

PROJECT TITLE: The effect of seeding rate and planting date on yield and quality of 'Bowman', 'Clark', and 'Gallatin' spring barley varieties.

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OBJECTIVE: To determine the optimum seeding rate and planting date for early, mid, and late maturing spring barley varieties.

RESULTS: Data are shown in table 1 and indicate early seeding date and the higher seeding rates produced the most yield this year. Variety performance was consistent with variety tests this year; however, significant interactions between variety x seeding rate and seeding rate x planting date for grain yield and seed quality indicate further research is necessary.

FUTURE PLANS: Continue one more year.

Table 1. EFFECT OF PLANTING DATE, SEEDING RATE AND VARIETY ON THE YIELD AND YIELD COMPONENTS OF SPRING BARLEY. Central Ag. Research Center, Moccasin, MT 1990.

VARIETY	SEED RATE	PLANT DATE	GRAIN YIELD	TEST WT.	PLANT HT.	TILLERS	PLUMP	THINS	KERNAL WT.
	seeds/ft		bu/ac	lb/bu	in	#/3'	%	%	(1)
Bowman	8	4-18	25.0	48.2	25.4	125	44.5	11.3	33.0
Clark	8	4-18	22.0	45.5	23.3	111	7.0	49.5	27.0
Gallatin	8	4-18	23.6	47.2	25.8	99	26.8	26.5	28.8
Bowman	13	4-18	27.7	46.9	26.3	144	22.8	27.5	30.0
Clark	13	4-18	27.1	45.4	23.8	120	9.0	50.0	26.3
Gallatin	13	4-18	28.1	47.3	24.4	149	20.5	29.5	28.5
Bowman	18	4-18	27.8	46.9	26.0	166	19.8	31.3	29.3
Clark	18	4-18	26.1	45.1	21.9	150	4.3	67.8	25.5
Gallatin	18	4-18	23.8	46.1	24.7	135	8.5	57.0	26.5
Bowman	23	4-18	28.7	45.9	25.0	155	8.3	41.3	27.8
Clark	23	4-18	24.7	43.8	22.1	145	2.5	73.3	24.3
Gallatin	23	4-18	22.5	46.2	23.5	136	5.0	61.5	25.3
Bowman	8	4-26	20.8	51.1	23.1	114	51.0	7.3	33.5
Clark	8	4-26	18.3	50.3	21.1	129	22.5	22.5	30.0
Gallatin	8	4-26	24.1	50.0	23.4	95	41.0	12.3	32.5
Bowman	13	4-26	20.9	49.5	21.9	137	21.8	17.5	29.8
Clark	13	4-26	19.5	50.4	20.1	112	30.0	19.5	30.0
Gallatin	13	4-26	23.5	51.5	22.1	104	24.0	18.8	31.8
Bowman	18	4-26	25.7	50.3	22.5	147	40.5	12.8	31.8
Clark	18	4-26	22.4	48.5	22.0	163	11.3	37.8	27.3
Gallatin	18	4-26	25.8	50.9	21.9	131	20.5	23.0	31.3
Bowman	23	4-26	29.1	49.5	23.7	132	42.5	16.5	31.8
Clark	23	4-26	23.4	48.0	20.4	169	12.0	43.3	27.3
Gallatin	23	4-26	25.9	49.7	20.9	148	13.8	36.5	28.0
Bowman	8	5-4	25.4	52.3	23.2	122	76.5	2.5	37.3
Clark	8	5-4	20.6	50.0	19.5	127	24.3	20.3	32.0
Gallatin	8	5-4	20.4	51.4	19.7	94	23.3	17.8	32.3
Bowman	13	5-4	27.7	51.7	21.9	129	66.3	4.5	35.0
Clark	13	5-4	27.1	49.8	19.5	118	19.8	23.8	30.8
Gallatin	13	5-4	28.1	51.7	20.3	117	19.8	20.5	31.8
Bowman	18	5-4	27.8	50.6	22.3	144	47.0	7.3	33.3
Clark	18	5-4	26.1	49.4	19.6	131	20.5	26.3	29.5
Gallatin	18	5-4	23.8	51.6	21.8	141	19.0	22.3	30.5
Bowman	23	5-4	23.8	51.1	21.2	139	41.0	10.3	31.8
Clark	23	5-4	19.7	49.4	19.5	132	23.0	31.5	29.3
Gallatin	23	5-4	20.3	52.2	18.1	96	9.8	28.8	30.3

