Weed Control in Sorghum with Kixor herbicides (Sharpen and Integrity)

Kixor herbicide technology, developed by BASF, is a new class of chemistry known as a pyrimidinediome. The active ingredient, saflufenacil is marketed alone as sharpen, or in combination with Outlook as Integrity. Studies were conducted in 2009 at three locations to evaluate sorghum tolerance and annual and perennial weed control with preplant burndown and preemergence treatments of Sharpen or Integrity. Preplant burndown studies, applied 14 days before sorghum planting, showed excellent control >90% of Texas blueweed, Field bindweed, and woollyleaf bursage. Control declined to 40-50% at 28 days after treatment (DAT), and to 20% or less by 42 DAT. (Table 1,2,3) These results indicate that Sharpen can provide burndown control of these weeds, but not long term control. Annual weeds such as kochia and Russian thistle were controlled 99-100% with Sharpen at 1 oz/A. (Table 4)

Sharpen was applied preemergence to sorghum at three locations including Lamesa (sandy loam soil), Lubbock (loam), and Halfway (clay loam soil) in mid-May of 2009. Two sorghum hybrids, Dekalb 44-20 and Pioneer 85G01, were planted at each location. Sharpen was applied at rates ranging from 1.3 – 3.0 oz/A and Integrity at 6.5 – 18 oz/A. At Lamesa, Sharpen applied at 1.3 oz/A injured the Pioneer Hybrid 6% but no crop injury was observed with the Dekalb varieties. No injury was observed with Integrity at 6.5 oz/A and yield were not affected. No injury was observed adn yields were not affected at the Lubbock Trial. At Halfway, the 1.3 oz/A rate caused slight early season sorghum injury >10%. No injury was observed with Integrity at rates up to 13 oz/A. Yield was not affected at any location following the slight early season injury oberserved. It does appear that there are differences between sorghum hybrids in their response to Sharpen applied PRE and this will be further investigated in 2010.

Sharpen is registered for use in sorghum in 2010. As a preplant burndown or preemergence treatement at a rate of 1-2 oz/A. When used postemergence, best results are obtained with the addition of a methylatial seed oil (MSO) at 1% v/v and ammonium sulfate at 1-2% v/v. Additional trials will be conducted in 2010 to determine control of additional weeds with Sharpen

Effective early-season control of pigweed and morningglory were achieved with Sharpen. This is a short residual herbicide and additional residuals such as atrazine or Milo-Pro will be needed for season- long weed control.