

Glyphosate-Resistant Palmer Amaranth

A Threat to Cotton and Soybean Production

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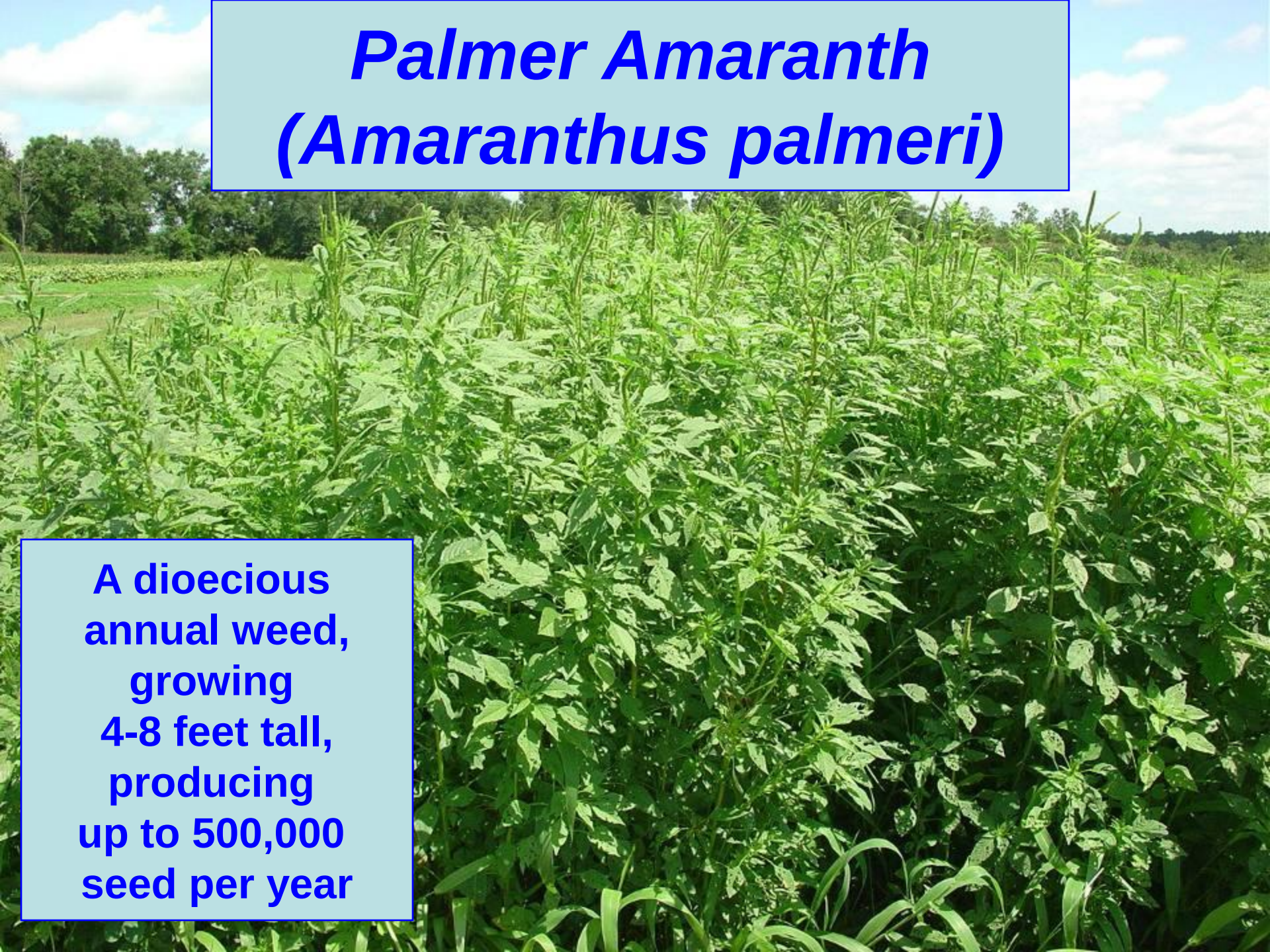


Common Pigweed Species (*Amaranthus* spp.) in North America



Palmer Amaranth (*Amaranthus palmeri*)

A dioecious
annual weed,
growing
4-8 feet tall,
producing
up to 500,000
seed per year



