

PPO Resistance Confirmed in Georgia Palmer amaranth Population

PPO Resistance in GA Palmer Amaranth		
Herbicide	=	Level of resistance
Reflex	=	≥ 227 times
Cobra	=	≥ 1244 times
U. Blazer	=	≥ 296 times
BAS 850*	=	≥ 9 times

applied post emergence ←

Herbicide Level of resistance		
Reflex	=	≥ 3 times
Valor	=	≥ 31 times
Goal	=	≥ 2 times
BAS 850*	=	≥ 7 times

applied preemergence →

*BAS 850 = Trifludimoxazin (Vulcanus)

Controlling Volunteer Peanut

1. Roundup + Liberty or Roundup + dicamba are effective; peanut must be larger than a saucer plate for consistent control by Liberty alone.
2. Sequential Roundup applications are almost always needed with the continual emergence of peanut.
3. For residual control, Cotoran + Staple is currently the best option with only fair control.

Control Nutsedge Patches Before it Takes the Field

1. If nutsedge patches are up prior to planting, apply 60 oz/A of Roundup PMAX 3 or equivalent and follow with paraquat 5-7 days later.
2. Reflex applied preemergence suppresses yellow nutsedge only.
3. Sequential applications of Roundup in-season are critical to overall success; Envoke is labeled overtop of cotton and is effective but one needs to be prepared for cotton yellowing and possible stunting.
4. A directed layby application is absolutely required; diuron + MSMA + Envoke or Roundup + diuron + Envoke are extremely effective.

Pesticide Stewardship

Protecting pollinators, endangered species, the environment, pesticide applicators, & consumers of agricultural pesticides must be a top priority for all of Georgia agriculture. Growers and their applicators must ensure pesticides are applied on and remain in the targeted area!

Numerous Herbicides Face Immediate Regulatory Challenges



- Growers and their ability to steward these tools will determine the future particle use of all pesticides.
- UPW 2023 will occur in March/April; all applicators of XtendiMax, Engenia, and Tavium must attend the in-person training!



Managing Grasses in a Dicamba System

Reduced grass control, especially goosegrass, occurs with nearly every Roundup + dicamba application when grasses are ≥ 4", goosegrass > 1", when treated (Fig 1). Be timely (Fig 2) or make sequential applications.

Fig 1. Texas Millet and Large Crabgrass

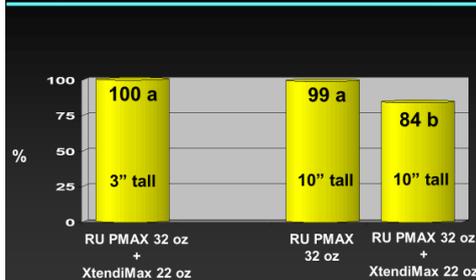


Fig 2. Minimizing Grass Escapes From a Roundup + Dicamba System

1. START WITH THE CORRECT PREEMERGENCE!
2. Full rate of Roundup (PowerMax 3 = 30 oz/A)
3. Grass < 4" grass; goosegrass < 1", when treated
4. Environmental conditions have huge impact
5. Not timely – make sequential applications

Managing Tropical Spiderwort

Spiderwort infestations continue to expand across Georgia agronomic fields. Effective residual herbicides must be overlapped throughout the season and it is critical to make a layby directed application just prior to row closure.

Spiderwort – Loving a Weak Dicamba System



Fig 3. Spiderwort – Overlap Effective Residuals

1. Warrant, Dual, and Outlook residual are excellent
2. Gramoxone and 2,4-D are excellent on emerged plants
3. Dicamba – sequential applications fair at best
4. Roundup – fair if very small
5. Liberty – no good
6. Layby – excellent options, must use residual!

Potential programs

- Warrant + partner (for pigweed) applied preemergence
- RU + Auxin + Dual/Warrant/Outlook OR RU + Staple Post 1
- RU + Auxin + Dual/Warrant/Outlook Post 2
- Direx + MSMA + Dual, Warrant, or Outlook OR RU + Direx + Dual, Warrant, or Outlook at Layby.....layby is the key!

The Cotton Weed Management Program – Systems Approach, Diversified, Integrated, Timely, and with Smart Decisions!!!

