com](https://www.xtendimaxapplicationrequirements.com) for approved tank-mix partners, nozzles, qualified DRT, and label.

XTENDIMAX
with VaporGrip[®]

OVERVIEW OF APPLICATION REQUIREMENTS*

Application requirements for XtendiMax[®] herbicide with VaporGrip[®] Technology, a restricted use pesticide, are intended to help maximize weed control with on-target applications and minimize the potential of off-target movement.

THIS SUMMARY IS NOT A SUBSTITUTE FOR READING AND FOLLOWING ALL PRODUCT LABELING.

MANDATORY TRAINING	APPLICATION EQUIPMENT	DOWNWIND REQUIREMENTS
<p>Prior to using, user MUST complete dicamba-specific training for certification on an annual basis.</p>	<p>SPRAY SYSTEM EQUIPMENT CLEANOUT Ensure entire sprayer system is properly cleaned before AND after application using a triple rinse procedure.</p>	<p>ADJACENT SENSITIVE CROPS AND CERTAIN PLANTS DO NOT SPRAY when wind is blowing toward adjacent sensitive crops and/or certain plants as defined on the label.</p>
RECORD KEEPING	<p>Records MUST be created within 72 hours of every application. Records MUST be kept for 2 years.</p>	<p>DOWNWIND BUFFER After determining no adjacent sensitive crops and/or certain plants are downwind, maintain a 240-ft downwind buffer.</p>
APPLICATION	<p>SPRAY BOOM HEIGHT DO NOT exceed a boom height of 24 inches above target pest or crop canopy.</p>	<p>ENDANGERED SPECIES Consult Endangered Species Protection Bulletins for ESA counties and restrictions.</p>
<p>VaporGrip[®]Xtra AGENT</p> <p>REQUIRED ADJUVANTS For EVERY application, an approved Volatility Reduction Adjuvant MUST be included in the spray solution. An approved Drift Reduction Adjuvant MUST also be included unless otherwise indicated on the website.</p> <p>XTENDIMAX with VaporGrip[®]</p> <p>APPLICATION RATE AND TIMING Apply 22 fluid ounces per acre for any single pre-emergent or in-crop application in:</p> <ul style="list-style-type: none"> • Cotton with XtendFlex[®] Technology up to and including July 30. • Soybean with Roundup Ready 2 Xtend[®] Technology or XtendFlex[®] Technology up to and including June 30. Applications after R1 are prohibited as crop response may occur. 	<p>GROUND SPEED DO NOT exceed 15 mph.</p>	<p>OPTIONAL USE OF DRIFT REDUCTION TECHNOLOGY (DRT)</p> <p>Use of QUALIFIED hooded/shielded broadcast sprayers results in a reduced downwind buffer distance of 110-ft in non-ESA counties.</p>
<p>SPRAY VOLUME Apply in a minimum of 15 gallons of spray solution per acre.</p>	<p>ENVIRONMENTAL CONDITIONS</p> <p>WIND SPEED Apply when wind speed, measured at boom height, is 3-10 mph.</p>	<p>FOR INCIDENCE OF NON-PERFORMANCE OR OFF-TARGET MOVEMENT OR FOR QUESTIONS REGARDING BUFFER REQUIREMENTS OR SENSITIVE CROP REGISTRIES CALL 1-844-RRXTEND.</p> <p>FOR BEST RESULTS, SPRAY WEEDS THAT ARE LESS THAN 4 INCHES TALL.</p>
<p>TANK MIXING Use only approved tank mix partners. DO NOT TANK MIX WITH AMS. Please refer to all product labels to determine mix order or perform mix compatibility test.</p>	<p>INVERSIONS DO NOT SPRAY during an inversion. Only spray between one hour after sunrise and two hours before sunset.</p>	<p>RAINFALL Apply ONLY if rain that may exceed soil field capacity and result in soil runoff is NOT expected in the next 48 hours.</p>

