

PROJECT TITLE: 2004 Evaluation of durum wheat variety performance under recrop conditions following a pulse crop near Moccasin, Denton and Geraldine.

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OBJECTIVES:
Evaluate the agronomic performance of durum wheat varieties in recrop or continuous crop environments in the southern triangle and central Montana.

RESULTS:
The statewide durum no-till recrop trial was reduced from 20 entries to 14 entries because central Montana interest in durum is marginal and many varieties have had several years of evaluation. Also, the hard red spring wheat check McNeal was dropped from the nursery. McNeal yields have consistently been greater than the yields of the top durum entries. Further, the processing companies generally have criteria other than agronomic performance in central Montana trials for determining which durum varieties they will contract. The majority of entries in the statewide trial were first time entries. Development line PI574642 and AC Avonlea produced the high grain yields (See Table 1). Test weights were sub-par averaging 55.9 lbs/bu. Six durum lines were planted on recrop at Denton and on fallow at Moccasin and Winifred. AC Avonlea had the highest mean grain yield across the three locations (see Table 2). AC Avonlea and Ben had the high mean test weight. Protein levels were near even with Kyle and Ben have a slightly higher mean protein level (Table 3). Multi-Year yield summaries for the Denton and Geraldine location are presented in Tables 4 and 5. With the change in entries, a multi-year table for Moccasin would differ little from the 2003 report.

A durum trial was established on winter wheat stubble at Geraldine but was not harvested due to excessive wild oat infestation.

FUTURE PLANS:
Durum work will be reduced to a single nursery under no-till continuous crop at the CARC.

Table 1 2004 Durum variety performance under no-till continuous crop environment.
 Exp 9870 Central Agricultural Research Center. Moccasin, Montana

Variety	Head Date	Grain Yield	Test Weight
	d of Y	bu/a	lbs/bu
Kyle	186.7	23.1	56.3
Ben	183.3	23.0	56.0
Mountrail	184.7	26.2	54.3
Maier	184.3	26.2	56.0
AC Avonlea	183.3	29.0	56.7
Dilse	186.0	25.6	57.7
Plaza	185.7	24.0	55.3
Monroe	181.0	26.8	56.0
Vic	184.0	22.3	57.0
Lebsock	184.3	24.2	57.0
Pierce	184.3	23.2	56.7
WPB YU8	182.0	27.7	55.0
Munich	183.7	26.8	55.3
McNeal	184.3	29.3	52.7
Mean	184.1	25.52	55.86
CV1	0.3992	6.943	1.381
LSD(0.05 by t)	1.234	2.974	1.295

Planted: April 12, 2004 No-till CC after lentils 03, barley 02, and yellow mustard 01.

Fertilizer: Pre-plant topdress 30N as urea. W/seed 10-10-10-5.

Herbicide: Post plant 10 oz glyphosate. Bronate: wheat @ 3-4 lb May 24

Precipitation: sept -Aug 13.5 (ave 15.4)

Table 2 2004 Durum three location grain yield and test weight performance.
Exp. 9870-73

Variety	Grain Yield			Test Weight		
	Moc-Fal	Denton	Winifred	Moc-Fal	Denton	Winifred
	bu/a	bu/a	bu/a	lbs/bu	lbs/bu	lbs/bu
Kyle	32.4	29.9	28.3	58.7	59.0	57.4
Ben	32.8	27.7	30.0	59.9	59.8	59.5
Mountrail	33.7	29.3	31.3	57.6	56.7	57.5
Maier	33.9	29.3	29.7	60.6	57.2	57.5
AC Avonlea	34.4	31.3	32.7	58.9	58.7	59.1
Dilse	31.6	26.3	33.3	60.3	dumped	58.8
Mean	33.2	28.96	30.9	59.3	58.3	58.3
CV 1	6.58	8.62	4.1			
LSD (0.05)	3.97	4.54	2.29			
Seed Date:	12-Apr	6-Apr	6-Apr			
Fertilizer:	NPKS 10-10-10-05 w/seed plus 60 N top dress as urea					

Table 3 2004 Durum three location protein content, plant height and head date performance.
Exp. 9870-73 Central Agricultural Research Center. Moccasin, Montana.

Variety	Protein Content			Protein Content		Headed Moc-Fal
	Moc-Fal	Denton	Winifred	Denton	Winifred	
	%	%	%	"	"	d of y
Kyle	17.7	13.9	18.1	41.2	39.0	186
Ben	17.4	14.2	17.8	34.0	33.0	183
Mountrail	17.3	14.2	17.1	34.4	27.0	184
Maier	16.0	14.7	17.9	34.4	29.0	184
AC Avonlea	16.8	14.6	17.0	36.0	33.0	183
Dilse	16.9	dumped	18.2	33.2	30.0	184
Mean	17.0	14.3	17.7	35.5	31.8	184.0

Table 4 Denton recrop spring durum multi-year yield summary for 1997-2004.
Exp. 9871 Central Agricultural Research Center, Moccasin, MT

Variety	Yield							
	1997	1998	1999	2000	2001	2002	2003	2004
	----- bu/a -----							
McNeal ^{1/}	43	34	21	31	24			
Kyle	28	33	17	23	22	19	13	30
Maier			14	23	24	17	21	29
Mountrail			16	26	26	18	16	29
Lebsock				26	24	20	18	
Plaza				24	25	--		
AC Avonlea						21	14	31.3
Nursery Mea	26.8	28.3	14.5	25.0	24.1	19.4	16.6	30.9

Table 5 Winifred spring durum variety multi-year yield summary.
Exp. 9873 Central Agricultural Research Center, Moccasin, MT

Variety	1998	1999	2000	2001	2002	2003	2004
	----- bu/a -----						
McNeal ^{1/}	47	44	33	25			
Kyle	39	33	34	23	36	18	28.3
Maier		36	35	23	43	18	29.7
Mountrail		34	36	26	40	18	31.3
Lebsock			30	24	36	20	
Plaza			31	23	--		
AC Avonlea						19	32.7
Mean	38.7	34.3	31.7	24.0	40.1	18.6	30.9

