“A southeastern perspective on herbicide resistance”

National Alliance of
Independent Crop Consultants
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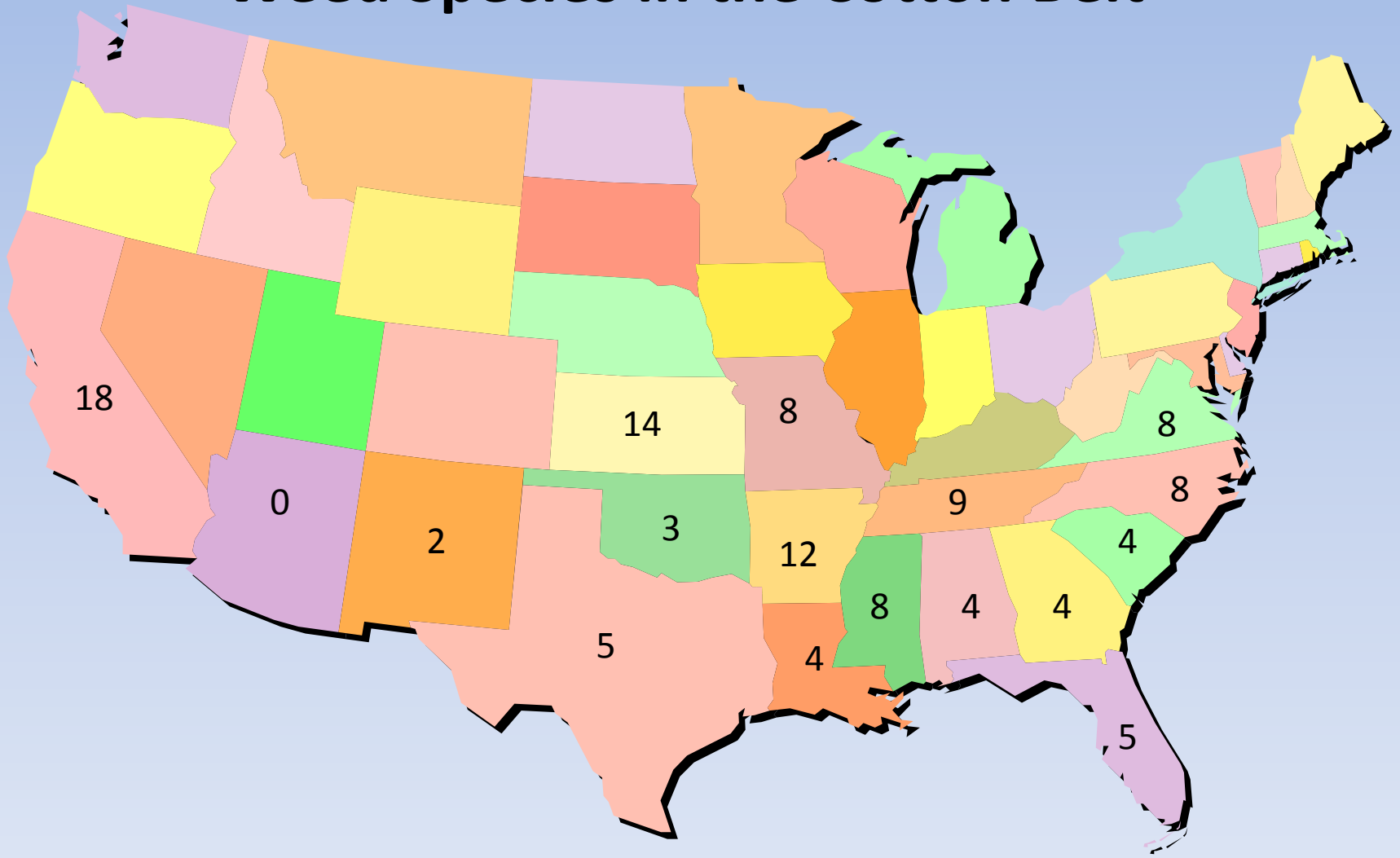
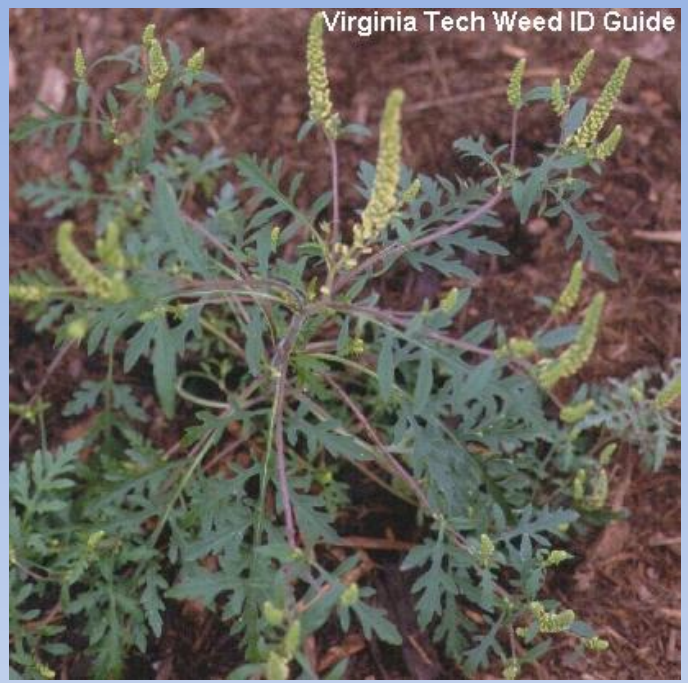
Confirmed Number of Herbicide-Resistant Weed Species in the Cotton Belt

