

OBJECTIVES

- Evaluate programs for controlling Amazon sprangletop and red rice in Clearfield rice.

MATERIALS and METHODS

- 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 90 lbs/A to plots measuring 7 by 15 ft. Permanent floods were established 4 to 5 weeks after planting. Nitrogen, in the form of prilled Urea, was applied at 120 lbs/A just before permanent flood. At panicle initiation an additional 30 lbs/A of nitrogen was applied.

- Herbicide treatments were applied, using CO₂ pressurized backpack sprayer calibrated to deliver 15 GPA.
- Studies/treatments:
 - **Figure 1.** In 2005, either 13.5 oz/A Clincher or 2 oz/A Beyond was mixed with 4 oz/A Newpath in the first or second Newpath application. Clincher at 15 oz/A or 5 oz/A Beyond was also applied post flood following two Newpath applications.
 - **Figures 2-4, Table 1.** In 2004 and 2005, red rice control as affected by Beyond rate and timing was evaluated in 3 trials. Imazamox was applied at 4 oz/A, 5oz/A, or 6 oz/A at the 2-4 tiller, PI, PI+10 or PI+17 stages.
 - **Figures 5-9.** Studies were conducted in 2004 and 2005 to evaluate the effect of tank mixing 4 oz/A Newpath with 1.3 qt/A, 2.6 qt/A and 5.2 qt/A Prowl applied to 1-2 leaf rice on red rice, sprangletop and eclipta control.
- The experimental designs were randomized complete blocks and factorial treatment arrangements were used when appropriate.



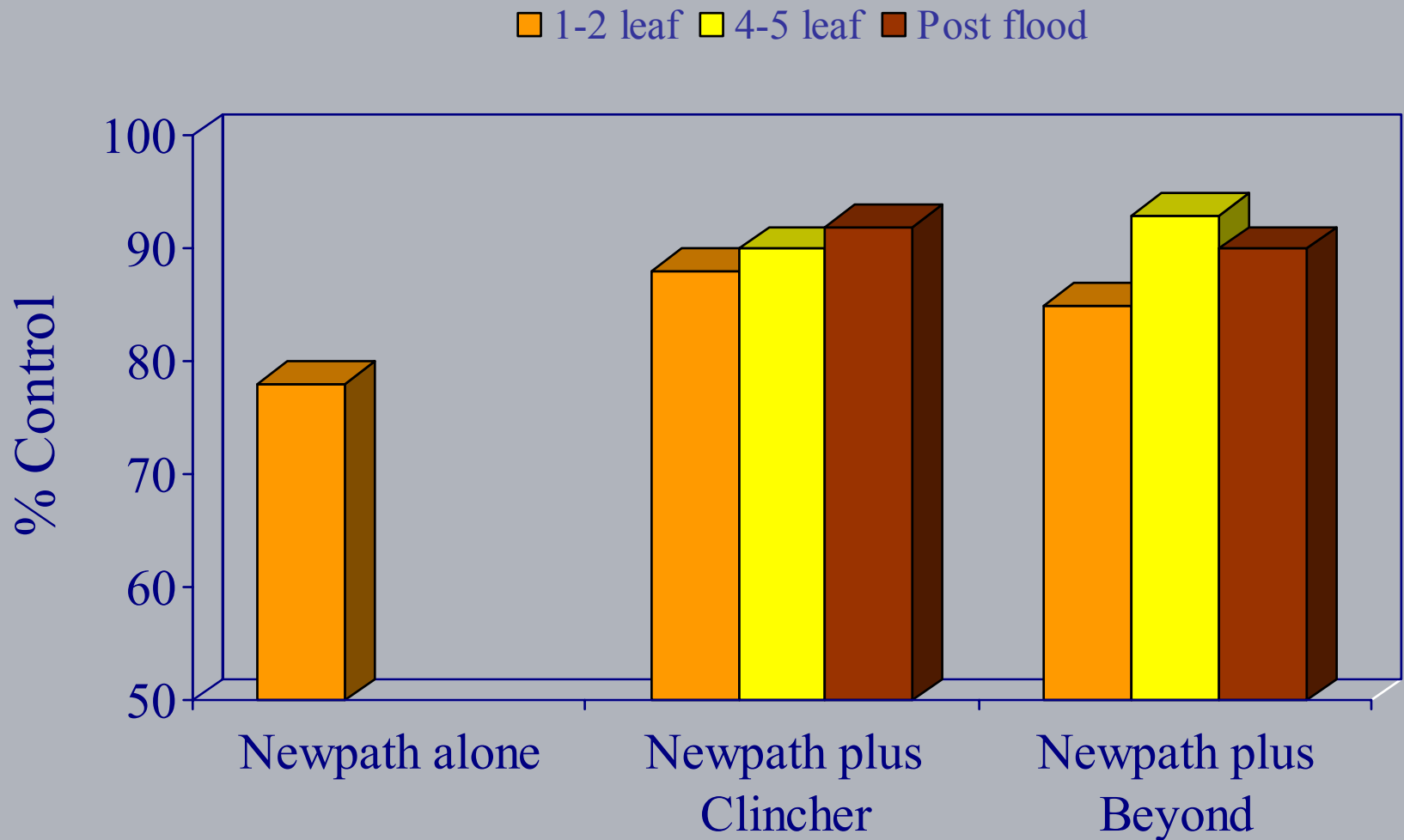


Figure 1. Effect of mixing or following Newpath with Clincher or Beyond on late season Amazon sprangletop control. Newpath (4 oz/A) was applied at the 1-2 and 4-5 leaf stages. Newpath was applied alone, mixed with Clincher (13.5 oz/A) or Beyond (2 oz/A) either at the 1-2 or 4-5 leaf stage, or followed by Clincher (15 oz/A) or Beyond (5 oz/A) post flood.

