

Weed Control in Field Corn 2024



UNIVERSITY OF GEORGIA
EXTENSION

2023 Problems



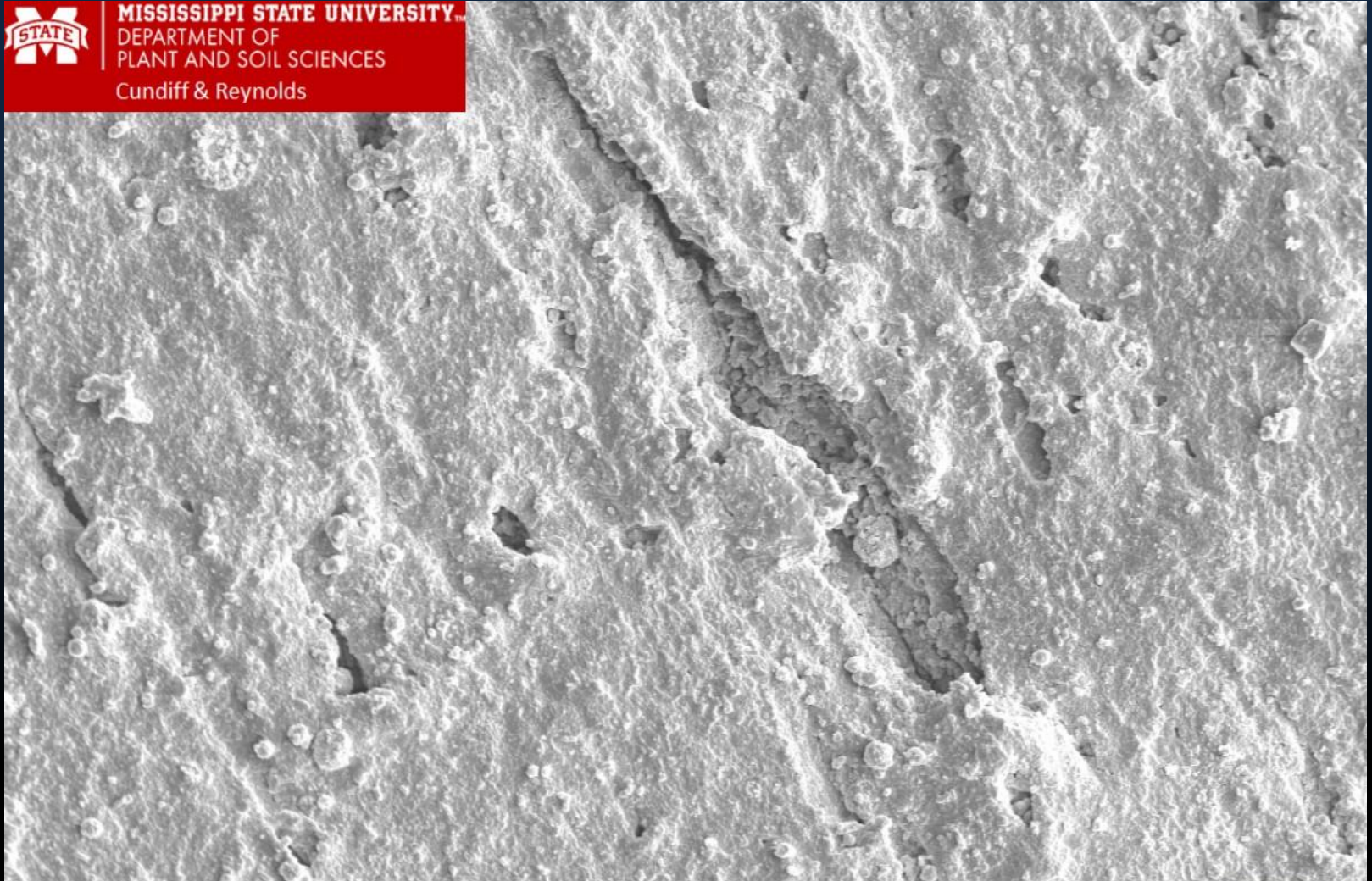
Laurens County - 2023



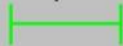
Scanning Electron Micrograph of a Goodyear (Black/Versigard Synthetic Rubber) Hose Used 8 Times.



