



2025 Soybean Weed Control Update

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Dept. Crop & Soil Sciences



UNIVERSITY OF
GEORGIA
College of Agricultural &
Environmental Sciences

Soybean Weed Control Simplified



- Start clean
- Narrow rows (< 30")
- **PRE**
 - Metribuzin + Group 15 or Prowl
 - tolerant variety
 - Irrigation or rainfall
- **POST + Residual (weeds <3" tall)**
 - Post = Reflex or Prefix or Warrant Ultra or Liberty or Zalo or Enlist One (2,4-D choline) or Enlist Duo (glyphosate + 2,4-D choline)
 - Residual = Anthem Flexx/Max or Dual or Warrant or Outlook or Zidua
 - *Check tank-mix sites first*



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
Syngenta	Tendovo	metribuzin + s-metolachlor + chloransulam
UPL	TriCor	metribuzin
Corteva	Trivence	flumioxazin + chlorimuron + metribuzin

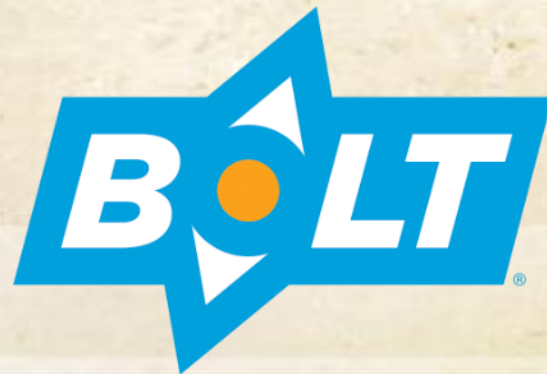
Conventional Soybeans



FirstRate[®]
HERBICIDE

Classic[®]
HERBICIDE

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)

Soybean Weed Control – 2024

Conventional Systems (15" row spacing)



NTC



Tricor 4F @ 8 oz/A
Zidua 4.17SC @ 2.5 oz/A
PRE
Reflex 2SL @ 24 oz/A
Classic 25DG @ 0.5 oz/A
Induce @ 0.25% v/v
POST (31 DAP)

SB-04-24
August 19
104 DAP

Soybean Weed Control – 2024

Conventional Systems (15" row spacing)



NTC

SB-04-24
August 19
104 DAP



Tricor 4F @ 8 oz/A
Dual Magnum 7.62EC @ 16 oz/A
PRE
Reflex 2SL @ 24 oz/A
Classic 25DG @ 0.5 oz/A
Induce @ 0.25% v/v
POST (31 DAP)

But would be OK with



- **PRE**

- **Valor** or
- **Envive** (Valor + Classic + Harmony) or
- **Surveil** (Valor + FirstRate) or
- **Fierce** (Valor + Zidua) or
- **Fierce MTZ** (Valor + Tricor + Zidua) or
- **Trivence** (Valor + Tricor + Classic)

- **POST**

- Roundup Xtendimax/
Engen residual
(Xtend System) or
- Liberty + residual
(Liberty-Link or
XtendFlex System) or
- Liberty + Enlist One +
residual (Enlist System)

Soybean Weed Control - 2023



NTC



Valor EZ 4SC @ 2 oz/A
Zidua 4.17SC @ 2.5 oz/A
PRE

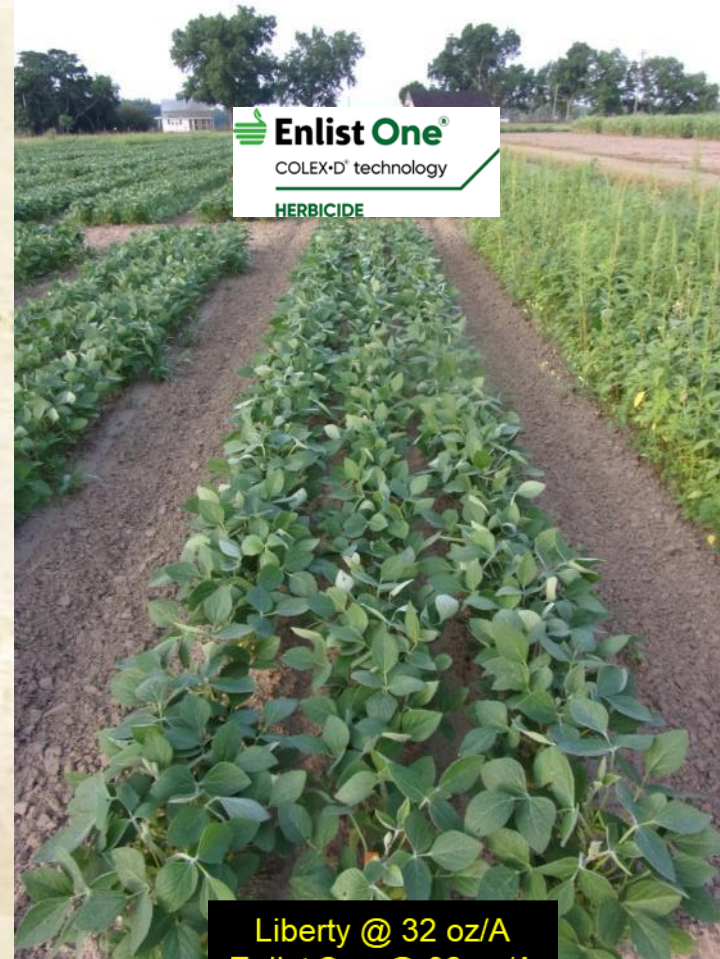
SB-05-23
June 6
48 DAT

Enlist Soybeans - 2023



SB-04-23
June 6
29 DAT

NTC



Liberty @ 32 oz/A
Enlist One @ 32 oz/A
Everprex @ 16 oz/A
15 GPA - AIXR11002

Liberty® ULTRA 1.76SL



- BASF
- glufosinate-P-ammonium
 - *More active isomer*
 - *Dual vs. Dual Magnum*
 - *Metolachlor vs. S-metolachlor*
- lower use rate (19-29 oz/A)
- Mandatory downwind spray buffer
 - *ground = 10'/aerial = 50'*
- 3 points for ESA runoff/erosion
 - *Tift Co. = 2 points*
 - *sandy soils = 2 points*

Liberty® ULTRA

Herbicide – Powered by **Glu-L™** Technology

Liberty® ULTRA herbicide — Powered by Glu-L™ Technology is a nonselective herbicide that provides control of a broad spectrum of broadleaf and grassy weeds in LibertyLink or glufosinate-resistant crops.