Table 1. Red rice growth stage when Beyond was applied on commercial rice at the 2-4 tiller, panicle initiation (PI), PI plus 10, and PI plus 17 stage.

Beyond application timing	St. Joseph	Macon Ridge	
	2004	2004	2005
2-4 Tiller	1-2 Tillers	1-2 Tillers	2-4 Tillers
Panicle initiation (PI)	2-4 Tillers	4-5 Tillers	1 Node
PI plus 10 days	1 Node	½” Panicle	Early boot
PI plus 17 days	3 Node	Early boot	Late boot



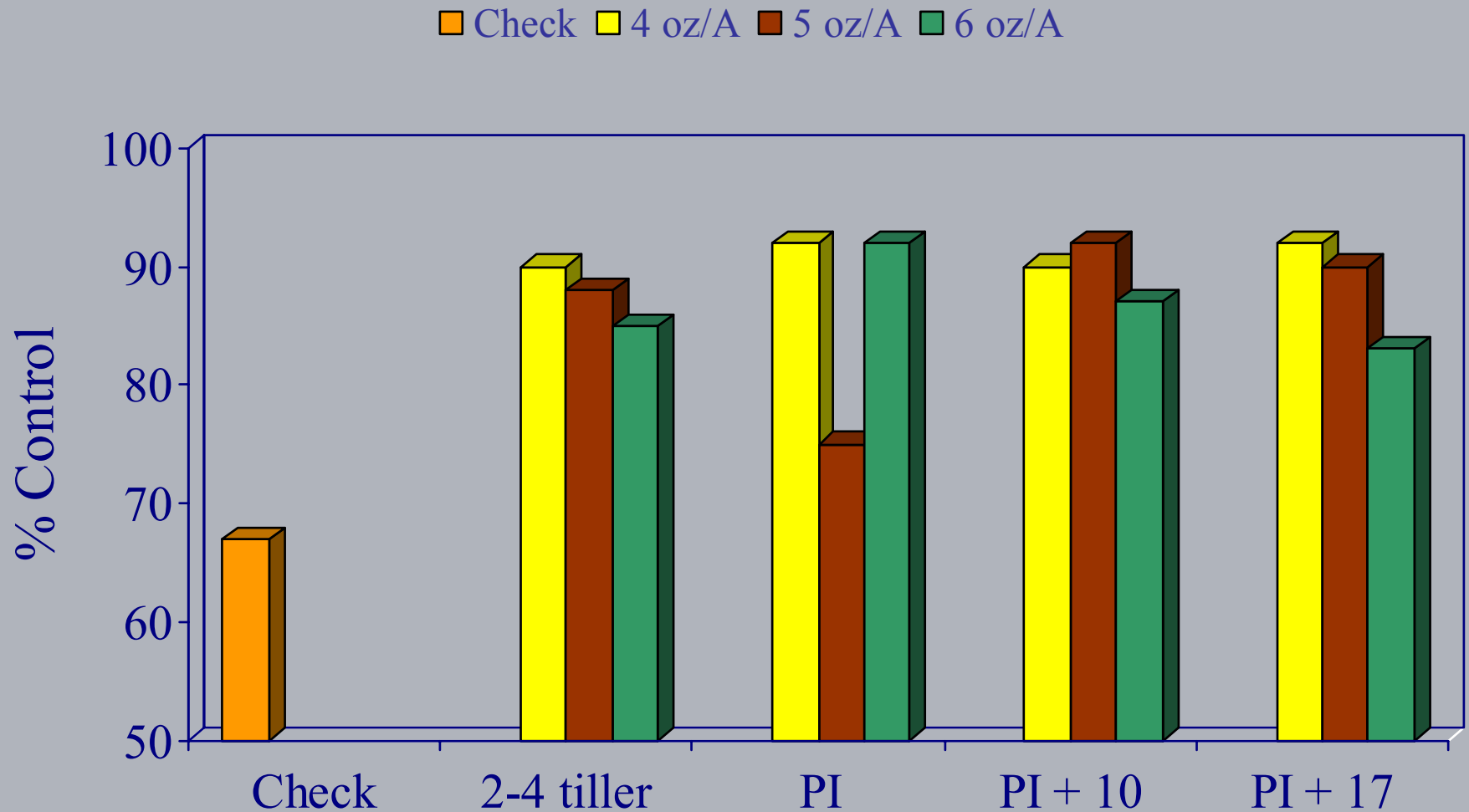


Figure 2. Effect of Beyond rate and timing on red rice control. Newpath (4 oz/A) was applied at the 1-2 stage and followed by Beyond at the 2-4 tiller, PI, PI + 10 or PI + 17 stages. All timings were based on commercial rice development and all Beyond treatments were applied post flood. Red rice stage at the time of application can be found in Table 1.

