Approved Dicamba Formulations for Use in the Roundup Ready® Xtend Crop System:

Education on Application Requirements

IMPORTANT INFORMATION

This presentation is intended for continuing education 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 labelled for use in the Roundup Ready® Xtend Crop System

- You will NOT receive a completion certificate following this training

- To find a Monsanto-sponsored mandatory dicamba training event, please go to:

RoundupReadyXtend.com/Training

MANDATORY DICAMBA APPLICATOR TRAINING

- The U.S. EPA labels for dicamba products labelled for use in the Roundup Ready ® Xtend Crop System require that prior to applying these products, the applicator must complete dicamba or auxin-specific training:
  - If training is available and required by the state where the applicator intends to apply these products, the applicator must complete that training
  - If the state where the application is intended does not require dicamba or auxin-specific training, the applicator must complete training provided by one of the following sources:
    - A registrant of a dicamba product approved for in-crop use with dicamba-tolerant crops, or
    - A state or state-authorized provider

- The above required training is not a substitute for the state-specific Certified Applicator training which is required to purchase and use Restricted Use Pesticides
  - Retail sale to and use only by Certified Applicators or persons under their direct supervision
  - Refer to specific state and local requirements for certification process

- Check with your state pesticide regulatory agency for additional training and application requirements imposed by your state

APPROVED FORMULATIONS OF DICAMBA

The following formulations of dicamba are approved for use in the Roundup Ready® Xtend Crop System as of November, 2017 and are discussed herein:

- XtendiMax® herbicide with VaporGrip® Technology (Monsanto)
- DuPont® FeXapan® herbicide Plus VaporGrip® Technology
- Engenia® Herbicide (BASF)

- The application requirements discussed apply to all labeled uses of these products
- Some slides contain language from XtendiMax® /FeXapan® labels; Engenia® label language may vary. Always read and follow the specific product label

- These products are Restricted Use Pesticides for retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

ALWAYS FOLLOW THE INDIVIDUAL PRODUCT LABELING AVAILABLE AT:

- XtendiMax® herbicide with VaporGrip® Technology (Monsanto)
  xtendimaxapplicationrequirements.com

- DuPont ® FeXapan® herbicide Plus VaporGrip ® Technology
  www.fexapanapplicationrequirements.dupont.com

- Engenia® Herbicide (BASF)
  Stewardship: *http://agproducts.basf.us/campaigns/engenia/#stewardship*
  Tank Mix: *www.engeniatankmix.com*

AGENDA

The following topics will be discussed:

- Buffer Requirements and Protection of Susceptible Crops
- Weed Management Practices
- Window of Application
- Chemistry, Mixing and Handling
- Equipment Preparation
- Application
- After Spraying
- Recordkeeping Requirements
- Summary of Application Requirements

BUFFER REQUIREMENTS AND PROTECTION OF SUSCEPTIBLE/SENSITIVE CROPS

SUSCEPTIBLE / SENSITIVE CROPS

- **Before making an application:**
  - the applicator must survey the application site for neighboring **non-target susceptible/sensitive crops**.
    - **For example, glyphosate tolerant (i.e. Roundup Ready®) and glufosinate tolerant (i.e. LibertyLink®) are susceptible crops**
    - Visit with neighbors who have fields next to yours to discuss their plans and yours (in all directions)

FieldWatch
Communication. Cooperation. Collaboration.

driftwatch
Specialty Crop Site Registry
by FieldWatch

AND

- The applicator must also consult applicable sensitive crop registries to identify any commercial specialty or certified organic crops that may be located near the application site.
  - E.g., FieldWatch

PROTECTION OF ADJACENT SUSCEPTIBLE/SENSITIVE CROPS:

DO NOT APPLY this product when the wind is blowing toward adjacent non-dicamba tolerant susceptible crops; **this includes NON-DICAMBA TOLERANT SOYBEAN AND COTTON**.

- Susceptible crops 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, other broadleaf plants, and including plants in a greenhouse.

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.

VISUAL SENSITIVITY SCALE FOR DICAMBA IN GA-018*

Lower	Moderate	Severe	Extreme
Broccoli Cabbage Kale Mustard Pecan Turnip	Cantaloupe Canola** Cucumber Peach Peanut Squash	Cotton Pepper Tomato Watermelon	Grapes** Lima Bean Southern Pea Snap Bean Soybean Sweet potato** Tobacco**
>1/75X	1/75-1/300X	1/300-1/800X	< 1/800X

Herbicide Rate of Visually Detectable Injury

For relative comparison, tomato, squash, and watermelon response to glyphosate for visual damage would be in the “lower” category.

Information adapted from Dr. Stanley Culpepper, University of Georgia Cooperative. *categories indicate sensitivity of listed plants to dicamba exposure; not the degree of symptomology **Data from literature; all other data generated in over 70 UGA field experiments.

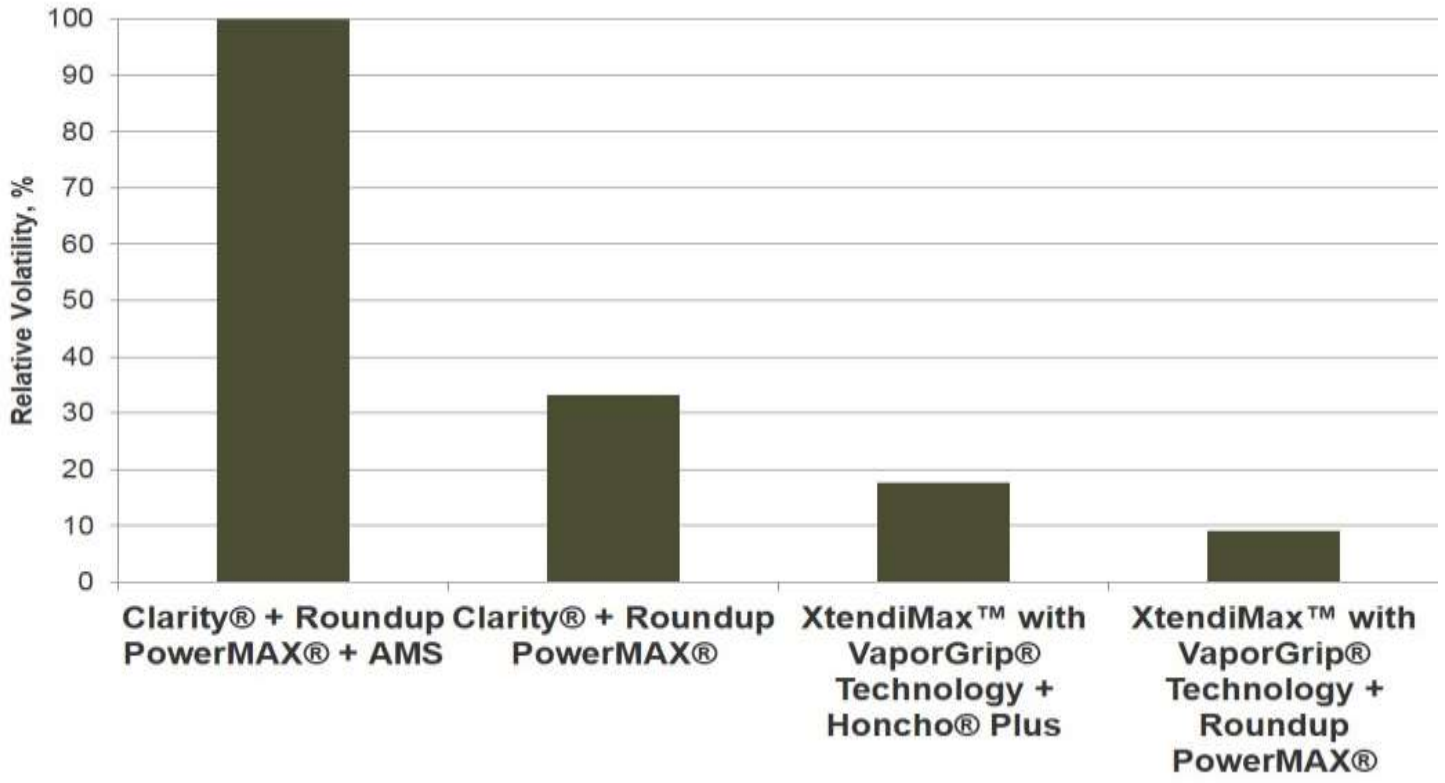
WHAT IS VOLATILITY

Definition:

- Herbicide volatility is the loss of a portion of the applied pesticide (herbicide) by vapor after application.
- Vapor loss of the applied pesticide (herbicide) can reduce the persistence of the herbicide or be a potential source for off-target movement from the application area.
- Herbicide vapor can be moved off-target by wind or other environmental conditions.
- Volatility is a function characteristic of herbicide formulation as well as environmental factors such as temperature, humidity, and rainfall after application and is influenced by environmental factors (i.e. temperature and humidity).

