

EVALUATION OF 10 PRE-EMERGENT HERBICIDE COMBINATIONS AND RATES FOR NON-BEARING PECAN AT THE VIDALIA ONION RESEARCH CENTER

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ABSTRACT

As the Georgia pecan industry continues to grow, new growers are learning both farming practices and pecan production. Particular to Southeast Georgia, small – medium producers manage their operations on a marginal budget. The markets for post emergent herbicides became volatile in 2021, raising the price of each herbicide. Pecan growers commonly rely mostly on these herbicides for weed control. Continued use of these post-emergent herbicides incurred a 200% increase in weed control per acre in 2021. The area pecan agent applied 10 different pre-emergent herbicide combinations and rates in a randomized block design for both research and demonstration. Ratings were taken at 30, 60 and 90 days after treatment (DAT). A field day was held to display both herbicide plots and costs per acre to pecan growers in Georgia.



Figure 1. Alion 3.5 oz at 90 DAT.



Figure 2. Centrus 3.5 oz at 90 DAT.



Figure 3. Pindar 2 pint at 120 DAT.

MATERIALS & METHODS

On April 5, 2023, a Bellspray CO₂ scuba-type, backpack sprayer was used to apply herbicides at 25 psi at 13.5 gallons per acre with 2-liter bottles. Plots were 75 ft long and 14 ft wide. Treatments were applied with full soil coverage. The day after treatments, a 0.5” rainfall event occurred at this location. Treatments were randomized in a complete block design and replicated three times. All chemical rates were applied per acre. All treatments included 2 quarts of glyphosate + 24 oz of glufosinate:

1. Alion 5 oz
2. Alion 3.5 oz
3. Broadworks 6 oz
4. Brake On! 43 oz
5. Centrus 5 oz
6. Centrus 3.5 oz
7. Chateau 6 oz
8. Matrix 4 oz + Prowl 3 qt
9. Pindar 2 pt + Prowl 3 qt
10. Simazine 3 qt + Prowl 3 qt

Labeled only as a dormant application, Pindar was applied November 1, 2022 in addition to its spring application. Pindar is labeled as a dormant application. Ratings were taken on May 2 (30 DAT), June 5, (60 DAT), and July 4 (90 DAT).

