



Weed Control in Conventional Soybeans: “Back to the Future”

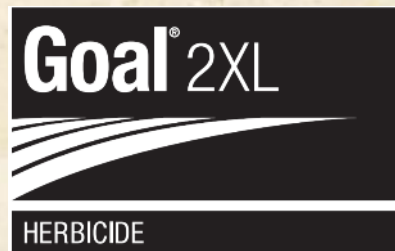
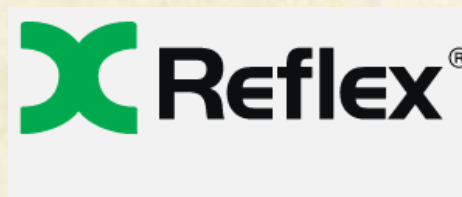
Eric P. Prostko
Extension Weed Specialist
Dept. Crop & Soil Sciences



Weed Control in Conventional Soybeans



- All depends upon the development and spread of PPO resistance (WSSA MOA #14)!



PPO-Resistance in US



- First identified in US in 2002
 - *tall waterhemp* (Illinois)
- 24 reported cases
- 4 weed species
 - *tall waterhemp*, *Palmer amaranth*, *common ragweed*, *goosegrass*
- 1 recently confirmed case in GA



PPO-Resistance in GA



Reflex Control of Palmer Amaranth (10 DAT)



NTC
(0 oz/A)
0% injury



Reflex Rate Response
(6-240 oz/A)
55-77% control

Palmer Amaranth Response to Valor PRE. UGA Tifton Greenhouse - 2021



**Non-treated
control**

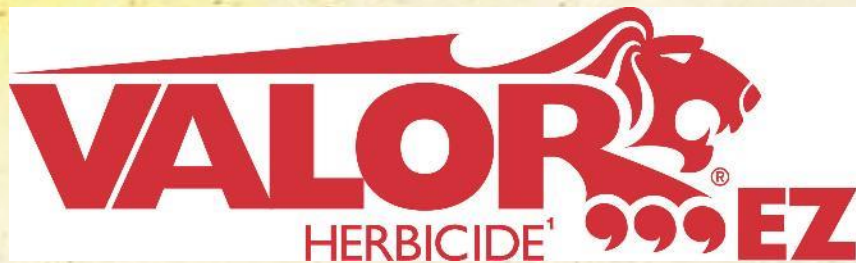


**Valor PRE
Susceptible
Population**



**Valor PRE
PPO POST
Resistant
Population**

Valor in GA Soybeans?



- Effective, legal and labeled but.....
- Valor fb Reflex/Prefix/Warrant Ultra is a good weed control program but a **bad** resistance mgt plan!
 - *Unless you hand-weed escapes!*
- Weed control in cotton and peanut without Valor/Reflex?

“Old School”



- What were you doing before 1996?
- What weeds were causing you problems before 1996?

Top Herbicides Used in Georgia Soybeans (1995)

(330,000 acres planted)



Top 10 Troublesome Weeds in Georgia Soybeans (1995)



1. sicklepod
2. annual MG
3. pigweed
4. coffee senna
5. cocklebur
6. Johnsongrass
7. crabgrass
8. Texas panicum
9. FL beggarweed
10. yellow nutsedge



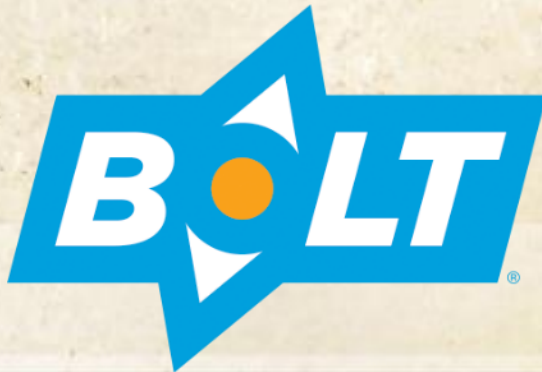
Conventional Soybeans

Herbicides



STS®

herbicide tolerant trait



- **PPO resistant weeds = SOL (really!)**
- Metribuzin – PRE
- Prowl or Group 15's
- Reflex, Cobra, Ultra Blazer, Prefix, Warrant Ultra
- Classic or FirstRate (sicklepod + MG)
 - STS® (1993) - single gene (non-GMO)
 - Bolt™ (2015) - 2 genes (non-GMO)

NON-GMO Soybean Cultivars with STS and Metribuzin Tolerance????



