

ROUNDUP ULTRA/RESIDUAL HERBICIDE TANK MIX COMBINATIONS IN ROUNDUP READY COTTON. J.W. Keeling, P.A. Dotray, J.D. Everitt, and L.L. Lyon, Texas Agricultural Experiment Station, Lubbock, TX

ABSTRACT

Roundup Ready cotton varieties have been planted extensively on the Texas High Plains since 1998. Effective control of most annual and many perennial weeds has been achieved with in-season Roundup Ultra applications in these varieties. Field experiments were established near Lubbock, TX to evaluate Roundup Ultra alone or in combination with Staple or Direx for Palmer amaranth (*Amaranthus palmeri*) and devil's-claw control (*Proboscidea louisianica*) control in Roundup Ready cotton (Paymaster 2326RR). Additional herbicides including Caparol, Cotoran, Goal, and Direx were applied in combination with and compared to Roundup Ultra for season-long Palmer amaranth and devil's-claw control without cultivation.

Effective early-season Palmer amaranth and devil's-claw control was achieved with Prowl fb Roundup Ultra or Prowl fb Roundup Ultra + Staple POST. Prowl fb Roundup Ultra or Prowl fb Roundup Ultra +Direx PDIR provided similar levels (95-97%) of Palmer amaranth control and devil's-claw control and were superior to residual herbicides alone (70-80%). Late-season Palmer amaranth and devil's-claw control was similar with Prowl fb Roundup Ultra POST followed by Roundup Ultra PDIR, Prowl fb Roundup Ultra + Staple POST fb Roundup Ultra PDIR, or Prowl fb Roundup Ultra POST fb Roundup Ultra + Direx PDIR. Lack of rainfall after July 15 limited additional Palmer amaranth germination and reduced the need for residual Palmer amaranth control. All plots receiving Roundup Ultra POST and PDIR with or without Staple or Direx produced higher yields than plots treated with soil-applied residual herbicides only.

All Roundup Ultra PDIR tank mix combinations improved Palmer amaranth control 14 DAT (92-100%) compared to Roundup Ultra alone (80%), due to the residual activity of these tank mix partners. All tank mix combinations improved Palmer amaranth control 35 DAT compared to Roundup Ultra alone. Because of limited late-season Palmer amaranth emergence, no differences in control existed between treatment combinations. Cotton lint yields were not different between treatments.