2017 Appling County Cotton Meeting

Weed Control and a few other things

Stanley Culpepper, University of Georgia, Tifton
Shane Curry, UGA Extension Appling County

County Cotton Update

Stanley Culpepper, University of Georgia, Tifton

Auxin Systems

Registered

Registered

Comment Closed 12/1

XtendiMax With Vapor Grip

Engenia

Enlist Duo (cotton, beans other states)

Dicamba Issues for the MidSouth in 2016

1. Hundreds of drift complaints.
2. EPA issues dicamba compliance advisory.
3. Two people are dead (underlying issues).
4. Federal Indictments: 21 Missouri.

UGA's 15 Factors Influencing Success

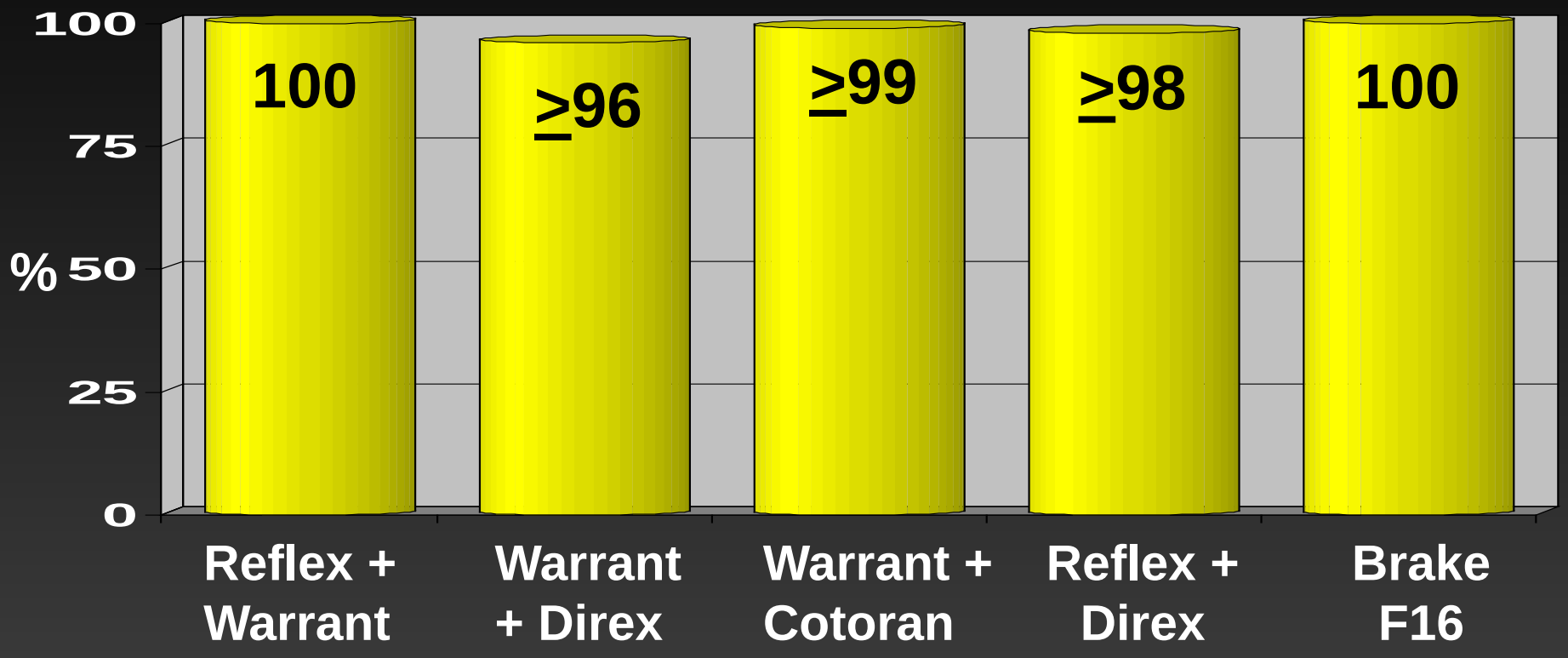
- Spray Tip
- Spray Pressure
- Sprayer Speed
- Boom Height
- Tank Cleanout
- Drift Control Agent
- Proper Formulation
- Wind
- Land Terrain
- Humidity
- Size of Crop
- Buffers
- Herbicide Footprint/ Surrounding crops
- Volatility
- Residue Tolerance

Take Home Message

- Many fields in GA should not be treated with dicamba or 2,4-D in-season.

- **Liberty + Roundup programs are effective.**

Palmer Control By Liberty/Roundup Based System At Harvest. 5 Loc, GA/NC.



POST 1: Roundup + Liberty + Residual
POST 2: Roundup + Liberty;
LPD: Direx + MSMA

2017 Auxin Systems

Restrictions:

UPW training,
wind speed,
spray tip,
pressure,
downwind buffers,
ground speeds,
GPA,
***tank mixes**
***specialty crops**

Auxin Programs

1. **Clean at planting**
2. **PRE Required**
3. **Sequential POST's…**
4. **Layby:**

YES, YOU WILL STILL USE PRE EMERGENT HERBICIDES!

Auxin Systems – Clean At Planting

Cover Crop

Burndown

Tillage

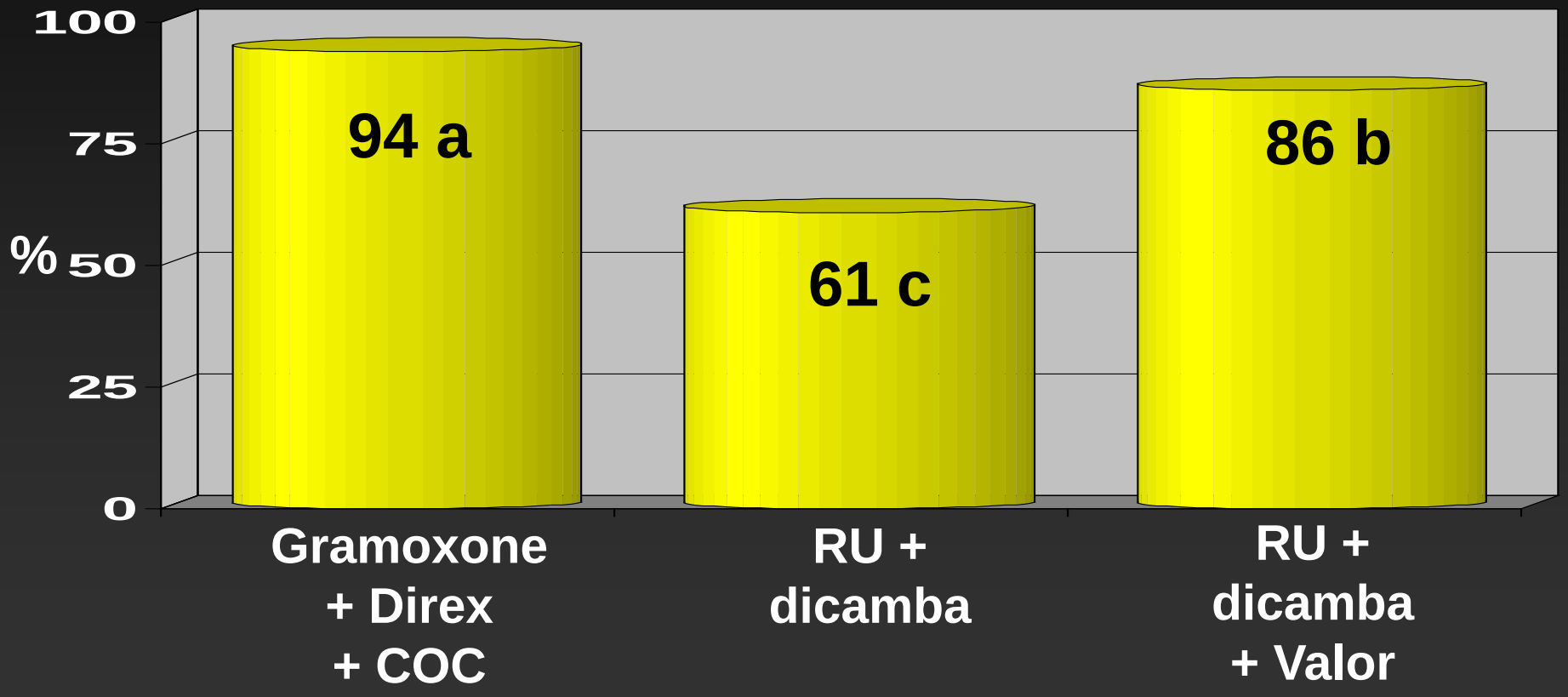
Don’t Plant into emerged pigweed!