TRAINING REQUIREMENT

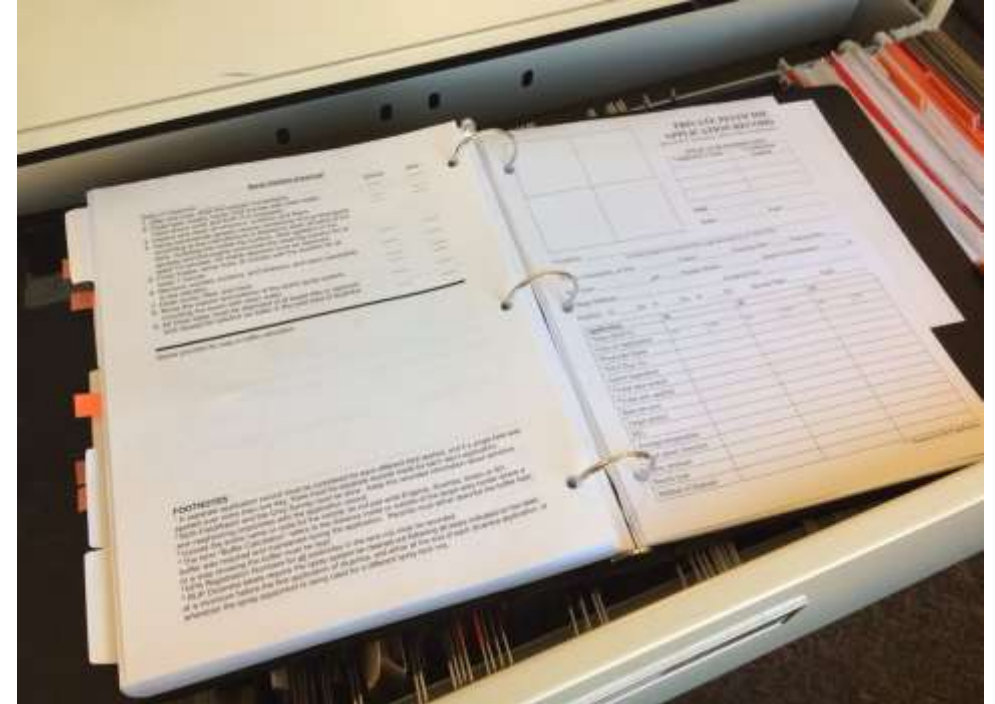
- If you spray dicamba in tolerant cotton or soybeans, you must be trained every year.
- No one can work under your certification. If they spray, they must be trained.
- This does not apply to spraying other dicamba products in pastures, small grains, etc.

TRAINING

Prior to using this product, users must complete dicamba-specific training to obtain certification on an annual basis. If state-specific training is required by the state where the applicator intends to apply this product, the applicator must complete training from the state or state-authorized provider. Otherwise, the applicator may complete dicamba-specific training provided either by the state/state-authorized provider or by a registrant of a dicamba product approved for in-crop use with dicamba-tolerant crops.

RECORD KEEPING

- These are restricted use pesticides.
- You must keep records and keep them for 2 years.
 - Just like all restricted use products
- Specific to these dicamba products:
You must record the application within 72 hours.



What all has to be recorded?

- Brand name of what was used
- EPA reg number
- Total amount applied
- Day, month, year of application
- Location
- Crop and/or site where it was applied
- Size of treatment area
- Name of applicator
- Certification of applicator
- Proof of training
- Receipts of purchase
- Copy of label
- Proof that sensitive crops were considered
- Proof of buffer enforcement
- Start and finish times
- Time of application
- Air temperature
- Wind speed and direction at boom height
- Nozzle pressure
- Any tank mix products
- Receipts and proof volatility and drift reduction adjuvants were used
- Spray system cleanout

FDACS ORGANO-AUXIN RULE

- In addition to the dicamba reporting, you still have to comply with the Florida organo-auxin rule.
 - Details on Florida Organo-Auxin Rule:
<https://www.flrules.org/gateway/ruleno.asp?id=5E-2.033>
1. Name and address of owner or tenant and the address of the applicator
 2. Location of mix/load area and description of application equipment
 3. Product manufacturer, formulation, and amount of active ingredient per acre , total treated acre, etc.