Volatility Addressed with Low-volatility Formulations and Restrictions on Tank Mixtures and Adjuvants

Based on published ASTM humidome methodology



Clarity® and DMA and acid formulations of dicamba are not approved for in-crop use in the Roundup Ready® Xtend Crop System.

Honcho® Plus and Ammonium Sulfate (AMS) are not approved tank mixes with XtendiMax®

>90% Reduction in Volatility Compared to Clarity ® herbicide

ADJACENT FIELD EXAMPLE – DO NOT SPRAY

COLOR LEGEND

Blue

RRX Soybeans

Green

Non-Dicamba
Tolerant Soybeans

Yellow

Corn

Brown

Agricultural Fields
Prepared for Planting

ADJACENT FIELD EXAMPLE – DO NOT SPRAY

COLOR LEGEND

- **Blue**

  RRX Soybeans

- **Green**

  Non-Dicamba
  Tolerant Soybeans

- **Yellow**

  Corn

- **Brown**

  Agricultural Fields
  Prepared for Planting

BUFFER REQUIREMENT

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) for all uses of these products.

Maintain infield downwind buffer (in the direction in which the wind is blowing).

- 110 feet (when applying 0.5 lb ae per acre)
- 220 feet (when applying > 0.5 lb up to 1.0 lb ae per acre)

BUFFER REQUIREMENT

To maintain this required buffer:

- The following areas may be included in the buffer distance calculation when directly adjacent to the treated field edges:
  - Roads, paved or gravel surfaces
  - Planted agricultural fields containing: corn, dicamba tolerant cotton, dicamba tolerant soybean, sorghum, proso millet, small grains and sugarcane
    - If the applicator intends to include such crops as dicamba tolerant cotton and/or dicamba tolerant soybeans in the buffer distance calculation, the applicator must confirm the crops are in fact dicamba tolerant and not conventional cotton and/or soybeans
  - Agricultural fields that have been prepared for planting.
  - Areas covered by the footprint of a building, silo, or other man made structure with wall and/or roof.

BUFFER SITUATION – INFIELD BUFFER

COLOR LEGEND

Blue

RRX Soybeans

Green

Non-Dicamba
Tolerant Soybeans

Yellow

Corn

Brown

Agricultural Fields
Prepared for Planting

BUFFER SITUATION – AGRICULTURAL FIELD PREPARED FOR PLANTING

COLOR LEGEND

- **Blue**

  RRX Soybeans

- **Green**

  Non-Dicamba
  Tolerant Soybeans

- **Yellow**

  Corn

- **Brown**

  Agricultural Fields
  Prepared for Planting

BUFFER SITUATION – DICAMBA TOLERANT CROP FIELD (CORN)

COLOR LEGEND

- **Blue**

  RRX Soybeans

- **Green**

  Non-Dicamba
  Tolerant Soybeans

- **Yellow**

  Corn

- **Brown**

  Agricultural Fields
  Prepared for Planting

DOWNWIND BUFFER AND SUSCEPTIBLE CROPS

DOWNWIND BUFFER

Maintain the required label buffer to protect sensitive areas (110’ or 220’)

SUSCEPTIBLE CROPS

Do not apply when wind is blowing toward adjacent susceptible crops

Question 1: When is a buffer required when you apply these dicamba products?

1. Always
2. Only when you spray > 0.5 lb ae/acre rate
3. When you have an adjacent downwind susceptible crop
4. It is optional

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1. Always
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4. It is optional

Question 2: Select the scenario that does NOT depict compliant buffer? (select all that apply)

Question 2: Select the scenario that does NOT depict compliant buffer? (select all that apply)

WEED MANAGEMENT PRACTICES

WEED MANAGEMENT PRACTICES

- Certain agronomic practices can delay or reduce the likelihood that resistant weed populations will develop and can be utilized to manage weed resistance once it occurs.

- Do not use less than the labeled rate of the product in a single application. Using the appropriate application rate can minimize the selection for resistant weeds.

- Proactively implementing diversified weed control strategies to minimize selection for weed populations resistant to one or more herbicides is a best practice. A diversified weed management program may include the use of multiple herbicides with different sites of action and overlapping weed spectrum with or without tillage operations and/or other cultural practices. Research has demonstrated that using the labeled rate and directions for use is important to delay the selection for resistance.

WEED MANAGEMENT PRACTICES

- Scout fields before application to ensure herbicides and rates will be appropriate for the weed species and weed sizes present.
- Start with a clean field, using either a burndown herbicide application or tillage.
- Control weeds early when they are relatively small (less than 4 inches).
- Apply full rates of these products for the most difficult to control weed in the field at the specified time (correct weed size) to minimize weed escapes.

WINDOW OF APPLICATION

WINDOW OF APPLICATION

- Target weeds when they are < 4” tall

<4"

WEED HEIGHT

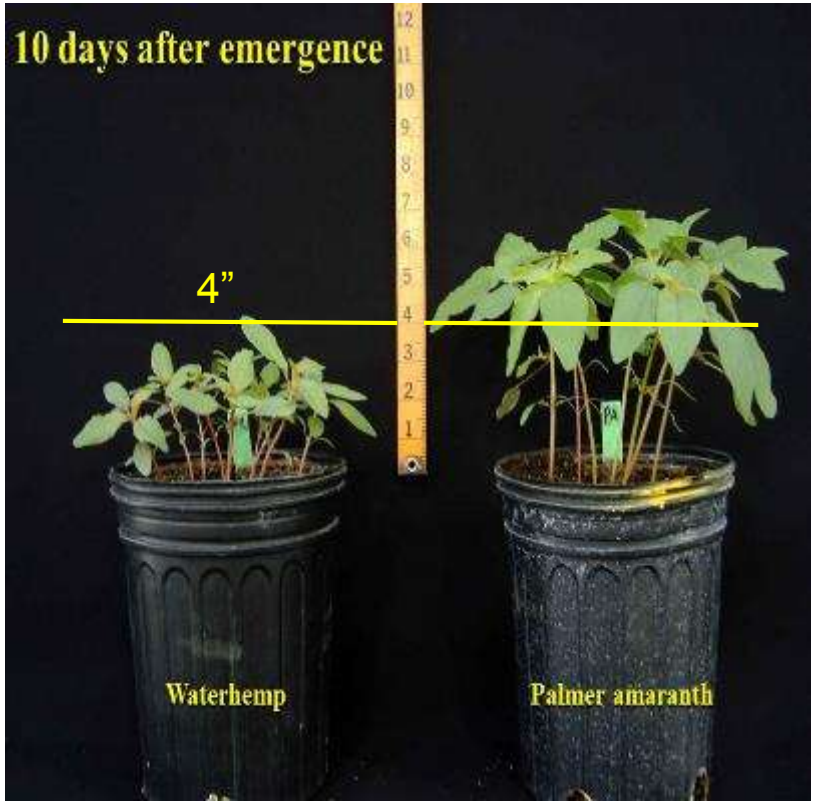
NOT GOOD WEED MANAGEMENT PRACTICE

WINDOW OF APPLICATION

- Target weeds when they are < 4” tall

<4"

WEED HEIGHT



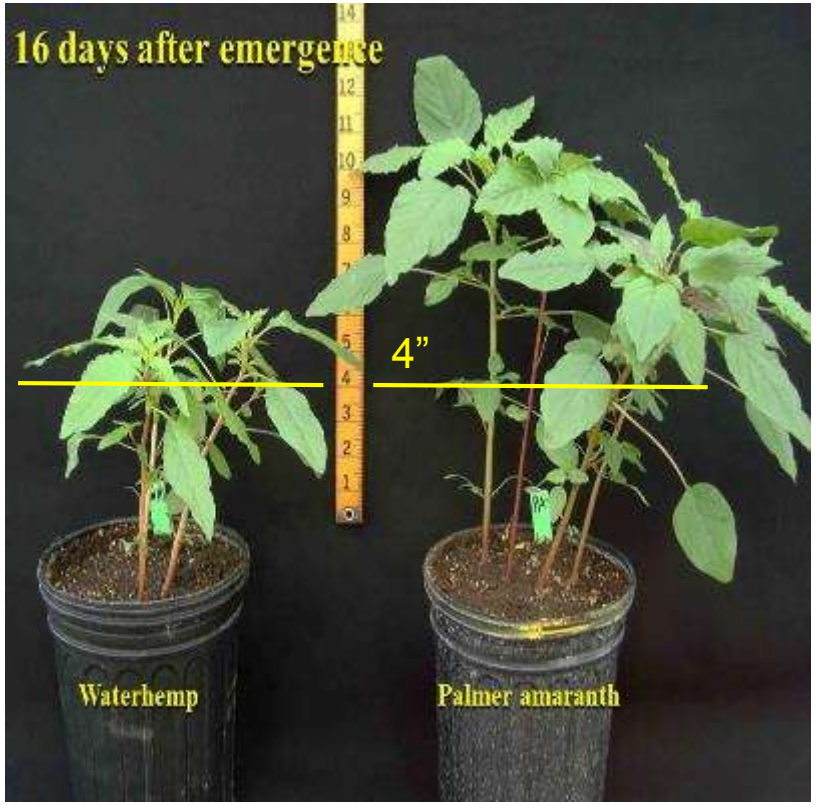


Photo credit: Aaron Hager – University of Illinois

WEED RESISTANCE MANAGEMENT

- Scout fields after application to detect weed escapes or shifts in weed species.
- Control weed escapes before they reproduce by seed or proliferate vegetatively.
- **Report any incidence of non-performance of this product against a particular weed species to your dicamba manufacturer retailer or representative (e.g., 1-844-RRXTEND).**
- If resistance is suspected, treat weed escapes with an herbicide having a site of action other than Group 4 and/or use non-chemical methods to remove escapes, as practical, with the goal of preventing further seed production.

