Why Dicamba?

- Provides excellent POST control of key glyphosate resistant weeds plus many tough to control broadleaf weeds
- Can provide residual control up to 14 DAT
- Rapid visual symptom development in weeds
- Similar uptake/translocation profile as glyphosate
- Good physical compatibility with glyphosate
- Moderate use rates, acceptable COG'S
- Low volatility salt registered in market (DGA-Dicamba)
The Roundup Ready® Xtend Crop System
Provides Excellent Marestail Control

2012 Monsanto Trial – Lincoln, Nebraska - Glyphosate Resistant Marestail

Untreated Check
Residual + 2.5X Roundup
Residual + dicamba/glyphosate
WeatherMAX® FB Roundup
WeatherMAX® F9 Roundup
The Roundup Ready® Xtend Crop System
Provides Excellent Waterhemp Control

2012 Trial - Ankeny, Iowa - Glyphosate Resistant Waterhemp

- Highly effective control of glyphosate resistant and tough to control broadleaf weeds
- Can provide residual soil activity up to 14 days on certain small seeded weeds
- Excellent application flexibility – before, at, and after planting
The Roundup Ready® Xtend Crop System

Provides Excellent Palmer amaranth Control

2012 Roundup Ready® Xtend Crop System Trials
Efficacy for Mid South Region – Palmer amaranth

University of Arkansas, Newport, 2012; 2013-02-07-06

Partial regulatory approval

ROAD AHEAD
The Roundup Ready® Xtend Crop System
Provides Excellent Pre-emergent Palmer amaranth Control
(84 Days After Treatment)
Importance of targeting the labeled weed size. MON-76832 vs Liberty® Applied POST on Palmer amaranth – Robinsonville, MS – 34 DAT (2015 Monsanto Demo)

Label pics bigger?
## Roundup Xtend™, XtendiMax™, Liberty® & Enlist Duo™ Product Comparison

<table>
<thead>
<tr>
<th></th>
<th>XtendiMax™ with Vaporphat Technology</th>
<th>Roundup Xtend™ with Vaporphat Technology</th>
<th>Liberty®</th>
<th>Enlist Duo™</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formulation Loading</td>
<td>2.92 lb ae/gal</td>
<td>4.5 lb ae/gal</td>
<td>2.34 lb ae/gal</td>
<td>3.3 lb ae/gal</td>
</tr>
<tr>
<td>Use Rate</td>
<td>22 ox/a (+ 12 oz PRE)</td>
<td>64 ox/a</td>
<td>25-39 ox/a</td>
<td>56-76 ox/a</td>
</tr>
<tr>
<td>Acres per Gallon</td>
<td>0.8</td>
<td>2</td>
<td>2.5-4.4</td>
<td>1.7 - 2.3</td>
</tr>
<tr>
<td>Signal Word</td>
<td>Caution</td>
<td>Caution</td>
<td>Warning</td>
<td>Warning</td>
</tr>
<tr>
<td>Re-entry Interval (REI)</td>
<td>24 hours</td>
<td>24 hours</td>
<td>12 hours</td>
<td>48 hours</td>
</tr>
</tbody>
</table>
| Rainfastness    | 4 hours                             | Heavy rainfall soon after may wash product of leaves | 4 hours | Heavy rainfall soon after ...

### Note:
- This information is for educational purposes only and is not an offer to sell XtendiMax™, XtendiMax™, Liberty®, or Roundup Xtend™. These products are not yet registered or approved for sale or use anywhere in the United States.
Example of Utilizing Dicamba as Part of a Weed Control Recommendation Within the Roundup Ready® Xtend Crop System

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roundup PowerMAX® + 2,4-D*</td>
<td>Roundup Xlend™ with VaporGrip™ Technology</td>
<td>Vantage® Herbicide + Roundup Xlend™ with VaporGrip™ Technology</td>
<td>Roundup PowerMAX® + Cobra®</td>
</tr>
<tr>
<td>Rowel™ or Rowel™ FX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ Roundup Xlend™ with VaporGrip™ Technology</td>
<td></td>
<td>+ SelectMAX® (if needed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Must follow labeled plant back restriction. For the full complement of herbicide options, see RoundupReadyPLUS.com. Other weed management recommendations as part of the Roundup Ready PLUS platform are available.
Example of Utilizing Dicamba as Part of a Weed Control Recommendation Within the Roundup Ready® Xtend Crop System

