

Gramoxone-based treatment evaluation in dryland peanut
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Gramoxone (paraquat) is a commonly used herbicide in peanut for weed control. It can be tank mixed with Storm, Basagran, Ultra Blazer, 2,4-DB and other residual herbicides to apply over the top of small peanuts. Tank mixing herbicides with Gramoxone increase weed control spectrum and efficacy, however, peanut injury has always been a concern for some growers who plan to use Gramoxone. Currently, we do not have enough information regarding the tolerance of newer peanut varieties to Gramoxone-based tank mixes in dryland. Therefore, research trials were conducted in 2016 and 2017 at Shorter, Fairhope and Headland, AL, to evaluate the tolerance of four common peanut variety to Gramoxone-based treatments. At each location, GA-06G, GA-14N, GA-12Y and TUF-511 were planted in May to early June and sprayed with different treatments at 21-28 days after planting with backpack sprayers. Non-ionic surfactant at 0.25% v/v was used with all these treatments. Experimental design was RCBD with 4 replications. All trials were maintained weed free during the season. Peanut height, width and final yield were measured at each location. Data was analyzed in SAS 9.4.

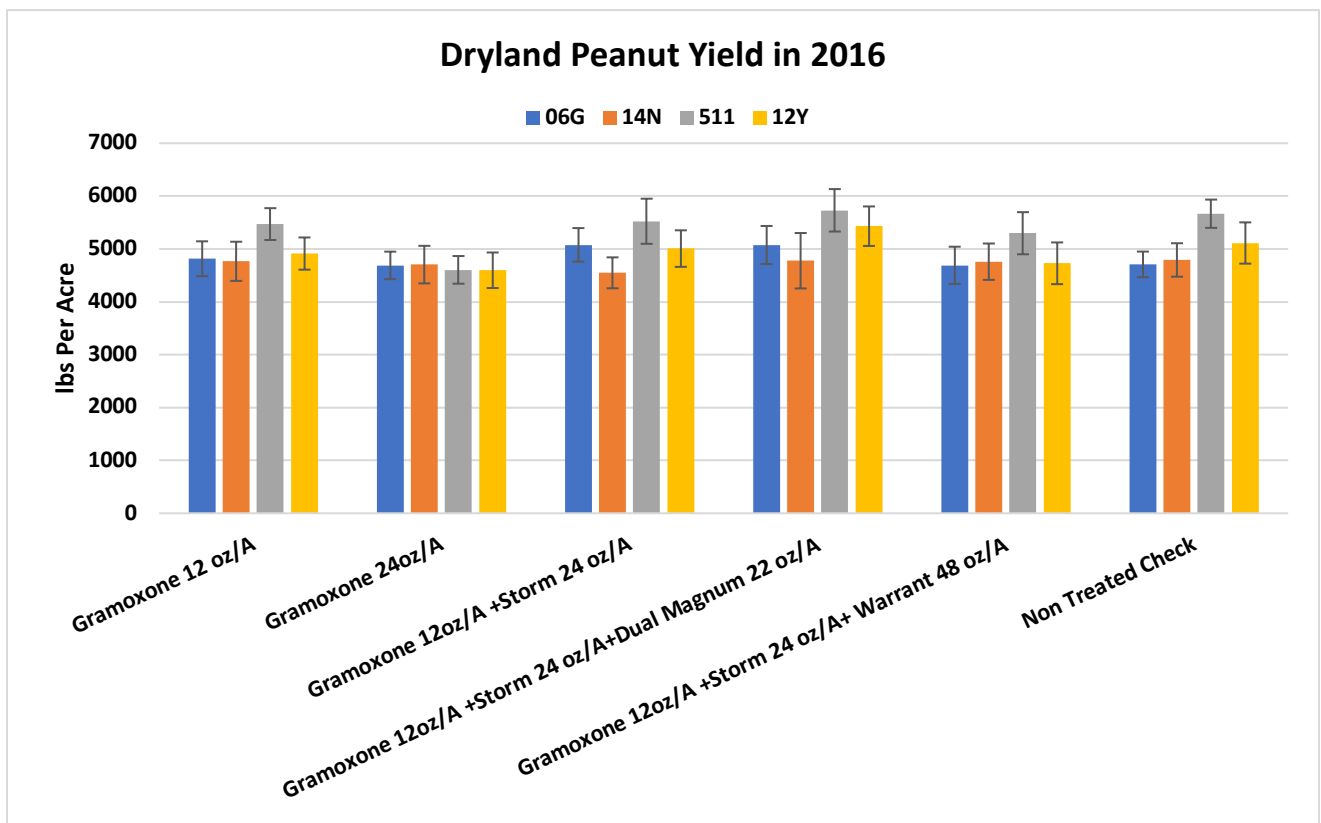


Table 1: Peanut yield responses to Gramoxone-based treatments. Data was averaged across three locations in Alabama (Headland, Shorter and Fairhope)

