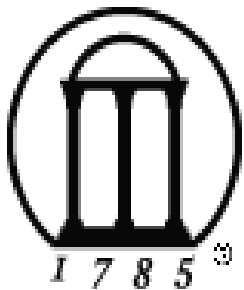


2011 Beltwide: Tillage impacts Reflex control of Palmer amaranth.



Kichler, Culpepper, Sosnoskie, and York
University of Georgia and N. C. State University





Irrigated
or
Dryland









Macon Co. = X % in 2010



OBJECTIVE

Determine the impact of a rototiller, a field cultivator, and a disk harrow on the activity of Reflex.

Three scenarios:

1. Activating rainfall (irrigated production)
2. Moist soil but no activating rain
3. Bone dry

Experiment 1: Irrigated

- Tift County: Palmer response study
- Tift County: Weed free tolerance study
- Plot Size – 6 by 70 feet
- Three Replications, RCBD
- PHY 375 WRF
- Weed free study using Ignite

Herbicide Treatments and Rates

- Reflex 1 pt + Prowl 1 pt
- None

Reflex is only currently labeled as a PRE application in Georgia cotton.

Application Methods

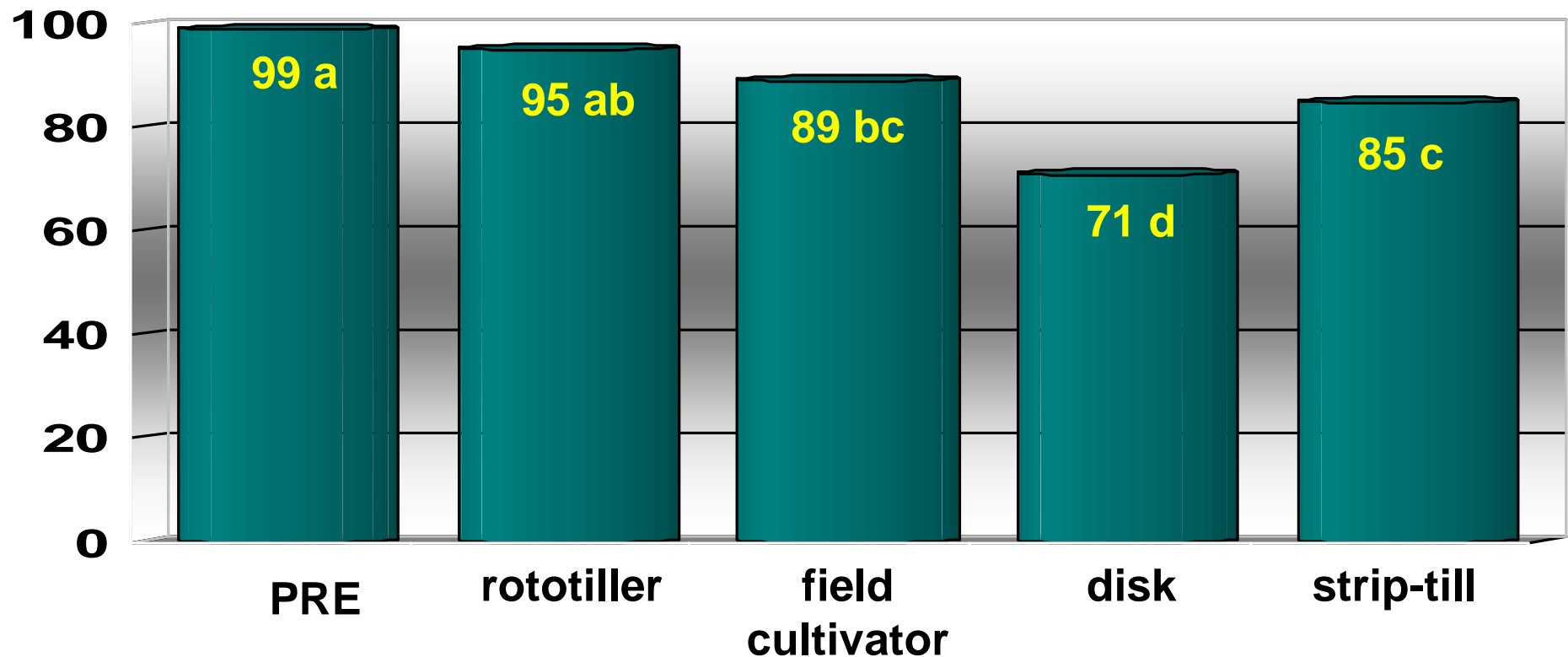
- PRE after planting
- PPI rototiller before planting
- PPI field cultivator before planting
- PPI disk harrow before planting
- Spray immediately before strip till

