

VARIETAL RESPONSE TO PINOXADEN AND ANTAGONISM OF WILD OAT CONTROL BY BROADLEAF HERBICIDES. Kirk A. Howatt, Associate Professor, Department of Plant Sciences, North Dakota State University, Fargo, ND 58105.

A12303, proposed common name pinoxaden, is the sole herbicide in a new family of chemistry that inhibits acetyl coenzyme-A carboxylase. Studies were established to evaluate the response of two- and six-row barley to fenoxaprop at 92 and 180 g ai/ha, tralkoxydim at 200 and 400 g ai/ha, and pinoxaden at 60 and 120 g ai/ha each at two- and five-leaf application timings; the response of hard red spring and durum wheat to fenoxaprop at 92 g/ha and pinoxaden at 60 g/ha with different herbicides tank-mixed for broadleaf weed control at two- and five-leaf application timings; and efficacy of pinoxaden at 45 g/ha to wild oat when tank-mixed with 15 combinations of herbicides for broadleaf weed control. Tralkoxydim was the only herbicide to cause visible injury to barley. Injury of 3 to 8% was similar across two- and six-row barley cultivars but only was evident at the evaluation 6 d after application to two-leaf barley. Relative yield of barley cultivars to low and high herbicide rates indicated that fenoxaprop and pinoxaden tend to cause more physiologic injury to barley than tralkoxydim. Treatments did not cause visible injury to wheat cultivars. Herbicide treatments did not result in different wheat yield within application timing; however, a tank-mixed treatment that contained pinoxaden plus a bromoxynil and 2,4-D premix tended to result in less wheat yield than other treatments when applied at the five-leaf application timing. Pinoxaden at 45 g/ha provided 87% control of wild oat 15 d after application. Several herbicide combinations for broadleaf weed control antagonized the control of wild oat by 4 or 5% at this evaluation, but all herbicide treatments provided 99% control of wild oat by 28 d after application. Wheat grain yield did not correlate with initial weed control ratings. None of the wheat yields for herbicide-treated plots differed from wheat treated with pinoxaden alone.