

Situation, Distribution and Impacts of Palmer in AR

Managing Glyphosate Resistant Palmer Amaranth

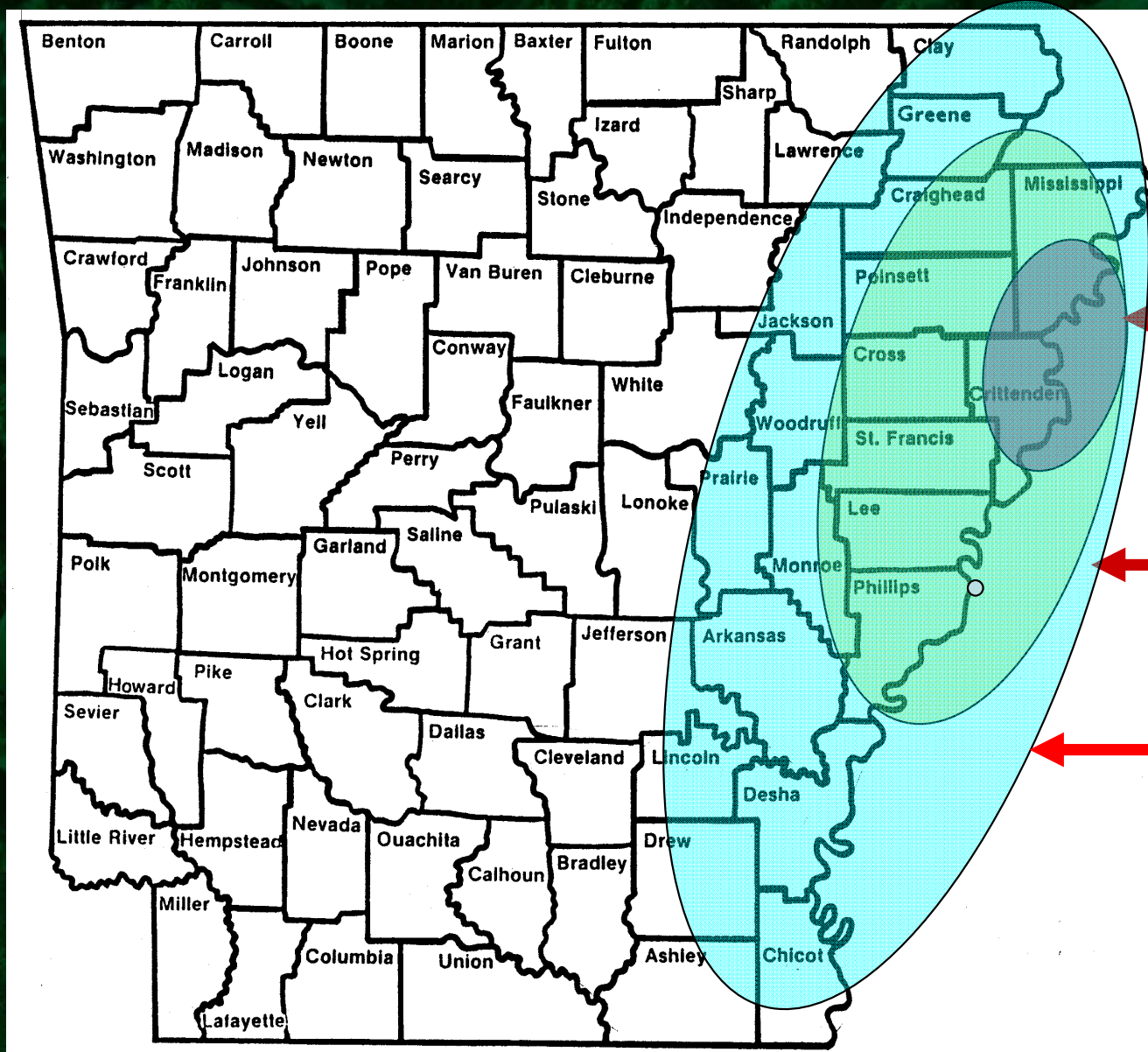
Ken Smith

Dec 13-14, 2007

An aerial photograph of a vast field of horseweed plants, which are small, green, and densely packed. The plants are growing in rows, and the ground between them is a mix of soil and sparse vegetation. The overall appearance is that of a well-maintained but heavily infested agricultural field.

