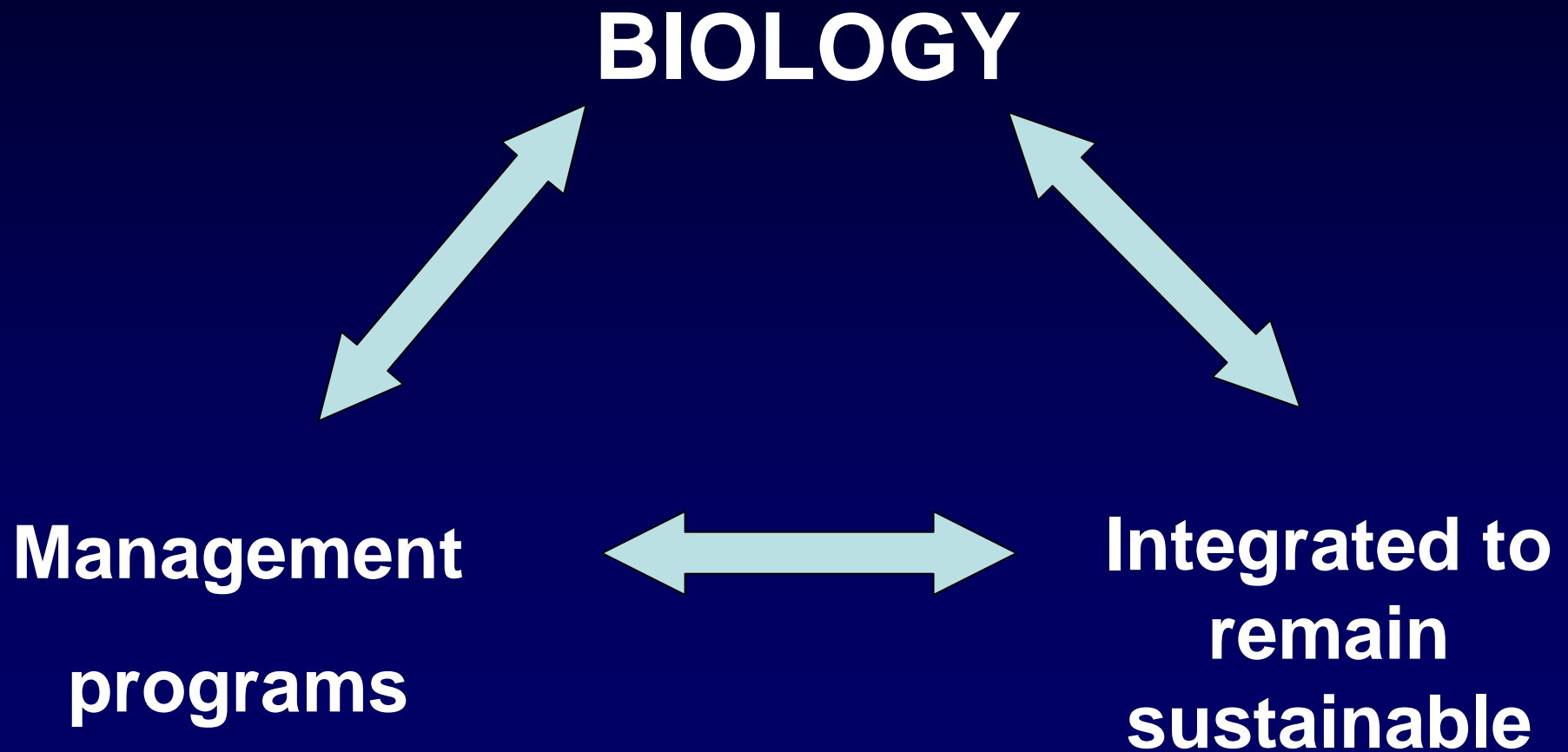


2012 Grower Meetings: Diversity and Integration; Keys to Surviving in a Palmer World



Stanley Culpepper, University of Georgia, Tifton

Diversity and Integration: Keys to Surviving in a Palmer World



RR Reduced Tillage Cotton Systems. 2012.

Preplant	PRE	POST1	POST 2	Layby
Valor <i>No Palmer up</i>	Reflex + Direx <i>add paraquat</i>	RU + Staple OR RU + Dual or Warrant	RU + Dual or Warrant	Direx + MSMA
Valor + Direx <i>Palmer up, >15 d to plant</i>	Reflex + Prowl <i>add paraquat</i>			
Direx <i>Palmer up, <15 d to plant</i>	Reflex + Prowl <i>add paraquat</i>			

RR Reduced Tillage Cotton Systems. 2012.

Preplant	PRE	POST1	POST 2	Layby
Valor <i>No Palmer up</i>	Reflex + Direx <i>add paraquat</i>	RU + Staple	RU + Dual or Warrant	Direx + MSMA
Valor + Direx <i>Palmer up, >15 d to plant</i>	Reflex + Prowl <i>add paraquat</i>	OR		
Direx <i>Palmer up, <15 d to plant</i>	Reflex + Prowl <i>add paraquat</i>	RU + Dual or Warrant		

**APPLY VALOR AND/OR DIREX TO EVERY ACRE;
MUST BE PALMER FREE AT PLANTING!!!**

Valor applied broadcast followed by strip till.



RR Reduced Tillage Cotton Systems. 2012.

Preplant	PRE	POST1	POST 2	Layby
Valor <i>No Palmer up</i>	Reflex + Direx <i>add paraquat</i>	RU + Staple	RU + Dual or Warrant	Direx + MSMA
Valor + Direx <i>Palmer up, >15 d to plant</i>	Reflex + Prowl <i>add paraquat</i>	OR		
Direx <i>Palmer up, <15 d to plant</i>	Reflex + Prowl <i>add paraquat</i>	RU + Dual or Warrant		

RR Reduced Tillage Cotton Systems. 2012.

