Dicamba Stewardship Training

Pratap Devkota

University of Florida - IFAS



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





Engenia® Herbicide



OTHER DICAMBA PRODUCTS

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







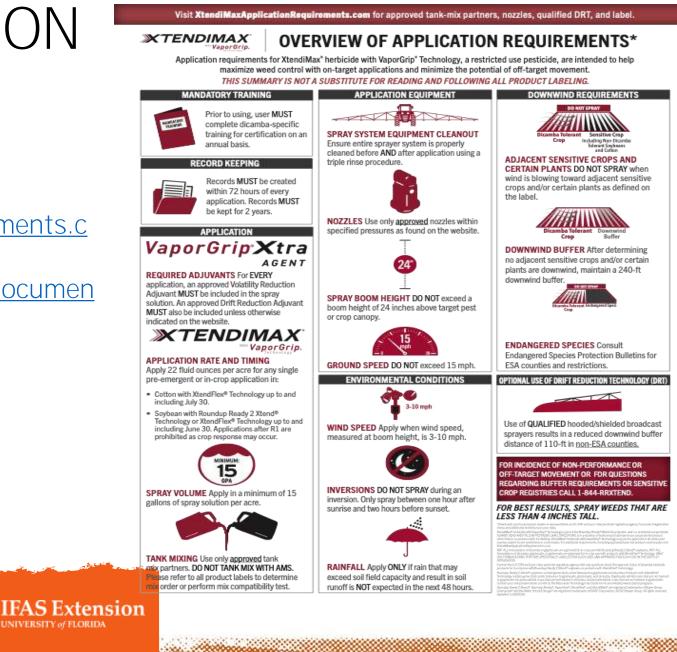
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DICAMBA APPLICATION REQUIREMENTS

Some provide summary sheets, others provide interactive websites.

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



TRAINING REQUIREMENT

• If you spray dicamba in tolerant cotton or soybeans, you must be trained every year.

TRAINING

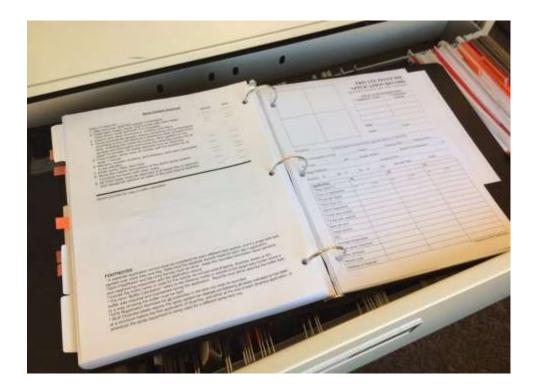
Prior to using this product, users must complete dicamba-specific training to obtain certification on an annual basis. If state-specific training is required by the state where the applicator intends to apply this product, the applicator must complete training from the state or state-authorized provider. 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.

- 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.