MISSISSIPPI STATE UNIVERSITY™
DEPARTMENT OF
PLANT AND SOIL SCIENCES
Cundiff & Reynolds



20 μ m



EHT = 10.00 kV
WD = 10.0 mm

Signal A = SE1
Photo No. = 1193

Date :13 May 2015
Mag = 1.03 K X



Halex GT/Counter - 2023



Counter/Herbicides

TECH

Guidelines for Herbicide¹ Use With COUNTER 20G Insecticide

The following corn herbicides can be applied at timings listed below in a program with COUNTER 20G Insecticide:

Manufacturer	Corn Herbicide	Timing	Manufacturer	Corn Herbicide	Timing
AMVAC [®]	Impact [®]	POST	Bayer [®] CropScience	Balance [®] Flexx	EPP/PPI/PRE/POST
	ImpactZ [®]	POST		Balance [®] Pro	EPP/PPI/PRE
	Impact Core [®]	POST		Buctril [®] 4EC	POST
	Sinate [®]	POST		Degree [®] brands	EPP/PPI/PRE/POST
Syngenta [®] Crop Protection, Inc.	AAtrex 4L [®]	EPP/PPI/PRE/POST		DiFlexx [®] brands	Preplant/PRE/POST
	Acuron [®] brands	EPP/PRE		Harness [®]	EPP/PPI/PRE/POST
	Bicep II [®] Magnum brands	EPP/PPI/PRE/POST		Harness [®] Xtra brands	EPP/PPI/PRE/POST
	Dual II [®] Magnum	EPP/PPI/PRE/POST		Laudis [®]	POST
	Lumax [®]	EPP/PRE		Roundup [®] brands	Preplant/POST
	Lexar [®]	EPP/PRE		Warrant [®]	POST
Corteva Agriscience [™]	Zemax [®]	Preplant/PRE	FMC [®] Corporation	Aim [®]	Preplant/POST
	Breakfree [®] brands	EPP/PPI/PRE/POST	Anthem [®] brands	EPP/PRE/POST	
	Durango [®]	POST	Cadet [®]	Preplant/POST	
	FulTime [®] brands	Preplant/POST	Valent [®] USA	Fierce [®] brands	Preplant Burndown
	Keystone [®] brands	Preplant/POST		Perpetuo [™]	Preplant/PRE/POST
Resicare [®]	EPP/PPI/PRE	Resource [®]		POST	
BASF [®] Ag Products	Stinger [®]	POST	Valor [®] SX	Preplant Burndown	
	G-Max [®] Lite	EPP/PPI/PRE/POST			
	Guardsman Max [®]	EPP/PPI/PRE/POST			
	Liberty [®] 280	Preplant/POST			
	Marksman [®]	PRE/POST			
	Outlook [®]	EPP/PPI/PRE/POST			
	Prowl [®] H ₂ O	EPP/PPI/PRE/POST			
Status [®]	POST				
	Zidua [®]	EPP/PPI/PRE/POST			

The following corn herbicides cannot be applied at timings listed below with COUNTER 20G Insecticide:

Manufacturer	Corn Herbicide	Timing	Manufacturer	Corn Herbicide	Timing
AMVAC	Hornet [®]	Preplant/PRE/POST	Bayer CropScience	Copreno [®]	PRE/POST
	Python [®]	Preplant/PRE		Corvus [®]	Preplant/PRE/POST
Corteva Agriscience	Accent [®] brands	POST		Harness [®] Max	POST
	Basis [®] brands	PRE/POST		TripleFLEX [®] brands	PRE/POST
	Instigate [®]	Preplant/PRE	BASF Ag Products	Sharpen [®]	Preplant/PRE
	Leadoff [®]	Preplant/PRE		Verdict [®]	Preplant/PRE
	Prequel [®]	POST	FMC Corporation	Solstice [®]	POST
	Realm [®] Q	Preplant/PRE/POST	Gowan [®] Co., LLC	Beacon [®]	POST
	Resicare [®]	POST		Northstar [®]	POST
	Resolve [®] brands	Preplant/PRE/POST		Peak [®]	POST
	Require [®] Q	Preplant/PRE/POST		Permit [®]	POST
	Steadfast [®] brands	POST		Spirit [®]	POST
Stout [®]	POST	Yukon [®]		POST	
Syngenta Crop Protection, Inc.	SureStart [®] brands	POST			
	Acuron [®] brands	POST			
	Callisto [®] brands	POST			
	Halex [®] GT	POST			
	Lexar [®]	POST			
	Lumax [®]	POST			
	Zemax [®]	POST			

¹Read and follow label restrictions of any herbicide before using in conjunction with Counter 20G at planting. Interactions of certain herbicides with Counter 20G may occur under adverse growing conditions which can cause significant injury to corn. Labels can be found at the manufacturer's websites. For more information about COUNTER 20G use with corn herbicides, contact your local agricultural chemical retailer or AMVAC representative at 1-888-462-6822, or visit AMVAC.com.

