Small Grain Forage Variety Testing, 2011.

Wade Thomason, Extension Grains Specialist, Steve Gulick, Farm Manager, Northern Piedmont AREC, Dave Starner, Superintendent, Retired, Northern Piedmont AREC,

Introduction

A forage production trial of commercial barley, oats, rye, triticale, and wheat cultivars has been conducted yearly from 1994-2011 at the Northern Piedmont AREC, Orange. Results from the 2010-11 crop season are presented in this report.

Management and Weather

Preplant fertilizer of 25-64-0 was applied on October 12, 2010. Plots were planted on Oct. 13, 2010 and were seven, seven inch rows wide by 16 feet long, trimmed to 12 feet for harvest. Nitrogen as UAN at a rate of 60 lb of N per acre was applied on March 15, 2011. The plots were harvested for forage yield at the boot (GS 45) and soft dough (GS 85) stages for barley, triticale, and wheat and at the boot and flowering stages for rye and oats. Two rows, the entire length of the plots (12 feet) were harvested with a 12-inch Jari sickle-bar mower and weighed with an electronic hanging scale.

Following an extremely dry summer and corresponding low yields in most of the Commonwealth, small grain growers experienced a generally drier and warm early start to planting. Many farmers were able to get an early start on wheat and barley planting since the harvest season for corn and soybeans was greatly abbreviated. By September 20, 9% of the wheat crop was seeded, compared to the average of 4%. By October 20, most areas had received enough rainfall so that 65% of the state was rated adequate for topsoil moisture. The trend toward early seeding and early emergence continued with 46% of intended acreage reported as already planted and 18% of acres emerged compared with the 5 year average of 8% by this date. The end of the first week of November showed continued cool and relatively wet weather throughout much of the state. Still growers managed to have 77% of acres planted. Conditions for early season growth were favorable, especially for the earlier seedings and the Virginia Ag Statistics Service reported that 81% of wheat had emerged compared to the 5 year average of 53%. Mid-winter was relatively dry and cold with little snow fall. This resulted in more winter injury to some small grain fields but did allow producers to access their fields. Rain in March was welcome and helped improve condition of both wheat and barley throughout the state.
By early April, both wheat and barley were rated at greater than 80% good or excellent. Crop condition remained quite good in most locations in late April however some areas were beginning to feel the effects of dry weather. The end of the first week of May found 64% of the wheat crop headed, compared to 41%, the 5 year average for this timeframe.

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Figure 1. Monthly average temperatures, 2010-11.

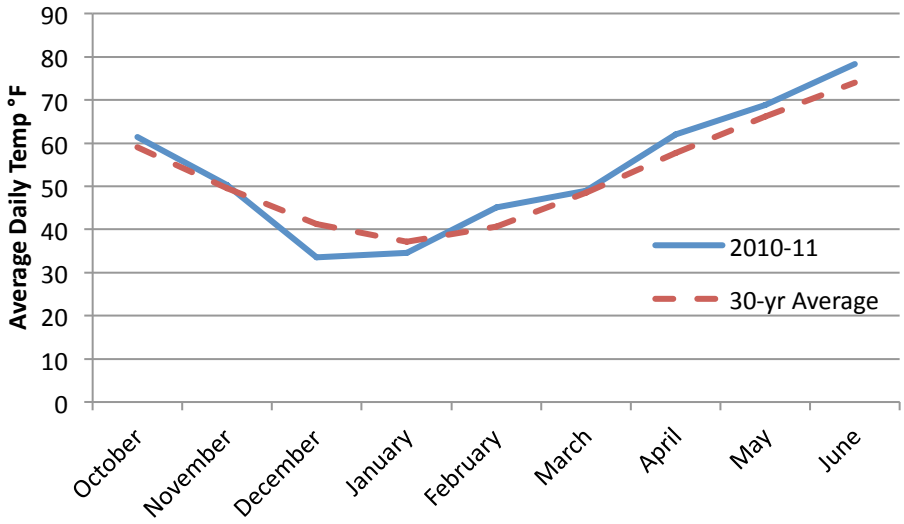
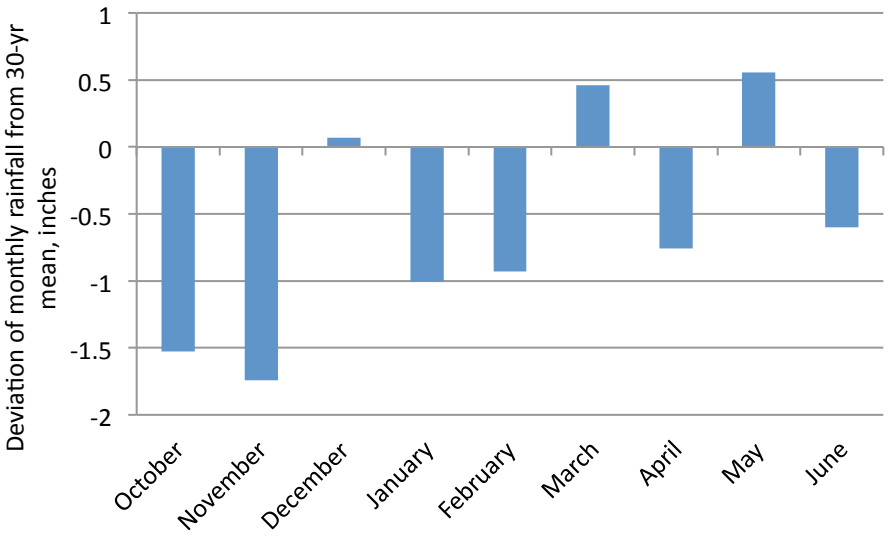


