

*Pigweeds:*

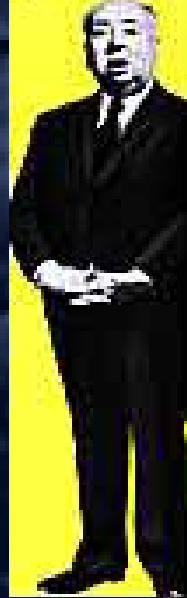
*“On Track  
to Take  
Over the  
World”*

Ken Smith



"It could be the most terrifying motion picture  
I have ever made!"— *Alfred Hitchcock*

— And remember,  
the next  
scream  
you hear  
may be  
your own!"

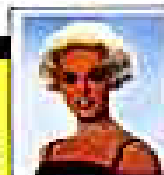


# ALFRED HITCHCOCK'S "THE PIGS"

TECHNICOLOR®

Starring  
**ROD TAYLOR · JESSICA TANDY**  
**SUZANNE PLESHETTE** *and* **'TIPPI' HEDREN**

Based on Robert D. Murn's Classic Suspense Story



A Fascinating  
New Personality



Screenplay by EVAN HUNTER · Directed by ALFRED HITCHCOCK

# *Top Ten Characteristics of an Ideal Weed !!*

1. Germinate in many environments
2. Discontinuous germination (internally controlled)
3. Great longevity of seed
4. Rapid growth through vegetative phase to flower
5. Self-compatibility, but not complete autogamy

# *Top Ten Characteristics of an Ideal Weed !!*

6. Cross-pollination by different means
7. Very high seed production in most conditions
8. Long and short distance seed dispersals
9. If perennial, Vegetative reproduction and brittleness
10. Compete by special means – rosette, choking growth, allelochemicals

# *Uno; Number 1; Grande Problem*

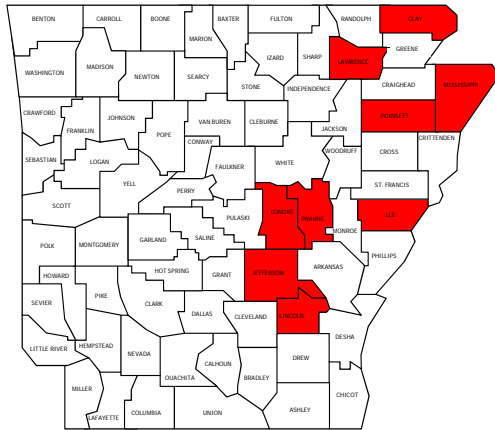


# *Palmer Resistance*

- 1989 – DNA's (yellow herbicides)
- 1991 – ALS herbicides (Pursuit, Staple, Envoke)
- 1993 – Triazines (Atrazine, Bladex)
- 2005 – Glyphosate
  
- Multiple resistance (more than one herbicide family) is common.