Table 1. Continued

Variety	Seed Rate	Plant Date	Grain Yield	Test Wt.	Plant Ht.	Tillers	Plump	Thins	Kernal Wt.
	seeds/ft		bu/ac	lb/bu	in	#/3'	%	%	(1)
Bowman	8	5-21	21.2	52.7	20.5	99	40.8	8.3	34.8
Clark	8	5-21	13.4	48.5	17.2	113	9.0	35.0	30.5
Gallatin	8	5-21	15.4	50.0	17.1	92	19.0	22.0	31.3
Bowman	13	5-21	22.8	51.6	18.0	104	40.5	7.3	35.5
Clark	13	5-21	14.6	49.2	17.5	114	11.8	35.0	29.8
Gallatin	13	5-21	19.0	49.5	16.9	103	21.3	21.3	31.5
Bowman	18	5-21	24.6	53.3	19.3	107	40.0	7.8	35.5
Clark	18	5-21	15.6	47.5	17.0	110	8.5	34.8	30.8
Gallatin	18	5-21	16.9	50.7	16.1	121	25.5	21.0	31.3
Bowman	23	5-21	30.0	52.1	21.2	139	59.3	6.3	36.5
Clark	23	5-21	21.8	49.7	17.3	118	15.5	31.3	30.8
Gallatin	23	5-21	28.4	51.8	20.3	155	25.3	21.8	32.3
Mean			23.2	49.4	21.2	127	25.3	26.3	30.6
Variety Summary									
Bowman			25.6	50.2	22.6	131	41.4	13.7	32.9
Clark			21.0	48.1	20.1	129	14.4	37.6	28.8
Gallatin			22.9	49.9	21.0	120	20.2	27.5	30.2
LSD (0.05)			1.5	0.5	0.6	7	3.8	2.7	0.5
Seeding Rate Summary									
8 seeds/sq. foot			20.8	49.8	21.6	110	32.1	19.6	31.9
13 seeds/sq. foot			23.3	49.5	21.1	121	25.6	22.9	30.9
18 seeds/sq. foot			23.7	49.2	21.2	137	22.1	29.1	30.2
23 seeds/sq. foot			24.9	49.1	21.1	139	21.5	33.5	29.6
LSD (0.05)			1.8	0.5	NS	9	4.4	3.1	0.6
Seeding Date Summary									
April 18, 1990			25.6	46.2	24.3	136	14.9	43.8	27.7
April 26, 1990			23.3	50.0	21.9	132	27.6	22.3	30.4
May 4, 1990			23.5	50.5	20.5	124	32.5	18.0	32.0
May 21, 1990			20.3	50.9	18.2	115	26.4	21.0	32.5
LSD (0.05)			1.8	0.5	0.7	9	4.4	3.1	0.6
Interactions p-value									
Variety x Seeding Rate			.960	.067	.868	.262	.047	.091	.313
Variety x Seeding Date			.029	.001	.395	.024	.001	.001	.002
Seeding Rate x Seeding date			.001	.033	.011	.014	.001	.001	.001
V x SR x SD			.962	.624	.194	.097	.011	.432	.048
CV %			18.7	2.6	8.1	52.8	43.4	29.0	4.8

(1)Weight of 250 seeds in grams.

Grain yield based on 48 lb/bu as standard test weight.

Growing season precipitation (April-July): 6.24 in. Previous crop: Fallow

Fertilizer: 66-30-0, 60 lbs/ac of 11-53-0 with seed, 60 lbs of N/ac as urea broadcast and incorporated prior to seeding.