Landscape Management to Reduce Tarnished Plant Bugs in Cotton

Jeff Gore

MSU, DREC

Gordon Snodgrass, Craig Abel, and O.P. Perera

USDA-ARS

Seasonal Occurrence of Plant Bugs

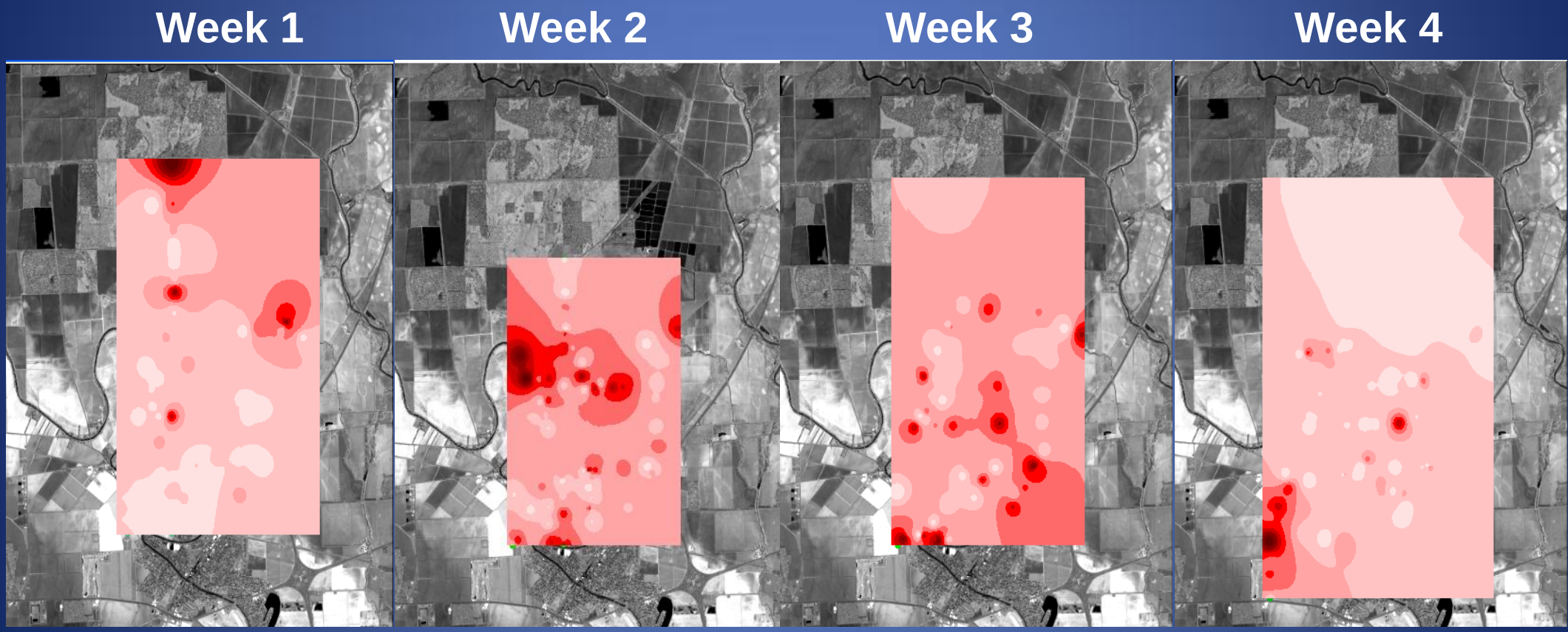
Winter Dec.-Feb.

Spring Feb.-May

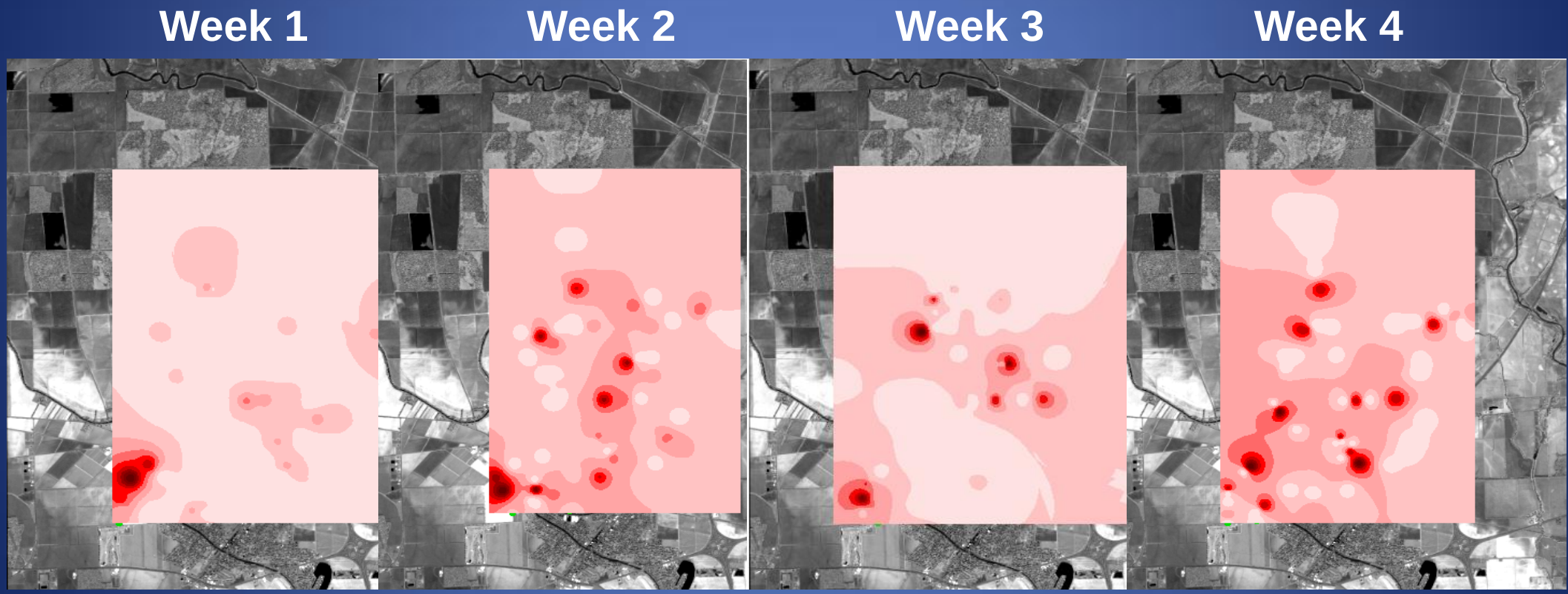
Summer June-Sept.