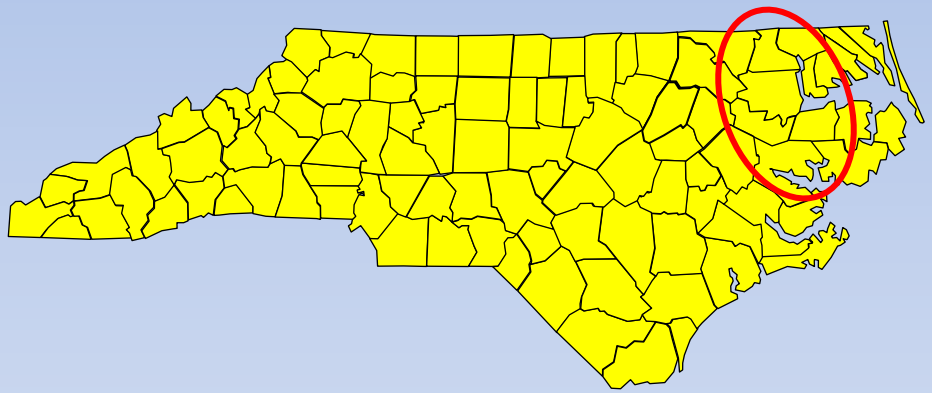


Source: International Survey of Herbicide Resistant Weeds (12/28/09)