Horseweed The New Nightmare 2003

GR Horseweed Distribution



2003

2004

2005



Horses

To

Rags



*Will The
Pigs be
Next?*

Poinsett Co. 2006







Greenhouse Program Spring of 2006

6 DAT, 22 oz WM



Suspect Biotype

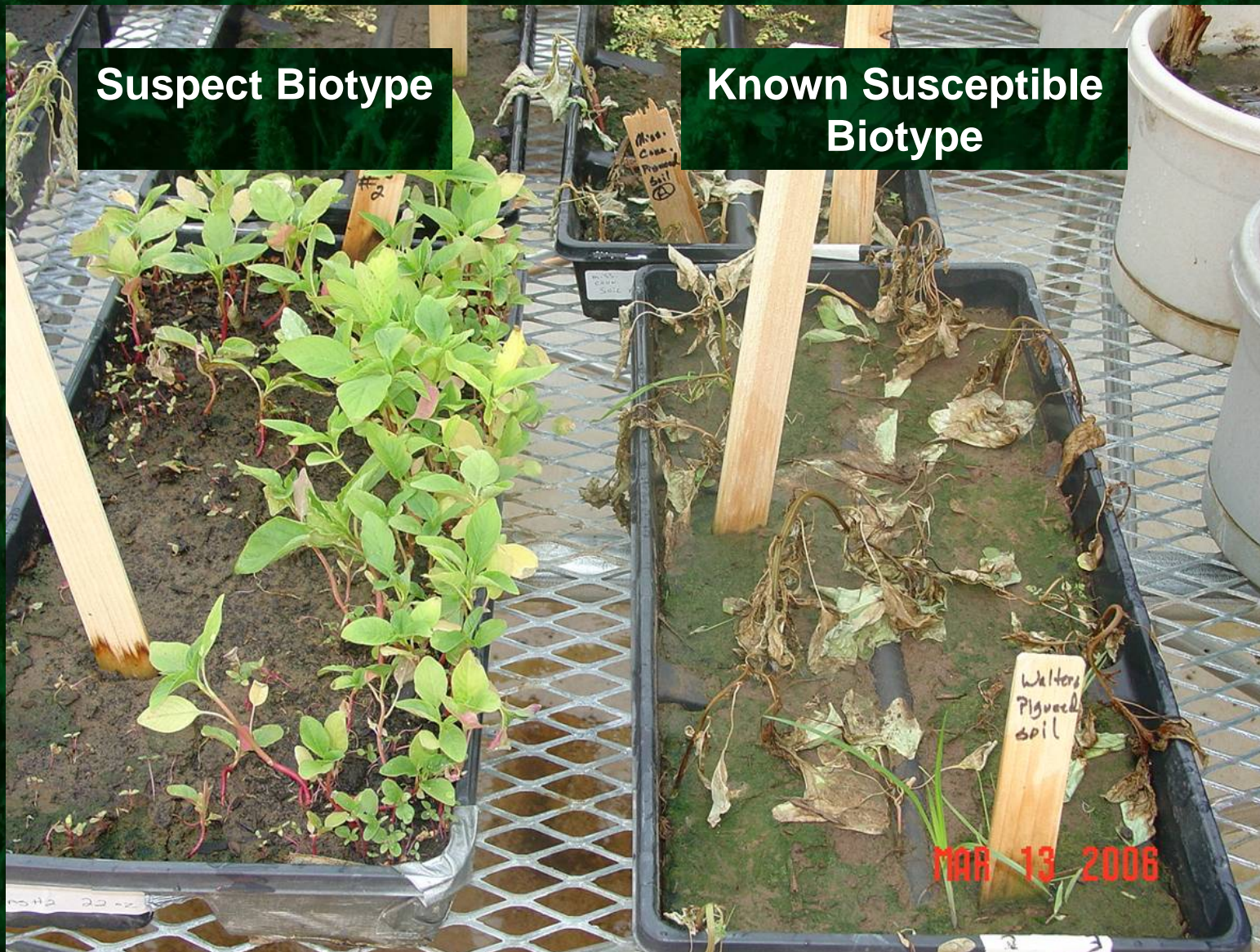
**Known Susceptible
Biotype**

Greenhouse Program Spring of 2006

6 DAT, 22 oz WM

Suspect Biotype

**Known Susceptible
Biotype**



Typical Pigweed Population



Phillips County 2006



Lincoln Co. 2007



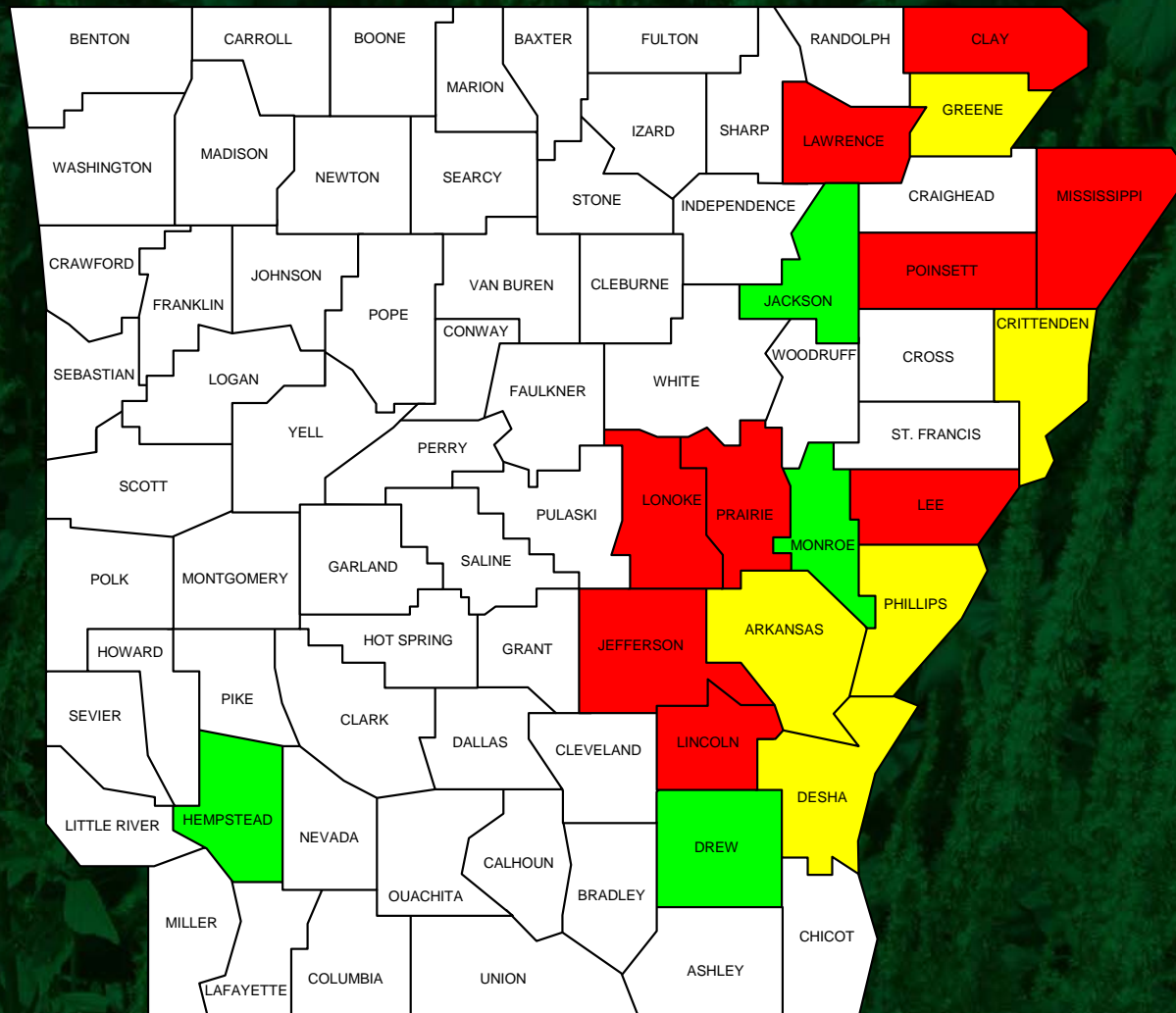
Lincoln Co. 2007



Lincoln Co. 2007

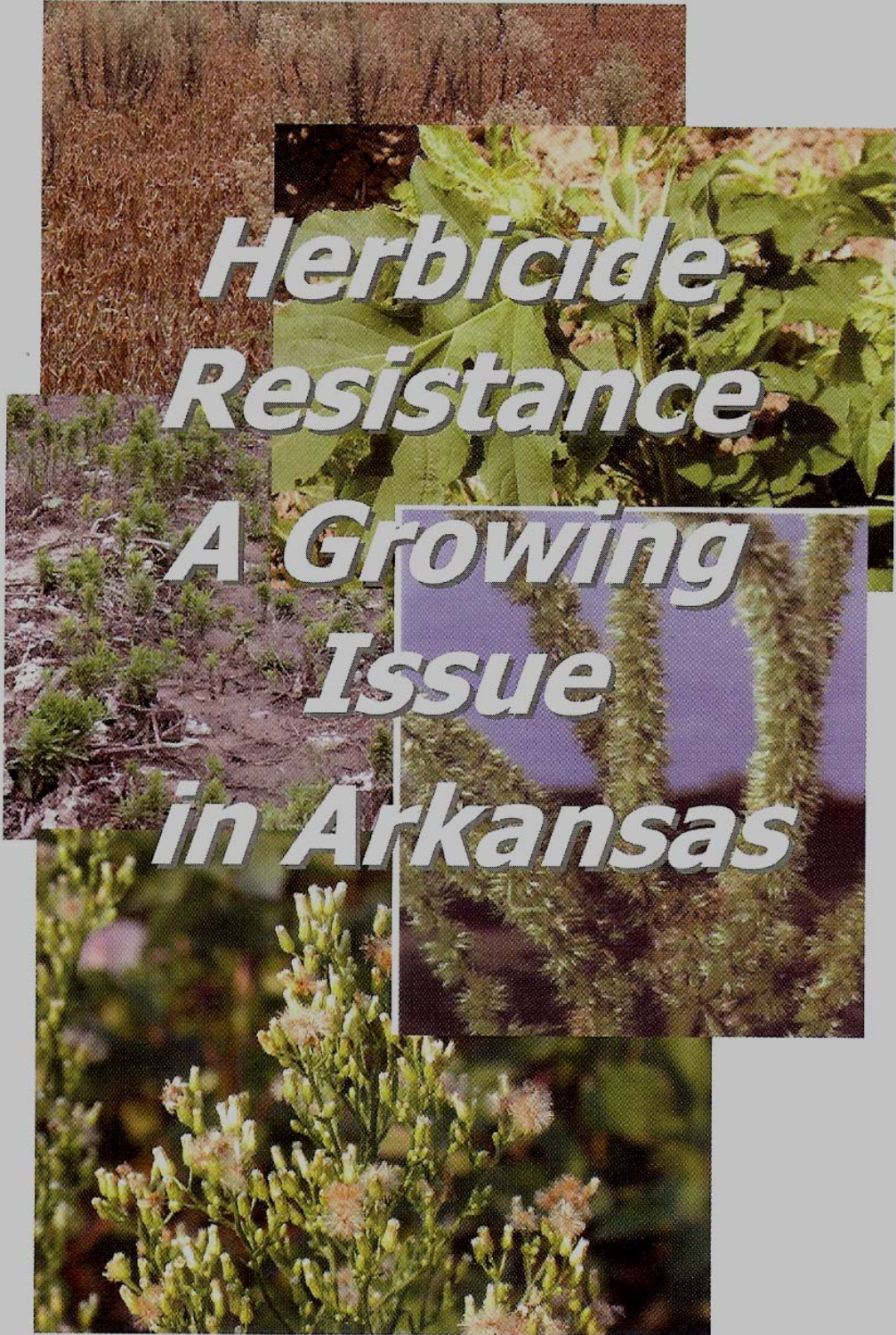


GR Palmer a. Distribution



- Field Rate
- 0.5 Field Rate
- Susceptible

**General
Resistance
Brochure
Covering
All Crops**



***Herbicide
Resistance
A Growing
Issue
in Arkansas***

Arkansas Herbicide Resistance Committee



Ken Smith
Extension Weed Scientist
UACES
Committee Chair



David Black
Research & Dev, Scientist
Syngenta Crop Protection



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Prevention and Control of Glyphosate-Resistant Pigweed in Roundup Ready™ Soybean and Cotton

Robert C. Scott
Extension Weed Scientist

