COTTON INJURY AS AFFECTED BY SIMULATED DRIFT OF 2,4-D AND DICAMBA. Molly E. Marple, Douglas E. Shoup, Kassim Al-Khatib, Dallas E. Peterson, Graduate Research Assistant, Graduate Research Assistant, Professor, and Professor, Department of Agronomy, Kansas State University, Manhattan KS 66502.

A field study was conducted in 2004 and 2005 at Manhattan, Kansas to compare cotton injury and yield reduction with 2,4-D and dicamba to other hormonal-type herbicides. The herbicides evaluated were dicamba (Clarity), 2,4-D amine, 2,4-D ester, clopyralid (Stinger), picloram (Tordon), fluroxypyr (Starane), and triclopyr (Remedy); herbicide rates were 0, 1/100, 1/200, 1/300, 1/400 of the use rate. The use rates were 561, 561, 561, 280, 561, 210, and 561g ai/ha for 2,4-D amine, 2,4-D ester, dicamba, clopyralid, picloram, fluroxypyr, and triclopry, respectively. Herbicides were applied at 5 to 6 leaf stage. A separate study was conducted to determine the effect of multiple exposure of simulated 2,4-D drift from multiple exposures to cotton. 2,4-D amine was applied at 0, 1/400, 1/800, 1/1200 of the use rates. Plots were treated with 1, 2 or 3 applications of 2,4-D amine at 2 week intervals. In general, injury symptoms and yield reduction was the greatest with 2,4-D when compared to other hormonal-type herbicides. Visual injury and yield reductions were greatest with 2,4-D and picloram. Similar injury was observed from both 2,4-D amine and ester. The lowest injury was with triclopry and clopyralid, whereas dicamba and fluroxypyr injury was intermediate. In the multiple exposure study, visual injury was the greatest at the highest rate of 2,4-D applied at 2 or 3 times. However, yield loss was still evident at the 1/1200 use rate of 2,4-D regardless of application timing. Cotton is extremely susceptible to 2,4-D drift, thus the use of 2,4-D should be avoided around cotton fields by using an alternative herbicides such as clopyralid and triclopry.

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