Brake (fluridone) Application Timing in Peanut
&
Peanut Response to Milestone (aminopyralid)

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UGA Weed Science Update for County Extension Agents

December 6, 2023

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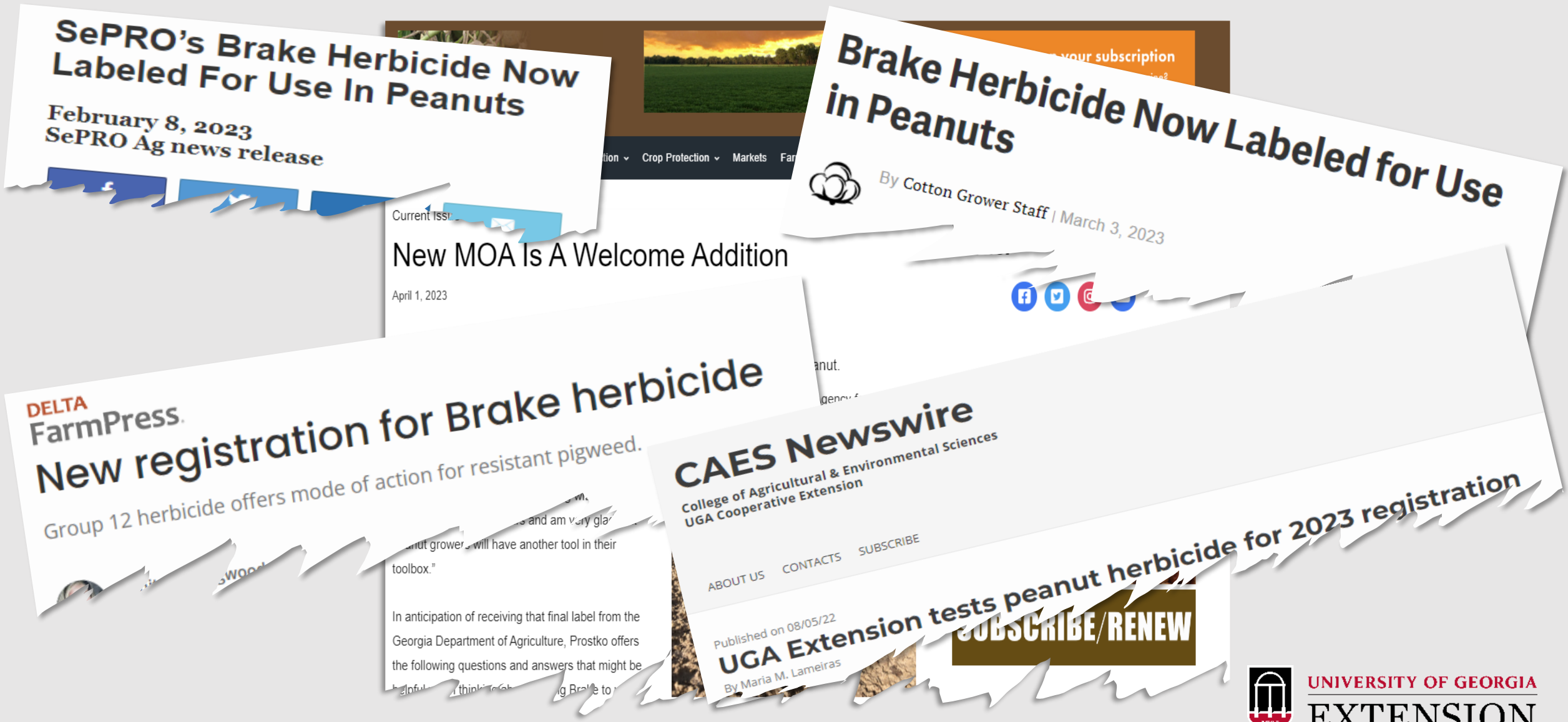
Introduction:
Brake® registration 2023



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Introduction:
Brake®

Fluridone

- WSSA Group # 12
  Phytoene Desaturase Inhibitor
- Application method: PRE
- **“Apply behind the planter (i.e. at planting) or within 36 hours after planting.”**

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Objective

1. Evaluate peanut response to delayed timings of Brake.

Methods:

Experimental Design

- Experimental Period: 2022 – 2023
- Location: Ponder Farm; Ty Ty, GA
  - Dothan/Tifton sand
- Peanut variety:
  - GA-06G
- RCB design; 4 replications
- Treatments:
  - NTC
  - Brake® 1.2SL @ 12 oz/A
  - Timing: 1, 3, 5, 7 DAP
- Data analyzed in SAS 9.4 (Cary, NC)
  - PROC GLIMMIX
  - Tukey-HSD ($P = 0.10$)
    Pairwise comparison

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Brake Timing - 2022

PE-16B-22
GA-06G

*7 DAP: GROUND CRACKING; SOME GREEN PLANT TISSUE EXPOSED (20-25%); 1" GREEN ABOVE SOIL SURFACE; ROOT=2"; HYPOCOTYL=1.25'; EPICOTYL=0.5

Brake Timing Study - 2023

PE-09-23
GA-06G

*7 DAP: 50% GROUND CRACKING; 2/20 PLANTS WERE 0.25" ABOVE GROUND; ROOT=2"; HYPOCOTYL=1"; EPICOTYL=0.25"; COTYLEDONS SPLIT; 90+% BELOW GROUND.