Question 3: Who do you contact if you observe any incidence of non-performance of these dicamba products against a particular weed species? (Check all that apply)

A. Your product retailer

B. Registrant representative (e.g., 1-844-RRXTEND or www.EngeniaQuestions.com)

C. Your neighbor

D. Contact is not necessary

Question 3: Who do you contact if you observe any incidence of non-performance of these dicamba products against a particular weed species? (Check all that apply)

A. Your product retailer

B. Registrant representative (e.g., 1-844-RRXTEND or www.EngeniaQuestions.com)

C. Your neighbor

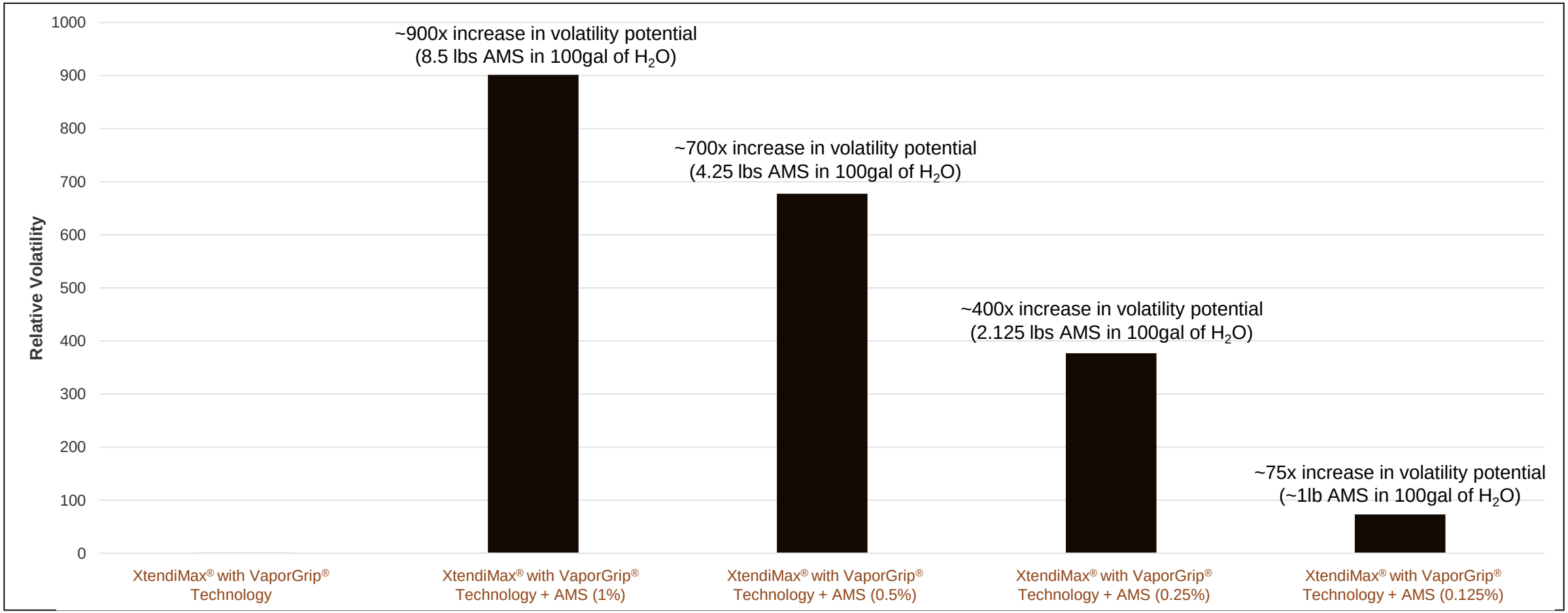
D. Contact is not necessary

CHEMISTRY, MIXING AND HANDLING

- Use only approved, low-volatility formulations of dicamba
- Use only approved herbicides, other pesticides, and additives as tank-mix partners which have been found not to adversely affect off-target movement (OTM) potential
- Some tank-mix partners with dicamba require an approved drift reduction agent (DRA).
- Approved tank-mix partners and required DRAs are included at each specific product labeling website.
  - Applicator must check the list of approved products no more than 7 days before applying
- You must ensure that the spray system used to apply this product is clean before mixing this product
- DO NOT add ammonium sulfate or other acidifying adjuvants to the tank when applying dicamba
  - AMS will increase volatility of dicamba even in small amounts
- Follow the tank mix order recommended for the specific DRA selected
  - Before mixing components, always perform a compatibility jar test
- Agitation is recommended following the addition of each component within a tank mix

Refer to the specific product website for approved tank mix partners

AMMONIUM SULFATE CAN SIGNIGICANTLY IMPACT THE VOLATILITY OF XTENDIMAX® WITH VAPORGRIP® TECHNOLOGY*



**Internal Monsanto Humidome Study*

Question 4: How many days before an application must the applicator visit the website before applying these dicamba products?

1. Applicator may visit after applications
2. No more than 7 days in advance
3. No more than 14 days in advance
4. Any time during the application season

Question 4: How many days before an application must the applicator visit the website before applying these dicamba products?

1. Applicator may visit after applications
2. No more than 7 days in advance
3. No more than 14 days in advance
4. Any time during the application season

Question 5: Check xtendimaxapplicationrequirements.com to determine if Roundup PowerMAX® and XtendiMax® with VaporGrip ® Technology are approved tank mix partners?

A. Yes

B. No

Does the addition of Roundup PowerMAX® and XtendiMax® with VaporGrip® Technology require a DRA?

A. Yes

B. No

Question 5: Check xtendimaxapplicationrequirements.com to determine if Roundup PowerMAX® and XtendiMax® with VaporGrip ® Technology are approved tank mix partners?

A. Yes
B. No

Does the addition of Roundup PowerMAX® and XtendiMax® with VaporGrip® Technology require a DRA?

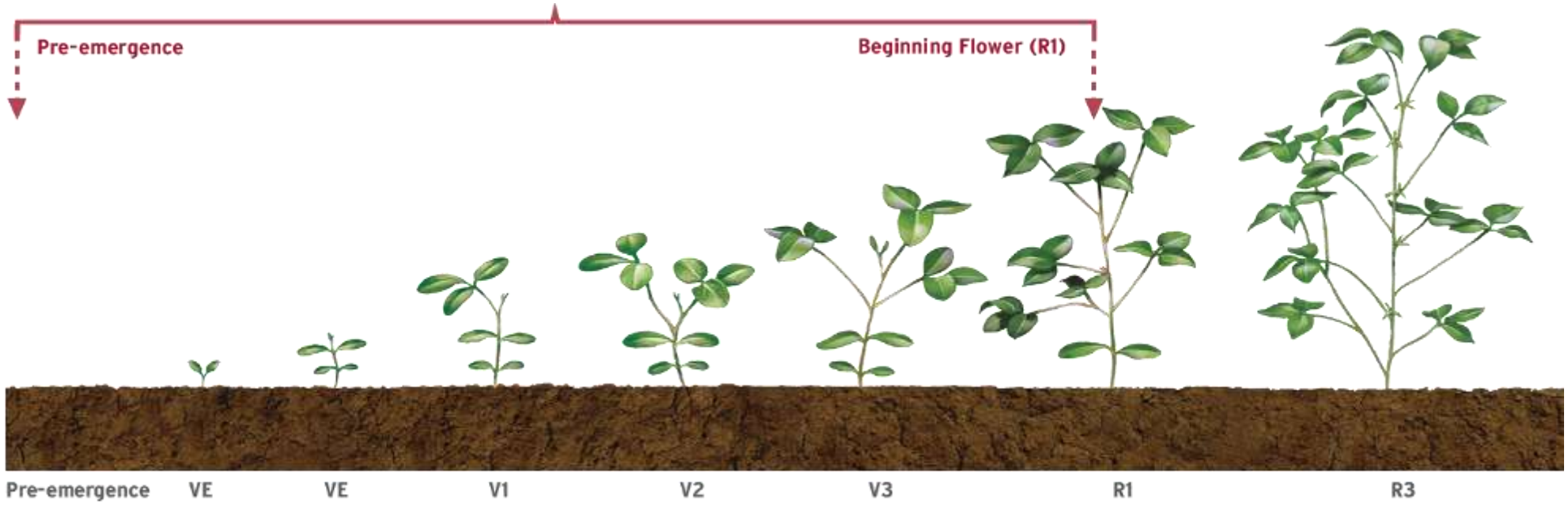
A. Yes
B. No

WINDOW OF APPLICATION

Roundup Ready 2 Xtend® Soybeans

Applications of these products can be made pre-plant, at planting, pre-emergence and in-crop up to and including R1 growth stage in soybeans