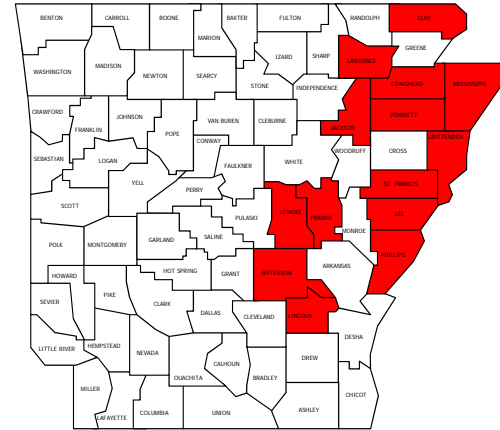
## 2006 Palmer a. Distribution

◆ Confirmed Resistant at Field Rate



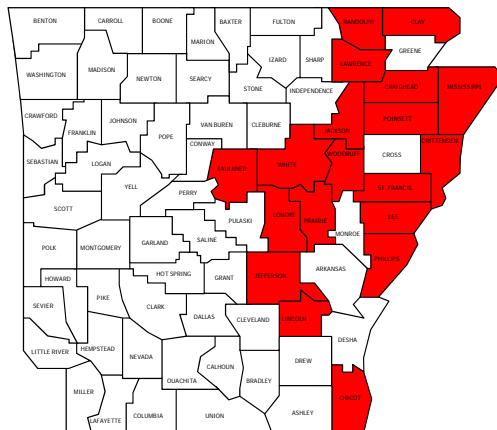
## 2007 Palmer a. Distribution

◆ Confirmed Resistant at Field Rate



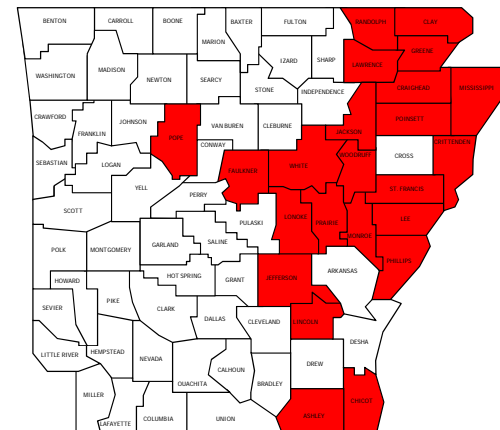
## 2008 Palmer a. Distribution

\* Confirmed Resistant to field rate

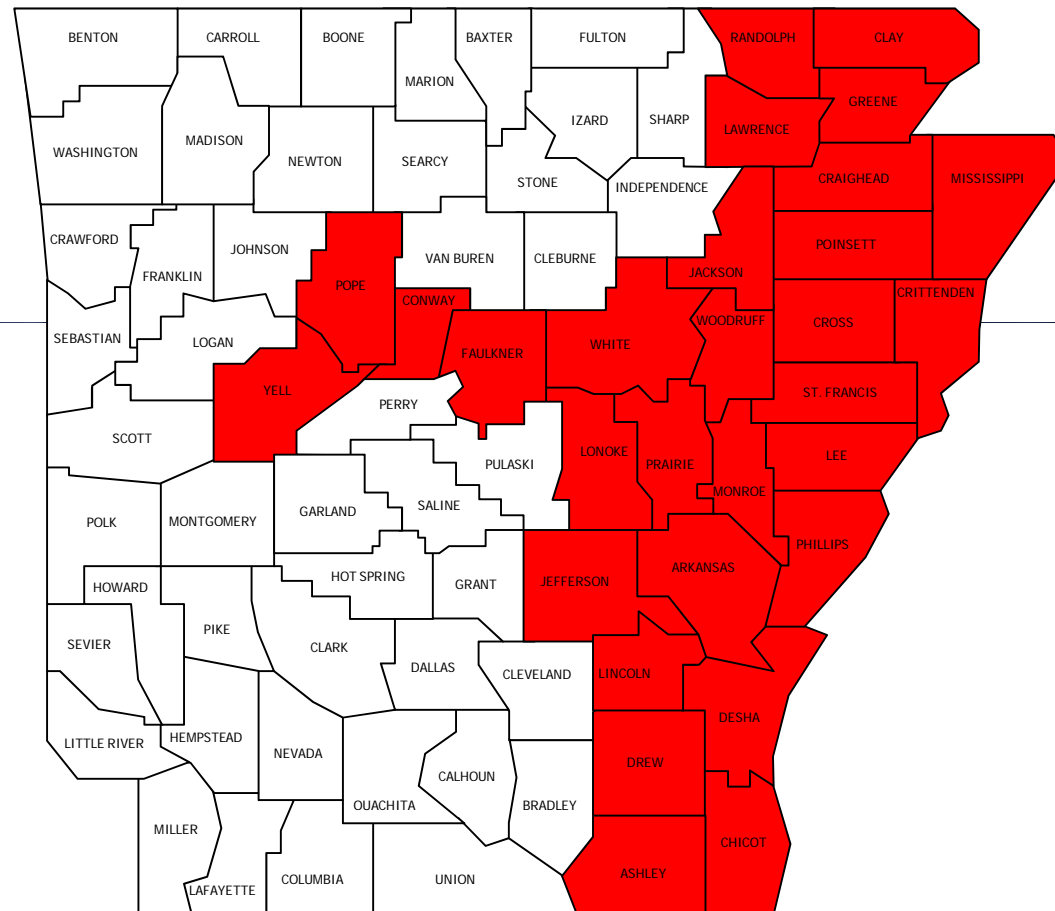


## 2009 Palmer a. Distribution

\* Confirmed Resistant to field rate



# 2010 Palmer a. Distribution



\* Confirmed  
Resistant to field  
rate



# Multiple Mechanisms of Resistance



# *Identify Weakness of Enemy!!*

1. Germinate in many environments
2. Discontinuous germination (internally controlled)
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# *Identify Weakness of Enemy!!*