NOZZLES AND PRESSURE

- You must check out the manufacture's website
- They give you nozzle and pressure ranges.
- **If the nozzle isn't on the list, you can't use it.**

Nozzles

AI8003 (max psi 60)	ID11006 (max psi 60)	TADF11003-D (max psi 60)	ULD12005 (max psi 60)
AI8004 (max psi 60)	MUG110-03 (max psi 90)	TADF11006-D (max psi 60)	ULD12006 (max psi 50)
AI8005 (max psi 60)	MUG110-04 (max psi 90)	TDXL-D11003 (max psi 60)	ULDM130-03 (max psi 80)
AI8006 (max psi 60)	MUG110-05 (max psi 90)	TDXL-D11004 (max psi 60)	ULDM130-04 (max psi 80)
AI11003 (max psi 60)	MUG110-025 (max psi 90)	TDXL11003-D (max psi 60)	ULDM130-05 (max psi 80)
AI11004 (max psi 50)	MUG110-035 (max psi 90)	TDXL11004 (max psi 50)	ULDM130-06 (max psi 80)
AI11005 (max psi 60)	PSLDMQ3006 (max psi 40)	TDXL11005 (max psi 60)	ULDM130-08 (max psi 80)
AI11006 (max psi 60)	PSLDMQ3008 (max psi 40)	TDXL11006 (max psi 60)	UR11004 (max psi 60)

Manufacturer	Nozzle Type	Part Number	Operating Pressure (psi)							
			20	30	40	50	60	70	80	90
Greenleaf Technologies	TADF03-D	TADF03-D	Min 20		Max 40					
	TADF06-D	TADF06-D	Min 20			Max 50				
	TDXL 11003-D	TDXL 11003-D	Min 20		Max 40					
	TDXL 11004-D	TDXL 11004-D	Min 20			Max 50				
	TDXL 11005-D	TDXL 11005-D	Min 20				Max 60			
	TDXL 11006-D	TDXL 11006-D	Min 20				Max 60			
Pentair Hypro	ULD120-04	ULD120-04 / FC-ULD120-04	Min 20		Max 40					
	ULD120-05	ULD120-05 / FC-ULD120-05	Min 20		Max 40					
	ULDM130-03	ULDM130-03		Min 30			Max 60			
	ULDM130-04	ULDM130-04		Min 30						Max 90
	ULDM130-05	ULDM130-05		Min 30				Max 70		
	ULDM130-06	ULDM130-06		Min 30			Max 60			
John Deere	ULD120-04	PSULD2004 / PSULDQ2004	Min 20		Max 40					
	ULD120-05	PSULD2005 / PSULDQ2005	Min 20		Max 40					
	PSULDMQ3003	PSULDMQ3003		Min 30			Max 60			
	PSULDMQ3004	PSULDMQ3004		Min 30						Max 90
	PSULDMQ3005	PSULDMQ3005		Min 30				Max 70		
	PSULDMQ3006	PSULDMQ3006		Min 30			Max 60			

GROUND SPEED & BOOM HEIGHT



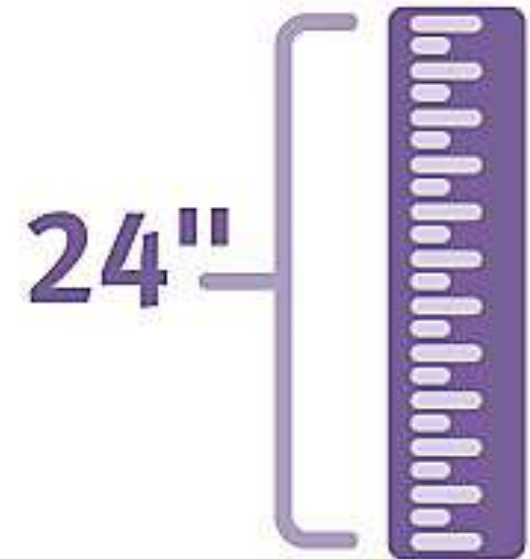
Ground Speed

≤ 15 mph



Boom height

≤ 24 inches above target



TANK MIXING

- You can tank mix, but you must check the individual manufacturer website
 - <https://www.syngenta-us.com/herbicides/tavium-tank-mixes>
 - <https://www.engeniaherbicide.com/tank-mix.html>
 - <http://www.xtendimaxapplicationrequirements.com/#/search>
 - <https://www.corteva.us/products-and-solutions/crop-protection/fexapan.html>
- Some companies have a longer list than others. You must check the list for the product you are spraying.