Preplant	PRE	POST1	POST 2	Layby
Valor	Reflex + Direx	RU + Staple	RU + Dual or Warrant	Direx + MSMA
Valor + Direx	Reflex + Prowl	OR		
Direx	Reflex + Prowl	RU + Dual or Warrant		



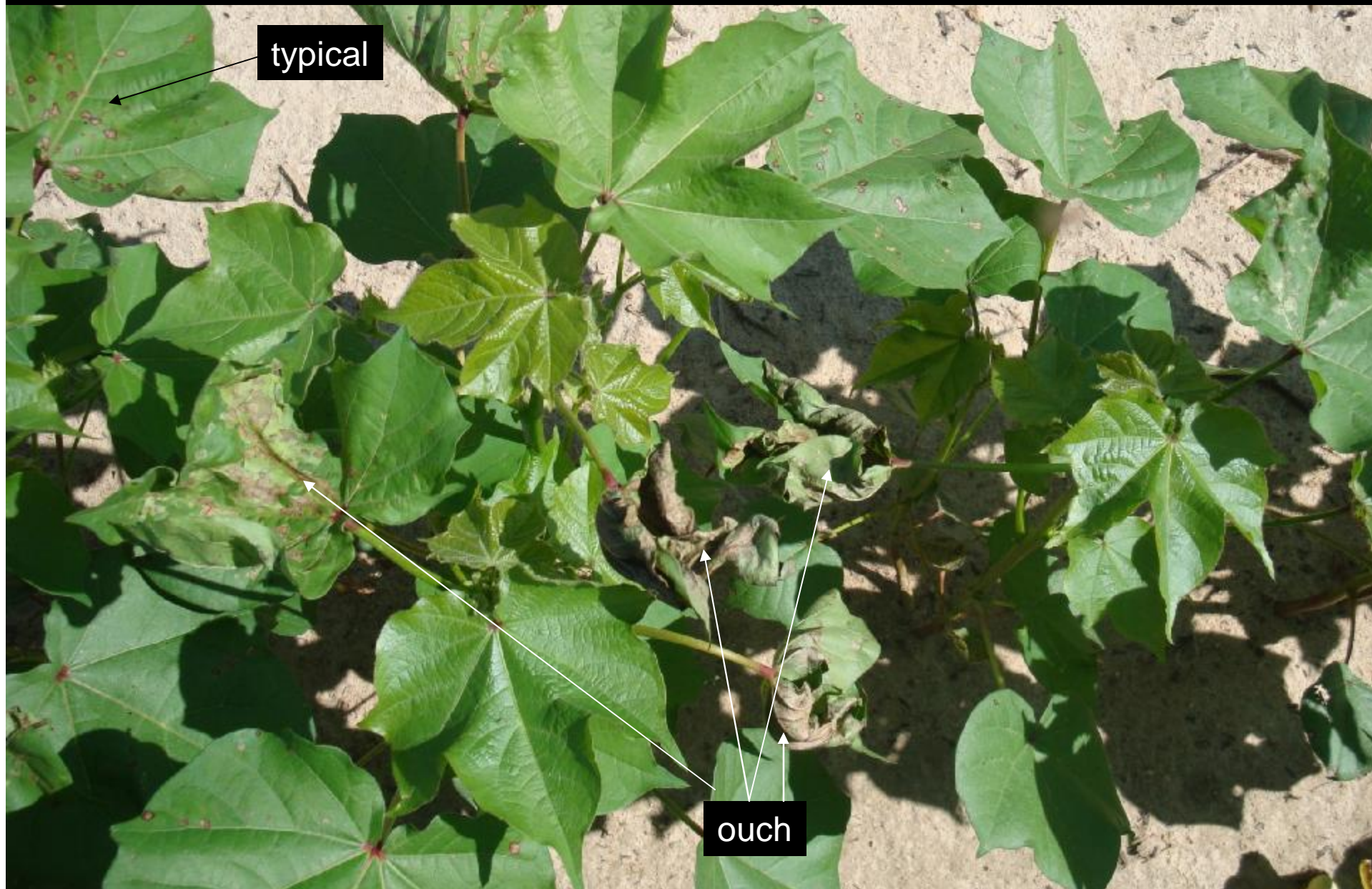
RU + Staple wins 7 out of 10 times!

RR Reduced Tillage Cotton Systems. 2012.

Preplant	PRE	POST1	POST 2	Layby
Valor	Reflex + Direx	RU + Staple	RU + Dual or Warrant	Direx + MSMA
Valor + Direx	Reflex + Prowl	OR		
Direx	Reflex + Prowl	RU + Dual or Warrant		

Consider direct spraying Warrant mixture if more than 6 leaf cotton!

Roundup + Warrant applied over **AGGRESSIVELY**
growing **LARGE** cotton.



RR Reduced Tillage Cotton Systems. 2012.

Preplant	PRE	POST1	POST 2	Layby
Valor	Reflex + Direx	RU + Staple	RU + Dual or Warrant	Direx + MSMA
Valor + Direx	Reflex + Prowl	OR		
Direx	Reflex + Prowl	RU + Dual or Warrant		

No brainer.....Suprend great option as well!



RR Reduced Tillage Cotton Systems. 2012.

Preplant	PRE	POST1	POST 2	Layby
Valor	Reflex + Direx	RU + Staple		
Valor + Direx	Reflex + Prowl	OR	RU + Dual or Warrant	Direx + MSMA
Direx	Reflex + Prowl	RU + Dual or Warrant		
add paraquat if Palmer emerged, follow plantback	48 hr within planting; add paraquat	10 - 12 d after PRE (10 day after May 10)	12 - 14 d after POST1 (12 day after May 10)	15-17 d after POST2