RECORD KEEPING

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





https://cropwatch.unl.edu/2019/easy-use-pesticide-recordkeeping-resources

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



						RESTRICTED USE PESTICIDE	
	Tavium Plus VaporGrip Technology application records form					eeping and Training Requirements Fo	
 Applicators must Receipts or o A copy of thi Record of th Record that At a minimu 	Vicing ¹⁰ Technology herbicide is a Restricted Use Pesticide. Accurate record keeping is required for the application of this product. Copies for the purchase of this product. The purchase of the purchase of the product of the second second base of the second base of the purchase of the product. The purchase of the purchase of the product of the second base of the second base of the second base of the purchase of the product. The purchase of the purchase of the product of the second base of the second base of the second base of the purchase of the	XTENDIMAX Recificate Una Perticular	RECORD KEEPING IS REQUIRED FOR APPLICATIONS OF THIS PRODU	FORM		following records for a period of two years; records must be kept for every individual application, F. fficial(s), USDA, and EPA upon request. The fol s Federal Pesticide Record Keeping Program, 7 CFR oplicator Name (If different from Certified Applicator)	must be generated within 14 days of ecords must be made available to lowing information must be recorded Part 110: State Certification #
 A separate recor 	e generated within 72 hours of application, or as required by state law. rd must be generated for each individual application. made available to State Pesticide Autority U.S. Department of Agriculture and Environmental Protection Agency (EPA) officials upon request.		 The certified applicator must keep the following records for a period of two years Records must be generated as soon as practical but no later than 72 hours after application 	loa	Product Name	EPA Reg #	
Certified applicate			 A separate record must be kept for each application Additional record keptings forms can be found at XtendiMatApplicationRequirements.com Applicators should check with their state for specific requirements that may be provisioned by locations. 	wanthorities	5 I have purchase receipts (check for yes)	state special local needs labels (check for yes)	
	Product name: EPA registration #:	Certified Applicator Name	State Certification # of Applicator:		Name and date of sensitive crop registry consult		
Pre- application information	Target pest(s) (complete if required by state law): Name of sensitive crop registry consulted:	Requised DICAMBA APPLICATOR TRANING Date Completed (swcdb/ro	9: / Provider (Se sue to intale preef of acceptorion):		-or - Date neighboring fields were surveyed for susce Date of dicamba or auxin-specific training compl		
	Date sensitive crop registry was consulted: / / Date neighboring fields were surveyed for susceptible crops: / Crop applied to: Soybeans Cotton Crop planting date / Type and date of application: Pre-emergence / /	SIZER/SS if additional protection measure	s are REQUIRED to visit EPA.gov/Endangered Species/Bulletins-Live-Two-View Bulletins or call 1-844-447 im are required for the county where application is to occur. (Must be completed no more than 6 months after ap try was consulted owncrover;//		Date of Application Crop		f the Application
Application information	Location of application field name or GPS coordinates;	Date and Name of	of the Sensitive Crop Registry Consulted: / /		8	e O Postemergence If post, how many y Nozzle Type	days after planting? Spray Pressure
	Buffer distance: Areas included within the buffer distance:		Date Adjacent Fields Ware Surreged for Sensitive Crops and Certain Plants: / / / /////websys/		(<i>List all pesticides, adjuva</i> ඉ Product	nts, and other products - EPA Reg # only requir EPA Reg # Product	ed for pesticides) EPA Reg #
Nozzle information	Manufacturer/brand: Onlice aiza: Type: Operating pressure:		THE CROPS/AREAS SURROUNDING THE FIELD PRIOR TO APPLICATIO	NN			
Application conditions	Tavium use rate (fl ac/k): Acres treated: Total guillons of Tavium applied: Start time (fill act this column about the start time) End time (fill out this column about the end time) : Air temperature: Air temperature: a.m. Wind speed (at boom height): Wind speed (at boom height): p.m. Wind direction: Wind direction:	SENSITIVE CRAP AND CERTON FLANT AMARENESS		*	Rate (Il ozs/A) Rate (Il ozs/A) Start Time O Air Temperature (at boom height)	Acres Treated = End Time or F Air Temperature (at boom height)	Total Amount Applied (¶ ozs/A) ° F
Tank mixes	List all pesicides, adjuvants and other products – EPA negistration # only required for pesicides. Visit Syngental/S.com/TaviumTavMilless for the complete list of approved tark-mic partners. PRODUCT AND USE HATE EPA REGISTRATION # PRODUCT AND USE RATE EPA REGISTRATION #				Wind Speed (at boom height) Wind Direction	mph Wind Speed (at boom height) Wind Direction	mph
Sprayer cleanout	Spray spatem equipment cheaned prior to use				Date Defore Application After Application Defore Ap	Method of cleanout	
Tavium Plus VaporGrip license from, Monsanto Te	(check for yea).		REF REVERSE SUE TO COMPLETE FORM	2 Prio applic trainin	minimum, records must include the date the applicator consulted the specia of a paper of the product, all applicators must complete dicamba or auxi- ation must complete that tailing badre applying this product have. If your of provide the the auxiety application graphing distributed by SPARE and Application and the application of distributed VISTREAD AND FOLLOW LABEL DIRECTIONS. Engeniat [®] is a neglisterial	scific training. If training is available and required by the state where tate does not require auxin or dicamba-specific training, then the ap uct approved for in-crop use with dicamba-tolerant crops, or b) a stat	the applicator intends to apply this product, the blicator must complete dicamba or auxin-specific e or state-authorized provider.
			are neverae side to complete Form				

- <u>https://www.engeniaherbicide.com/content/dam/cxm/agriculture/engenia-herbicide/stewardship/application-</u> checklist/documents/Engenia_Record_Keeping_Form_12-8-20.pdf
- https://assets.syngenta-us.com/pdf/media/Tavium RecordKeeping Form mech Interactive 2020.pdf
- <u>https://www.roundupreadyxtend.com/Documents/xtendimax-record-keeping-form-v2.pdf</u>