Glyphosate-Resistant Weeds in NC

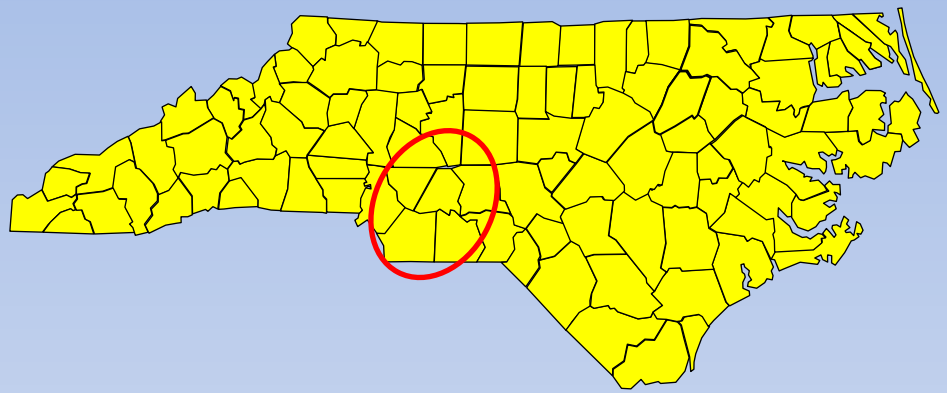
Glyphosate-resistant common ragweed



96 oz Weathermax

Untreated

Glyphosate-resistant ryegrass




Virginia Tech Weed ID Guide

Marestail

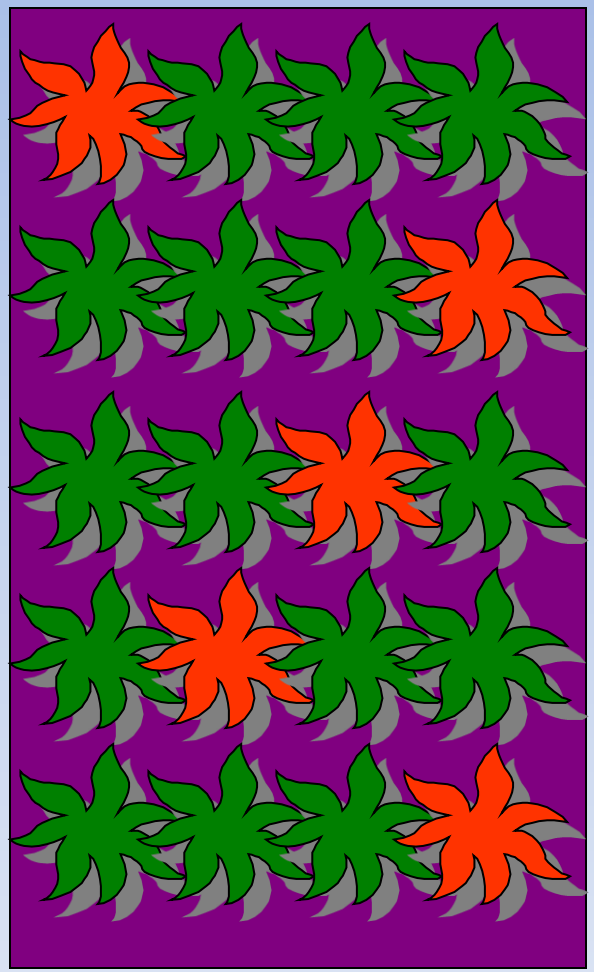
- Selection not just from growers using Roundup excessively,
  - DOT rights of way
  - Railroad beds

  Select for resistance

Marestail:

- Primarily started with NO-TILL, TN 2000
- More Widespread by 2003
- Exploded in 2008,2009
- Required changes in materials on *pre's* and *burndown* programs.

Palmer amaranth seedbank – it is the key!



YEAR 1: 5 Palmer females escape

Produce 2,000,000 seeds in cotton (50% germ)

YEAR 2:

Weed program = 99.9% control

1,000 plants per acre left at harvest

400 female plants/A

160,000,000 seeds produced in cotton (50% germ)

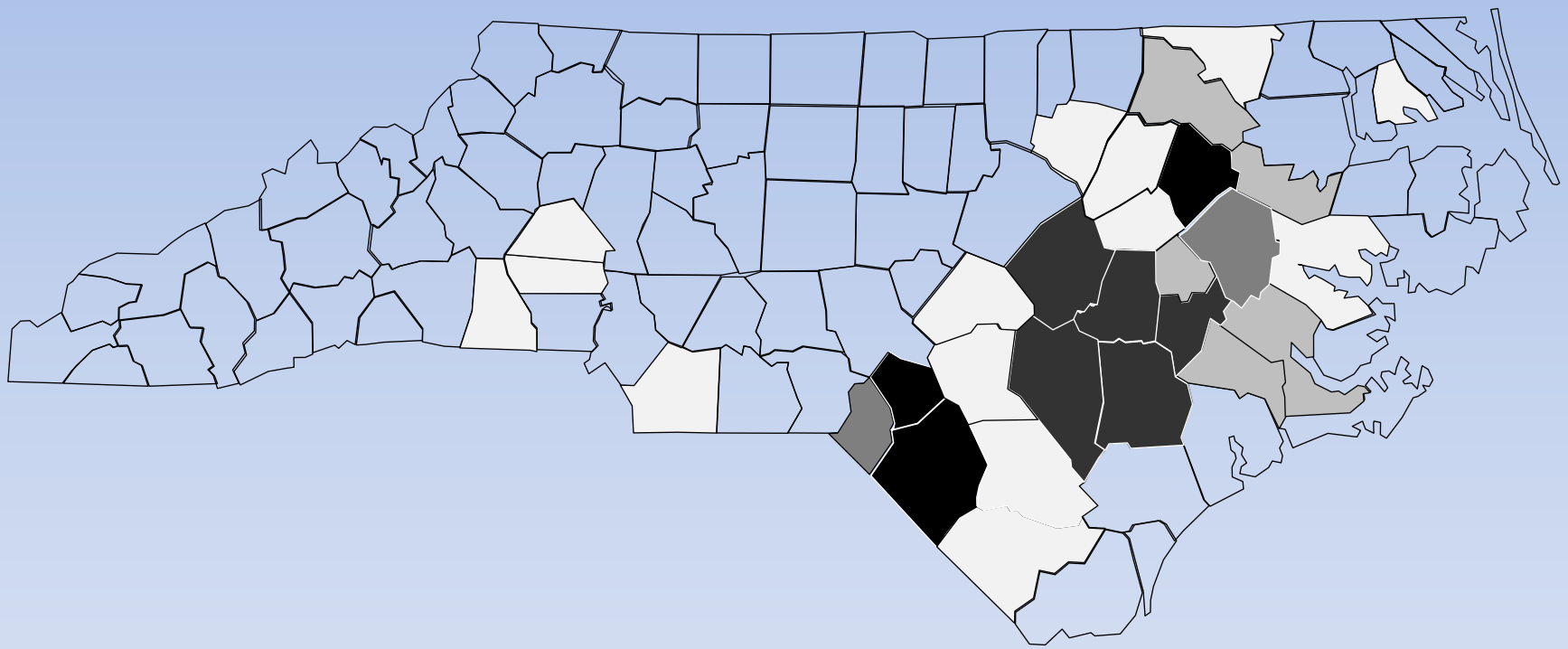
YEAR 3:

Weed program 99.9% control

80,000 plants per acre left at harvest

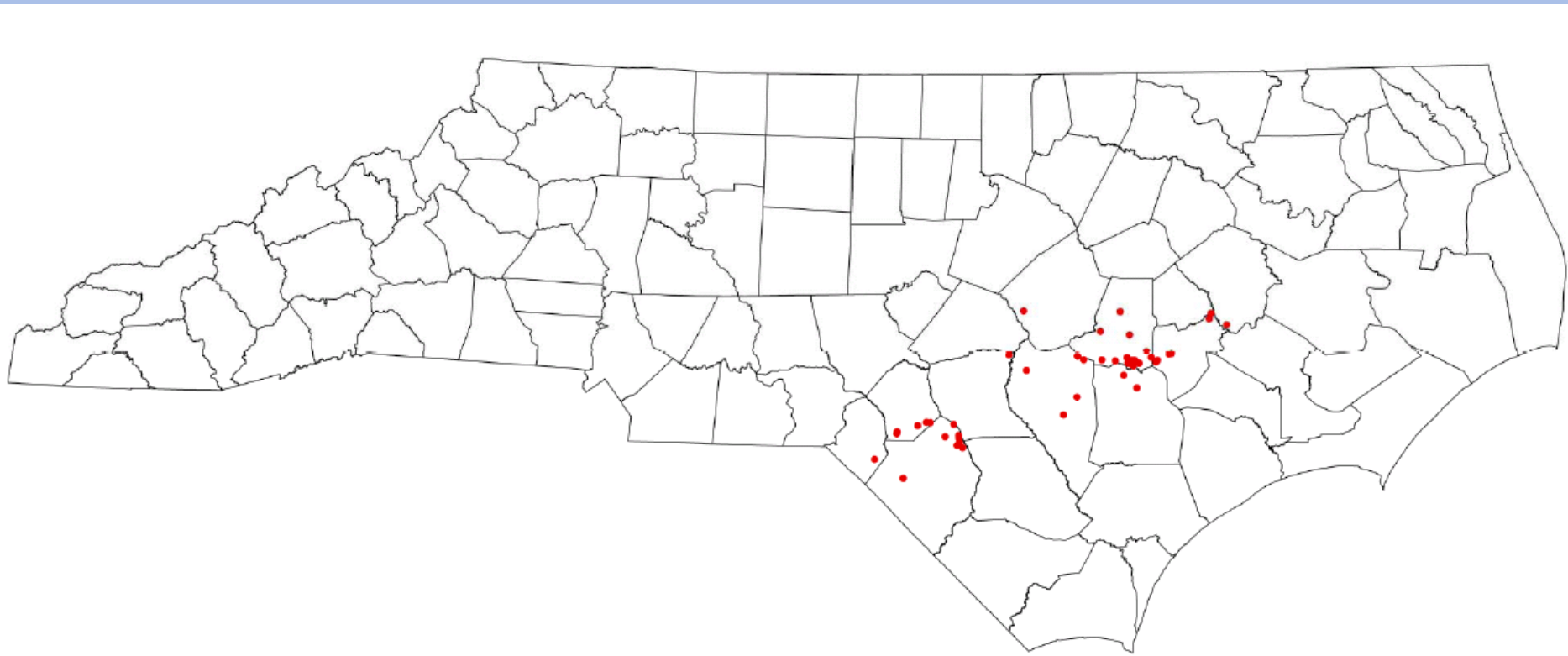
32,000 female plants/A = 1.28×10^{10} seed/A

