

New 2,4-D and Dicamba Resistant Crops

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The Technology

- Transgenic crops with resistance to either:
 - 2,4-D
 - dicamba
- New tools to control glyphosate- and ALS-resistant weeds such as Palmer amaranth
- These new transgenic crops can be sprayed **ONLY** with new herbicides with reduced volatility and drift potential

XtendiMax™ and with VaporGrip™ Technology

- Monsanto
- Formulation of dicamba
- Registration for soybean, cotton, and burndown
- Restrictions on spraying conditions and equipment



Engenia™

- BASF
- Formulation of dicamba
- Registration for soybean, cotton, and burndown
- Restrictions on spraying conditions and equipment



FeXapan™ plus with VaporGrip™ Technology

- Dupont
- Formulation of dicamba
- Registration for soybean, cotton, and burndown
- Restrictions on spraying conditions and equipment



Enlist Duo™



- Dow Agrosiences
- Formulation of glyphosate with 2,4-D choline
- Also 2,4-D choline alone herbicide
- Registration for corn, soybeans and cotton; also burndown, fallow, and preplant
- Restrictions on spraying conditions and equipment

Extensive Spraying Restrictions

- Only new herbicide formulations
- Only anti-drift nozzles (different pressure profile)
- Only pre-approved tank-mixtures allowed
- Identification of susceptible crops and sensitive areas is critical to determine whether the herbicide can be sprayed
- Restrictions on buffer areas, wind speed and direction, and spray-boom height and speed

Labels will specify acceptable low drift nozzles



AI (80 degree)
TeeJet



ULD Hydpro



AITT J60
TeeJet



AI/AIC (110
Degree TeeJet

Very Coarse
Extremely Coarse
Ultra Coarse



TDXL
Greenleaf



AirMix
Greenleaf



DR Wilger



AIXR TeeJet



TTI TeeJet

XtendiMax™ Herbicide With VaporGrip™ Technology

This website contains information required by the supplemental label for Xtendimax™ With VaporGrip™ Technology. Please read and follow the [supplemental label](#).

ALWAYS READ AND FOLLOW PESTICIDE PRODUCT LABELING. It is a violation of Federal and state law to use any pesticide product in a manner inconsistent with its labeling.

APPLICATION
REQUIREMENTS

TANK MIX

NOZZLES

Tank Mix

Herbicides

- Authority® First
- Rowel™
- Rowel™ FX
- Valor® SX
- Valor® XLT
- Warrant®

Adjuvants

- AG16098®
- Astonish™
- Bomber™
- Chemsurf™ /90
- Choice® Trio
- Clasp®
- ClassAct® Ridion®
- Contrast™
- CorrexWC™
- Fast Break®
- FoamBreaker™
- FSAttero
- FSCertin™
- Impetro
- Intact™
- Jackhammer™ Elite
- Lockamba™
- Oculus™
- Perimeter™
- Plexus®
- Pointblank® WM
- R-11®
- Smoke®
- Superb® HC
- Wheelhouse™Pro
- Xpond™
- Zaar®

XtendiMax™ Herbicide With VaporGrip™ Technology

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APPLICATION
REQUIREMENTS

TANK MIX

NOZZLES

Nozzles

		Operating Pressure (psi)									
Manufacturer	Nozzle Type	10	20	30	40	50	60	70	80	90	100
Greenleaf Technologies	TADF-D11003		Min 20		Max 40						
	TADF-D11006		Min 20			Max 50					
	TDXL-D11003		Min 20		Max 40						
	TDXL-D11004		Min 20			Max 50					
	TDXL-D11005		Min 20				Max 60				
	TDXL-D11006		Min 20				Max 60				
Hypro	ULD12004		Min 20		Max 40						
	ULD12005		Min 20		Max 40						
Lechler	ID11003			Min 30	Max 40						
	ID11004			Min 30	Max 40						
	ID11005			Min 30	Max 40						
	ID8004			Min 30	Max 40						
TeeJet® Technologies	AI11003			Min 30	Max 40						
	AI8003			Min 30	Max 40						
	AI8005			Min 30	Max 40						
	TTI11003		Min 20				Max 60				
	TTI11004		Min 20				Max 63				
	TTI11005		Min 20				Max 60				
	TTI11006		Min 20			Max 50					
Wilger	DR11010		Min 20		Max 40						