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Palmer amaranth (also referred to as Palmer pigweed) is considered the most troublesome weed in Arkansas crop production. The rapid growth, aggressive competition, extremely prolific seed production and germination throughout the season make pigweed a multimillion dollar pest each year in our state.

Populations of Palmer amaranth were identified in both Georgia (Culpepper et al., 2005) and Tennessee (Meuller et al., 2005) that were resistant to glyphosate, the active ingredient in Roundup brand herbicides.

Recently, a population of Palmer amaranth was discovered in Mississippi County, Arkansas, that has proven more tolerant to glyphosate than other biotypes and is suspected to be resistant to the herbicide. If confirmed, this will be the third population of this resistant weed biotype discovered in the last two years.

Glyphosate is currently the only effective means of controlling pigweed in cotton and the most effective means of control in soybean. For this reason, there is great concern over the development of glyphosate-resistant pigweeds. Pigweeds that cannot be controlled with glyphosate will add tremendous cost and cause major shifts in our agricultural community. This threat has resulted in an intense interest in developing plans for the prevention and management of pigweed in soybean and cotton.

Heavy Selection Pressure in Soybean Production Today

Currently, there are over 3 million acres of soybean in Arkansas. Of those, over 95 percent are Roundup Ready™ and receive an average 1.75 applications of in-crop glyphosate per year. In addition, the number of different herbicides used in soybean has been in decline since 1999. Couple



Palmer amaranth can be distinguished from other pigweeds by its long petioles (the branch that connects the leaf to the main stem).



Pigweeds that survive to maturity in Roundup Ready™ soybean are a cause for concern. *Photo courtesy of Susan Matthews.*

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Our Campus*

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<http://www.uaex.edu>

Pigweed Brochure

**Failure To
Communicate
Is Only
Unproductive
Noise**



**"Yes! That was very loud Mr. Trainer,
but I said I wanted to hear your *HEART!*"**



The



UofA



Thanks!



Weed

Crew