Seminole County – March 2023



➤ Nematodes

- Root-knot = 7
- Lesion = 4
- Stubby = 82
 - *40 is threshold*
- Ring = 10
- Spiral = 1

Macon County – March 2023



➤ Nematodes

- Root-knot = 100-140
 - *100 is threshold*
- Stubby = 170-200
 - *40 is threshold*
- Lesion = 50-210
 - *200 or more is threshold*

Bulloch County – Spring 2023

- Planted March 24
- Pioneer 1622
- *Shallow planting depth (1.5")
- First 7 DAP
 - *1.52" rain
 - *3 nights below 49 F
- 2022 – Peanuts
 - ½X rate Strongarm in August
- *70 stubby nematodes/100 cc
 - * ➤ 40/threshold
- Replant showed same symptoms even after using Counter 20G INFR
- Oxadiazon @ 1.9 ppm + Prodiamine @ 0.08 ppm detected in soil
- Was impregnated on fertilizer



Pierce County - 2023



pH = 5.0; P was very high; K, Mg, Ca were all low


Tattnall Co. - 2023

- Stine 9818-32N
- Possible linuron sprayer contamination
- Linex 4L @ 24 oz/A applied to V3-V4 (12") tall field corn (P1197VYHR) caused a 22-32% yield reduction.
 - *Richburg et al. 2020. Weed Technology 34:277-283.*
- **2.3 ppm of linuron was detected in tissue sample**



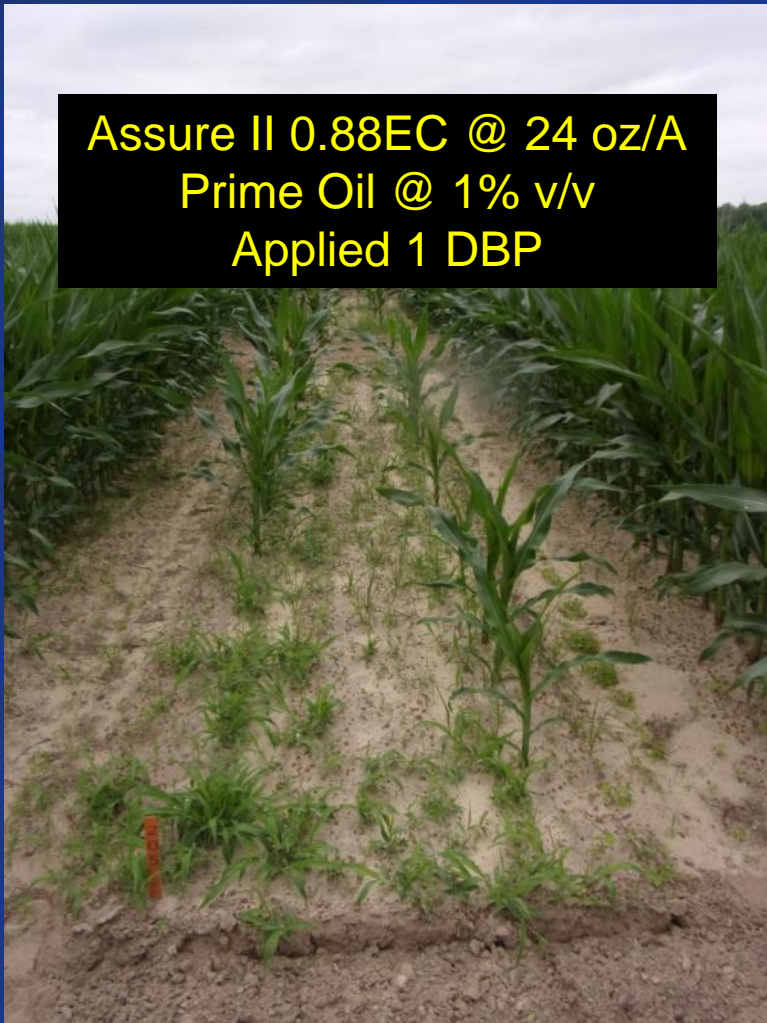


Volunteer Corn Control

- Best option is clethodim
 - *takes about 10 days to really work*
 - 6 day plant-back restriction
 - *yes, it's VERY real*
 - Liberty and Gramoxone have been inconsistent (*for me*)
 - *RR + LL hybrids*
- 