Fall Sept.-Dec.

Distribution of Tarnished Plant Bugs in the Landscape - May



Distribution of Tarnished Plant Bugs in the Landscape - June

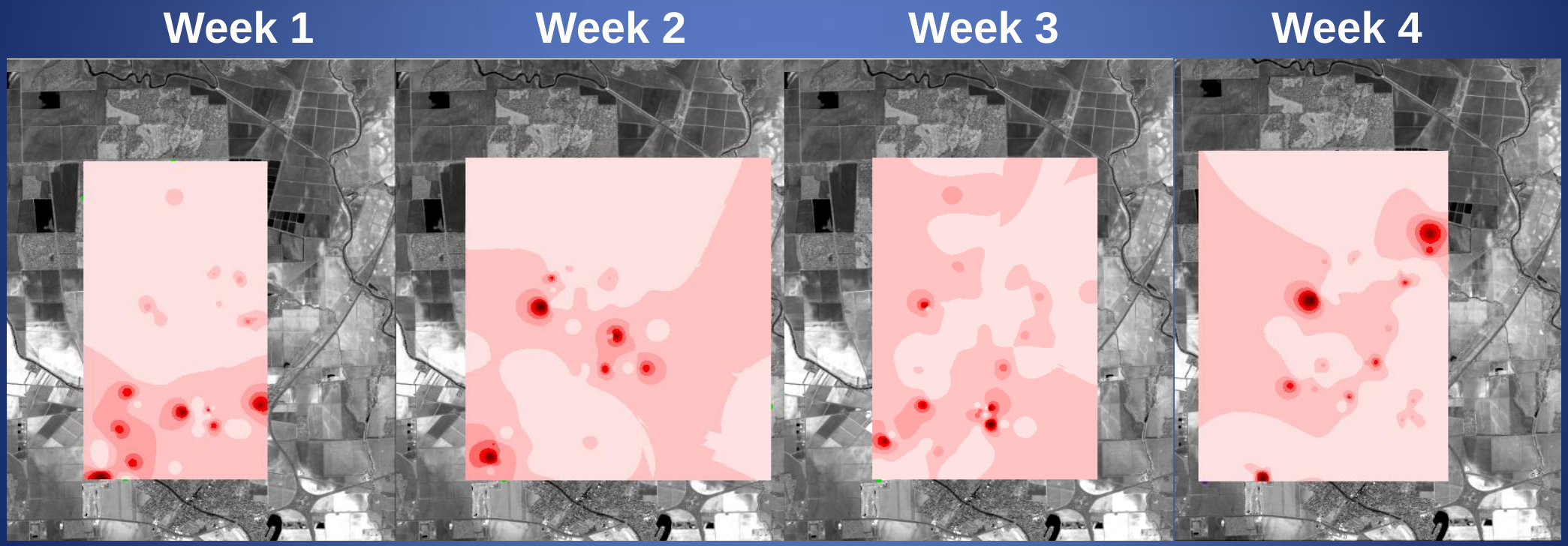


High

Medium

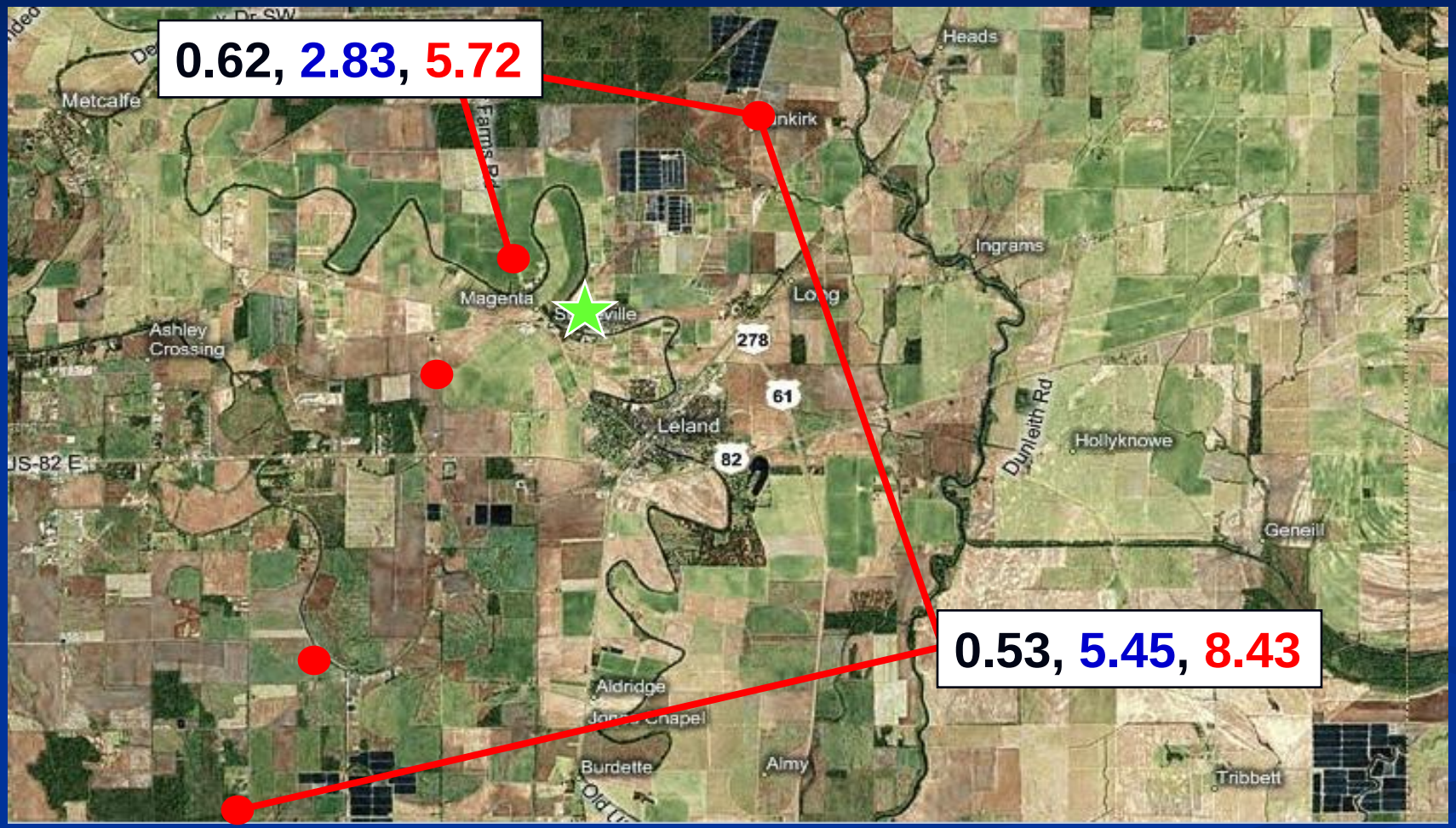
Low

Distribution of Tarnished Plant Bugs in the Landscape - July



Gene Flow Between Populations 2006

O.P. Perera, USDA-ARS



Key: May, July, September


2007-2008
Tunica/Robinsonville
Clarksdale
Leland/Stoneville
Rolling Fork/Cary
Vicksburg
St. Joseph, LA
Little Rock
Pine Bluff
Tupelo
Starkville
Holly Springs National Forest
Tombigbee National Forest
Delta National Forest
Bienville National Forest
Ruston
Monroe
Jackson
Meridian
MISSISSIPPI
Sardis Lake
Grenada Lake
Okatibbee Lake
Saline Bayou National Wild and Scenic
Saline Lake

Late Winter and Early Spring

Winter
Dec.-Feb.