1. Germinate in many environments
2. Discontinuous germination (internally controlled)

## ~~3. Great longevity of seed~~

4. Rapid growth through vegetative phase to flower
5. Self-compatibility, but not complete autogamy

# *Thought For The Day*

**“The soil seedbank must be stable or decreasing in order to be sustainable!”**

*R fb R fb R fb R*

**Not Sustainable**

**“Zero”**

**UofA** UNIVERSITY OF ARKANSAS  
DIVISION OF AGRICULTURE



**No  
Escapes  
Allowed**

**No  
Seed  
Produced**

Palmer amaranth

**Soil Weed Seedbank  
Reduction Program**

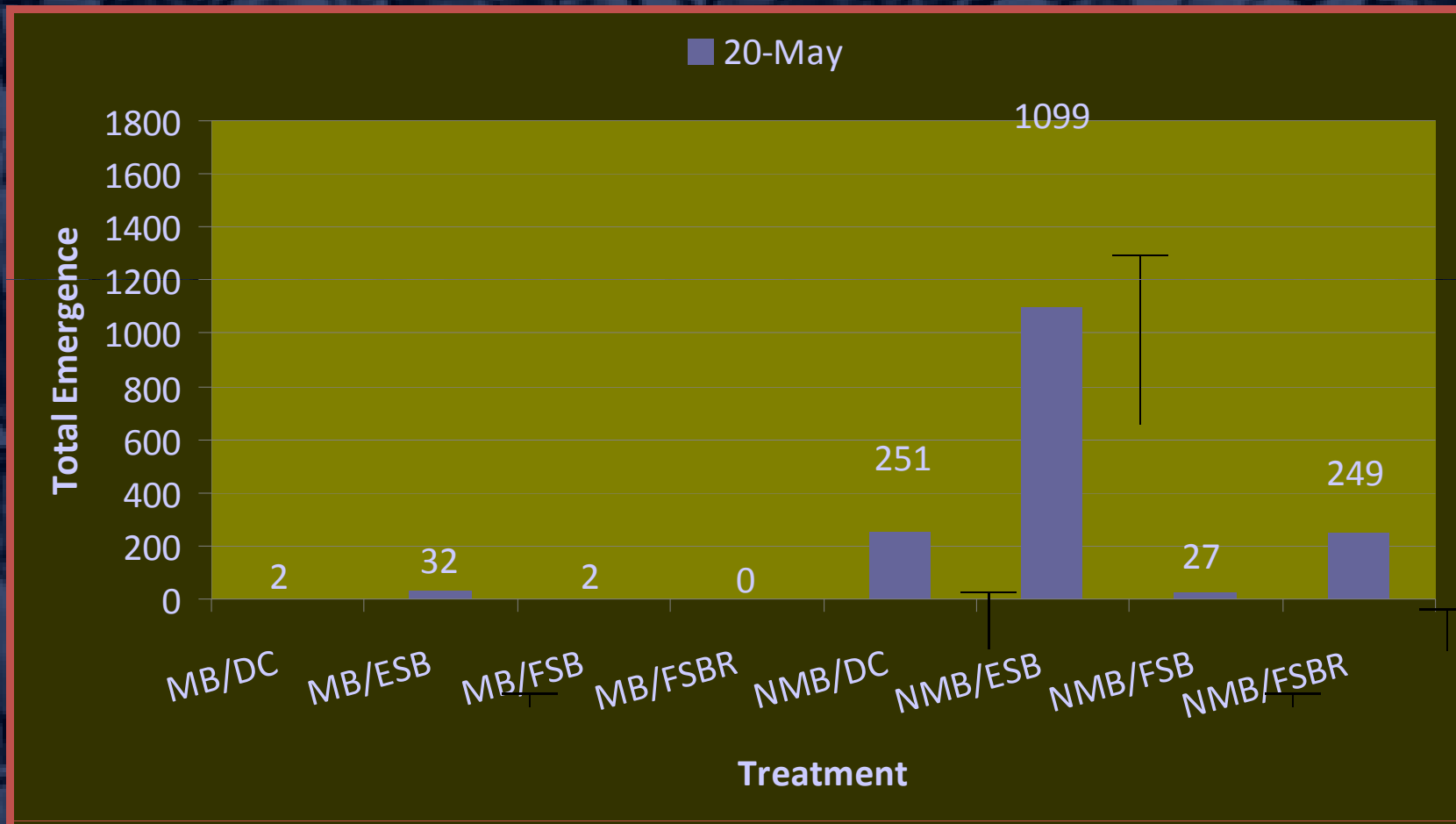
**“Tolerance”**

**Program to  
Demonstrate  
Reduction of  
Seedbank over  
Time**

# *Options?*

- Cultural practices
- Change technology (change herbicides)
- Soil residual herbicides