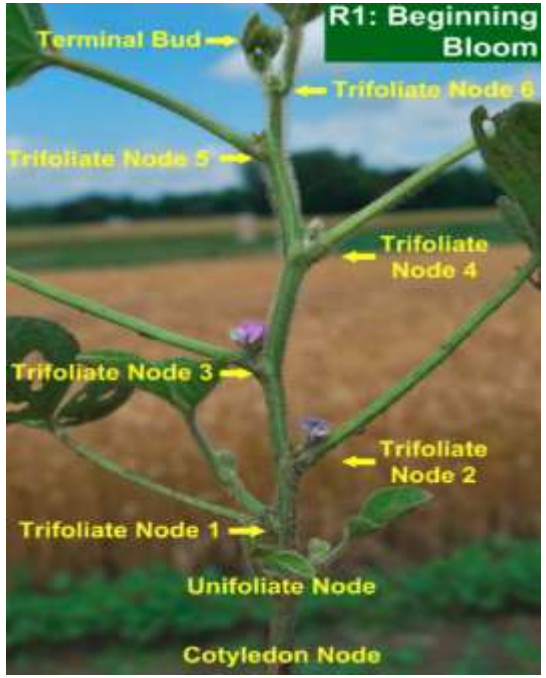
- R1 growth stage in soybeans = beginning bloom (open flower at any node on the main stem)



WINDOW OF APPLICATION

Roundup Ready 2 Xtend® Soybeans

- **Pre-emergent burndown:**
  apply 0.5 lb to 1 lb ae/acre labeled dicamba formulation
- **Single in-crop application:**
  apply 0.5 lb ae/acre labeled dicamba formulation
  - Spray from emergence up to and including beginning bloom (R1 stage)
- Refer to specific product labels for rates and timings



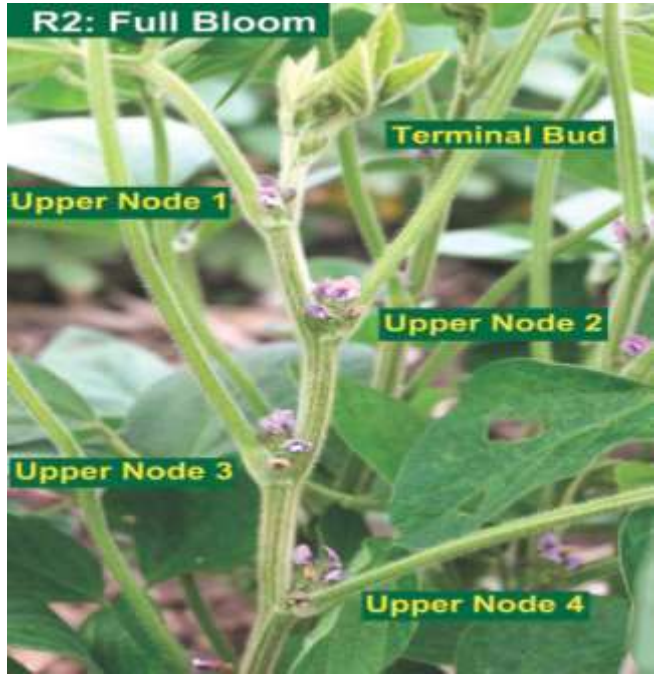
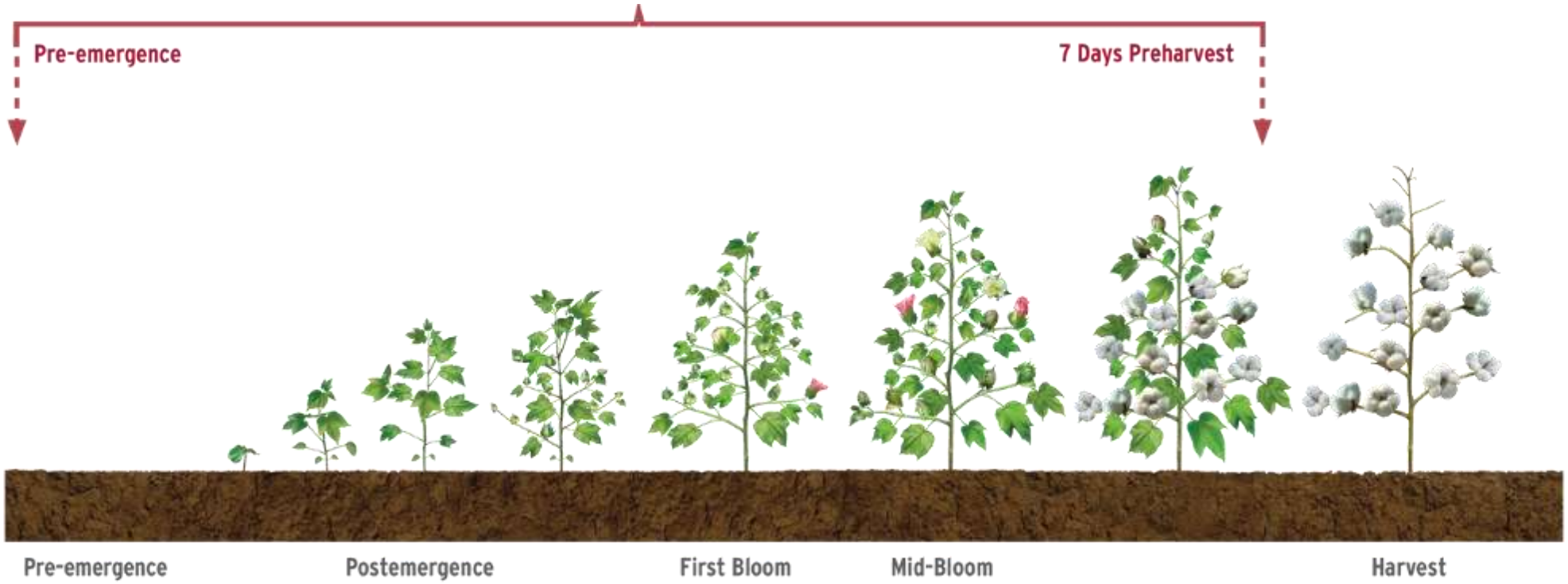


Photo credit: Shaun Casteel – Purdue University

WINDOW OF APPLICATION

Cotton with XtendFlex® Technology

Applications of these products can be made pre-plant, at planting, pre-emergence and in-crop up to 7 days prior to harvest



WINDOW OF APPLICATION

Cotton with XtendFlex® Technology

- **Pre-emergent burndown:**
  apply 0.5 lb to 1 lb ae/acre labeled dicamba formulation
- **Single in-crop application:**
  apply 0.5 lb ae/acre labeled dicamba formulation
  - Spray from emergence up to 7 days preharvest
- Refer to specific product labels for rates and timings

EQUIPMENT PREPARATION

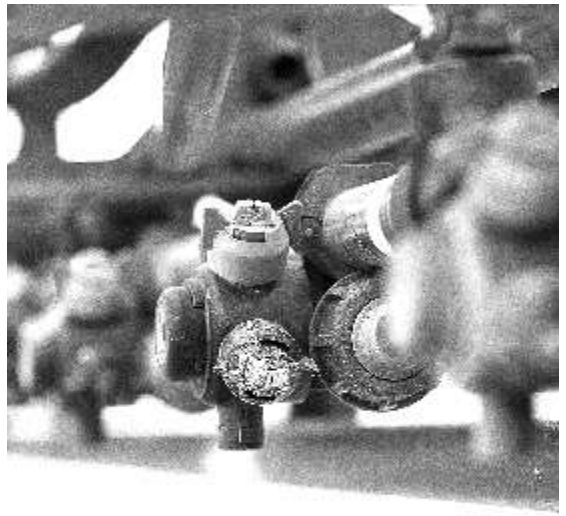
EQUIPMENT PREPARATION – NOZZLE SELECTION