Active Ingredient:

Glufosinate-P-Ammonium* 18.7%**

Other Ingredients: 81.3%

Total: 100.0%

* CAS Number 73777-50-1

** Equivalent to 1.76 pounds of active ingredient per U.S. gallon; equivalent to 1.61 pounds per U.S. gallon acid equivalent, as glufosinate-P.

INTRODUCING ZALO™ HERBICIDE — DELIVERED BY PROLEASE™ TECHNOLOGY



Delivered By
ProLease™
Technology

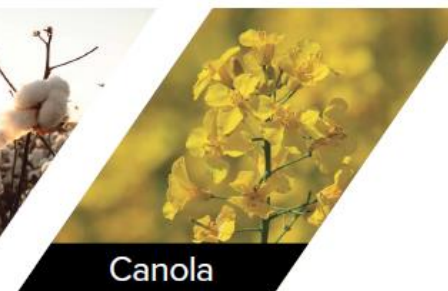
**POSTEMERGENCE CONTROL
WITH MULTIPLE MODES OF
ACTION FOR TRAIT-ENABLED
CROPS IN A CROP-SAFE
FORMULATION**



Soybean



Cotton



Canola

ACTIVE INGREDIENTS

- Glufosinate
- Quizalofop

POSTEMERGENCE TIMING



- Early-Post
- Mid-Post —
Without Cutoff Dates



Expected FIFRA Section 3 Registration

FALL 2023

Formulation	Soluble liquid — 2.57 lb/gal 2.34 lb glufosinate 0.23 lb quizalofop
Use Rate	Soybean/Cotton: 32-43 fl oz/A; up to 72 fl oz/A per year Canola: 22-29 fl oz/A; up to 72 fl oz/A per year
Restricted Entry Interval (REI)	12 hours (<i>under EPA review</i>)
Rainfast	Rainfall or overhead irrigation within 4 hours after application may result in reduced weed control
Expected Pack Sizes	2x2.5 gallon jugs & 250 gallon totes



ZALO™ Herbicide has not yet received regulatory approval. EPA registration is pending.

The product is not yet offered for sale. The information shown here is for informational purposes only. Always check with your state agency responsible for pesticide registration to ensure registration status.
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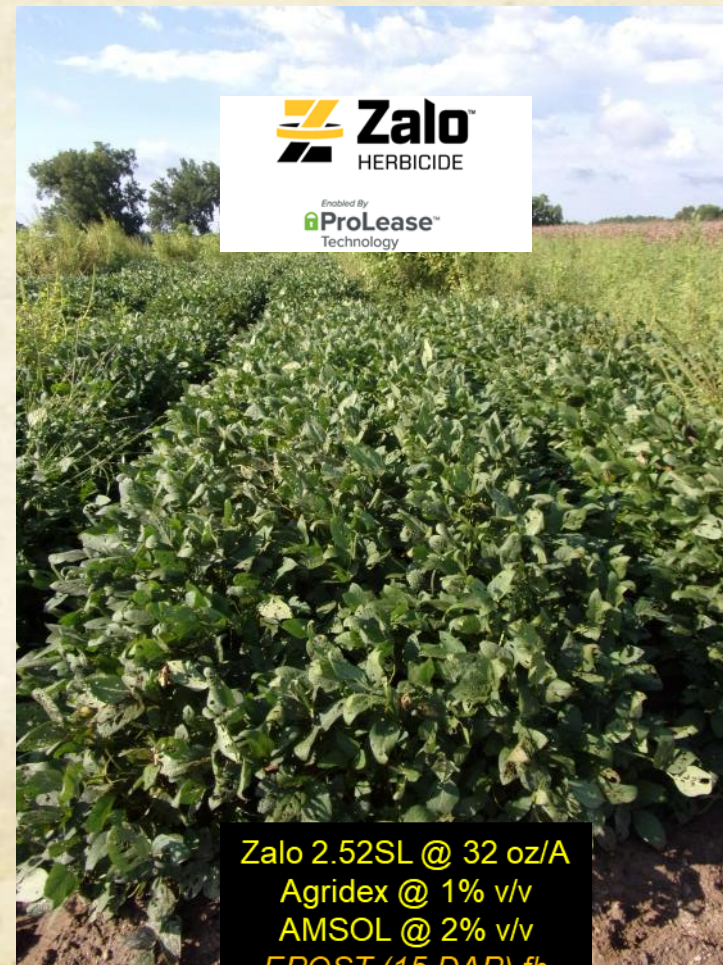
Soybean Weed Control – 2024

Liberty Systems (15" row spacing)



NTC

SB-04-24
August 19
104 DAP



Zalo 2.52SL @ 32 oz/A
Agridex @ 1% v/v
AMSOL @ 2% v/v
EPOST (15 DAP) fb
POST (31 DAP)

Pre-Plant Burndowns



NTC



Helmquat 3SL @ 32 oz/A
Rancor 4F @ 16 oz/A
AMSOL @ 2% v/v
MSO @ 1% v/v

BN-03-24
April 10
20 DAT

Double-Cropped Soybean Behind Field Corn



- **What herbicides are safe?**
 - Roundup, Liberty, Group 15's, Atrazine (?)
- **What about the HPPD herbicides?**
 - Callisto = 10 months
 - Impact = 9 months
 - Laudis = 8 months
 - Shieldex = 9 months
- **What about south Georgia?**
 - Irrigation, sandier soils, low OM
 - less carryover potential (?)

