

HERBICIDE COMBINATIONS WITH SAFLUFENACIL FOR PREPLANT BURNDOWN WEED MANAGEMENT IN SOYBEAN. Adam C. Hixson, John S. Harden, Leo D. Charvat, Troy D. Klingaman, and Walter E. Thomas, Agricultural Biologist, Senior Research Associate, Biology Area Development Manager, Biology Area Development Manager, and Field Biologist, BASF Corporation, Research Triangle Park, NC 27709.

Saflufenacil is a new herbicide being developed for broadleaf weed control in several crop and non-crop use patterns with federal registration expected in late 2009. Control of sensitive broadleaf weed species is through the inhibition of the protoporphyrinogen IX oxidase enzyme. Field research trials have been conducted across the United States and Canada to evaluate weed control and crop safety of saflufenacil in soybean. Saflufenacil provides rapid burndown of emerged broadleaf weeds when applied in conservation till or no-till soybean management systems. Saflufenacil has been shown to effectively control many key broadleaf species, including glyphosate or ALS resistant biotypes, such as horseweed (*Conyza canadensis*), prickly lettuce (*Lactuca serriola*), common lambsquarters (*Chenopodium album*), ragweed species (*Ambrosia* spp), and pigweed species (*Amaranthus* spp). Research has focused on burndown use rates of 18-25 g ai/ha. Results indicate that saflufenacil can be tank mixed with glyphosate to increase the burndown weed spectrum to include emerged grasses. Imazethapyr, imazaquin, pendimethalin or 2,4-D can be added to saflufenacil and glyphosate to further extend the residual weed control period up to an in-crop application of glyphosate in glyphosate-tolerant soybean cropping systems. These herbicide combinations with saflufenacil have provided greater than 80% broadleaf and grass weed control for 4 to 6 weeks following application. Research has indicated that soybean tolerance is good to excellent at the planned burndown use rates. Saflufenacil in combination with glyphosate and a residual herbicide can provide an effective treatment for preplant burndown and residual weed control in soybean cropping systems.