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, MONSANTO MAKES NO RECOMMENDATION OR WARRANTY HEREIN REGARDING THE USE OF ANY PRODUCT THAT MAY APPEAR ON THIS WEBSITE, REGARDLESS OF WHETHER SUCH PRODUCT IS USED ALONE OR WITH XTENDIMAX™ WITH VAPORGRIP™ TECHNOLOGY. BUYER AND ALL USERS ARE SOLELY RESPONSIBLE FOR ANY LACK OF PERFORMANCE, LOSS, OR DAMAGE IN CONNECTION WITH THE USE OR HANDLING OF ANY SUCH PRODUCT ALONE OR WITH XTENDIMAX™ WITH VAPORGRIP™ TECHNOLOGY. See container and supplemental labeling for additional information.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. It is a violation of Federal and state law to use any pesticide product in a manner inconsistent with its labeling.
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Engenia herbicide label language will require that applicators use nozzles that produce extra-coarse to ultra-coarse droplets.



XR (M)



TT (C)



TTJ (C)



AITTJ (VC)



AIXR (XC)



AI (XC)

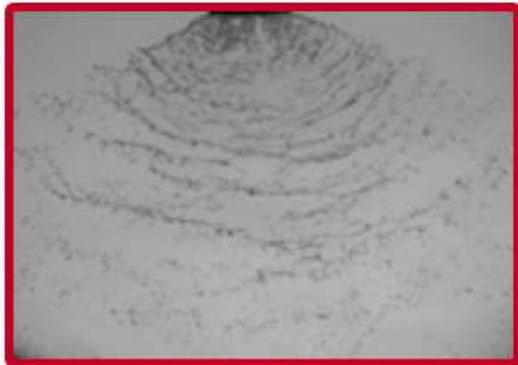


TTI (UC)