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

Al8003 (max psi 60)	ID11006 (max psi 60)	TADF11003-D (max psi 60)	ULD12005 (max psi 60)
Al8004 (max psi 60)	MUG110-03 (max psi 90)	TADF11006-D (max psi 60)	ULD12006 (max psi 50)
Al8005 (max psi 60)	MUG110-04 (max psi 90)	TDXL-D11003 (max psi 60)	ULDM130-03 (max psi 80)
Al8006 (max psi 60)	MUG110-05 (max psi 90)	TDXL-D11004 (max psi 60)	ULDM130-04 (max psi 80)
Al11003 (max psi 60)	MUG110-025 (max psi 90)	TDXL11003-D (max psi 60)	ULDM130-05 (max psi 80)
Al11004 (max psi 50)	MUG110-035 (max psi 90)	TDXL11004 (max psi 50)	ULDM130-06 (max psi 80)
Al11005 (max psi 60)	PSLDMQ3006 (max psi 40)	TDXL11005 (max psi 60)	ULDM130-08 (max psi 80)
Al11006 (max psi 60)	PSLDMQ3008 (max psi 40)	TDXL11006 (max psi 60)	UR11004 (max psi 60)

Manufacturer	Nozzle Type	Part Number Operating Pressure (psi)								
manufacturei		Part Number	20	30	40	50	60	70	80	90
	TADF03-D	TADF03-D	Min 20		Max 40					
	TADF06-D	TADF06-D	Min 20			Max 50				
Greenleaf	TDXL 11003-D	TDXL 11003-D	Min 20		Max 40					
Technologies	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			
	ULD120-04	ULD120-04 / FC-ULD120-04	Min 20		Max 40	· · · ·				
	ULD120-05	ULD120-05 / FC-ULD120-05	Min 20		Max 40					
8	ULDM130-03	ULDM130-03		Min 30			Max 60			
Pentair Hypro	ULDM130-04	ULDM130-04		Min 30						Max 90
F	ULDM130-05	ULDM130-05		Min 30				Max 70		
	ULDM130-06	ULDM130-06	à à	Min 30	· · · · · · · · · · · · · · · · · · ·		Max 60			
ULD1: PSULDN	ULD120-04	PSULD2004 / PSULDQ2004	Min 20		Max 40					
	ULD120-05	PSULD2005 / PSULDQ2005	Min 20		Max 40					
	PSULDMQ3003	PSULDMQ3003		Min 30			Max 60			
John Deere	PSULDMQ3004	PSULDMQ3004		Min 30						Max 90
ļ	PSULDMQ3005	PSULDMQ3005		Min 30				Max 70		
	PSULDMQ3006	PSULDMQ3006		Min 30			Max 60			
	1	10 4 4 5 5 5 T								



GROUND SPEED & BOOM HEIGHT



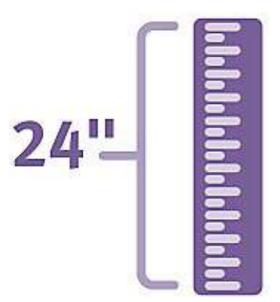


Ground Speed

≤ 15 mph







TANK MIXING

- You can tank mix, but you must check the individual manufacturer website
 - <u>https://www.syngenta-us.com/herbicides/tavium-tank-mixes</u>
 - <u>https://www.engeniaherbicide.com/tank-mix.html</u>
 - <u>http://www.xtendimaxapplicationrequirements.com/#/search</u>
 - 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	~
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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)



https://plantsciencesweb.missouri.edu/cmc/ pdf/2019/bradley-dicamba.pdf

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.



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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



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SPRAY DRIFT



SPRAY DRIFT

Extension

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 <u>www.xtendimaxapplicationrequirements.com</u>. 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

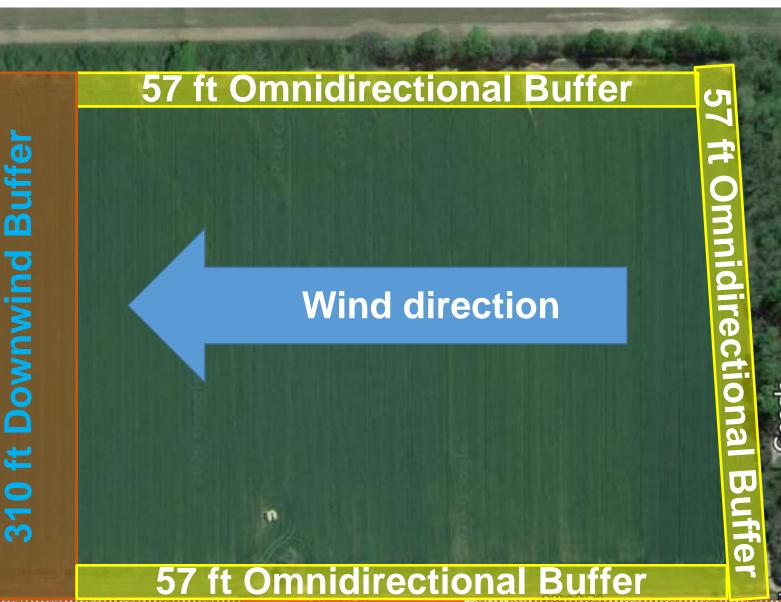
- Do not apply if sensitive crops are downwind "."
- Buffer Requirement (Regular Sprayer):

