TWO YEAR EVALUATION OF COTTON TOLERANCE TO POST APPLICATION OF PROWL H20 Donnie K. Miller LSU AgCenter, Northeast Research Station St. Joseph, LA D. R. Lee LSU AgCenter Lake Providence, LA M.S. Mathews LSU AgCenter, Northeast Research Station

St. Joseph, LA

<u>Abstract</u>

Field studies were conducted at the Northeast Research Station in St. Joseph, La in 2006 and 2007 to evaluate application timing effects on Roundup Ready Flex cotton tolerance to postemergence application of Prowl H_2O . Treatments evaluated included Roundup Weathermax (glyphosate) at 32 oz/A applied alone or in combination with Prowl H_2O (pendimethalin) at 32 or 64 oz/A or Dual Magnum (s-metolachlor) at 16 or 32 oz/A. Treatments were applied to STV 4554 B2RF cotton in 2006 and DP 164 B2RF cotton in 2007 at the 4 to 5 or 6 to 8 leaf growth stage. Treatments were evaluated in a randomized complete block experimental design with four replications. Treatments were applied to each 6.67' by 40' plot at 15 GPA. Parameters measured included cotton injury and height 14 and 21 d after treatment (DAT) and seedcotton yield.

In 2006, 14 d after the 4 to 5 leaf application, Prowl H_2O at 32 (13%) or 64 oz/A (16%) and Dual Magnum at 32 oz/A (12%) resulted in similar injury, which was greater than the 6% observed with Dual Magnum at 16 oz/A. Injury following the 6 to 8 leaf application was no greater than 1% for any treatment. In 2007, averaged across application timing, injury with Prowl H_2O applied at 64 oz/A resulted in greatest injury of 11%. Prowl H_2O applied at 32 oz/A resulted in equivalent injury of 4 and 7%, respectively. Averaged across herbicide treatment, injury was greater following the 4 to 5 leaf application timing (8 vs 2%). At 21 DAT, injury was no greater than 1% following either application in both years. All treatments in both years resulted in similar plant height at 14 and 21 DAT. Cotton yield following application of Prowl H_2O or Dual Magnum ranged from 3250 to 3520 lb/A in 2006 and 2380 to 2589 lb/A in 2007 and was not reduced in comparison to yield for Roundup Weathermax applied alone.

POST over-the-top application of Prowl H_2O to 4 to 5 leaf cotton can result in greater initial injury than 6 to 8 leaf application. Injury observed was transient and not evident 21 DAT and did not result in negative effects on cotton growth or yield.