Spring
Feb.-May

Examples of early-spring broadleaf hosts of tarnished plant bug

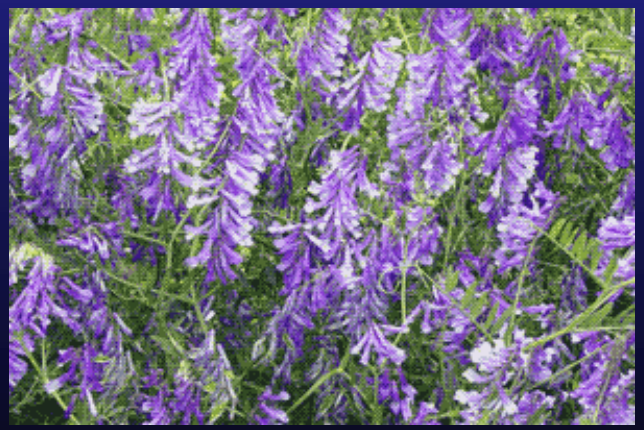
Buttercup

Evening Primrose

Butterweed

Annual Fleabane

Sourdock



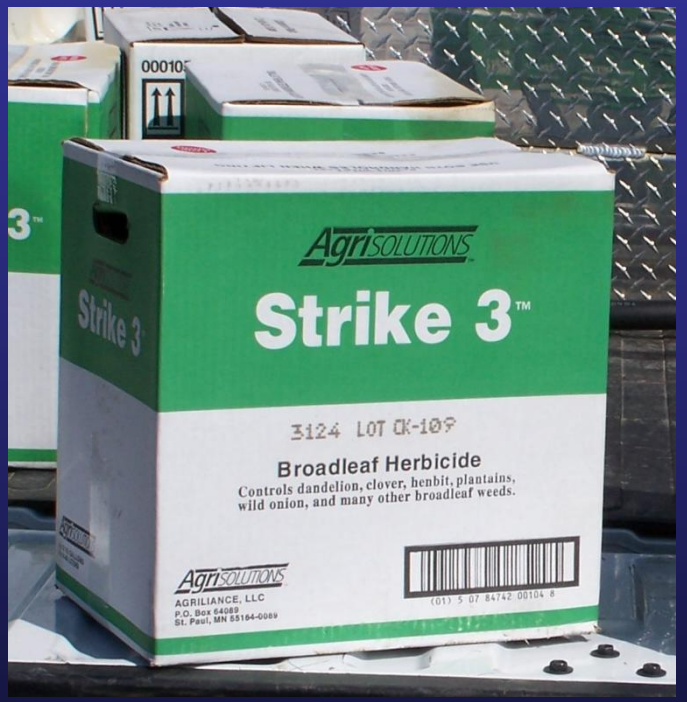
Vetch

Crimson Clover