Need weeds killed at least a week prior to planting.

Burndown: 2,4-D vs Dicamba When Mixed with Roundup

	2,4-D	dicamba
Horseweed	?	+
Primrose	+	-
Radish	+	-
Cost	+	-
Plantback	+ 2,4-D	+ dicamb

Palmer (3-7”) Control By Burndown Herbicides. Macon, 2015.



C52-15. Gramoxone, Direx, COC, & Wmax = 1 qt/A; Clarity 16 oz/A; Valor 2 oz/A.

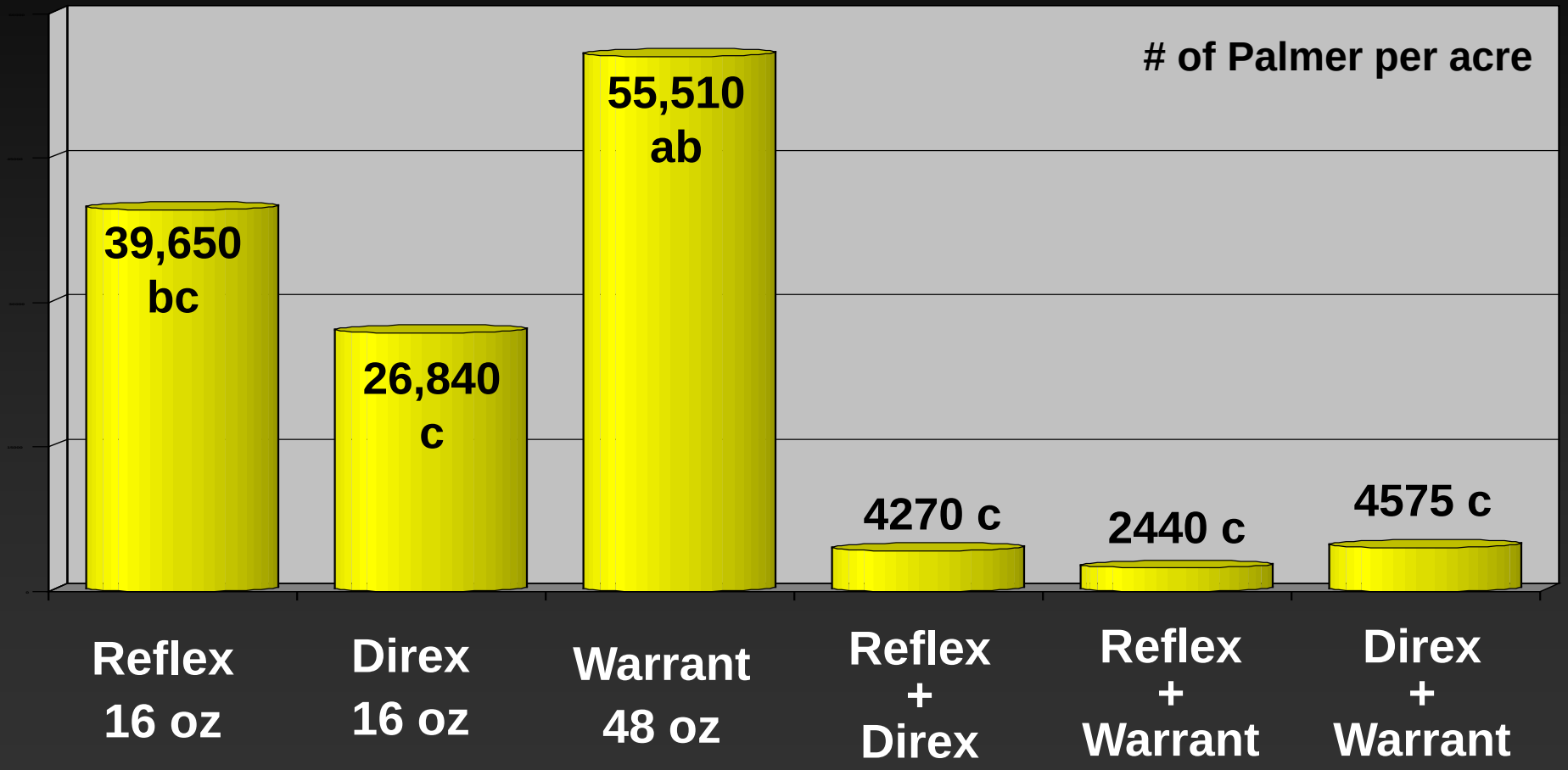
Auxin Systems

1. Clean at planting
2. PRE Required
3. Sequential POST's……..
4. Layby:

Auxin Systems – PRE REQUIRED

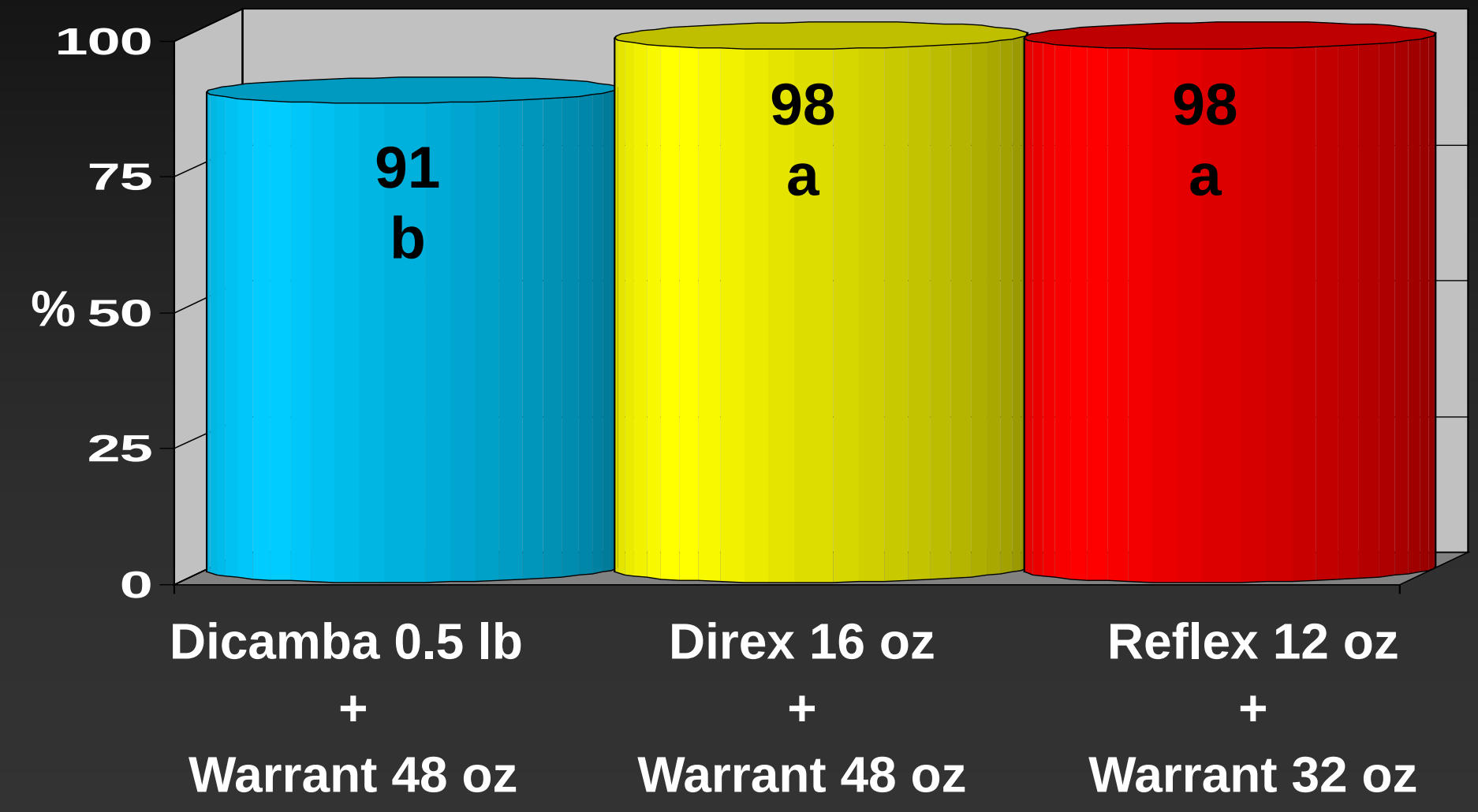
1. Resistance management!!!!!
2. Coverage
3. Early-season competition
4. Need no injury concern, low cost ($9.18 without reward)

Number of emerged Palmer amaranth/A at 21 d.