- Strip tillage rig

Rainfall/Irrigation

- Planted May 14
- Irrigated May 13 (0.5 inch)
- Irrigated May 19 (0.5 inch)

Percent control of Palmer amaranth by Reflex as impacted by tillage. 14 DAP.*



Prowl 1 pt/A + Reflex 1 pt/A

Nontreated – 11 DAT



Prowl 1 pt + Reflex 1 pt: PRE – 11 DAT



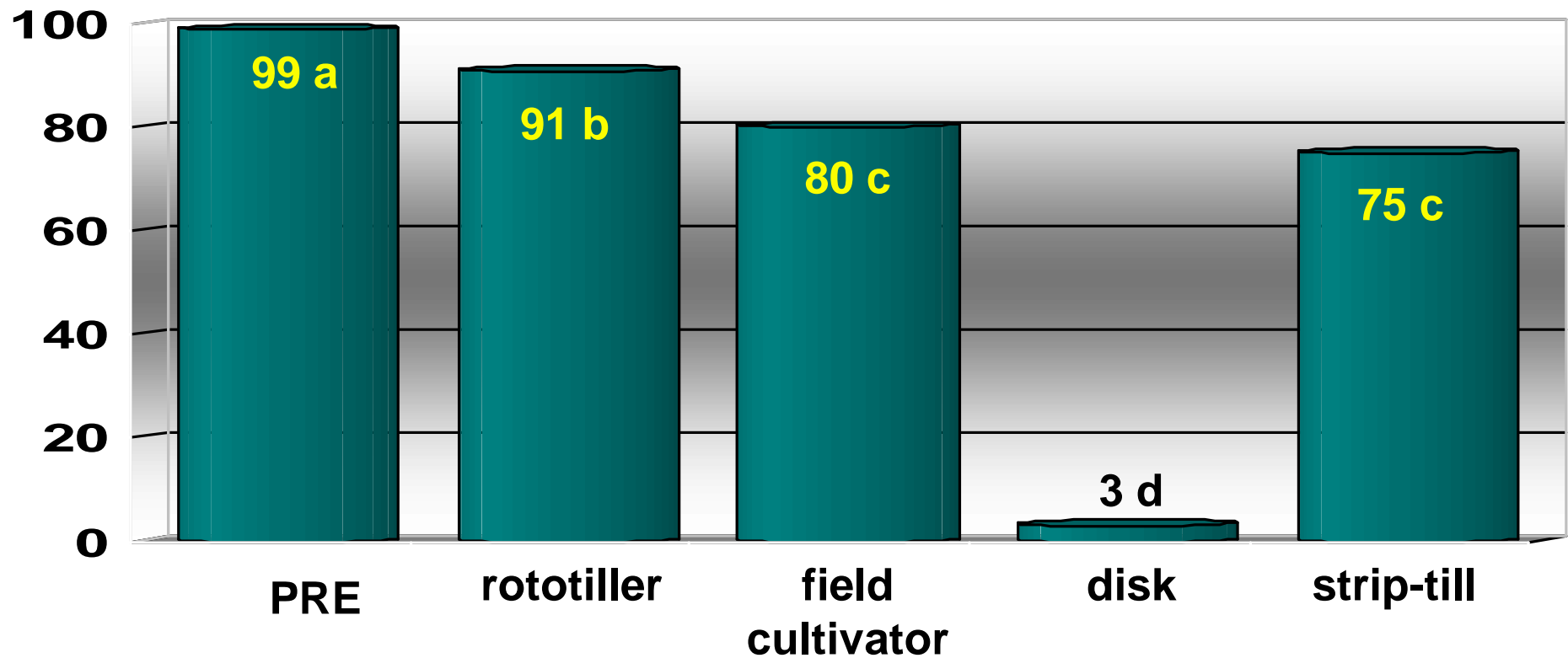
Prowl 1 pt + Reflex 1 pt: PPI with rototiller – 11 DAT



