

EFFICACY OF AIM 2EC (CARFENTRAZONE) AS A COTTON HARVEST AID IN TEXAS

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Abstract

Aim 2EC (Carfentrazone) is a herbicide that was recently introduced by FMC as a cotton (*Gossypium hirsutum* L.) harvest aid. It is used to defoliate as well as desiccate leaves of the target crop. Aim 2EC is also utilized to desiccate new juvenile growth, and can be used alone or in combination with boll openers or other defoliant/desiccants as a one time application or as part of a sequential application. Three studies were conducted across the state of Texas, one each in Hill, Hardeman and Lubbock Counties. The objective of these studies was to determine the efficacy of Aim 2EC as a harvest aid for cotton production. Plots were treated with Aim 2EC alone at 0.5, 1.0 and 1.5 oz product/acre, Cyclone Max (paraquat 3EC) alone at 5.3, 10.7 and 21.3 oz product/acre and Aim 2EC at 0.5, 1.0 and 1.5 oz/acre tank mixed with 10.7 oz/acre Cyclone Max. Crop oil concentrate (COC) was added to the Aim 2EC alone treatments at 1.0% v/v and a non-ionic surfactant (NIS) at 0.25% v/v was included in the treatments containing Cyclone Max. Treatments were applied in Hill County at 60% open boll (OB) on August 13, 2002 to 'Sure-Grow 215BG/RR' cultivar using a Lee Spider sprayer set to deliver 11 gallons per acre (gpa) at 3 mph through Turbo TJ11002 nozzles set on 20-inch spacings at 28 psi. In Hardeman County, treatments were applied to 'Paymaster 2280BG/RR' cultivar at 90% OB on September 25, 2002. Hardeman County treatments were applied using a back-pack sprayer set to deliver 15 gpa at 3 mph through 11002XR nozzles on 20-inch spacings at 27 psi. A Lee Spider sprayer was used to treat 'Paymaster 2167RR' cultivar at 65% OB in Lubbock County on October 11, 2002. The sprayer was set to deliver 15 gpa through 11002VS nozzles on 20-inch spacings at 24 psi with a ground speed of 3 mph. Plots were visually evaluated at 14 days after treatment (DAT) for defoliation and desiccation percentage at all locations, and at 21 and 14 DAT for terminal and basal regrowth at Hardeman County and Hill County, respectively. Results from the Hardeman County and Hill County locations indicated that the 1.5 oz rate of Aim 2EC alone was comparable to the 5.3 and 10.7 oz rates of Cyclone Max alone and the Aim 2EC + Cyclone Max tank mixes for defoliation. Desiccation rates at Hardeman County and Hill County were similar for all rates of Aim 2EC alone and were comparable to the lower rates of Cyclone Max alone. Addition of Cyclone Max to Aim 2EC tended to enhance desiccation in Hill County, while it increased defoliation with the 0.5 and 1.0 oz rates of Aim in Hardeman County. There were no differences in terminal or basal regrowth among treatments in Hill County. The only treatments that resulted in less than 15% terminal regrowth at Hardeman County were Cyclone Max at 21.3 oz and when Cyclone Max was used in combination with 1.0 and 1.5 oz of Aim. Defoliation percentages at the Lubbock County location were higher for the Aim 2EC alone treatments, which were similar to that of the 5.3 rate of Cyclone Max alone. Aim 2EC alone at all rates was lower than all other treatments for desiccation percentages at the Lubbock County location. Efficacy of Aim 2EC alone at the Lubbock County location was somewhat lower when compared to the Hardeman County and Hill County locations. This may be due in part to the condition of the crop at time of application. The Lubbock County location received only marginal irrigation throughout the growing season thereby reducing susceptibility of the crop to harvest aids.