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

- Consult: <u>http://www.epa.gov/espp/</u> 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

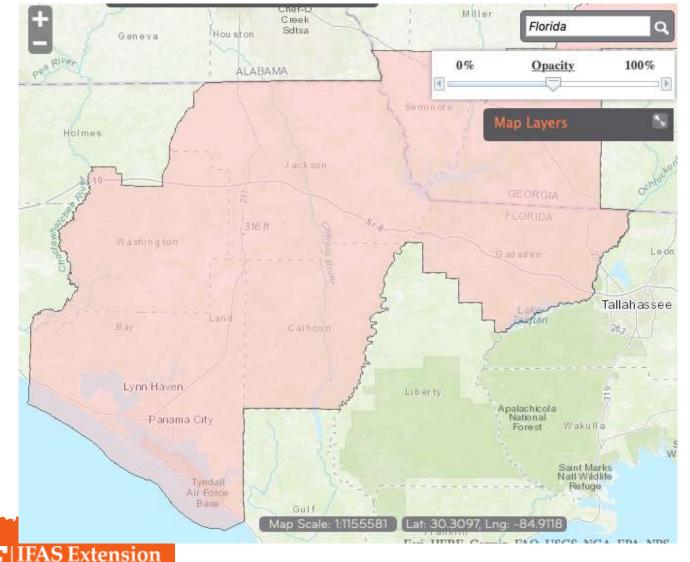




https://www.dtnpf.com/agriculture/web/ag/crops/article/2020/11/2 5/dicamba-label-changes-give-hooded

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
- <u>https://www.epa.gov/end</u> <u>angered-</u> <u>species/bulletins-live-</u> <u>two-view-bulletins</u>



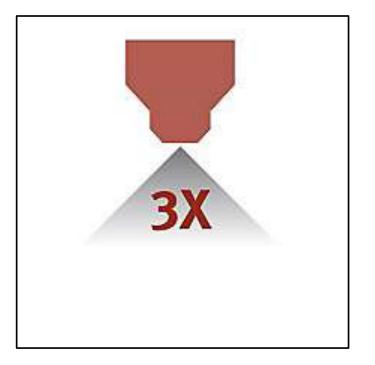
OTHER RESTRICTIONS

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



THANK YOU...!

Pratap Devkota Email: pdevkota@ufl.edu Phone: 850-983-7102



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 <u>www.xtendimaxapplicationrequirements.com</u>, 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 <u>www.xtendimaxapplicationrequirements.com</u> to obtain a copy of the Overview of Application Requirements for reference prior to and during application.

REQUIREMENTS	LABEL SECTIONS
Mandatory Training: □ 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: □ 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: ☐ 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 <u>www.xtendimaxapplicationrequirements.com</u> . Refer to the website for a list of approved DRAs and VRAs.	> Tank Mix Partners (p. 5)
 Rate and Timing: Apply 22 fluid ounces per acre (0.5 lb. a.e. dicamba) for any single pre-emergent or in-crop application in: Cotton with XtendFlex® Technology up to and including July 30 (D0 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 the Directions" section. 	Specific Use Directions (pp. 7-8)
 Spray volume: Apply in a minimum of 15 gallons of spray solution per acre. Tank mixing: Use only approved tank-mix partners found at www.xtendimaxapplicationrequirements.com. Refer to all product labels to determine mix order or perform a mix compatibility test. 	 Specific Use Directions (pp. 7-8) Tank Mix Partners (p. 5)
Application Equipment: Spray system equipment cleanout: Ensure entire sprayer system is properly cleaned before and after application. Nozzles: Use only approved nozzles within specified pressures found at www.xtendimaxapplicationrequirements.com. Spray boom height: Maximum boom height is 24 inches above target pest or crop canopy. Ground speed: D0 NOT exceed 15 mph.	> Equipment Requirements (p. 4)
Environmental Conditions: Wind speed: Apply when wind speed, measured at boom height, is 3-10 mph. Inversions: D0 NOT spray during an inversion; only spray between one hour after sunrise and two hours before sunset. Rainfall: D0 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: Sensitive crops and certain plants downwind: D0 N0T apply if sensitive crops and/or certain plants, as defined below in this label, are planted on an adjacent downwind field or area. Downwind buffer: After determining no adjacent sensitive crops and/or certain plants are downwind, maintain a 240-ft downwind buffer. Endangered species: 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: ☐ 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)

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