ADJUVANTS

pH Buffering Adjuvants*



Glyphosates**



Drift Reduction Agents



Adjuvants



Herbicides



Insecticides



Nutritionals



Other



NEVER, EVER, MIX AMMONIUM SULFATE
WITH ANY OF THESE DICAMBA
PRODUCTS!

NEVER ADD AMMONIUM SULFATE

- AMS will convert any dicamba into a highly volatile form



WHAT ELSE INCREASES DICAMBA VOLATILITY?

- Dicamba volatility is greater from leaves than soil (Univ Tennessee, Minnesota, and Purdue)
- Dicamba volatility is greater if applied to soils with lower pH (Univ Missouri)
- Presence of dew during application increases dicamba volatility (Purdue and Univ Missouri)

WHAT ARE TEMPERATURE INVERSIONS?

- Cold air near the ground, warm air on top
- Usually occurs over night
- See how the fog is protected and will move? Spray particles will do the same.



TEMPERATURE INVERSIONS

- Inversions set up perfect conditions to pesticide drift.
- Watching time of day and wind speed are good ways to avoid issues with inversions
- Application at 1-hr after sunrise until 2-hrs before sunset



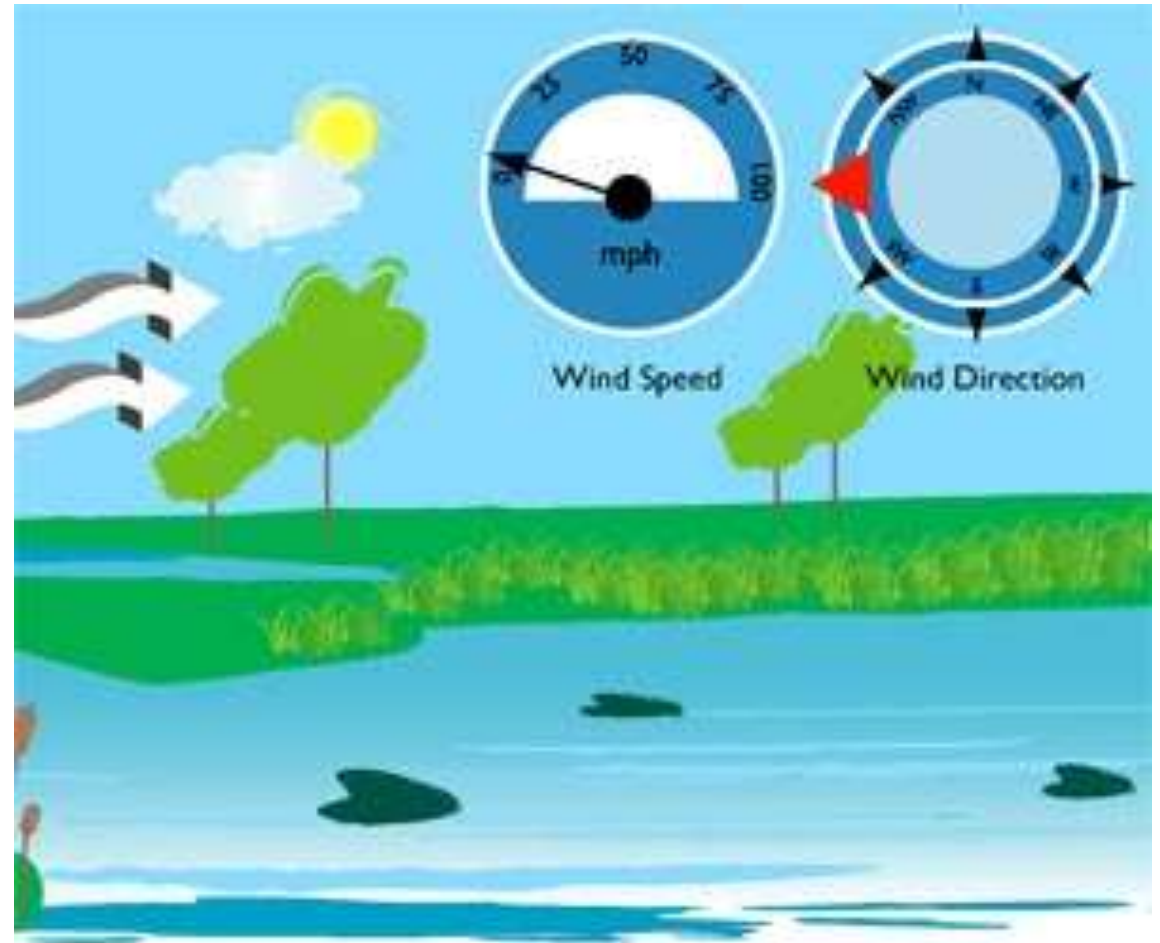
SPRAY DRIFT



SPRAY DRIFT

Weather factors contribute to spray drift

- Wind speed: Spray when wind is between 3 and 10 MPH
 - Wind gusts > 10 mph
- Wind direction
- Inversions



