Brake® Herbicide
Foundation Preemergence for an Excellent Weed Control Program

Larry Moss
Brake® Herbicide

- Wide spectrum foundation grass and broadleaf preemergence weed control providing less weeds to be controlled by our post applications
- Excellent Pigweed (Palmer amaranth) control, you can count on
- Long residual control keeps working for you
- Works great in wet conditions, when you can’t get in the field
- Safest preemergence available for your cotton
- A unique chemistry for resistant management on your farm
- Compatible with all herbicides you need to use in cotton
- Crop rotation flexibility for your farming operation
- Earn rebates in the PhytoGen ® Residual Rewards Program

Stop Pigweed. Protect Cotton.
Brake® Herbicide

Wide spectrum foundation grass and broadleaf preemergence weed control providing less weeds to be controlled by our postemergence applications

<table>
<thead>
<tr>
<th>Broadleaf Weeds</th>
<th>Grasses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pigweeds (including Palmer Amaranth)</td>
<td>• Annual bluegrass</td>
</tr>
<tr>
<td>• Carpetweed</td>
<td>• Barnyardgrass</td>
</tr>
<tr>
<td>• Florida pusley</td>
<td>• Crabgrass</td>
</tr>
<tr>
<td>• Ground cherries</td>
<td>• Goosegrass</td>
</tr>
<tr>
<td>• Horseweed (marestail)</td>
<td>• Italian ryegrass</td>
</tr>
<tr>
<td>• Hairy fleabane</td>
<td>• Johnsongrass (seedling)</td>
</tr>
<tr>
<td>• Henbit</td>
<td>• Junglerice</td>
</tr>
<tr>
<td>• Lambsquarters</td>
<td>• Orcutt lovegrass</td>
</tr>
<tr>
<td>• London rocket</td>
<td>• Fall panicum</td>
</tr>
<tr>
<td>• Nightshades</td>
<td>• Red sprangletop</td>
</tr>
<tr>
<td>• Prickly sida (teaweed)</td>
<td>• Texas panicum</td>
</tr>
<tr>
<td>• Puncture vine</td>
<td>• Morningglories</td>
</tr>
<tr>
<td>• Purple deadnettle</td>
<td>• Cocklebur</td>
</tr>
<tr>
<td>• Purslane</td>
<td>• Sicklepod</td>
</tr>
<tr>
<td>• Ragweeds</td>
<td>• Hemp sesbania</td>
</tr>
<tr>
<td>• Spurges</td>
<td>• Florida beggarweed</td>
</tr>
<tr>
<td>• Redstem filaree</td>
<td>• Tropic croton</td>
</tr>
<tr>
<td>• Russian thistle</td>
<td>• Thistles</td>
</tr>
</tbody>
</table>

Partially Controlled
Brake® Herbicide

A unique chemistry for resistant management on your farm

• Fluridone is a bleaching herbicide
  – HRAC Group 12
• Inhibits carotenoid synthesis
  – PDS-inhibitor
• Absorbed via roots and readily translocated
• Cotton tolerance through differential uptake/sequestration
  – Do not apply postemergence
Brake® Herbicide

Crop rotation flexibility for your farming operation

<table>
<thead>
<tr>
<th>Crop to be Planted</th>
<th>Minimum Rotation Interval (months after last Brake® application)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16 fluid ounces or less Brake per acre</td>
</tr>
<tr>
<td></td>
<td>17-21 fluid ounces or less Brake per acre</td>
</tr>
<tr>
<td></td>
<td>22-32 fluid ounces or less Brake per acre</td>
</tr>
<tr>
<td>Cotton</td>
<td>0</td>
</tr>
<tr>
<td>Sweet Potato</td>
<td>2</td>
</tr>
<tr>
<td>Soybean</td>
<td>2</td>
</tr>
<tr>
<td>Peanut</td>
<td>8</td>
</tr>
<tr>
<td>Rice, wheat, barley, and rye</td>
<td>8**</td>
</tr>
<tr>
<td>Corn and sorghum</td>
<td>10***</td>
</tr>
<tr>
<td>Alfalfa, sunflower, and crops in the Solanaceae family (e.g. peppers, tobacco, tomatoes)</td>
<td>18</td>
</tr>
</tbody>
</table>

*West TX only add 4 months to rotational restrictions for all crops except cotton and peanut.

**If used as a cover crop (i.e. will not be harvested), wheat, barley, and rye may be planted 5 months after the last Brake application if no more than 16 fl. ounces /acre were applied.