Changing Pest Status of Palmer Amaranth

- **Wilcut et al. 2003. Weed Management in Transgenic Cotton. NCSU Tech. Bull. 319**
- **Results of a Cotton Incorporated supported study – 22 sites years done in the states of FL, GA, LA, MS, MO, NC, TN, TX**
- **Data for 15 most common weeds reported. No data published for Palmer amaranth**



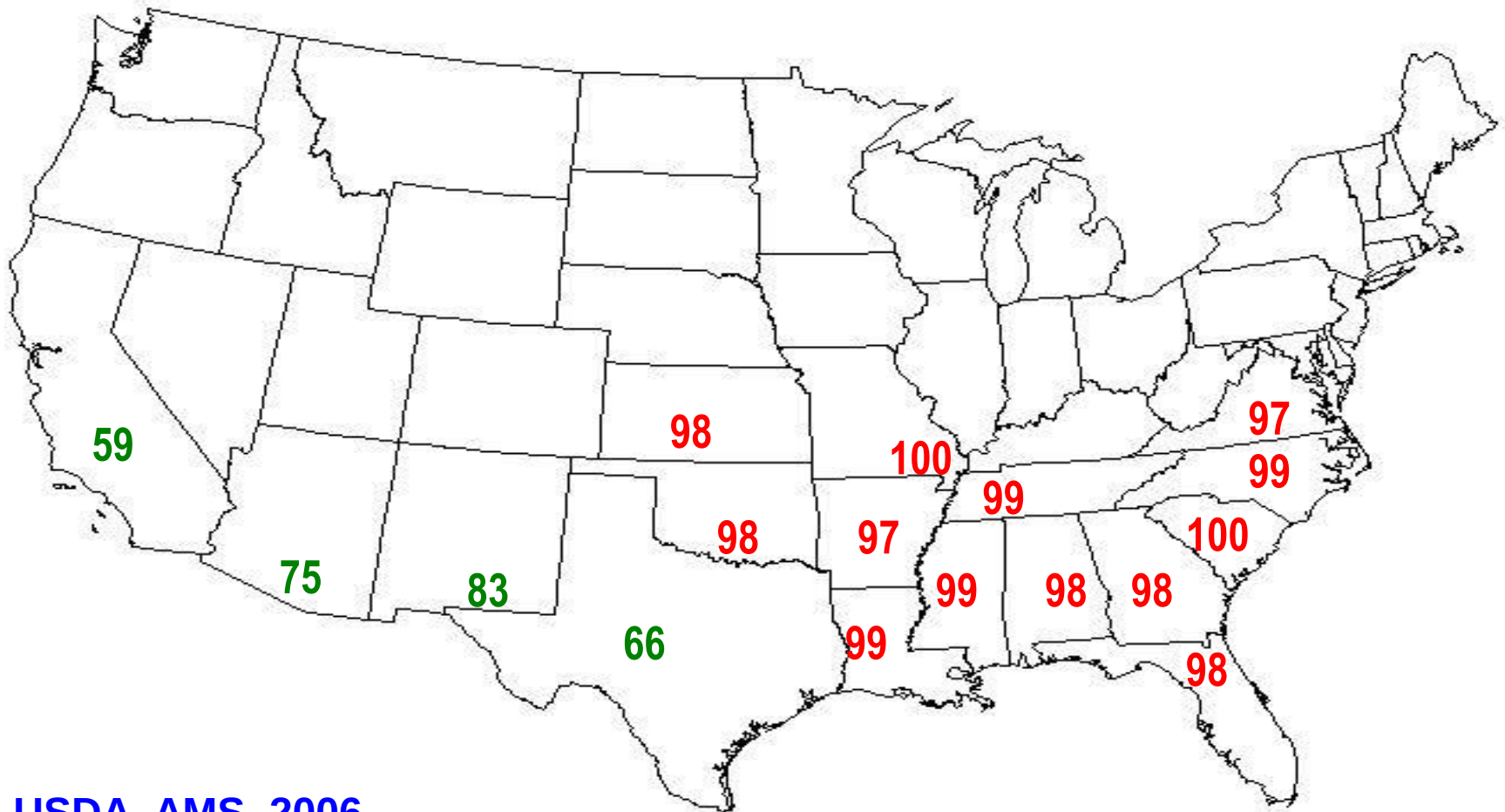
Relative Growth of Pigweeds

	<u>Weeks Growth</u>		
	2	4	6
	----- inches -----		
Palmer amaranth	4	10	38
Red Root Pigweed	3	7	24
Common Waterhemp	2	4	16
Smooth Pigweed	2	6	12
Spiny Pigweed	1	6	10
Tumble Pigweed	1	2	9

Sellers et al. Weed Science 51:329-333.



