2012 Idaho Spring Barley Variety Performance

By Juliet Marshall, Extension Specialist, and Doug Finkelnburg, Extension Support Scientist, Department of Plant, Soil and Entomological Sciences, University of Idaho

Variety Testing

Spring varieties of wheat and barley are evaluated each year to provide performance information to help growers select superior varieties for their growing conditions. The tests are done using growers fields or experiment station locations and the varieties are grown under conditions typical for crop production in the area. Varieties are included in these tests based on their potential adaptation in an area and commercial use of a variety. The number of entries is limited due to resource constraints. Individual plots were planted as 7 rows spaced 7" apart for 14' to 25' in length and replicated 3 or 4 times in a randomized complete block design. Plots in North Idaho that were direct seeded were 5 feet wide with five paired rows, three inches apart with ten inches from center to center of paired rows.

Information Summarization

Agronomic performance data for 2012 spring barley tests are summarized by district in Tables 1-3. The state is divided into the Northern, the Southern, and the Eastern Districts. Previous Districts III and IV have been included in the Southern and Eastern Districts, respectively, and results are presented for 2-row barley in Table 2 and for 6-row barley in Table 3. Yield data are reported for individual sites while other agronomic data are averaged over all sites of each table. Bushel/acre yield results are based on 48 lb/bu at 11% moisture. Lodging ratings are the percent of a plot area lodged. Plump percentage is based on cleaned grain retained on a 6/64" screen. Thin grain percentage is clean grain passing through a 5.5/64" screen. Average values are presented at the bottom of listings and are followed by a least significant difference (LSD) statistic at the 5% level.

Average yield data from variety performance trials in 2010, 2011, and 2012 are presented in Table 4 for all districts. These data represent results of 4-12 site/years and can be a good indication of long-term performance of a variety.

Information Interpretation

Average past performance of a variety is the best indicator available to predict future performance potential. Variety performance can vary from location to location and year to year. The results reported in this article are for 2012 trials; previous results can be found in the spring 1992 to 2012 issues of Idaho Grain Magazine. Average performance over locations and years more accurately indicates a variety's relative performance. Try to evaluate as much information as you can prior to selecting varieties. Yield is a primary characteristic used to select varieties, but disease resistance, maturity, lodging tendency, and quality characteristics such as test weight and plumpness are also important variety selection considerations. Also consider that plots are managed according to the average expected yield, latest varietal maturity, and / or performance of the surrounding crop in a grower's field, whether wheat or barley. Varietal performance may not reflect actual performance in your field when a specific variety is managed for optimal economic performance.

Reported small differences among varieties in yield and other characteristics are usually of little importance due to chance differences in tests. Utilize the LSD statistic to determine the true difference between varieties. If differences between varieties are greater than the 5% LSD value, the varieties are considered "significantly different." This means that there is a 9.5 in 10 chance that the reported difference between varieties is a true difference and not due to other experimental factors or chance variation. If no significant differences are determined for a trial, n.s. is used in place of the LSD.

Further Information

Information on variety characteristics can be found in Extension publication: "2006 Certified Seed Selection Guide for Spring Barley and Oats" (Progress Report 328) and "2006 Certified Seed Selection Guide for Spring Wheat" (Progress Report 327). Variety performance information for winter wheat and winter barley has been published in the fall issues of Idaho Grain. An excellent Extension Publication for barley producers is "Idaho Spring Barley Production Guide" (Bulletin No. 742) that was updated for 2003, (see the Idaho Ag Communications website at *http://www.cals.uidaho.edu/edcomm/catalog.asp* under "crops" and "cereals"). For spring wheat producers, "Irrigated Spring Wheat Production Guide for Southern Idaho" (Bulletin No. 697) can be ordered on the same website. In addition, all these publications are free through the University of Idaho Agriculture Publications (ph. 208-885-7982) or contact your county Extension Office. Additional Idaho small grain variety performance information is available on the web at *http://www.extension.uidaho.edu/cereals/*.

Table 1. Dryland spring barley performance in Northern District at Bonners Ferry, Genesee, and Moscow, 2012.

	Yield				North Idaho Average				
Variety	Craigmont	Genesee	Moscow	Bonners Ferry	Yield	Test weight	Plant Height	Plumps	Thins
FEED	bu/A				bu/A	lb/bu	inches	%>6/64	%<5.5/64
Spaulding	98	92	106	134	108	55.5	30	90	2
Tetonia	97	105	96	126	106	54.1	30	86	3
Champion	95	95	103	126	105	54.9	31	91	2
Camas	88	92	99	132	103	54.6	32	92	2
Xena	96	91	103	120	102	54.2	30	90	2
Baronesse	92	94	101	120	102	53.8	29	90	2
Merideth	99	88	99	119	101	53.1	30	92	2
Lenetah	90	87	100	125	100	55.5	29	92	2
Millenium (six-row)	91	90	81	119	95	52.0	32	73	6
Aquila	93	76	93	112	93	53.9	35	91	2
Clearwater	88	83	88	95	88	61.1	32	72	6
MALT									
Copeland	96	88	96	125	101	53.2	33	92	2
AC-Metcalfe	97	87	90	114	97	54.5	32	90	3
Harrington	81	90	98	114	96	54.3	31	81	4
Tradition (six-row)	84	79	87	104	89	53.5	36	88	2
Average	93	89	97	120	100	54.7	2	6	2
LSD (0.05)	19	11	8	11	6	0.8	3	3	1

Tests and 2010-2012 Yield Summaries

Table 2. Irrigated Two-Row Spring Barley Performance in Eastern Districts at Rupert, Aberdeen, Idaho Falls, and Ashton, 2012.

