PEANUT RESPONSE TO POSTEMERGENCE APPLICATIONS OF BRAKE®

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INTRODUCTION

Brake® (fluridone) was recently registered for use in peanut in 2023. Brake® was a welcome addition to the peanut herbicide arsenal because of its unique mode of action (WSSA/HRAC #12, phytoene desaturase inhibitor). The current label permits preplant surface or preemergence applications (*up to 36 hours after planting*). Limited research has been conducted on the tolerance of peanut to postemergence (POST) applications. Therefore, the objective of this research was to evaluate the response of peanut to POST applications of Brake®.

MATERIALS AND METHODS

A small-plot, irrigated, replicated field trial was conducted in 2024 at the UGA Ponder Research Farm near Ty Ty, Georgia. 'GA-06G' peanuts were planted in twin rows on April 30. Plots were arranged in a randomized complete block design with four replications in a three rate (Brake® 1.2SC @ 0, 16, and 32 oz/A) by four timing (13, 29, 36, and 52 days after planting [DAP]) factorial treatment arrangement. Peanut stages of growth at the time of application were as follows: 13 DAP = V2-3; 29 DAP = V5-7; 36 DAP = R1 (beginning bloom); and 52 DAP = R2 (beginning peg).

All treatments were applied using a CO_2-powered, backpack sprayer calibrated to deliver 15 GPA @ 37 PSI and 3.5 MPH using 11002AIXR nozzles. The plot area was maintained weed-free using a combination of hand-weeding and labeled herbicides (clethodim, diclosulam, imazapic, lactofen, pendimethalin, and *s*-metolachlor).

Data collected included visual estimates of peanut injury (stunting, necrosis, bleaching), plant height, and yield. All data were subjected to ANOVA and means separated using Tukey's HSD Test (P=0.10).

Figure 1. Peanut injury caused by POST applications of Brake® 1.2SC @ 16 oz/A. From L-R: 13 DAP (7 DAT); 29 DAP (6 DAT); 36 DAP (6 DAT); 52 DAP (12 DAT).

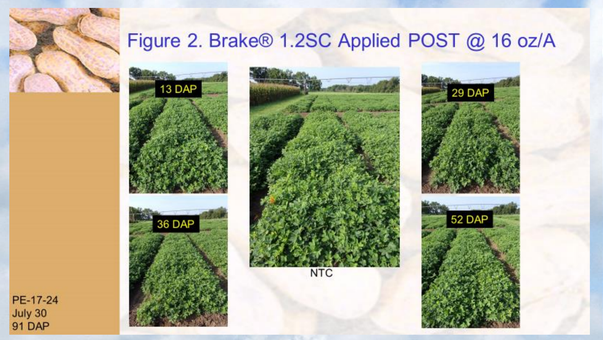

Figure 2. Brake® 1.2SC Applied POST @ 16 oz/A

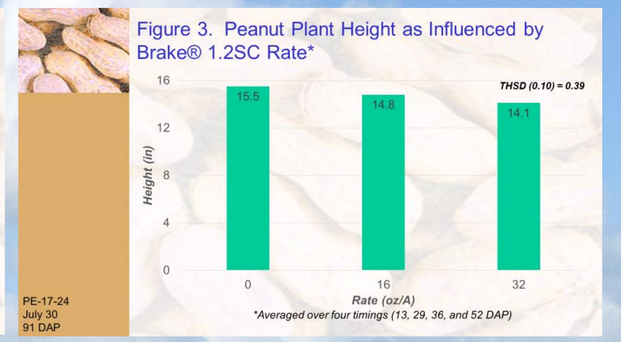

Figure 3. Peanut Plant Height as Influenced by Brake® 1.2SC Rate*

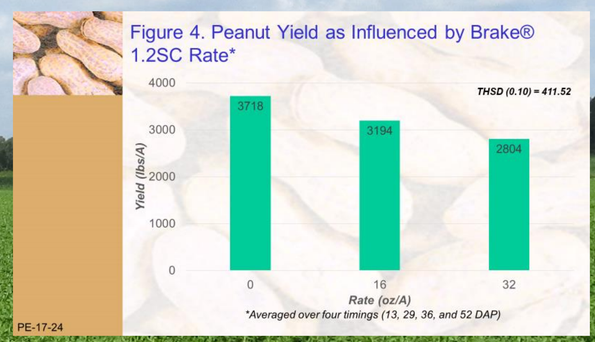

Figure 4. Peanut Yield as Influenced by Brake® 1.2SC Rate*

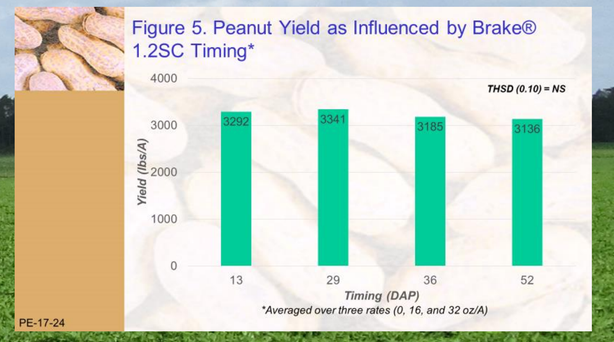

Figure 5. Peanut Yield as Influenced by Brake® 1.2SC Timing*

RESULTS AND DISCUSSION

1) All POST applications of Brake® caused significant leaf injury in the form of bleaching and necrosis (Figure 1). However, the crop recovered from these symptoms later in the season (Figure 2).

2) Plant height data obtained 91 DAP indicated the following: a) no interaction between rate and timing was observed (P=0.1440); b) peanut height was significantly reduced by 5% (16 oz/A) and 9% (32 oz/A) (Figure 3); and c) timing had no effect on peanut height (P=0.3794, data not reported).

3) Peanut yield data indicated the following: a) no interaction between rate and timing was observed (P=0.1299); b) peanut yield was significantly reduced by 14% (16 oz/A) and 25% (32 oz/A) (Figure 4); and c) timing had no effect on peanut yield (P=0.4508) (Figure 5).

4) Peanut yields were lower than normal for several reasons including the following: increased TSWV; short crop rotation (peanut after peanut); excessive rainfall from May 1 to May 27 (8.13" total, 5.82" above normal); and no rainfall from May 28 to June 26 (0" total, 4.33" below normal).

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