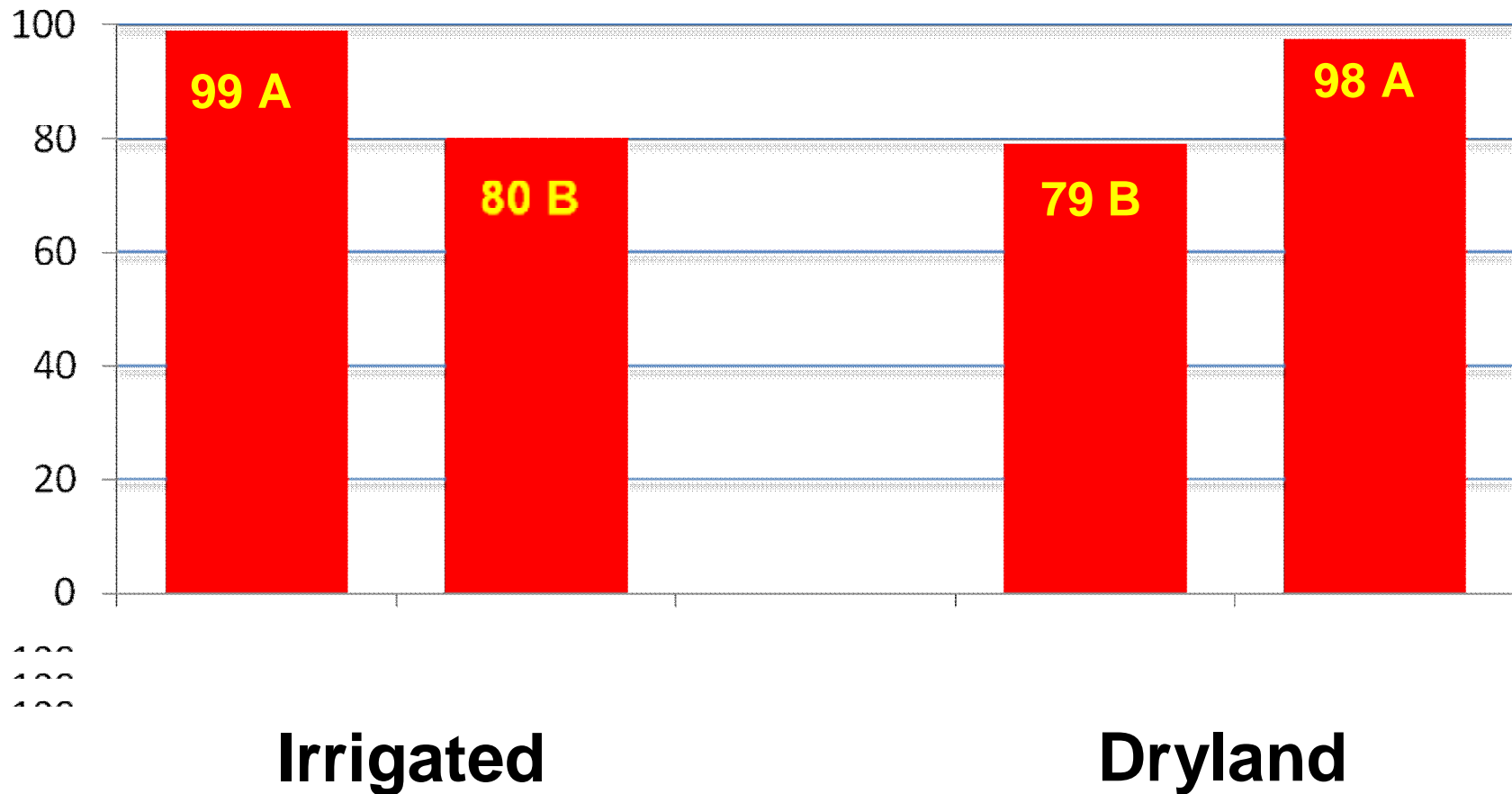
RR Reduced Tillage Cotton Systems. 2012.

Preplant	PRE	POST1	POST 2	Layby
Valor	Reflex + Direx	RU + Staple	<p>Allows 2 residuals at planting instead of 3 to reduce injury.</p> <p>Perfect timing for thrips application!</p> <p>Allows time for activation before PRE breaks down!</p>	
Valor + Direx	Reflex + Prowl	OR		
Direx	Reflex + Prowl	RU + Dual or Warrant		
<p>add paraquat if Palmer emerged, follow plantback</p>	<p>48 hr within planting; add paraquat</p>	<p>10 - 12 d after PRE</p> <p>(10 day after May 10)</p>	<p>12 - 14 d after POST1</p> <p>(12 day after May 10)</p>	<p>15-17 d after POST2</p>

Tillage is now a common scene



Percent Palmer Amaranth Control with Reflex 1 pt/A PPI or PRE in 2010.



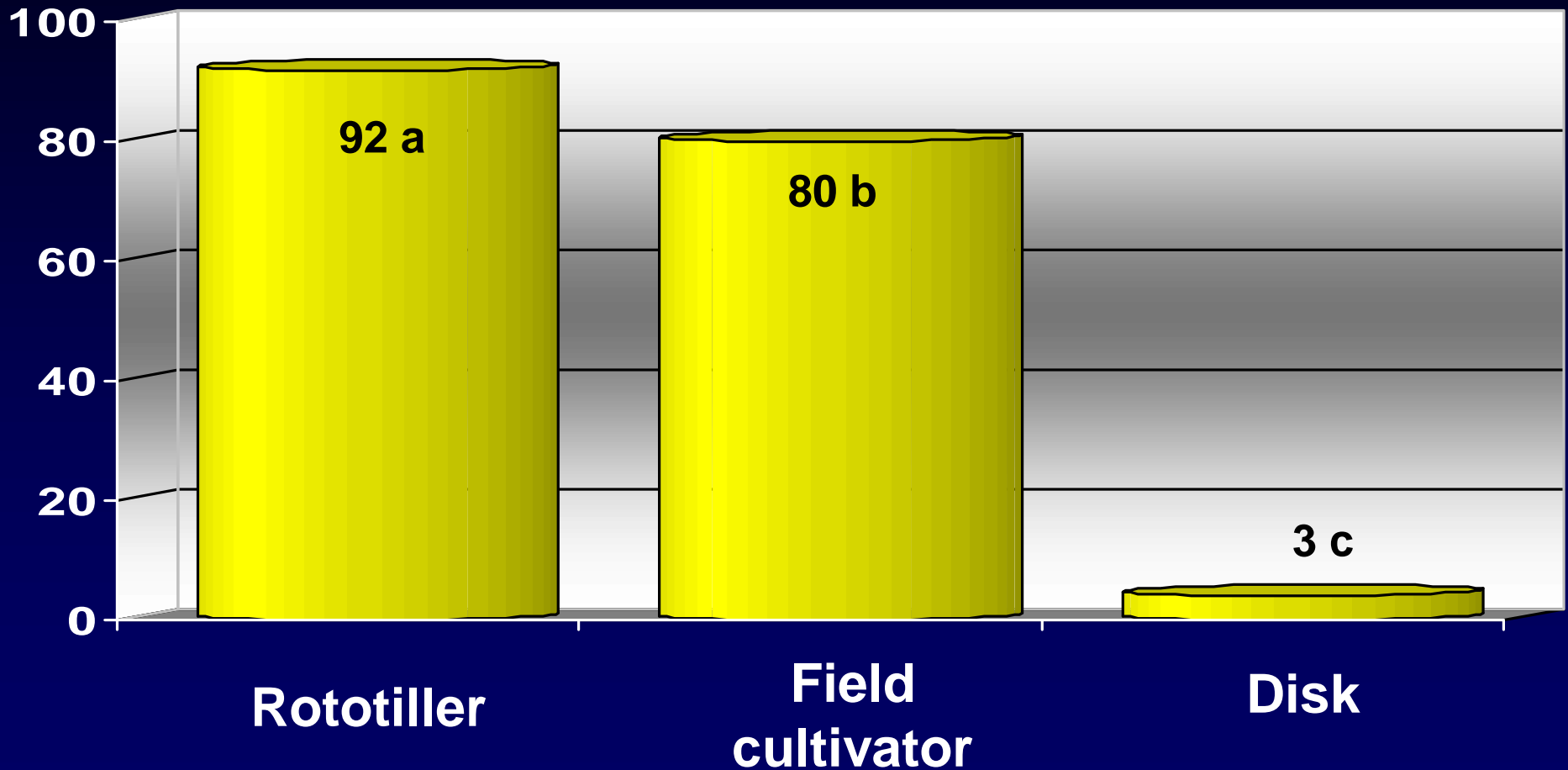
RR Conventional Tillage Cotton Systems. 2012.

