EFFICACY OF PETHOXAMID IN COTTON AND CROP TOLERANCE

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Abstract

FMC is currently developing pethoxamid, a new Group 15 residual herbicide, for use as a preemergence herbicide and tank-mix option with postemergence herbicides in several crops. Pethoxamid is currently being evaluated in canola, corn, cotton, rice, soybean, and sunflower crops. Experiments were conducted in 2014 and 2015 at the Southeast Research and Extension Center in Rohwer, Arkansas, to evaluate the performance of pethoxamid in comparison to other common preemergence weed control treatments. Two experiments were conducted in Glytol, LibertyLink cotton and were arranged as a randomized complete block design. The rate comparison trial consisted of 8 treatments that evaluated the efficacy and selectivity of pethoxamid alone in comparison to *S*-metolachlor (Dual Magnum) and acetochlor (Warrant) for residual weed control. The programs trial contained 7 treatments that consisted of pethoxamid applied at multiple timings and in combination with other broad-spectrum herbicides. Pethoxamid applied PRE at 1.0 lb ai/acre performed similar to 1.0 lb ai/acre of *S*-metolachor and superior to 0.94 lb ai/acre and 1.25 lb ai/acre of acetochlor on Palmer amaranth and barnyardgrass. Pethoxamid, when applied PRE caused less injury to cotton than did diuron and the level of injury was similar to acetochlor. When applied POST in combination with glyphosate of glufosinate, a high level of residual barnyardgrass control, greater than 95%, was observed. Based on this research, pethoxamid will provide Midsouth cotton producers another very long chain fatty acid inhibitor for use in cotton for control of small-seeded broadleaves and grasses.