Results

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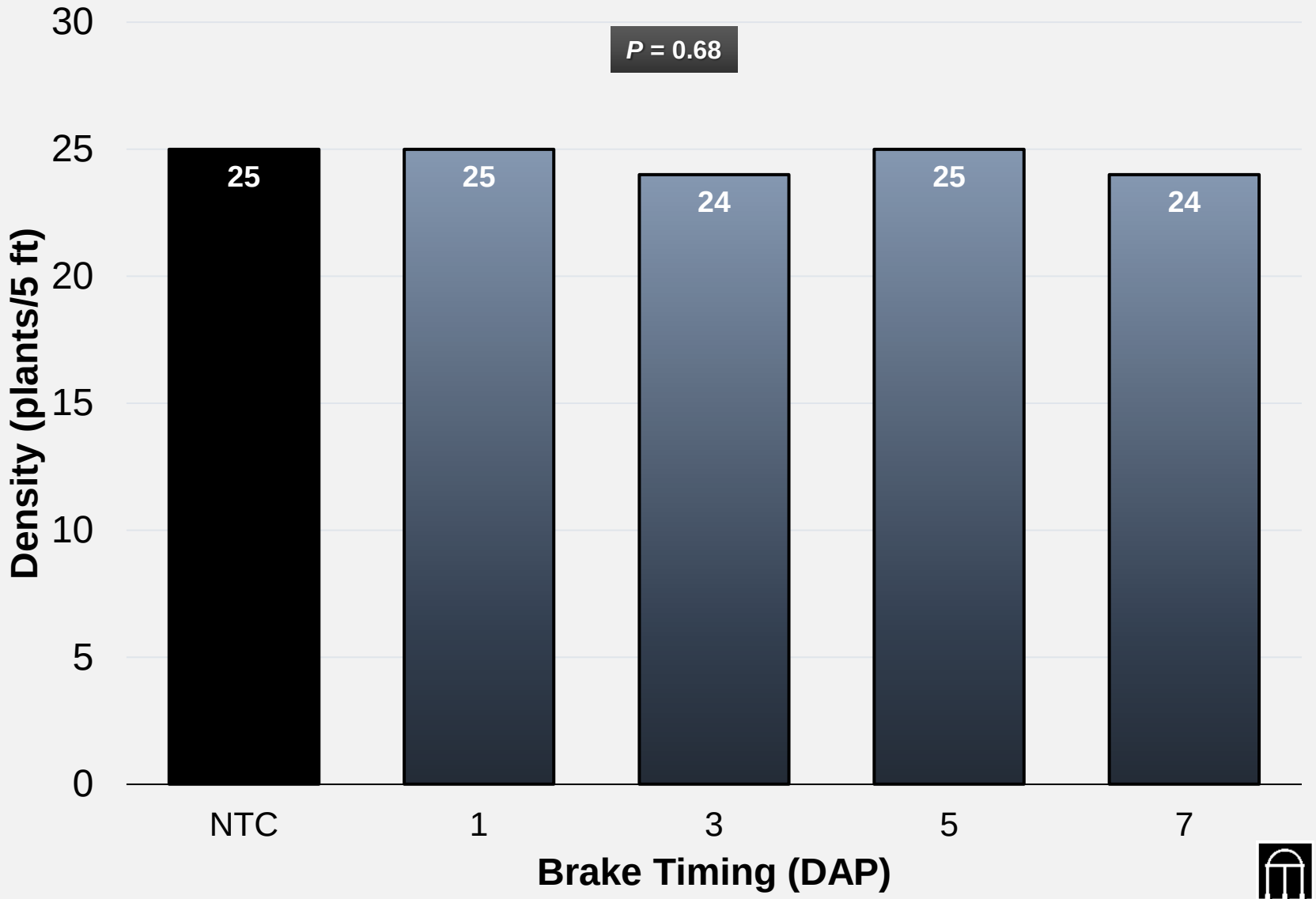
Results:

Peanut stand 13 DAP following Brake @ 1, 3, 5, 7 DAP (2022-2023)



*Columns with letter separation are significantly different at ($P < 0.1$)

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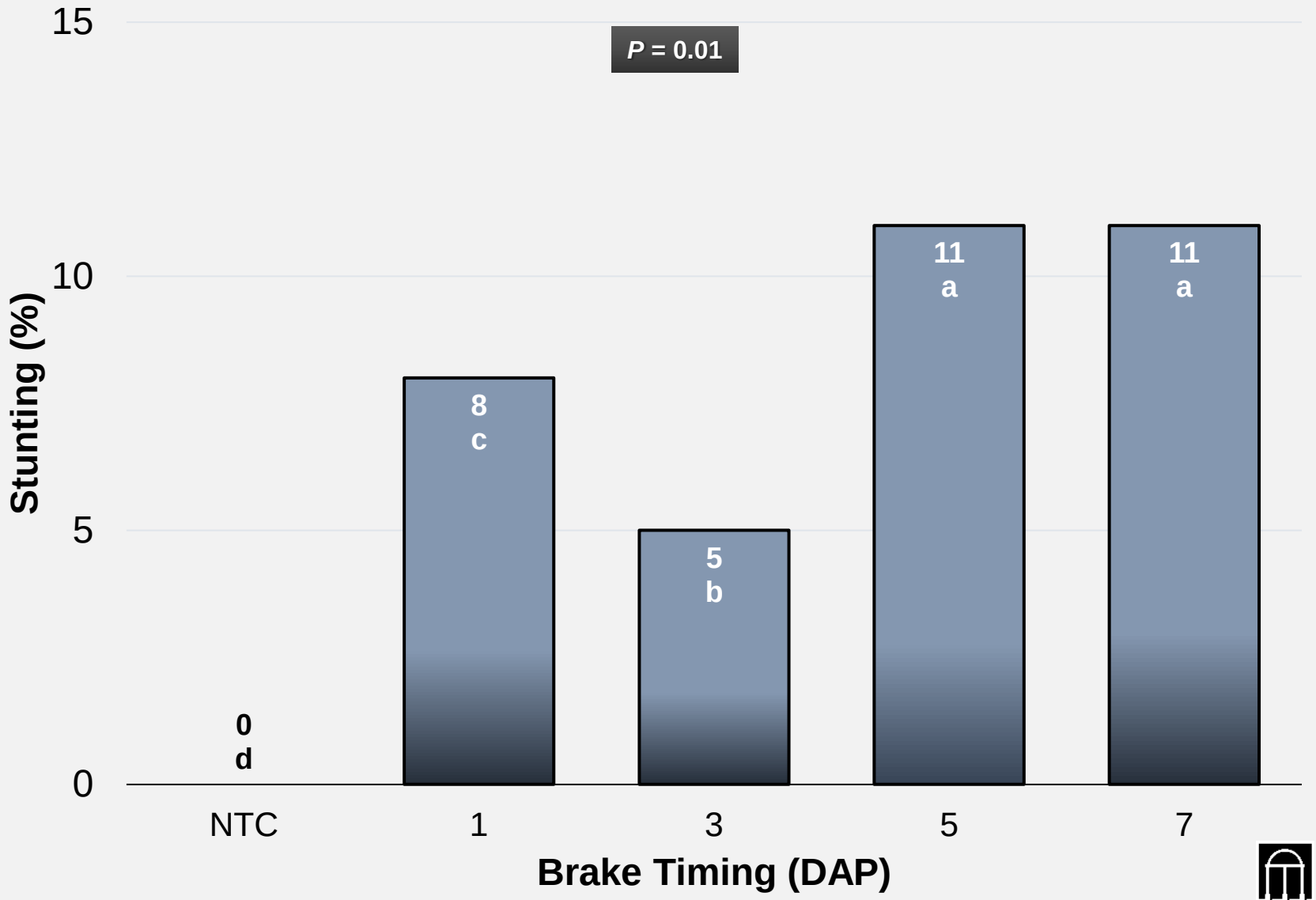
Results:

Peanut stunting 13 DAP following Brake @ 1, 3, 5, 7 DAP (2022-2023)



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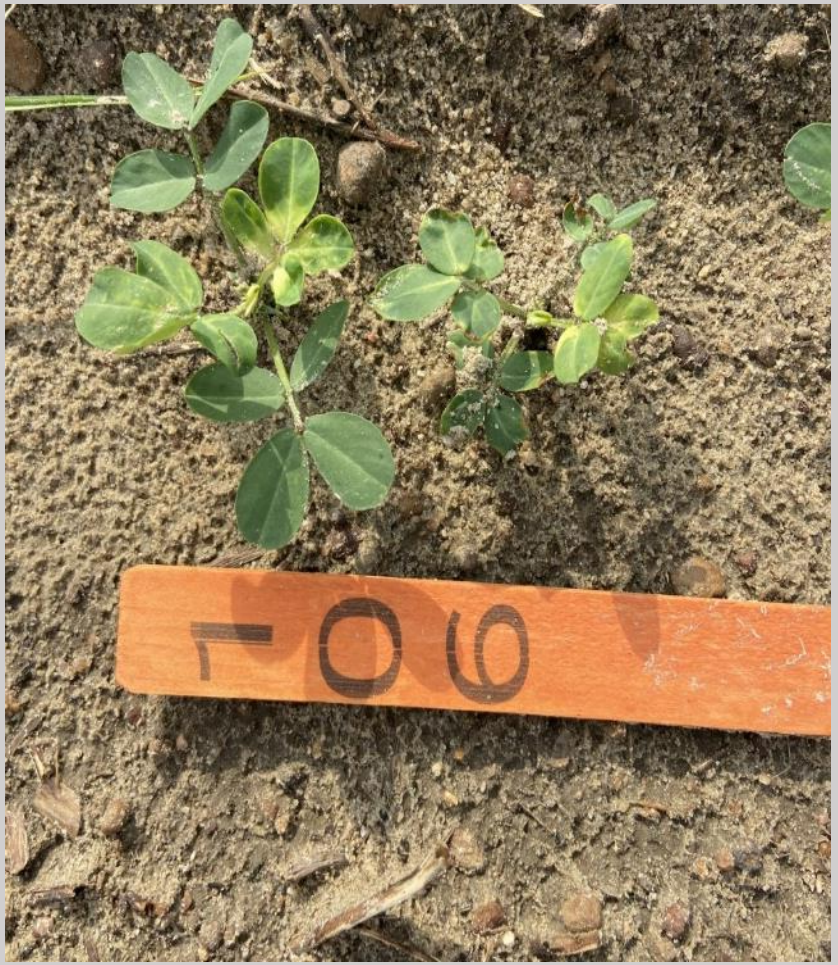
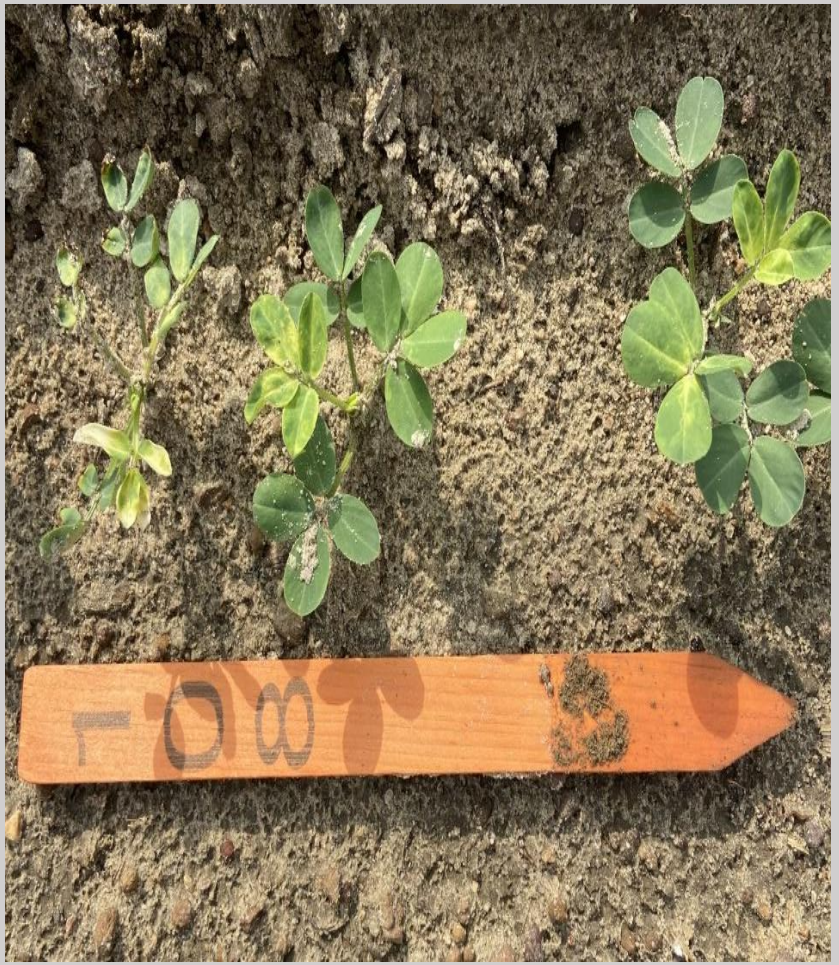
Results:
Brake