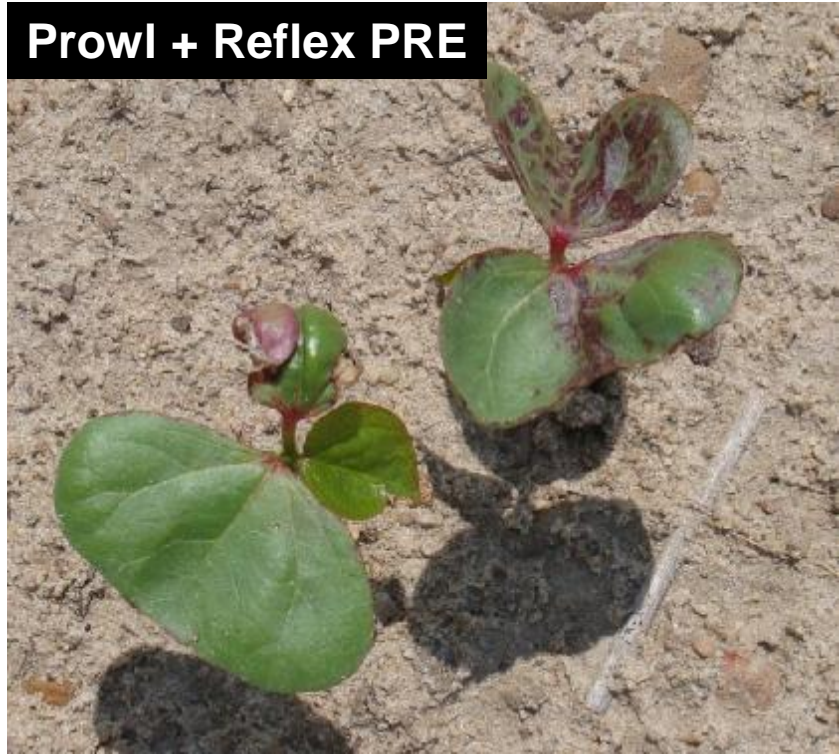
Preplant	PRE	POST1	POST2	Layby
Treflan/Prowl + Reflex 12 oz	Reflex 8-12 oz + Direx	RU + Staple (Palmer up) or RU + Dual or Warrant	RU + Dual or Warrant	Direx + MSMA



Plant as soon after incorporation as possible

Percent Palmer Control with Reflex + Prowl PPI, 2010. TyTy, GA. 38 DAT.





Irrigated May 13
Planted May 14
Irrigated May 19 during emergence

Roundup Ready PLUS Cotton Incentive (Up to \$22)

Valor AND Reflex = (\$3.00)

Cotoran, Cotton Pro, Direx = (\$3.00)*

Warrant 3 pt = (\$4.50)*

Dual Magnum 1 pt = (\$3.00)

Gramoxone Inteon 2 pt = (\$1.00)

*Will pay on 2 applications

GR Palmer amaranth control in dryland conservation tillage systems



Prowl + Reflex PRE

Roundup + Dual POST

Diuron + MSMA PD



Prowl + Reflex PRE

Ignite + Dual POST

Diuron + MSMA PD

Making the most of your Liberty!

