

LUMAX (S-METOLACHLOR & ATRAZINE & MESOTRIONE) PERFORMANCE IN GRAIN SORGHUM. David L. Regehr, Gary L. Cramer, Curtis R. Thompson, Phillip W. Stahlman, and Patrick W. Geier, Professor, Sedgwick County Extension Agriculture Agent, and Professor, Kansas State University, Manhattan 66506, and Professor and Assistant Scientist, Agricultural Research Center, Hays 67601.

In 2006, a Section 18 Emergency Exemption allowed the use of Lumax herbicide on grain sorghum in Kansas, to control triazine- and/or ALS-resistant broadleaf weeds. Field experiments were established in Sedgwick and Stevens Counties, and at Hays, to compare soil-applied Lumax treatments to standard soil-applied s-metolachlor plus atrazine products and to foliar-applied alternatives that, depending on location, included prosulfuron, dicamba plus atrazine, fluroxypyr, carfentrazone-ethyl, bromoxynil, and 2,4-D. All locations received adequate precipitation to activate the soil-applied herbicides.

At Colwich in Sedgwick County, Lumax, s-metolachlor plus atrazine, atrazine, and s-metolachlor were applied three days after planting, just as an extremely heavy population of Palmer amaranth was about to emerge. Lumax provided significantly better pigweed control than any other treatment, but even this treatment had five to ten pigweeds per plot that escaped control, and sorghum yield was reduced 34% compared to the weed-free check. However, this was much less yield loss than the 87, 86, and 61% loss suffered by atrazine, s-metolachlor, and s-metolachlor plus atrazine, respectively.

At Clearwater in Sedgwick County, Lumax was the only treatment to provide satisfactory, season-long control of Palmer amaranth that appeared to be both triazine- and ALS-resistant.

In Stevens County, kochia, Russian thistle, and Palmer amaranth populations appeared not to be triazine- or ALS-resistant. Soil-applied s-metolachlor plus atrazine, and atrazine followed by foliar-applied prosulfuron, provided excellent control of weeds. This control significantly surpassed that of Lumax in some instances. At this location, some plots suffered from kochia that flourished following inadequate control by the preplant burndown treatment.

At Hays, weed infestations were light. Preplant Lumax gave better control of prostrate spurge, tumble pigweed, and puncturevine, than did s-metolachlor plus atrazine. Among foliar-applied treatments, fluroxypyr plus atrazine and carfentrazone-ethyl plus atrazine generally out-performed dicamba plus atrazine, and carfentrazone-ethyl plus 2,4-D.