VOLATILITY AND DRIFT REDUCTION

- This is confusing...so make sure you check your label.

Application:

- ❑ For EVERY application of XtendiMax® With VaporGrip® Technology, an approved Volatility Reduction Adjuvant (VRA) must be included in the spray solution. An approved Drift Reduction Adjuvant (DRA) must also be included in the spray solution, unless otherwise indicated on www.xtendimaxapplicationrequirements.com. Refer to the website for a list of approved DRAs and VRAs.

Application:

- For EVERY application of **Engenia® herbicide** an approved **pH Buffering Adjuvant** must be included in the spray mixture. Refer to www.engeniatankmix.com for a list of approved pH Buffering Adjuvants.

BUFFER DISTANCES

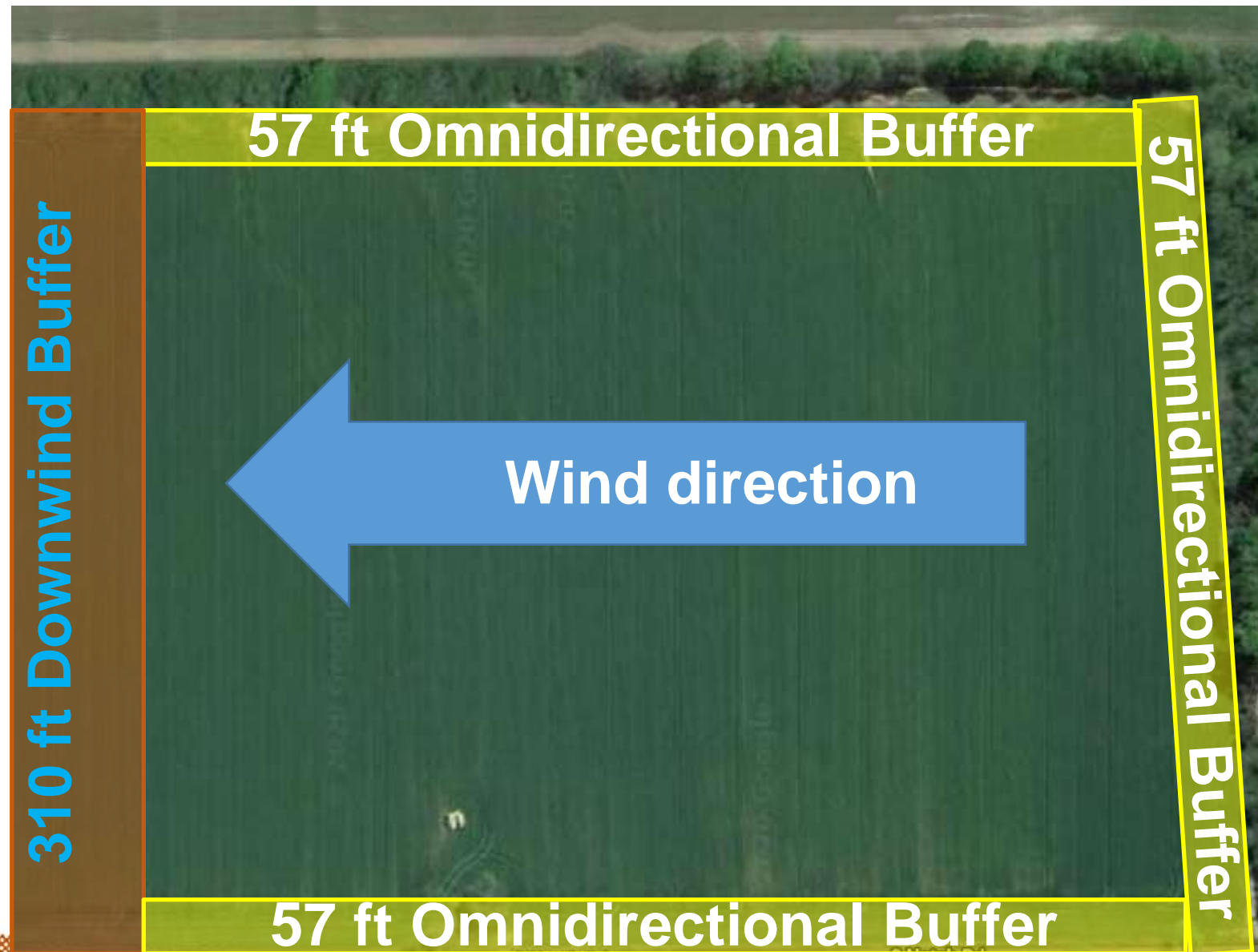
- **Do not apply if sensitive crops are downwind “.”**
- Buffer Requirement (Regular Sprayer):