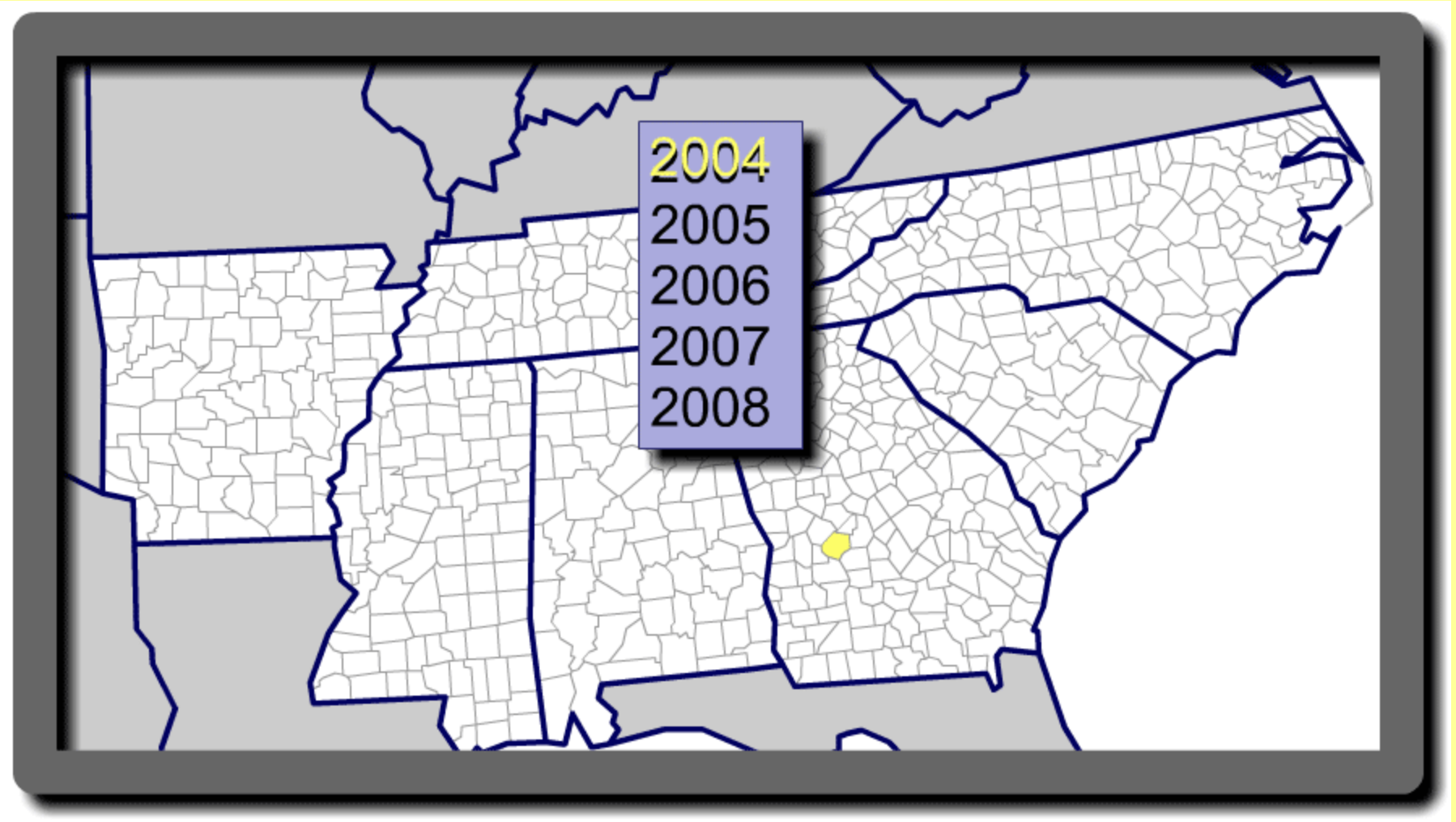
Percent of Glyphosate-Resistant Cotton Cultivars



