

MANAGING VOLUNTEER COTTON IN VARIOUS PRODUCTION AREAS OF TEXAS**G.D. Morgan****Texas AgriLife Extension Service****College Station, TX****R. Minzenmayer****Texas AgriLife Extension Service****San Angelo, TX****D. Mott****P. A. Baumann****Texas AgriLife Extension Service****College Station, TX****D. Drake****P. Halfmann****Texas AgriLife Extension Service****San Angelo, TX****M. Matocha****Texas AgriLife Extension Service****College Station, TX****Abstract**

With the overwhelming adoption of herbicide tolerant cotton varieties, glyphosate and glufosinate, management of volunteer cotton is a major challenge for many producers. Volunteer cotton is consistently a problem in the Southwestern cotton production regions due to high seed survival from one season to the next, especially when dry falls and winters occur. In South and Central Texas, the primary impetus for managing volunteer cotton is to continue the progress of eradicating the boll weevil and meeting the laws required by the boll weevil eradication program. Additionally, as development of 2,4-D and dicamba resistant cotton varieties approach the market, volunteer cotton will become much more difficult to manage and alternative chemistries need to be identified. The objective of this research is to evaluate the chemical management options (preemergence and postemergence) for controlling volunteer cotton at various growth stages. Four trials were initiated to evaluate chemical management of volunteer cotton. Seven preemergence herbicide treatments were applied 3 days after planting and one inch of irrigation was applied immediately following the herbicide application. In the postemergence trials, only NIS (0.25%v/v) was added to the treatments at the Burleson County location. The trial in Tom Green County was initiated following sorghum harvest in a producer's field. All trials were visually rated for herbicide efficacy (% control), regrowth, and boll weevil hostability. Data were analyzed using ARM software. Several of the preemergence herbicides, Balance Flex, Corvus, Integrity, and Basis, provided over 50% reduction in plant stands at 17 days after treatment. However, the surviving plants in these treatments were only slightly suppressed (<30%) at 39 DAT and became hostable with 7 days of the untreated check. Integrity was the only preemergence treatment that virtually prevented (99%) cotton emergence at 17 and through 39 DAT. Numerous contact-type herbicides and harvest-aid compounds were moderately effective (75-85%) at desiccating 5 and 10 leaf cotton plants at 14 DAT; however, regrowth quickly occurred. Only Gramoxone Inteon (24 and 48 oz/a) exceeded the 90% control at both ratings and had minimal regrowth on 5 and 10 leaf cotton. However, hostable plants were present in these treatments at six weeks and beyond. The most effective sulfonylurea herbicide on 5 and 10 leaf cotton at a labeled rate was Affinity Broadspec (1 oz/a). The 2,4-D and Starane were the most effective and consistent treatments, and were the only treatments that prevented hostable plants at 63 and 42 DAT for both the 5 and 10 leaf cotton, respectively. At the Tom Green County location, several row crop and pasture herbicides were evaluated for managing mature cotton plants with 10-12 day old bolls. The contact-type herbicides provided decent (>75%) initial control of the large cotton plants. However, conditions were favorable for regrowth and hostable plants were present in these treatments by 37 DAT. The hormone-type herbicides (Milestone and Chaparral) provided poor initial control, but did cause the cotton plants to abort current fruit and prevented new fruit development. In conclusion, very few herbicides are currently labeled in corn, sorghum, or wheat that provide excellent control of small and larger cotton and prevent boll weevil hostable plants beyond 40 days after treatment. Additional herbicides need to be identified to provide more options for managing herbicide tolerant cotton varieties and to insure the success of the boll weevil eradication program in Texas.