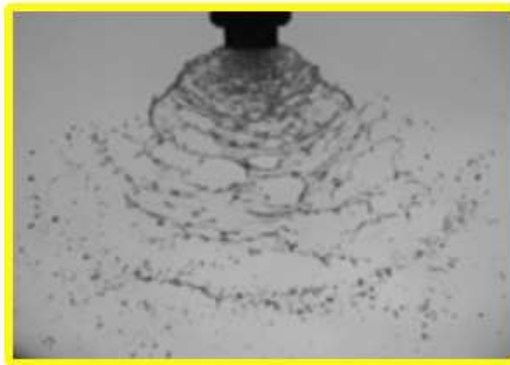


Fine

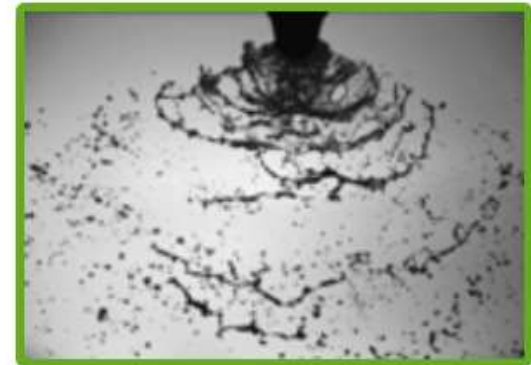
Ultra-Coarse



TeeJet® XR11004



TeeJet® AIXR11004



TeeJet® TTI11004

		Maximum Operating Pressure (psi)											
		10	20	30	40	50	60	70	80	90	100	110	120
Manufacturer Model													
ABJ Agri	ABJ11004				MAX 40								
	ABJ10006			MAX 30									
GreenLeaf	TDXL11003				MAX 40								
	TDXL11004				MAX 45								
	TDXL11006							MAX 75					
	TDXL11003-D								MAX 90				
	TDXL11004-D								MAX 90				
	TDXL11006-D									MAX 100			
	TDXL11008-D							MAX 80					
Hypro	ULD12004							MAX 70					
	ULD12006				MAX 50								
Lechler	ID11004				MAX40								
	ID11005						MAX 60						
TeeJet	AI11004						MAX 60						
	AI11006						MAX 60						
	AI11008							MAX 70					
	AITTJ60-11006				MAX 40								
	AIXR11003			MAX 30									
	AIXR11004				MAX 40								
	AIXR11006				MAX 40								
	TTI11004								MAX 85				
Wilger	MR11006						MAX 60						
	MR11008						MAX 60						

XtendiMax, Engenia, and FeXapan

Wind Speed	Application conditions and restrictions
< 3 mph	Do not apply
3-10 mph	Optimum application conditions provided all other application requirements in the label are met.
>10-15 mph	Do not apply product when wind is blowing toward non-target sensitive crops.
>15 mph	Do not apply

XtendiMax, Engenia, and FeXapan

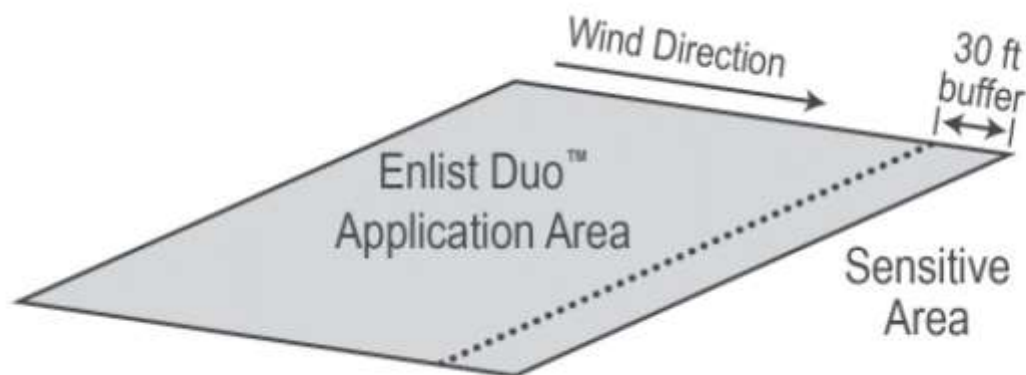
Rate	Buffer
22 fl oz/a	110 ft downwind
44 fl oz/a	220 ft downwind

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

Enlist Duo and 2,4-D choline

Postemergence

Apply 3.5 to 4.75 pints of Enlist Duo per acre. Apply when weeds are small and corn is no larger than V8 growth stage or 30 inches (free standing) tall, whichever occurs first. For corn heights 30 to 48 inches (free standing), apply only using ground application equipment using drop nozzles aligned to avoid spraying into the whorl of corn plants. Make one to two applications with a minimum of 12 days between applications.



To maintain the required downwind buffer zone:

- Measure wind direction prior to the start of any swath that is within 30 feet of a sensitive area.
- No application swath can be initiated in, or into an area that is within 30 feet of a sensitive area if the wind direction is towards the sensitive area.

