

**WEED MANAGEMENT IN BOLLGARD II XTENDFLEX™ COTTON WITH ENGENIA® HERBICIDE
ON THE TEXAS HIGH PLAINS****A.T. Koonce****J.W. Keeling****P.A. Dotray****Texas A&M Agrilife Research****Lubbock TX****A.C. Hixson****BASF Corporation****Lubbock, TX****Abstract**

Engenia® herbicide, a new dicamba formulation (BAMPA) developed by BASF is registered for use in Bollgard II XtendFlex™ cotton. Engenia applied in Bollgard II XtendFlex cotton could improve control of glyphosate tolerant Palmer amaranth (*Amaranthus palmeri*), morningglory (*Ipomoea spp.*), Russian thistle (*Salsola tragus L.*), Kochia (*Kochia scoparia*) woollyleaf bursage (*Ambrosia grayi*) and field bindweed (*Convolvulus arvensis L.*) compared to Roundup PowerMax (RUPM) or Liberty alone. The objectives of these studies were to evaluate control of glyphosate-tolerant Palmer amaranth with Engenia in both glyphosate and glufosinate systems.

Field trials were conducted near Lubbock, TX to evaluate Palmer amaranth control with Engenia based herbicide programs. Pre-plant incorporated (PPI) treatments included pendimethlin (40 oz/A). Early-postemergence (EPOST) treatments included dicamba (12.8 oz/A), dimethenamid (14 oz/A), s-metolachlor (20 oz/A), acetochlor (48 oz/A), glyphosate (32 oz/A), and glufosinate (29 oz/A). Mid-postemergence (MPOST) treatments included dicamba (12.8 oz/A), acetochlor (48 oz/A), glyphosate (32 oz/A), and glufosinate (29 oz/A). Pre-plant incorporated treatments were applied April 21st, EPOST applications were applied June 8th when weeds were 2-4" in height and MPOST applications were applied July 13th when weeds were 6-8" in height. Treatments were applied using a CO₂-pressurized backpack sprayer calibrated for 15 gallons per acre. Weed control was estimated visually at 30, 50, and 70 DAP for both studies.

In the Roundup Powermax/Engenia systems, most effective Palmer amaranth control and greatest cotton yields were produced when Roundup PowerMax (RUPM) + Engenia were applied EPOST. RUPM + Engenia™ treatments in combination with Prowl H2O or Outlook, controlled Palmer amaranth 95 to 100% 50 DAP when applied EPOST. Reduced Palmer amaranth control and cotton yields resulted when POST treatments were delayed to MPOST timing. In the Liberty/Engenia system, the addition of Engenia improved Palmer amaranth control compared to Liberty alone or in combination with Outlook. These studies demonstrate the value of residual herbicides such as Prowl H2O and Outlook, and the importance of Engenia® herbicide in a glyphosate resistant Palmer amaranth.