

Impact and Management of Glyphosate-Resistant Weeds in the Southern Region

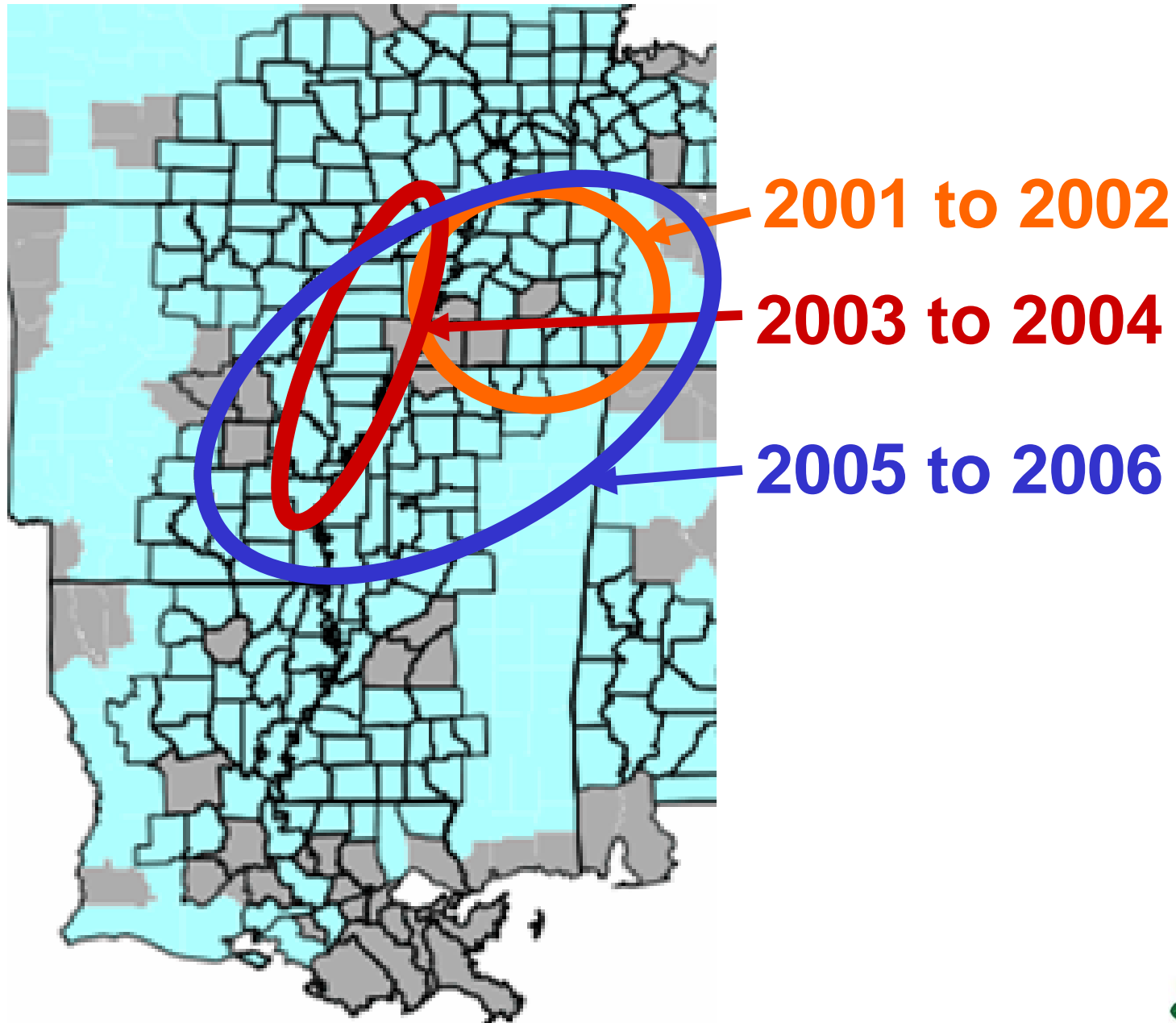
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Glyphosate – Resistant Horseweed



Spread of GR Horseweed



GR Horseweed

➤ Tennessee

- ❖ All cotton acres

- West TN 3-4 years

- ❖ 80% of the soybean acres

- ❖ 1% of the corn acres (2005)