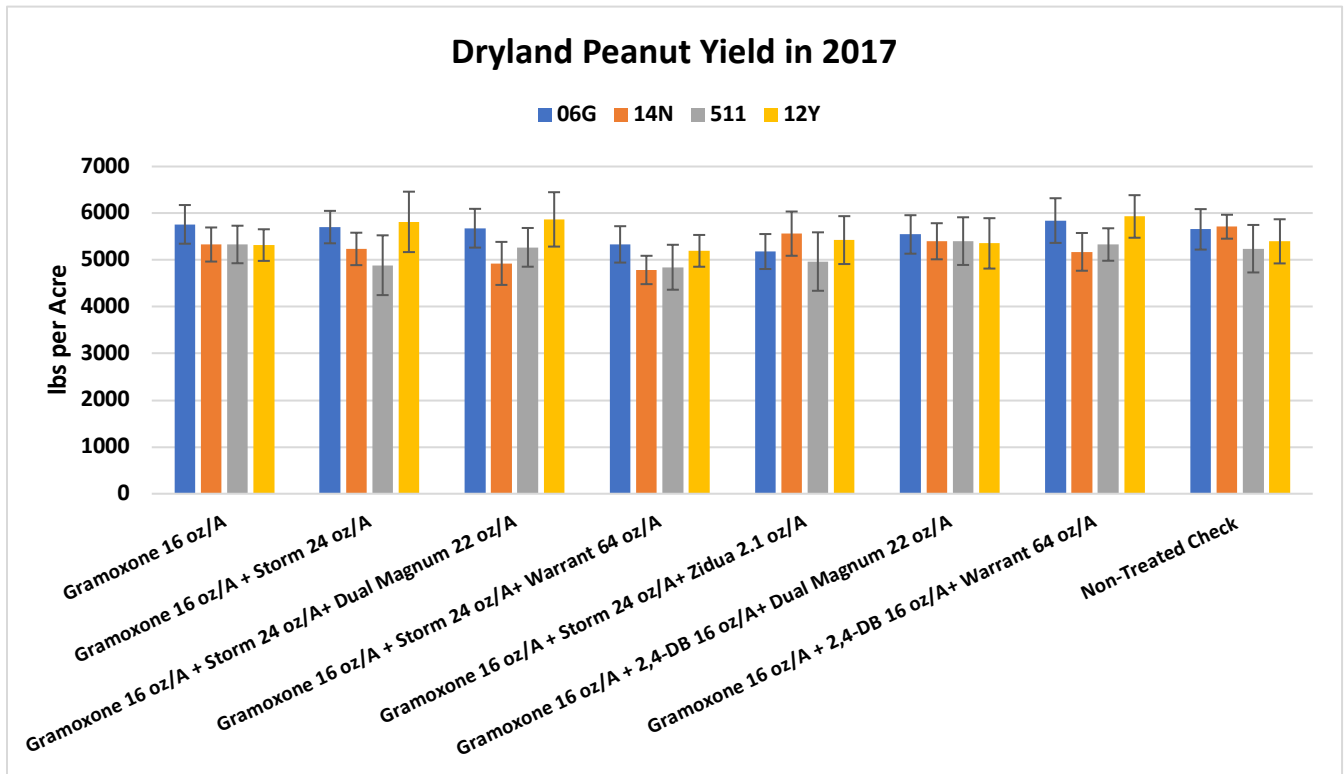


Table 1: Peanut yield responses to Gramoxone based treatments. Data was averaged across three locations in Alabama (Headland, Shorter and Fairhope). Peanut yield was not different between treatments as compared to non-treated check.

Results of this study show that peanut width was more sensitive than peanut height. No peanut variety showed greater sensitivity to Gramoxone-based treatments than the other varieties. Gramoxone + 24DB + Dual Magnum or Warrant produced most of the visual injury as compared to other treatments. Adding Storm or Basagran with Gramoxone reduced peanut injury by 10-15%. However, final yield was not affected by any of these Gramoxone-based treatments except for Gramoxone 24 oz/A at Fairhope and Headland in 2016 (this rate is over the label rate and included for research purpose only). The use rates of each herbicide for the 2017 trial was the highest label rate and I would not recommend growers using these much of products. These highest label rates were used only to test crop tolerance. At the end of season, all four varieties showed similar tolerance to these treatments and no yield loss was found after statistical analysis at $p=0.05$ level. This means all the Gramoxone-based treatments produced statistically equivalent amount of yield compared to non-treated check.

Conclusion:

Peanut varieties evaluated showed very good tolerance to Gramoxone tank mixes. Temporary leaf burn should be expected but peanut will soon recover from injury under normal growing conditions. Considering the dry weather we have been having this spring, Gramoxone based treatments are good options if residual herbicides applied behind the planter were not properly activated due to lack of rain in



dryland fields. Dual Magnum, Zidua, Warrant or Outlook should be tank mixed with Gramoxone to provide extended residual weed control and this is important to ensure a successful season long weed control.

Questions? Please contact:

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