Distribution of Palmer amaranth, 2005



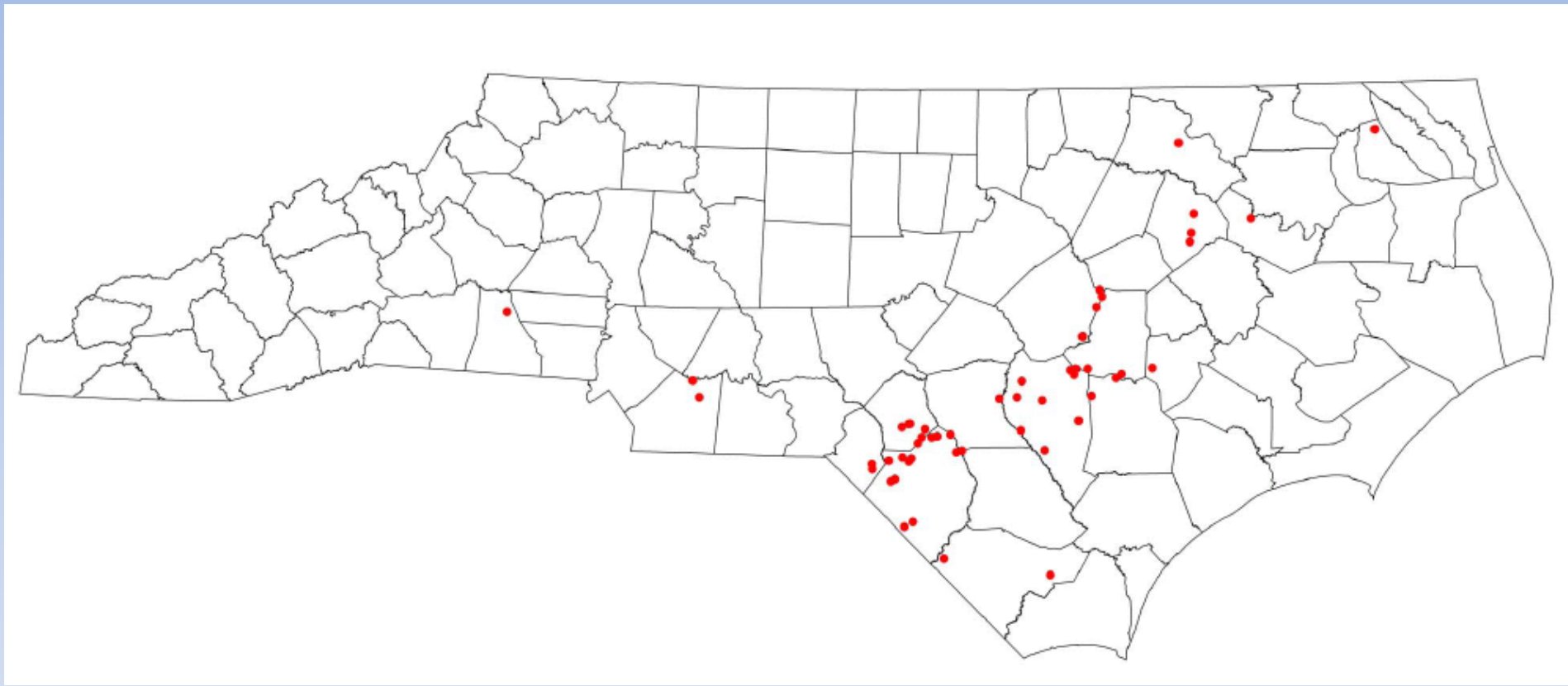
Very light → Light → Moderate → Heavy

Distribution of glyphosate-resistant Palmer amaranth, 2005.