Typical horseweed burndown in 2003 and 2004



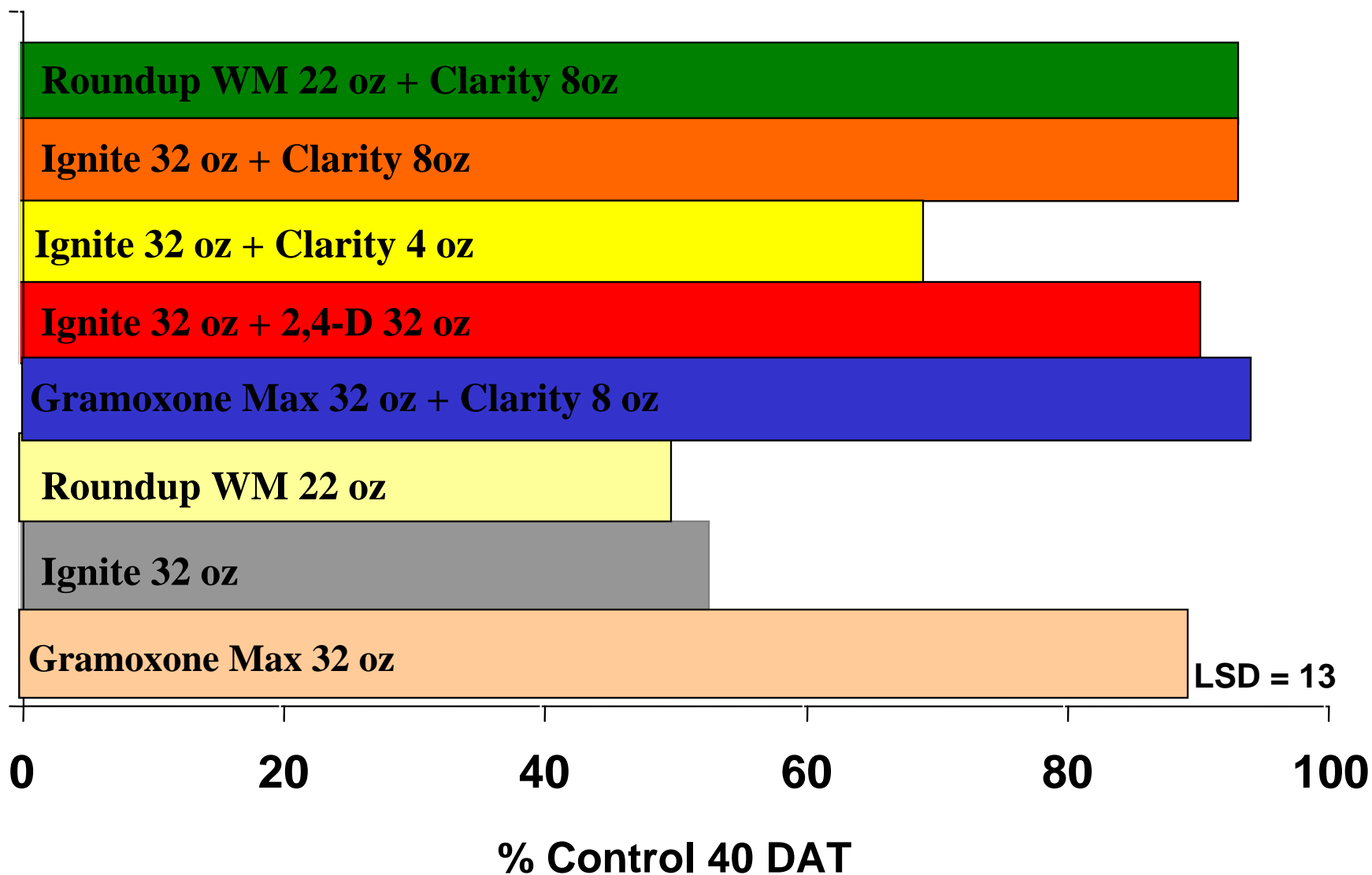
GR Horseweed Management

➤ Burndown

- ❖ **Glyphosate + Clarity has been the standard**
- ❖ **Does not always fit a producers needs**
 - ❖ **Timing**
 - ❖ **Horseweed emergence after burndown**
- ❖ **Other options are needed**