1 DAP

3 DAP



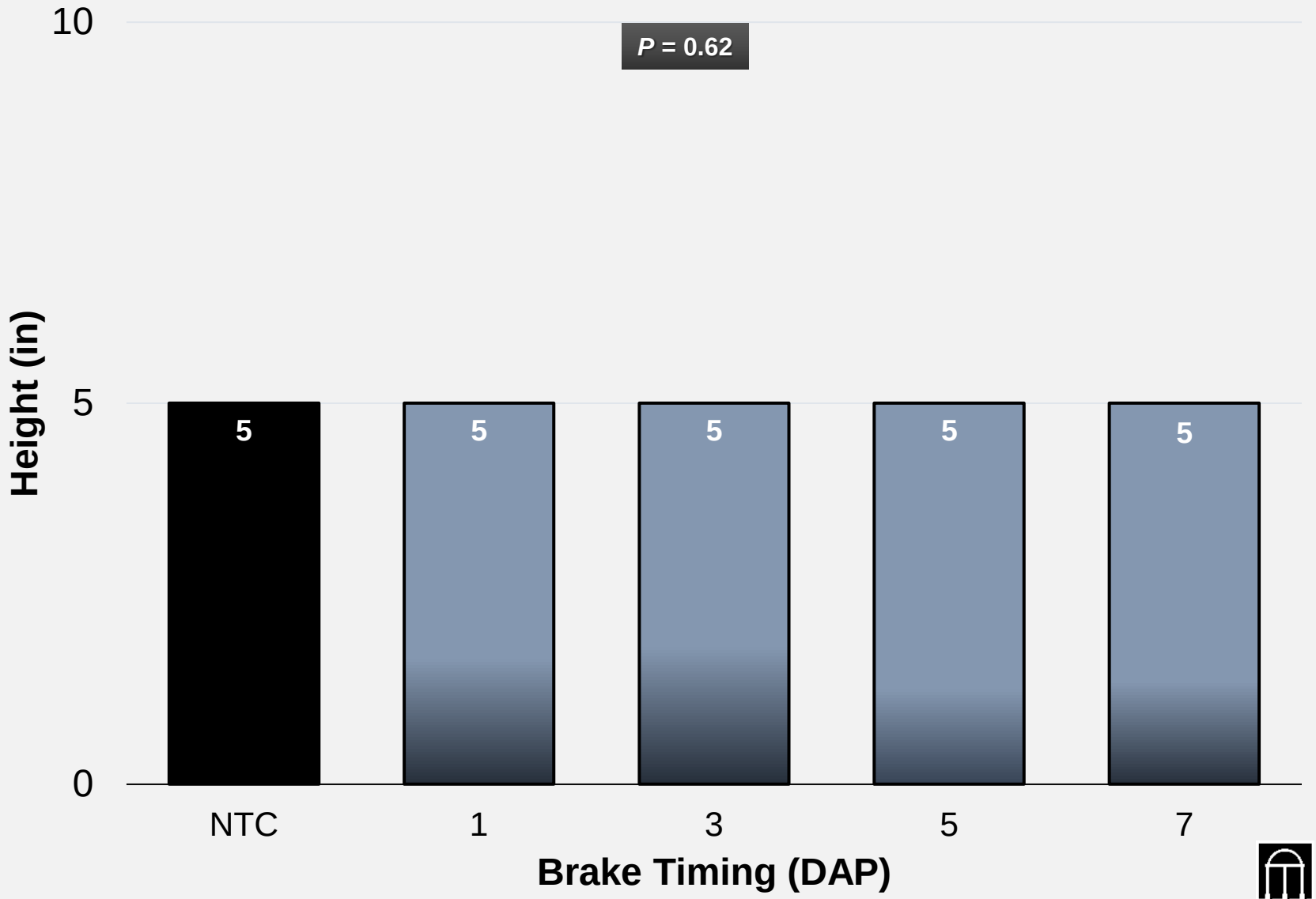
7 DAP



13 DAP; May 15, 2023

Results:

Peanut height 30 DAP following Brake @ 1, 3, 5, 7 DAP (2022-2023)