Tank mixes = Reflex 12 oz/A + Direx 12 oz/A or Warrant 2 pt/A; Direx 1 pt/A + Warrant 3 pt/A.
The non-treated control consisted of 1,464,000 per acre; LSD 21 K;

Palmer Response to PRE's at 16-19 DAT. 3 Loc 2014.



Does Dicamba or 2,4-D Have A Fit PRE?

Engenia/XtendiMax (XtendFlex)

1. Dryland – no rain in site?
2. Horseweed?
3. No injury concern for XtendFlex; but less effective in weed control!!!

2,4-D choline (Enlist)

1. No

Auxin Systems

1. Clean at planting
2. PRE Required
3. Sequential POST's……..
4. Layby:

POST Dicamba Applications in XtendFlex

If no tank mix label: then will recommend Liberty + Roundup programs.

Non-tank mixes =

1. **Rapid resistance development**
2. **Potentially less weed control**
3. **More expensive (# trips)**
4. **More drift**
5. **More human pesticide exposure**

If POST Mixes are Labeled…17 & 34 DAP

Dicamba Options:

POST 1: RU or Lib + Engenia/XtendiMax (+ residual)

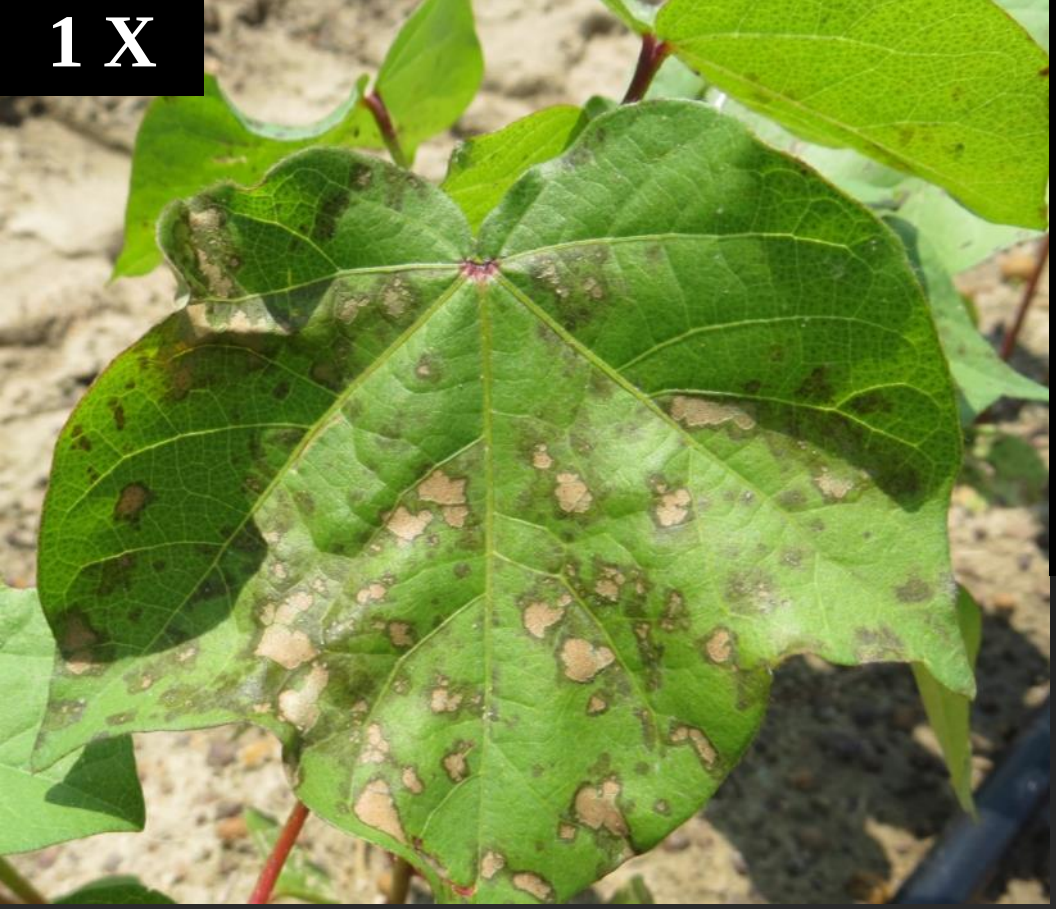
or

POST 1: RU + Liberty + Engenia/XtendiMax

POST 2: RU or Liberty + Engenia/XtendiMax

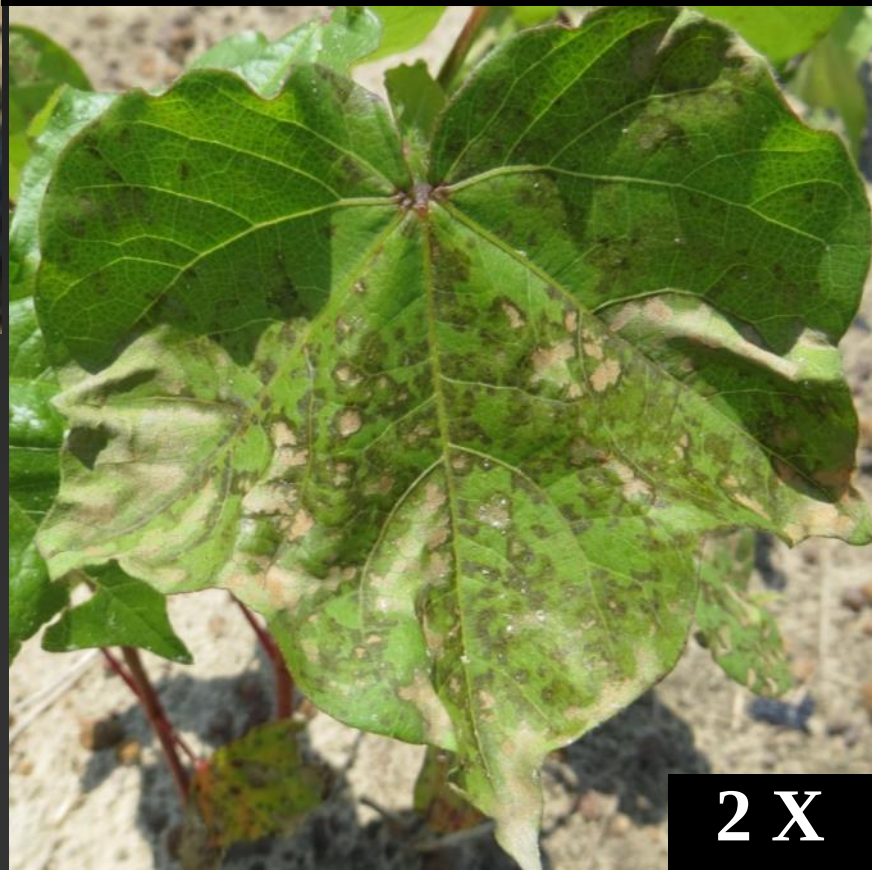
2,4-D Options:

Awaiting labels



Challenging Environment

(worst 10% of time?)



RU + dicamba

RU or Liberty + Auxin IN A SYSTEM

	Lib	RU
Palmer <4”	+	-
Competition	+	-
Grass	-	+
Cost	-	+
Prepare Layby	-	+


Liberty + Dicamba
4”
above
ground
Roundup + Dicamba will bend pigweeds (8inch) over and to allow layby application to kill weeds.
RU + Dicamba

