REVISITING TRIALLATE USE IN NORTH DAKOTA. Angela J. Kazmierczak and Kirk A. Howatt, Graduate Research Assistant and Associate Professor, Department of Plant Sciences, North Dakota State University, Fargo, ND 58105.

Triallate use in North Dakota has decreased since 1984 with the increased availabilty of post emergent grass herbicides in wheat. Along with a decrease in usage, recent research with triallate also has been limited. The acquisition of triallate by Gowan Company in 2004 has revitalized interest in triallate and its present fit in weed control practices. Two experiments were conducted in 2006 in Fargo to evaluate the effect of triallate on various wheat cultivars and efficacy of triallate to control wild oat. The cultivar experiment evaluated six hard red spring wheat and three durum wheat cultivars. Treatments included a control, triallate at 1120 and 2240 g ai/ha, and triallate at 1120 g/ha plus GWN 3047 at 11.2 g ai/ha. Treatments were incorporated immediately after application and prior to seeding. The wheat cultivars were not affected by triallate as indicated by visual evaluations of wheat injury (21, 28, and 70 d after treatment), wheat yield, grain moisture, and test weight compared to the untreated control. The wild oat control experiment included triallate applied at 560, 840, and 1120 g ai/ha; triallate at 560 g ai/ha followed by postemergence application of fenoxyaprop-P at 70 g ai/ha, pinoxaden at 28 g ai/ha, or flucarbazone at 14.7 g ai/ha; the postemegence grass herbicides alone; and an untreated control for a total of ten treatments. Postemergence treatments were applied to three-leaf wheat and three- to four-leaf wild oat. Injury to wheat and control of wild oat were visually evaluated 7, 14, and 28 d after postemergence treatments were applied, and wheat yields were measured at maturity. Triallate plus any postemergence herbicide provided greater than 94% wild oat control throughout the season. Triallate at 840 and 1120 g/ha maintained wild oat control greater than 90% throughout the growing season, although yields were reduced by as much as 40% compared to treatments of triallate plus a postemergence herbicide. A yield increase of 25-55% was observed in triallate treatments that included a postemergence grass herbicide compared with triallate at 560 g/ha alone. Postemergence grass herbicides alone provided greater than 85% wild oat control 14 d after treatment, but early season competition resulted in yield losses of up to 30% compared with combination treatments of triallate followed by a postemergence grass herbicide.

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