Step 1. Remove weeds prior to planting, especially Palmer amaranth, annual grasses, and tropical spiderwort!

Cover crops, tillage, and herbicides are all important components of farm sustainability. **Cover crops** reduce weed emergence decreasing herbicide selection pressure. **Deep turning** can place weed seeds at a depth where they cannot emerge. All weeds and cover crops, with the exception of cereal grains, should be killed at least 14 days before planting. Valor at 2 oz/A and/or Direx at 1 to 2 pt/A are needed for residual control in most fields. Dicamba or 2,4-D would be beneficial to control primrose, horseweed, fleabane, and radish (2,4-D is much more effective on radish). Gramoxone + Direx offers the most effective option for emerged Palmer amaranth while mixtures of glyphosate + 2,4-D + Valor or Direx or glyphosate + dicamba + Valor or Direx are effective on most weeds. *Follow all plant back interval requirements.*

Step 2. Apply two residuals at planting, both herbicides should be effective on Palmer amaranth!

<p>1) Brake + Reflex or Brake + Warrant PRE 2) Diuron + Warrant PRE 3) Reflex + Direx or Reflex + Warrant PRE 4) Treflan/Prowl incorporated followed by Reflex + Warrant or Direx PRE</p>	<p>1) Brake at 1 pt/A is an effective rate in mixtures but will require $\geq 0.5''$ rain/irrigation to become fully active. 2) Warrant at 32-40 oz/A, for most soils, is in order. Effective on most grasses, pigweeds, and is <u>essential for spiderwort</u>. 3) Direx at 10-16 oz/A is needed for most soils; lower rates on sands or under intense irrigation. 4) Reflex at 10-12 oz/A is ideal for most soils when used in these mixtures; best option for Palmer. NOTE: Add paraquat if pigweed emerged; jar test advised if mixing with Brake.</p>
--	--

Step 3. Sequential applications are needed for most fields, regardless of cotton technology being grown!

POST 1 ~15-17 d after PRE (assuming PRE is activated)	POST 2 ~ 15-17 d after POST 1 ¹ (before 9-leaf cotton)
LIBERTY OR LIBERTY + ROUNDUP SYSTEMS	
Liberty + Roundup + Dual Mag., Outlook, or Warrant* or Liberty + Dual Mag, Outlook, Warrant, or Staple	Liberty + Dual Mag., Outlook, or Warrant* (Including Roundup will improve weed control; crop injury can be significant)

*Mixtures of Liberty + Roundup + residual can cause 25+% injury in some conditions. Mixing Liberty with Roundup may reduce grass control, maximize Roundup rate.

ENGENIA OR XTENDIMAX SYSTEMS – XTENDFLEX COTTON	
Engenia 12.8 oz/A or XtendiMax 22 oz/A + approved glyphosate** or Tavium 56 oz/A + glyphosate (cannot apply overtop after 6-leaf cotton)	Engenia 12.8 oz/A or XtendiMax 22 oz/A + approved glyphosate** or Liberty + Dual Mag, Outlook, or Warrant

**Warrant (2 pt/A), Dual Mag. (1 pt/A), or Outlook (12.8 oz/A) mixed with glyphosate + Engenia or XtendiMax improves residual weed control; however, more injury often reaching 25+% occurs in some conditions. Visit www.engeniatankmix.com, www.xtendimaxapplicationrequirements.com, and www.TaviumTankMix.com for all application requirements.

ENLIST ONE SYSTEMS – ENLIST COTTON	
Enlist One 2 pt/A + Liberty or approved glyphosate***	Enlist One 2 pt/A + Liberty or approved glyphosate***

***Warrant (2 pt/A) or Dual Mag. (1 pt/A) mixed with Enlist One + Liberty or glyphosate improves residual weed control; however, more injury often reaching 25+% occurs in some conditions. Visit web site for latest information on approved tank mixtures, adjuvants and drift reduction agents for Enlist One or Enlist Duo (www.enlisttankmix.com).

Step 4. MAKE A DIRECTED LAYBY! Diuron + MSMA or Roundup + diuron are effective options to control many weeds; add Envoke for morningglory or nutsedge or add Warrant, Outlook, or Dual Magnum for tropical spiderwort and annual grasses.