FLAIR® BOLL OPENER (ENDOTHALL), RESULTS FROM 1995-96 EXPERIMENTAL USE PERMIT TRIALS IN SOUTHEASTERN UNITED STATES

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Abstract

Flair® (endothall) has been evaluated in experimental use permit trials in the Southeastern United States over the past two years. More than 50 trials were conducted in eleven states. The results obtained show that Flair®, when applied as a boll opening treatment following a defoliation treatment, was equal to or better than Prep™ (ethephon) at opening bolls. Defoliation was increased over the defoliation application. Desiccation activity against selected broadleaved weeds was also observed.

Introduction

Since 1993 Flair®, the monoamine salt of endothall, has been evaluated for its effect on opening of cotton bolls in replicated plots where cotton bolls were tagged. Results from these replicated tests in the United States as well as in Australia have shown that Flair® applied either sequentially or in a tankmix with common defoliants was equal to or better than ethephon as a boll opener. Defoliation has also been shown to be enhanced when Flair® was applied as a boll opening treatment and at times when applied in a tankmix with a common defoliant. Based on results from these studies, experimental use permit (eup) testing was conducted in 1995 and 1996. Results from the two years of testing are discussed.

Materials and Methods

During 1995-96 over 50 eup trials were conducted in eleven Southeastern states. Plots were set up as either 0.5 A/treatment for ground applications or 2.0 A/treatment for aerial applications. At each site there were four treatments. A defoliant treatment was applied when the cotton was approximately at 60 percent open bolls. The defoliant treatments were either DEF® (tribufos), Folex® (merphos), or Dropp® (thidiazuron) applied at a labelled rate, based on crop condition, weather and location. Additional harvest aids, including Accelerate® (mixed mono and diamine salt of endothall)(0.03 lb ai/A) or Prep™ (ethephon)(0.19 lb ai/A), were tankmixed with the defoliant treatment during 1996. Boll opening treatments of Flair® applied at 0.5 and 0.75 lb ai/A and Prep™ applied at 1.0 lb ai/A followed the defoliation treatment. The typical application timing of the boll opening treatment was 3-4 days after the defoliation treatment. At defoliation and at the boll opening treatment the plots were evaluated for percent boll opening and percent defoliation and typically 3, 5, 7 and 10 days after the boll opening treatment. Weed desiccation ratings were also obtained. Regrowth ratings, leaf sticking ratings, cotton quality and yield ratings were obtained, but details are not discussed in this report.

Results and Discussion

Figures 1 and 2 illustrate the average percent boll opening from trials conducted during 1995 and 1996, respectively. As shown in figure 1, the percent boll opening for those treatments containing a boll opening application was superior to a single defoliation treatment. At three days after the defoliation treatment, both Flair® treatments were slightly superior on average to Prep™. By 7-21 days after treatment, the 0.75 lb ai/a rate of Flair® was slightly superior to Prep™. During 1996, Flair® applied at 0.5 lb ai/A was equal to Prep™ in opening bolls (Figure 2). Both boll opening treatments were slightly superior to the defoliation treatments. While all treatments performed well in defoliation, there was a slight increase in defoliation in those plots treated with a boll opening application (Figure 3). Several species of broad-leaved weeds were present at various sites during both years. While no boll opening treatment or defoliant treatment was consistent on a particular weed at all sites, Flair® did show excellent desiccation activity on morningglory species *(Ipomoea spp.)* and redvine *(Brunnichia ovata* Walt. Shinners). Both of these weeds can be a problem at harvest if present in high populations.

Conclusion

Flair® boll opener applied at 0.5-0.75 lb ai/A was equal to or better than ethephon when evaluated for boll opening, boosting defoliation and for desiccation of selected broadleaved weeds in large scale eup testing in the Southeastern United States.

Def® is a registered trademark of Bayer; Folex® is a registered trademark of Rhone-Poulenc; Prep™ is a trademark of Rhone-Poulenc; Dropp® is a registered trademark of AgrEvo; Accelerate® and Flair® are registered trademarks of Elf Atochem.

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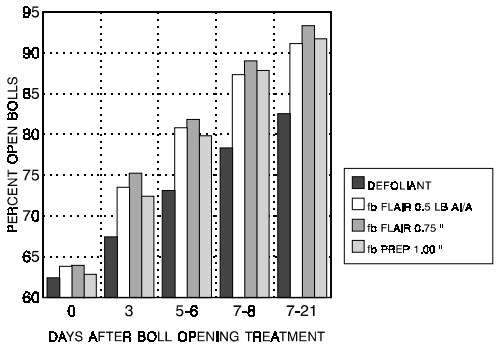

Figure 1. Average percent boll opening from 24 experimental use permit trials conducted during 1995 in the Southeastern United States.

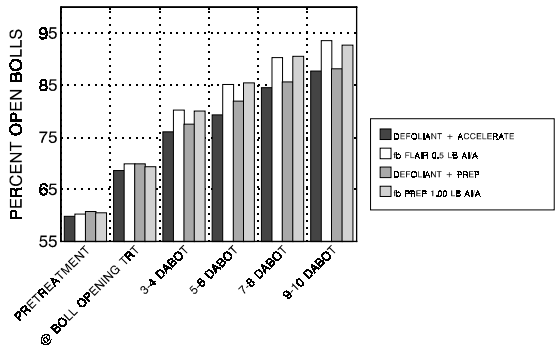

Figure 2. Average percent boll opening from 23 experimental use permit trials conducted during 1996 in the Southeastern United States.

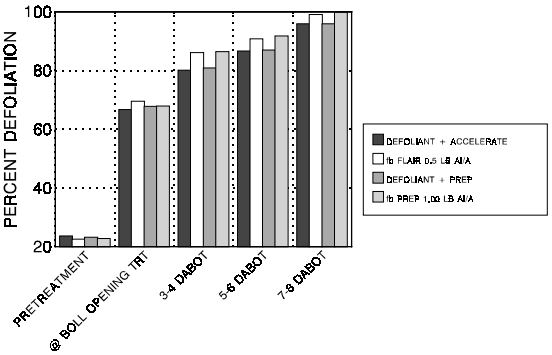

Figure 3. Average percent defoliation from 23 experimental use permit trials conducted during 1996 in the Southeastern United States.