

**ASIATIC DAYFLOWER (*COMMELINA COMMUNIS*) CONTROL
IN GLYPHOSATE-RESISTANT COTTON**

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MSMA applied alone controlled Asiatic dayflower 80%. Control was similar and ranged from 88 to 95% when MSMA was mixed with Bladex, Caparol, Cobra, Direx, or Valor. Leaving out the MSMA and applying Direx plus Cobra reduced dayflower control 30%. Roundup Ultra at 1 qt/A controlled dayflower 74%. When 1½ pints of Roundup Ultra was tank mixed with Aim or Valor control was improved 14 to 15% at two weeks after treatment and the Valor mixture improved control 9% at four weeks after treatments. Cobra mixed with 1 ½ pints of Roundup Ultra increased control 10% at four weeks after treatments. Caparol, Direx, and Harvade mixed with Roundup did not affect control at either rating date.

Abstract

Since 1994, cotton acreage in Grady County, Georgia has increased 144%. Most of these acres (80%) are planted in glyphosate-resistant cotton. Growers have rapidly adopted this technology because of the broad spectrum of weeds controlled by glyphosate, reduction in labor input cost, and ease of the glyphosate-resistant system. With the exception of a dinitroaniline herbicide applied at planting, glyphosate is often the only herbicide used to manage weeds in glyphosate-resistant cotton. Glyphosate products only suppress dayflower growth. With little to no crop rotation and the repeated use of glyphosate, Asiatic dayflower has become a significant pest.

Two experiments were conducted to evaluate early postemergence herbicides applied over-the-top of cotton in the 3- to 4-leaf stage and late post-directed herbicides applied to cotton at least 12 inches tall. Asiatic dayflower ranged from 1 to 5 inches with a plant population of 80 plants per square yard. Visual estimates of weed control were taken 2 and 4 wk after treatment.

In the early postemergence herbicide study, treatments included Roundup Ultra 4L (glyphosate) at 1.5, 2.0, 4.0, and 8.0 pt/A; Roundup Ultra at 1.5 pt/A mixed with MSMA 6.6 L (1 pt/A), Staple (pyrithiobac) (0.6 oz/A), or CGA 362-622 at (0.1 oz/A); Staple at 1.2 oz/A applied alone and mixed with 1 pt/A of MSMA; CGA 362-622 at 0.1 oz/A; and Liberty (glufosinate) at 28 oz/A. A nonionic surfactant was included with Staple and CGA 362-622 and an ammonium sulfate was included with Liberty. All treatments were applied at 14.8 GPA.

At 4 wk after treatment, Roundup Ultra (1.5, 2.0, 4.0, and 8.0 pt/A) controlled Asiatic dayflower 63, 74, 84, and 92%, respectively. Mixing Staple or MSMA with 1.5 pt/A of Roundup Ultra improved dayflower control 23 and 12%, respectively. CGA 362-622 mixed with Roundup Ultra did not increase dayflower control. Applied alone, Staple and Liberty were at least 20% more effective than Roundup Ultra at 2 wk after treatment. MSMA mixed with Staple tended to reduce dayflower control. By 4 wk after treatment, this trend was still apparent. CGA 362-622 applied alone controlled dayflower only 42 and 35% at 2 and 4 wk after treatment, respectively.

In the late postemergence-directed study, treatments included MSMA (2 lb ai/A) applied alone or mixed with Bladex 4L (cyanazine) (1 qt/A), Caparol 4L (prometryn) (1 qt/A), Cobra (lactofen) (12 oz/A), Direx 4L (diuron) (1 qt/A), Harvade (dimethipin) (8 oz/A) + crop oil concentrate (1 pt/A), or Valor (flumioxazin) (2 oz/A). Additional treatments included Direx (1.5 pt/A) + Cobra (8 oz/A) and Roundup Ultra (2 pt/A) alone or Roundup Ultra (1 ½ pt/A) mixed with Aim (carfentrazone) (0.67 oz/A), Caparol (1.5 pt/A), Cobra (8 oz/A), Direx (1.5 pt/A), Harvade (8 oz/A) + crop oil concentrate (1 pt/A), or Valor (2 oz/A). All treatments were applied at 20 GPA. A nonionic surfactant was included with all MSMA treatments and Direx + Cobra.