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Results:
Brake

NTC

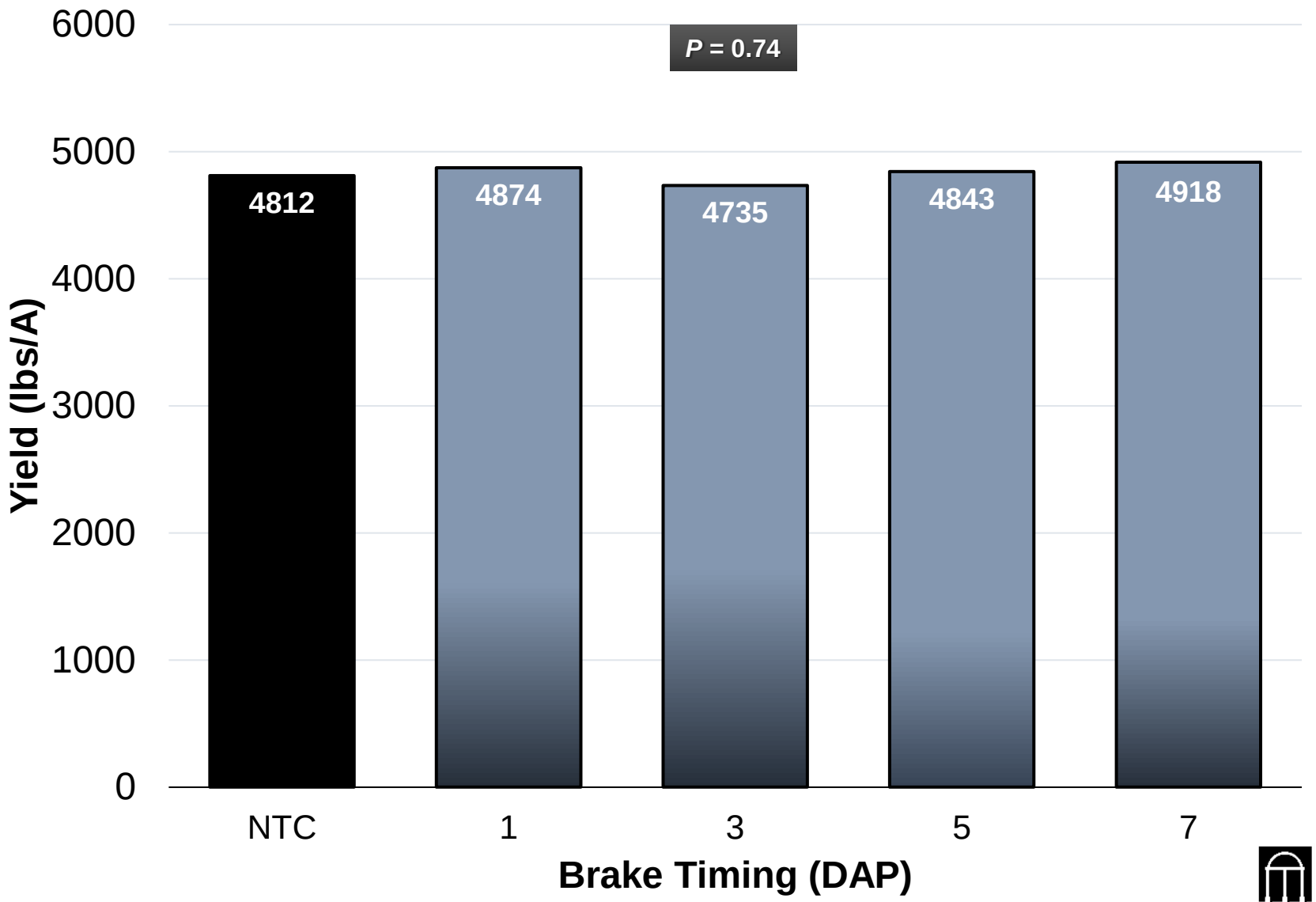
1 DAP

7 DAP

30 DAP; May 31, 2023

Results:

Peanut yield following Brake at 1, 3, 5, 7 DAP (2022-2023)



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Summary/Conclusions:

1) No effect on peanut density
2) Increased visual injury with delayed applications
3) No effect on peanut plant height
4) No effect on yield.

Overall Takeaways:

1) Peanuts were tolerant of applications of Brake up to 7 DAP without negatively impacting yield.
2) Increase window of application? **READ/FOLLOW THE LABEL**

Repeating study in 2024!

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Peanut Response to Milestone (aminopyralid)

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Introduction:
MILESTONE®

Aminopyralid

- WSSA Group 4 – Auxin
- **Family:** Pyridine Carboxylate
- **Trade names**: Milestone, GrazonNext, Chaparral DF
- Pre/Postemergence
- Mostly foliar applications
  - Horsenettle, Tropical Soda Apple
- Uses: pastures, right-of-way, rangelands, CRP
- Advantages: soil residual activity
- Restrictions:
  - Animal/manure management
  - Hay distribution 18 months
  - Crop rotations 1 (corn); 2-3 (BL crops) years
  - 6-74 day ½ life

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Objective

Evaluate peanut responses to applications of Milestone (aminopyralid).

