

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

Year: 2003

Location: Western Triangle Research Center, Conrad, MT.

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

An off-station winter wheat variety trial was grown at the Knees east of Brady, an area where wheat-stem sawfly pressure is high. The trial was no-till planted on chemical fallow.

Results: Data for 2003 and five-year averages are presented in Tables 1 and 2, respectively. The chemical fallow system at the Knees allowed conservation of adequate soil moisture for good fall stand establishment and winter survival. Favorable moisture in the fall and spring contributed to high yields, but moisture stress later in the season reduced test weights. Sawfly wasps and larval infestation were abundant at the Knees, but harvest was accomplished before sawfly stem breaking occurred.

Genou (MTS 0031), a new sawfly resistant variety, averaged 1.5 bu/a higher than sawfly-resistant Vanguard. MTS 0031 had good stem solidness, although not as solid as Rampart. Its winterhardiness was much higher than Vanguard and Rampart, and slightly higher than Rocky. Heading date of MTS 0031 was slightly earlier than Vanguard, and one day later than Rocky. Test weight of MTS 0031 was above average. Protein of MTS 0031 was slightly higher than Vanguard and 1.3% higher than Rocky. MTS 0031 was named Genou (French for Knees). The Knees area of the Triangle has a high prevalence of sawfly, and is one of the main target areas for Genou wheat. Seed is currently under increase, and should be available to the public in about two years.

Rocky had the highest average yield, and averaged 5 bu/a higher than the sawfly-resistant variety Vanguard. Other entries with good field performance included Falcon and Big Sky.

In the hard white varieties, field performance and protein of NuSky was similar to NuWest.

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

Table 1

**Dryland Winter Wheat** variety trial grown near the **Knees**, 2003. 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
ROCKY		65.0	60.7	38	2	10.6
MT 9989		64.4	58.1	37		10.8
JUDITH		64.2	57.9	37	3	10.6
MTR 9997		62.9	59.8	36		11.1
MT 9982		61.4	56.6	34		11.4
CDC FALCON		61.0	60.4	30	4	10.6
MT 00159		60.8	57.2	36		10.2
PAUL		59.8	55.7	34	4	11.6
BIGSKY		59.1	59.0	38	4	11.8
NUWEST	*	58.3	58.2	38	4	10.9
Genou (MTS 0031)**		57.9	60.0	38		11.6
MT 0097		57.8	58.8	35		11.1
PRYOR		57.7	57.8	35	3	10.7
PROMONTORY		57.2	59.9	35	2	10.7
JERRY		57.1	58.5	38	5	11.8
VANGUARD	**	56.6	60.5	38	2	11.5
MORGAN		55.9	57.8	35	5	10.9
NEELEY		55.8	56.8	37	3	10.7
NUSKY	*	55.7	57.9	38	4	10.6
TIBER		55.5	58.3	40	3	11.1
BIGHORN		55.3	59.1	31	3	9.9
MTI 01158		54.9	59.8	34		10.7
RAMPART	**	47.7	59.5	36	2	11.0
NORSTAR		46.6	57.7	46	5	11.7

Cooperator: Dan Picard.

Location: Thirty miles east of Brady, Chouteau County.

Fertilizer: 51-52-0 (N-P-K).

Rainfall: May 1, to harvest = 2.1 inches.

Previous crop: No-till chem-fallow.

Date seeded: Sept. 25, 2002. Date harvested: July 28, 2003.

Stored soil water at seeding: 7 inches.

\* = Hard white wheat.

\*\* = Sawfly resistant variety.

1/ = Spring survival class: 5=best; 1=very low; based on several location-years of observation.

Yield exp. mean: 57.86 Error degrees of freedom: 46

F test for var. = 8.26,--- C.V. 2 = 2.70,--- LSD (0.05) = 4.44

Table 2 **Five-year summary** on dryland **Winter Wheat** varieties grown near the **Knees**. 1998 - 2000 - 2001 - 2002 - 2003. Mont. Agr. Expt. Sta., Western Tri. Ag. Research Center, Conrad, MT.

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5 - year comparable average				
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Variety	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein
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MT 9982	49.1	59.7	29	14.0
ROCKY	48.5	53.6	29	13.4
JUDITH	47.0	58.6	31	13.9
MTR 9997	46.2	59.8	28	14.3
BIGSKY	44.7	59.3	30	14.3
Genou (MTS 0031) **	44.5	59.1	29	14.7
CDC FALCON	44.4	59.7	25	13.6
TIBER	44.1	59.8	31	14.1
VANGUARD **	43.2	60.2	29	14.2
NUWEST *	43.2	58.9	29	13.8
PAUL	43.6	57.8	27	14.1
PROMONTORY	42.8	59.9	29	13.2
NEELEY	42.2	58.1	29	13.4
MORGAN	41.9	58.3	29	13.5
BIGHORN	41.7	60.1	25	13.6
NUSKY *	41.4	59.2	29	13.6
RAMPART **	40.1	58.9	29	14.2
NORSTAR	37.7	58.5	34	13.9
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Cooperator: Dan Picard.

Location: Thirty miles east of Brady. (Chouteau County)

\* = Hard white wheat.

\*\* = Sawfly resistant varieties