# Results

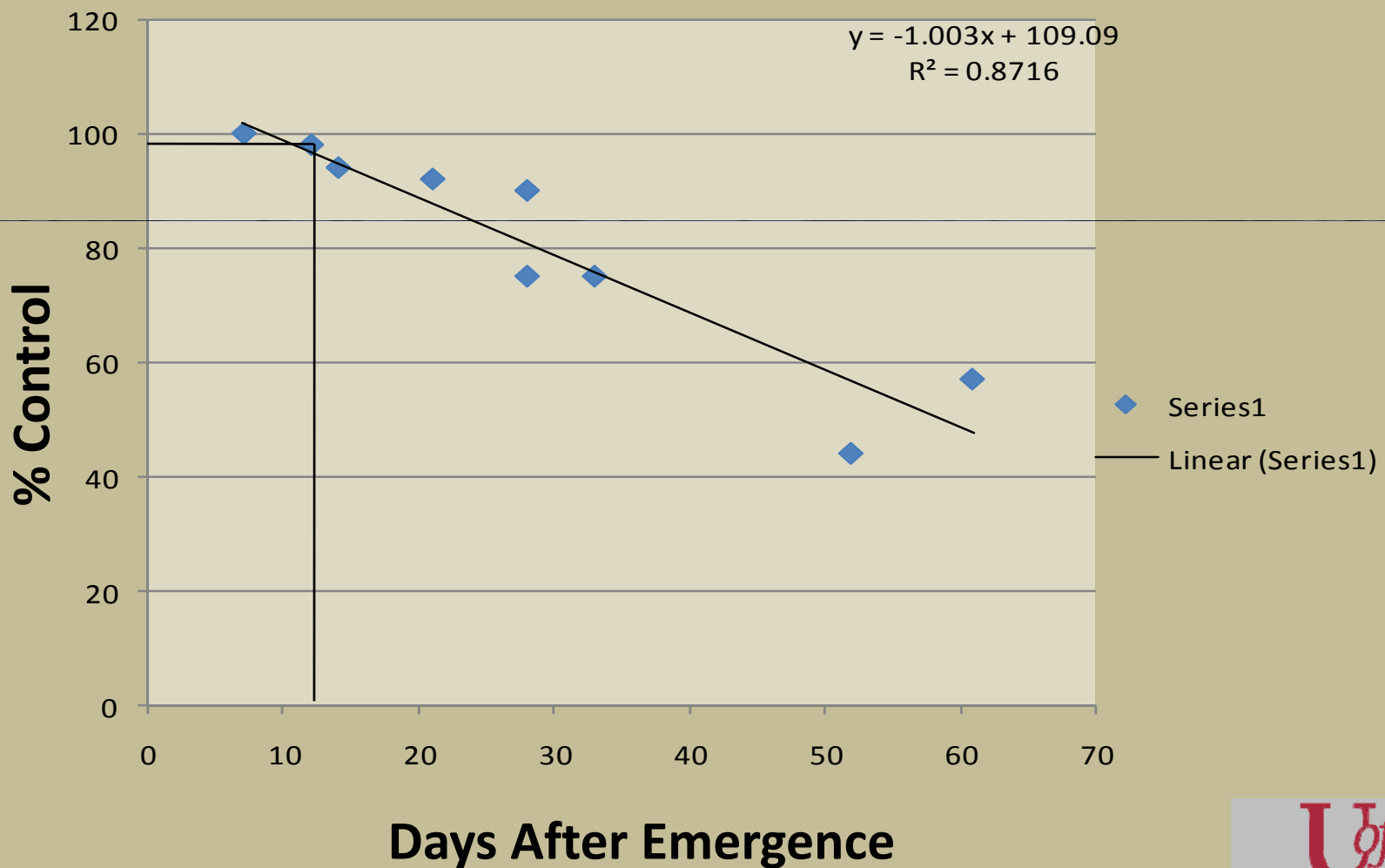




# *Change Technology*

- Liberty Link
- Dicamba
- 2,4-D
- GAT ?