■ Check
 ■ 4 oz/A
 ■ 5 oz/A
 ■ 6 oz/A

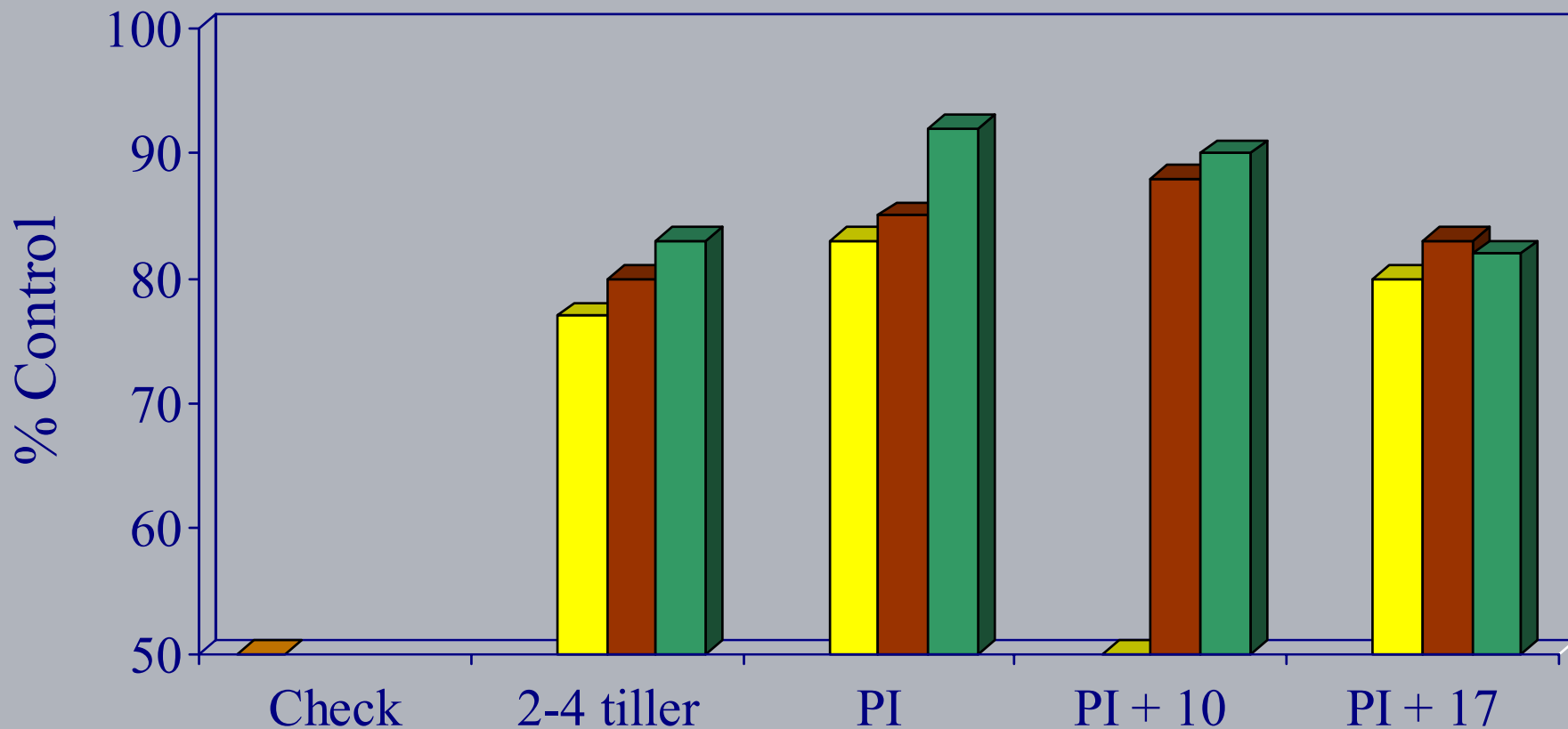


Figure 3. Effect of Beyond rate and timing on red rice control. Newpath (4 oz/A) was applied at the 1-2 stage and followed by Beyond at the 2-4 tiller, PI, PI + 10 or PI + 17 stages. All timings were based on commercial rice development and all Beyond treatments were applied post flood. Red rice stage at the time of application can be found in Table 1.