- GoSoy 48C17S
 - *Root-knot susceptible*
- Virtue 4520S, 4921S, V4720S
 - *Root-knot susceptible*



Metribuzin Products




Manufacturer	Trade Name	Active Ingredients
FMC	Authority MTZ	sulfentrazone + metribuzin
Syngenta	Boundary	s-metolachlor + metribuzin
Corteva	Canopy Canopy Blend	chlorimuron (10.7%) + metribuzin (64.3%) chlorimuron (8.3%) + metribuzin (50%)
NuFarm	Cloak	chlorimuron (10.7%) + metribuzin (64.3%)
Valent	Fierce MTZ	flumioxazin + pyroxasulfone + metribuzin
Loveland	Intimidator	s-metolachlor + fomesafen + metribuzin
NuFarm	Panther MTZ	flumioxazin + metribuzin
NuFarm	Panther Pro	flumioxazin + imazethapyr + metribuzin
Valent	Mauler	metribuzin
UPL	TriCor	metribuzin
Corteva	Trivence	flumioxazin + chlorimuron + metribuzin

Anthem Max, Dual, Warrant, Zidua, Outlook, Prowl????



 **Dual Magnum[®]**



 **Zidua[®] SC**
Herbicide Group 15 Herbicide

Outlook[®]
Herbicide

ANTHEM[®]
 **MAXX**
HERBICIDE

PROWL[®] H₂O
herbicide

Soybean Weed Control - 2021



Soybean Weed Control - 2021



NTC



Reflex 2SL @ 24 oz/A
Classic 25DG @ 0.5 oz/A
2,4-DB 2SL @ 2 oz/A
Induce @ 0.25% v/v
Applied 17 DAP



SB-04-21
July 19
53 DAP

Reflex @ 24 oz/A + Classic @ 0.5
oz/A + 2,4-DB @ 2 oz/A - Applied 17
DAP (V2)