# *Influence of Palmer amaranth age on Ignite (0.4 lb ai/A) control*

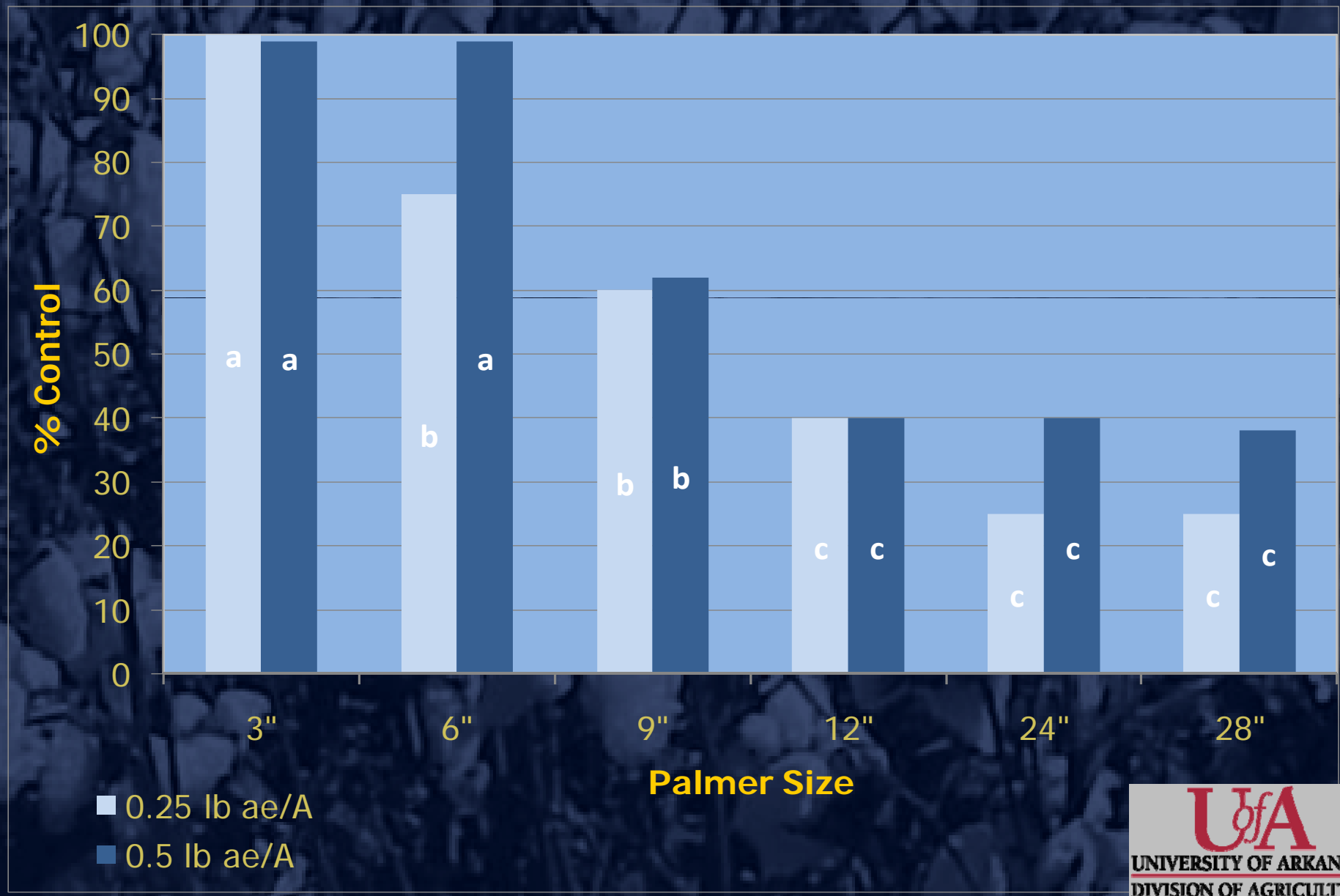




**WideStrike**<sup>TM</sup>  
*Insect Protection*

***IT'S NOT LIBERTY LINK***

# Dicamba Palmer a. Control 40 DAA



Cotoran

Envoke

Reflex

Prowl

