

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

Year: 2002

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. Drought conditions prevailed from planting time through the following spring, with moisture improving in June. The Knees trial was no-till planted on chemical fallow.

Results: Data for 2002 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. In contrast, trials grown on station at Conrad were planted on reduced-tillage fallow, resulting in less than adequate soil moisture, weak fall stands, and poor winter survival. Sawfly wasps and larval infestation were abundant at the Knees, but harvest was accomplished before sawfly stem breaking occurred. Consequently, solid stem lines did not rank quite as high for yield as they normally do at this location.

MTS 0031, a sawfly resistant experimental, yielded nearly 3 bu higher than sawfly-resistant Vanguard. MTS 0031 has good stem solidness; and its winterhardness is much higher than Vanguard and Rampart, and equal to Rocky. Heading date of MTS 0031 is slightly earlier than Vanguard, and one day later than Rocky. Protein of MTS 0031 was slightly higher than Vanguard and 1.3% higher than Rocky. Another sawfly resistant line, MTS 0023, has shown no improvement in winterhardness over Vanguard, and was much later in maturity and lower in yield than MTS 0031. The sawfly-resistant variety Rampart was not included in the 2002 trial due to a seed problem.

Big Sky and Tiber were agronomically similar at the Knees over the five-year period, and were among the top yielders. Rocky had the highest average yield, and was 2 bu/a higher than Big Sky and Tiber, and 3.5 bu/a higher than the sawfly-resistant variety Vanguard.

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**, 2002. 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 9982		48.8	58.6	31		13.4
ROCKY		48.8	59.1	34	2	12.9
TIBER		46.3	58.3	35	3	14.7
JUDITH		44.6	57.0	34	3	14.0
GOLDEN SPIKE	*	43.6	58.1	31		12.9
BIGSKY		43.3	60.0	32	4	14.1
MT 9951		42.9	56.5	34		13.6
RANSOM		42.7	55.3	32		13.0
MTS0031	**	42.8	57.5	31	2	14.2
NUWEST	*	42.7	58.5	32	3	12.8
PAUL (MT 9426)		42.5	56.3	27	4	13.4
MTR9997		41.7	59.2	29		14.0
BIGHORN		41.1	58.7	26	3	13.3
MTS0023	**	39.9	55.5	31	1.5	14.8
CDC FALCON		39.6	58.4	28		13.4
MTS 9719	**	39.4	55.2	31		14.0
PROMONTORY		39.3	58.8	30	2	12.5
VANGUARD	**	39.1	58.4	31	1.5	13.8
NUSKY	*	38.9	59.0	32	2	12.5
MORGAN		37.3	57.3	32	5	12.3
MCGUIRE		35.2	59.7	33	3	15.6
NUPLAINS	*	35.1	61.0	25	2	14.4
NORSTAR		34.9	57.8	33	5	13.2
NEELEY		34.1	57.3	31		12.2

Cooperator: Dan Picard.

Location: Thirty miles east of Brady, Chouteau County.

Fertilizer: 100# 11-52-0 (N-P-K).

Rainfall: April to harvest = 7 inches.

Previous crop: No-till chem-fallow.

Date seeded: Sept. 19, 2001. Date harvested: Aug. 12, 2002.
Stored soil water at seeding: 3 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: 41.03 Error degrees of freedom: 46
F test for var. = 3.70,--- C.V. 2 = 5.12,--- LSD (0.05) = 5.97

Table 2. **Five-year summary** on dryland **Winter Wheat** varieties grown near the **Knees**. 1997 - 1998 - 2000 - 2001 - 2002. Mont. Agr. Expt. Sta., Western Tri. Ag. Research Center, Conrad, MT.

5 - year comparable average					

Variety		Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein

ROCKY		43.8	53.3	28.3	14.0
BIGSKY		41.8	59.0	29.6	15.0
JUDITH		41.8	58.2	29.9	14.8
TIBER		41.5	59.8	29.5	14.8
VANGUARD	**	40.2	59.7	27.2	14.9
NUWEST	*	40.2	58.7	27.4	14.5
RAMPART	**	38.5	58.7	27.6	15.0
PROMONTORY		38.3	59.6	28.5	13.8
NEELEY		38.0	58.2	28.5	14.3
BIGHORN		38.1	60.1	24.6	14.5
MORGAN		38.1	58.3	29.2	14.1
NUSKY	*	37.7	59.3	27.9	14.4
NUPLAINS	*	37.4	62.8	25.0	15.0
MCGUIRE		35.6	59.8	27.6	16.0
NORSTAR		35.3	58.6	32.2	14.7

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