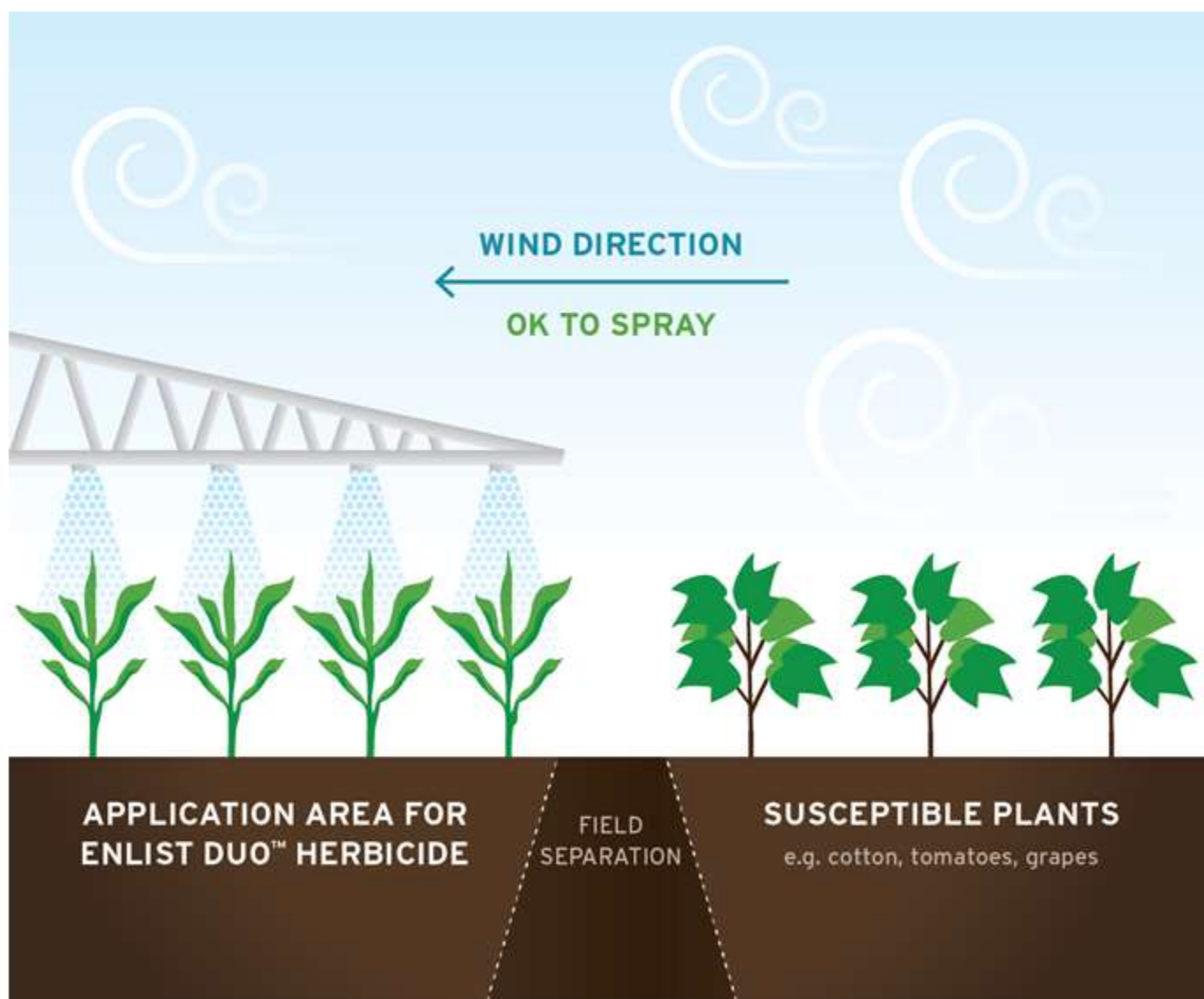
State and Local Requirements

Applicators must follow all state and local pesticide drift requirements regarding application of 2,4-D herbicides. Where states have more stringent regulations, they must be observed.

Susceptible Plant Buffers



Susceptible Plant Buffers



Tolerance levels

- Unlike glyphosate or glufosinate resistant varieties, 2,4-D and dicamba varieties can suffer serious injury if treated with rates higher than the recommended.
- No yield reduction with 2X rates.
- 3X and 4X rates reduced yields in several situations.
- Growers must be very careful to avoid double passes and properly calibrate their sprayer.

Which fields can be 2,4-D/dicamba?