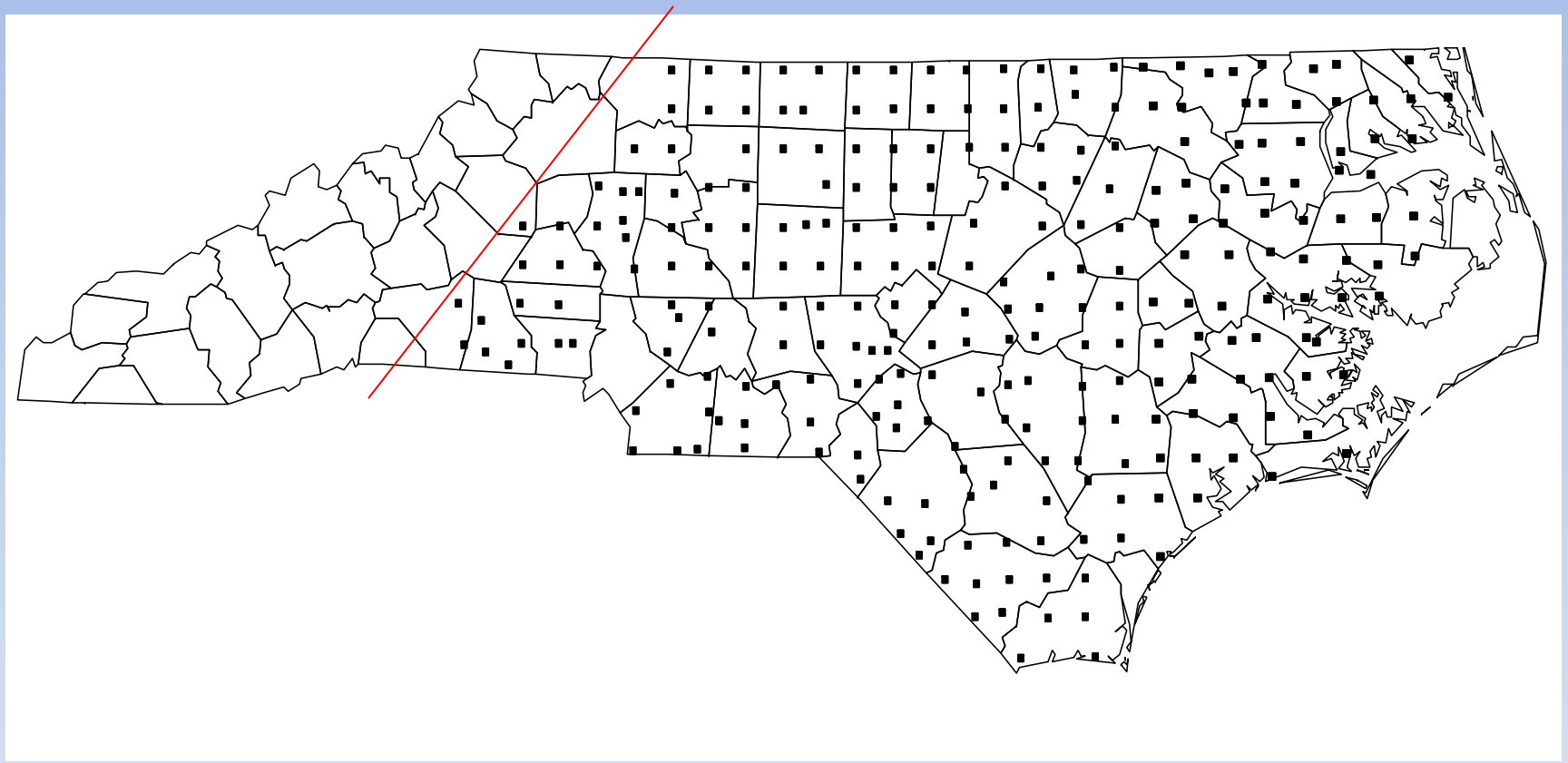
17% of samples glyphosate-resistant

Distribution of ALS-resistant Palmer amaranth, 2005.



