

WINTER WEED MANAGEMENT WITH SHARPEN IN A NO-TILL COTTON SYSTEM**J.K. Manning****Mississippi State University****Delta Research and Extension Center****Stoneville, MS****D.O. Stephenson, IV****Louisiana State University AgCenter****Dean Lee Research and Extension Center****Alexandria, LA****J.A. Bond****J.B. McDuffie****Mississippi State University****Delta Research and Extension Center****Stoneville, MS****R.L. Landry****Louisiana State University AgCenter****Dean Lee Research and Extension Center****Alexandria, LA****J.B. Guice****BASF Corporation****Winnsboro, LA****Abstract**

Previous research has identified that dicamba (Clarity) co-applied with glyphosate can provide control of glyphosate-resistant (GR) horseweed at a burndown application timing. However, producers continue to struggle with weeds prior to planting that may or may not have been identified as GR such as cutleaf evening-primrose (*Oenothera laciniata*), Italian ryegrass (*Lolium perenne* ssp. *multiflorum*), curly dock (*Rumex crispus*), henbit (*Lamium amplexicaule*), and others. Sharpen is a new PPO-inhibiting herbicide labeled for use as a burndown 42 days prior to planting in cotton.

Research was conducted in 2009 at the Mississippi State University Delta Research and Extension Center in Stoneville, MS, and the Louisiana State University AgCenter Dean Lee Research and Extension Center in Alexandria, LA to determine the effectiveness of Sharpen alone or co-applied with various other herbicides for winter and spring weed management preplant in cotton. Treatments were arranged as a randomized complete block with four replications. Treatments included Roundup PowerMax (22 oz/A), Sharpen (1 oz/A), Sharpen (1 oz/A) plus Roundup PowerMax (22 oz/A), Sharpen (1 oz/A) plus Roundup PowerMax (22 oz/A) plus Clarity (8 oz/A), Sharpen (1 oz/A) plus Roundup PowerMax (22 oz/A) plus Diuron (20 oz/A), Sharpen (oz/A) plus Gramoxone Inteon (3 pt/A), and Sharpen (1 oz/A) plus Ignite 280 (41 oz/A).

Sharpen alone provided 88% GR horseweed control 7 days after application (DAA), but control decreased to 75% 22 DAA. The addition of Sharpen to Roundup PowerMax did not increase GR horseweed control compared with Sharpen alone. Adding Clarity to Sharpen plus Roundup PowerMax increased GR horseweed control to 90% by 22 DAA. Diuron applied with Sharpen plus Roundup PowerMax provided at least 90% control at all evaluations. Sharpen plus Ignite 280 provided excellent control of GR horseweed. Sharpen co-applied with Roundup PowerMax plus Clarity or diuron may reduce barnyardgrass control compared to Roundup PowerMax alone. All treatments controlled Palmer amaranth 95% 14 DAA. Hophornbeam copperleaf and entireleaf morningglory control was greater than 85% 14 and 38 DAA, indicating the feasibility of Sharpen for control of these weeds.

Sharpen provided good initial control of GR horseweed in Mississippi, but the addition of Clarity, diuron, or Ignite 280 is needed to provide at least 90% control 22 DAA. Sharpen co-applied with Roundup PowerMax has the potential to reduce control of barnyardgrass. Sharpen application is a good option for control of Palmer amaranth, hophornbeam copperleaf, and entireleaf morningglory.