PROJECT TITLE: Dryland Durum Performance Trial near Molt, Montana. (Exp. 999894).

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OBJECTIVES: To provide durum growers in south central Montana with a reliable, unbiased, up-to-date source of information that will permit valid comparisons among improved barley varieties. This information should help durum producers in south central Montana select varieties best suited to their particular area and growing conditions.

METHODS: The 1999 off-station durum trial had 16 entries plus a spring wheat check, and was planted using a randomized complete block design with three replications. Test plots consisted of a 15-foot, 4-row plot with 12-inch row spacing. All rows of each test plot were trimmed 36 inches and harvested using an experimental-plot combine. Recorded grain yields were adjusted to 13% grain moisture content, and are reported in bushels per acre based on a 60 pound per bushel test weight. Test weight (pounds per bushel) and percent grain moisture content were obtained for each plot using a Dickey-john GAC 2100 grain analyzer. Grain protein (%) was determined for each entry bulked across replications. Grain protein values were adjusted to 12 percent grain moisture content. Plant height was measured in inches from the soil surface to the top of the head, excluding the awns if present. Reported plant height values have been rounded to the nearest inch.

RESULTS and SUMMARY: Agronomic performance of the durum cultivars tested under dryland conditions near Molt during 1999 is presented in Table 1. Durum yields, test weights and proteins were lower than normal at Molt due to severe hail damage close to boot stage, followed by below normal precipitation the remainder of the growing season. Molt dryland durum yields averaged 21.5 bu/ac and ranged from 27.0 bu/ac for 'Laker' to 16.6 bu/ac for 'Vic'. Test weights averaged 51.2 lb/bu and no entry produced a test weight greater than 60.0 lb/bu. There was no significant difference in grain yield or test weight between entries at Molt. Grain protein averaged 8.7 percent and ranged from 8.5 percent for 'Mountrail' to 8.9 percent 'Kyle' and Laker.

FUTURE PLANS: Off-station durum performance evaluations will continue in 2000 with locations at Bridger, Hysham, Molt and Ryegate, Montana.

Table 1. Performance of 17 spring durum cultivars tested under dryland conditions near Molt, Montana during 1999. Cultivars listed alphabetically. (Exp. 999894).

Cultivar	1/ Grain Yield	Test Weight	Grain Moisture	2/ Grain Protein	Plant Height
	bu/ac	lb/bu	%	%	inches
Belzer	20.5	50.4	7.8	8.7	26
Ben	21.0	52.0	8.1	8.6	26
Crosby	18.1	51.1	8.1	8.7	28
Kyle	21.6	54.2	8.3	8.9	28
Laker	27.0	55.1	8.2	8.9	25
Lloyd	22.5	53.7	7.4	8.7	20
Maier	24.7	53.5	7.9	8.7	24
McNeal	24.6	53.6	7.8	8.8	26
Medora	19.2	53.0	8.4	8.7	26
Monroe	16.7	49.2	8.2	8.7	25
Mountrail	24.8	51.0	7.9	8.5	25
Munich	23.9	52.5	8.1	8.6	23
Plenty	24.5	52.5	7.9	8.7	30
Renville	23.3	48.4	8.4	8.7	25
Sceptre	18.6	48.6	7.4	8.8	27
Vic	16.6	44.6	7.6	8.6	28
Ward	18.4	47.3	8.2	8.6	27
Average	21.5	51.2	8.0	8.7	26
LSD (p=0.05)	ns	ns	ns	-	2.0
CV%	21.2	10.1	7.3	-	8.3

1/ Yields are based on 60 pound standard bushel weight and adjusted to 13.0 percent moisture content.
2/ Grain protein values are based on grain dry matter.
ns Indicates no significant difference between cultivars within a column based on Fisher's protected LSD (p=0.05).

Molt Dryland Durum (Exp. 999994)

Planted:	April 20, 1999
Harvested:	August 11, 1999
Fertility:	46-00-00, 100 lb/ac, preplant incorporated, by cooperator 11-52-00, 100 lb/ac, in-furrow, April 20, 1999 34-00-00, 88 lb/ac, broadcast, June 5, 1999
Herbicide:	Buctril, 1 pt/ac; Harmony Extra, 0.3 oz/ac; R-11, 1% v/v, June 18, 1999
Insecticide:	none
Previous Crop:	summer fallow
Precipitation:	not available
Other:	hit by severe hailstorm, June 17, 1999