# Soil Residual Herbicides

Dual

Direx

Treflan

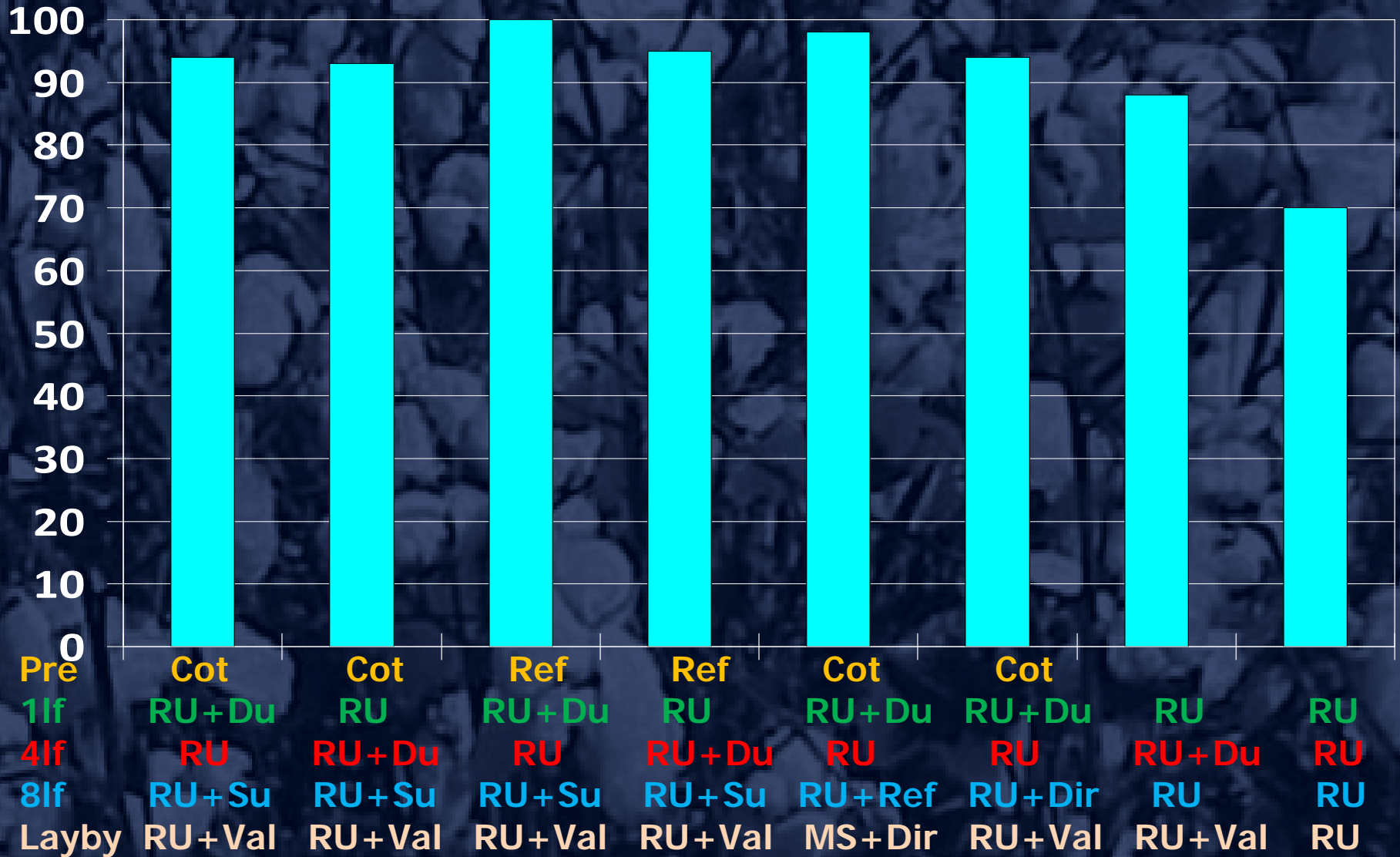
Staple

Warrant

Caparol

Valor

# Palmer Control 34 Days Following Layby



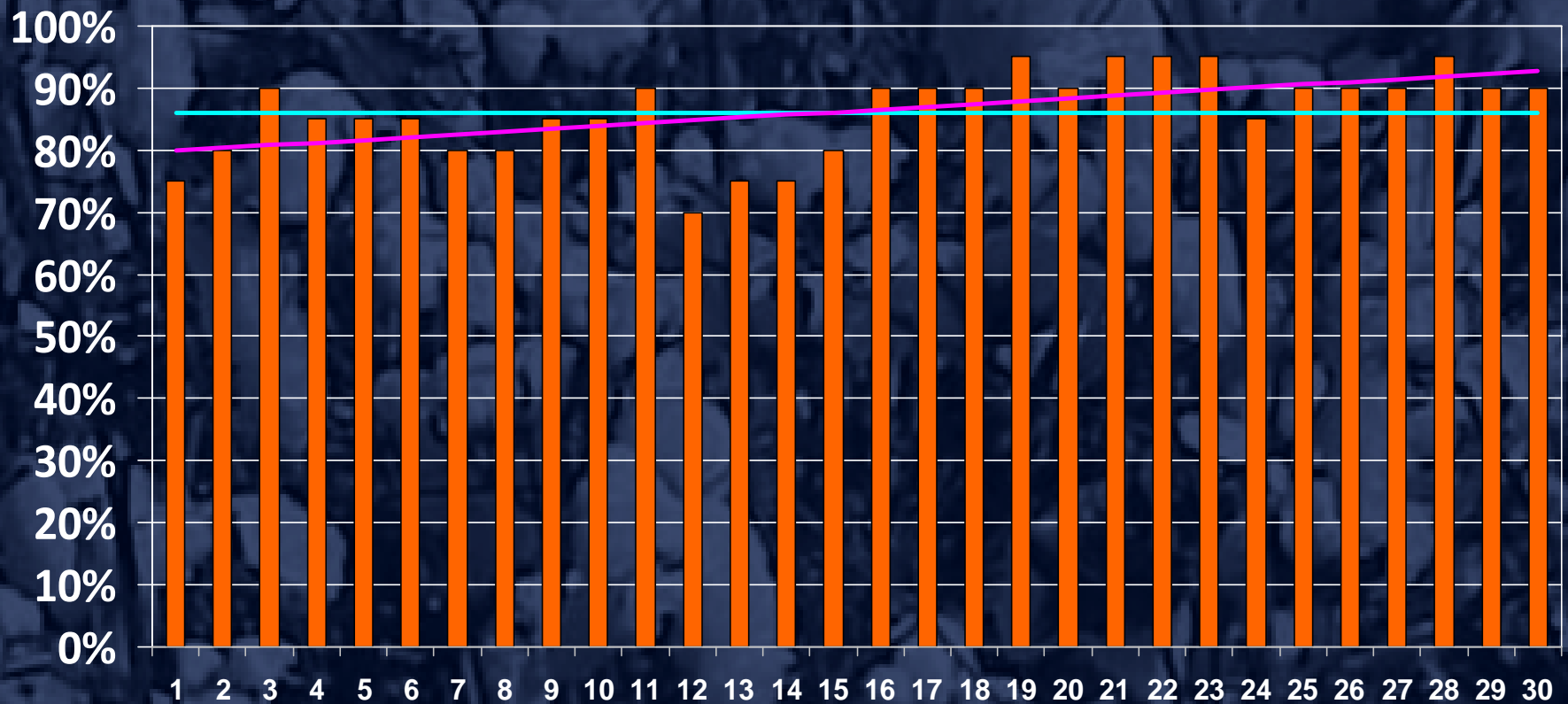
# *Moisture for Activation*

**Not enough water!!**

**Too much water!!