Prowl 1 pt + Reflex 1 pt: PPI with disk – 11 DAT



Percent control of Palmer amaranth by Reflex as impacted by tillage. 38 DAP.*



Prowl 1 pt/A + Reflex 1 pt/A



Ho Herbicide

PRE



PPI-Rototiller



Prowl (1 pt) + Reflex (1 pt)
30 days after treatment

PRE



PPI-Disk

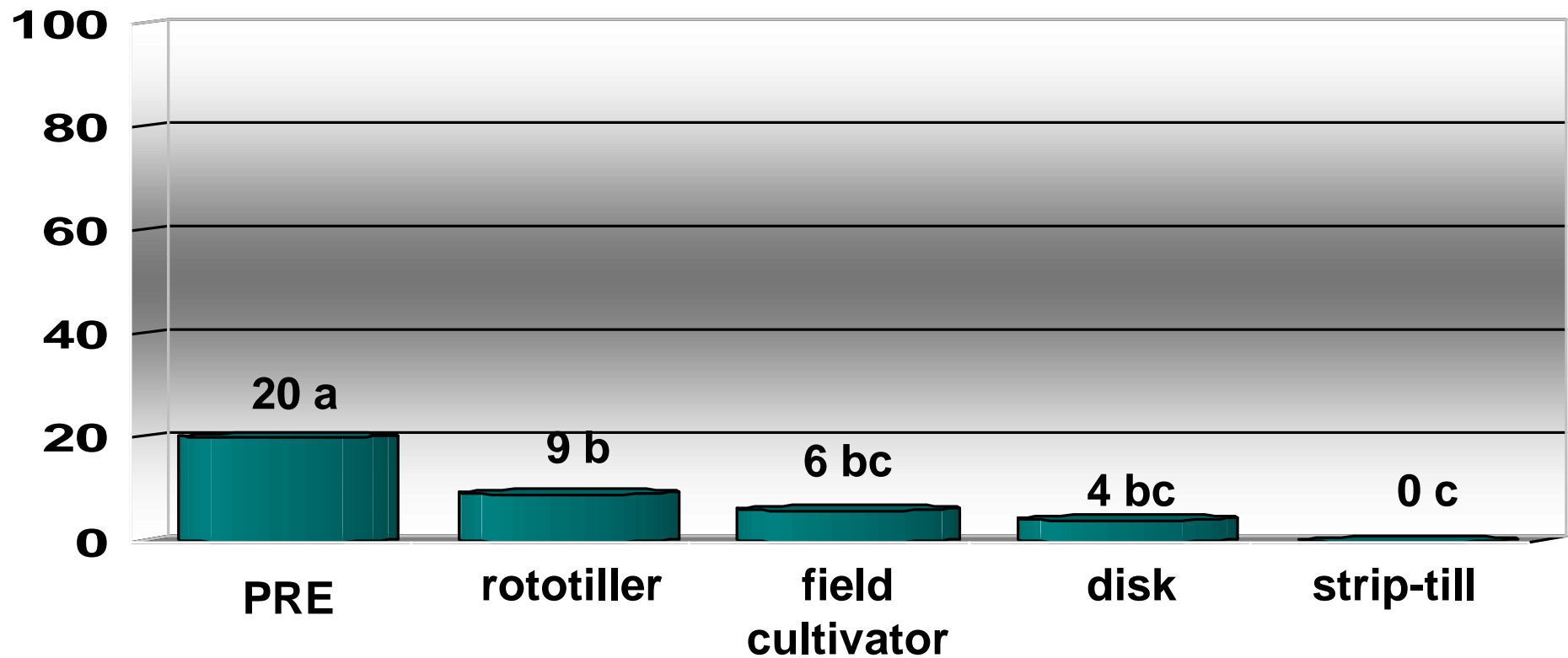


Prowl (1 pt) + Reflex (1 pt)
30 days after treatment

Cotton injury from Reflex can be severe if rainfall occurs during emergence.



