

# Control of Key Weeds in South Texas Peanut

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## Summary

Everman et al. (2008) found that the critical weed free period of broadleaf weed interference in peanut was approximately eight weeks after planting, thus effective early-season control is of utmost importance for maintaining yield potential. Palmer amaranth (*Amaranthus palmeri* S. Wats.) emerging with the crop is capable of out-competing peanut for sunlight, water, and nutrients and is likely to produce extremely large amounts of seed if allowed to compete season-long (Mahoney et al. 2021). Burke et al (2007) found that peanut yield was decreased 28% due to season-long competition from one Palmer amaranth individual plant per meter of row.

## Objective

In a previous study near Pearsall, TX in 2021, effective season-long control of Palmer amaranth was achieved with Prowl H2O + Valor + Dual Magnum PRE followed by Dual Magnum + 2,4-DB MPOST (98% control), Prowl H2O + Dual Magnum PRE followed by Dual Magnum + 2,4-DB MPOST (97%), Prowl H2O + Valor + Dual Magnum PRE (95%), Prowl H2O PRE followed by imazapic + 2,4-DB EPOST (92%), Prowl H2O PRE followed by Anthem Flex + 2,4-DB EPOST (88%), Prowl H2O + Dual Magnum PRE (83%), Prowl H2O + Valor PRE (78%), and Prowl H2O + Anthem Flex (78%)

The objective of this study was to evaluate the efficacy of herbicide programs for season-long control of key weed species and crop safety.

## Materials and Methods

A field study was conducted in 2022 in an irrigated peanut field near Pearsall, TX. Soil at the study site was a Miguel very fine sandy loam. The trial included fifteen treatments and was arranged as a randomized complete block with three replications. Plots were two rows (38" spacing) wide by 30 ft long. Treatments included preemergence (PRE) applications of Prowl H2O 1 qt/A either alone or in combination with Valor (2 oz/A), Dual Magnum (1.33 pt), Valor + Dual Magnum (2 or 3 oz + 1.33 pt/A), Outlook (12 oz/A), or Warrant (48 oz/A). These were followed by either at-cracking applications of

Gramoxone + Zidua (16 oz + 2.0 oz/A), early postemergence (EPOST) applications of either Anthem Flex + Storm (3.5 oz + 1.5 pt/A) or Cadre + Storm (4.0 oz + 1.5 pt/A), or mid postemergence (MPOST) applications of Dual Magnum + 2,4-DB (1.33 pt + 1.6 pt/A). Applications were made with a CO<sub>2</sub> pressurized backpack sprayer with a handheld spray boom equipped with TeeJet Drift Guard 11002 spray nozzles calibrated to deliver a total spray volume of 20 GPA. Environmental conditions at application are shown in Table 1 and photos of the study site are shown in Figures 1-3.



**Table 1.** Environmental conditions at applications, Pearsall, TX, 2022.

Application timing	PRE	At-cracking	EPOST	MPOST
Application date	6/12/22	6/29/22	7/11/22	7/29/22
Application start time	9:00 AM	8:30 AM	8:20 AM	8:30 AM
Air temperature (°F)	84	76	83	79
Relative humidity (%)	67	84	63	77
Soil temperature (at 10 cm) (°F)	86	81	86	80
Soil moisture	Good	Fair	Excellent	Excellent
Cloud cover (%)	90	40	10	40

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## **Results, Discussion, Conclusions**

Fourteen days after the PRE applications were made, all herbicide treatments provided 97 to 100% control of Palmer amaranth, 96 to 100% control of Texas panicum, and 87 to 100% control of smellmelon. By eighteen days after EPOST applications were made, all treatments resulted in 90 to 100% control of all three species, other than Prowl H2O alone (78, 73, and 90% control of Palmer amaranth, Texas panicum, and smellmelon)(Figure 1).

By the final evaluation (41 days after MPOST applications), all treatments provided 90 to 100% control of Palmer amaranth, 83 to 100% control of Texas panicum, and 80 to 100% control of smellmelon, except for Gramoxone + Zidua applied at cracking (only 79% control of Palmer amaranth). Control of ivyleaf morningglory was greatest with Prowl + Valor + Dual Magnum PRE (Figure 2), Prowl + Dual Magnum PRE, Prowl + Valor + Dual Magnum PRE followed by Dual Magnum + Storm MPOST, Prowl + Outlook PRE, Prowl PRE followed by Gramoxone + Zidua at cracking, Prowl PRE followed by Anthem Flex + Storm EPOST, Prowl PRE followed by Cadre + Storm EPOST, Prowl + Valor + Dual Magnum PRE followed by Dual Magnum + 2,4-DB MPOST, and Prowl + Dual Magnum PRE followed by Dual Magnum + 2,4-DB MPOST.

Applications of Gramoxone + Zidua at cracking resulted in 40 to 50% stunting of peanut 12 days after those applications were made (Figure 3). By July 29, stunting with these two treatments was estimated at 40% and crop injury became apparent with Prowl + Valor + Dual Magnum PRE followed by Dual Magnum + Storm MPOST (10%), Prowl PRE followed by Anthem Flex + Storm EPOST (22%), and Prowl PRE followed by Cadre + Storm EPOST (18%). By the final evaluation, stunting was no greater than 10% with any treatment, however visual observations made after peanuts were dug indicated a possible yield loss with treatments of Gramoxone + Zidua at cracking.



**Figure 1.** Prowl H2O 1.0 qt/A applied PRE.



**Figure 2.** Prowl H2O 1.0 qt/A + Valor 2.0 oz/A + Dual Magnum 1.33 pt/A applied PRE showing lack of peanut stunting.



**Figure 3.** Prowl 1.0 qt/A applied PRE followed by Gramoxone 1.0 pt/A + Zidua 2.0 oz/A applied at peanut cracking. Stunting caused by Gramoxone. Also note stunting in plot in background (same herbicide treatment).

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**2022 South Texas Peanut Growers Annual Peanut Tour**  
**(Peanut Herbicide Trial Results 09/22/22)**



**Acknowledgements**

We would like to appreciate all the individuals who assisted in the planning and implementation of the 2022 Peanut Herbicide Trials that were conducted in Pearsall, Tx. Special thanks to Josh A McGinty, Extension Agronomist, Texas A&M AgriLife Extension, Corpus Christi, TX and W. James Grichar, Senior Research Scientist, Texas A&M AgriLife Research, Yoakum, TX who were both instrumental in communicating with local Frio County Extension Agent, Brianna Gonzales, Atascosa County Extension Agent – Dale Rankin, Atascosa Assistant County Extension Agent – Teresa Mendieta, conducting the analysis, and providing data to the attendees of the 2022 South Texas Peanut Growers Annual Peanut Tour. Data was also provided to agricultural producers upon request. Lastly, we greatly appreciate the continued support of Gary Boyd Farms, Tech Farms, Wilmeth Farms, Bill Slomchinski Farms, and Bennet Partnership for allowing us to continue conducting annual applied demonstration research of Texas A&M AgriLife Extension.