- No susceptible plants around =
 - YES
- Susceptible plants downwind outside buffer restrictions =
 - MAYBE depending on wind direction
- Susceptible plants downwind inside buffer restriction =
- NO

Florida's organo-auxin rule

- Until the rule is updated to include new 2,4-D and dicamba technologies, we must follow the rule
- Find the rule at <http://edis.ifas.ufl.edu/wg051>
- Keep in mind that downwind buffers are different in FL rule than in current labels for new 2,4-D and dicamba herbicides
- At this point, there are no extra licensing requirements

Florida's organo-auxin rule

Wind Speed	Labels	Ground Equipment
0-3 mph	Do not apply	1/8 mile downwind 1/8 mile crosswind 20 feet upwind
3-6 mph	Optimum application conditions provided all other application requirements in the label are met.	1/4 mile downwind 1/8 mile crosswind 5 feet upwind
6-10 mph	Optimum application conditions provided all other application requirements in the label are met.	1/2 mile downwind 1/4 mile crosswind 5 feet upwind
>10 mph	Do not apply product when wind is blowing toward non-target sensitive crops.	Do not apply
>10-15 mph	Do not apply product when wind is blowing toward non-target sensitive crops.	Do not apply
>15 mph	Do not apply	Do not apply



Florida's organo-auxin rule

Spraying requirements	Labels	Florida organo-auxin rule
Nozzle pressure	Meet nozzle requirements (up to 100 psi)	35 psi max
Droplet size	Extra coarse to ultra coarse	>200 microns
Aerial equipment	Prohibited	Allowed depending on conditions



Keep in mind

- Talk to your neighbors and make sure you know and they know what technologies are being used (2,4-D vs dicamba)
- Learn cleanup requirements for each herbicide
- Document in detail application conditions
- Educate neighbors that are not using the technology

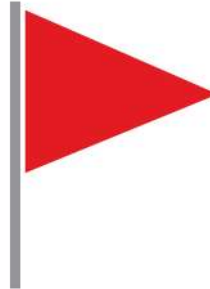
Preferred Flag Size

6' x 1/4" fiberglass pole with minimum 11" x 17" flag for maximum visibility

Color Codes

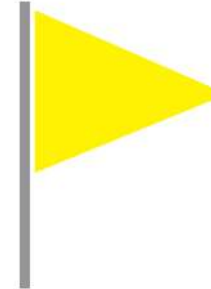
RED

signifies conventional varieties with no herbicide technology traits. *Extreme caution.*



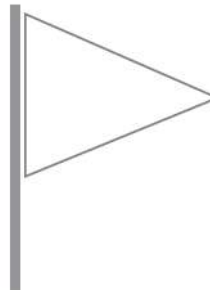
BRIGHT YELLOW

is the color chosen for Clearfield® rice technology and STS® soybeans.¹



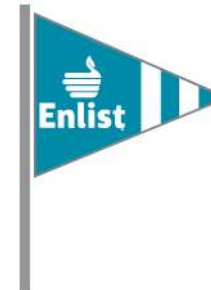
WHITE

represents the Roundup Ready® technology that is tolerant to glyphosate herbicide.



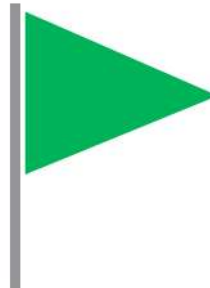
TEAL

indicates tolerance to both 2,4-D and FOP (Accase) herbicides or the Enlist® technology. The white stripes indicate tolerance to glyphosate. For Enlist cotton and soybean fields, a green flag should be added to denote tolerance to glufosinate (Liberty).



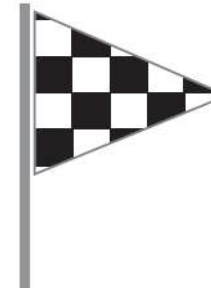
BRIGHT GREEN

indicates the Liberty Link® technology. This technology is tolerant to glufosinate (Liberty®) herbicide.



BLACK

indicates tolerance to dicamba herbicide or Xtend®. The black and white checks indicate tolerance to both dicamba and glyphosate (Roundup). A green flag should be added for cotton to denote glufosinate (Liberty) tolerance.



¹Although many herbicides are in the ALS family of herbicides, crops with this technology are not tolerant to all ALS herbicides.