Counties	Downwind Buffer	Omnidirectional Buffer
Non-Endangered Species	240 ft	N/A
With-Endangered Species	310 ft	57 ft

- Consult: <http://www.epa.gov/espp/> or call 1-844-447-3813 for Bulletin.

- You must use the Bulletin valid for the month in which you will apply the product.

BUFFER DISTANCES - ENDANGERED SPECIES



BUFFER DISTANCES

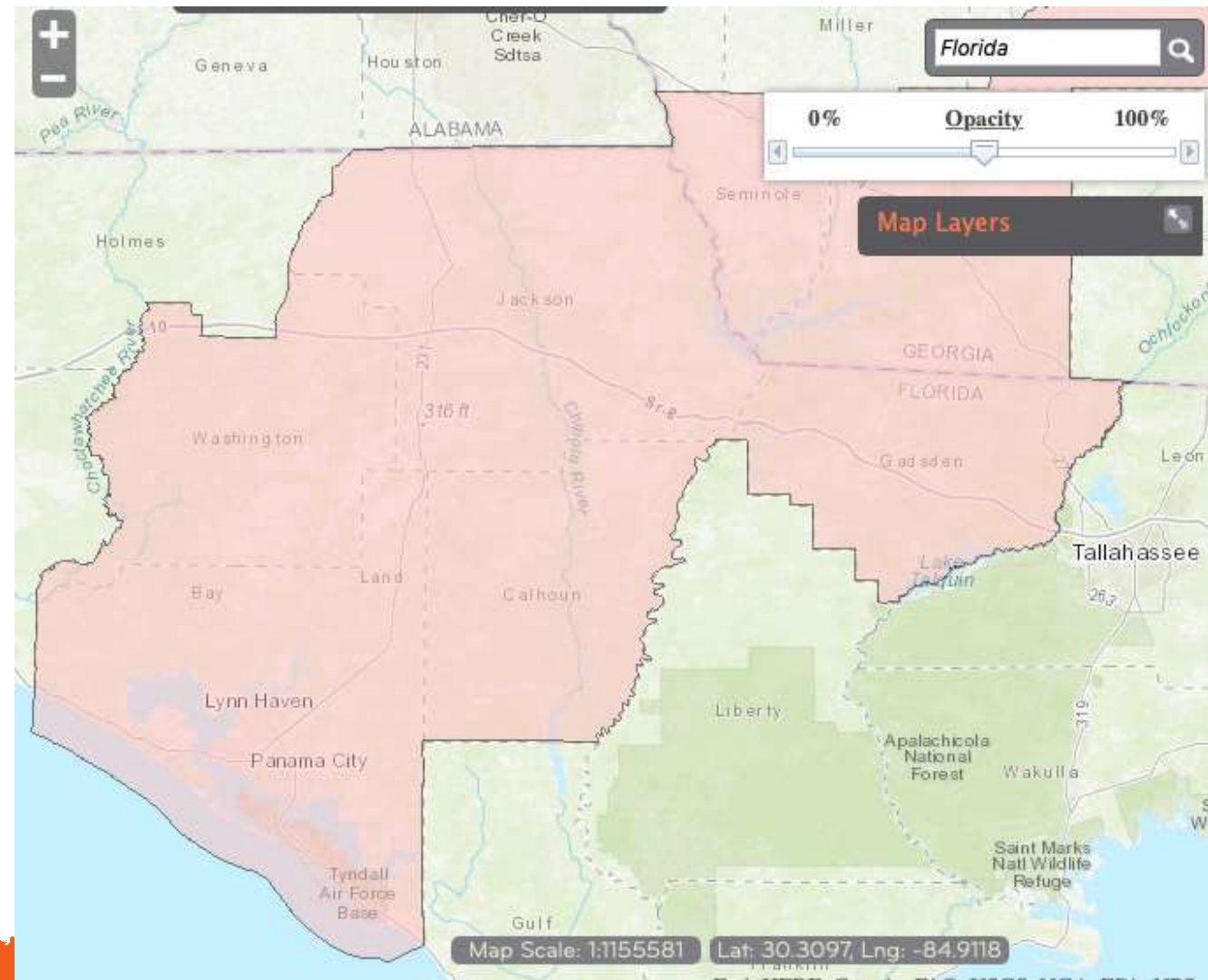
- **Use of Drift Reduction Technology (DRT) or Qualified Hooded/Shielded Sprayer for Reduced use Restrictions**