***Minor chlorosis and stunting of corn and sorghum may occur, especially if heavy rainfall occurs during or soon after emergence, but plants typically outgrow these effects and develop normally.

If this product is used for two consecutive years in the same field at a rate greater than 16 fl oz per acre, only plant cotton, peanut or sweet potato the following year in those fields.
Brake® Herbicide Programs

- Brake® must be used in a herbicide program
- Scout aggressively and overlap residuals with POST applications
- Recommend Brake + other residual preemergence
- Followed by postemergence + a residual within 18 days
- If early postemergence is timely, mid or late postemergence may not be necessary
“The key to weed control is being timely. If mother nature doesn’t allow me to spray when I want, **Brake gives me peace of mind.** Peace of mind is PRICELESS.”

- Missouri cotton grower (4 years of experience)

“The addition of Brake to our weed control program has **significantly reduced our pigweed population** and has **decreased the amount of labor** required in the fields for manual pigweed control.”

- Georgia cotton grower (1st time user)
Brake® Herbicide

Excellent Pigweed (Palmer amaranth) control, you can count on

Palmer Amaranth Control   Jackson, TN
47 Days After Planting
Brake® Herbicide

Long residual control, keeps working for you

72 Days After Planting
PRE: Brake + Cotoran
14-d POST: Liberty + Dual Magnum
Brake® Herbicide

Works great in wet conditions, when you can’t get in the field

1.2” Total Rainfall/Irrigation in First Week after Application
9” Total Rainfall/Irrigation, 38 days after application
**Brake® Herbicide**

Safest preemergence available in cotton

13 days after application

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Fluridone Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated</td>
<td></td>
</tr>
<tr>
<td>0.5x</td>
<td></td>
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<tr>
<td>1x</td>
<td></td>
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<tr>
<td>2x</td>
<td></td>
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</tbody>
</table>
Brake® Herbicide
Compatible with all herbicides you need to use in cotton

Brake® Mix Partners
26 Days After Application

% Palmer amaranth Control

21 fl oz Brake 32 fl oz Brake 16 fl oz Brake 16 fl oz Brake 16 fl oz Brake 16 fl oz Brake 16 fl oz Brake 16 fl oz Brake + Reflex + Cotoran + Diuron + Prowl + Warrant + Caparol
## 17-18 PhytoGen Residual Rewards Program

**START CLEAN**  
Start the season off right. Apply pre-emergent.

**PLANT PHYTOGEN® COTTONSEED**  
Plant PhytoGen® brand cotton varieties (WRF), WideStrike® 3 Insect Protection (W3IP), or BASF® (W3HE) in a qualifying state.

**PURCHASE**  
Purchase qualifying crop protection products from an authorized retailer from September 1, 2017 to August 31, 2018 and apply at labeled rates.

**EARN YOUR REWARD**  
Your PhytoGen Residual Rewards check will be mailed to your retailer.

### New 18-19 program expected soon

### CROP PROTECTION PROGRAMS

<table>
<thead>
<tr>
<th>Region</th>
<th>Burndown</th>
<th>AT PLANT</th>
<th>Early &amp; Mid Post</th>
<th>Layby</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOUTH TEXAS</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>SOUTHWEST</td>
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<td></td>
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<tr>
<td>SOUTHEAST</td>
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<tr>
<td>MID-SOUTH</td>
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</tbody>
</table>

### PARTICIPATING HERBICIDE PRODUCTS

<table>
<thead>
<tr>
<th>Qualifying Products</th>
<th>Use Rates AC</th>
<th>WRF Earnings</th>
<th>WRF Earnings</th>
<th>WRF Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>EnlistOne</td>
<td>2 pt.</td>
<td>–</td>
<td>–</td>
<td>$2.00</td>
</tr>
<tr>
<td>EnlistDuo</td>
<td>4.76 pt.</td>
<td>–</td>
<td>–</td>
<td>$2.00</td>
</tr>
<tr>
<td>Caparol</td>
<td>2 pt.</td>
<td>$0.40</td>
<td>$0.40</td>
<td>$0.40</td>
</tr>
<tr>
<td>DualMagnum</td>
<td>1 pt.</td>
<td>$1.50</td>
<td>$1.50</td>
<td>$1.50</td>
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<tr>
<td>Gramoxone SL</td>
<td>2.5 pt.</td>
<td>$0.40</td>
<td>$0.40</td>
<td>$0.40</td>
</tr>
<tr>
<td>Reflex</td>
<td>1 pt.</td>
<td>$0.40</td>
<td>$0.40</td>
<td>$0.40</td>
</tr>
<tr>
<td>Valor</td>
<td>2 oz.</td>
<td>$1.00</td>
<td>$1.00</td>
<td>$1.00</td>
</tr>
<tr>
<td>Brake</td>
<td>2 fl oz.</td>
<td>$2.00</td>
<td>$2.00</td>
<td>$2.00</td>
</tr>
<tr>
<td>Brake F16</td>
<td>16 fl oz.</td>
<td>$1.00</td>
<td>$1.00</td>
<td>$1.00</td>
</tr>
<tr>
<td>Staple’LX</td>
<td>2.1 fl oz.</td>
<td>$1.00</td>
<td>$1.00</td>
<td>$1.00</td>
</tr>
</tbody>
</table>