Ø Water volume

Ø Spray tip and pressure

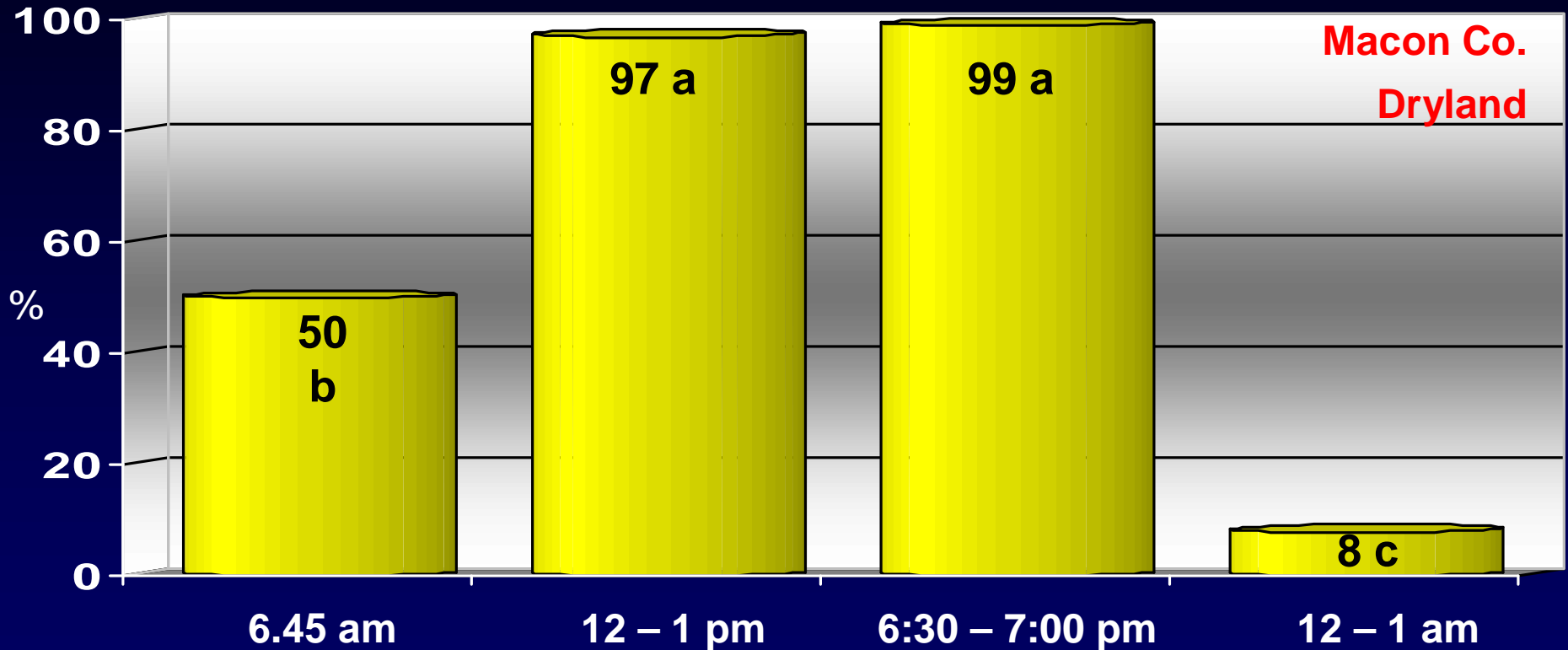
Ø Time of day you spray

Ø Palmer size



**MOST IMPORTANT IS TO HAVE PRESSURE AND NOZZLES
THAT GENERALTE MEDIUM (300-400 MICRONS)**

Late-season Palmer control with Liberty as influenced by time of day.



Time of Day for Ignite Applications

Ignite POST 1 (5" Palmer), Ignite POST 2 (18 d later), Diuron + MSMA layby

Making the most of your Liberty!

GPA

Time

**Biggest pigweed
in the field is 3
inches!!!!!!!!!!!!!!!!!!!!**

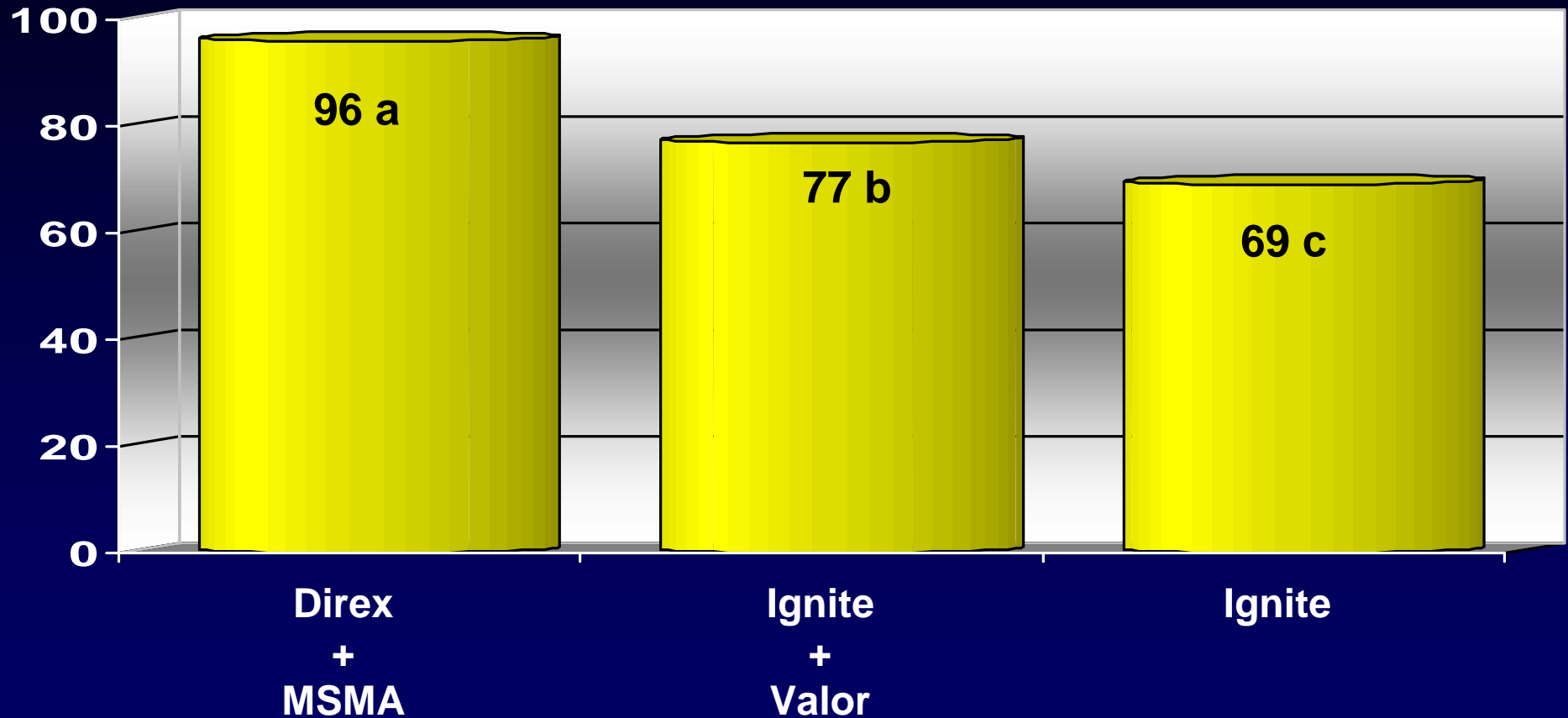
Nozzle

Rate

Controlling Palmer in LL Cotton. 2012.

Pre-plant	PRE	POST1	POST 2	Layby
Valor or diuron	Diuron + Prowl Cotoran + Prowl Reflex + Prowl Staple + Prowl	Liberty + Dual Mag	Liberty	Diuron + MSMA
Valor before Palmer emergence; diuron + paraquat less than 5" Palmer	48 hr within planting; add paraquat	12 - 14 d after PRE (12 day after May 10)	14 - 16 d after POST1 (14 day after May 10)	15-17 d after POST 2

Six Inch GR Palmer Response to Layby or Hooded Spray Options. Macon, 2012.