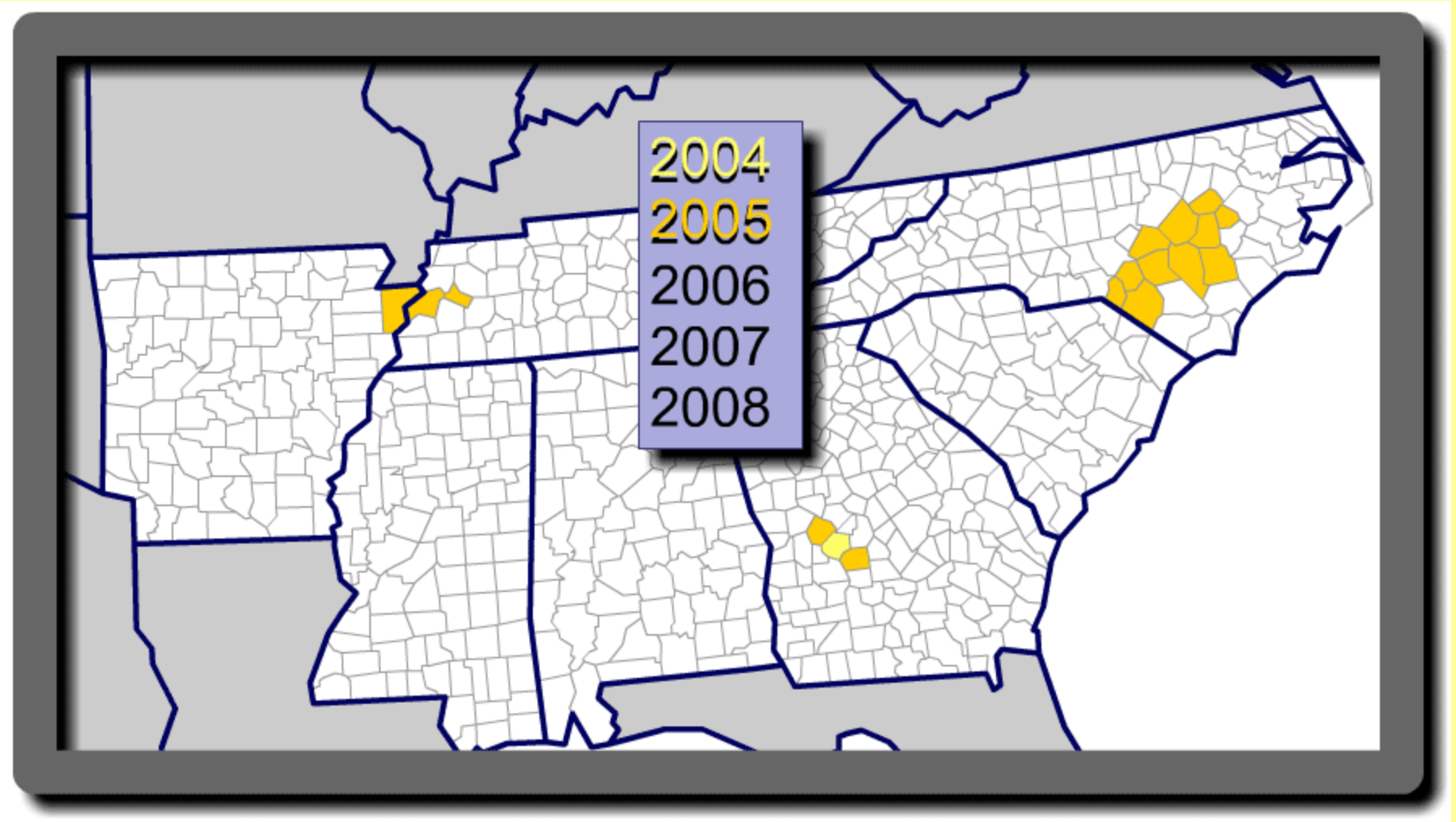
USDA, AMS. 2006



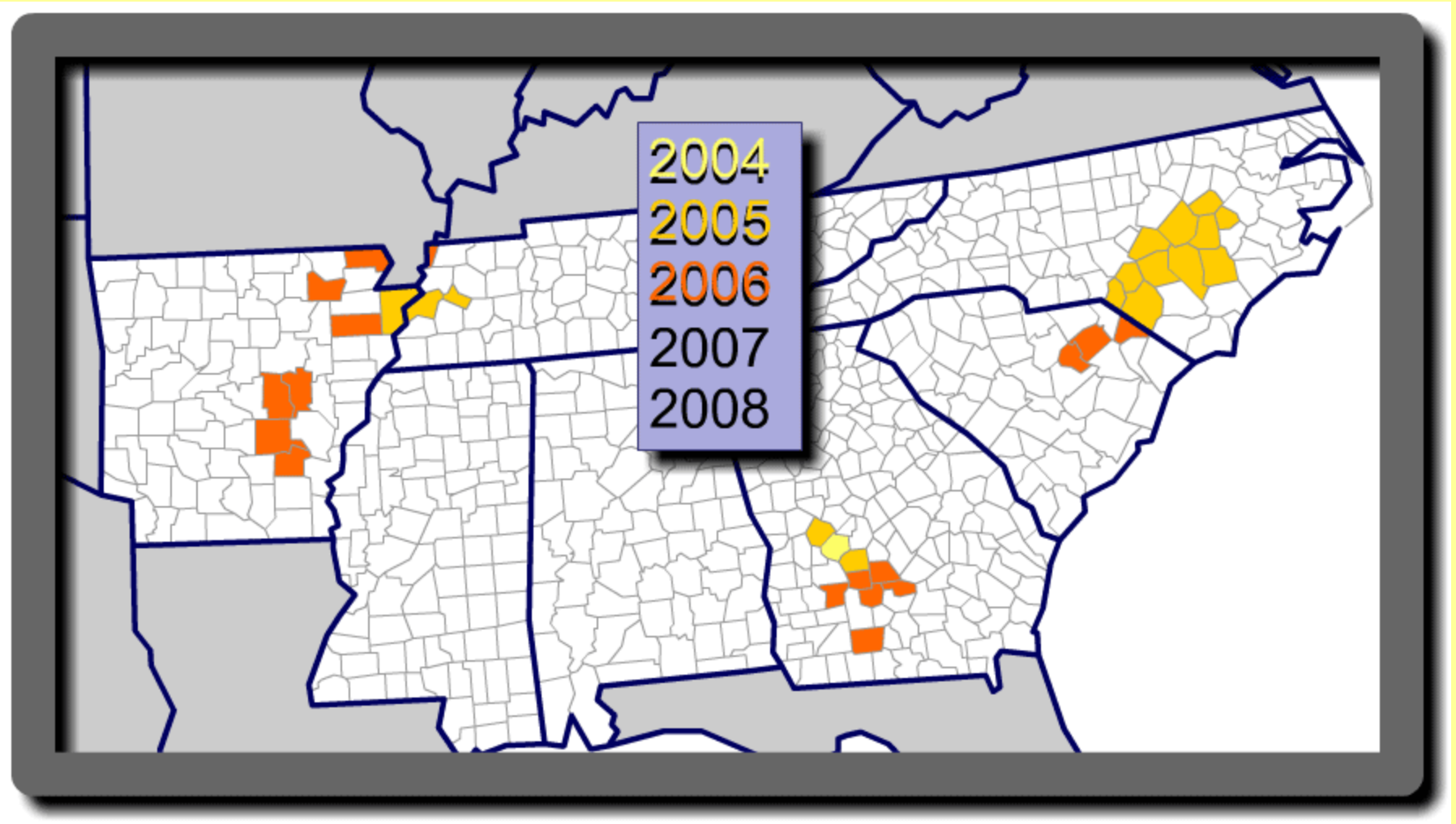
Counties with Confirmed Populations of Glyphosate-Resistant Palmer Amaranth 2004