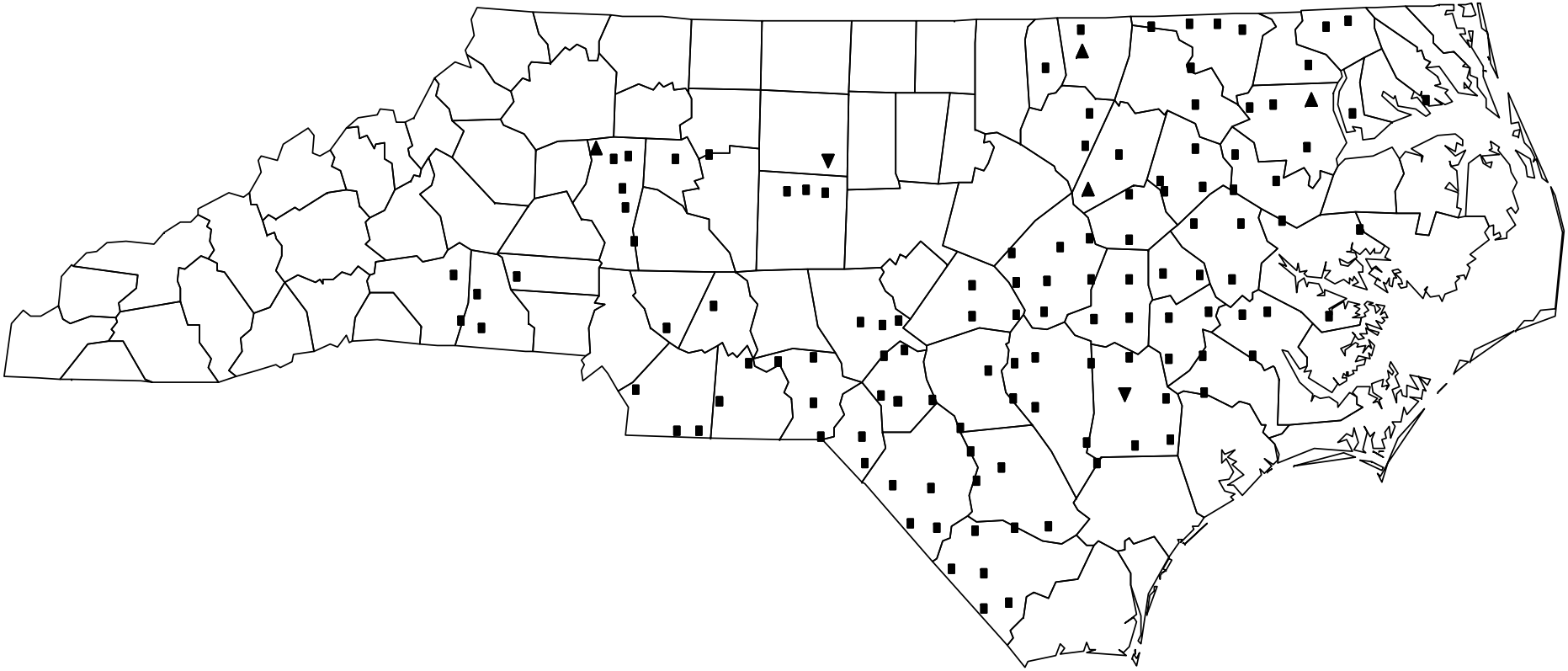
18% of samples ALS-resistant

Figure 1. Sample sites for the 2010 survey.



274 sites checked, Palmer amaranth present at 130.

Figure 2. Distribution of Palmer amaranth in 2010.



Palmer amaranth resistance in North Carolina

Resistance	2005	2010
Glyphosate only	17%	98%
ALS inhibitor only	18%	97%
Resistant to both	< 2%	95%

In view of this intensive pressure, how have we managed?

Palmer amaranth resistance in North Carolina

Resistance	2005	2010
Glyphosate only	17%	98%
ALS inhibitor only	18%	97%
Resistant to both	< 2%	95%
Fomesafen (Reflex, PPO)		0%
Glufosinate (Liberty)		0%

- Recognition that pre's won't work if it does not rain.

- There may be crop failure.

Controlling GR Palmer amaranth by Developing Integrated Programs

WeedFreeNC

PULL TOGETHER

– **Special Thanks To:**

- *Alan York*
- *Stanley Culpepper,*
- *Larry Steckel, and*
- *Consultant Friends*