Dims/Fops Have Soil Residual Properties

Assure II 0.88EC @ 24 oz/A
Prime Oil @ 1% v/v
Applied 1 DBP



Assure II 0.88EC @ 24 oz/A
Prime Oil @ 1% v/v
Applied 0 DBP



RR Corn Control (Pioneer 33M57) 40 DAT*



NTC
(123 Bu/A)



SelectMax 0.97EC @ 6 oz/A
Induce @ 0.25% v/v
AMS X-TRA @ 2.5% v/v
(0 Bu/A)



Gramoxone Inteon 2SL @ 40 oz/A
Atrazine 4L @ 32 oz/A
Agridex @ 1% v/v
(27 Bu/A)

*Applied to 7" tall corn, V4 stage of growth

What happens when you spray Liberty on a non-LL corn hybrid?



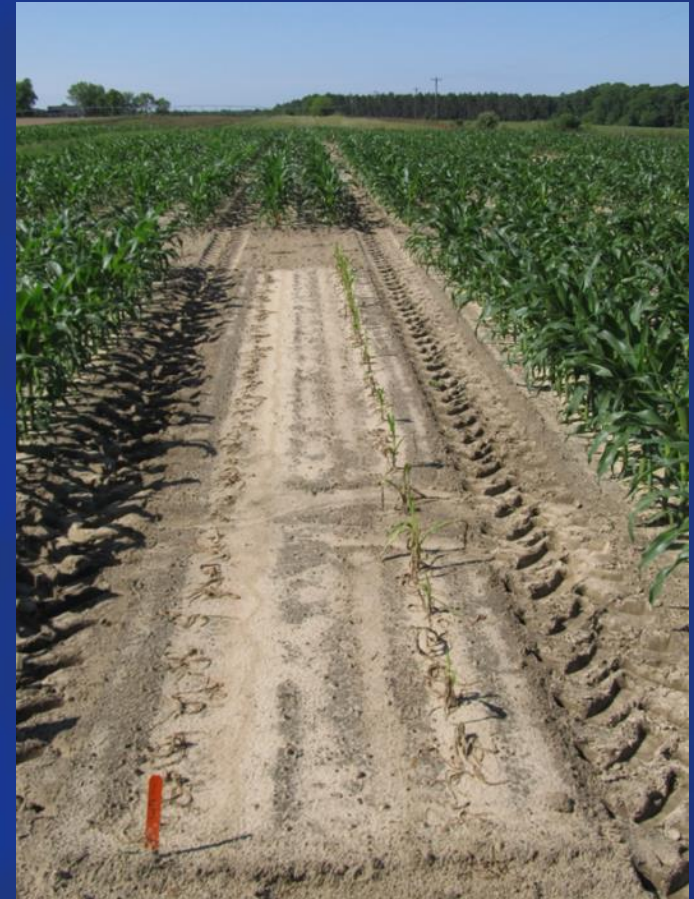
6 DAT

CN-01B-16
DKC 66-59
Liberty @ 29 oz/A +
Atrazine @ 48 oz/A
Applied V4-V5 (6")

***Only made 28
Bu/A!!!!**

***Other
treatments made
~231 Bu/A**

***88% yield loss**



15 DAT

Yellow Nutsedge in Field Corn - 2023



P. Sapp - May 11, 2023

- Not very competitive
 - 800/100 row ft = 10% yield loss
- **PRE**
 - Dual II Magnum (PRE)
 - Only yellow
- **POST**
 - Roundup + Atrazine + Sandea (0.67 oz/A)
 - purple + yellow
 - Basagran 4SL
 - 32 oz/A + 1% COC
 - 2 applications (7-10 days)
 - only yellow

Sandea/PRE/Counter – 2023

Don't do it!!!!!!