Auxin Systems

1. Clean at planting
2. PRE Required
3. Sequential POST's……..
4. Layby:

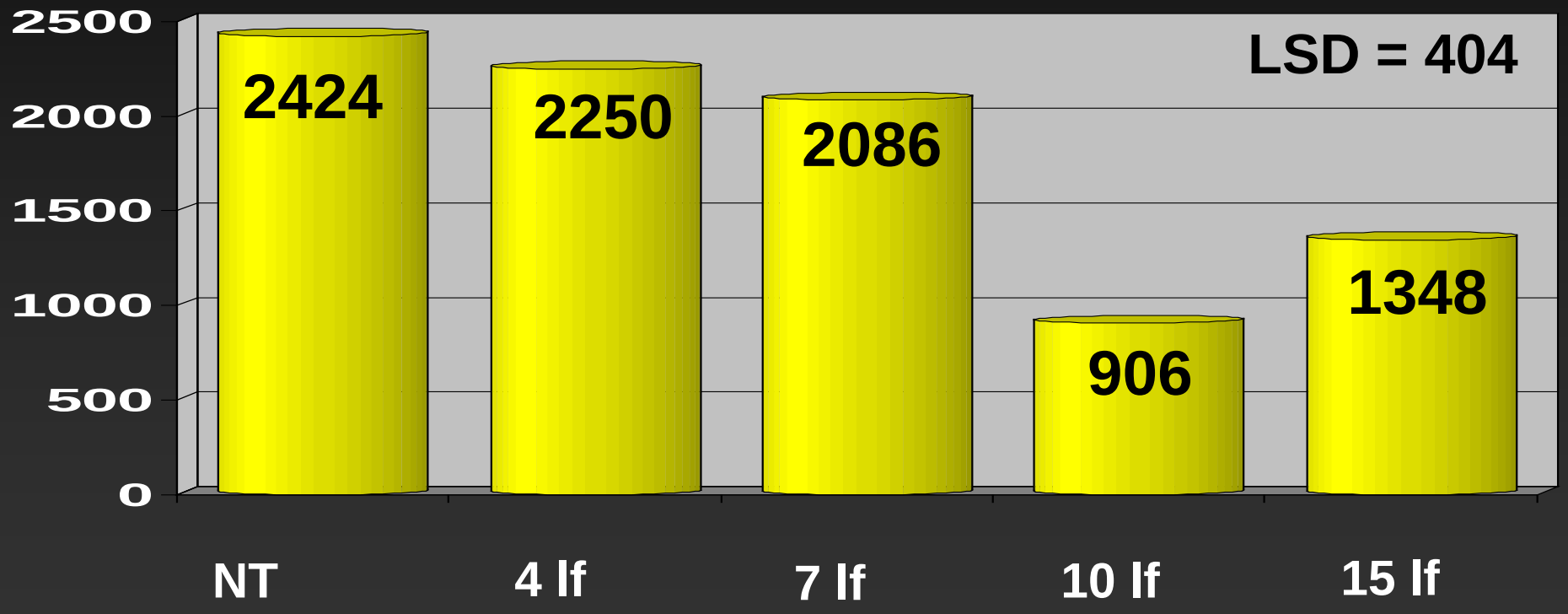
Layby…….critical to sustainability!!

For Palmer: Direx + MSMA; add Envoke or dicamba for MG.
If grasses: Roundup + Direx; add Envoke or dicamba for MG.

Why Would You Risk Injury From Overtop Application After 8 leaf?

Stage of Growth – Key to Recovery

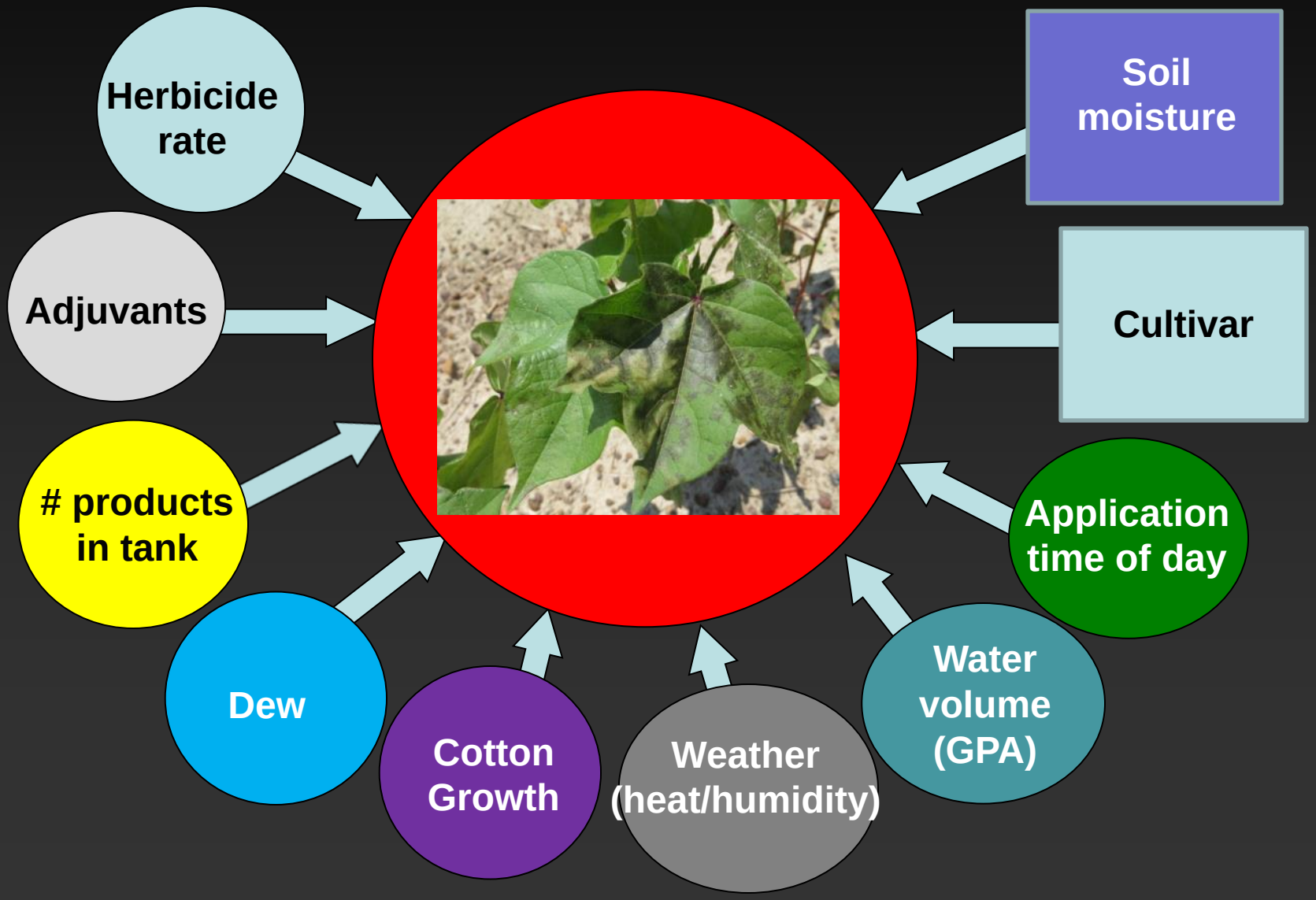
Gramoxone topically: 40 to 50% damage



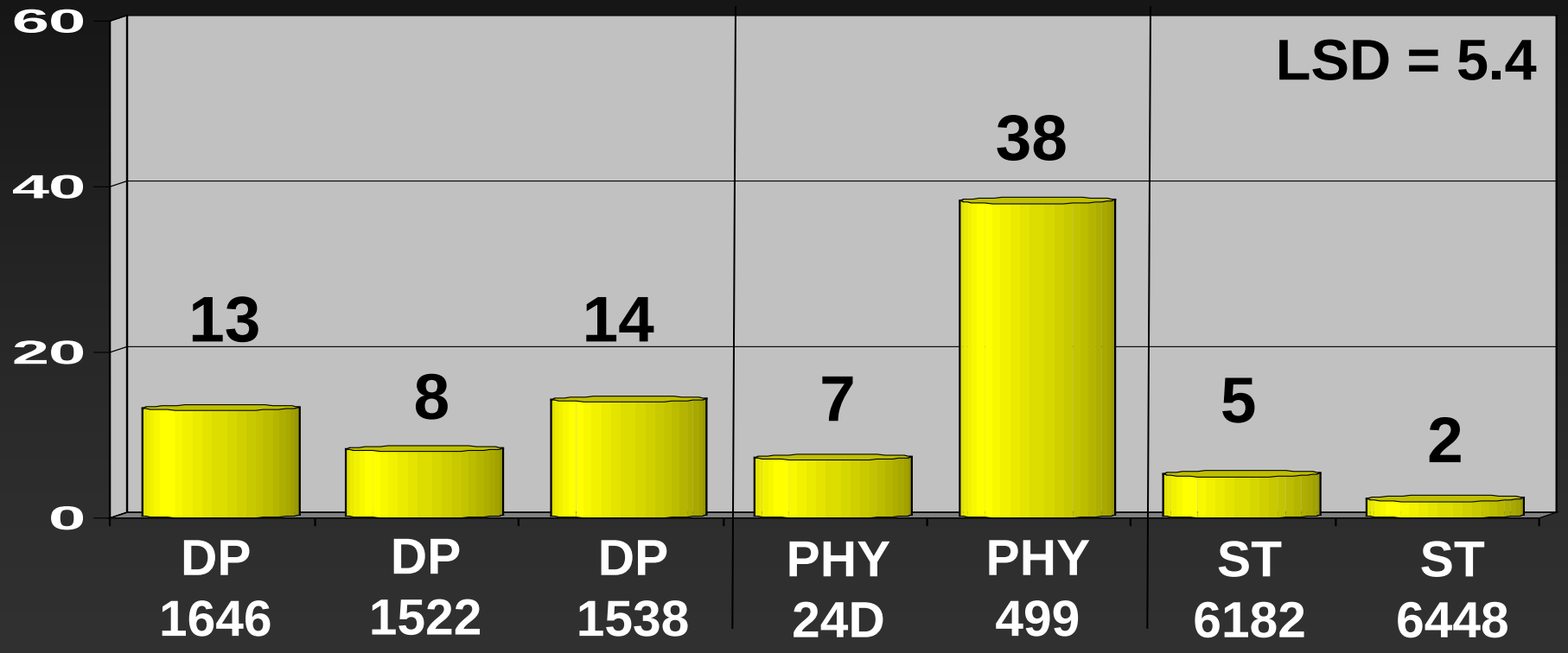
Study maintained weed free. C48-16. Sunbelt Expo 2016.