Counties	Downwind Buffer	Omnidirectional Buffer
Non-Endangered Species	Reduced to 110 ft (from 240 ft)	N/A
With-Endangered Species	Reduced to 240 ft (from 310 ft)	57 ft



FLORIDA HAS ENDANGERED SPECIES

- If spraying in Gadsden, Jackson, Washington, Calhoun, Bay - you will **need to use a 310' buffer**
- Check the EPA website often to ensure new areas have not been included
- <https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins>



OTHER RESTRICTIONS

- **Don't apply if "rain may exceed field capacity or runoff within 48-hours"**
- **Do not apply to "sand" soils with <3% OM and a shallow water table**
 - They don't define what shallow water table means.
- Do not apply within 50 feet of wells
- **Don't apply to soybeans after June 30, cotton after July 30**

SPRAYER CLEANOUT

- Follow manufacturer recommendations.
- Most importantly – **don't let it sit in the tank.**
 - Clean it as soon after the application as possible.
 - Proper tank-cleanout procedure



MORAL OF THE STORY...

- Read the label
 - Don't take anyone's word for what is or isn't allowed. Go to the websites, read the labels for yourself!

<https://www.engeniastewardship.com/#/>

<https://www.syngenta-us.com/herbicides/tavium>

<http://www.xtendimaxapplicationrequirements.com/>

**THE LABEL
IS THE LAW!**



MORAL OF THE STORY...

- **Don't drift...**
- **If you drift, it doesn't matter**
what your distances are.



MORAL OF THE STORY...

- Consider categorizing fields into:
 - Dicamba always: Bordered by your own fields, surrounded by woods, pasture, etc.
 - Dicamba maybe: Sensitive crops are not close. Application of dicamba depends on wind speed and direction.
 - Dicamba never: Bordered by sensitive crops that are owned by a contentious neighbor.

THANK YOU...!

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PRODUCT INFORMATION

XtendiMax® With VaporGrip® Technology is:

- a water-soluble formulation intended for control and suppression of many annual, biennial, and perennial broadleaf weeds listed in the “Weeds Controlled or Suppressed” section of this label. This product may be used for control of these weeds in cotton with XtendFlex® Technology and soybean with Roundup Ready 2 Xtend® Technology or XtendFlex® Technology.
- a contact, systemic herbicide, with limited soil activity on small seeded broadleaf weeds, including waterhemp, lambsquarters, and Palmer pigweed.
- readily absorbed by plants through shoot and root uptake, translocates throughout the plant's system, and accumulates in areas of active growth. XtendiMax® With VaporGrip® Technology interferes with plant growth hormones (auxins) resulting in death of many broadleaf weeds.

Additional state restrictions and requirements may apply. The user must comply with any additional state requirements and restrictions.

Refer to the specific use directions and restrictions in each crop table. Follow all requirements and restrictions on www.xtendimaxapplicationrequirements.com.

