FORAGE BARLEY VARIETY TRIAL

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Recent interest in the use of annual cereal crops as a forage by farmers has been evident over the past few years in central North Dakota and elsewhere. One particular crop that has been gaining popularity is spring planted hooded (awnless) hay barley. Typically the awnless forage barley varieties are developed and used in drier western environments. Since these barleys lack awns (beards) they generally are harvested with some degree of grain fill or at a later stage as compared to awned types. An advantage of planting any barley for forage would be an adapted crop that is early, has fast competitive growth along with good yield and quality potential.

With acreage expansion and numerous inquiries about performance of various varieties, a trial was established at the NDSU Carrington Research Extension Center to evaluate the available commercial varieties of hay barley. Comparisons to current grain type barleys for forage yield were also made in 2002.

All varieties tested were available as North Dakota certified seed or as common seed with the exception of Horsford, developed 1879-80 in Vermont, and Hayes, which has just been released by Montana State University (MSU). Haybet, which was developed at MSU and released in 1988, has been the most commonly planted forage barley in central North Dakota. Westford, released in 1988 and a more recent release, Bestford, have been developed by Western Plant Breeders and are proprietary varieties marketed in drier environments. Logan is a feed barley released by NDSU in 1995, while Robust is a malt type released by the University of Minnesota in 1983.

The trial was planted April 25 on a field that was previously planted to soybean. Seeding rate for all varieties was 1.2 million PLS/ac. The range among varieties to achieve this rate varied from 96 to 122 lbs. PLS/ac. The trial was inadvertently sprayed with a grass herbicide that resulted in noticeable injury, particularly with the 2-row varieties. This incident points out the importance of exercising caution when using selected grass control herbicides. Proper staging is critical, especially with 2-row varieties, which are more susceptible to this herbicide injury. Most varieties exhibited good disease tolerance under the wet conditions (10.22 inches from planting to harvest) of this past season. However, Westford and Bestford were infected by a late fungal disease diagnosed as scald which had an unknown impact on yield.

Targeted harvest stage for forage varieties was early dough and for grain types was four days after heading. Most varieties were harvested at the intended growth stages with the exception of Horsford and Robust (Table). Horsford was harvested earlier due to plant lodging and Robust was two days late due to rain. Forage varieties generally required 8-10 days after heading to reach early dough. Horsford did not reach early dough until much later since it required 10 days to reach the early milk stage. This delay in maturity may be due to plant lodging that occurred with this variety.

Data gathered is consistent with previous year's data at the CREC, indicating that western developed forage barleys will be higher yielding then adapted grain types for forage production in central North Dakota. Quality data was not taken due to limited funds, although data gathered from other trials indicate that forage barley is of good quality.

Forage Barley												**Carrington**
Variety	Type	Awns	PVP	Days to Heading	Plant Lodging	Plant Height	Harvest Date	Days to Harvest	Harvest Stage	Harvest Moisture	Yield @ 15%	Yield dry wt.
					0-9	inch				%	ton/ac	ton/ac
Horsford	6 row	No	No	59	5.5	34	3-Jul	69	E. milk	71	4.4	3.7
Robust	6 row	Yes	Yes	60	0.8	34	30-Jun	66	Head + 6 days	78	3.0	2.5
Logan	2 row	Yes	Yes	62	0.3	31	30-Jun	66	Head + 4 days	78	3.4	2.9
Haybet	2 row	No	No	65	1.8	38	8-Jul	74	L. milk-E. dough	72	4.2	3.6
Hayes	2 row	No	Yes	67	0.0	37	8-Jul	74	L. milk-E. dough	71	4.1	3.5
Bestford	6 row	No	Yes	69	1.5	39	14-Jul	80	L. milk-E. dough	76	3.5	3.0
Westford	6 row	No	Yes	71	0.8	37	14-Jul	80	L. milk-E. dough	76	4.0	3.4
Mean				65	1.5	36				75	3.8	3.2
C.V.%				0.8	53.4	3.6				2.2	7.1	7.1
LSD.05				1	1.3	2				3	0.4	0.3