

**COMPARISON OF ROUNDUP READY
(GLYPHOSATE-TOLERANT) VARIETIES
TREATED WITH EITHER ROUNDUP
(GLYPHOSATE) OR CONVENTIONAL
HERBICIDES**

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Abstract

Roundup Ready varieties have expanded grower options for weed control, but growers are concerned about the effects of overspraying Roundup tolerance varieties with Roundup Ultra. University variety trials compare Roundup Ready varieties with conventional and bollgard varieties treated in the same system, hence, Roundup Ready varieties are not oversprayed with Roundup Ultra in these trials. The purpose of this study is a yield comparison of Roundup Ready varieties oversprayed with a labeled Roundup Ultra treatment with Roundup Ready varieties treated with conventional herbicides and not oversprayed with Roundup Ultra.

Introduction

Ten stacked (B/RR) varieties and five Roundup Ready (RR) varieties were randomly replicated four times in a complete block design and oversprayed with 1 quart/acre of Roundup Ultra at the 2-3 leaf stage. These same varieties were also randomly replicated four times in a complete block design and not oversprayed with Roundup Ultra, but treated with conventional herbicides. In addition, three varieties (two RR and one B/RR) were randomly replicated four times in a complete block design and oversprayed with 1 quart/acre of Roundup Ultra at the 2-3 leaf stage, but no preemerge herbicide (pendimethalin (Prowl)) was applied. Plots were four rows, 36 inch centers and 150 feet in length. The two inside rows were harvested. Plots were planted under irrigation in a Lucy soil in Decatur County, Georgia. Each technology system was scouted for insects and weeds twice per week and sprayed according to University of Georgia Extension recommendations.

Materials and Methods

May 1 1 quart/acre Gramoxone Extra (paraquat) applied as burndown
May 14-15 Planting Date

At Plant: 4.0 lbs/acre Temik applied in-furrow
17 gallons 10-34-0 dribbled on top of the ground two inches to side of seed
Seeding Rate: 3.5 seed/foot

Conventional Herbicide Treatment

1 qt/acre Prowl & Cotoran (fluometuron)-Pre (May 15)
1 qt/acre Bladex (cyanazine) & Crop oil conc. +
2.67 pints/acre MSMA-Layby (June 23-24)

Roundup Over sprayed Treatment

1 qt/acre Prowl-Pre (May 15)
1 qt/acre Roundup Ultra (June 8 at 2-3 leaf stage)
1 qt/acre Bladex & Crop oil conc. +
2.67 pints/acre MSMA-Layby (June 23-24)

Roundup Over Sprayed Treatment

No Pre-Emerge Herbicide
3 Varieties
1 qt/acre Roundup Ultra (June 8 at 2-3 leaf stage)
1 qt/acre Bladex & Crop oil conc. +
2.67 pints/acre MSMA-Layby (June 23-24)

Jun 2 Broadcast 300 lbs 0-7-28/acre (all treatments)
Jun 7/8 Applied 20 gallons of 28-0-0-5/acre (all treatments)
Jun 22 Sprayed ½ pt PixPlus + 1 lb Solubor/acre (all treatments)
Jun 29 Sprayed 2.6 oz Karate Z/acre on RR treatments
Jul 2 Sprayed 16 oz Pix + 1 lb Solubor/acre (all treatments)
Jul 2/3 Broadcast 275 lbs 0-0-40 plus 25 gallons of 28-0-0-5/acre (all treatments)
Jul 7 Sprayed 2.5 oz Tracer/acre on RR treatments
Jul 12 Sprayed 2 oz Karate Z/acre (all treatments)
Jul 28 Sprayed 1.9 Decis plus 2 gals urea/acre (all treatments)
Aug 3 Sprayed 2 oz Karate Z/acre plus 2 pts Persist/100 gallons on conventional and RR treatments
Aug 11 Sprayed 2 oz Tracer/acre plus 2 pts Persist/100 gallons on RR treatments
Sep 24 Sprayed 2 ½ pints Prep + .125 lb Dropp + 4 oz Folex/acre (all treatments)
Oct 18/20 Harvested reps 1-3
Oct 18/22 Plant mapped reps 1-4
Oct 25 Ginned cotton at Coastal Plains Experiment Station for gin turnout and brought ginned sampled to USDA cotton classing lab in Macon
Nov 1 Harvested rep 4

Results

Roundup Ultra used according to labeled directions resulted in no significant yield difference when applied to stacked (B/RR) and Roundup Ready varieties.

On a limited scale (3 varieties) where no pre-emerge herbicides were applied, there was no significant difference compared to conventional herbicide program, and Prowl applied pre-emerge and over sprayed with Roundup Ultra. However, where pre-emerge herbicides were not used competition from Florida pusley and annual grasses caused early season stunting of cotton. University of Georgia Extension recommendations to apply a pre-emerge grass herbicide are still applicable.

Stacked Gene Varieties

Variety	Oversprayed-Roundup #lint/acre	Conventional-No Roundup #lint/acre
DPL 458 B/RR	1240	1151
SG 501 B/RR	1219	1180
DPL 451 B/RR	1175	1056
SG 125 B/RR	1172	1145
PM 1218 B/RR	1127	1140
DPL 450 B/RR	1119	953
DPL 409 B/RR	1092	1001
DPL 422 B/RR	1088	1082
PM 1560 B/RR	1033	978
DPL 655 B/RR	1006	1018
AVERAGE	1127	1070

Roundup Ready Varieties

Variety	Oversprayed-Roundup #lint/acre	Conventional-No Roundup #lint/acre
DPL 5415 RR	1196	1177
DPL 425 RR	1193	1185
SG 125 RR	1102	1165
DPL 5690 RR	1099	1115
SG 585 RR	1081	1041
AVERAGE	1134	1137

No Pre-Emergence Herbicides

Variety	PRE +Roundup #lint/acre	PRE+Conv #lint/acre	No PRE + Roundup #lint/acre
SG 125 B/RR	1172	1145	1154
DPL 5690 RR	1099	1115	1177
DPL 5415 RR	1196	1177	1193
AVERAGE	1155	1146	1175