

Annual Grass Control in Clearfield Rice

Williams B.J. and Burns A.B.

Programs for controlling Amazon sprangletop and red rice were evaluated in several studies in 2004 and 2005. The trials were conducted at the Northeast Research Station near St. Joseph, LA on a Sharkey Clay soil and at the Macon Ridge Research near Winnsboro, LA on a Gigger Silt Loam soil. Rice was drill-seeded at 100 kg/ha to plots measuring 2 by 4.5 m. Permanent floods were established 4 to 5 weeks after planting. Nitrogen, in the form of prilled Urea, was applied at 126 kg/ha just before permanent flood. At panicle initiation an additional 42 kg/ha of nitrogen was applied. Herbicide treatments were applied in 140 L/ha of water using a CO₂ pressurized backpack sprayer. The experimental designs were randomized complete blocks and factorial treatment arrangements were used when appropriate.

In 2005, either 0.88 L/ha (13.5 oz/A) cyhalofop or 0.15 L/ha (2 oz/A) imazamox was mixed with 0.3 L/ha (4 oz/A) imazethapyr in the first or second imazethapyr application. Cyhalofop at 1.1 L/ha (15 oz/A) or 0.37 L/ha (5 oz/A) was also applied post flood following two applications of imazethapyr. Tank mixing one of the imazethapyr applications with either cyhalofop or imazamox improved sprangletop control compared to imazethapyr alone. Tank mixing the second imazethapyr application with cyhalofop or imazamox resulted in the best control (90 to 93%). Imazethapyr alone resulted in 78% sprangletop control. Applying, cyhalofop or imazamox post flood also resulted in excellent (90 to 92%) sprangletop control. In similar studies (4) conducted in 2004 and 2005, the most consistent sprangletop control (87 to 95%) was observed from post flood cyhalofop and imazamox applications. Treatments were also applied at the 3-4 lf weed stage, but control was very erratic (53 to 90%). Sprangletop control from fenoxaprop was also erratic, ranging from 53 to 88%.

In 2004 and 2005, red rice control as affected by imazamox timing and rate was evaluated in 3 trials. Imazamox was applied at 0.3 L/ha (4 oz/A), 0.37 L/ha (5oz/A), or 0.44 L/ha (6 oz/ha) at the 2-4 tiller, PI, PI+10 or P+17 stages. Few differences in rate were observed, but timing was critical. If applied too early, coverage was an issue, and red rice was often too large at the PI+17 timing. In general the best control was observed after red rice emerged from the canopy just before or at the boot stage of red rice. Beyond also controlled Amazon sprangletop and barnyardgrass when applications were made before early boot stages. In 2005, two 4 oz/A imazethapyr applications controlled red rice as well (87%) as two 0.44 L/ha (6 oz/A) imazethapyr applications. The best red rice control (99%) was observed when two 4 oz/A imazethapyr applications were followed by 5 oz/A imazamox at the boot stage. Imazamox alone controlled red rice 57, 70, 80 and 90% when applied at the 1-2 lf, 4-5 lf, 1 WAF and Boot timings.

A study was conducted in 2004 and 2005 to evaluate the effect of tank mixing 4 oz/A imazethapyr with 1.5 L/ha (1.3 qt/A), 3 L/ha (2.6 qt/A) and 6 L/ha (5.2 qt/A) pendimethalin applied to 1-2 leaf rice on sprangletop and red rice control. Sprangletop and red rice control improved when the pendimethalin rate was increased from 1.2 to 2.6 qt/A but not when increased from 2.6 to 5.2 qt/A. Single applications of pendimethalin plus imazethapyr resulted at least 10%, and as much as 30%, more sprangletop and red rice control than single applications of imazethapyr. Imazethapyr plus 2.6 qt/A pendimethalin resulted in superior sprangletop control and red rice control similar to two imazethapyr applications. Imazethapyr plus 2.6 qt/A pendimethalin followed by imazethapyr resulted in sprangletop and red rice control equal or superior to two imazethapyr applications followed by 5 oz/A imazamox.

These trials demonstrate that cyhalofop can be incorporated into Clearfield rice systems to improve sprangletop control, with post flood applications being most effective. Also, both pendimethalin and imazamox can improve sprangletop and red rice control. Imazamox is most effective post flood after weeds emerge from the canopy but before the boot stage. Pendimethalin at 2.6 qt/A applied with imazethapyr at the 1-2 lf stage is very promising, but additional research on rice response to high pendimethalin application rates is needed.