<table>
<thead>
<tr>
<th>1 Burnt Down</th>
<th>2 PRE or PrePlant</th>
<th>3 POST Application 1</th>
<th>4 POST Application 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roundup PowerMAX® + Rowdy™ or Rowdy™ FX</td>
<td>Warrant® Herbicide + Roundup Xtend™ with VaporGrip™ Technology</td>
<td>Roundup PowerMAX + CoTRA™</td>
<td></td>
</tr>
<tr>
<td>2,4-D® + Roundup Xtend™ with VaporGrip™ Technology</td>
<td>Roundup Xtend™ with VaporGrip™ Technology</td>
<td>(if needed)</td>
<td></td>
</tr>
</tbody>
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Nozzle Selection
- Proper nozzles and settings help determine:
  - Droplet size and potential driftable fines
  - Uniformity of spray pattern and coverage
  - Carrier volume

PREPARING THE SPRAYER: NOZZLE SELECTION
- Nozzle selection is one of the most important parameters for drift reduction
- Successful herbicide applications largely depend on correct nozzle selection and settings that help determine the application rate, uniformity of spray droplet size and carrier volume
- Proper nozzles and settings help determine:
  - Droplet size and potential driftable fines
  - Uniformity of spray pattern and coverage
  - Carrier volume
- Incorrect nozzle selection, worn or improperly functioning nozzles and poor planning can result in:
  - Off-target movement
  - Poor weed control
  - Crop damage
  - Increased application rates and costs
Roundup Ready® Xtend Crop System

PREPARING THE SPRAYER

Boom Height

- Maintain boom height at lowest efficient setting based on manufacturer’s directions
  - No more than 20 inches above target crop or pest canopy
    - Too high increases potential for spray drift
    - Too low reduces pattern overlap and coverage
  - Operate sprayer to maintain consistent boom height

PREPARING THE SPRAYER: BOOM HEIGHT

- Boom height influences spray pattern, application uniformity and the amount or time droplets are exposed to wind and evaporation
- Set boom height at lowest efficient setting based on manufacturer’s directions
  - No more than 20 inches above crop or pest canopy
  - Too high increases potential for spray drift
  - Too low reduces pattern overlap and coverage
  - Operate sprayer to maintain consistent boom height
- Automated boom height controllers are recommended with large booms to better maintain optimum nozzle-to-canopy height
Roundup Ready® Xtend Crop System

PREPARING TO SPRAY

Wind Speed
Spray when wind speeds are 3-10 mph
  • Spraying in wind speeds of 0-3 mph is restricted
    — Most unpredictable and variable in direction
    — May indicate a temperature inversion; check first before spraying
  • Faster speed increases risk of drift and potential for farther off-target movement

REMINDERS:
  — Wind speed and direction can change at any time
  — Implement a buffer as required per label instructions
  — Tools such as anemometers and wind socks can assist in gauging wind speed and direction in the field
  — Be fully informed of neighboring and downwind areas

PREPARING TO SPRAY: WIND SPEED & DIRECTION
  • While wind speed will be a requirement of the Roundup Ready® Xtend Crop System, these recommendations are good practices when spraying any herbicide
  • Spray when wind speeds are 3-10 mph
    • Spraying in wind speeds of 0-3 mph is restricted
      • Most unpredictable and variable in direction
      • A temperature inversion may be present; check first before spraying
    • Faster speed increases risk of drift and potential for farther off-target movement
  • Reminders:
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Roundup Ready® Xtend Crop System

SPRAYING

Ground Speed
- Do not exceed 15 mph ground speed
- Faster speeds can increase drift potential, by:
  - Decreasing boom stability
  - Increasing air turbulence
- To reduce drift potential, be aware of field terrain for appropriate ground speed

15 mph

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Roundup Ready® Xtend Crop System

PREPARING TO SPRAY

Weed Height

- Spray weeds less than 4 inches tall
  - Earlier applications help protect yield potential
  - Smaller weeds are more easily controlled
  - Scout fields prior to application for appropriate weed height
- Within the labeled application window, time applications to weed height versus crop stage

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