

WINTER WHEAT RESPONSE AND WEED CONTROL EFFICACY OF SAFLUFENACIL APPLIED WITH GROWTH REGULATOR HERBICIDES. John C. Frihauf, Phillip W. Stahlman, and Patrick W. Geier, Graduate Research Assistant, Kansas State University, Manhattan, KS 66502, Professor, and Assistant Scientist, respectively, Kansas State University Agricultural Research Center, Hays, KS 67601.

Saflufenacil is an experimental herbicide developed for burndown and preemergence (PRE) control of broadleaf weeds in small grains, soybeans, and various other crops. This herbicide inhibits protoporphyrinogen oxidase and may be a useful tool to control herbicide resistant weeds. However, the use of saflufenacil in winter wheat may be limited since many growers prefer to apply spring postemergence (POST) herbicides after wheat has broken dormancy. Field experiments were conducted at two locations during the 2007 to 2008 winter wheat growing season to determine winter wheat and weed response to POST-applied saflufenacil in combination with 2,4-D amine, 2,4-D ester, MCPA ester, dicamba, or bentazon. Saflufenacil was POST-applied at 13 or 25 g/ha alone or tank-mixed with 2,4-D amine, 2,4-D ester, MCPA ester, dicamba, or bentazon (533, 533, 520, 140, or 560 g/ha, respectively). Companion herbicides were also applied alone and COC was included at 1% v/v with all solo saflufenacil treatments and tank-mixes with bentazon. Treatments including saflufenacil provided greater than 90% control of blue mustard. Flixweed control with saflufenacil treatments was also excellent ($\geq 95\%$) except when tank-mixed with bentazon (53%). Averaged over experiments, solo application of saflufenacil caused 21% necrosis, but saflufenacil in combination with MCPA ester or 2,4-D ester increased necrosis by 10% compared to saflufenacil applied alone at 3 or 4 DAT. Necrosis was minimal in the remaining treatments at both locations. Grain yields of all herbicide-treated wheat at both locations were higher than the untreated control. Grain yields were greatest for wheat receiving saflufenacil in the Hays experiment; whereas, grain yields in the Manhattan experiment were similar among most herbicide treatments. Generally, efficacy, necrosis, and yield data showed saflufenacil at 25 g/ha applied alone or tank-mixed with 2,4-D amine, 2,4-D ester, MCPA ester, dicamba, or bentazon was safe in winter wheat and provided excellent control of blue mustard. However, the addition of bentazon with saflufenacil reduced flixweed control to unacceptable levels.