SB-04-21
June 16
30 DAP

Classic 25DG @ 0.67 oz/A + NIS Injury on Non-STS Soybeans



WT-01-21
July 19
6 DAT

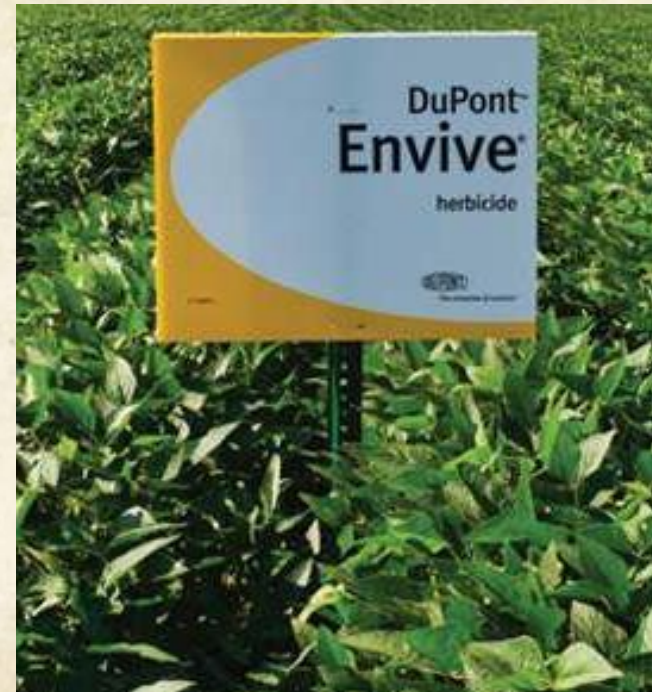
PPO Injury on Soybean



Envive Rates/Crop Injury



- Corteva
- 41.3% WG
 - Classic – 9.2%
 - **Valor** – 29.2%
 - Harmony – 2.9%
- Rate range of 2.5-4.0 oz/A
- I prefer 2.5 oz/A
- Similar injury situation occurs with **Valor XLT**
 - **Valor XLT = Valor (30%) + Classic (10.3%)**
- Most likely cause is Classic
- STS/Bolt technologies??



Soybean Injury Caused by Envive 41.3WG @ 3.5 oz/A 10 DAP



NTC

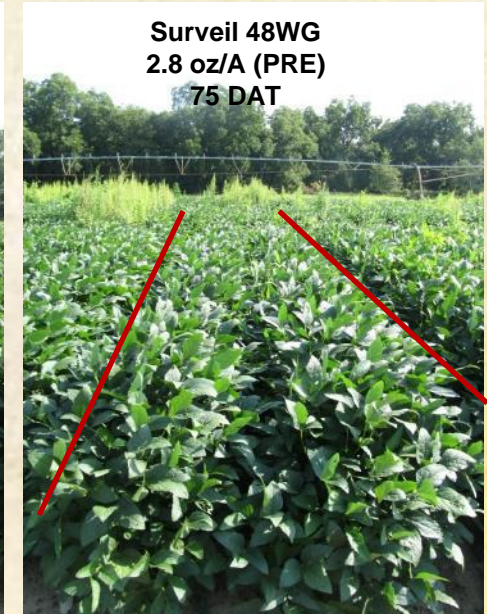


Envive

Surveil 48WDG



- Corteva
- **Valor** (36%) + FirstRate (12%)
- 2.8 to 4.2 oz/A
- PRE within 3 days of planting
- Better residual control of annual mg than Valor alone?
- **2.8 oz/A**
 - 2 oz/A Valor 51WG
 - 0.4 oz/A FirstRate 84WG



Sonic 70WG



- Corteva
- **Spartan** (62.1%) + FirstRate (7.9%)
- PPI or PRE
- Cotton rotations??



NTC



Sonic 70WG
3 oz/A (PRE)

Conventional Soybeans POST Grass Control



 **Assure® II**
HERBICIDE

 **Fusilade® DX**

Poast®
Herbicide

SELECTMAX®
HERBICIDE
WITH INSIDE TECHNOLOGY™

PE-42-21
June 16
29 DAT
4'-5" weeds at application

Narrow Rows and Weed Control - Soybeans



- “A review of row spacing experiments in which an initial weed management practice had been accomplished revealed that in **64% of the cases (72 of 113 site-years)**, less late-season weed density and/or biomass, or greater late-season weed control, was achieved in narrow-row (< 30”) compared to wide-row soybean production systems.”



- *Bradley, K. W. 2006. A review of the effects of row spacing on weed management in corn and soybean. Online. Crop Management doi:10.1094/CM-2006-0227-02-RV.*

On-Time



- Works 100% of the time
 - Excellent crop safety
 - any GPA or nozzle
 - tank-mix with anything
 - no rotational restrictions
 - FREE
- **Obstacles**
 - Farm size
 - Weather
 - breakdowns
 - Beach Vacations
 - ???

Conventional Soybean Weed Control – Summary

(assuming no PPO resistance)



- start clean
- narrow rows (<30")
- metribuzin + Group 15 or Prowl - PRE
- timely POST's
 - *Reflex, Prefix, Warrant*
Ultra, Cobra, Ultra Blazer,
Classic, FirstRate
- hand-weed escapes



Questions/Comments

eprostko@uga.edu

www.gaweed.com



**UNIVERSITY OF
GEORGIA**
College of Agricultural &
Environmental Sciences