Cutleaf Primrose

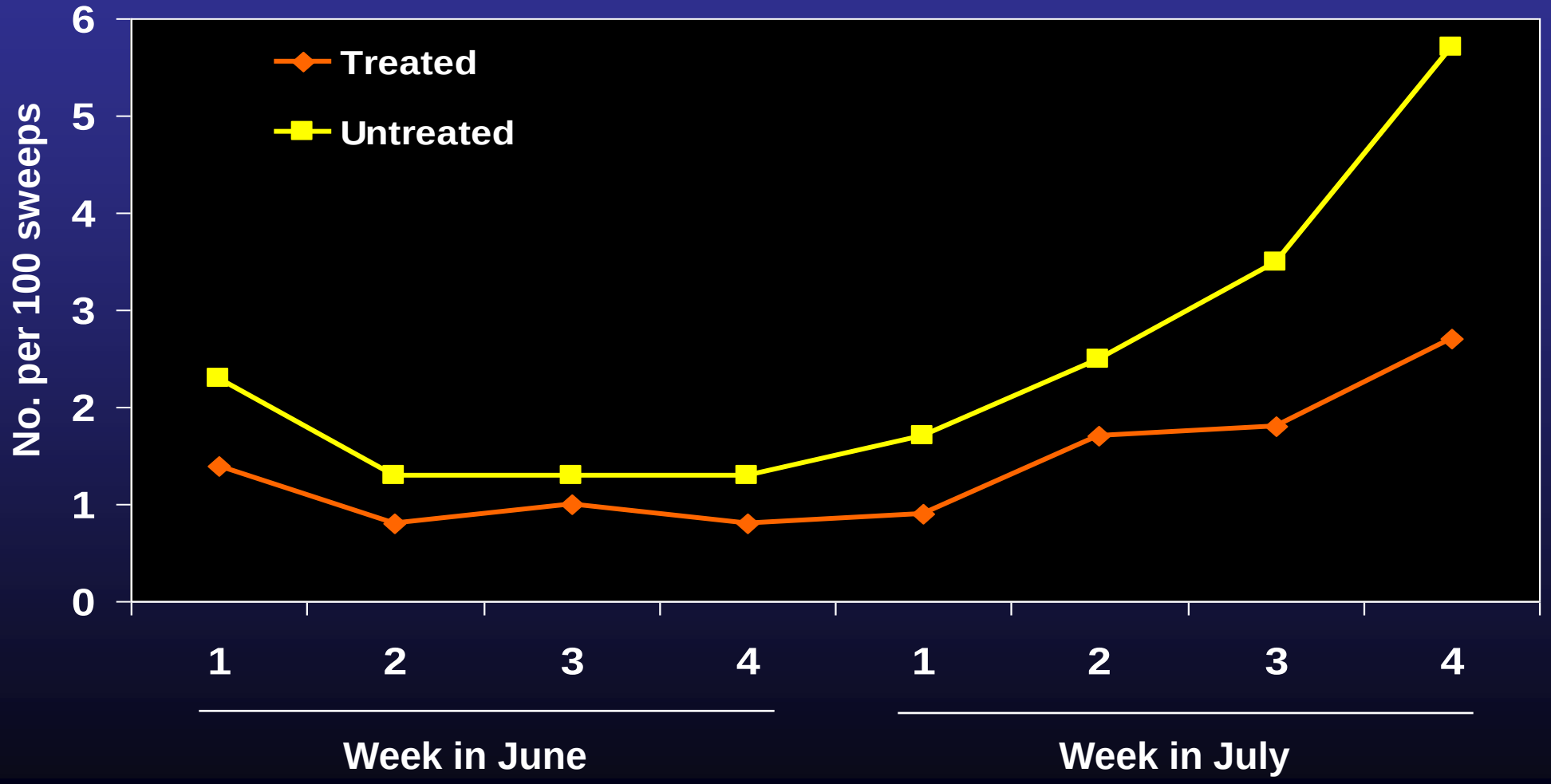
Area-wide Plant Bug Management

Gordon Snodgrass, William Scott, and Craig Abel – USDA-ARS

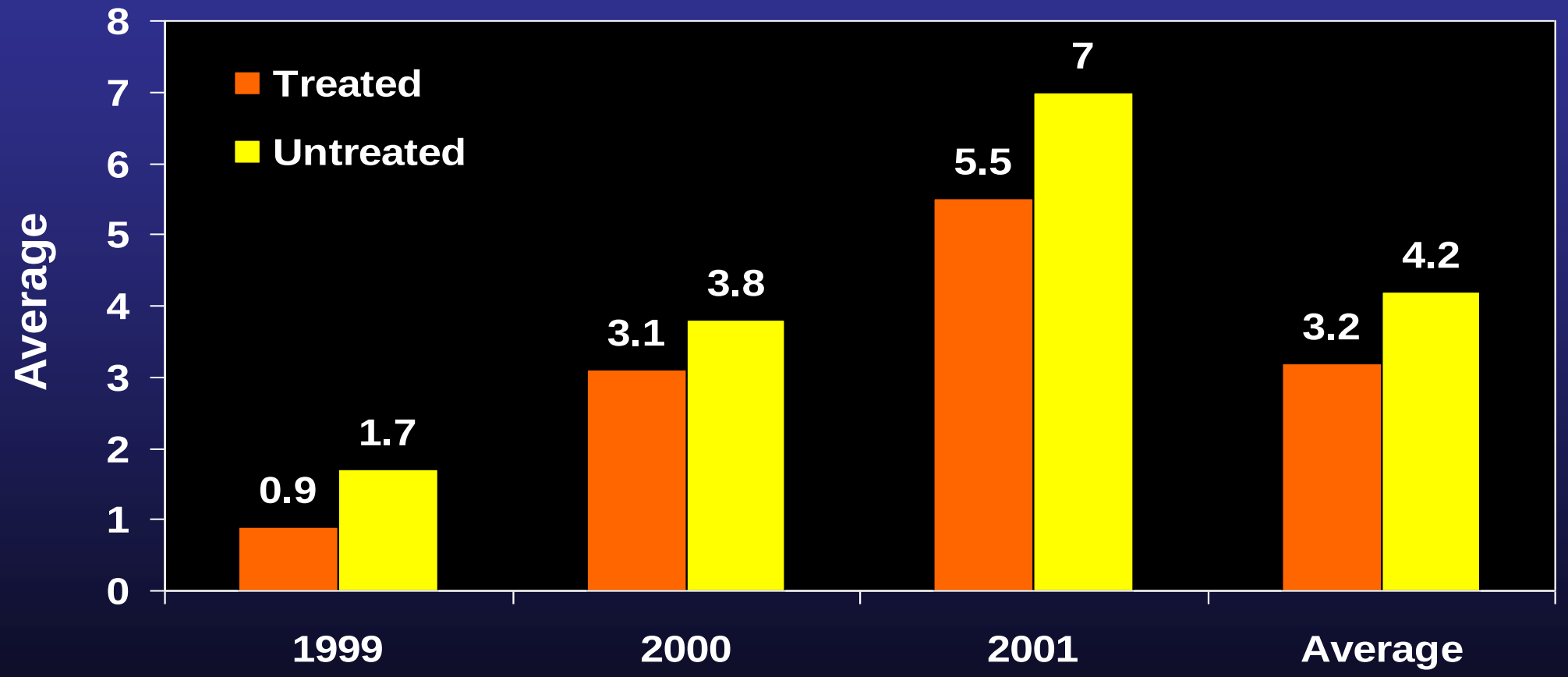


One herbicide application from late-Feb. through March.

