RESPONSE OF WINTER WHEAT AND WINTER ANNUAL WEEDS TO TWO SAFLUFENACIL FORMULATIONS. 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 for burndown and preemergence (PRE) control of broadleaf weeds in various crops. Research has shown preplant and PRE applications of saflufenacil to be generally safe to winter wheat. However, many wheat producers may be reluctant to use this herbicide because many to apply herbicides postemergence (POST) after wheat breaks dormancy in the spring. Field experiments were conducted at two locations during the 2007 to 2008 winter wheat growing season to evaluate the response of winter wheat and winter annual weeds to two saflufenacil formulations POST applied alone or mixed with 2,4-D amine. Herbicide treatments were POST applications of emulsifiable concentrate (EC) and water dispersible granule (WDG) formulations of saflufenacil at 13, 25, and 50 g/ha alone and in combination with 2,4-D amine at 533 g/ha. 2,4-D amine was also applied alone at 533 g/ha and crop oil concentrate (Agri-dex) at 1.0% v/v was added in all treatments except those that included 2,4-D amine. Blue mustard control was ≥ 90% when treatments included saflufenacil in both experiments regardless of saflufenacil formulation or rate. Saflufenacil at 25 and 50 g/ha controlled flixweed ≥ 90% regardless of formulation, but control was reduced when the WDG formulation was mixed with 2,4-D amine in both experiments. Generally the WDG formulation caused less necrosis than the EC formulation, and tank-mixing either formulation with 2,4-D amine reduced necrosis compared to solo treatments with adjuvant in both experiments. Wheat eventually fully recovered from necrosis in both experiments. Grain yields were similar among all herbicide-treated wheat in the Hays experiment. Yields of most herbicide-treated wheat were similar to wheat receiving 2,4-D amine at Manhattan. However, solo applications of EC and WGD formulations at 13 g/ha, and the tank-mix of the WDG formulation at 13 g/ha with 2,4-D resulted in yields 12, 11, & 10%, less than wheat treated with 2,4-D alone. Efficacy, injury, and yield data generally indicate POST applications of either saflufenacil formulation alone or tank-mixed with 2,4-D amine are safe in winter wheat and provide excellent control of blue mustard and flixweed.

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