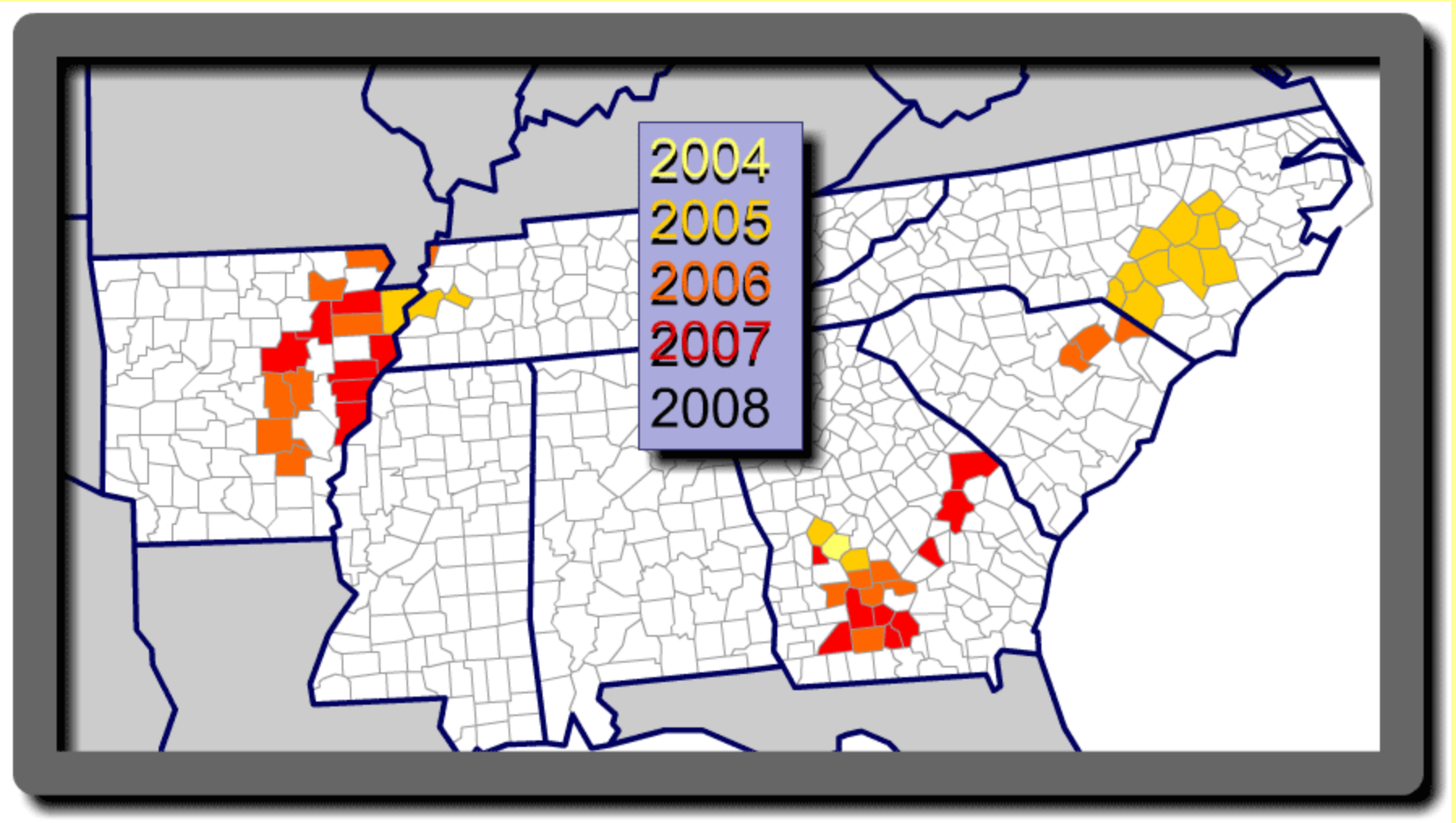
Counties with Confirmed Populations of Glyphosate-Resistant Palmer Amaranth 2005