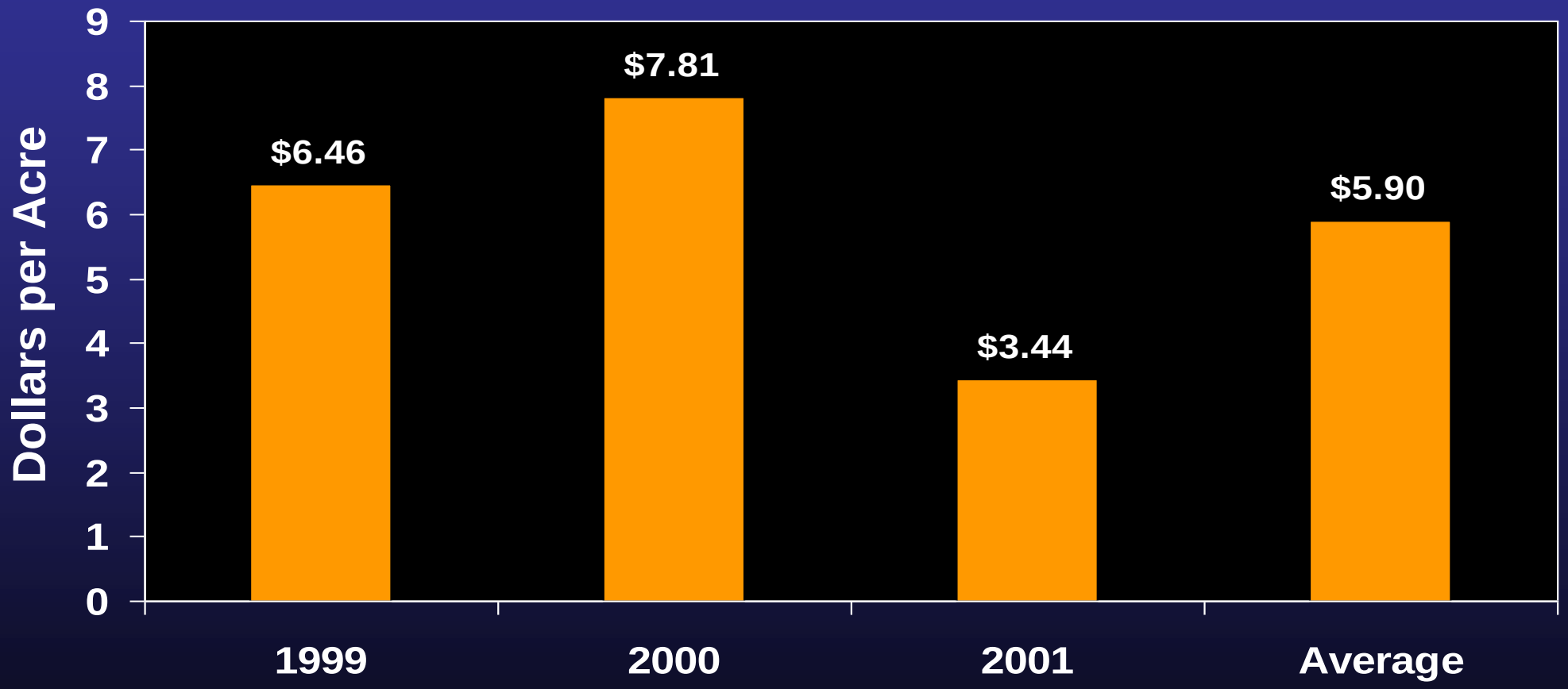
Area-Wide Plant Bug Control
MS Delta



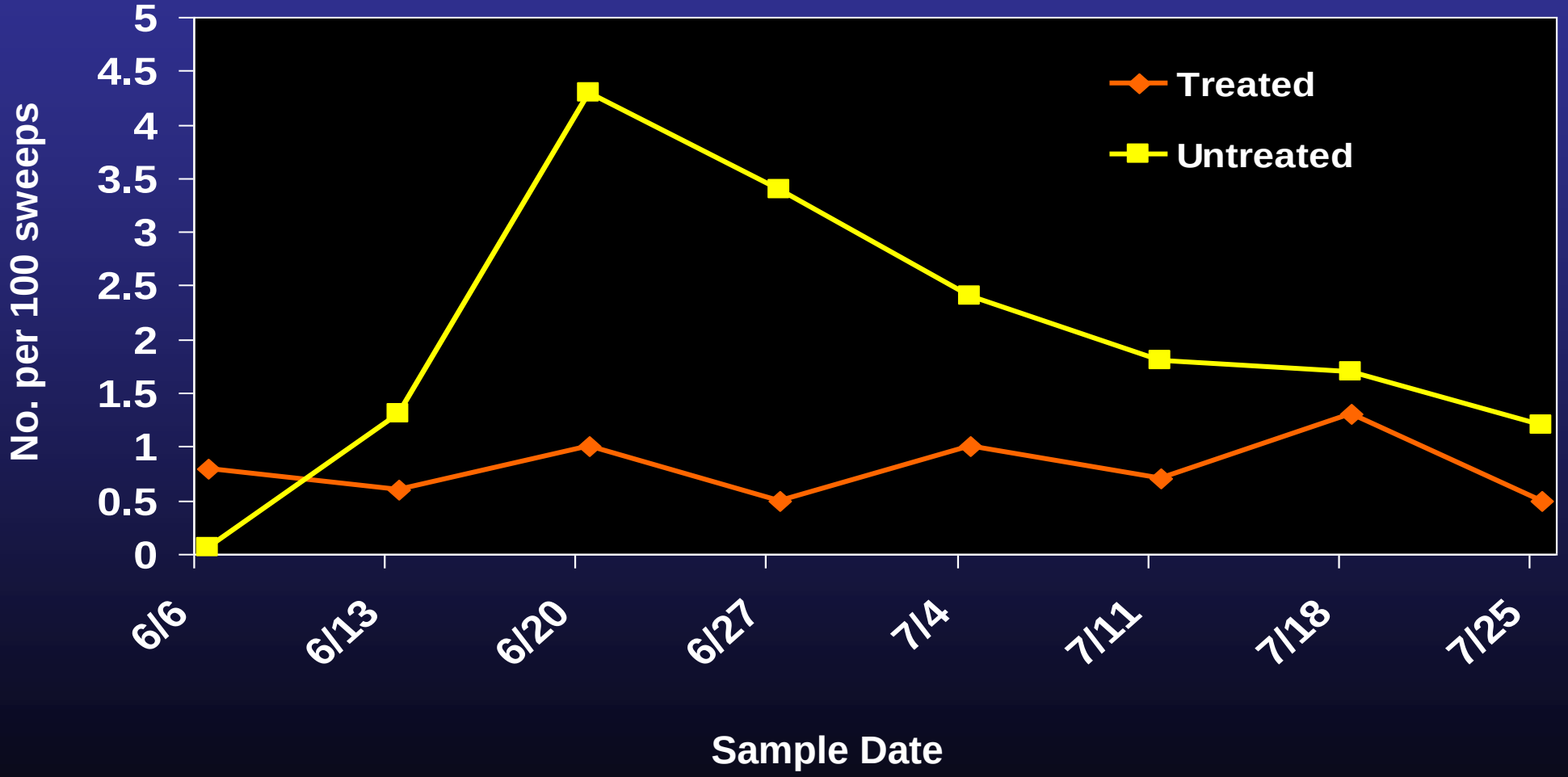
No. Plant Bug Applications



Economic Benefit



Area-Wide Plant Bug Control
MS Hills



Untreated

Treated

Treated with Roundup at Burndown