NTC



Sandea @ 0.67 oz/A



Sandea @ 1.34 oz/A



9-15% yield loss (0.67 oz/A)
14-30% yield loss (1.34 oz/A)

2,4-D Injury in Non-Enlist™ Field Corn



- Rate
 - No more than 1 pt/A
- Timing
 - Not after 8"
- Hybrid
 - **P1289**
 - **P1608**
 - **P1633**
- Tank-Mixes
 - glyphosate
 - adjuvants

Tropical Spiderwort



- does not like deep tillage
- hard to control in-season with typical programs
- need Group 15's for residual
 - *Anthem Maxx, Dual Magnum, Warrant, Outlook, Zidua*
- Halex GT/Callisto???
- Lay-By
 - *2,4-D, Aim, Evik, Gramoxone*
- Post-Harvest
 - *2,4-D, Aim, Gramoxone*

Tropical Spiderwort Control in Field Corn - 2005



Untreated



Aim 2EC @ 1.5 ozs/A
Dual Magnum 7.62EC @ 1.33 pt/A
Herbimax @ 1% v/v

Tropical Spiderwort Control in Field Corn - 2005



Untreated



Evik 80DF @ 2 lbs/A
Dual Magnum 7.62EC @ 1.33 pt/A
Herbimax @ 1% v/v

Tropical Spiderwort Control in Field Corn - 2005



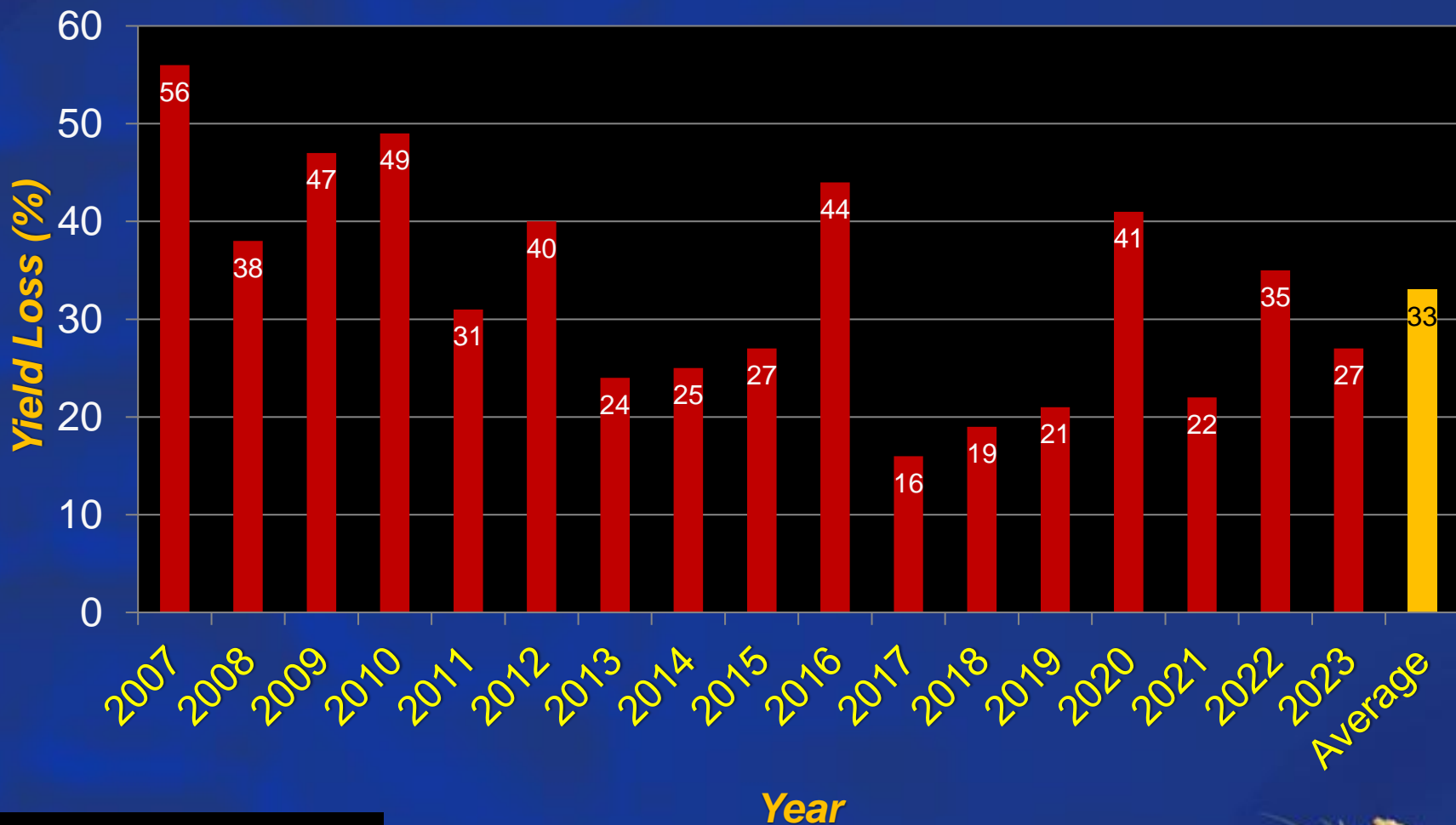
Untreated