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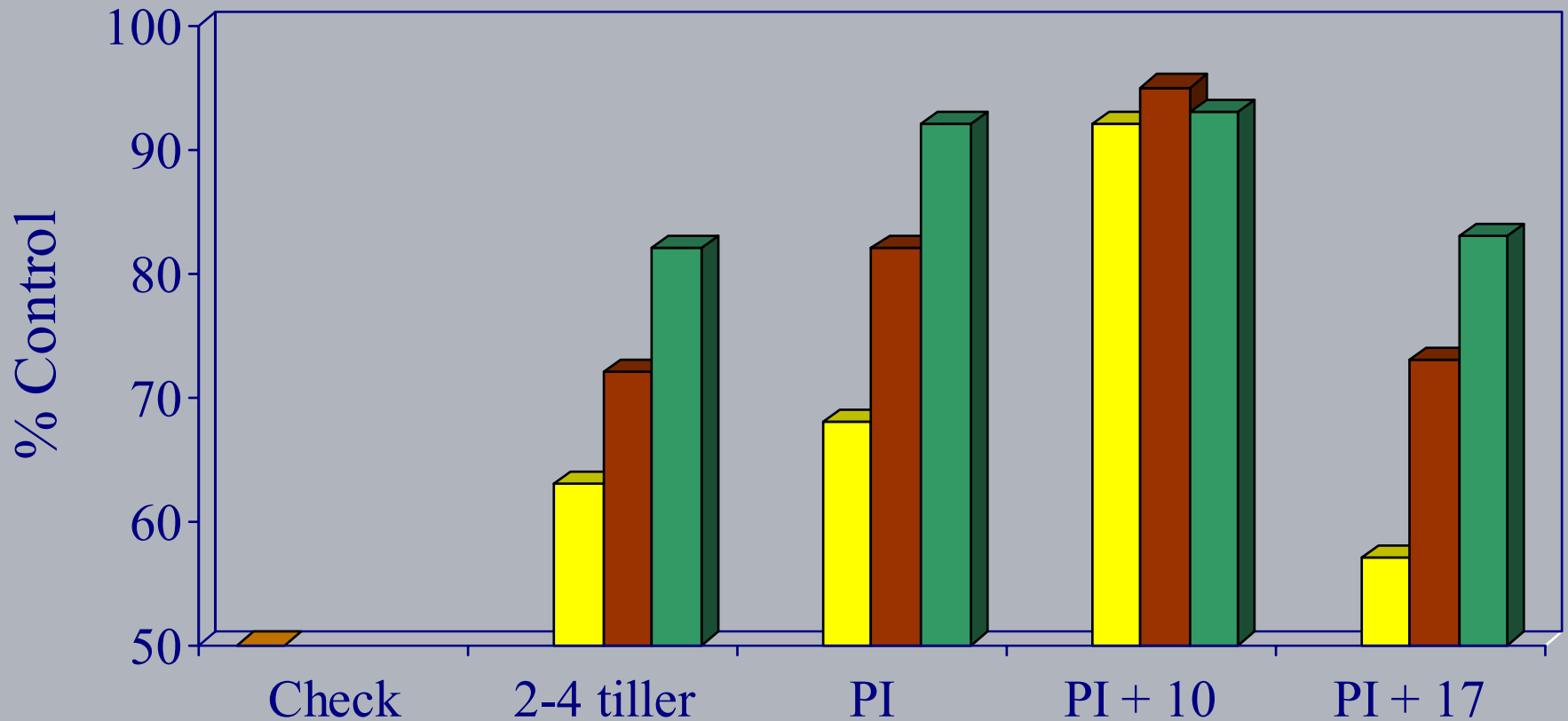


Figure 4. Effect of Beyond rate and timing on red rice control. Newpath (4 oz/A) was applied at the 1-2 stage and followed by Beyond at the 2-4 tiller, PI, PI + 10 or PI + 17 stages. All timings were based on commercial rice development and all Beyond treatments were applied post flood. Red rice stage at the time of application can be found in Table 1.