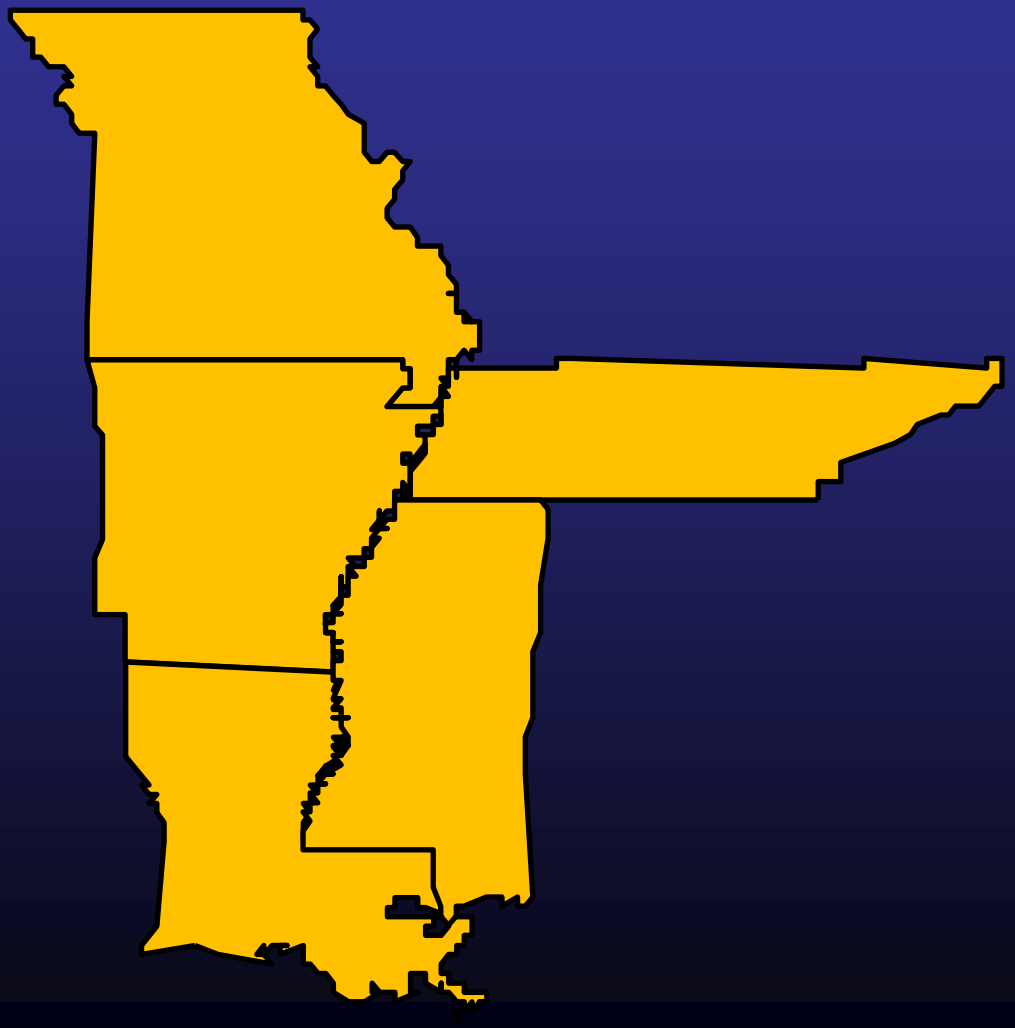
Summer (Crop Season)

Summer

June-Sept.


Micro-Band
Micro-Band
Micro-Band

Regional Temik Side-Dress Study



Missouri – Kelly Tindall

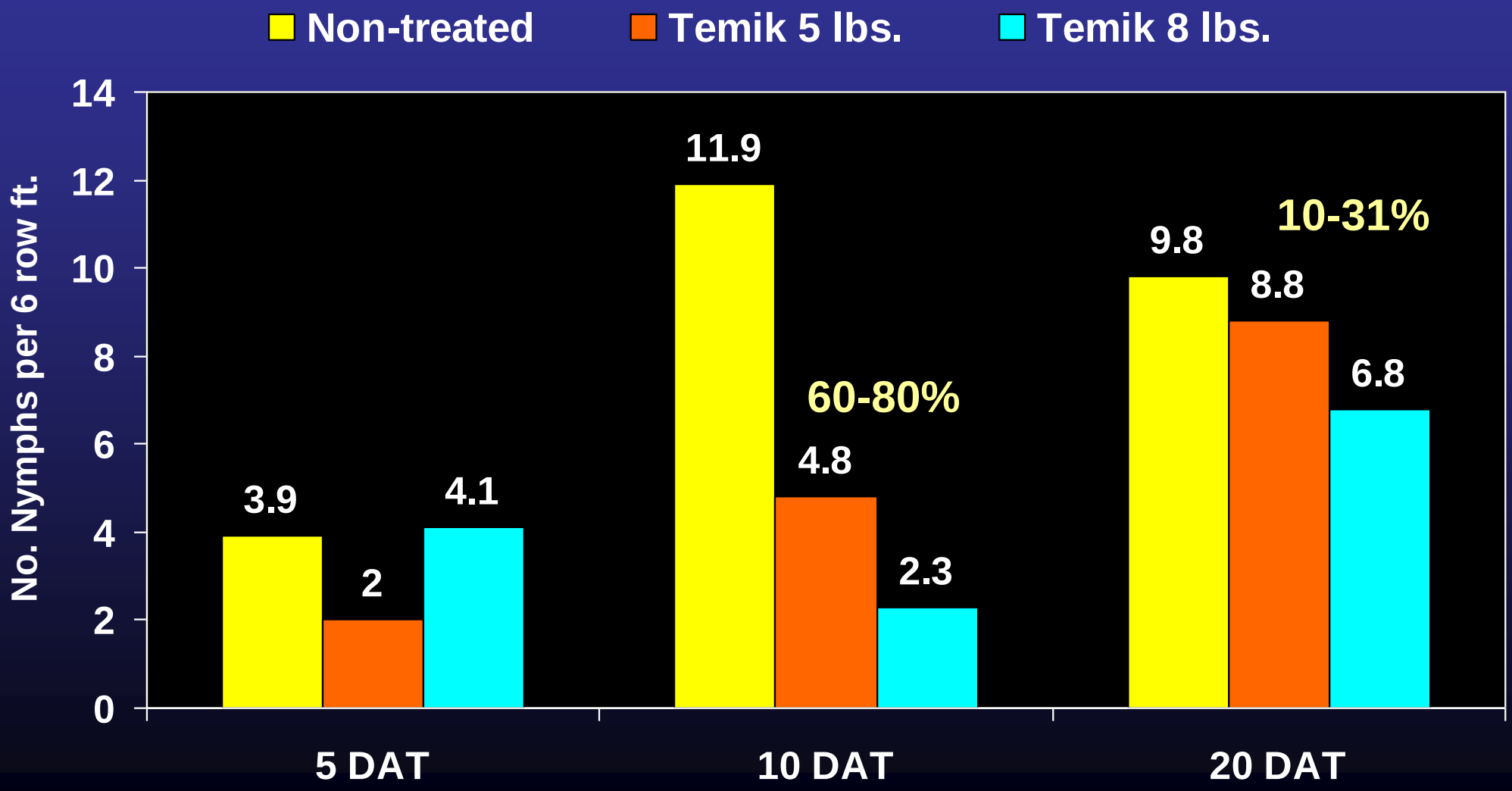
Arkansas – Gus Lorenz, Glen Studebaker, and Scott Akin

Tennessee – Scott Stewart

Mississippi – Jeff Gore, Angus Catchot, Don Cook, and Fred Musser

Louisiana – Ralph Bagwell and Roger Leonard

Temik Side Band Applications



Fall - Winter (Reproductive Diapause)

Winter
Dec.-Feb.