NOZZLES

Use only approved nozzles within specified operating pressure range

Nozzle Selection: Droplet Size

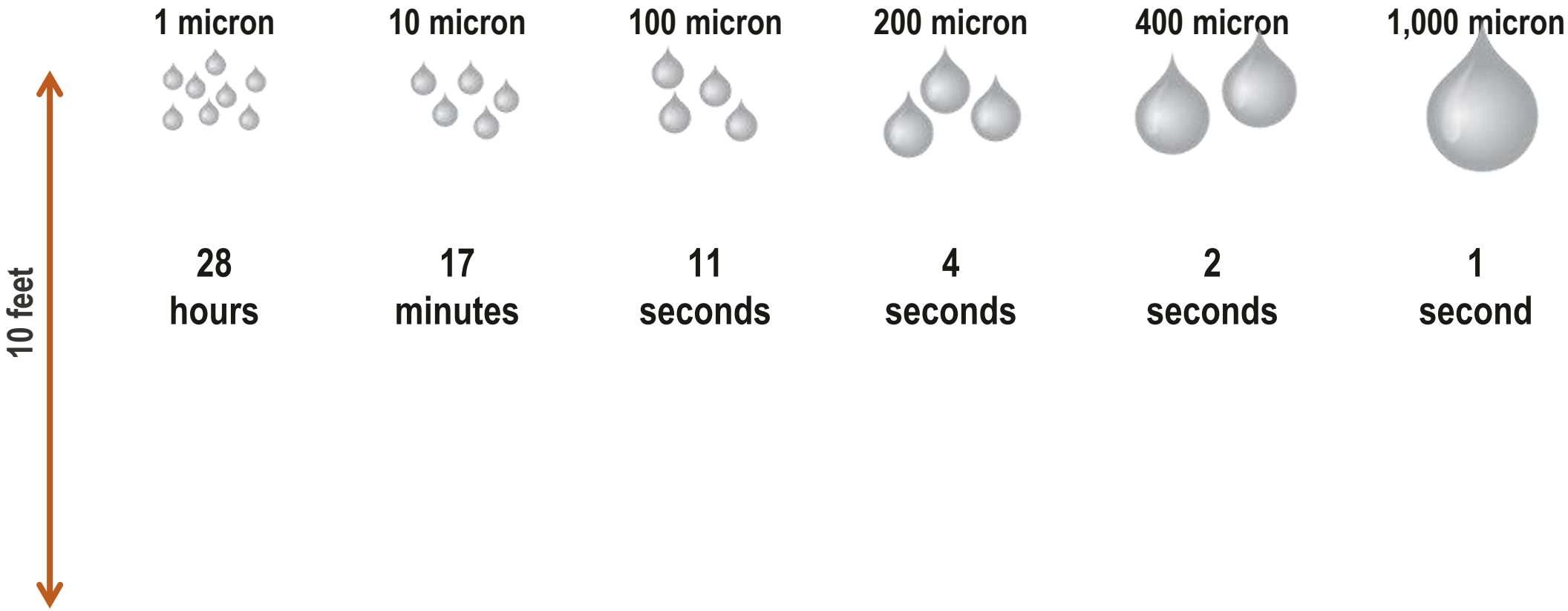
- The smaller the droplets, the slower they fall, and the farther they can drift
- Large spray droplets improve on-target application and reduce the likelihood of drift
- Nozzle selection is only part of the equation
  - Nozzle selection and pressure combined determine droplet size and percentage of driftable fines (<141 microns)



AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR

EFFECT OF DROPLET SIZE (MICRONS) – *TIME IT TAKES TO FALL 10 FEET*

Adapted from: Ross and Lembi, 1985. *For illustrative purposes only.*



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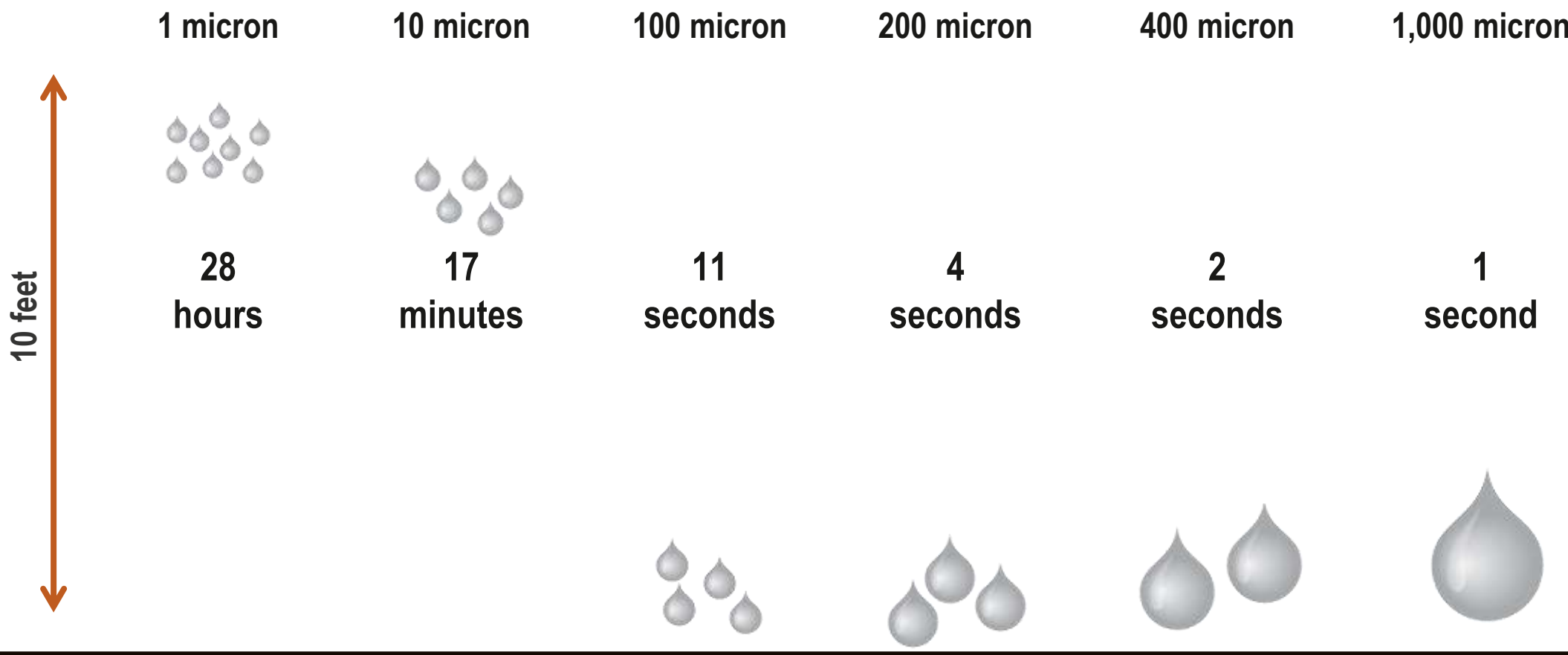

UNDERSTANDING REQUIRED NOZZLE MANAGEMENT

Nozzle Type

- Use only approved nozzles within the pressure ranges listed on the specific product websites
- **Do not use** any nozzle and pressure combination not specifically listed on the label or the specific product website.
- Applicators are required to consult specific product website no more than 7 days before application for a complete list of nozzles, DRAs, and other herbicides, pesticides, and additives approved for use with dicamba.

REFER TO THE SPECIFIC PRODUCT WEBSITE FOR APPROVED NOZZLES AND PRESSURE RANGES

TTI 11004 NOZZLE AT VARIABLE OPERATING PRESSURE RANGE

NOZZLES

Dicamba (0.5 lb ae/acre) + Roundup PowerMAX® herbicide (1.125 lb ae/acre) + DRA (0.5% V/V)

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

20 PSI

60 PSI

DEMONSTRATION ON IMPORTANCE OF PROPER NOZZLES

RATE: 0.5lb ae/acre dicamba

EQUIPMENT PREPARATION

Summary:

- Unapproved nozzles can lead to OTM due to increased driftable fines
- The applicator needs to monitor the operating pressure readings; may be different "in the cab readings" versus at the boom where the pressure should be within the recommended range
- Following all application requirements minimizes OTM due to physical drift
- To help maximize weed control, ensure full spray pattern for good coverage

Approved nozzles, herbicide tank mix partners, adjuvants, additives, DRAs and other approved tank mix partners are listed on approved dicamba specific product websites

Monsanto: *xtendimaxapplicationrequirements.com*

DuPont: www.fexapanapplicationrequirements.dupont.com

BASF Stewardship: http://agproducts.basf.us/campaigns/engenia/#stewardship

BASF Tank Mix: *www.engeniatankmix.com*

Question 6: Why is use of approved nozzles within specified pressure ranges important when applying these dicamba products? (Check all that apply)

A. Approved nozzles reduce the percentage of driftable fines

B. Approved nozzles produce large droplets

C. It is not important

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A. Approved nozzles reduce the percentage of driftable fines