■ 0
 ■ 1.3 qt Prowl
 ■ 2.6 qt Prowl
 ■ 5.2 qt Prowl

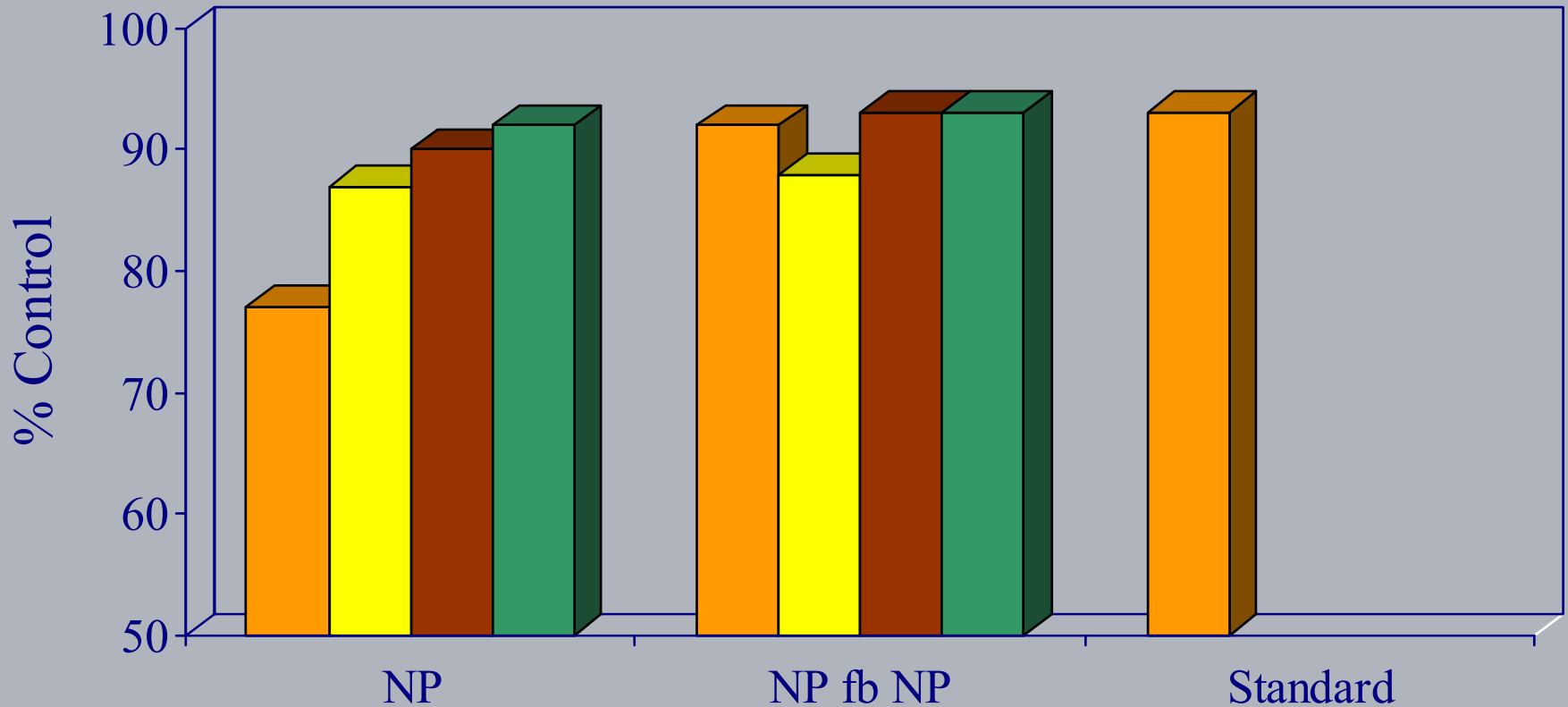


Figure 5. Effect of tank mixing Prowl with Newpath on red rice control. In the first series, Newpath (4 oz/A) was applied alone or mixed with Prowl at 1.3, 2.6, or 5.2 qt/A at the 1-2 leaf stage. In the second series, Newpath (4 oz/A) was applied alone or mixed with Prowl at 1.3, 2.6, or 5.2 qt/A at the 1-2 leaf stage and followed by 4 oz/A Newpath 10 DPF. The standard program was two 4 oz/A Newpath applications followed by 5 oz/A Beyond.

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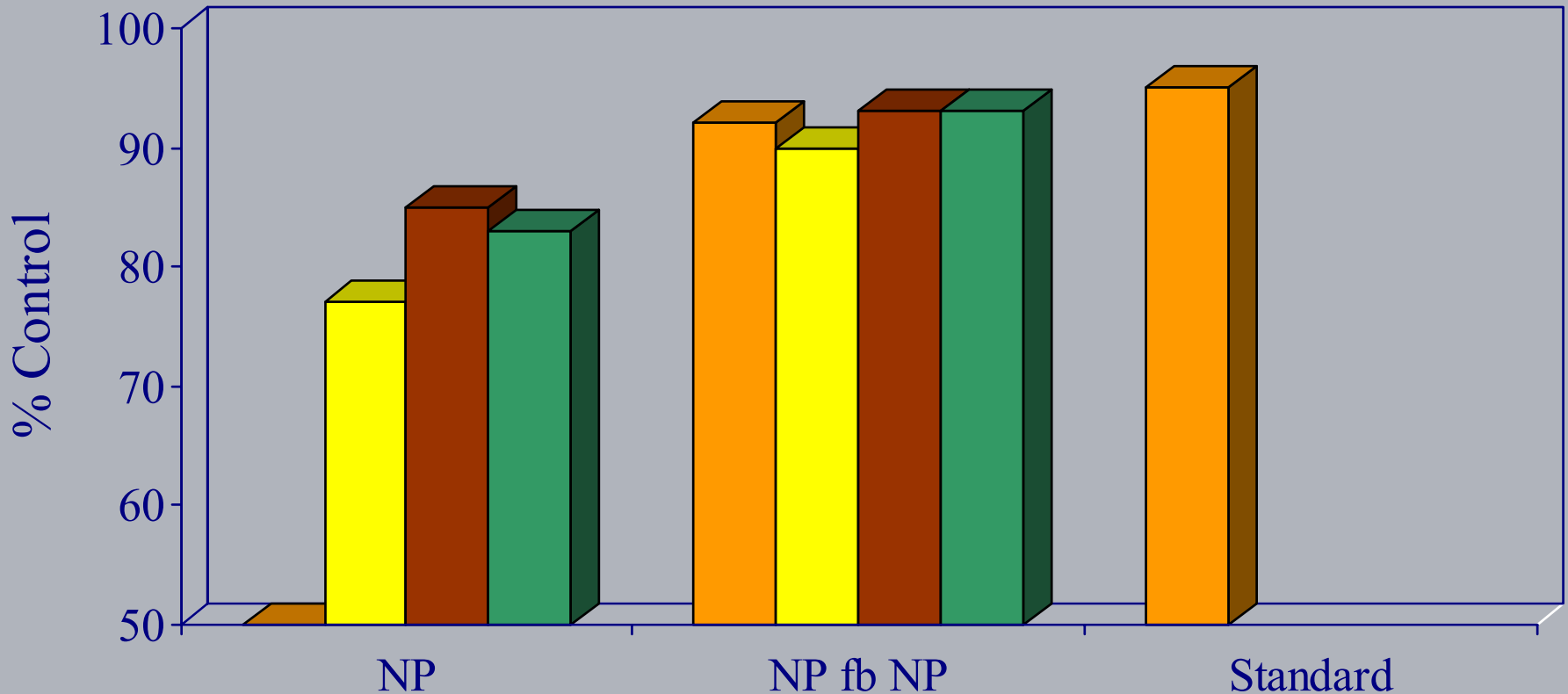


