2002 BELTWIDE COTTON CONFERENCES, ATLANTA, GA – JANUARY 8-12

AIM, A NEW COTTON HARVEST AID

T.I. Crumby
FMC Corporation
Bolton, MS
T.W. Mize
FMC Corporation
Amarillo, TX
H.R. Mitchell
FMC Corporation
Louisville, MS

Abstract

FMC discovered and conducted field research with several PPO inhibitor herbicides leading to the Section 3 registrations of sulfentrazone and carfentrazone. Field research was conducted with several of these candidate herbicides as cotton harvest aids, resulting in a decision to seek a Section 3 registration for the use of carfentrazone as a harvest aid. That registration was granted in August 2001, just prior to use season. Carfentrazone, sold under the brand names Aim and Shark, was positioned to be used alone in situations where cotton leaves were mature and cotton bolls were sufficiently open. In situations where boll-opening capabilities were required as well as additional defoliation, Aim was positioned to be tank-mixed with ethephon products. Where there was concern over potential cotton plant regrowth, Aim was positioned to be used in tank-mix combinations with thidiazuron products. In situations of rank cotton plant growth, Aim was positioned as a sequential treatment to be used in conjunction with Aim or other harvest aid products. Aim demonstrated excellent desiccation of problem weeds such as morninglories and defoliation of pigweeds and has proven to be very effective in the removal of juvenile growth.

In replicated small plot research trials, Aim applied alone at 0.015 lb ai/a, and in combination with Finish at 0.75 lb ai/a, Dropp at 0.05 lb ai/a, Prep at 0.75 lb ai/a or Def at 0.75 lb ai/a plus Prep at 0.75 lb ai/a provided 64%, 77%, 71%, 71% and 80% defoliation, respectively, at 7 days after treatment as compared to 75% defoliation provided by Prep at 1.0 lb ai/a plus Def at 0.75 lb ai/a. When evaluated 15 days after application, these treatments provided 77%, 85%, 82%, 82% and 89% defoliation, respectively, as compared to 83% defoliation provided by the standard Prep plus Def treatment. Aim and the Aim mixture treatments provided very similar cotton desiccation and regrowth performance as compared to the standard Prep plus Def treatment. In sequential application research programs, Aim at 0.015 applied alone, Aim at 0.015 followed by Aim at 0.015, and Aim at 0.015 plus Prep at 0.075 followed by Aim at 0.015 lb ai/a provided 77%, 87% and 90% defoliation, respectively, at 7 days following the second application as compared to 83% defoliation provided by a single treatment of Def at 0.75 lb ai/a plus Prep at 1.0 lb ai/a.

In a market introduction program, over 65 large scale demonstration trials were conducted by producers, consultants and distributor/dealer field representatives from North Carolina to Texas. In these demonstrations trials Aim applied alone provided 40%, 59%, 74% and 89% defoliation and 47%, 61%, 70% and 86% desiccation of weeds at 3,5,7 and 10 days after treatment, respectively. Aim plus ethephon provided 28%, 59%, 77% and 89% defoliation and 29%, 55%, 69% and 77% desiccation of weeds at 3,5,7 and 10 days after treatment, respectively. Aim plus thidiazuron provided 33%, 59%, 78% and 90% defoliation and 27%, 56%, 79% and 76% desiccation of weeds at 3,5,7 and 10 days after treatment, respectively.

Future plans for Aim use as a harvest aid include the marketing of an EC formulation. Field research trials as a cotton harvest aid will further define product use rates, Aim utilization in dry land and stripper production systems and Aim use as a harvest aid in other crops such as soybeans and corn. Additionally, FMC will be promoting the use of Aim in cotton as preplant burndown, at-plant burndown, post-directed and lay-by treatments.