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PROJECT TITLE: Off-station hard red winter wheat and spring barley variety trials, Broadview and Bridger MT respectively. SARC, Huntley MT 1989.

PROJECT LEADERS: G.F. Stallknecht and R.A. Larson

PROJECT PERSONNEL: Glenn Morton, Broadview MT - Cooperator
USDA Bridger Plant Material Center, Bridger MT

PROJECT LOCATION: MSU, Southern Agricultural Research Center, Huntley MT 59037

OBJECTIVES:

The off-center trials are conducted to evaluate cereal crop varieties grown under various environmental conditions. The off-center sites allow for new varieties to be compared directly with present varieties under commercial farming managements for considered advantages to replace the varieties which are now planted. These trials are used not only for demonstrations of new or potential releases, they also provide a significant data base for use by the plant breeders when evaluating cultivar responses to various environments.

SUMMARY AND RESULTS:

Dryland hard red winter wheat variety yields ranged from 40 to 26 bu/Ac. with protein varying from 15.5 to 11.9 percent (Table 1). Significant lodging was observed in only two selections, MT 88064 and Vona.

Table 2 describes the yield and agronomic data of the off-center spring barley trial. Yields ranged from 152 to 114 bu/Ac. Two MSU selections, MT 140523 and MT 81161 appeared to exhibit a high level of lodging which may limit application to irrigated cropping. Both Lewis and Gallatin had the highest test weight and exhibited no lodging problems.

TABLE 1 . 1989 DRYLAND OFF STATION HARD RED WINTER WHEAT TRIAL
BROADVIEW, MT.

VARIETY	YIELD BU/AC	TESTWT LB/BU	PLANTHT INCHES	LODG %	PROT. %
PI491532 CREE	39.59	60.97	34.33	.00	13.0
QT 542 HYBRITECH	37.48	60.57	29.67	2.33	12.6
CI 8885 CHEYENNE	37.11	60.57	33.67	.00	13.8
CI 17860 NEELEY	36.96	60.23	31.17	1.67	13.8
MT 8039 JUDITH	36.29	59.97	29.67	.00	13.1
CI 17879 ROCKY	36.13	58.20	28.33	.00	15.0
CI 17846 MANNING	36.11	59.23	26.33	.00	13.8
MT 79125 UT755079/CST56//TX65	36.05	58.23	27.67	.00	13.6
CI 17727 WESTON	35.49	61.80	34.67	.00	14.5
MT 8003 TIBER	34.98	60.03	32.33	3.33	13.2
CI 17844 REDWIN	34.46	60.27	32.33	1.67	14.4
MT 88065 CST/VT1230//ID745101	33.36	57.40	31.00	1.67	13.2
CI 13670 WINALTA	33.17	60.53	35.33	.00	13.6
CI 13190 WARRIOR	33.00	59.77	33.00	.00	13.4
CI 17902 WINRIDGE	32.62	56.37	32.33	.00	14.1
CI 17735 NORSTAR	32.11	59.73	37.67	.00	13.6
MT 88005 WSC/YOGO//RSC/3/TD25	31.71	59.17	35.67	.00	14.1
MT 88064 CST/VT1230//ID745101	30.41	55.63	25.33	20.00	11.9
PI491533 NORWIN	29.90	59.37	23.67	.00	13.2
MT 88006 WSC/YOGO//RSC/3/TD25	28.83	58.93	36.00	.00	15.5
MT 88062 CST/VT1230//ID745101	28.78	56.17	31.67	1.67	13.9
MT 88001 SMT/TD//YGSS	28.37	58.33	21.67	3.33	13.3
ID 297 BLIZZARD	27.56	59.00	29.67	8.33	12.8
MT 88002 POLO/TURG//WRR	27.25	56.27	23.00	8.33	12.0
CI 15075 CENTURK	27.04	59.30	30.00	8.33	13.9
MT 88008 WSC/YOGO//RSC/3/WRR1	26.81	60.90	35.33	.00	14.6
CI 17441 VONA	26.09	59.33	24.00	23.33	12.7
MT 88003 POLO/TURG//WRR	25.97	56.73	23.67	5.00	12.6

STATISTICAL TABLE

EXPERIMENTAL MEANS	32.27	59.04	30.33	3.18	
TOTAL OBSERVATIONS	84.00	84.00	84.00	84.00	
NO. OF REPLICATIONS	3.00	3.00	3.00	3.00	
NO. OF VARIETIES	28.00	28.00	28.00	28.00	
C.V. 1: (S/MEAN)*100	7.55	1.60	5.95	190.60	
C.V. 2: (S OF MEAN/MEAN)*100	4.36	.92	3.44	110.04	
LSD (0.05)	3.99	1.55	2.95	9.92	

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TABLE 2 . 1989 OFF STATION BRIDGER IRRIGATED SPRING BARLEY TRIAL.

VARIETY	YIELD BU/AC	TESTWT LB/BU	PLANTHT INCHES	LODG PREV	LODG SEVER	LODG INDX
CI 15229 Steptoe	152.08	48.63	36.33	.00	.00	.00
BA 2601 Busch Agr Res 2601	146.08	50.30	33.00	.00	.00	.00
CI 15856 Lewis	139.43	54.83	38.33	.00	.00	.00
MT140523 Hector/Klages	138.79	52.83	35.17	26.67	.33	2.97
MT 81161 Lewis//Kgs/Smt	138.78	52.50	36.00	60.00	2.33	23.33
CI 10083 INGRID	136.19	53.57	35.00	.00	.00	.00
PI483127 Russell	135.69	52.33	37.50	.00	.00	.00
WPB 999 Winchester	134.11	49.57	32.33	13.33	3.33	7.40
PI491534 Gallatin	133.45	54.10	37.83	.00	.00	.00
VD 3 MENUET	133.08	53.97	34.33	.00	.00	.00
CI 15857 Clark	131.92	53.40	38.33	10.00	2.00	3.70
BA 1202 Busch Agr 1202	129.57	51.17	39.00	11.67	3.33	6.50
SK 76333 Harrington	127.60	51.60	37.00	20.00	2.33	10.00
CO 3 Moravian 3	126.93	51.47	36.33	10.00	1.00	3.33
PI 49476 Samson	125.91	49.53	35.00	46.67	5.67	30.73
MT 81616 TR440/Clark	125.85	52.90	35.83	3.33	.67	.73
CI 15687 Kimberly	119.95	51.03	38.67	.00	.00	.00
CI 15478 Klages	116.83	50.27	38.50	31.67	1.67	13.53
CI 15514 Hector	115.75	52.93	36.00	69.67	3.33	23.67
CI 15773 Morex	114.32	51.73	40.83	53.00	4.33	22.13

***** STATISTICAL TABLE *****

EXPERIMENTAL MEANS	131.12	51.93	36.57	17.80	1.52	7.40
TOTAL OBSERVATIONS	60.00	60.00	60.00	60.00	60.00	60.00
NO. OF REPLICATIONS	3.00	3.00	3.00	3.00	3.00	3.00
NO. OF VARIETIES	20.00	20.00	20.00	20.00	20.00	20.00
C.V. 1: (S/MEAN)*100	6.52	3.01	4.51	142.64	109.83	171.21
C.V. 2: (S OF MEAN/MEAN)*100	3.76	1.74	2.61	82.35	63.41	98.85
LSD (0.05)	14.13	2.58	2.73	41.97	2.75	20.95