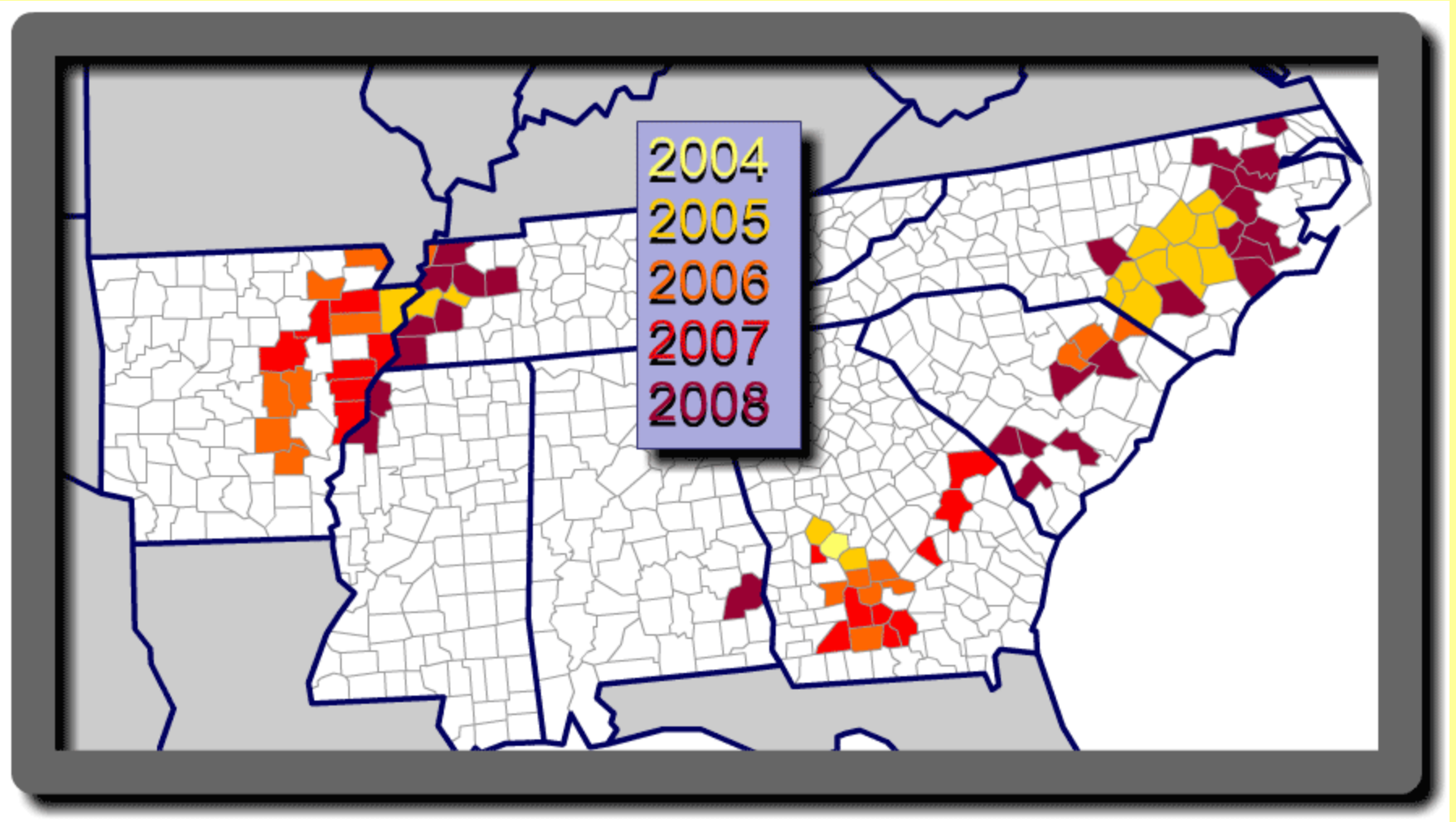
Counties with Confirmed Populations of Glyphosate-Resistant Palmer Amaranth 2006



Counties with Confirmed Populations of Glyphosate-Resistant Palmer Amaranth 2007



Counties with Confirmed Populations of Glyphosate-Resistant Palmer Amaranth 2008



Glyphosate Resistant Palmer Amaranth

Economic Threat to Cotton

If ALS herbicides and glyphosate are compromised, and PPO herbicides are not an over-the-top option, there are no selective post emergence options for cotton.

Economic Threat to Soybeans

If ALS and glyphosate are compromised, then PPO herbicides are the only post emergence option.



Glyphosate Resistant Palmer Amaranth

- **Threatens Conservation of Post Emergence Herbicides in U.S. Agriculture.**
- **If PPO herbicides are heavily used pre-emergence in cotton, and are the only post emergence option in soybean, what is their future?**
- **Need for a General Resistance Management Plan for Herbicide Modes of Action in Broadleaf Agronomic Crops.**