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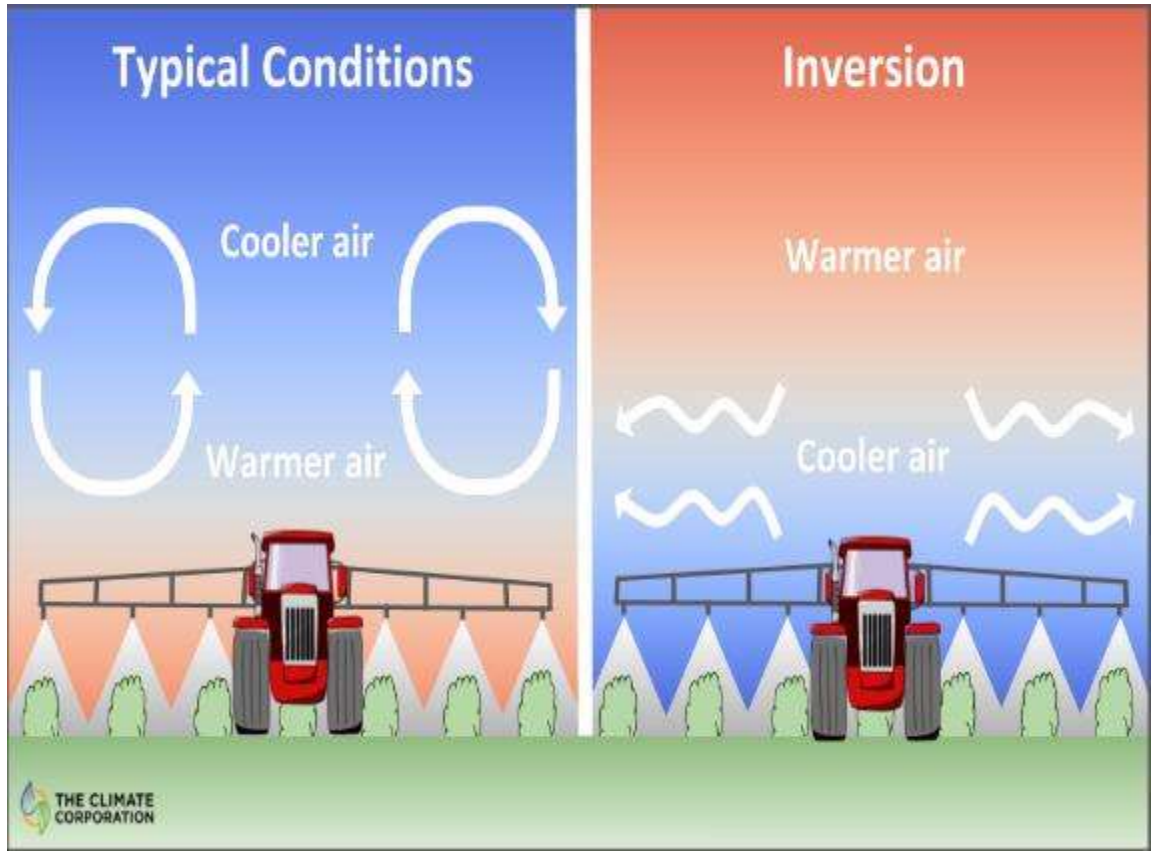
APPLICATION

APPLICATION

- Keep boom height ≤ 24 inches from target crop or pest canopy
- Apply when wind speeds are between 3 - 10 mph
- 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 miles per hour at field edges
- Use a minimum of 15 gallons of spray solution per acre for optimal performance
- Do not apply this product between sunset and sunrise
- Do not apply this product during a temperature inversion
  - OTM potential can increase during a temperature inversion
- Do not make application of this product if rain is expected in the next 24 hours
  - Could result in runoff from area of application
- Do not apply this product aerially
- You must ensure that the spray system used to apply dicamba is clean before using the product

TEMPERATURE INVERSIONS

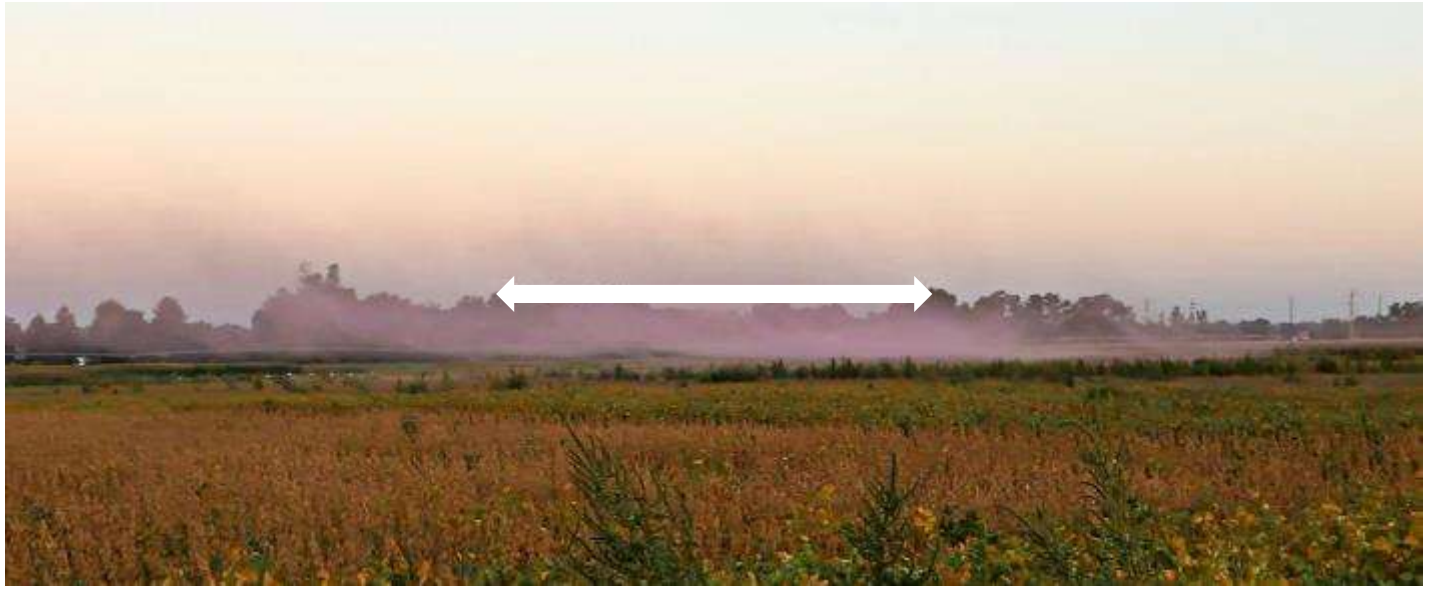
A layer of cool air trapped below a layer of warmer air



- During a temperature inversion, the atmosphere is very stable and vertical air mixing is restricted, which can cause small, suspended droplets to remain in a concentrated cloud
- The inversion will typically dissipate with increased winds (>3 mph) or at sunrise when the surface air begins to warm (~3°F from morning low)
- Do not apply this product between sunset and sunrise.
- Inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator.
- Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

VERTICAL MIXING OF AIR

Smoke test demonstration in 4-8 mph winds at 11:00 a.m. (Nebraska)

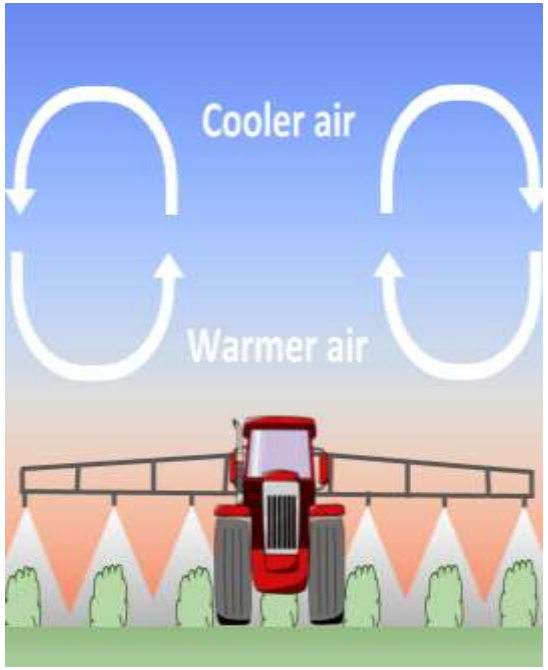


INVERSION LAYER NEAR SURFACE

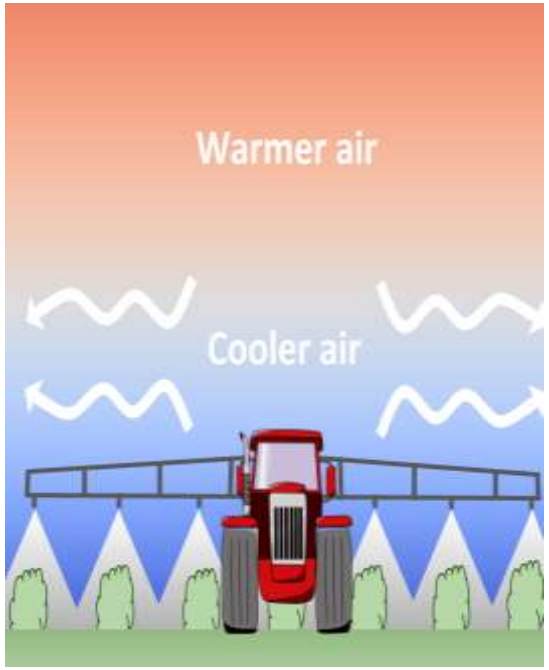
Smoke test demonstration in < 1 mph winds at 7:15 a.m. (Nebraska)

Question 7: Which picture illustrates a temperature inversion?

