

**CONTROL OF ANNUAL AND PERENNIAL
GRASSES IN COTTON WITH
SELECTIVE HERBICIDES**

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Abstract

Weeds reduce cotton yields through competition for light, nutrients and space. Early competition causes yield loss by reducing the cotton stand. Late season competition from weeds such as johnsongrass (*Sorghum halepense*) and barnyardgrass (*Echinochola crus-galli*) interfere with defoliation and reduce lint quality. Applying selective herbicides such as Prism (Clethodim), Fusilade (Fluazifop-P-butyl) or Poast (Sethoxydim) can reduce the negative impact of grasses on cotton. Proper timing of herbicide application is essential. Early applications kill both rhizome and seedling johnsongrass and effectively reduce the population of johnsongrass in the next year. Research has been conducted with Prism, Fusilade and Poast for both short term and long term control of grasses.

In the 1993 barnyardgrass study, an Acala Maxxa cotton field was divided into 3 replications in a randomized complete block design (RCBD). Herbicide applications were made on 5/6. Control evaluations were taken at 7 and 14 days after treatment (DAT). In the 1994 johnsongrass study, a Maxxa field was divided into 3 replications in a RCBD. Herbicide applications were made on 6/8 & 7/5. Control evaluations were taken at 7, 14 & 27 DAT, and 21 DAT from the 2nd application. Johnsongrass biomass was taken on 5/30/95. In the 1995 johnsongrass study, a Maxxa field was divided into 4 replications in a RCBD. Due to the severe infestation an untreated control was not included. Herbicide applications were made on 5/4. Control evaluations for johnsongrass were taken at 7, 14 and 21 DAT.

In the 1993 study, at 7 DAT, Prism and Agri-dex provided the greatest control of barnyardgrass at 77%. At 14 DAT, Prism and Agri-dex provided the best control at 95%. In the 1994 study at 14 DAT, the high rate of Poast and Prism provided the best control at 87%. The low rate of Fusilade and Poast had the lowest control at 50% and 43% respectively. At 27 DAT, control had dropped with all materials while Fusilade maintained the greatest control at 73%. At 21 days after the second application, the high rate of Prism and Poast and all rates of Fusilade provided the greatest control with a range of 83-90% control. Biomass sampling at 357 DAT showed significant reductions in

johnsongrass the next year. Poast and Fusilade provided the greatest reductions while Poast at the lowest rate provided the least reduction. In the 1995 study there were no significant differences in control for seedling johnsongrass. At 14 DAT the low rate of Prism showed 68% control whereas the rest of the treatments exhibited 78% to 90% control. At 21 DAT, there were no significant differences in control.

Fusilade, Poast or Prism all provide effective control of johnsongrass and barnyardgrass. Fusilade and Poast may not perform as well at their lowest rates as Prism for short term control. Fusilade and Poast and Prism applications resulted in significant decreases in johnsongrass in the next growing season. Combining proper timing and rates of herbicides with field and equipment sanitation could effectively eliminate johnsongrass or barnyardgrass in a cotton field within 2 - 3 years. This could provide a significant benefit to the grower by increasing yield, improving lint quality and reducing production costs by reducing pesticide usage over the long term.