Percent cotton injury by Reflex as impacted by tillage. 10 DAP.*

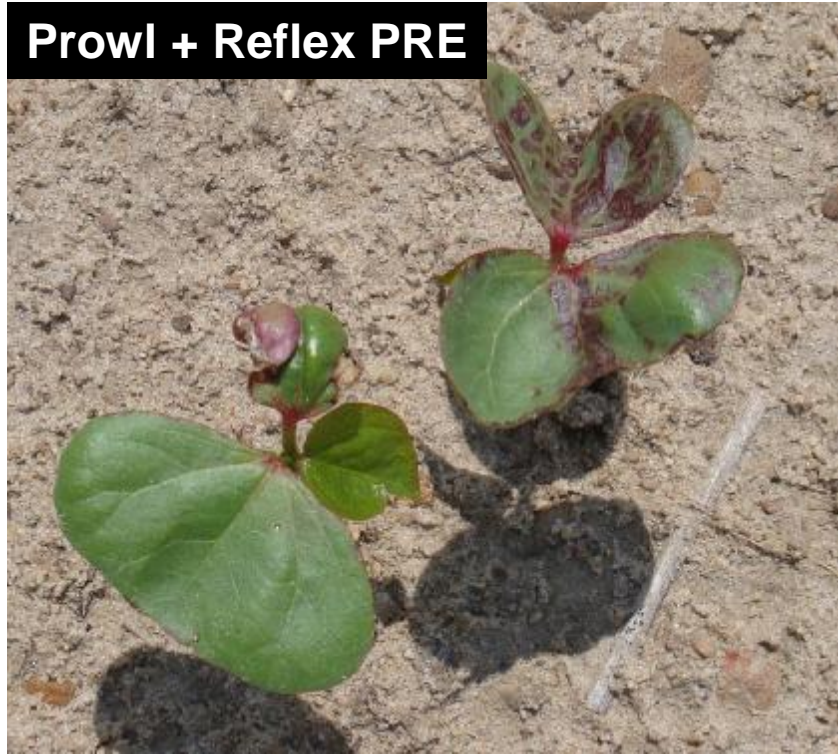


Prowl 1 pt/A + Reflex 1 pt/A

None



Prowl + Reflex PRE



Prowl + Reflex PPI - Rototill

Planted May 14
Irrigated May 13
Irrigated May 19 during emergence

Experiment 2: Soil moist but no limited activating moisture.

April 15 – 0.75 inches

April 21 – 0.2 inches

April 23 – 0.4 inches ← Planted April 23

May 5 – 0.25 inches ← Cotton Emergence April 29

May 6 – 0.75 inches

May 7 – 0.25 inches

May 10 – 0.75 inches

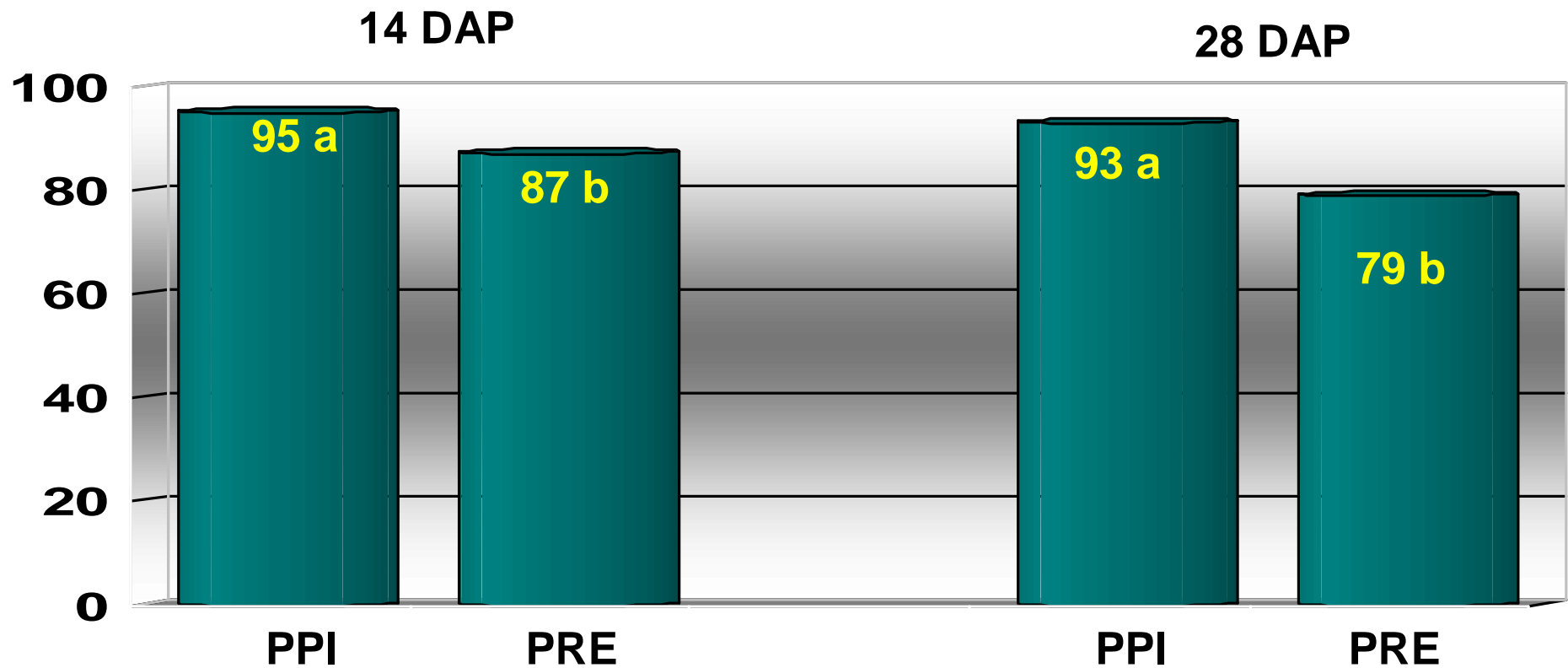
May 17 – 0.75 inches

May 28 – 1.4 inches

Experiment 2: Soil moist but no limited activating moisture.