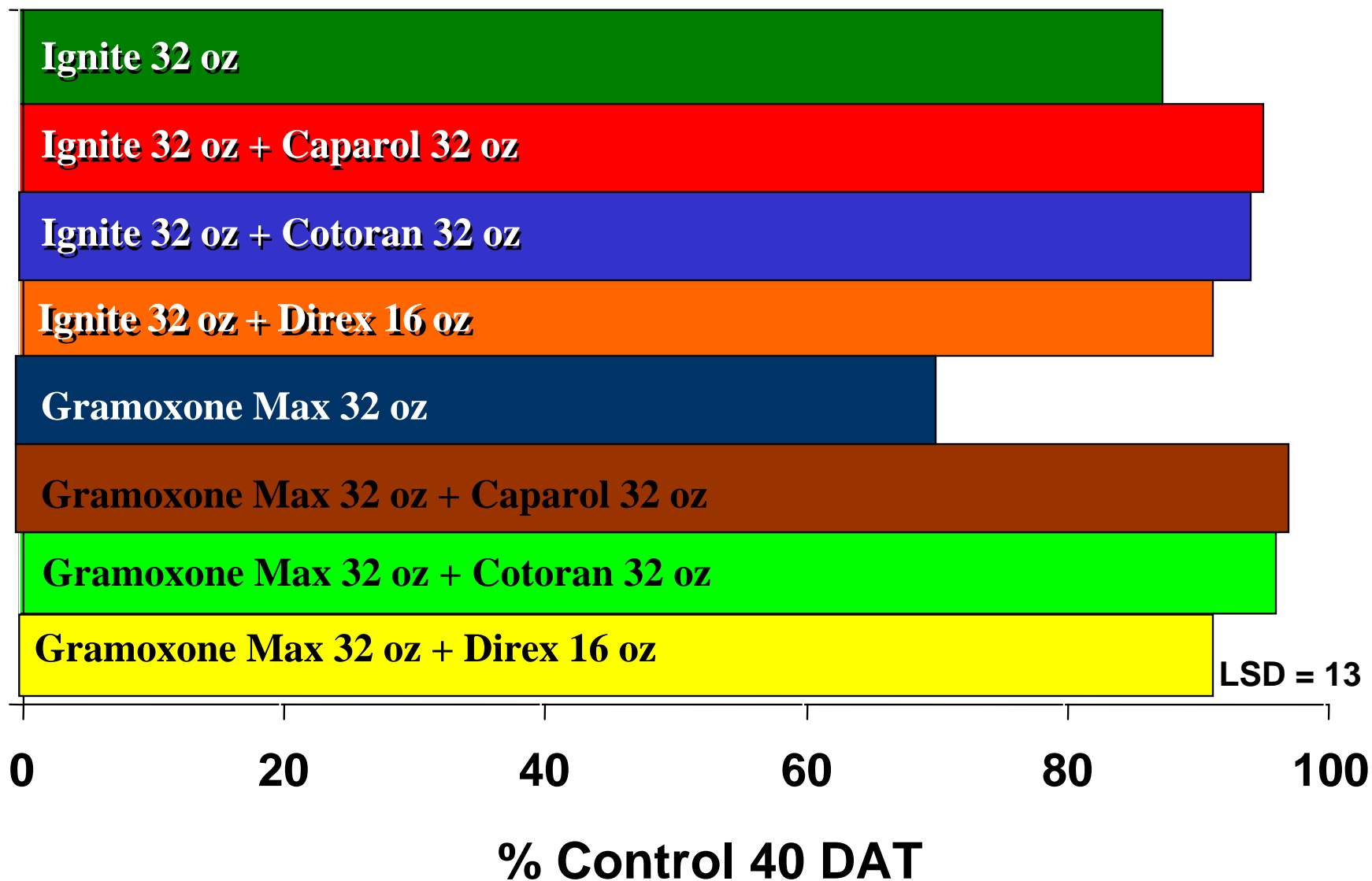
Horseweed Control

March 30th Application



Horseweed Control


April 14th Application







Check

Gramoxone Max 24 oz



Gramoxone Max 32 oz + Caparol 32 oz

Horseweed Burndown for Cotton

March	April	May
Glyphosate/Gramoxone/Ignite + Clarity 8 ozs		21 DBP
Gramoxone/Ignite + Caparol 32 oz or Cotoran 32 oz or Direx 16 oz		Bolting up to 6" horseweed (Mid-April to Cotton Emergence)
Newly emerged to rosette (March to mid-April)		
		

GR Horseweed Management

➤ Soil Residuals

- What they add:
 - ✓ Tankmixed with Gramoxone or Ignite greatly increase burndown of GR horseweed
 - ✓ Applied behind the planter provide good control until a hooded application

Soil Residual Herbicides for GR Horseweed



Soil Residual Herbicides for Cotton

- **Large increase in use in 2005**
- **Caparol, Cotoran, Direx, Dual Magnum, Prowl and Valor**
- **Control of Resistant Horseweed**
- **Palmer Weed Control**

GR Horseweed Impact

- **Reduction in reduced-till acres**
- **Yield reduction**
- **Increase cost for producers**
 - ✓ **Cotton \$15 to \$25/Acre**
 - ✓ **Soybean \$5 to \$12/Acre**
- **Indirect cost**
 - ✓ **Increased crop injury**
 - ✓ **Increase in sprayer contamination**

Palmer Amaranth Status in Tennessee



Palmer amaranth

- **Field Work**
- **4 Locations**
- **1 Suspect Resistant and 1 Random**
- **Sprayed 11, 22, 44 and 88oz/A of**
- **Roundup WeatherMax**
- **Rated 21 DAA**

