

Final Report
447593

102
VA-14
409
Final
2006

Title: Evaluation of Several Postemergence Herbicides Registered for the Control of Eastern Black nightshade in Peanuts

Progress: This trial was conducted in 2006 at the Tidewater Agricultural Research and Extension Center in Suffolk, VA. The objective of this trial was to evaluate the efficacy of several postemergence herbicide programs on various sizes of eastern black nightshade and common ragweed.

All herbicide treatments were applied postemergence over the top. The herbicide programs evaluated included Cobra applied at 12.5 oz/A, Ultra Blazer at 1.5 pt/A, Cobra at 12.5 oz/A applied twice (2 wk apart), Ultra Blazer at 1 oz applied twice (2 wk apart), Cobra at 8 oz/A, and Ultra Blazer at 1 pt/A.

The original protocol specified herbicide applications to be made at 1, 3, and 5 weeks postemergence. Emergence was delayed and spotty, requiring us to estimate stage of growth and use this for timing, starting at the 4 lf eastern black nightshade stage. Therefore, each of these treatments was applied to plots when eastern black nightshade was at the 4-lf stage (7/10 with second applications on July 24), 2 wks after the 4 lf stage (July 24 with second applications on August 7), and 4 wk after the 4 lf stage (August 7 with second applications on August 21).

Results

Applications made at the eastern black nightshade 4 leaf stage

At 10 days after treatment (DAT), there was little variation in treatment efficacy (all greater than 90%) with the exception of the Ultra Blazer a 1 pt/A applied twice treatment (Approximately 86%) (Figure 1). At this point, only the initial applications had been made. By 28 DAT, all treatments provided greater than 90% control and there were no differences in levels of control.

At 10 DAT, the Cobra at 12.5 oz/A and the Ultra Blazer at 1.5 pt/A provided numerically the highest level of common ragweed control and significantly higher control than Ultra Blazer applied at 1 oz/A (Figure 2). By 28 DAT, there was a trend of plants receiving one herbicide application beginning to recover witnessed by control levels less than those at 10 DAT. All treatments provided significantly higher control than the Ultra Blazer at 1 pt/A treatment and this was the only treatment providing less than 90% control.

Applications made at the eastern black nightshade 4 leaf stage plus 2 weeks

Control at 15 and 25 DAT were very inconsistent as blister beetles were also feeding on the plants at this time (Figures 3 and 4). All but one treatment (Ultra Blazer at 1.5 oz/A) controlled eastern black nightshade adequately (higher than 90%). Again, these data

were confounded by blister beetle feeding. Data were inconsistent as well regarding the common ragweed control. The one trend that was observed is that in general Cobra treatments provided a higher level of control than the Ultra Blazer treatments.

Applications made at the eastern black nightshade 4 leaf stage plus 4 weeks

At 11 DAT, the two treatments where Cobra was applied at 12.5 oz provided numerically the highest level of control of eastern black nightshade, being significantly higher than the Cobra at 8 oz/A application and the Ultra Blazer at 1 pt/A application (Figure 5). By 23 DAT, the plants had begun to recover and control was significantly lower than at 11 DAT for all one application treatments. Although there were no significant difference in treatments, there was a trend towards higher control in the 2 application treatments.

Ragweed control was highest in the Cobra treatments at 11 and 23 DAT relative to Ultra Blazer treatments. All Cobra treatments provided greater than 95% control while Ultra Blazer control ranged from 77-85% control depending on treatment.

Summary

This research demonstrates the increasing difficulty of controlling eastern black nightshade as it increases in size. In many cases, two applications of either Cobra or Ultra Blazer improved the control. As seen in the changes in control at each rating date, the data also demonstrates the ability of this plant to recover quickly relative to common ragweed. This recovery rate appears to increase as the plant increases in size. However, the reduced control and quicker recovery may also have been influenced by the common ragweed in the plots that grew over the nightshade, likely reducing spray coverage.

With respect to ragweed control, the reduction in control as the plant increases in size was only observed with Ultra Blazer treatments. Cobra effectively controlled common ragweed regardless of plant size. Additionally, there typically was an increase in control in treatments where 2 herbicide applications were made.