- Tillage: PRE or Rototill
- Herbicide options = none or Reflex 1 pt/a

Percent control of Palmer amaranth by Reflex as impacted by tillage. 14 and 28 DAP.*



Reflex 1 pt/A

Reflex



PRE



PPI

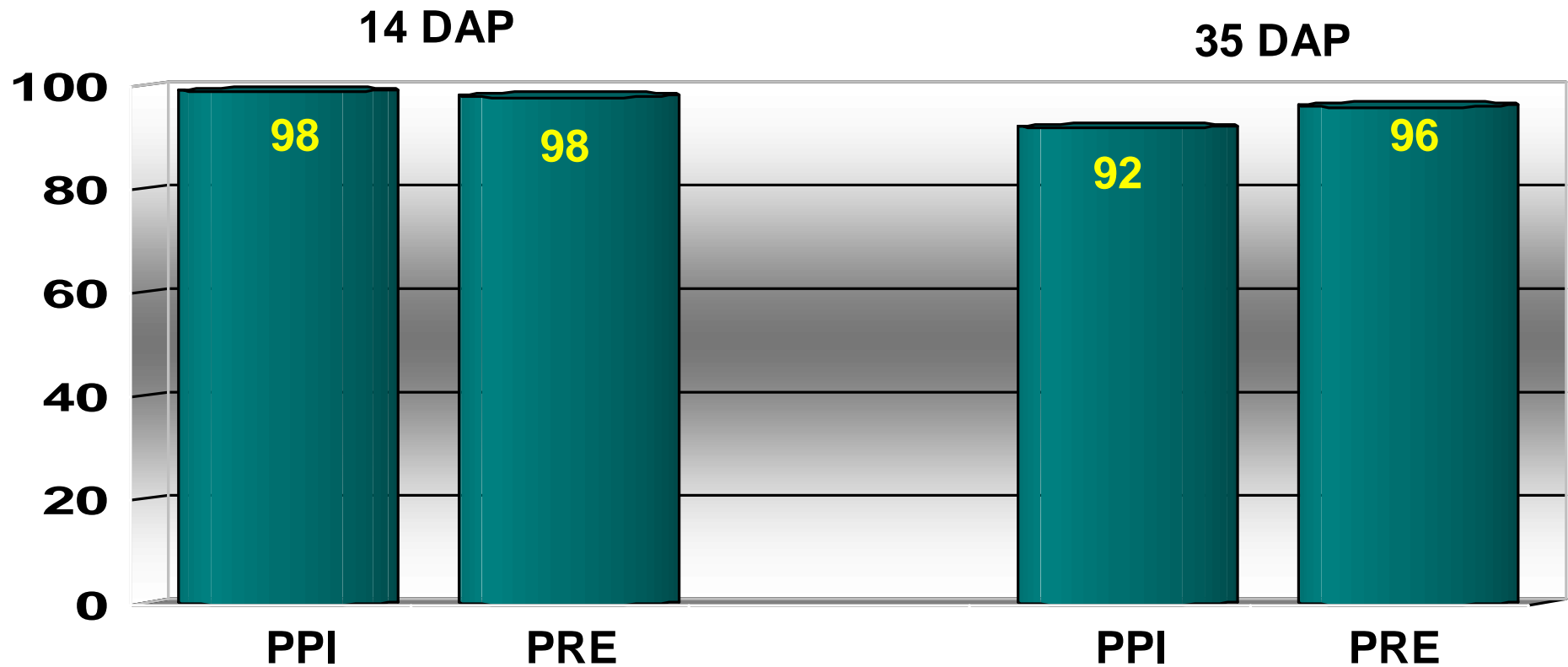
Experiment 3: Very dry soil, first rain 7 DAT.



Experiment 2: Soil moist but no limited activating moisture.

- Herbicide options = none or Reflex 1 pt/a
- Tillage: PRE or Rototill

Percent control of Palmer amaranth by Reflex as impacted by tillage. 17 and 29 DAP.*



Reflex 1 pt/A

Conclusions

- 1. Irrigated/Rainfall timely:** PRE applications are the most effective option; however, crop injury could be reduced with a shallow incorporation that only reduced control 9%.
- 2. Moist soil/no activating rainfall:** PPI shallow incorporation more effective than PRE application.
- 3. Bone dry soil:** Control was similar with PRE or PPI application because Palmer did not emerge until it rained.
- 4. Rototiller > Field Cultivator > Strip till > Disk**