A

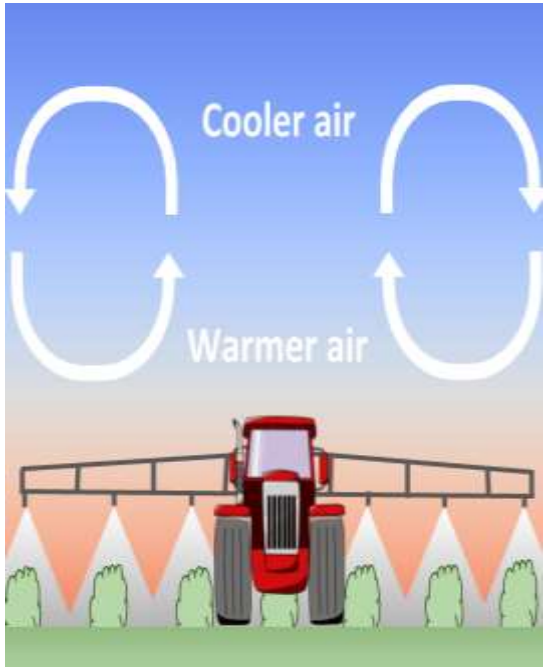


B



Question 7: Which picture illustrates a temperature inversion?

A



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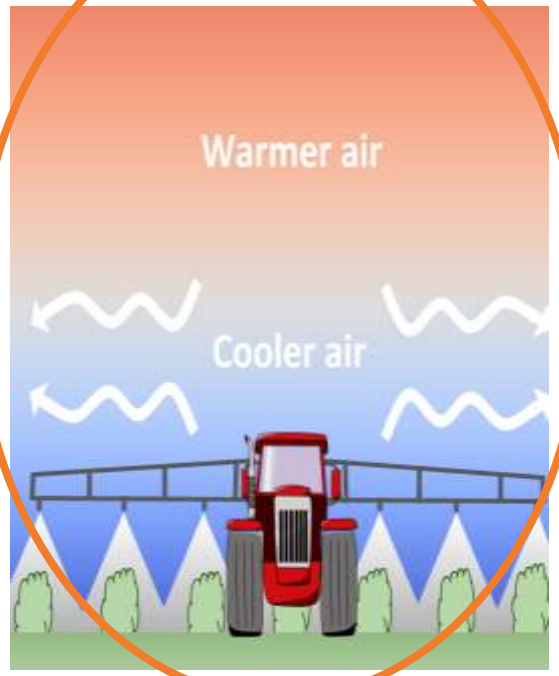


HIGHLIGHTED LABEL RESTRICTIONS

- *DO NOT APPLY THIS PRODUCT AERIALLY.*

- DO NOT TANK MIX WITH PRODUCTS CONTAINING AMMONIUM SALTS SUCH AS AMMONIUM SULFATE (AMS) AND UREA AMMONIUM NITRATE.
  - Small quantities of AMS can greatly increase the volatility potential of dicamba.
  - Includes additives, conditioners, fertilizers, etc.
  - Use only approved tank mix partners confirmed on each product website

- DO NOT APPLY TO CROPS UNDER STRESS DUE TO LACK OF MOISTURE, HAIL DAMAGE, FLOODING, HERBICIDE INJURY, MECHANICAL INJURY, INSECTS, OR WIDELY FLUCTUATING TEMPERATURES AS INJURY MAY RESULT.

- DO NOT APPLY THROUGH ANY TYPE OF IRRIGATION EQUIPMENT. DO NOT TREAT IRRIGATION DITCHES OR WATER USED FOR CROP IRRIGATION OR DOMESTIC PURPOSES.

- DO NOT MAKE APPLICATION OF THESE PRODUCTS IF RAIN IS EXPECTED IN THE NEXT 24 HOURS.
  (For prevention for potential water runoff when excessive rain may occur)

APPLICATION- *SUMMARY*

- Do not exceed a boom height of 24 inches; excessive boom height will increase drift potential
- Increased ground speeds can lead to OTM (maximum 15 mph)
- Use required spray volume per specific product label
- Do not apply sunset to sunrise
- Do not apply labeled dicamba formulations during a temperature inversion
  - Most likely conditions for inversion are early morning and later afternoon
- Apply when wind speeds at boom height are between 3 and 10 mph
- Do not apply this product aerially

VORTEX EFFECT AT HIGHER SPEEDS

Question 8: Which of the following requirements for applying dicamba products are CORRECT (Check all that apply)

Prior to application

- Sprayer System Cleanout Required Before ☐
- Use only labeled, low volatility dicamba formulations ☐
- Applicator must be certified & keep records for 1 year ☐
- Use only approved nozzles ☐
- Use only approved tank mix partners ☐

Question 8: Which of the following requirements for applying dicamba products are CORRECT (Check all that apply)

Prior to application

- Sprayer System Cleanout Required Before ☑
- Use only labeled, low volatility dicamba formulations ☑
- Applicator must be certified & keep records for 1 year ☐
- Use only approved nozzles ☑
- Use only approved tank mix partners ☑

Question 9: Which of the following requirements for applying dicamba products are CORRECT (Check all that apply)

At Application

- Do not exceed 15 mph ground speed ☐
- Maintain a 200 foot downwind buffer for all applications ☐
- Only spray between sunrise and sunset ☐
- Application wind speed should be between 3-10 mph ☐
- Boom Height of 36 inches ☐

Question 9: Which of the following requirements for applying dicamba products are CORRECT (Check all that apply)

At Application

- Do not exceed 15 mph ground speed ☑
- Maintain a 200 foot downwind buffer for all applications ☐
- Only spray between sunrise and sunset ☑
- Application wind speed should be between 3-10 mph ☑
- Boom Height of 36 inches ☐


AFTER SPRAYING

SPRAYER SYSTEM EQUIPMENT CLEANOUT

- Clean equipment immediately after using dicamba
  - refer to specific product label for cleanout procedure
- Do not allow the spray solution to remain in the system overnight prior to flushing
- Failure to properly clean the entire system can result in inadvertent contamination of the spray system
- Small quantities of dicamba may cause injury to non-dicamba tolerant soybeans or other susceptible crops
- All rinse water must be disposed of in compliance with local, state, and federal guidelines

SINGLE RINSE

DOUBLE RINSE

TRIPLE RINSE

CLEANING THE SPRAYER: WHAT COMPONENTS?

SPRAYER PARTS THAT CAN TRAP HERBICIDE

Figure 1. Filters and screens should be cleaned to remove residues.

1/20,000th of the 1x Use Rate (0.000025 lb ae/A dicamba) – 14 days after vegetative stages (V3) application on non-dicamba tolerant soybeans

CONTROL - 14 DAT

0.000025 lb ae/a - 14 DAT

AFTER SPRAYING: BE AWARE OF DICAMBA SUSCEPTIBLE CROPS

APPLICATOR SPRAYED DICAMBA & THEN PARKED SPRAYER IN GRAVEL LOT PRIOR TO TRIPLE RINSING AND CLEANING SPRAYER. SIGNIFICANT RAINFALL OCCURRED AFTER CLEANOUT ONTO THE GRAVEL

DICAMBA MOVED FROM GRAVEL LOT VIA RAIN WATER RUNOFF INTO ADJACENT NON-DICAMBA SOYBEAN FIELD CAUSING VISUAL INJURY

SUMMARY: FOR SPRAYER CLEANOUT

- Ensure sufficient sprayer cleanout before and after any application
  - It only takes a small amount of dicamba to contaminate tanks and sprayers
- Other contamination sources to be considered include nurse tanks, inductors, hoses, and connections at mixing sites
- See label for specific instructions for cleanout
  - Include a commercial tank cleaner
- Clean out your sprayer in an area where runoff or movement of herbicide cannot occur especially near sensitive areas or susceptible crops

Question 10: Select all correct statements that pertain to spray equipment cleanout when applying these dicamba products

A. Thoroughly clean all equipment before AND after application
B. Clean out all parts of spray system including filters, hoses, screens, etc.
C. Include a commercial tank cleaner
D. Properly dispose of all rinse water in compliance with local, state, and federal guidelines

Question 10: Select all correct statements that pertain to spray equipment cleanout when applying these dicamba products