HPPD/Soybean Test - 2023

Planted 92 DAT



Impact



NTC



Callisto



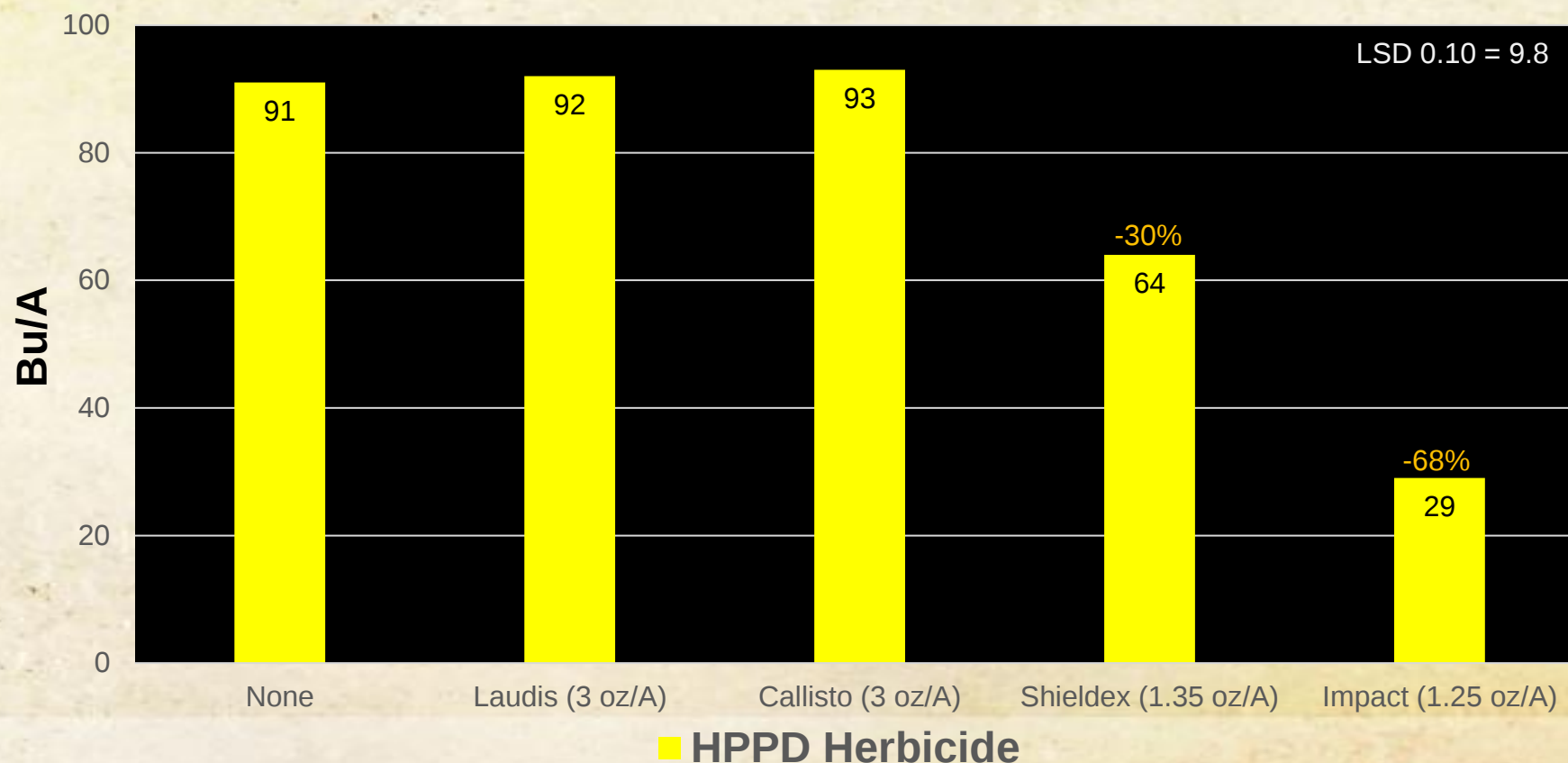
Shieldex



Laudis



Soybean Yield Response to HPPD Herbicides Applied 92 DBP* - 2023



SB-03-23
Asgrow AG66XF2
PD: July 3
7.5" rows

*DBP = days before planting.

