

Late Season Bermudagrass Control in Pecan Orchard Herbicide Strips

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Introduction

Georgia is the largest producer of pecans in the United States with approximately 88 million pounds grown annually. Pecan production adds a significant value of \$263 Million to Georgia's diverse economy. With an increase in popularity for pecan production, and lower commodity pricing in other agricultural areas, some land use has shifted to implement new pecan orchards throughout the state. Weed control in newly established orchards is vital for optimum growth. Orchards planted in old pastures, hay fields, or areas where bermudagrass is common can see significant competition between this weed pest and young pecan trees (Figure 1). Due to bermudagrass spreading by the production of rhizomes, post-emergent herbicides are the only viable option for control. The most effective time for control of a perennial weed like bermudagrass is late season, generally during September or October. During this time, bermudagrass is transporting photosynthate to its roots for dormancy which increases the ability of the plant to translocate herbicides towards the roots. Therefore, an experiment was conducted to assess the effectiveness of 4 post emergent herbicides in a late season application on established bermudagrass in a young pecan orchard herbicide strip.

Materials & Methods

On September 30, 2021, Roundup, Fusilade, Select, and Poast were applied in a single application at the maximum labeled rate to the herbicide strips of non-bearing trees (Table 1). Herbicides were mixed in two liter bottles with a non-ionic surfactant, and applied at a rate of 10 gallons per acre. Each treatment was randomized and subsequently replicated three times with a plot being 10 feet wide and 25 feet long (Figure 2). Plot ratings were taken 21 days and 30 days after application. Ratings were taken for overall control and bermudagrass control for each plot (Figure 3).

Treatment	Herbicide	Rate per acre
1	Control	-
2	Roundup (glyphosate)	2 qt./acre
3	Fusilade (fluazifop)	1.5 pt./acre
4	Poast (sethoxydim)	2.5 pt./ acre
5	Select (clethodim)	8 fl oz./acre

Table 1. Herbicides and rates of each plot.



Figure 1. Pecan orchard planted in old bermudagrass pasture.



Figure 2. Pecan orchard herbicide strip prior to herbicide application

Results

In this trial, overall herbicide control and overall bermudagrass control was determined for each treatment. Statistical analysis was performed using ARM software, and statistical differences were observed (Table 2). Roundup provided the best control overall followed by Fusilade with Poast and Select providing the least control with no statistical difference between them.

Treatment	Overall 10/22/21	Overall 11/2/21	Bermudagrass Control 10/22/21	Bermudagrass Control 11/2/21
Control	0.0 d	0.0 d	0.0 d	0.0 d
Roundup	96.7 a	100.0 a	93.3 a	100.0 a
Fusilade	66.7 b	70.0 b	46.7 b	63.3 b
Poast	43.3 c	43.3 c	33.3 c	33.3 c
Select	40.0 c	33.3 c	30.0 c	23.3 c

Table 2. Percent ratings for control.

LSD (P=0.10)



Figure 3. Pecan orchard herbicide strip post herbicide application

Summary

The greatest level of control noted in this study came from Roundup with 100% control of bermudagrass 30 days after application. Fusilade did improve in bermudagrass control from the 21 day to 30 day rating. Poast and Select both provided the least amount of control. Overall, bermudagrass control is difficult and should not be managed with a single herbicide application, yet a season long herbicide management strategy should be utilized. Subsequent trials in the following years will be conducted to assess an overall bermudagrass management strategy in Georgia pecan orchards.