Methods:

Experimental Design

- **Experimental Period:** 2023-2024
- **Location:** Ponder Farm, Ty Ty, GA
- **RCB design:** 3 replications
  - 5x4 factorial arrangement
  - 20 treatments
  - 60 plots
  - 2 m x 7.62 m plots
- **Treatments:**
  - Milestone 3LC
  - 1x rate: 7 oz/A
    - NTC, 1x, 1/5X, 1/10X, 1/100X
  - Timing: PRE, 30, 60 - DAP

- **In-season data collection:**
  - Plant density / 5ft
  - % stunting
  - % leaf curl
  - % necrosis
  - % epinasty
  - Plant height & width
  - Yield

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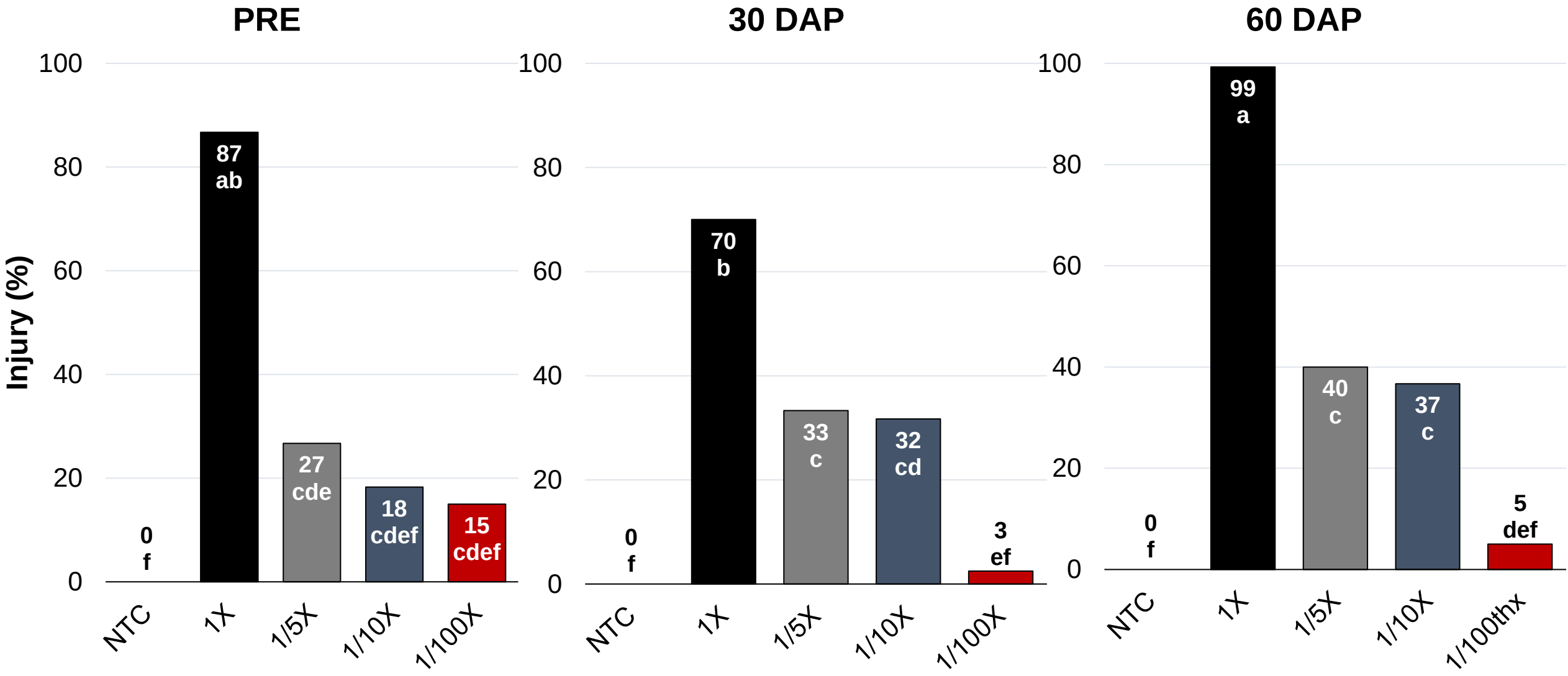
Results:

Peanut visual injury ratings 2 WAT from Milestone in TyTy, Georgia, 2023.