Soybean/HPPD – 2024

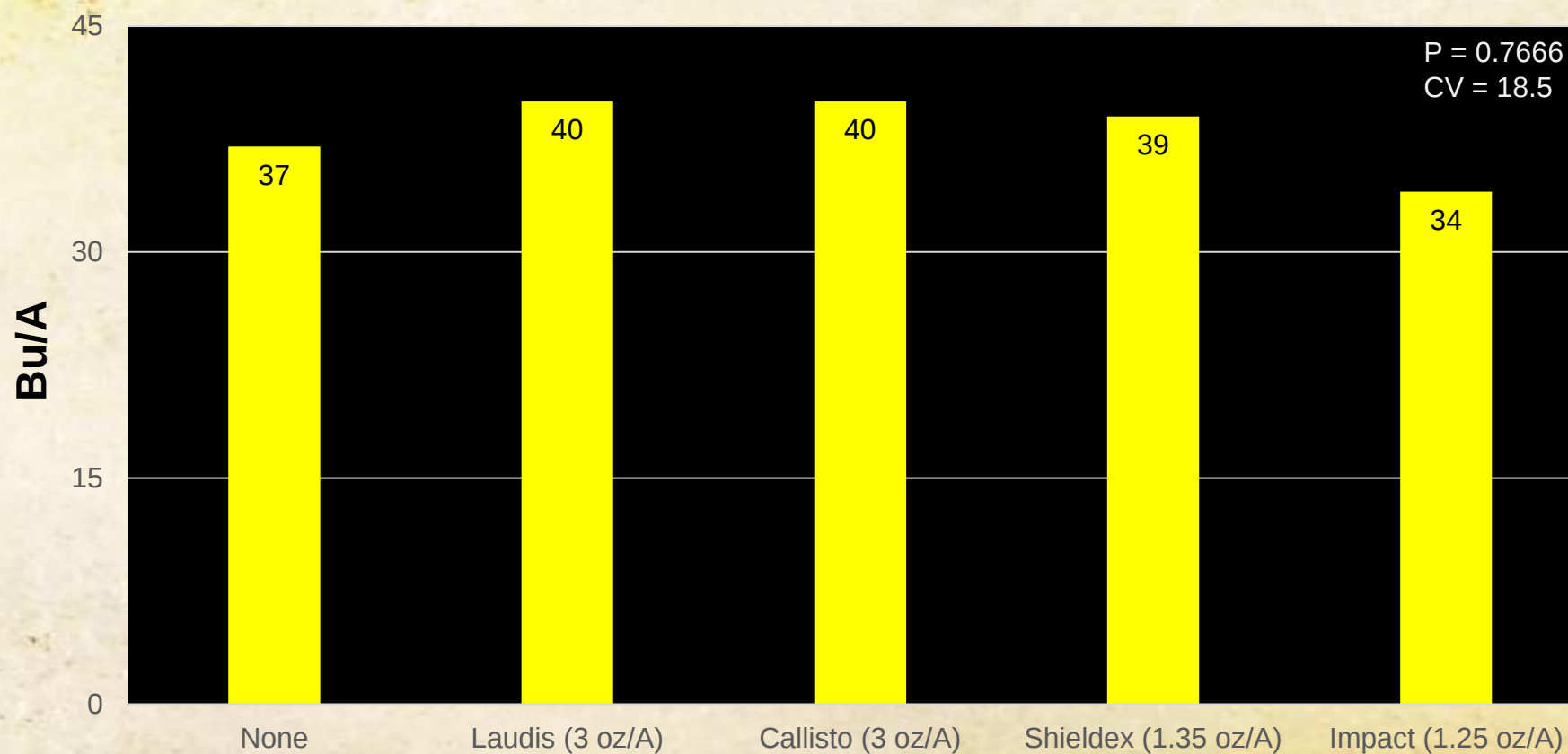
Planted July 8 (90 DAT)



NTC



Soybean Yield Response to HPPD Herbicides Applied 90 DBP* - 2024



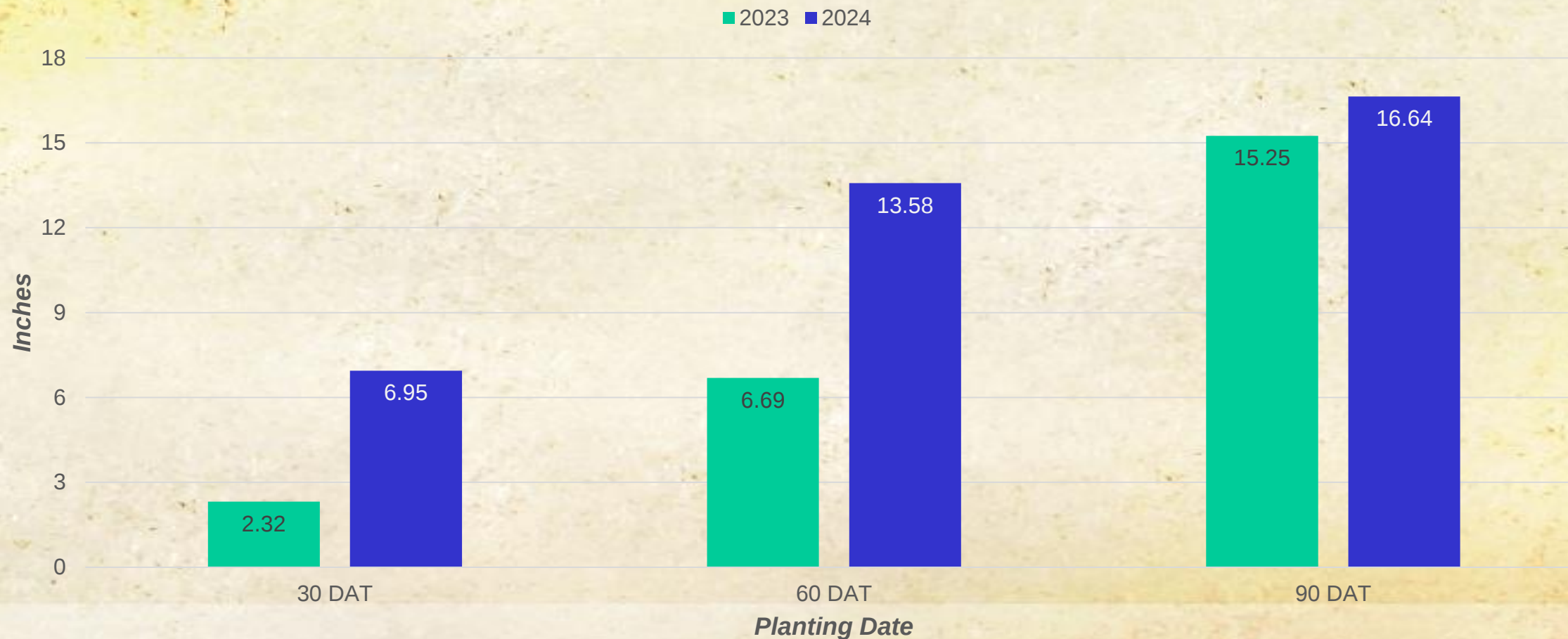
■ HPPD Herbicide

SB-03-24
Asgrow AG66XF2
PD: July 8
7.5" rows

*DBP = days before planting.