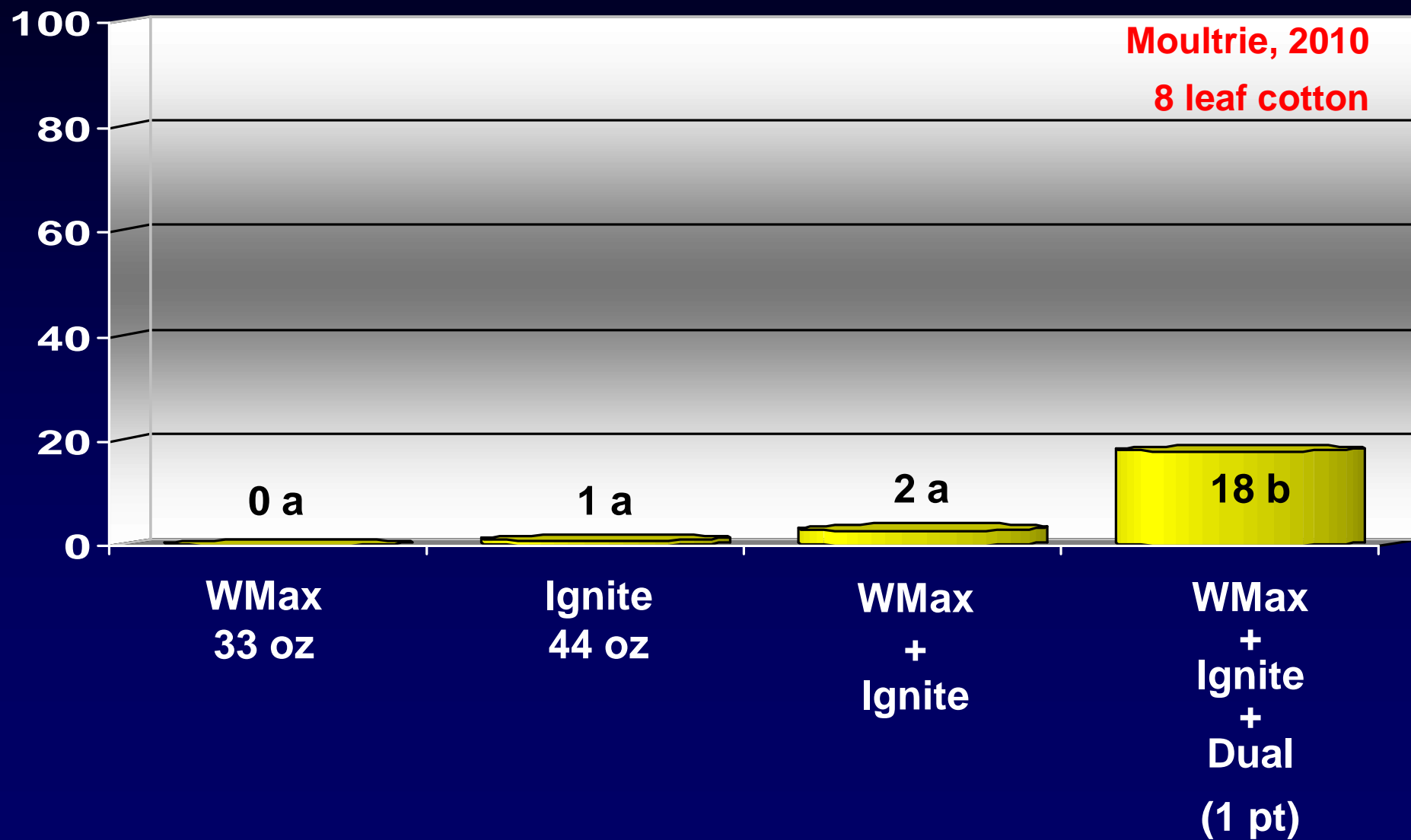
2012 Liberty Based Programs

1. LibertyLink

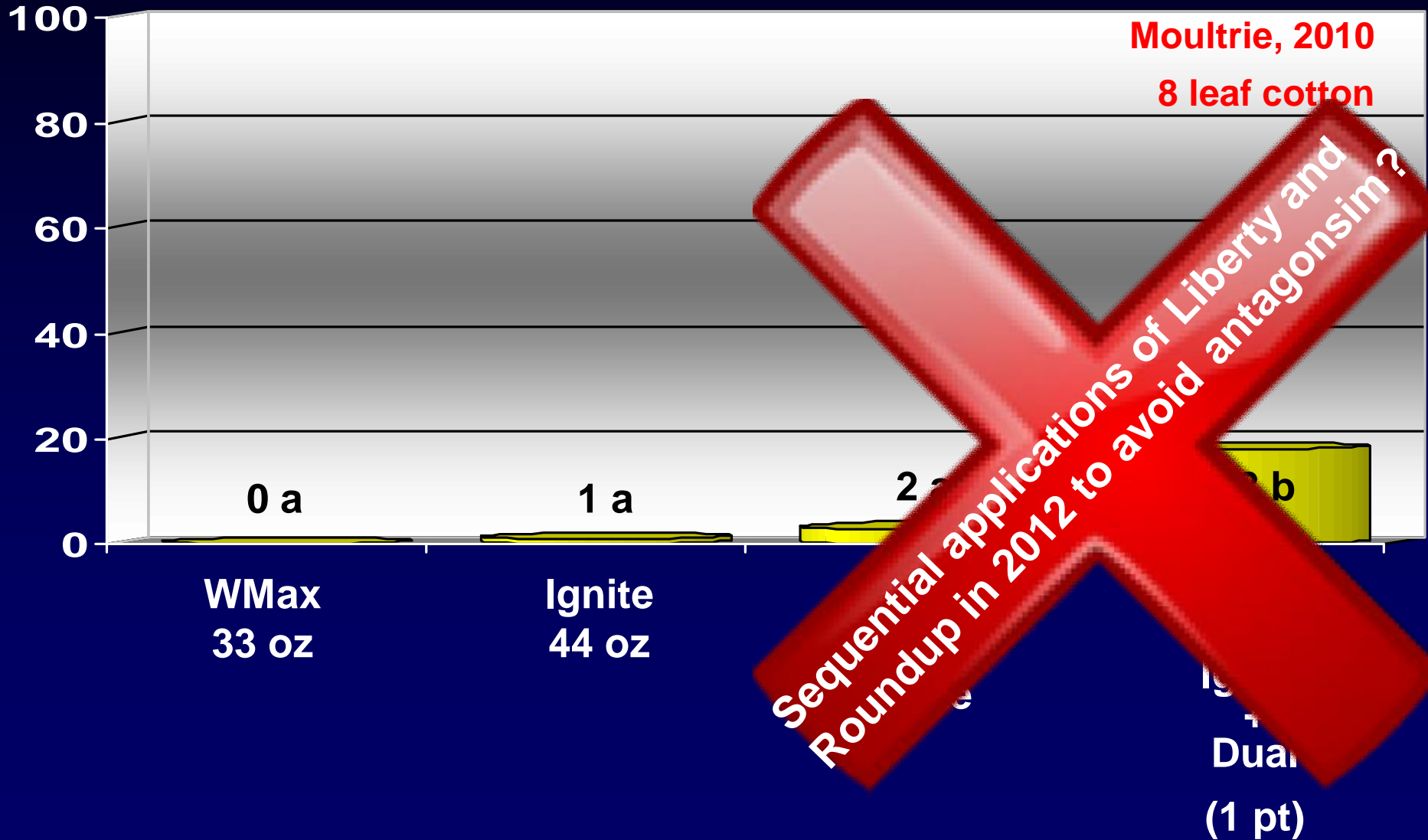
2. WideStrike

3. GlyTol LibertyLink

Percent GlyTol + LL cotton injury from topical applications 7 DAT.