Figure 6. Effect of tank mixing Prowl with Newpath on red rice control. In the first series, Newpath (4 oz/A) was applied alone or mixed with Prowl at 1.3, 2.6, or 5.2 qt/A at the 1-2 leaf stage. In the second series, Newpath (4 oz/A) was applied alone or mixed with Prowl at 1.3, 2.6, or 5.2 qt/A at the 1-2 leaf stage and followed by 4 oz/A Newpath 10 DPF. The standard program was two 4 oz/A Newpath applications followed by 5 oz/A Beyond.

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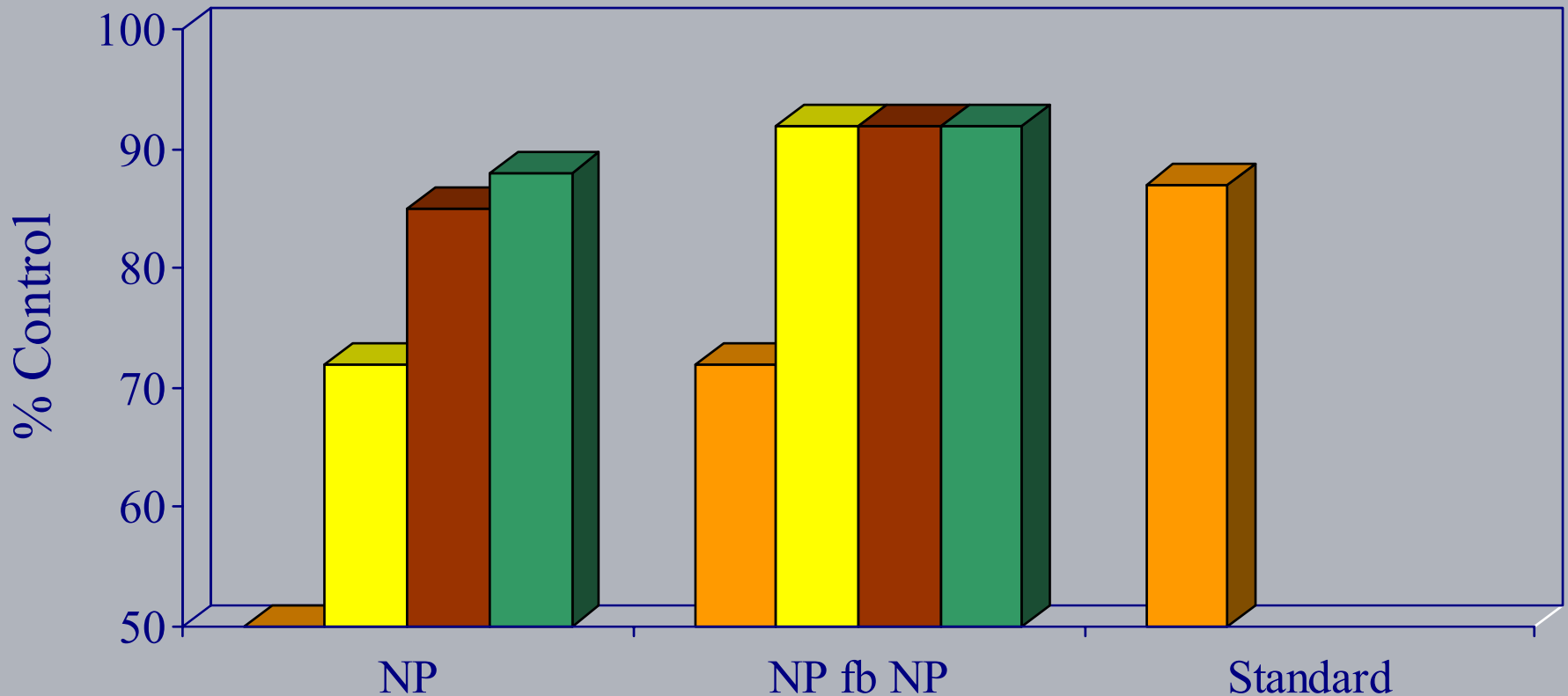


Figure 7. Effect of tank mixing Prowl with Newpath on sprangletop control. In the first series, Newpath (4 oz/A) was applied alone or mixed with Prowl at 1.3, 2.6, or 5.2 qt/A at the 1-2 leaf stage. In the second series, Newpath (4 oz/A) was applied alone or mixed with Prowl at 1.3, 2.6, or 5.2 qt/A at the 1-2 leaf stage and followed by 4 oz/A Newpath 10 DPF. The standard program was two 4 oz/A Newpath applications followed by 5 oz/A Beyond.