**

# April Activation Probabilities

## 0.25" within 10 days



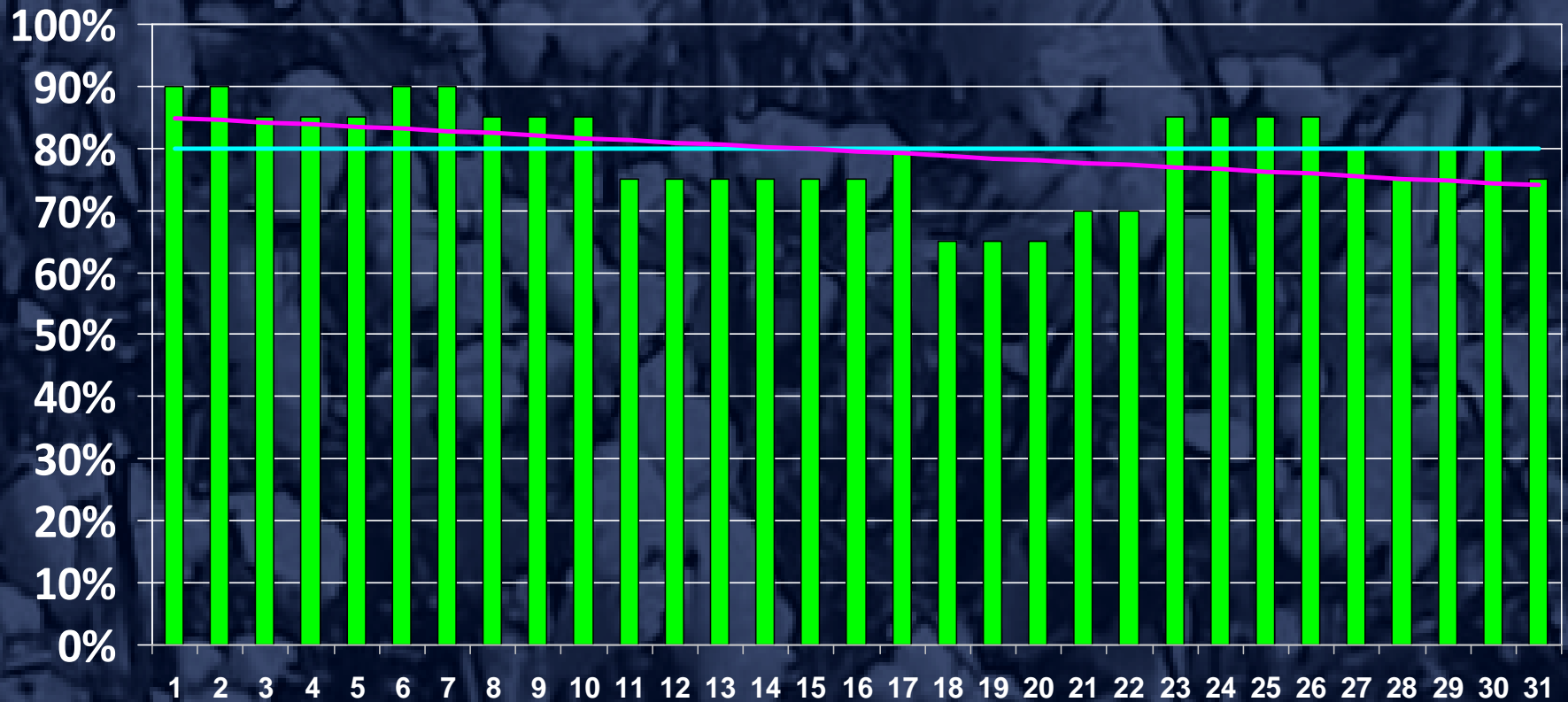
■ April — Ave — Linear (April)

Keiser 20 yr.



# May Activation Probabilities

## 0.25" within 10 days



■ May — Ave — Linear (May)

Keiser 20 yr.



# *Suggestions*

- Reflex PrePlant – 1 pt  
–or
- Cotoran, Direx or Caparol PRE
- Roundup 1 X + Dual Mag at 1 If
- Scout, Scout, Scout
- Roundup as needed for grass
- Post-direct if needed
- Valor 2 oz or Direx 1 pt layby
- Never let pigweed germinate!

# "Proper" Hand Hoeing is an Option



**I Don't Think So!!**

