

PROJECT TITLE: Wild Oat Control in Spring Wheat with Reduced Herbicide Rates.

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OBJECTIVES: To determine the consistency of wild oat control with reduced herbicide rates.

#### RESULTS:

McNeal spring wheat was planted on April 18, 2001 at a rate of 60 lbs/acre on 6-inch rows to a depth of 1.75 inches. Plots were 10 X 15 ft with four replicates arranged in a randomized complete block design. Wild oat was planted in all plots to improve the consistency of weed pressure.

Achieve was applied at a range of rates on May 24. The rates represent twice the normal use rate (2X) and normal labeled rate (1X), as well as 1/2X and 1/4X rates. Nontreated and handweeded controls were included for comparison. Treatments were applied with a CO<sub>2</sub> backpack sprayer in 20 gallons water per acre at 30 psi. Teejet XR11002 nozzles spaced 20 inches apart were used for applications. The spring wheat was in the four to five leaf stage. Wild oat was 1.5 to 8 leaf but mostly 4 to 5 leaf and 1 to 3 inches tall. An application of Harmony Extra plus 2,4-D was applied on May 30 to control broadleaf weeds.

All measured variables responded to herbicide rate. Wild oat biomass and dockage decreased as herbicide rates increased. Dockage ranged from 15% in the nontreated control to 1.98 % with the 2X rate of Achieve. Correspondingly, spring wheat yield and test weight increased as herbicide rates increased. Yields ranged from 36 to 89 bu/A; illustrating the negative effect that wild oat competition has on grain yield. The impact on test weight was not as dramatic and ranged from a low of 59.81 to a high of 62.24 lb/bu. Wheat protein actually decreased as wild oat control improved and is probably related to competition for soil water. Even though herbicide rate responses were observed, wild oat control was unacceptable even with the 2X rate of Achieve.

#### SUMMARY:

Twice the labeled rate failed to provide acceptable control of wild oat this year. This underscores the variable response associated with herbicides as well as the potential risks associated with using reduced rates. These results also demonstrate the negative consequences of allowing wild oat to compete with spring wheat.

#### FUTURE PLANS:

Continue to evaluate integrated approaches for the control of wild oat.

Achieve Rate	Wild Oat Biomass	Wild Oat Dockage	Spring Wheat Yield	Spring Wheat Protein	Spring Wheat TWT
lb ai/A	(g/m <sup>2</sup> )	(%)	(bu/A)	(%)	lb/bu
0.000	545	15.56	36.60	14.47	59.81
0.046 (1/4X)	475	11.56	47.70	14.11	59.98
0.089 (1/2X)	412	9.84	50.60	13.84	59.88
0.178 (1X)	177	3.26	70.70	13.38	61.02
0.356 (2X)	120	1.98	73.40	13.44	61.24
Handweeded	0	0.00	89.10	13.31	60.41
LSD	73	1.88	6.50	0.35	0.63