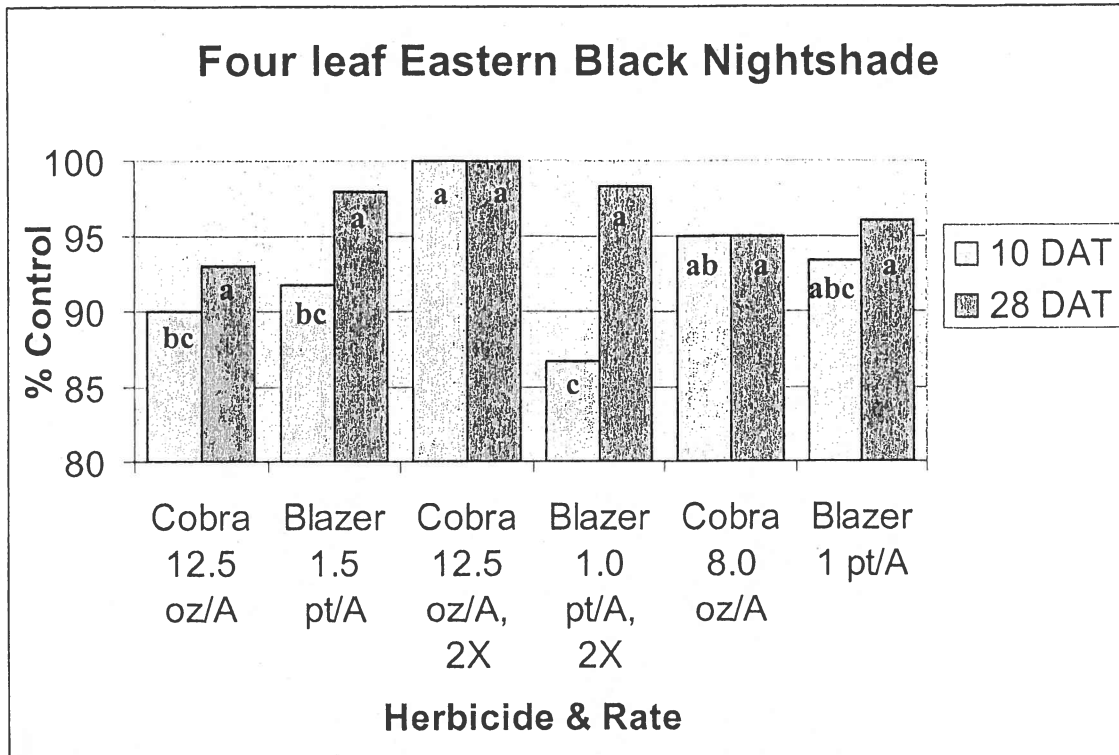


Figure 1. Percent control of 4 lf eastern black nightshade.