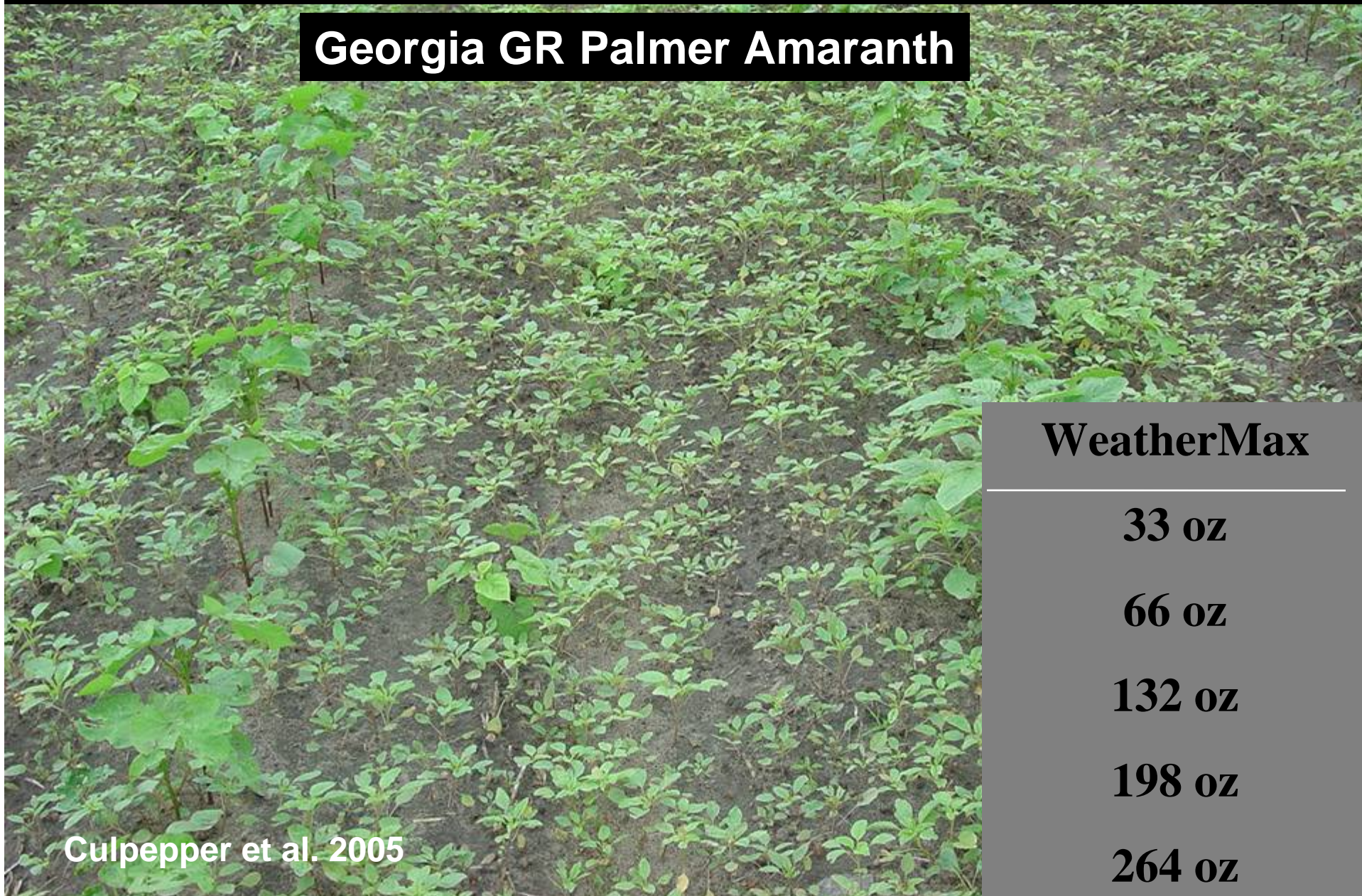
Palmer Greenhouse Screen

- Rates were 6, 11, 22, 44 and 88 oz of RWM
- Better control than in the field
- Lauderdale County GR ⁵⁰ 1.5x
- Crockett County GR ⁵⁰ 2x



Experiment 1: Palmer 3 to 5 inches when treated. Dual Magnum applied over entire trial to eliminate continual emergence.

Georgia GR Palmer Amaranth



WeatherMax

33 oz

66 oz

132 oz

198 oz

264 oz

Culpepper et al. 2005



WeatherMax 33 oz/A

Culpepper et al. 2005



WeatherMax 66 oz/A

Culpepper et al. 2005



WeatherMax 132 oz/A

Culpepper et al. 2005



WeatherMax 198 oz/A

Culpepper et al. 2005



WeatherMax 264 oz/A

Culpepper et al. 2005

Glyphosate-Resistant Palmer Amaranth (2005)

- **Georgia – 3 plus counties** (**>12x resistant**)
- **North Carolina 3 plus counties** (**>?x resistant**)
- **Tennessee 2 counties** (**1.5 – 2x tolerant**)

Questions ?