Why Would You Risk Not Killing the Pigweed with Overtop App After 8 leaf?

Factors Influencing Cotton Injury from Topically Applied Herbicides



Cotton Cultivar Response To Liberty

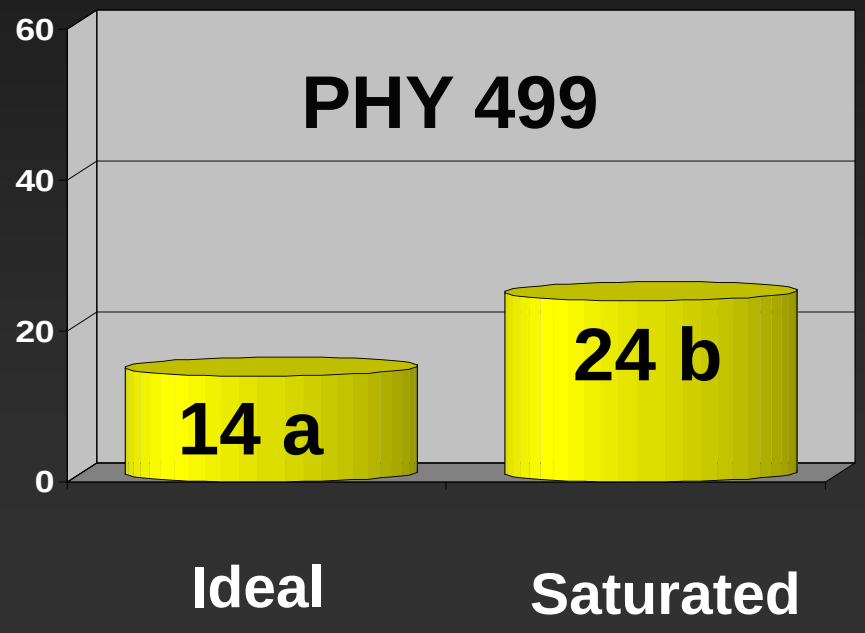


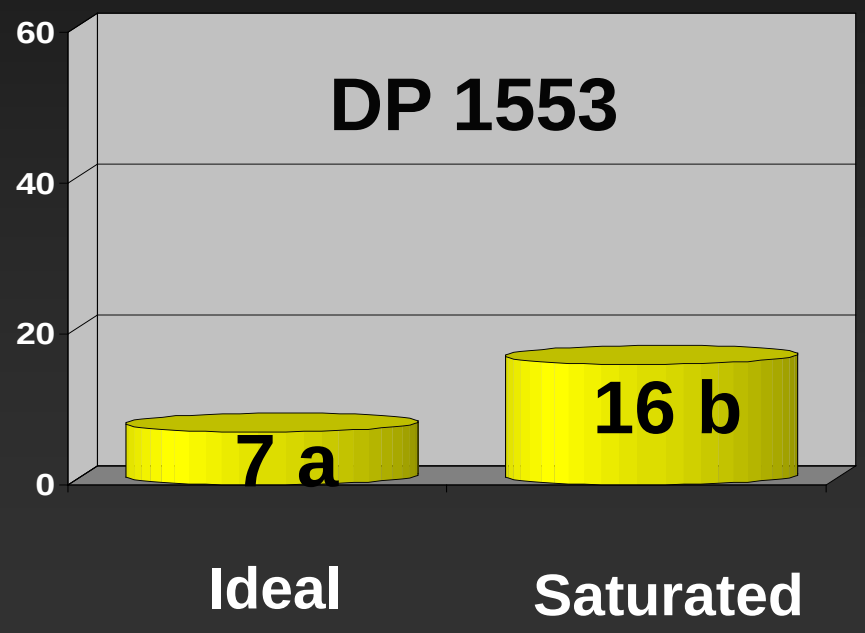
Liberty applied at 32 oz/A. C7B-16. Injury 3 to 5 DAT. Injury from 1538 and 1553 very similar.

Roundup + Liberty + Dicamba

Percent Injury As Influenced By Soil Moisture

Liberty 36 oz/A





Discussion Topics

1. Auxin technologies
2. Cotton injury
3. Conservation tillage

RESEARCH: RYE & CLOVER STRONG

2016 Research:

1. 3 studies: Cover > Conv. 100-300 lb seed cotton; hot dry fall.
2. Rye or rye + clover system better on weeds (clover melts).
3. Clover needs to be killed well in advance of planting.

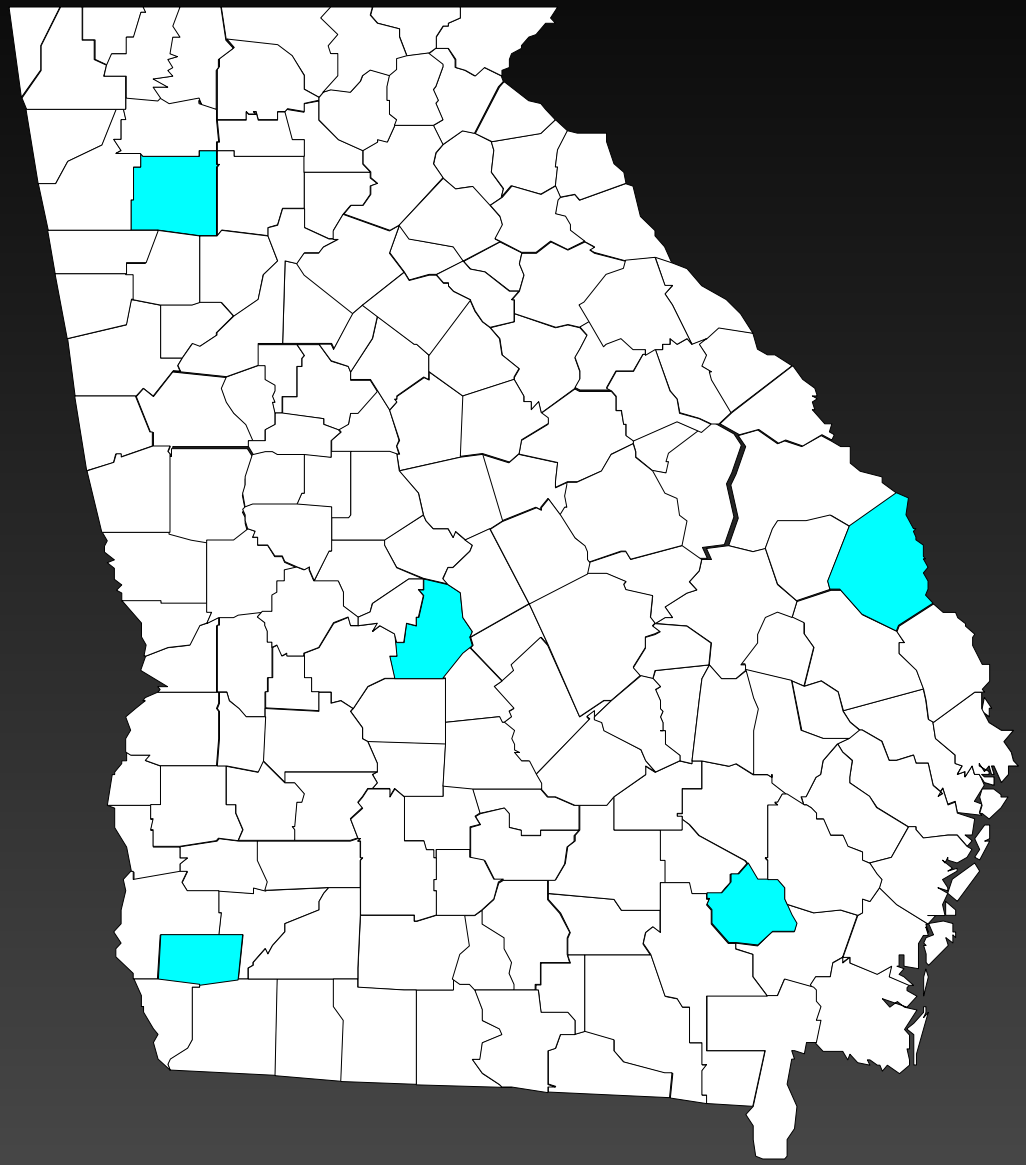
2010-2016 Research:

1. Wet-cold early = conv wins; hot or dry = cover crop wins.
2. Rye or rye/clover blend best; other grains are good.

Discussion Topics

1. Auxin technologies
2. Cotton injury
3. Conservation tillage
4. Using pesticides wisely

Using Pesticides Wisely Trainings



2017 – 5 loc

Screven: Feb 2

Pierce: Feb 13

Miller: Feb 15

Houston: Feb 17

Bartow: Mar 1

Pesticide Card – Using Pesticides Wisely

This is to attest that **Eric P. Prostko**
is certified as a **Commercial Applicator**
in the following categories:

21, 33, Using Pesticides Wisely Training

Certification Date: **10/27/2014**
License Expiration Date: **10/27/2019**
License Number: **08845**

2,4-D Salts and Relative Volatility

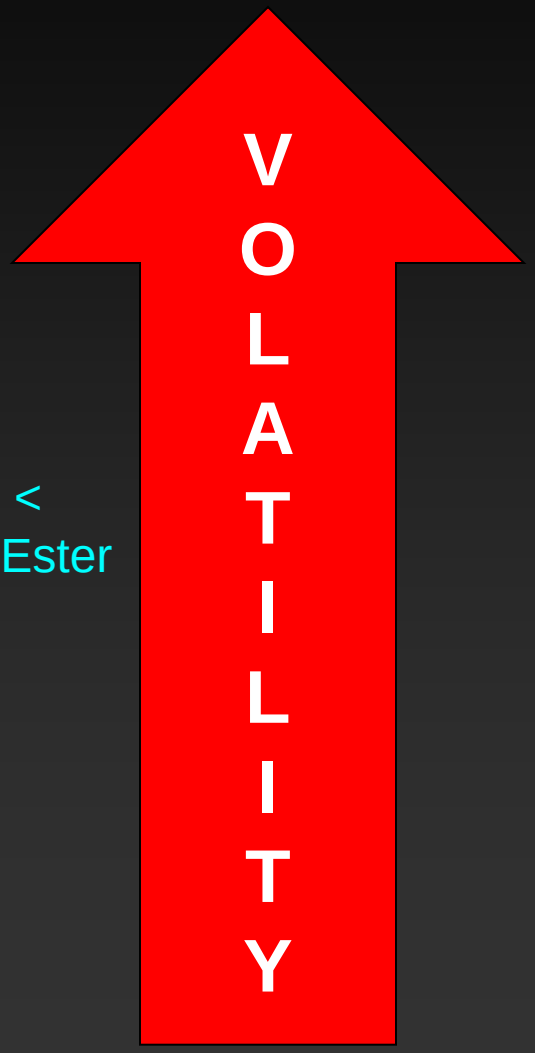
2,4-D Acid

2,4-D Ester

GA study: Amine 95% < volatility damage than Ester

2,4-D Amine

2,4-D Choline



DO NOT SPRAY ACID; DO NOT SPRAY ESTER AFTER FEB 20

Dicamba Salts and Relative Volatility

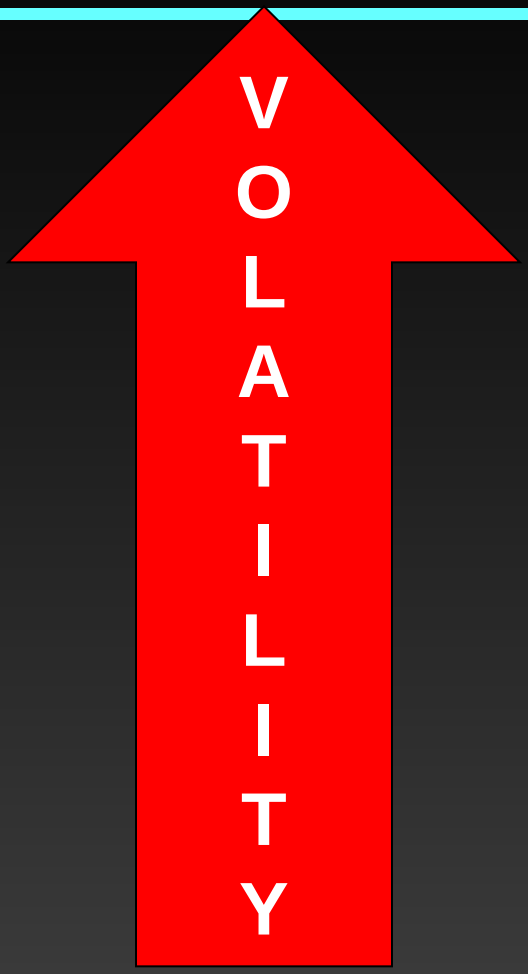
Dicamba Acid

Dicamba Na^+ or K^+

Dicamba DMA

Dicamba DGA (Clarity)

Dicamba BAPMA (Engenia) = Xtendimax?



Only these two will be legal and labeled for in season over the top use on cotton:

-Dicamba BAPMA (Engenia) = Xtendimax

-2,4-D Choline (Enlist)

That's it. No other formulation is labeled. No tank mixes labeled.

COTTON DISEASE LOSS ESTIMATE COMMITTEE REPORT, 2016.

Kathy Lawrence & Austin Hagan, Auburn University; Randy Norton, University of Arizona; Travis Faske, University of Arkansas; Robert Hutmacher, University of California, John Muller, Clemson University; David Wright & Ian Small, University of Florida; Bob Kemerait, University of Georgia; Charlie Overstreet & Paul Price, Louisiana State University, Gary Lawrence & Tom Allen, Mississippi State University, Sam Atwell & Andrea Jones, University of Missouri; Steve Thomas & Natalie Goldberg, New Mexico State University; Randy Boman & Jerry Goodson, Oklahoma State University; Heather Young, University of Tennessee; Jason Woodward, Texas A & M; and Hillary Mehl, Virginia Tech.