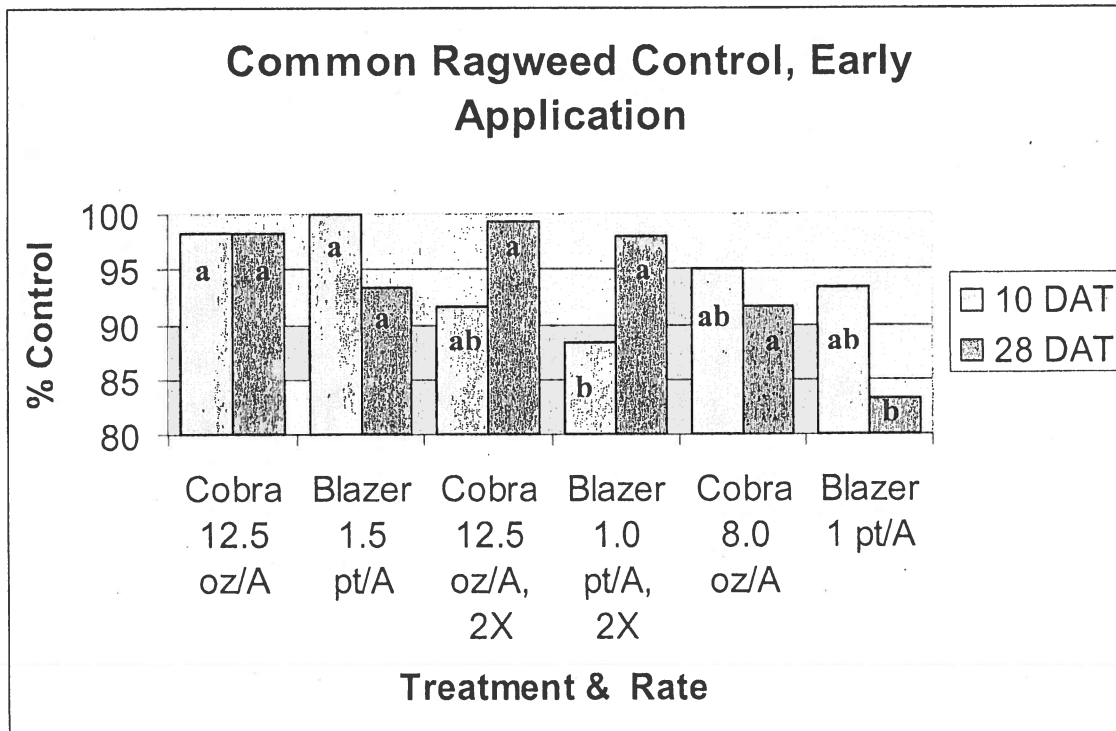


Figure 2. Percent control of common ragweed. Herbicide application timing corresponded with 4 lf eastern black nightshade.

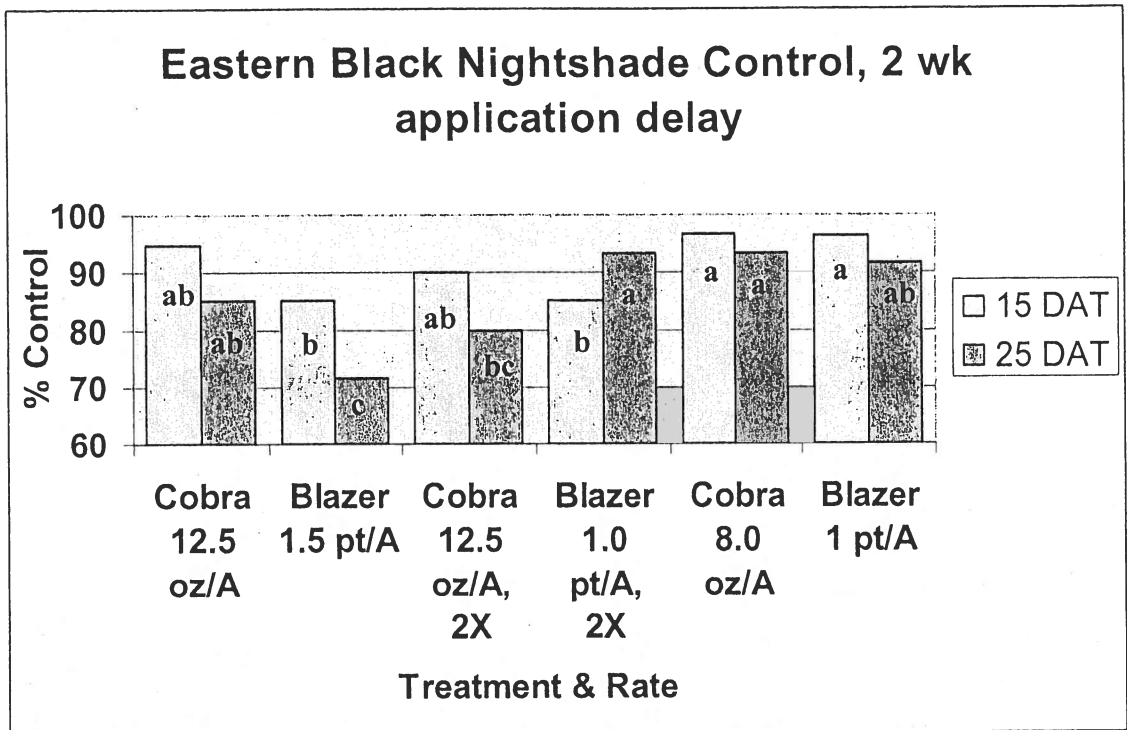


Figure 3. Percent control of eastern black nightshade. Herbicide applications timed at 4 lf plus 2 wk.