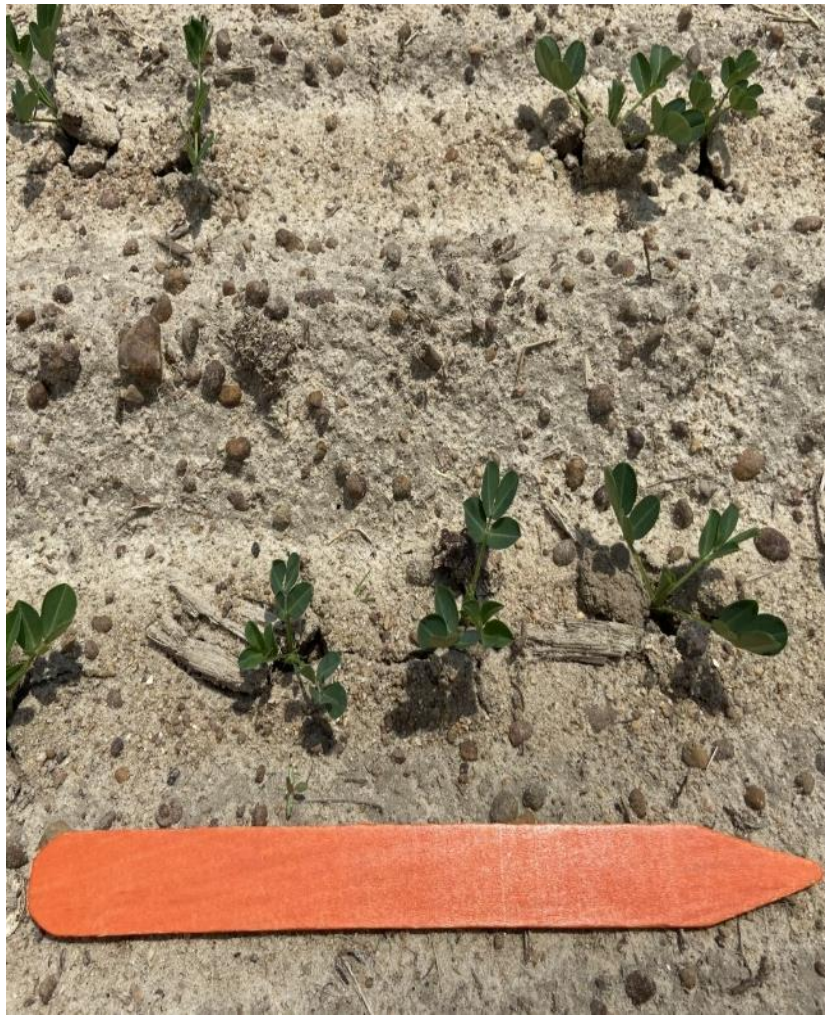


*Columns with letter separation are significantly different at ($P < 0.1$)

$P = 0.03$

Results:
Visual peanut injury from PRE treatment

NTC



1X

1/100X

14 DAT; May 9, 2023

Results:
Visual peanut injury from 30 DAP

NTC

1X

1/100X

14 DAT, 30DAP; June 7, 2023

Results:
Visual peanut injury from 60 DAP

NTC

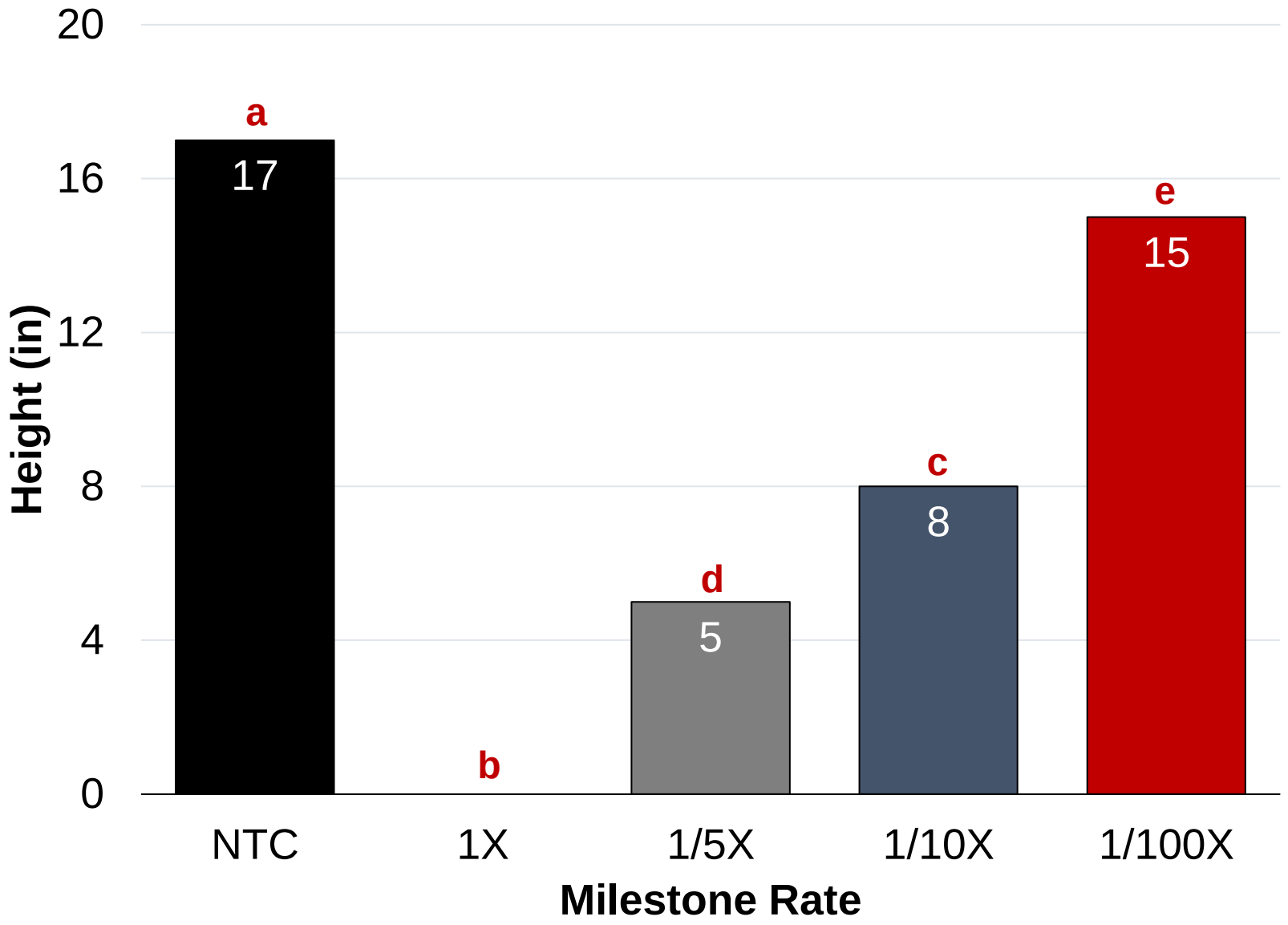
1X

1/100X

14 DAT, 60 DAP; July 5, 2023

Results:

Peanut plant height at 98 DAP from Milestone in TyTy, Georgia, 2023.



*Columns with letter separation are significantly different at ($P < 0.1$)

$P < 0.001$

Results:

Peanut plant height at 98 DAP in TyTy, Georgia, 2023.

NTC

PRE; 1X

30 DAP; 1X

Aug. 11, 2023

Results:

Peanut plant height at 98 DAP in TyTy, Georgia, 2023.