Percent disease loss estimates, 2016	AL	AZ	AR	CA	FL	GA	LA	MS	MO	NM	NC*	OK	SC	TN	TX	VA	Bales Lost	Avg. % Bale Lost
Fusarium Wilt (*F. vasinfectum*)	1.0	0.0	0.3	1.8	0.0	0.1	0.0	0.1	0.1	0		0.0	1.5	0.5	0.3	0.0		**0.35**
Bales Lost to Fusarium (x 1,000)	7.1	0.0	2.5	4.6	0.0	2.3	0.0	1.1	0.6	0.0		0.0	4.4	2.8	22.2	0.0	**47.4**	
Verticillium Wilt (*V. dahliae*)	1.0	1.5	0.1	0.3	0.0	0.0	0.0	0.0	0.1	1		0.8	0.0	0.5	2.2	0.0		**0.47**
Bales Lost to Verticillium (x 1,000)	7.1	5.4	0.8	0.8	0.0	0.0	0.0	0.0	0.6	0.9		4.2	0.0	2.8	162.8	0.0	**185.4**	
Bacterial Blight (*X. malvacearum*)	0.2	0.0	0.1	0.0	0.0	0.5	0.8	0.1	2.0	0.5		2.5	0.1	0.0	0.2	0.0		**0.44**
Bales Lost to Xanthomonas (x 1,000)	1.4	0.0	0.8	0.0	0.0	11.3	2.2	1.1	11.3	0.4		14.1	0.3	0.1	14.8	0.0	**57.8**	
Root Rot (*P. omnivorum*)	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0		0.2	0.0	0.0	3.0	0.0		**0.33**
Bales Lost to Phymatotrichopsis (x 1,000)	0.0	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		1.1	0.0	0.0	222.0	0.0	**230.3**	
Seedling Diseases (Rhizoctonia, ect.)	2.0	0.5	2.5	1.3	0.2	1.0	3.0	1.5	0.1	0.5		0.1	2.0	4.0	1.8	3.0		**1.40**
Bales Lost to Seedling Disease (x 1,000)	14.2	1.8	20.8	3.3	0.4	22.5	8.1	16.5	0.6	0.4		0.6	5.8	22.6	133.2	3.0	**248.2**	
Ascochyta Blight (*A. gossypii*)	0.5	0.0	0.1	0.0	1.0	trace	0.1	0.0	0.0	0		0.0	0.1	1.0	0.0	0.1		**0.21**
Bales Lost to Ascochyta (x 1,000)	3.6	0.0	0.4	0.0	1.8	0.0	0.3	0.0	0.0	0.0		0.0	0.3	5.7	0.0	0.1	**12.1**	
Boll Rots (Multiple Genera)	4.0	0.1	2.5	0.0	5.0	2.5	6.0	1.5	6.0	0.5		0.1	0.3	2.0	0.7	3.0		**3.07**
Bales Lost to Boll Rots (x 1,000)	28.4	0.4	20.8	0.0	9.0	56.3	16.2	16.5	33.9	0.4		0.6	0.7	11.3	51.8	3.0	**249.2**	
Nematodes (All)	6.0	3.0	4.2	0.1	7.1	8.5	6.0	7.5	4.0	0.5		0.2	8.0	2.6	2.9	5.0		**4.30**
Bales Lost to Nematode (x 1,000)	42.6	10.8	34.9	0.3	12.8	191.3	16.2	82.5	22.6	0.4		1.1	23.2	14.7	214.6	5.1	**672.9**	
Nematodes (*Meloidogyne* spp.)	2.0	3.0	2.0	0.1	5.5	6.0	3.0	2.0	0.0	0.5		0.2	3.0	0.1	2.5	2.0		**2.15**
Bales Lost to Root knot (x 1,000)	14.2	10.8	16.6	0.3	9.9	135.0	8.1	22.0	0.0	0.4		1.1	8.7	0.6	185.0	2.0	**414.7**	
Nematodes (*R. reniformis*)	4.0	0.0	2.0	0.0	1.5	2.0	3.0	5.0	0.0	0		0.0	2.0	2.5	0.4	0.0		**1.43**
Bales Lost to Reniform (x 1,000)	28.4	0.0	16.6	0.0	2.7	45.0	8.1	55.0	0.0	0.0		0.0	5.8	14.1	29.6	0.0	**205.3**	
Nematodes (Other genera)	0.5	0.0	0.2	0.0	0.1	0.5	0.0	0.5	0.0	0		0.0	3.0	0.0	0.0	3.0		**0.50**
Bales Lost to other Nematodes (x 1,000)	3.6	0.0	1.7	0.0	0.2	11.3	0.0	5.5	0.0	0.0		0.0	8.7	0.0	0.0	3.0	**33.9**	
Leaf Spots & Others	3.0	0.5	1.5	0.0	2.5	0.3	4.0	3.2	8.0	0		0.5	0.1	2.0	0.2	0.5		**1.68**
Bales Lost to Leaf Spots & Others (x 1,000)	21.3	1.8	12.5	0.0	4.5	6.8	10.8	35.2	45.2	0.0		2.8	0.3	11.3	14.8	0.5	**167.7**	
Total Percent Lost	**17.7**	**7.6**	**11.3**	**3.4**	**15.8**	**12.9**	**19.9**	**13.9**	**20.3**	**3.0**		**4.4**	**12.1**	**12.6**	**11.3**	**11.6**		**11.71**
Total Bales Lost (x 1,000)	**125.7**	**27.4**	**93.4**	**8.8**	**28.4**	**290.3**	**53.7**	**152.9**	**114.7**	**2.6**		**24.6**	**34.9**	**71.2**	**836.2**	**11.7**	**1871.1**	
Total Yield in Bales (x 1,000) (USDA Dec 2106)	**710**	**360**	**830**	260	180	**2250**	**270**	1100	**565**	**85**	**360**	565	290	565	**7400**	**101**	**15891**	

* NC did not report . **For AZ, CA, NM, and TX yields include upland and pima cotton production

Bales in Georgia Lost to:

Fusarium	2,300
Verticullium	0
Bacterial Blight	11,300
Seedling Diseases	22,000
Boll Rot	56,300
Nematodes	191,300
Root Knot	135,000

Almost 13% of yield is lost each year

290,300 bales total lost each year

More focus here!

145 million pounds = $103,056,500

65% of the total bales lost in Georgia are from Nematodes

65% of the total bales lost in Georgia are from Nematodes

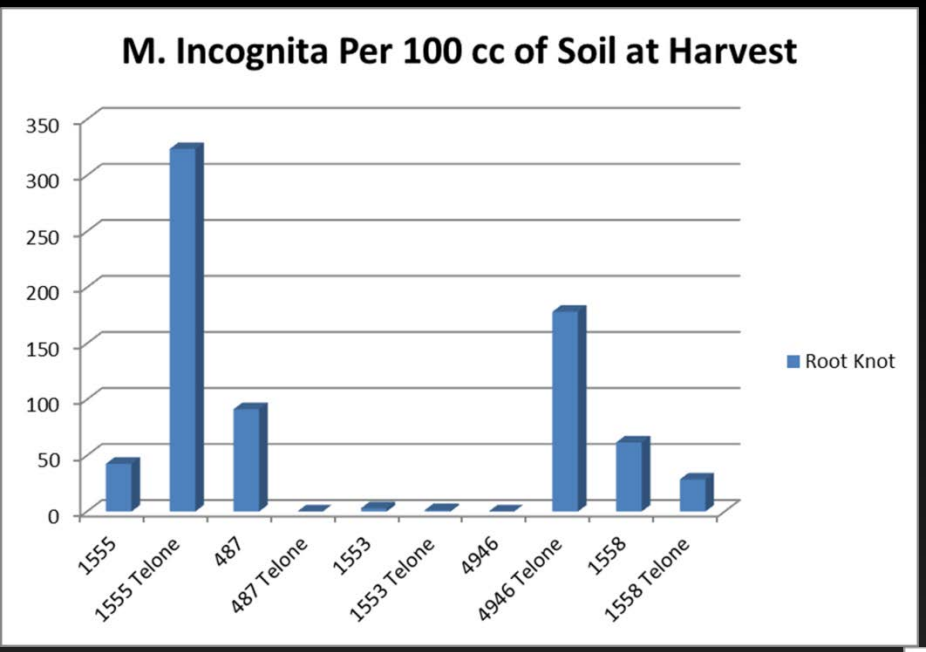
What are you spending most money on?

Have you taken nematode samples?

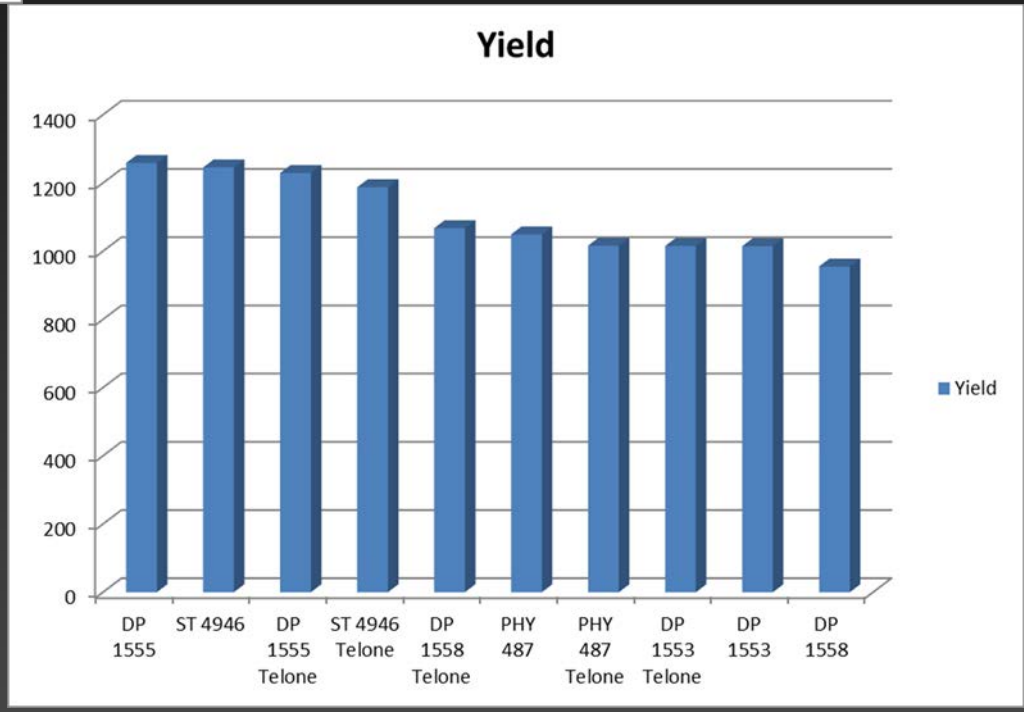
What is your rotation?

Corn and Soybeans are susceptible to nematodes.

Use nematicides or resistant cotton varieties?