Soybean/HPPD Tests (2023-2024)

Cumulative Rainfall From Application to Planting



Late Applications of PPO Herbicides



- The diphenyl ether herbicides (**Cobra, Reflex, Ultra Blazer**) applied at reproductive growth stages (**R1, R3, R5**) have no negative impact on developing soybean flowers and pods. Even with foliar injury as high as 55%, soybean plants are able to compensate for this injury and produce yields comparable to nontreated soybean plants. ***Applications made by growers as “rescue” applications late in the season do not lead to soybean yield loss.***

– Source: Beam et al. 2018. *Weed Technology* 32:444-447



Green Stem Syndrome

- **SUCKS!**
- cultivar
- stink bug/kudzu bug feeding
- late herbicide application
- fungicide application (“strobi”)
- infection by one of several soybean viruses
- late planting and/or emergence
- mixed seed lots (seed lots of blended cultivars)
- Paraquat not consistent



Asgrow 66XF2 Planted June 7
10 Days after Paraquat (Harvest Aid)
11/04/24

Soybean Harvest Aids



Soybean Reproductive Growth Stages



Source: LSU, Dr. Jim Griffin et al.

R7 = beginning maturity, 1 pod on mainstem has reached mature pod color



© Iowa State University Extension

- Roundup (glyphosate)
 - 7 d PHI
- Gramoxone (paraquat)
 - 15 d PHI
- Aim (carfentrazone)
 - 3 d PHI
- Sharpen (saflufenacil)
 - 3 d PHI
- Defol (sodium chlorate)
 - 10 d PHI

■ Weed Control in Grain Sorghum – 2025

■ *Eric P. Prostko,
Extension Weed Specialist*



Seth McAllister, Terrell Co. (October 2022)

Grain Sorghum Weed Control

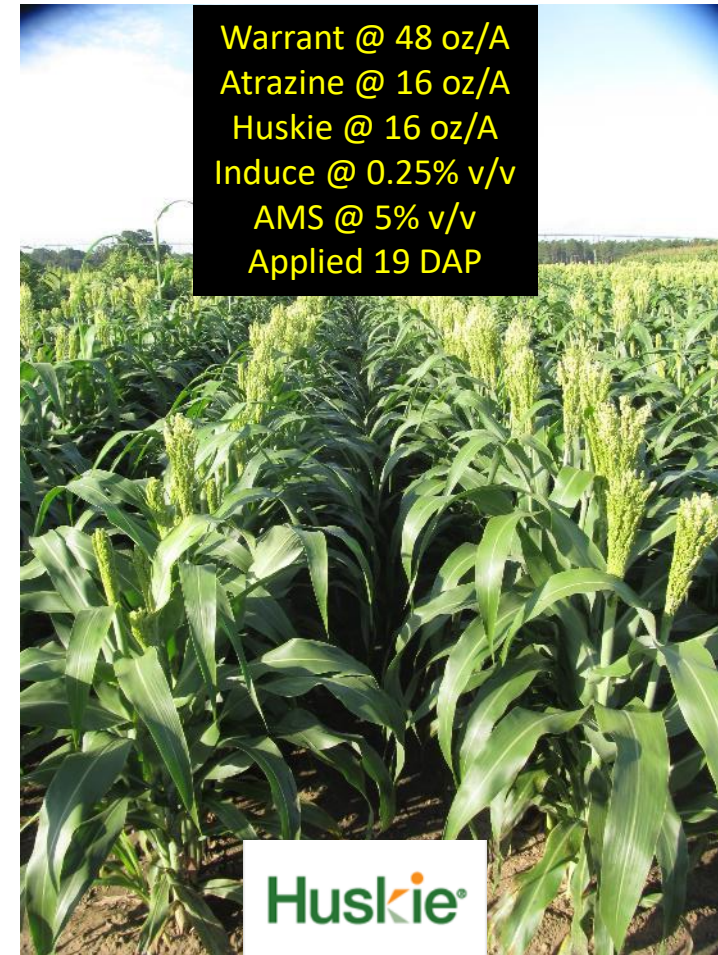
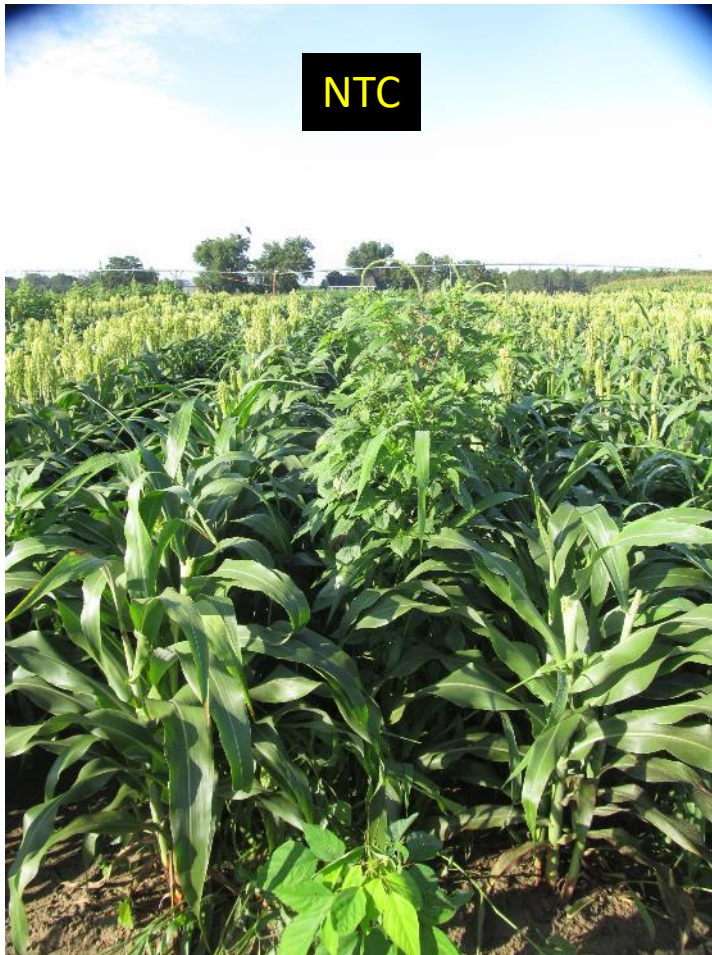
- 1) Start clean!
- 2) **Concep** treated seed
- 3) Dual Magnum or Outlook or Warrant (PRE)
- 4) Atrazine 4L @ 1.5 QT/A (EPOST)
 - 1) *Add Huskie if you have ATZ resistance*
- 5) Paraquat (Hooded sprayer)
- 6) Mechanical Cultivation