Figure 2. Deviation of monthly rainfall from 30-yr mean.



Results

Results are reported for 35 percent dry matter (DM) yield, DM yield, and nutritive value for wheat, barley, rye, and triticale crops.

Experimental plots vary in yield and other measurements due to their location in the field and other factors which cannot be controlled. The statistics given in the tables are intended to help the reader make valid comparisons between cultivars. The magnitude of differences which may have been due to experimental error has been computed for the data and listed at the bottom of columns as the LSD (.05) (least significant difference with 95 percent confidence). Differences must be greater that the LSD to be believed to truly exist.

Table 1. Small Grain Forage Variety Test, Northern Piedmont AREC, Orange, Va 2010-2011, Boot Stage Harvest

Northern Piedmont AREC, Orange, Va 2010-2011											
Boot Stage											
Cultivar	Species†	Harvest Date	Zadoks Maturity	Height (inches)	Lodging %	% Crude Protein	ADF %	NDF %	TDN %	35% DM Yield (tons/ac)	DM Yield (tons/ac)
Thoroughbred	B	4/22	45	30	0	17.07	28.27	51.67	70	8.30	2.91
Nomini	B	4/19	45	32	0	18.83	29.83	55.03	68	7.71	2.70
Early Grazer	R	4/14	45	34	0	20.53	28.73	54.10	69	5.12	1.79
Grazemaster	R	4/14	45	32	0	19.20	29.23	54.90	70	5.07	1.77
TRICAL 718	T	5/2	44	44	0	15.47	34.73	61.50	68	10.88	3.81
TRICAL 141	T	5/2	44	43	0	14.00	36.13	64.53	66	10.74	3.76
SN-08-PA-25	T	4/29	45	43	0	16.23	34.90	62.43	66	10.71	3.75
TRICAL 2700	T	5/2	45	43	0	12.67	37.30	64.63	67	10.65	3.73
SN-08-PA-21	T	4/29	45	40	0	16.40	34.37	61.20	67	10.52	3.68
SN-08-PA-23	T	4/29	45	41	0	15.93	34.80	61.57	66	10.45	3.66
SN-08-PA-09	T	4/29	44	42	0	17.20	35.17	62.37	66	10.38	3.63
SN-08-PA-10	T	4/29	44	41	0	15.57	36.37	64.63	65	10.10	3.54
SN-08-PA-02	T	4/30	45	40	0	13.90	35.97	63.07	67	10.06	3.52
SN-08-PA-17	T	4/27	45	39	0	15.30	35.43	63.20	66	9.48	3.32
TRICAL 336	T	4/27	45	31	0	15.07	33.90	61.03	68	9.30	3.25
TRICAL 815	T	4/29	46	33	0	15.27	34.40	61.40	68	9.15	3.20
TRICAL 342	T	4/26	46	36	0	15.30	34.90	60.23	68	7.93	2.78
TRICAL 308	T	4/26	47	30	0	17.63	31.43	57.20	68	7.56	2.65
Featherstone VA 258	W	4/29	46	34	0	15.57	34.10	61.17	68	10.19	3.57
SS MPV 57	W	4/29	45	38	0	17.60	31.13	57.23	67	9.61	3.36
Merl	W	4/27	45	29	0	16.27	29.90	55.80	69	7.83	2.74
Sisson	W	4/27	46	31	0	15.93	30.80	57.47	67	7.73	2.71
Jamestown	W	4/26	45	26	0	17.00	30.67	55.93	68	7.00	2.45
LSD 0.05						**1.54**	**2.19**	**2.81**	**2**	**1.03**	**0.36**
† B - Barley, R - Rye, T - Triticale, W- Wheat											