Nematode trial 2016



Appling County Variety Trial

2016

Variety	Yield
PHY 444	1119.2448
DG 2615	1065.2209
ST 4946	1054.5603
ST 5115	1023.3614
ST 6182	1018.4744
PHY 496	1016.7035
CG3885	991.84186
PHY 333	984.5
DP1538	963.90988
DP 1553	948.57674
DP 1646	921.36552
NG 3526	894.91395
PHY 487	894.13372
NG 5007	891.72414
DG 3522	881.96954
BX 1739	876.78621

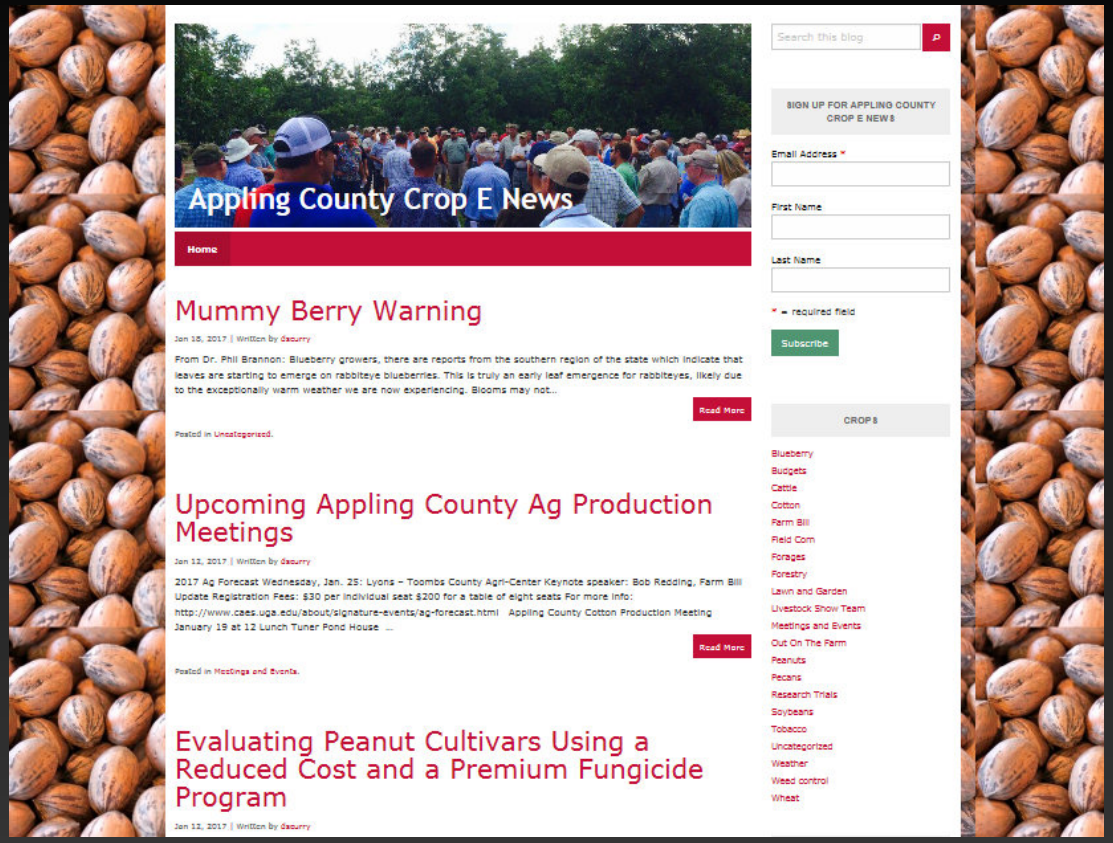
2015

Variety	Average of Seed Yield	Average of Gin Turnout	Average of Lint Yield
ST 6182 GLT	2,520	0.496	1,250
DP 1252 B2RF	2,527	0.479	1,210
DP 1538 B2XF	2,514	0.477	1,199
CG 3885 B2XF	2,502	0.472	1,181
NG 5007 B2XF	2,521	0.459	1,157
PHY 444 WRF	2,463	0.469	1,155
DP 1553 B2XF	2,415	0.472	1,140
PHY 333 WRF	2,404	0.461	1,108
NG 3405 B2XF	2,375	0.460	1,093
DP 1558NR B2RF	2,320	0.456	1,058
PHY 552 WRF	2,256	0.454	1,024
ST 4946 GLB2	2,273	0.444	1,009
Grand Total	**2,424**	**0.467**	**1,132**

Replicating on farm research is important. You can see 1553 variety in the below trial varied 310 lbs. across the field with the same treatment. To know if a product truly works, you need multiple replications across a field.

Rep 1		Rep 2		Rep 3	
Variety	Yield	Variety	Yield	Variety	Yield
1555 Telone	1305.251335	1555	1331.757	1555	1198.314
4946	1267.598347	4946	1325.561	4946	1143.106
4946 Telone	1265.591892	1555 Telone	1255.926	1555 Telone	1126.988
1555	1246.165027	4946 Telone	1244.799	4946 Telone	1051.681
487	1217.070302	1558 Telone	1083.398	1558 Telone	991.3856
1553	1192.032225	487	1003.077	1553 Telone	949.9561
487 Telone	1181.232081	1558	977.9121	487	927.6365
1558 Telone	1126.881987	1553 Telone	977.2303	487 Telone	911.7501
1553 Telone	1117.924622	1553	968.7365	1558	897.6998
1558	989.7801701	487 Telone	955.8586	1553	882.3912

What are people most interested in on the blog?



https://blog.extension.uga.edu/applingcrop/

Google “appling farm news”

Pages	Sessions
Appling County Crop E News |	2,999
Appling County Crop E News | Forestry Herbicides For Longleaf Pines	429
Appling County Crop E News | High yield soybeans looking good	400
Appling County Crop E News | Spring Lawn Care	342
Appling County Crop E News | Worms in Peanuts	317
Appling County Crop E News | Blueberry Leaf Rust	218
Appling County Crop E News | Corn Moisture Conversion Chart	198
Appling County Crop E News | Out On The Farm	185
Appling County Crop E News | Southeast Georgia Pecan Field Day August 19	165
Appling County Crop E News | Renew Your GATE Card	159

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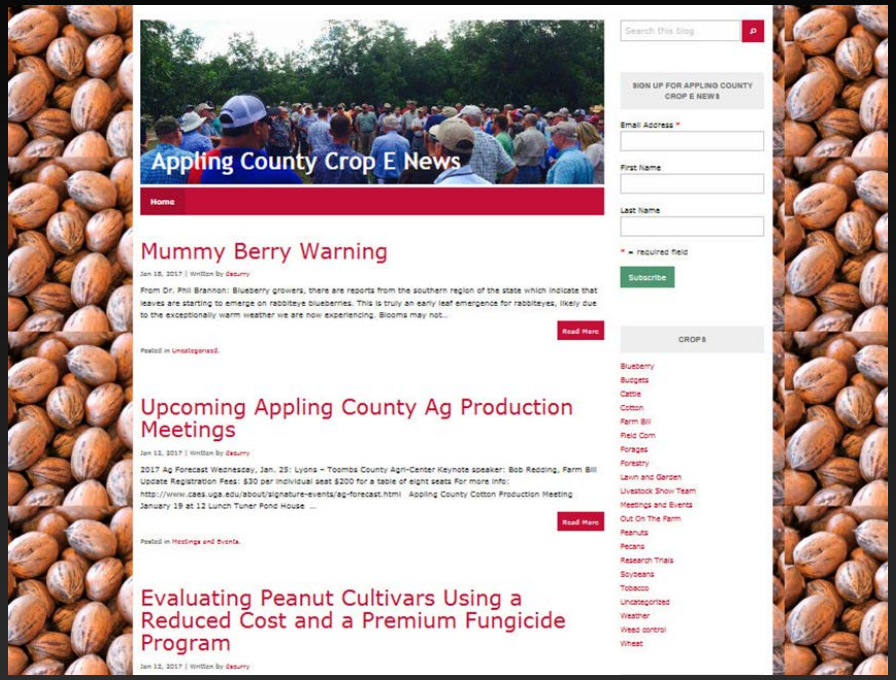
What are people most interested in on the blog?



https://blog.extension.uga.edu/applingcrop/

Google “appling farm news”

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Bales in Georgia Lost to:

Fusarium	2,300
Verticullium	0
Bacterial Blight	11,300
Seedling Diseases	22,000
Boll Rot	56,300
Nematodes	191,300
Root Knot	135,000

Let's focus on where yield is being lost the most!

Almost 13% of yield is lost each year

290,300 bales total lost each year

145 million pounds = $103,056,500

More focus here!

94 million lbs. lost

65% of the total bales lost in Georgia are from Nematodes

- Variety selection
- Weed Control
- Fertility (N,P,K) & soil pH
- Nematodes