APPLICATION REQUIREMENTS OVERVIEW

Read and follow all applicable restrictions, precautions, and directions on the container label and booklet and at www.xtendimaxapplicationrequirements.com. For product questions or inquiries and/or to report any nonperformance of this product against any particular weed species, call 1-844-RRXTEND (1-844-779-8363). It is recommended that the certified applicator visit www.xtendimaxapplicationrequirements.com to obtain a copy of the Overview of Application Requirements for reference prior to and during application.

REQUIREMENTS	LABEL SECTIONS
Mandatory Training: <input type="checkbox"/> Prior to applying, applicator must complete dicamba-specific training. Only certified applicators may apply this product; NOT to be used by uncertified persons working under the supervision of a certified applicator, except that uncertified persons may transport containers.	➤ Training (p. 3)
Record Keeping: <input type="checkbox"/> Records must be created within 72 hours of every application. Records must be kept for a period of two years.	➤ Record Keeping (p. 3)
Application: <input type="checkbox"/> For EVERY application of XtendiMax® With VaporGrip® Technology, an approved Volatility Reduction Adjuvant (VRA) must be included in the spray solution. An approved Drift Reduction Adjuvant (DRA) must also be included in the spray solution, unless otherwise indicated on www.xtendimaxapplicationrequirements.com . Refer to the website for a list of approved DRAs and VRAs. <input type="checkbox"/> <i>Rate and Timing:</i> Apply 22 fluid ounces per acre (0.5 lb. a.e. dicamba) for any single pre-emergent or in-crop application in: <ul style="list-style-type: none">• Cotton with XtendFlex® Technology up to and including July 30 (DO NOT apply after July 30 regardless of growth stage), and• Soybean with Roundup Ready 2 Xtend® Technology or XtendFlex® Technology up to and including June 30. Applications occurring after R1 are prohibited as crop response may occur and in no event can applications be made after June 30 regardless of growth stage.• For details, see the “Specific Use Directions” section. <input type="checkbox"/> <i>Spray volume:</i> Apply in a minimum of 15 gallons of spray solution per acre. <input type="checkbox"/> <i>Tank mixing:</i> Use only approved tank-mix partners found at www.xtendimaxapplicationrequirements.com . <ul style="list-style-type: none">• Refer to all product labels to determine mix order or perform a mix compatibility test.	➤ Tank Mix Partners (p. 5) ➤ Specific Use Directions (pp. 7-8) ➤ Specific Use Directions (pp. 7-8) ➤ Tank Mix Partners (p. 5)
Application Equipment: <input type="checkbox"/> <i>Spray system equipment cleanout:</i> Ensure entire sprayer system is properly cleaned before and after application. <input type="checkbox"/> <i>Nozzles:</i> Use only approved nozzles within specified pressures found at www.xtendimaxapplicationrequirements.com . <input type="checkbox"/> <i>Spray boom height:</i> Maximum boom height is 24 inches above target pest or crop canopy. <input type="checkbox"/> <i>Ground speed:</i> DO NOT exceed 15 mph.	➤ Equipment Requirements (p. 4)
Environmental Conditions: <input type="checkbox"/> <i>Wind speed:</i> Apply when wind speed, measured at boom height, is 3-10 mph. <input type="checkbox"/> <i>Inversions:</i> DO NOT spray during an inversion; only spray between one hour after sunrise and two hours before sunset. <input type="checkbox"/> <i>Rainfall:</i> DO NOT apply this product if rain that may exceed soil field capacity and result in soil runoff is forecasted in the next 48 hours.	➤ Environmental Requirements (p. 4)
Downwind Requirements: <input type="checkbox"/> <i>Sensitive crops and certain plants downwind:</i> DO NOT apply if sensitive crops and/or certain plants, as defined below in this label, are planted on an adjacent downwind field or area. <input type="checkbox"/> <i>Downwind buffer:</i> After determining no adjacent sensitive crops and/or certain plants are downwind, maintain a 240-ft downwind buffer. <input type="checkbox"/> <i>Endangered species:</i> Consult Endangered Species Protection Bulletins for ESA counties and restrictions.	➤ Adjacent Sensitive Crops and Certain Plants (p. 4) ➤ Buffer Requirements (p. 4) ➤ Protecting Endangered Species (p. 1)
Drift Reduction Technology: <input type="checkbox"/> See “Optional Use of Drift Reduction Technology” section for details on application requirements and the potential to qualify for reduced use restrictions.	➤ Optional Use of Drift Reduction Technology (p. 4)