A New (er) Product to Consider?

- **Huskie 2.06EC**
- Bayer CropScience
- Buctril (1.75 lbs/gal) + pyrasulfotole (0.31 lbs/gal)
- MOA = 6 + 27
- Postemergence (13-16 oz/A)
- 3-leaf to 12" tall sorghum
- Broadleaf weeds, good on pigweed
- Tank-mix with atrazine (16 oz/A)
- **Huskie FX = Huskie + Starane**



Grain Sorghum Weed Control - 2021



Huskie Injury on Sorghum



Huskie™

Texas Panicum in Grain Sorghum



New Grain Sorghum Weed Control Technologies (Non-GMO)

- **Igrowth®**
 - Alta/UPL
 - **ImiFlex** (imazamox)
 - PRE/POST
- **DoubleTeam™**
 - S&W/Sorghum Partners/ADAMA
 - **FirstAct** (quizalofop)
 - POST
- **Inzen™**
 - Pioneer/Corteva
 - **Zest** (nicosulfuron)
 - POST

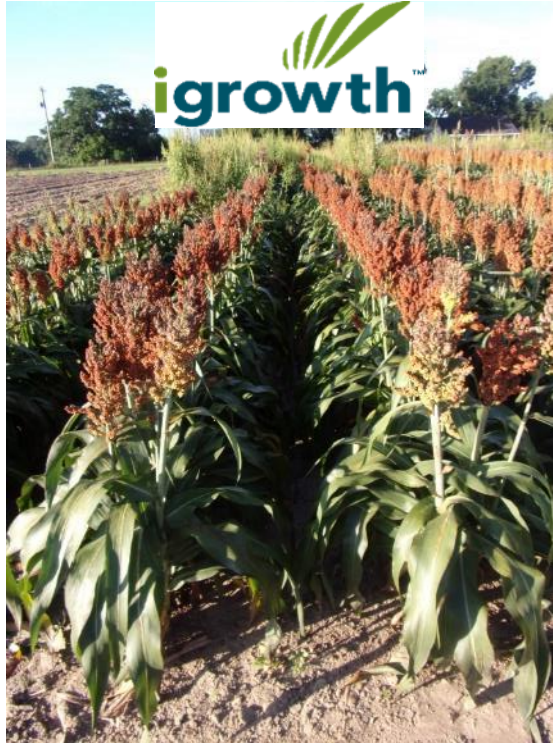


Grain Sorghum Weed Control – 2022

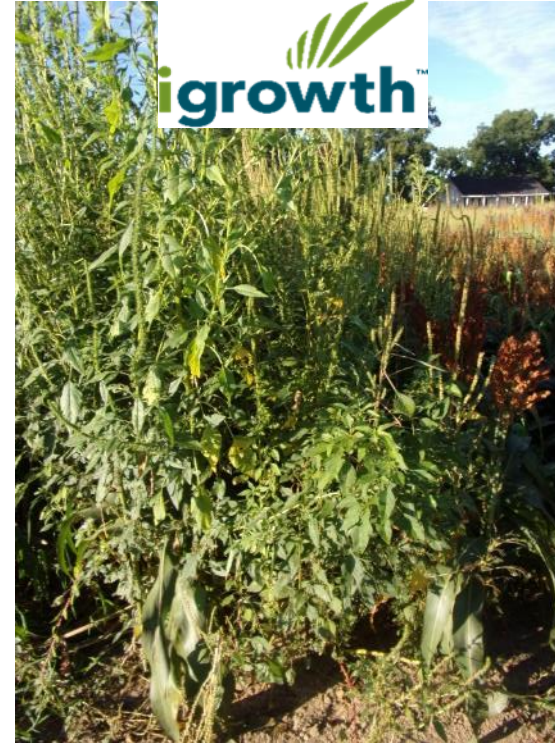
I-Growth



NTC



Mocassin II Plus 7.64EC @ 21 oz/A (PRE)
fb
Imiflex 1AS @ 6 oz/A
Agridex @ 1% v/v
POST (V7, 9-10" tall, 22 DAP)



Imiflex 1AS @ 4 oz/A
Agridex @ 1% v/v
EPOST (V3, 4" tall, 14 DAP)