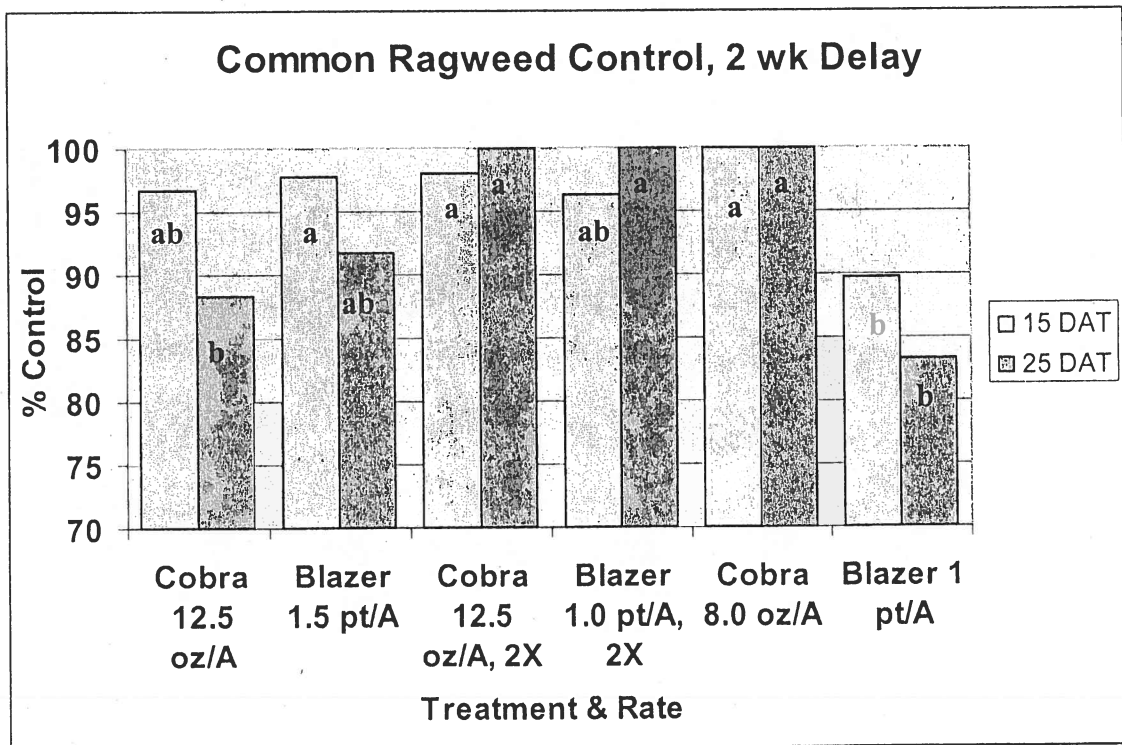


Figure 4. Percent control of common ragweed. Herbicide application timing corresponded with 4 lf eastern black nightshade plus 2 weeks.

