COMPARISONS OF KIH-485 AND S-METOLACHLOR FOR WEED CONTROL IN CORN. Randall S. Currie and David L. Regehr, Associate Professor, Kansas State University, SW Research-Extension Center, Garden City, KS 67846, and Professor, Department of Agronomy, Kansas State University, Manhattan, KS 66506.

The chemistry of KIH-485 has not been released at this time. From more than 25 research reports and abstracts published by the North Central Weed Science Society in 2003 and 2004, one can infer that--contingent on many factors, such as manufacturing cost--it could be marketed in the future as a grass weed control compound competitive with several chloracetamide herbicides. Although work to date is far from conclusive, several researchers have reported that this compound provides superior control of a different spectrum of broadleaf weeds than is controlled by current chloracetamide herbicides. Although some of these studies measure control of *Amaranthus Spp.*, none of these reports discuss *Palmer amaranth* control. Therefore, it is the objective of this work to compare *Palmer amaranth, digitaria sanguinalis,* and *Sorghum bicolor* control provided by KIH-485 or S-metolachlor, with and without atrazine.

On a Ulysses silt loam near Garden City, Kansas, Palmer amaranth, yellow foxtail, crabgrass, sunflower, barnyard grass, and Rox orange sorghum (to simulate shatter cane)were seeded at 700,000; 344,124; 9,800,000; 40,000; 817,000; and 119,000 seeds/acre, respectively, into clean tilled fields before corn was planted. All weeds except Rox orange sorghum were planted with a carrier mixture of cracked corn at a rate of 40 lb/acre by using a 14-foot Great Plains Drill with tubes removed to allow weed seed to be dropped on the soil surface. Rox orange sorghum was drilled separately, with every third hole set at 1 inch deep, at 2 inches deep, or with the tube pulled for seed to be dropped on the soil surface. Weed seed was planted in 10-inch rows. This procedure was repeated at a second location in 2005. Triton 9461 HX LL corn was planted May 16, 2004, 1.5 inches deep in 30-inch rows at a rate of 36,000 seeds/acre with a John Deere Max Emerge II 6-row planter. Dekalb DK-6019 RR corn was similarly planted on May 16, 2005, at 34,200 seeds/acre. On a Reading silt loam near Manhattan, Asgrow RS 718 RR was planted on April 13, 2004, at 24,500 seeds/acre and a depth of 2 inches. A garden seeder was used to plant crabgrass and Rox orange sorghum. Palmer amaranth populations were naturally high and were not supplemented. KIH-485 at rates from 2.37 to 4.74 oz ai/a were compared with 20.3 oz ai/acre S-metolachor.

Early-season crabgrass control was similar at all locations. When corn reached the 8-leaf stage, only the high rates of KIH-485 out-performed S-metolachlor. At the 3- to 6-leaf stage and at the 8-leaf stage, KIH-485 provided better control of Rox orange sorghum than S-metolachlor and its tank mixes did. At comparable rates, S-metolachlor and KIH-485 provided similar control of Palmer amaranth at all rating dates. But only good control was achieved at 2 of 3 locations. At Garden City in 2005, early-season control ranged from 44 to 75% and, by the time corn had reached the 8-leaf stage, control had declined to 44 to 55%. All treatments increased corn yield over yield of the untreated plots. No statistically significant differences in yield were measured in 2004. In 2005, KIH-485 increased yield more than S-metolachlor treatment did. We speculate that the leaf surface lost to hail just before tassel, and the somewhat more persistent control provided by the higher rates of KIH-485, were responsible for this yield boost.