NTC

PRE; 1X

60 DAP; 1X

Aug. 11, 2023

Results:

Peanut plant height at 98 DAP in TyTy, Georgia, 2023.

PRE; 1/5X

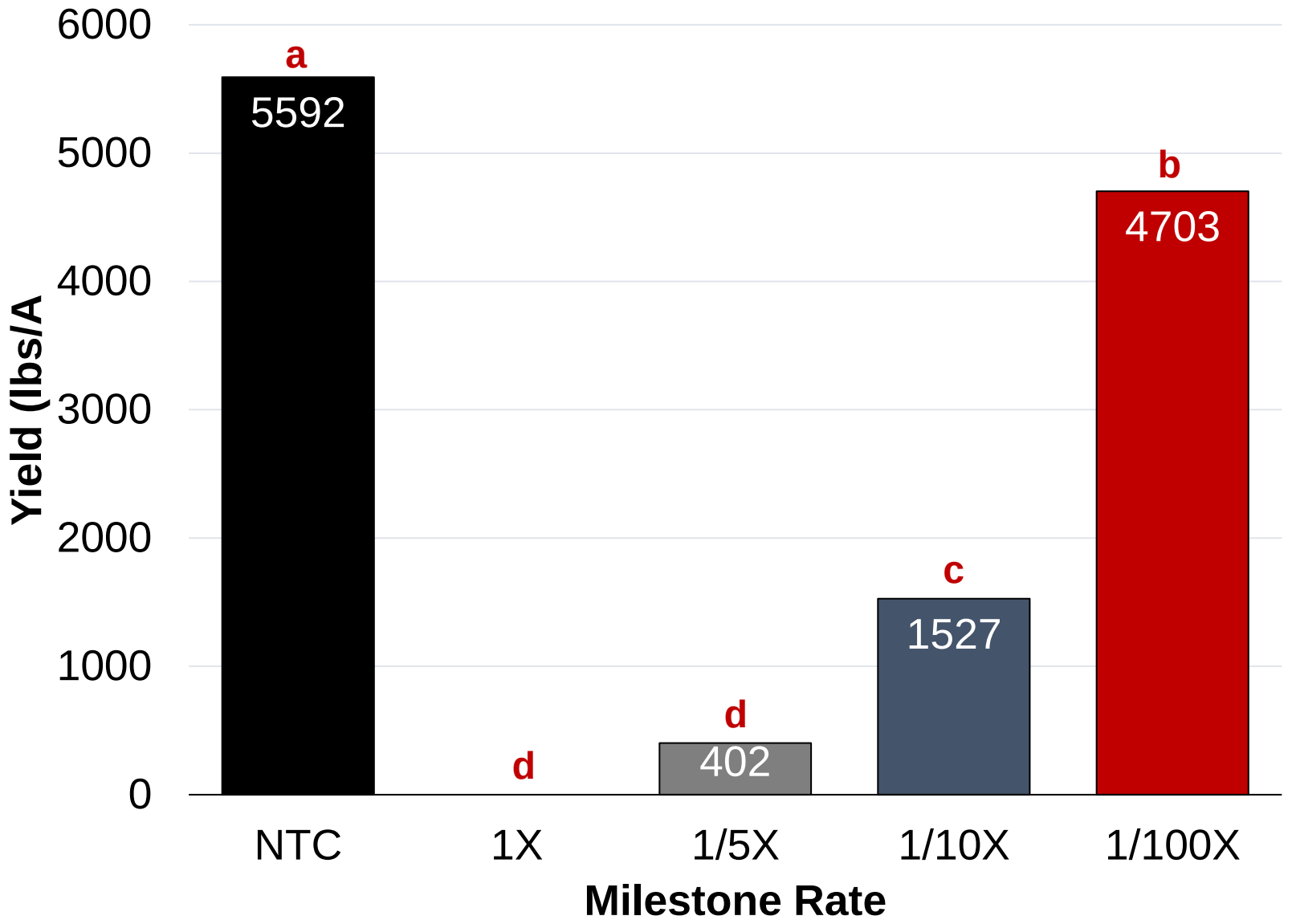
30 DAP; 1/10X

60 DAP; 1/10X

Aug. 11, 2023

Results:

Peanut yield response to Milestone in TyTy, Georgia, 2023.



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$P < 0.001$

Summary/Conclusions

- **Stunting:**
  - 1X rate: Significant injury (70 – 99%) all timings
    - 60 > PRE > 30
  - 1/5X rate (27-43%)
  - 1/10X rate (18-37%)
  - 1/100X rate (<15%)

- **Height:**
  - All heights were significantly reduced from NTC
    - 1X: 100%
    - 1/5X: 71%
    - 1/10X: 53%
    - 1/100X: 12%

- **Yield:**
  - All trt significantly reduced yield from NTC
    - 1X: 100%
    - 1/5X: 93%
    - 1/10X: 73%
    - 1/100X: 16%
      - **6+ ½ lives (~444 days)**

Repeat study in 2024!

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Current Milestone Label: Real Deal!

- Crop Rotation: Do not rotate to any crop from rangeland, permanent pasture, or CRP acres within one year following treatment. Cereals and corn can be planted one year after treatment. Broadleaf crops are sensitive to aminopyralid residues in the soil and prediction of crop safety by field bioassay (see instructions below) is the BEST way to determine planting options. ***Broadleaf crops such as canola, flax, and alfalfa can require at least 2 to 3 years depending on the crop and environmental conditions.*** More sensitive crops such as soybeans, tobacco, peanuts, potatoes, and peas may require a longer plant-back interval and should not be planted until a field bioassay shows that the level of aminopyralid present in the soil will not adversely affect that broadleaf crop.

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Thank you.
Questions?

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