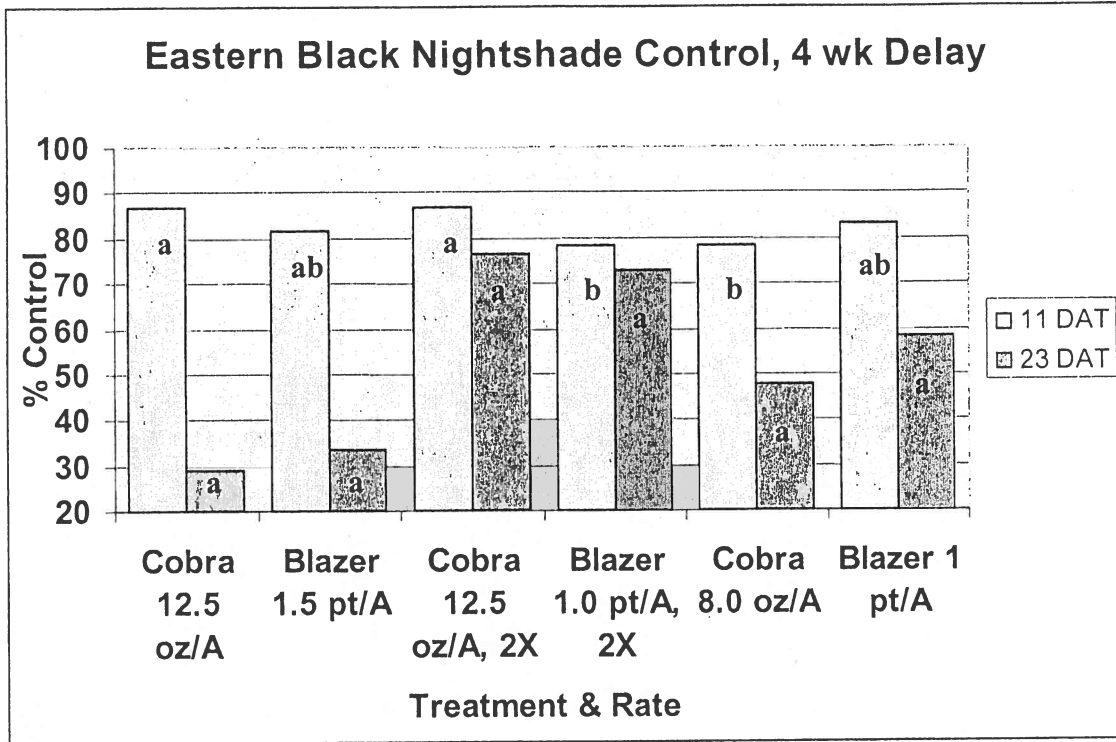


Figure 5. Percent control of eastern black nightshade. Herbicide applications timed at 4 lf plus 4 wk.

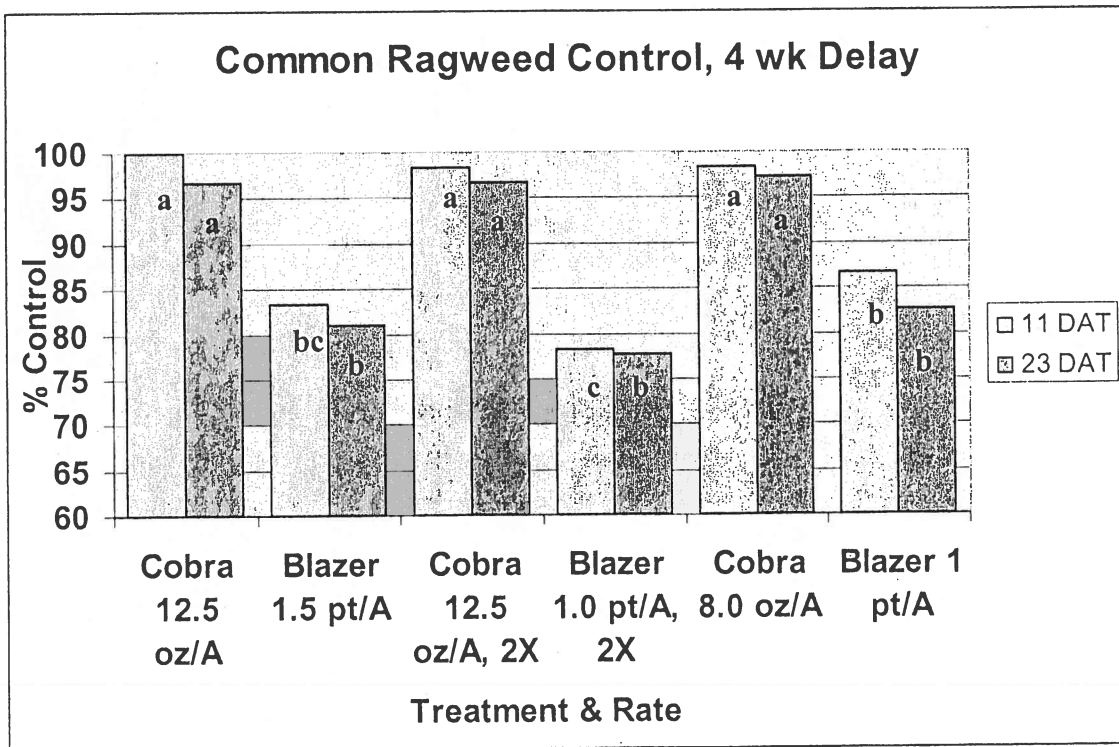


Figure 6. Percent control of common ragweed. Herbicide application timing corresponded with 4 lf eastern black nightshade plus 2 weeks.