

ABSTRACT

Broad Spectrum Weed Control in California Rice with a Pinpoint Application of V-10029 80 WP plus Thiobencarb 8 EC¹

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V-10029 80 WP (bispyribac-sodium) is a post-emergence herbicide which has excellent efficacy against certain grasses, sedges and broadleaf weeds with selectivity for rice. It inhibits the plant enzyme acetolactate synthase (ALS), thus blocking branched-chain amino acid biosynthesis. V-10029 controls sensitive species with a cessation of growth followed by chlorosis, necrosis, and plant death. This usually occurs in 3 to 4 days.

V-10029 80 WP has excellent activity on barnyardgrass, *Echinochola crus-galli*, watergrass *E. oryzoides*, and ricefield bulrush, *Scirpus mucronatus* with minimal phytotoxicity to the rice plant. Slight stunting of the rice may occur within 3 to 5 days of application. The rice plant recovers within 10 to 14 days. Slight to moderate root pruning may appear within 5 to 7 days. Root growth recovers with 10 to 14 days after application. Phytotoxic response can be minimized with a good fertility program. Phytotoxicity does not have a negative effect on maturity or yield.

V-10029 80 WP has a wide application window for control of barnyardgrass and watergrass. The herbicide can be applied from 1st leaf to 1st tiller stages of growth. Use rates range from 10 to 18 grams ai/A. Optimum use rates are 10 to 12 grams ai/A with the grass being at the 3 to 5 leaf stage. Higher use rates may be necessary for larger grass sizes. A non-ionic silicone based surfactant is required at rates of 0.125 to 0.25% v/v.

In 1997, joint testing was conducted between Valent USA Corporation and United Agri Products, to determine the tank-mix activity of V-10029 80 WP and thiobencarb 8 EC with various rates of Silwet L-77, a 100% Silicone-polyether copolymer, applied at pinpoint in water seeded rice. Thiobencarb at 4 lbs ai/A plus 12 grams ai/A of V-10029, was investigated. Silwet L-77 was tank-mixed with V-10029 plus thiobencarb at concentrations of 0.0, 0.5, 0.25, 0.1875, 0.125, 0.0625, 0.0313% v/v. All treatments were applied at pinpoint flood when the rice and watergrass were at the 3 to 5 leaf stage. Additional treatments included: Thiobencarb 8 EC at 4 lbs ai/A, and V-10029 80 WP at 12 grams ai/A plus Silwet L-77 @ 0.25% v/v.

Weed control ratings for watergrass, taken at 30 days after the application, indicated that individual applications of thiobencarb and V-10029 provided 87.5% and 98.5%, control respectively. The tank-mix of V-10029 plus thiobencarb provided 100% grass control regardless of Silwet L-77 concentration. All treatments of V-10029, provided 100% control of ricefield bulrush. Thiobencarb provided good control of smallflower umbrellaplant (91.3%). Economic control of smallflower umbrellasedge from V-10029 was not observed. The tank-mix provided economic control of all three weed species.

The concentration of Silwet L-77 did not have any effect on the efficacy of the tank-mix of V-10029 plus thiobencarb. There were no statistical differences between concentrations of Silwet L-77 for control of any of the weeds species in the trial. However, V-10029 alone does require a silicone surfactant for activation.

In conclusion, the tank-mix of V-10029 plus thiobencarb provided excellent control of watergrass, ricefield bulrush and smallflower umbrellaplant throughout the growing season. Concentration of Silwet L-77 in the tank-mix of V-10029 plus thiobencarb did not influence weed control.

1. Thiobencarb 8 EC is sold as Abolish 8 EC by United Agri Products in California