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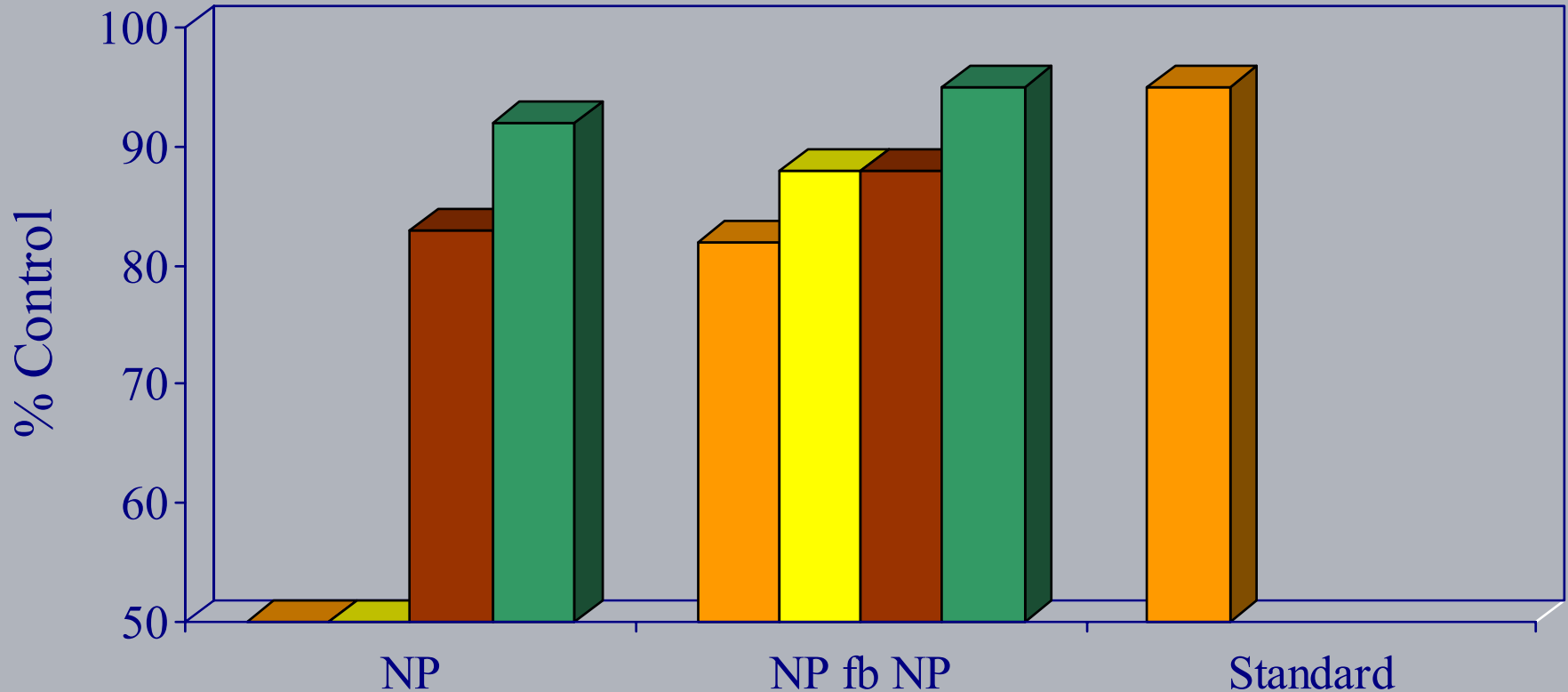


Figure 8. Effect of tank mixing Prowl with Newpath on eclipta control. In the first series, Newpath (4 oz/A) was applied alone or mixed with Prowl at 1.3, 2.6, or 5.2 qt/A at the 1-2 leaf stage. In the second series, Newpath (4 oz/A) was applied alone or mixed with Prowl at 1.3, 2.6, or 5.2 qt/A at the 1-2 leaf stage and followed by 4 oz/A Newpath 10 DPF. The standard program was two 4 oz/A Newpath applications followed by 5 oz/A Beyond.