A. Thoroughly clean all equipment before AND after application

B. Clean out all parts of spray system including filters, hoses, screens, etc.

C. Include a commercial tank cleaner

D. Properly dispose of all rinse water in compliance with local, state, and federal guidelines

SUMMARY: ALWAYS FOLLOW ALL LABELING FOR PRODUCT BEING APPLIED

- XtendiMax® with VaporGrip® Technology (Monsanto)
  xtendimaxapplicationrequirements.com

- DuPont® FeXapan® herbicide Plus VaporGrip ® Technology
  www.fexapanapplicationrequirements.dupont.com

- Engenia® Herbicide (BASF)
  Stewardship: *http://agproducts.basf.us/campaigns/engenia/#stewardship*
  Tank Mix: *www.engeniatankmix.com*

RECORDKEEPING REQUIREMENTS

RECORDKEEPING REQUIREMENTS

- Record keeping is 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 14 days after application.
  - e.g., if 10 fields are sprayed, 10 sets of records are required, including if the same field is sprayed twice

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

RECORDKEEPING REQUIREMENTS - *FOR EACH APPLICATION OF DICAMBA PRODUCTS*

1. Brand or Product Name

2. EPA Registration

(e.g., 524-617)

3. Total Amount Applied

120 Acres x 22 oz/acre =
2,640 oz (20.6 gallons)

4. Month, Day, Year Applied

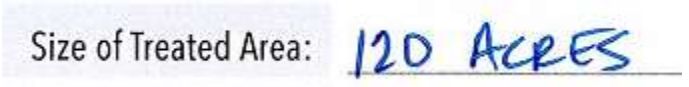
5. Location Of Application

(e.g., GPS coordinates)

6. Crop, Commodity, Stored Product or Site

(e.g., DT soy)

7. Size of Treated Area



RECORDKEEPING REQUIREMENTS - *FOR EACH APPLICATION OF DICAMBA PRODUCTS*

8. Name of Certified Applicator

Certified Applicator Name: JOHN DOE

Applicator Name *(if different from Certified Applicator)*: Robert Sprayer

9. Certification # of Applicator

State Certification # of Applicator: 1243574

10. Dicamba Training Date, Provider and Proof of Completion

Applicator Name *(if different from Certified Applicator)*: Robert Sprayer

Date Completed *(MM/DD/YY)*: 03/14/16 Provider *(be sure to retain proof of completion)*: MONSANTO

11. Receipts of Purchased Product

12. Product Label

13. Record of Buffer Distance Calculation and Any Areas Included Within

Buffer Distance Calculation: 30' PAVED ROAD + 80' CORN FIELD

(e.g., road)

14. Record That a Sensitive Crop Registry Was Consulted or Document Survey of Neighboring Fields for Susceptible Crops

FieldWatch
Communication. Cooperation. Collaboration.
driftwatch

RECORDKEEPING REQUIREMENTS - *FOR EACH APPLICATION OF DICAMBA PRODUCTS*

15. Time of Application Start and Finish

Time: 9:00 AM | 12:02 PM

16. Application Timing

(e.g., pre, post) and # of days after planting if post

17. Air Temperature (F°) at Start and Finish

Air Temperature (°F): 79°F | 85°F

18. Wind Speed at Boom at Start and Finish

Wind Speed (at boom height): 5 MPH | 7 MPH

Wind Direction (direction from which wind is blowing): SW - 225° | W-270°

19. Nozzle Manufacturer/Brand, Type, Orifice Size and Operation Pressure

Manufacturer/Brand: TEE JET | Type: TTI 110

Orifice Size: 06 | Operating Pressure: 45

20. Brand Names and EPA Registration #'S for All Tank Mix Products

Tank Mix Products (brand names and EPA reg #s, if applicable)

Roundup PowerMax 524-549 (@ 32 oz/A)

Intact (DRIFT REDUCTION AGENT) 9349-16001 (0.5% v/v; 4pts/100 gal)

21. Confirmation of Sprayer Cleanout Procedure Both Before and After Use

Question 11: What Record Keeping Requirements are mandatory?
Select True or False for each question

Records must be kept for fields over 100 acres only?

Records must include wind speed at start/finish of application?

Records for product used & product labels must be kept?

Records must include buffer calculation?

Records must include application start/stop time?

Records must include sprayer cleanout only after use?

CLICK HERE TO PRINT RECORD KEEPING FORM

Question 11: What Record Keeping Requirements are mandatory?

Select True or False for each question

Records must be kept for fields over 100 acres only?	False
Records must include wind speed at start/finish of application?	True
Records for product used & product labels must be kept?	True
Records must include buffer calculation?	True
Records must include application start/stop time?	True
Records must include sprayer cleanout only after use?	False

CLICK HERE TO PRINT RECORD KEEPING FORM

SUMMARY OF APPLICATION REQUIREMENTS

SUMMARY OF APPLICATION REQUIREMENTS (1 of 2)

Mandatory training – prior to applying, applicator must complete dicamba or auxin-specific training

Certified applicator must keep required records for two years

Use only approved low-volatility formulations of dicamba labeled for use in the Roundup Ready® Xtend Crop System

Adhere to the application rate on the specific product label

Apply when wind speed measured at boom height is between 3-10 mph

Use only approved nozzles within specified pressure range

Do not exceed 15 mph ground speed

SUMMARY OF APPLICATION REQUIREMENTS (2 of 2)

Sprayer system equipment cleanout – ensure entire sprayer system is properly cleaned before AND after using the product

Do not exceed a boom height of 24 inches above target pest of crop canopy

Tank mix partners – use only approved tank mix partners confirmed on each product website. Refer to all product labels to determine mix order or perform mix compatibility test

Ensure minimum gallons per acre spray volume (e.g., 10 or 15 GPA, depending on product)

Ammonium sulfate and ammonium based additives are prohibited in applications.

Application timing – only spray between sunrise and sunset (DO NOT spray during temperature inversion)

DO NOT apply when wind is blowing toward adjacent susceptible crops (including non-dicamba tolerant soybeans and cotton)

Maintain a minimum of 110 feet downwind buffer for all applications.

Question 12: Check all boxes that are required during application of these dicamba products?

- Sprayer System Cleanout before and after applications ☐
- Do not exceed 15 mph ground speed ☐
- Application wind speed should be between 3-10 mph ☐
- Do not apply during a temperature inversion ☐
- Use only approved nozzles ☐
- Read and follow the label ☐
- Maintain a downwind buffer for all applications ☐
- Do not apply between sunset and sunrise ☐
- Use only approved tank mix partners ☐

Question 12: Check all boxes that are required during application of these dicamba products?

- Sprayer System Cleanout before and after applications ☑
- Do not exceed 15 mph ground speed ☑
- Application wind speed should be between 3-10 mph ☑
- Do not apply during a temperature inversion ☑
- Use only approved nozzles ☑
- Read and follow the label ☑
- Maintain a downwind buffer for all applications ☑
- Do not apply between sunset and sunrise ☑
- Use only approved tank mix partners ☑

IMPORTANT NOTICES

- **XtendiMax® herbicide with VaporGrip® Technology is a restricted use pesticide for retail sale to and use only by Certified Applicators or persons under their direct supervision.**
- ALWAYS READ AND FOLLOW DIRECTIONS FOR USE ON PESTICIDE LABELING. It is a violation of federal and state law to use any pesticide product other than in accordance with its labeling. XtendiMax® herbicide with VaporGrip® Technology, Roundup Ready 2 Xtend® soybeans, and cotton with XtendFlex® Technology may not be approved in all states and may be subject to use restrictions in some states. Check with your local Monsanto dealer or representative or U.S. EPA and your state pesticide regulatory agency for the product registration status and additional restrictions in your state. For approved tank-mix products and nozzles visit XtendiMaxApplicationRequirements.com
- NOT ALL formulations of dicamba or glyphosate are approved for in-crop use with Roundup Ready 2 Xtend® soybeans and cotton with XtendFlex® Technology. ONLY USE FORMULATIONS THAT ARE SPECIFICALLY LABELED FOR SUCH USES AND APPROVED FOR SUCH USE IN THE STATE OF APPLICATION.
- **Roundup Ready 2 Xtend® soybeans contain genes that confer tolerance to glyphosate and dicamba. Cotton with XtendFlex® Technology contains genes that confer tolerance to glyphosate, dicamba, and glufosinate.** 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 Monsanto dealer or refer to Monsanto's Technology Use Guide for recommended weed control programs.
- **Individual results may vary,** and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.
- **Always read and follow IRM, where applicable, grain marketing and all other stewardship practices and pesticide label directions.** Roundup Ready 2 Xtend®, Roundup Ready®, VaporGrip®, XtendFlex® and XtendiMax® are registered trademarks of Monsanto Technology LLC. LibertyLink® and the Water Droplet Design® are registered trademarks of Bayer. All other trademarks are the property of their respective owners. ©2017 Monsanto Company. All Rights Reserved.

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