EVALUATION OF NEW COTTON (*Gossypium hirsutum*) HARVEST AIDS

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Abstract

Field studies were conducted at the R.R. Foil Plant Sciences Research Center at Mississippi State University in 1998 and 1999 to compare new harvest aids with current industry standards. In the first experiment, 1, 2, and 3 pts/A Flair (TD-2335) was tank mixed with 1 pt/A Folex (tribufos) and was compared to 1 pt/A Folex + 1.33 pts/A Prep (ethephon). Single and sequential applications of 0.0714 oz/A CGA-248757 were compared to 1 pt/A Folex + 1.33 pts/A Prep in a second experiment. The third experiment compared 1, 1.33, and 1.5 lbs/A Finish (ethephon + cyclanilide), 1.0 lb/A Finish + 0.0033 lb/A Dropp with 1.75 qts/A Cottonquick (ethephon + 1-aminomethanamide dihydrogen tetraoxo sulfate) and 0.0033 lb/A Dropp (thidiazuron). The fourth experiment compared 0.0428, 0.0571, and 0.0714 oz/A ET-751, sequential applications of 0.0571 oz/A ET-751, 0.0571 oz/A ET-751 + 5.995 oz/A Dropp or 1.0 pt /A Prep compared to 0.37 pts/A DEF 6 + 1.0 pt/A Prep.

The addition of Prep to Folex increased the percentage of open bolls 7 days after treatment (DAT) compared to the addition of 1 pt/A Flair. Percent open bolls did not differ among treatments 14 DAT with at least 85% open bolls from all Flair treatments. Defoliation was at least 70% with all treatments in the Flair comparison study. Flair at 2 pts/A caused more desiccation 7 DAT than any other treatment. Apical regrowth was less with the Folex + Prep tank mixture compared to Flair combinations at 7 and 14 DAT in 1998. There was less basal regrowth, 14 DAT, with at least 1.5 pts/A Flair compared to Folex + Prep. In 1999, there was more basal regrowth with the Folex + Prep combinations 14 DAT compared to the Folex + Flair tank mixtures.

Sequential applications of CGA-248757 did not increase percent open bolls compared to single applications. Defoliation with the Folex + Prep tank mixture 7 DAT was better than with single or sequential applications of CGA-248757. In 1999, defoliation was better with sequential applications of CGA-248757 compared to the Folex + Prep combination and single application of CGA-248757. There was less desiccation 7 DAT with Folex + Prep compared to applications of CGA-248757; however, by 14 DAT desiccation did not differ among treatments. Apical regrowth was higher with sequential CGA-248757 applications, compared to other treatments 21 DAT.

Percent open bolls did not differ between rates of Finish, when applied alone. Percent defoliation was higher 14 DAT when at least 1.33 lbs/A was used. Desiccation and regrowth were the same in most instances, regardless of rate. Finish tank mixtures did not differ in percent open bolls among treatments. In 1999, there was more desiccation with the Cottonquick + Dropp combinations compared to other treatments. Regrowth did not differ among treatments.

Percent open bolls did not differ among ET-751 treatments. Defoliation was better with tank mixtures containing Prep. At 14 and 21 DAT, there was less regrowth with the Prep + Dropp tank mixture compared to ET-751 + Dropp combination.

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