

**2007 FINAL REPORT
FOR FUNDING BY GEORGIA AGRICULTURAL
COMMODITY COMMISSION FOR PEANUTS**

Project Title:

Residual Control of Palmer Amaranth in Peanut

Principal Investigator:

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Background:

ALS-resistant Palmer amaranth has become a major concern for peanut growers in Georgia. Results from recent surveys indicated that more than 80% of the plants grown from seed collected from 61 locations across Georgia were resistant to Cadre (imazapic). Other research has shown that optimum control of Palmer amaranth can only be achieved through the use of both preemergence (PRE) and postemergence (POST) herbicides. Several PRE herbicides are available for use in peanut that have good activity on Palmer amaranth. Additionally, 2 new herbicides have potential for use in peanut for the control of Palmer amaranth (Reflex, GoalTender). ***Reflex and GoalTender are not currently registered for use in peanut.***

Objective:

The objective of this research was to evaluate various PRE herbicides for the control of Palmer amaranth in peanut. None of the herbicides used in this study were ALS-inhibitors.

Materials and Methods:

In 2007, an irrigated field trial was conducted in Macon County. 'AP-3' peanuts were planted on April 23 in 36" rows with a Monosem planter. Plot size was 6 ft by 25 ft. The following herbicides were used in this study: Dual Magnum 7.62EC (16 oz/A); Stalwart 8EC (16 oz/A); Outlook 6EC (16 oz/A); Intro 4SC (64 oz/A); Valor 51WG (2 or 3 oz/A); Reflex 2L (8 or 16 oz/A); and GoalTender 4SC (8 or 16 oz/A). All treatments were applied PRE in 15 GPA. Palmer amaranth control ratings were obtained using a visual scale of 0 to 100% (0 = no control, 100 = complete control). All treatments were replicated 4 times and the data were subjected to ANOVA and means separated using Duncan's Multiple Range Test (P = 0.10).

Results and Discussion:

- 1) Valor, Reflex, and GoalTender caused significant peanut injury early in the season particularly when used at higher rates. Reflex injury lasted the longest.
- 2) There were no differences in Palmer amaranth control between Dual Magnum and Stalwart @ 16 oz/A until 53 days after treatment (DAT). From that time onward, Dual Magnum provided better control than Stalwart.
- 3) Outlook and Intro provided excellent control (99%) of Palmer amaranth up until 23 DAT. After that time, control steadily declined. At 94 DAT, Outlook @ 16 oz/A provided 40% control while Intro @ 64 oz/A provided 16% control.
- 5) Palmer amaranth control with GoalTender @ 16 oz/A was excellent (>90%) up until 53 DAT. At 94 DAT, control was only 78%.
- 6) Valor and Reflex provided the most consistent and long lasting control of Palmer amaranth. At 94 DAT, both of these herbicides provided at least 93% control of Palmer amaranth.