Gramoxone Max 3SC @ 16 oz/A
Dual Magnum 7.62EC @ 1.33 pt/A
Herbimax @ 1% v/v

Field Corn Yield Loss (%) Caused by Uncontrolled Weeds in UGA Weed Science Research Trials (2007-2023)

Treated vs. Non-treated



200 Bu/A X 0.33 X \$4.00 = \$264/A

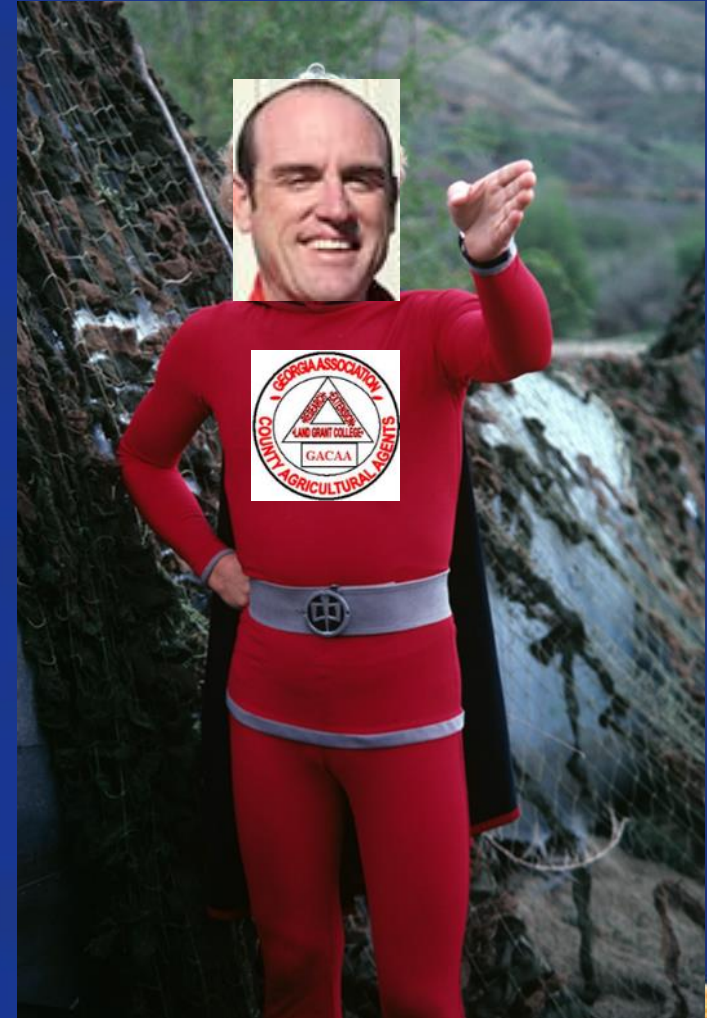
250 Bu/A X 0.33 X \$4.00 = \$330/A

What about harvest?

What about next year?

As always.....

- start clean
 - *cover crops, tillage, herbicides*
- multiple residuals
- Timely POST's
- Post-Harvest



"The Greatest American County Agent"

Pre-Plant Burndowns - 2023




NTC



Gramoxone 3SL @ 32 oz/A
Aatrex 4L @ 32 oz/A
Induce @ 0.25% v/v



Conventional Field Corn

- Dual, Warrant, Outlook (PRE)
 - Callisto, Laudis, Shieldex, Revulin Q, Steadfast Q (POST)
 - + *Atrazine (64 oz/A) + Prowl (32 oz/A)*
 - *Anthem Maxx, Dual, Warrant, Outlook, Zidua if you don't like/want/Prowl but.....*
 - *adjuvant as needed/required*
- 

Field Corn Weed Control - 2023

No Roundup or Liberty??



