Title: Off-Station winter wheat variety evaluations in the Western Triangle Area.

Year: 1997

Location: Western Triangle Research Center, Conrad, MT.

Personnel: Gregory D. Kushnak and Ron Thaut, Research Center, Conrad; and Dr. Phil Bruckner, MSU Dept Plant, Soil & Environ Sci.

Off-station winter wheat variety trials were grown at Dutton and the Knees area east of Brady. In addition to the standard variety trial at Dutton, several thousand lines were grown for field evaluation for sawfly resistance.

Results: The Dutton location was heavily infested with downy brome (cheat grass), and therefore yield data were not obtained. The Knees location received heavy sawfly pressure, which enhanced the yield rankings of Vanguard and Rampart. These two sawfly resistant varieties averaged approximately five to 12% lower in yield than Rocky in sawfly-free trials, but were equal to Rocky at the sawfly infested Knees location in 1977 (Table 1), as well as over the last five years (Table 2).

Summary: The yield performance and improved harvestability of Vanguard and Rampart in our trials under heavy sawfly conditions has generated grower interest in choosing Vanguard and Rampart for winter wheat production in the Triangle area.

Future Plans: Continue winter wheat variety tests at the Knees area in efforts to identify sawfly resistant varieties that are superior to Vanguard and Rampart.

Table 1 **Dryland Winter Wheat** variety trial grown near the **Knees**, 1997. Mont. Agr. Expt. Station, Western Triangle Ag. Res. Center, Conrad, MT.

Variety	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	Spring survival class 1/	% protein
MT 9432	44.9	57.6	33.0		14.7
CENTURK	44.2	59.0	32.5	2	14.0
NUWEST *	43.5	57.4	29.0	3	14.8
TIBER	42.8	58.3	31.5		14.8
ROCKY	41.7	59.7	31.5	2	13.7
VANGUARD **	41.4	57.9	28.0	1.5	15.0
MT 9222	41.3	56.2	30.0		14.7
MT 91192	40.7	56.6	26.0		15.0
KESTREL	39.9	57.3	32.0	5	14.1
RAMPART **	39.5	58.3	29.0	1.5	14.9
HYBRITECH 542	39.0	57.9	33.0	3	14.1
YUMA	38.6	57.9	27.0	2	12.9
HAWK	38.5	57.5	26.5	2-3	13.9
AGASSIZ	38.5	58.3	35.5	4	13.9
JUDITH	38.2	56.0	29.5	3	15.2
BIGHORN	37.5	59.1	25.0		14.5
ALLIANCE	36.6	57.4	28.0		13.3
MCGUIRE	35.4	57.5	29.0	3	15.3
PROMONTORY	34.8	58.1	29.5	2	13.9
NORSTAR	34.4	58.2	35.0	5	15.6
NEELEY	34.3	57.4	30.5	3	15.1
REDWIN	30.6	53.6	29.0	3	15.7
ERHARDT	30.1	56.2	27.5	4	16.1
MANNING	29.4	54.9	29.5	2	14.4

Cooperator: Dan Picard.
Location: Thirty miles east of Brady, Chouteau County.
Fertilizer: 100# 11-51-0 with the seed, + 60# N AA-N.
Rainfall: From May 21 to harvest was 3.5 inches.
Previous crop: Fallow.
Date seeded: Sept. 11, 1996.
Date harvested: July 28, 1997.
1/ = Spring survival class: 5=best; 1=very low; based on several location-years of observation.
Yield experimental mean: 38.16
Error degrees of freedom: 46
F test for var. = 2.82, C.V. 2 = 6.7, LSD (0.05) = 7.28
* = Hard white wheat.
** = Sawfly resistant varieties.

Table 2 **Five-year summary on dryland Winter Wheat varieties grown under heavy sawfly infestation near the Knees.** 1990 - 1991 - 1993 - 1996 - 1997. Mont. Agr. Expt. Sta., Western Tri. Ag. Research Center, Conrad, MT.

Variety		5 - year comparable average Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein
ROCKY		49.4	59.2	33.7	13.7
VANGUARD	*	49.4	58.5	32.0	14.4
RAMPART	*	47.8	58.8	32.6	14.4
CENTURK		45.3	58.8	33.3	13.7
TIBER		44.8	59.1	33.3	14.0
QUANTUM 542		44.7	58.5	35.5	13.5
YUMA		41.7	58.7	29.3	12.4
BIGHORN		41.1	59.2	28.1	13.7
HAWK		40.8	59.1	28.7	14.1
NUWEST	**	40.8	57.0	32.3	14.2
KESTREL		40.7	57.0	36.6	13.4
NEELEY		39.4	57.7	32.1	13.7
MCGUIRE		39.1	58.5	31.5	14.9
REDWIN		38.1	58.0	32.8	14.6
AGASSIZ		37.8	57.7	37.7	14.2
JUDITH		37.6	56.3	33.9	14.4
ERHARDT		36.6	57.8	30.7	15.3
NORSTAR		33.9	58.7	39.0	14.7
MANNING		31.3	56.4	31.6	13.6
PROMONTORY		30.6	59.4	32.8	13.3

Cooperator: Dan Picard.
Location: Thirty miles east of Brady. (Chouteau County)
* = Sawfly resistant varieties.
** = Hard white wheat, (MT 7811).