### PARTICIPATING INSECTICIDE PRODUCT

| Intrepid Edge Insecticide | 7 oz. | $1.00 | – | – |
What About The Price?

- Brake gives excellent residual pigweed control as part of a preemergence residual program to get your cotton started clean
- You may be able to reduce late post or layby treatments
- The complete herbicide program is usually competitively priced with other programs targeting resistant Pigweed

Stop Pigweed. Protect Cotton.
Brake - Moisture Influence

13 Days After Application

% Palmer amaranth Control

- 0.25” Irrigation
- 0.5” Irrigation
- 0.75” Irrigation

16 fl oz Brake/ac
16 fl oz Brake + 12 fl oz Direx/ac
16 fl oz Brake + 24 fl oz Cotoran/ac
16 fl oz Brake + 12 fl oz Reflex/ac
16 fl oz Brake + 32 fl oz Warrant/ac

Legend:
- bc
- c
- ab
- a
- b
What About Moisture Needed?

- Yes, Brake needs ½ inch of moisture to provide maximum effectiveness
  - Then it stays put and works great in successive rains or wet weather that may keep you out of the field
  - Sandy or lighter soils may dry out more quickly and reduce effectiveness between periods of adequate moisture for activation

- Solutions:
  - Plan to irrigate soon after planting
  - Pick a preemergence residual partner which is active with less water needed to activate
  - Time your Brake preemergence application pre-plant before a rain to ensure activation

Stop Pigweed. Protect Cotton.
Brake® – Overlapping Residuals

57 Days After PRE
43 Days After POST 1
29 Days After POST 2

POST 1: Liberty + Dual Magnum
POST 2: Roundup + Warrant
Brake® Herbicide

- Foundation to a program
- Wide Spectrum
- Excellent Pigweed control
- Extended Residual
- Safest to Cotton

Stop Pigweed. Protect Cotton.
Pigweed Factoids

*Amaranthus palmeri* is a species of flowering plant in the amaranth genus.

- Palmer amaranth is native to the desert southwest and northern Mexico
- Produce up to one million seed per plant
- Can grow 2 inches to 3 inches per day
- 3% missed Palmer is 3,000 Palmer/acre
- 240 per acre can reduce yield 18%
- 1,440 per acre can reduce yield 78%
- Palmer amaranth’s emergence period extends well into the typical crop season and can, at times, occur after crop harvest
- Resistance to glyphosate discovered in 2006
- Has also evolved resistance to ALS inhibitors, triazines, HPPD inhibitors, and dinitroanilines
- Palmer amaranth can be toxic to livestock due to presence of oxalates and nitrates
Cotton Factoids

- Cotton dates from at least 7,000 years ago making it one of the world’s oldest known fibers.
- Cotton fiber can be woven or knitted into fabrics such as velvet, corduroy, chambray, velour, jersey and flannel. In addition to textile products like underwear, socks and t-shirts, cotton is also used in fishnets, coffee filters, book binding and archival paper.
  One bale (480 lbs.) can make:
  - 215 pairs of jeans
  - 250 single bed sheets
  - 750 shirts
  - 1,200 t-shirts
  - 4,300 pairs of socks
  - 680,000 cotton balls
  - 2,100 pairs of boxer shorts
  - 3,000 baby diapers
- Cotton seed is fed to cattle and crushed to make oil. This cottonseed oil is used for cooking and in products like soap, margarine, emulsifiers, cosmetics, pharmaceuticals, rubber and plastics.
- Linters are the very short fibers that remain on the cottonseed after ginning. They are used to produce goods such as bandages, swabs, money and x-rays.
- Cotton can absorb up to 27 times its weight in water.
- American ‘paper’ money is a blend of 75% cotton and 25% linen.