0 1.3 qt Prowl 2.6 qt Prowl 5.2 qt Prowl

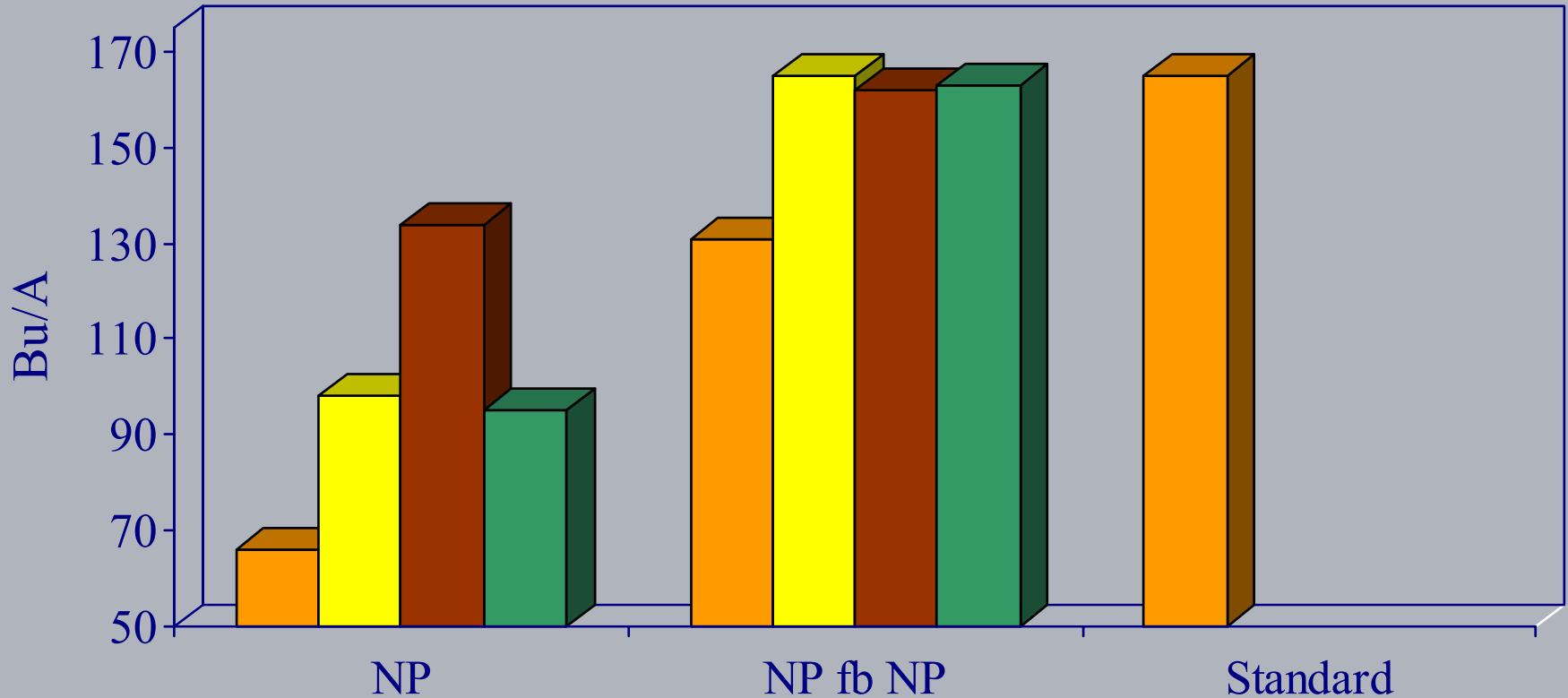


Figure 9. Effect of tank mixing Prowl with Newpath on rice yield. In the first series, Newpath (4 oz/A) was applied alone or mixed with Prowl at 1.3, 2.6, or 5.2 qt/A at the 1-2 leaf stage. In the second series, Newpath (4 oz/A) was applied alone or mixed with Prowl at 1.3, 2.6, or 5.2 qt/A at the 1-2 leaf stage and followed by 4 oz/A Newpath 10 DPF. The standard program was two 4 oz/A Newpath applications followed by 5 oz/A Beyond.

SUMMARY/CONCLUSIONS

- Tank mixing Newpath with either Clincher or Beyond improved sprangletop control (Figure 1). Newpath alone resulted in 78% sprangletop control.
- Overall, tank mixing the second Newpath application with Clincher or Beyond resulted in the best control (90 to 93%).
- Clincher and Beyond applied post flood also resulted in excellent (90 to 92%) sprangletop control.
- In similar studies conducted in 2004 and 2005, the most consistent sprangletop control (87 to 95%) was observed from Clincher or Beyond applied post flood (data not shown). Control was erratic (53 to 90%) when applications were made at the 3-4 leaf stage. Sprangletop control from Ricestar was also erratic, ranging from 53 to 88%.

- Beyond rates influenced red rice control, but application timing appeared to be the most critical factor influencing red rice control with Beyond (Figures 2-5, Table 1).
- 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 (data not shown).
- In similar study 2005, red rice control (87%) from two 4 oz Newpath applications was similar to two 6 oz Newpath applications (data not shown). The best red rice control (99%) was observed when two 4 oz/A Newpath applications were

followed by 5 oz/A Beyond at the boot stage. Beyond alone controlled red rice 57, 70, 80 and 90% when applied at the 1-2 lf, 4-5 lf, 1 WAF and Boot timings.

- Red rice (Figure 5-6), sprangletop (Figure 7), eclipta (Figure 8), and rice yield (Figure 9) improved when the when Prowl was tank mixed with Newpath.
- Single applications of Prowl plus Newpath resulted at least 10%, and as much as 30%, more sprangletop and red rice control than single applications of Newpath.
- Newpath plus 2.6 qt/A Prowl resulted in superior sprangletop control and red rice control similar to two imazethapyr applications. Newpath plus 2.6 qt/A Prowl followed by Newpath resulted in sprangletop and red rice control equal or superior to two Newpath applications followed by 5 oz/A Beyond.

- These trials demonstrate that Clincher can be incorporated into Clearfield rice systems to improve sprangletop control, with post flood applications being most effective.
- Prowl and Beyond can improve sprangletop and red rice control. Beyond is most effective post flood after weeds emerge from the canopy but before the boot stage.
- Prowl 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 Prowl application rates is needed.

ACKNOWLEDGEMENTS

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