Pigweeds: "On Track to Take Over the World"

Ken Smith
ALFRED HITCHCOCK'S
"THE PIGS"

TECHNICOLOR®

ROD TAYLOR · JESSICA TANDY
SUZANNE PLESHETTE · TIPPI HEDREN

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.
2010 Palmer a. Distribution

* Confirmed Resistant to field rate
Multiple Mechanisms of Resistance
Identify Weakness of Enemy!!

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“The soil seedbank must be stable or decreasing in order to be sustainable!”
Not Sustainable
Program to Demonstrate Reduction of Seedbank over Time

“Zero”

No Escapes Allowed

No Seed Produced

Soil Weed Seedbank Reduction Program

“Tolerance”

Palmer amaranth
Options?

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

The graph shows the total emergence for different treatments on 20-May. The treatments are MB/DC, MB/ESB, MB/FSB, MB/FSBR, NMB/DC, NMB/ESB, NMB/FSB, and NMB/FSBR. The y-axis represents the total emergence, and the x-axis represents the different treatments. The graph indicates that NMB/ESB had the highest emergence with 1099, followed by NMB/FSB with 251, and MB/ESB with 32. The other treatments have much lower emergence.
Change Technology

- Liberty Link
- Dicamba
- 2,4-D
- GAT?
Influence of Palmer amaranth age on Ignite (0.4 lb ai/ A) control

\[ y = -1.003x + 109.09 \]

\[ R^2 = 0.8716 \]
IT’S NOT LIBERTY LINK
Dicamba Palmer a. Control 40 DAA

% Control

Palmer Size

3" 6" 9" 12" 24" 28"

0.25 lb ae/A

0.5 lb ae/A

University of Arkansas
Division of Agriculture
Soil Residual Herbicides

- Cotoran
- Envoke
- Reflex
- Dual
- Prowl
- Treflan
- Direx
- Warrant
- Caparol
- Staple
- Valor
Palmer Control 34 Days Following Layby
Moisture for Activation

Not enough water!!

Too much water!!
April Activation Probabilities
0.25” within 10 days

Keiser 20 yr.
May Activation Probabilities
0.25” within 10 days

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!!