Fall
Sept.-Dec.

Overwintering Habitats

- **Winter Annuals**
  - **Mostly henbit,**
    Lamium amplexicaule

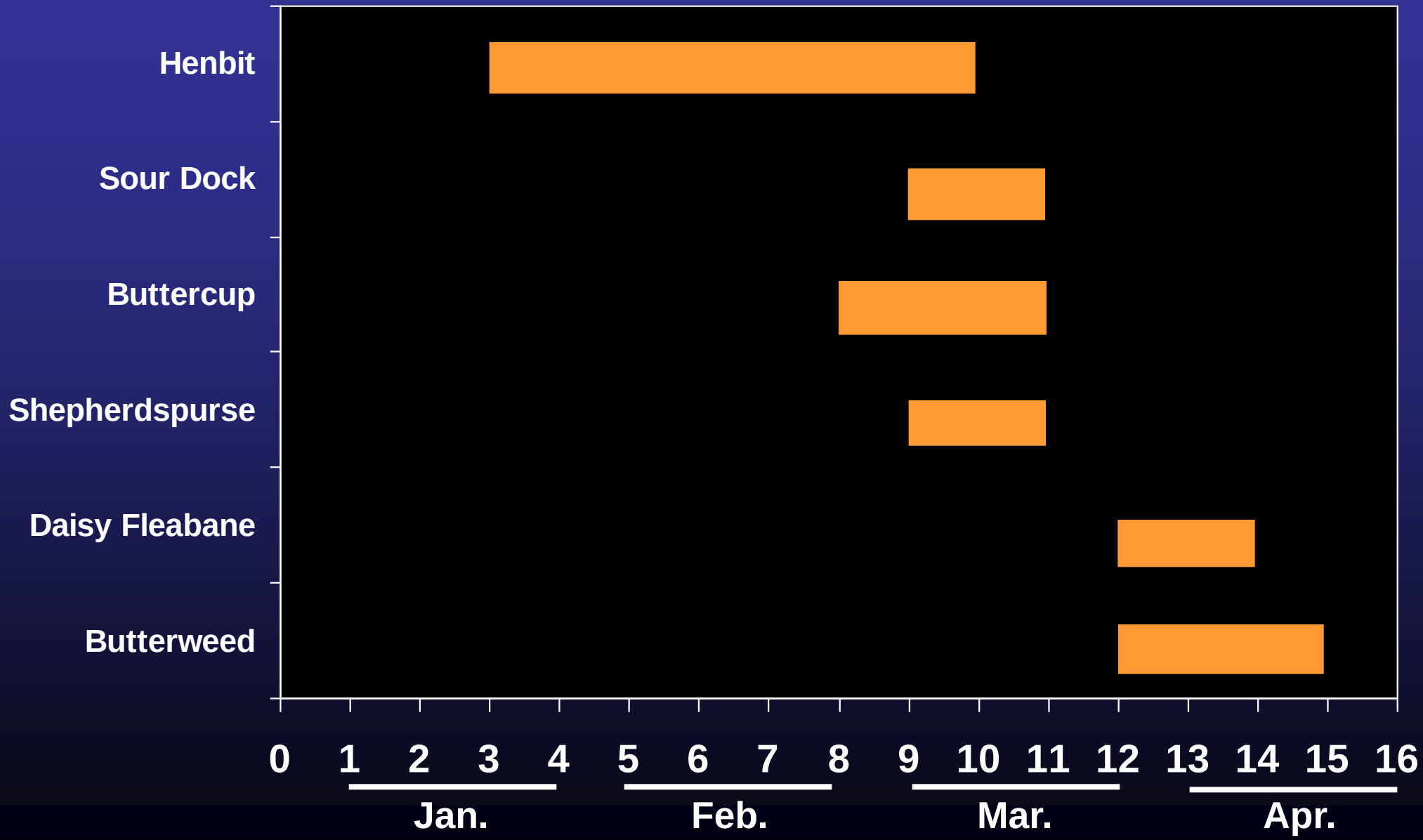
- **Plant Debris**

Percentages of Reproductive Females with Mature Eggs (2002-04) – G. Snodgrass

		% with Mature Eggs		
Month	Wk	Henbit	Plant Debris	Mustard
December	1	30	0	-
	2	59	0	0
	3	75	0	0
	4	62	6	0
January	1	75	35	27
	2	95	85	93
	3	100	87	83
	4	96	95	92

Occurrence of Nymphs on Winter and Spring Hosts

G. Snodgrass, 1999-2001



Summary and Conclusions

- Host management during the early spring can provide an economic benefit.
- Crop arrangement and border management from planting through summer.
- Fall and winter management has not been investigated, and may provide some good opportunities.

Summary and Conclusions

- Tarnished plant bugs feed and reproduce on over 350 plant species which makes it a difficult challenge.

- Because of that, management from a landscape perspective using an integrated approach will yield the greatest success.


cotton
MISSISSIPPI
MAFES
AGRICULTURAL & FORESTRY
EXPERIMENT STATION
DELTA
REC