1) Warrant 3ME @ 48 oz/A
PRE fb

2) HPPD +
Aatrex 4L @ 64 oz/A +
Prowl H₂O 3.8SC @ 32 oz/A +
Agridex @ 1% v/v
POST (23 DAP)



NTC = 233 Bu/A
Treated = 257-270 Bu/A

Field Corn Weed Control - 2023

No Roundup or Liberty?

205 Bu/A



NTC

265 Bu/A



Steadfast Q 37.7DG @ 1.5 oz/A
Aatrex 4L @ 64 oz/A
Prowl H₂O 3.8SC @ 32 oz/A
Induce @ 0.25% v/v
POST (19 DAP)

CN-16-23
May 19
50 DAP
D58VC65

RR and/or Liberty Systems



Field Corn Weed Control - 2023



NTC



Roundup P-MAX3 5.88SL @ 22 oz/A
Aatrex 4L @ 32 oz/A
Prowl H₂O 3.8SC @ 32 oz/A
POST (17 DAP)

CN-12-23
April 27
15 DAT

Field Corn Weed Control - 2023



NTC



Roundup PowerMax3 5.88SL @ 22 oz/A
Liberty 2.34SL @ 22 oz/A
Aatrex 4L @ 64 oz/A
Applied 21 DAP

CN-15-23
May 30
48 DAT

Field Corn Weed Control - 2023



NTC

CN-15-23
May 30
48 DAT



Halex GT 4.38CS @ 58 oz/A
Aatrex 4L @ 64 oz/A
Induce @ 0.25% v/v
Applied 21 DAP



Field Corn Weed Control – 2023

No Roundup or Atrazine



NTC
202 Bu/A



Dual II Magnum 7.64EC @ 16 oz/A
(PRE)

Liberty 2.34SL @ 32 oz/A
Laudis 3.5SC @ 3 oz/A
Prowl H₂O 3.8SC @ 32 oz/A
Induce @ 0.25% v/v

POST (24 DAP)
242 Bu/A

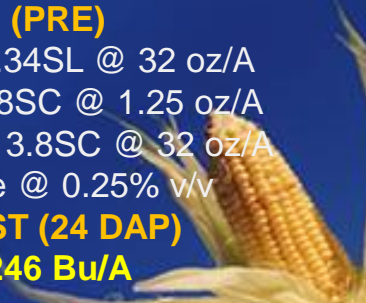


Dual II Magnum 7.64EC @ 16 oz/A
(PRE)

Liberty 2.34SL @ 32 oz/A
Impact 2.8SC @ 1.25 oz/A
Prowl H₂O 3.8SC @ 32 oz/A
Induce @ 0.25% v/v

POST (24 DAP)
246 Bu/A

CN-01-23
June 13
85 DAP
P2042VYHR



Field Corn Weed Control – 2023

No Roundup or Atrazine



NTC
202 Bu/A

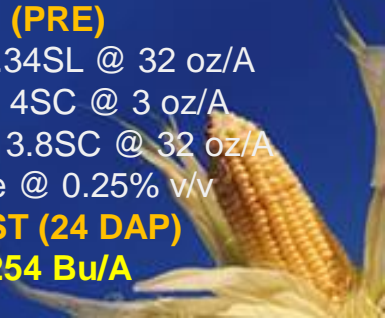


Dual II Magnum 7.64EC @ 16 oz/A
(PRE)
Liberty 2.34SL @ 32 oz/A
Shieldex 3.33SC @ 1.35 oz/A
Prowl H₂O 3.8SC @ 32 oz/A
Induce @ 0.25% v/v
POST (24 DAP)
257 Bu/A



Dual II Magnum 7.64EC @ 16 oz/A
(PRE)
Liberty 2.34SL @ 32 oz/A
Callisto 4SC @ 3 oz/A
Prowl H₂O 3.8SC @ 32 oz/A
Induce @ 0.25% v/v
POST (24 DAP)
254 Bu/A

CN-01-23
June 13
85 DAP
P2042VYHR





New(er) Products Being Tested - I

Not in UGA Pest Control Handbook (yet?)