	Yield				Irrigated Average						
	Rupert	Aberdeen	Idaho Falls	Ashton	Yield	Test Weight	Plant Height	Lodging	Plumps	Thins	Protein
Variety	bu/A				bu/A	lb/bu	inches	%	(% > 6/64)	%	%
FEED											
Baronesse	137	154	171	82	136	52	31	30	85	5	12.4
CDC Fibar*	79	108	114	54	89	57	34	52	76	7	16.1
CDC McGwire*	107	138	155	44	111	58	33	30	60	15	13.2
Champion	143	168	186	109	152	54	33	24	90	3	14.0
Clearwater*	95	117	141	89	110	58	33	43	65	13	15.3
Herald	132	155	167	66	130	49	35	29	77	9	13.8
Idagold II	136	170	162	96	141	51	29	6	83	5	13.8
Julie*	106	136	144	77	116	58	33	19	81	9	15.5
Lenetah	130	161	172	113	144	53	33	23	92	3	13.8
RWA 1758	142	153	169	84	137	53	30	28	87	5	13.1
Spaulding	137	182	191	98	152	54	32	8	87	5	13.3
Tetonia	128	153	167	91	135	52	31	43	80	9	13.5
Transit*	87	121	110	62	95	57	34	23	75	7	14.7
Xena	144	177	178	108	151	53	32	33	90	4	13.2
Average	121	152	158	81	120	54	32	26	80	7	14.3
LSD (α = .05)	21	20	16	33	11	1	2	18	6	3	1.4
MALT											
B1202	124	140	133	79	122	51	31	34	86	5	13.8
Conrad	138	145	144	68	127	52	30	30	91	3	13.9
Copeland	147	162	149	78	134	52	33	21	90	3	14.0
Genie	131	152	140	87	128	51	29	31	81	8	14.6
Harrington	108	119	103	72	101	51	33	48	75	10	14.6
Hockett	121	139	140	92	123	52	32	47	88	5	14.5
Meredith	-	129	150	78	123	50	31	35	83	6	14.6
Merit	122	128	147	59	114	51	32	25	83	7	14.2
Merit 57	124	125	155	85	122	50	33	40	79	8	14.4
Metcalfe	124	131	143	81	120	52	35	45	88	5	14.1
Moravian 115	136	148	118	76	122	49	27	49	82	6	14.0
Moravian 137	115	164	144	72	124	49	27	50	72	10	14.0
Moravian 143	150	175	149	72	137	49	29	23	89	3	14.6
Moravian 69	145	164	142	83	133	50	28	39	79	8	14.2
Pinnacle	140	170	154	89	138	54	33	9	96	1	13.6
Voyager	145	161	162	66	133	52	31	32	92	3	13.7
Xena (feed check)	149	159	168	92	142	53	32	23	91	3	13.4
Average	135	152	144	80	128	51	31	34	85	5	14.0
LSD (0.05)	19	20	19	31	11	1	2	16	9	4	1.0

* indicates hulless variety

Table 3. Irrigated Six-Row Spring Barley Performance in Eastern Districts at Rupert, Aberdeen, Ashton, and Idaho Falls, 2012.

	Yield				Average						
Variety	Rupert	Aberdeen	Idaho Falls	Ashton	Yield	Test Weight	Plant Height	Lodging	Plumps	Thins	Protein
FEED	bu/A				bu/A	lb/bu	inches	%	(% > 6/64)	%	%
Aquila	95	149	183	76	126	52	35	2	85	6	13.7
Goldeneye	118	145	211	108	146	51	35	18	84	6	13.5
Gustoe	92	140	152	74	114	46	25	47	61	16	13.3
Herald	132	145	197	69	136	49	35	21	80	8	11.2
Millennium	137	179	191	74	145	50	36	8	70	12	13.1
Steptoe	118	129	196	82	134	48	35	44	77	9	12.5
MALT											
Celebration	103	140	175	66	121	50	34	45	80	8	14.6
Legacy	116	143	181	84	131	50	36	43	81	7	13.3
Maja	109	129	178	68	121	49	34	49	64	16	12.7
Morex	109	127	166	67	117	49	36	51	70	12	13.8
Quest	120	114	181	74	122	50	36	38	80	7	14.1
Tradition	135	129	186	72	131	51	37	25	88	3	13.2
Average	119	142	186	76	131	50	35	32	78	9	13.2
LSD (0.05)	20	22	14	28	11	1	2	14	9	5	1.3

Table 4. Spring Barley Yield Average for 2010-2012 in Idaho.

	District	
	Northern	Eastern
Site/Years	**4**	**12**
2-ROW FEED		
Transit*		91
Clearwater*	81	100
Julie*		106
Baronesse	97	129
RWA 1758		129
Tetonia	102	130
Lenetah	100	130
Idagold II		131
Champion	104	136
Spaulding	102	138
Xena		140
Camas	101	
Average	98	124
LSD (α = .05)	4	5
2-ROW MALT		
B1202		113
Conrad		123
Copeland		121
Harrington	92	102
Hockett		113
Merit		110
Merit 57		117
AC-Metcalfe	93	
Moravian 115		117
Moravian 137		131
Moravian 69		124
Pinnacle		122
Average	93	120
LSD (0.05)		6
6-ROW FEED		
Aquila		
Millennium		133
Goldeneye		132
Herald		128
Steptoe		122
6-ROW MALT		
Legacy		120
Tradition	88	112
Celebration		109
Morex		102
Tradition		
Average	88	122
LSD (0.05)	4	5