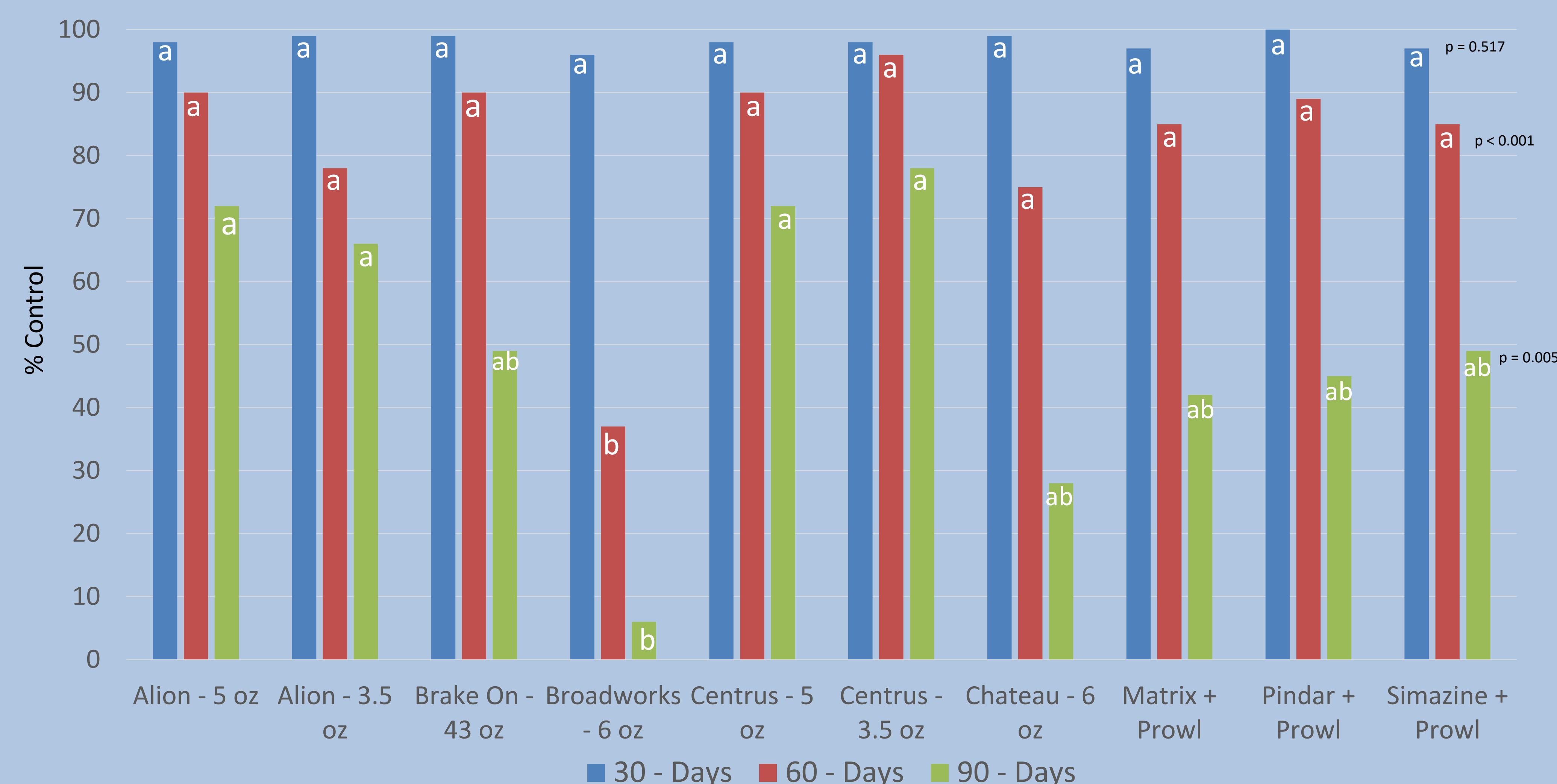


Table 1. Ratings of spring herbicide application at 30, 60 and 90 days after treatment. Ratings are percent control. All treatment rates listed are per acre.

RESULTS/SUMMARY

Each herbicide exhibited 90 – 100% control at 30 DAT in which none were statistically different. At 60 DAT, all herbicides exhibited 80 – 95% control. At 60 DAT, only Broadworks was statistically less effective than all other herbicides. At 90 DAT, both rates of Alion and both rates of Centrus maintained 66 – 78% control and were statistically the same. At 90 DAT, Brake On, Chateau, Matrix + Prowl, Pindar + Prowl and Simazine + Prowl fell between 28 – 48% control but were not statistically different from both indaziflam products. Broadworks fell to only 5% control but was only significantly different from both indaziflam products. Weeds present at the 30 DAT were mostly nutsedge in Alion, Broadworks, Centrus and Simazine plots. At 90 DAT, annual grasses and broadleaf weeds infested Broadworks, Chateau more than Pindar and Simazine. Both rainfall from May through August and full sunlight was a significant factor in reduced herbicide residual control of Chateau and Broadworks. Alion and Centrus provided great control through 90 DAT. Matrix, Pindar and Simazine needed retreatment around 75 DAT. Both Alion and Centrus exhibited similar control between the 5 oz and 3.5 oz treatments (Figure 1 & 2). This observation is significant since no previous indaziflam was used on this site. Current recommendations of indaziflam (Alion, Centrus) are full rates in the first year and half rates in later use. Additionally, the fall application of Pindar alone (Figure 3) achieved greater than 90% weed control at 120 DAT. This should be considered for rotation for non-bearing pecans.

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