➤ AMVAC

- *Sinate* (glufosinate + topramezone)
- *Impact Core* (topramezone + acetochlor)

➤ BASF

- *Surtain* (encapsulated saflufenacil + pyroxasulfone)


➤ Bayer

- *Convintro* (diflufenican)
- *TriVolt* (isoxaflutole + thien carbazono + flufenacet)

➤ Corteva

- *Kyro* (encapsulated acetochlor + topramezone + clopyralid)
- *Resicore* (mesotrione + acetochlor + clopyralid)
- *Resicore XL* (mesotrione + encapsulated acetochlor + clopyralid)

➤ Syngenta

- *Acuron GT* (bicyclopyrone + s-metolachlor + mesotrione + glyphosate)
 - *Acuron XR* (bicyclopyrone + s-metolachlor + mesotrione + atrazine)
 - *Storen* (s-metolachlor + mesotrione + bicyclopyrone + pyroxasulfone)
- 



New(er) Products Being Tested - II

Not in UGA Pest Control Handbook (yet?)

➤ Helm

- *Katagon* (tolpyralate + nicosulfuron)
- *Helmet Maxx* (metolachlor + atrazine + mesotrione)

➤ Helena

- *Empyros* (tolpyralate + s-metolachlor)
- *Empyros Triad* (tolpyralate + s-metolachlor + atrazine)
- *Empyros Triad Flex* (tolpyralate + s-metolachlor + atrazine)

➤ Valent

- *Maverick* (mesotrione + pyroxasulfone + clopyralid)

➤ Summit Agro

- *Restraint* (tolpyralate + acetochlor + dichlormid)



Field Corn Weed Control - 2023



NTC



Dual II Magnum 7.64E @ 16 oz/A
PRE
Kyro 3.49ZC @ 45 oz/A
Aatrex 4L @ 32 oz/A
Roundup PowerMax3 5.88SL @ 26.7 oz/A
Prime Oil @ 1% v/v
AMSOL @ 2.5% v/v
POST (28 DAP)

CN-11-23
August 15
135 DAP

Field Corn Weed Control - 2023



NTC



 **EMPYROS™**

Empyros 3.82L @ 45 oz/A
Aatrex 4L @ 32 oz/A
Grounded @ 16 oz/A
PRE
No Counter 20G INFR



Empyros 3.82L @ 45 oz/A
Aatrex 4L @ 32 oz/A
Grounded @ 16 oz/A
PRE
Counter 20G INFR

Field Corn Weed Control – 2023

Late-Season



NTC



Storen 3.22ZC @ 57.6 oz/A
Aatrex 4L @ 48 oz/A
RoundupPowerMax3 5.88SL @ 28 oz/A
AMSOL @ 2.5% v/v
POST (20 DAP)

Field Corn Weed Control – 2023



NTC



Maverick 2.04SC @ 18 oz/A
(PRE)

fb

Maverick 2.04SC @ 14 oz/A
Roundup PowerMax3 5.88SL @ 22 oz/A
Induce @ 0.25% v/v
AMSOL @ 2.5% v/v
(37 DAP)

Post-Harvest



Post-Harvest Weed Control - 2023

*Gramoxone 2SL @ 48 oz/A + Tricor 4F @ 8 oz/A + NIS @ 0.25% v/v
(15 GPA, AIXR11002 nozzles, 3.5 MPH)*



TREATED

**NOT
TREATED**

*September 18
4 DAT*

*sprayed 3 beds/skipped 2 beds (September 14)
mowed every other bed (September 5)
corn harvested (August 29)*

Post-Harvest Weed Control - 2023

*Gramoxone 2SL @ 48 oz/A + Tricor 4F @ 8 oz/A + NIS @ 0.25% v/v
(15 GPA, AIXR11002 nozzles, 3.5 MPH)*



TREATED

**NOT
TREATED**

October 31
47 DAT
sprayed 3 beds/skipped 2 beds (September 14)
mowed every other bed (September 5)
corn harvested (August 29)

Post-Harvest Control of Tropical Spiderwort



Untreated



2,4-D @ 1.5 pt/A
POST1 + POST 2

POST1: 8-10" tall COMBE
POST2: 2 weeks later
Photo 1 week after POST2

Questions/Comments