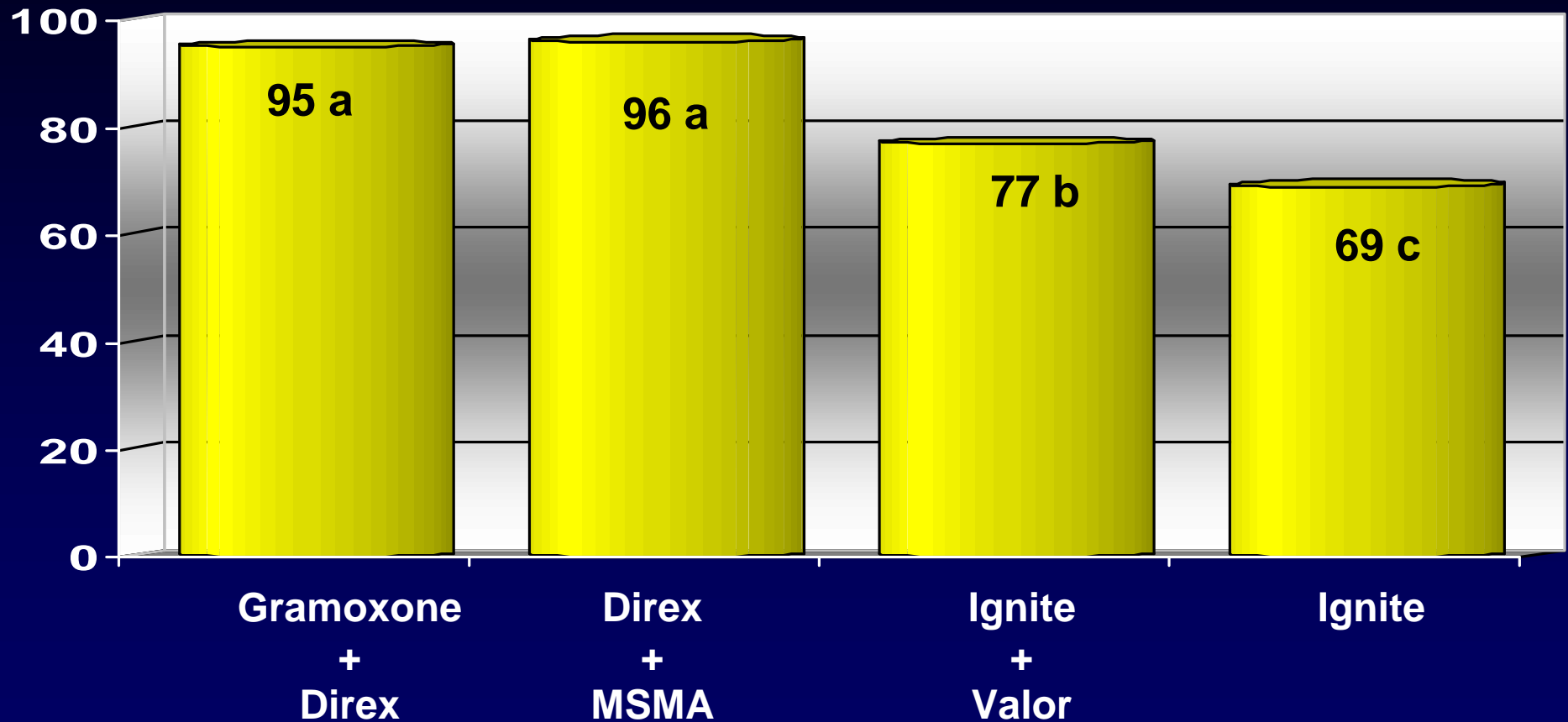


Percent GlyTol + LL cotton injury from topical applications 7 DAT.





Six Inch GR Palmer Response to Layby or Hooded Spray Options. Macon, 2012.



Heavy Residue



Deep Turn



Adopt Integrated Programs Or You Simply Wont Survive Because of Resistance!!!