Igrowth Grain Sorghum Hybrids

Characteristics	ADV G1120IG	ADV G2168IG	ADV G2193IG
✓ Technology	igrowth	igrowth-Aphix	igrowth-Aphix
✓ Relative Maturity	Medium-Early	Medium-Early	Medium
✓ Grain Color	Red	Red	Red
✓ Plant Height	45-55	38-44	40-48
✓ SCA tolerance	No	Yes	Yes
✓ Head excersion	Good	Good	Good
✓ Head type	Semi-compact	Semi-compact	Semi-open
✓ Root Lodging	Good	Good	Good
✓ Drought Tolerance	Very Good	Good	Good
✓ Threshability	Very Good	Very Good	Very Good

DoubleTeam Sorghum - 2022



NTC

GS-01-22
August 1
69 DAT (POST)



Parallel Plus 5.5F @ 72 oz/A
PRE
FirstAct 0.88EC @ 10 oz/A
Agridex @ 1% v/v
POST (22 DAP)

DoubleTeam™ System – First Act Off-Types



DoubleTeam Sorghum Hybrids

DOUBLE TEAM	<i>Relative Maturity</i>	<i>Days to 50% Bloom</i>	<i>Height</i>	<i>Head Exertion</i>	<i>Head Type</i>	<i>Grain Color</i>	<i>Seeds Per Pound</i>	<i>Emergence</i>	<i>Yield for Maturity</i>	<i>Yield Stability</i>	<i>Standability</i>	<i>Drought Tolerance</i>	<i>Threshability</i>	<i>SCA Tolerance *</i>
SP 30A30 DT®	Early	55-59	Medium	5-7"	Semi-Open	Bronze	13,200	1	1	2	3	3	3	9
SP 45A45 DT®	Medium Early	57-61	Medium	2-5"	Semi-Open	Bronze	12,500	1	1	2	2	3	3	9
SP 58M85 DT®	Medium	62-66	Medium	5-7"	Semi-Compact	Bronze	14,000	1	2	2	2	2	3	5
SP 65B21 DT®	Medium	65-67	Medium	4-6"	Semi-Open	Bronze	13,500	1	2	2	1	2	3	1



**SORGHUM
PARTNERS®**
A BRAND OF S&W SEED COMPANY

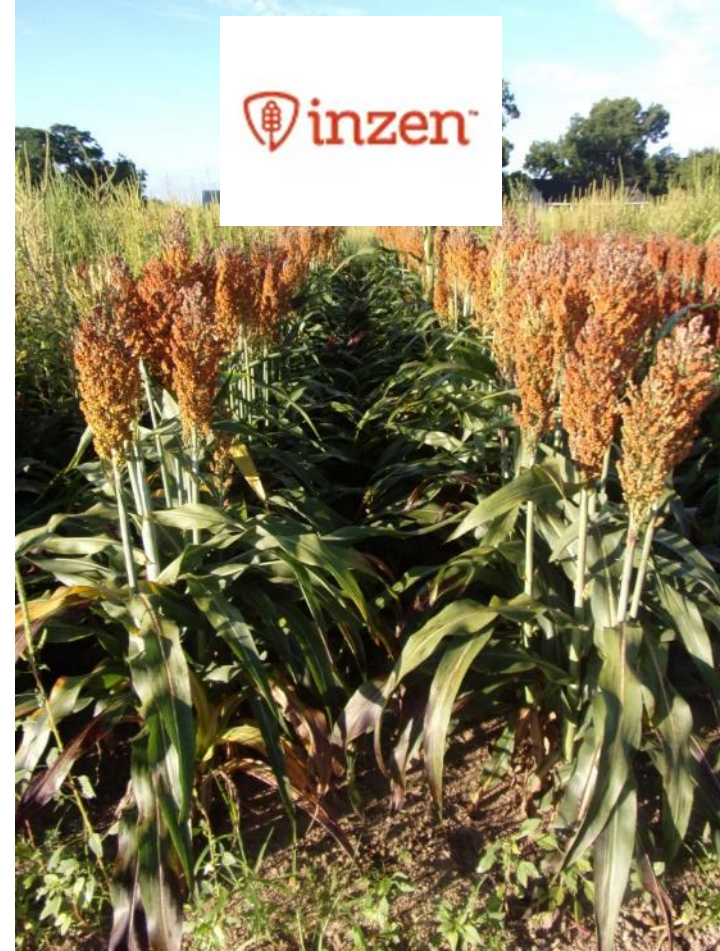
Numeric
1 = excellent
5 = average
9 = poor

SCA
1 = high tolerance
5 = moderate tolerance
9 = susceptible

Inzen Grain Sorghum - 2022



NTC



Everprex 7.62EC @ 16 oz/A (PRE) fb
Zest 75DG @ 0.67 oz/A +
Aatrex 4L @ 48 oz/A + Agridex @ 1% v/v
(POST)



Sunflower Weed Control

Eric P. Prostko

Extension Weed Specialist

Dept. Crop & Soil Sciences

UGA - Tifton

What is labeled? (*not much*)

- **PPI**
 - *Sonalan or Treflan*
- **PPI or PRE**
 - *Prowl, Dual Magnum, Zidua (only PRE), Spartan (\$220/gal; 3-4 oz/A; \$5.16-6.88/A)*
- **POST**
 - Arrow, Assure II, Select, Poast, SelectMax (grasses only)
 - Beyond (imazamox)
 - *only on Clearfield hybrids*
 - *Beyond same family as Cadre, Pursuit, and Scepter*
 - *Beyond costs about \$350/gal (4 ozs/A = \$10.94)*
 - *\$205/bag (200,000 seed ~ 10 acres) = \$20.50/A*
 - *Clearfield sunflower hybrids are not GMO's*
- **Hooded Sprayer**
 - *Aim 2EC @ 1-2 oz/A + COC @ 1% v/v*
 - *Pigweeds must be 4" or less*

Harvest Aids for Sunflowers

- Paraquat
 - 2SL (19-32 oz/A)
 - 3SL (13-21 oz/A)
- Sodium Chlorate
 - Defol 5
 - 4.8 qt/A
- Sharpen (saflufenacil)
 - 1-2 oz/A
 - MSO + AMS



Valor PRE on Sunflowers??

