

SOYBEAN DOUBLE CROP RESPONSE TO SPRING APPLIED PYROXSULAM IN WINTER WHEAT. Gary A. Finn, D. Chad Cummings, Monte R. Weimer, Jeffrey M. Ellis, Roger E. Gast, Steve P. Nolting, Patrick W. Geier, Douglas E. Shoup, Thomas F. Peeper, and Phil Westra, Dow AgroSciences, Indianapolis, IN 46268; Assistant Scientist, Kansas State University, Hays, KS 67601; Southeast Area Agronomist, Kansas State University, Chanute, KS 66720; Professor, Oklahoma State University, Stillwater, OK 74078; Professor, Colorado State University, Ft. Collins, CO 80523.

Nine field research trials were conducted over a two year period across the Central Plains states of Colorado, Kansas and Oklahoma to evaluate the crop response of soybean following a spring application of pyroxsulam (PowerFlex<sup>®</sup> Herbicide) in winter wheat. Four trials were conducted in 2008 and five trials conducted in 2009. Soybean response was evaluated following a spring application of pyroxsulam (1X use rate = 18.4 g ha<sup>-1</sup>) and related comparison herbicides propoxycarbazone (1X use rate = 44 g ha<sup>-1</sup>), mesosulfuron (1X use rate = 15 g ha<sup>-1</sup>) or three premix products; 1) propoxycarbazone + mesosulfuron (Olympus Flex, 1X use rate = 25 g ha<sup>-1</sup>), 2) chlorsulfuron + metsulfuron (Finesse, 1X use rate = 26.3 g ha<sup>-1</sup>), and 3) chlorsulfuron + flucarbazone (Finesse Grass and Broadleaf, 1X use rate = 37.7 g ha<sup>-1</sup>). All herbicides were applied at 1X and 2X use rates and additionally, pyroxsulam, mesosulfuron, and Finesse were applied at 4X use rates. Applications were made in the spring to fully tillered winter wheat prior to stem elongation. Soybean was planted as a double crop 32-120 days after the herbicide applications. Visual crop injury assessments were made after the soybean emerged.

Double crop soybean was not affected when planted within the 32-120 day interval following a spring application of pyroxsulam at 1X, 2X, and 4X use rates, and mesosulfuron and propoxycarbazone at 1X and 2X use rates. The premix herbicides Olympus Flex, Finesse, and Finesse Grass and Broadleaf caused varying degrees of crop injury (5 – 53%) to soybean dependent upon use rates. These soybean double crop results observed in the Plains states were additionally supported by similar trial results for pyroxsulam from the Southern US. The required interval on the PowerFlex label for soybean rotation following a spring application in winter wheat was recently reduced to 3 months to support double crop agronomic practices in selected geographies in the US.

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