Hand weed



Cultivate

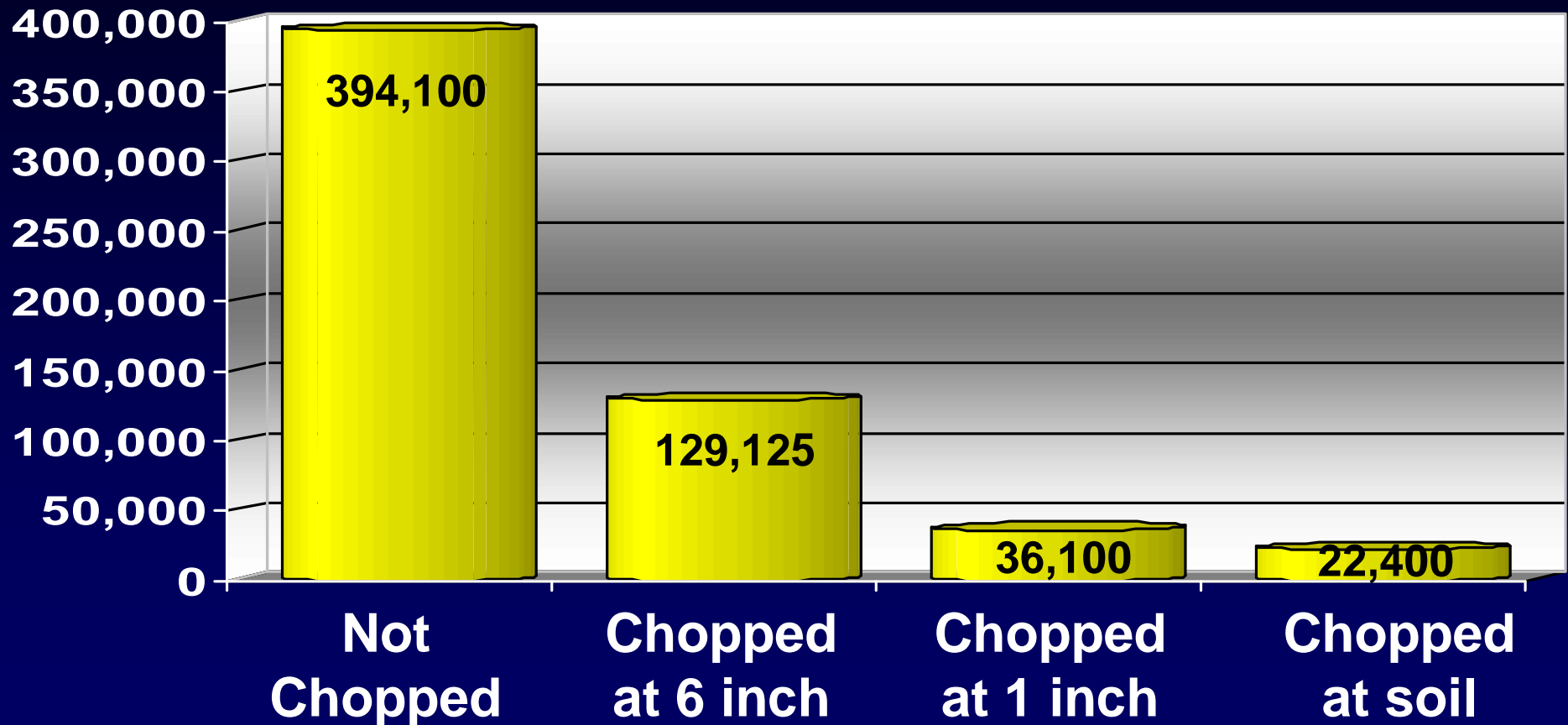


2006-2010: 92% of growers hand-weeded
52% cotton acres at \$23.70/A



Photo by A.C. York 2010

Palmer Seed (#/plant) when Chopping Plants at Cotton Layby.



Developing Integrated Programs



Potential Benefits for Georgia Growers



1. Improved Palmer control
2. Protect herbicide chemistry
3. Labor (compared to tillage)
4. Wind and water erosion
5. Prevents GR horseweed
6. Prevents/Lessons GR ryegrass
7. Moisture conservation
8. Reduce herbicide inputs
9. Higher yields on dryland
10. Protection from EPA
11. Reduces thrips damage

Potential Challenges for Georgia Growers

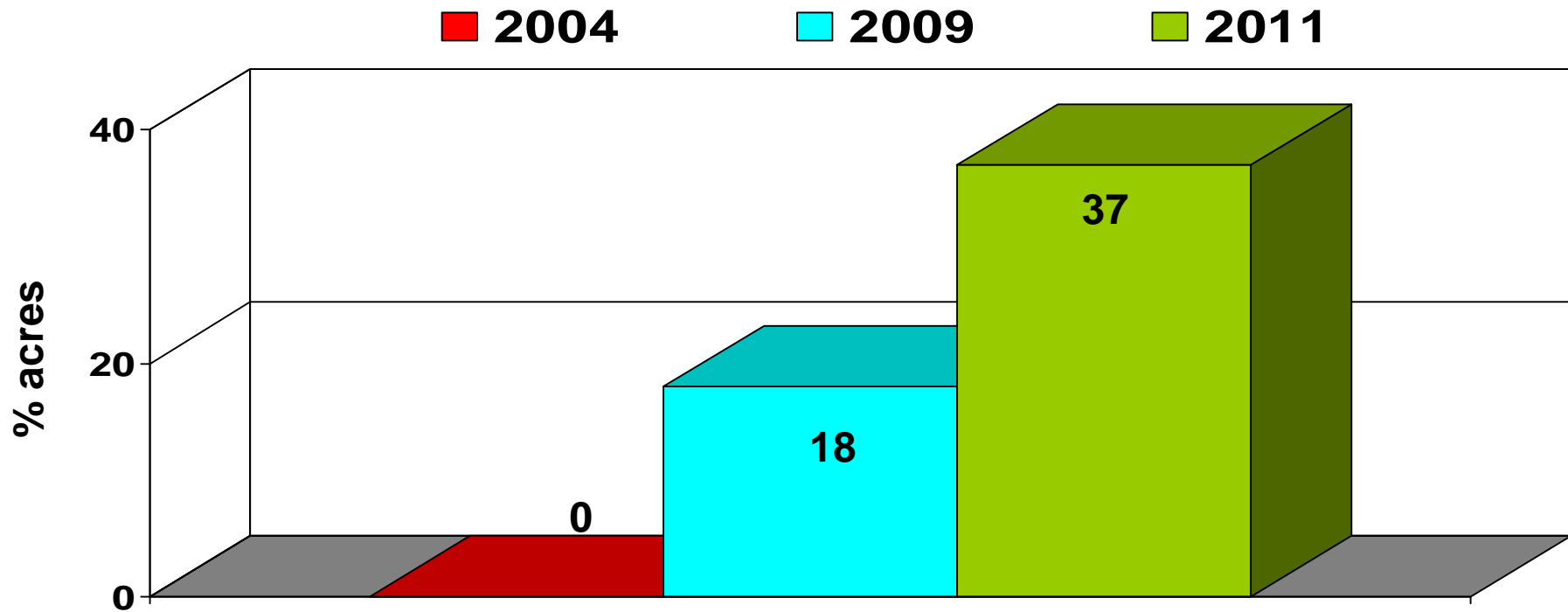


1. Blowout impacting stand
2. Incorporate herbicides with when strip tilling
3. Time to get established
4. Increased fertilizer
5. Rubber wheel system
6. Grower comfort





Impact of GR Palmer amaranth on GA.



Liberty-based Programs



1.5 pt of 2,4-D



Liberty + 1.5 pt of 2,4-D



Clarity 8 oz



Liberty + Clarity 8 oz



HPPD



Liberty + HPPD

Herbicide Resistance: Will You Survive?

25 plants per
square foot emerge

=

1,089,000 plants
per acre

If resistance is **one in a billion** then you
only need **918 acres** to find that plant.

Herbicide Resistance: Will You Survive?

25 plants per
square foot emerge

=

1,089,000 plants
per acre

**DO NOT SPRAY LIBERTY BUT TWICE
PER YEAR IN A SOUND PROGRAM!!!**

Controlling Palmer Without Killing Cotton With Herbicides!



Seedling depth and vigor



Irrigation Schedule



Soil dry or moist at planting?

AT-PLANT HERBICIDES

Cotoran

Diuron

Prowl

Reflex

Staple

Combinations

Irrigation/Herbicide Scheduling

(preliminary as much more work is being conducted)



**Irrigate
before
planting**

P
L
A
N
T

**DO NOT
irrigate first
36-48 hr??**

Irrigate

**DO NOT irrigate
24 hr before or
24 hr after
emergence**

Irrigate

Comments or Questions??