NO, NO, NO!



NTC



Valor EZ 4SC @ 3 oz/A

Sunflower Weed Control - 2024



NTC

SN-01-24
July 1
54 DAP



Spartan 4F @ 3.75 oz/A
Zidua 4.17SC @ 2.5 oz/A
PRE
Cadre 2AS 4 oz/A
Zidua 4.17SC @ 2.5 oz/A
Induce @ 0.25% v/v
POST (28 DAP)



Spartan 4F @ 3.75 oz/A
Zidua 4.17SC @ 2.5 oz/A
PRE
Beyond 1AS @ 4 oz/A
Zidua 4.17SC @ 2.5 oz/A
Induce 0.25% v/v
POST (28 DAP)

Sunflower Weed Control - 2024

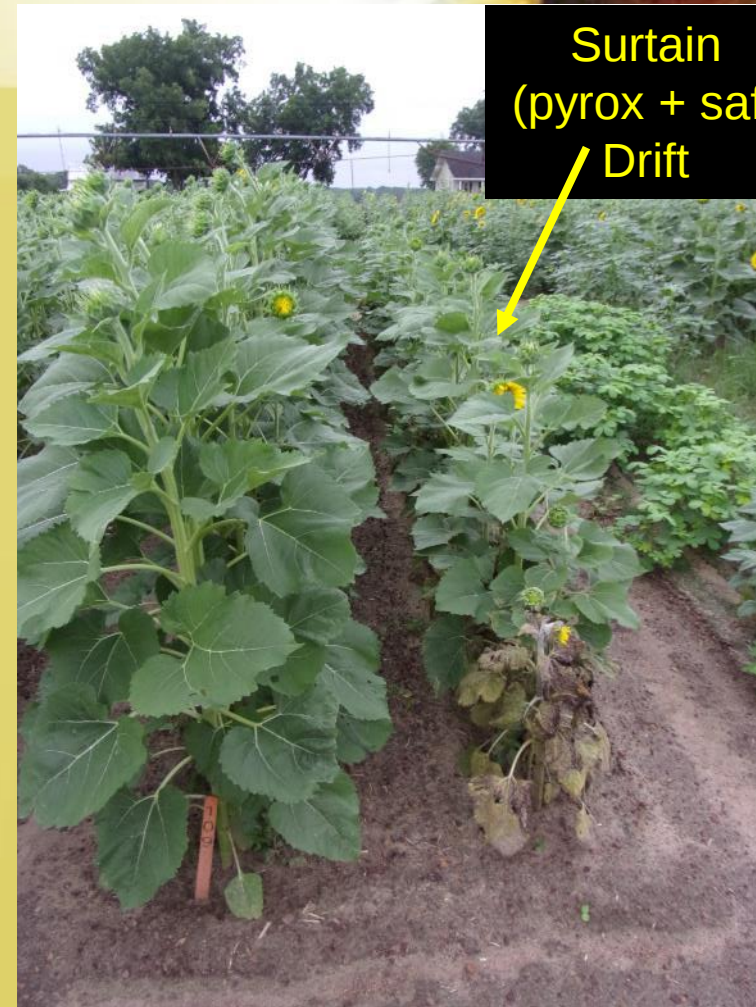


NTC

SN-01-24
July 1
54 DAP



Spartan 4F @ 3.75 oz/A
Dual Magnum 7.62EC @ 16 oz/A
PRE
Cadre 2AS 4 oz/A
Dual Magnum 7.62EC @ 16 oz/A
POST (28 DAP)



Spartan 4F @ 3.75 oz/A
Dual Magnum 7.62EC @ 16 oz/A
PRE
Beyond 1AS @ 4 oz/A
Dual Magnum 7.62EC @ 16 oz/A
POST (28 DAP)

Surtain
(pyrox + saf)
Drift

Know Who to Contact (Your Extension Weed Science Team)



Eric Prostko

Peanuts, soybeans, field corn, sunflowers,
grain sorghum, sesame, canola, field pea,
sugarcane



Mark Czarnota

Ornamentals, small fruits, nursery,
landscape, greenhouse, Christmas Trees



Stanley Culpepper

Cotton, small grains,
vegetable crops (including sweet corn)



Lisa Baxter

Pastures/Forages



Bob Stougaard

Pastures/Forages



New Hire

Turf

Interviews completed



Wayne Mitchem

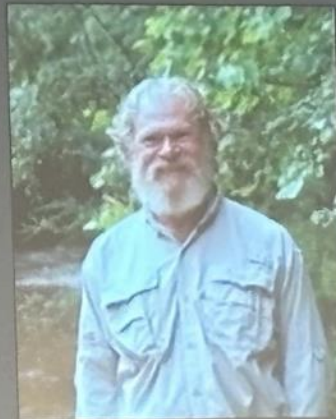
Tree fruits
(NCSU)

Aquatic Resources Outreach Team



Wesley Gerrin

- Master's and Bachelor's from Warnell
- 40% extension
- 60% Warnell research and outreach



Jay Shelton

- Associate professor at Warnell
- Warnell instruction and outreach programs



Sarah McNair

- Master's and Bachelor's from Warnell
- 100% Warnell
- Content development



Forestry/Pine Trees

Warnell School of Forestry



David Dickens
Statesboro



David Clabo
Tifton

Questions/Comments?