Compared to 2010, overall 35% DM forage yield at the boot state was approximately 1.2 ton/ac higher and crude protein 1% lower in 2011. Very warm temperatures in April 2010 accelerated crop development, but the 2010-11 season was much more favorage for small grain forage produciton. The highest yielding entry at the boot stage harvest was 'TRICAL 718' and the triticale entries as a group produced the greatest tonnage.

Table 2. Small Grain Forage Variety Test, Northern Piedmont AREC, Orange, Va 2009-2010, Soft Dough Stage Harvest.

Small Grain Forage Variety Test Northern Piedmont AREC, Orange, Va 2010-2011 Soft Dough Stage											
Cultivar	Species†	Harvest Date	Zadoks Maturity	Height (inches)	Lodging %	% Crude Protein	ADF %	NDF %	TDN %	35% DM Yield (tons/ac)	DM Yield (tons/ac)
Thoroughbred	B	5/26	85	41	0	6.50	38.93	64.00	65	18.60	6.51
Nomini	B	5/26	86	42	0	5.30	44.30	69.30	61	15.89	5.56
Early Grazer	R	5/2	65	65	0	12.10	38.73	65.93	65	9.50	3.33
Grazemaster	R	5/2	65	65	0	12.37	38.57	66.13	64	9.03	3.16
TRICAL 718	T	6/17	85	67	0	5.40	43.97	69.93	57	26.69	9.34
SN-08-PA-21	T	6/9	85	61	0	6.33	44.50	71.63	57	25.35	8.87
TRICAL 141	T	6/17	86	67	0	5.63	45.30	72.40	58	24.91	8.72
SN-08-PA-25	T	6/9	85	61	0	5.57	46.03	72.77	58	24.78	8.67
SN-08-PA-09	T	6/17	87	63	0	6.47	43.50	70.13	58	24.55	8.59
SN-08-PA-10	T	6/9	85	61	0	6.20	45.00	71.27	58	24.24	8.48
SN-08-PA-17	T	6/9	85	63	0	5.90	44.67	70.83	60	23.96	8.39
TRICAL 2700	T	6/17	87	65	0	5.17	45.10	69.63	58	23.93	8.38
TRICAL 342	T	6/9	85	56	0	5.53	42.63	68.57	57	23.65	8.28
SN-08-PA-23	T	6/9	85	65	0	5.57	45.70	72.20	56	23.64	8.27
TRICAL 336	T	6/17	87	52	0	5.87	43.90	68.80	56	23.25	8.14
TRICAL 815	T	6/17	87	55	0	6.20	44.13	71.07	54	22.81	7.98
SN-08-PA-02	T	6/9	85	62	0	6.40	42.53	69.77	61	22.59	7.91
TRICAL 308	T	6/9	85	43	0	5.97	43.80	72.40	55	21.16	7.41
Featherstone VA 258	W	6/9	85	43	0	5.30	44.20	67.60	54	21.57	7.55
Merl	W	6/9	86	40	0	5.85	45.50	70.60	57	19.83	6.94
Jamestown	W	6/9	86	38	0	5.13	46.77	72.13	55	19.37	6.78
Sisson	W	6/9	86	38	0	5.70	45.33	69.77	56	18.21	6.37
SS MPV 57	W	6/9	85	42	0	5.30	43.20	65.50	59	17.14	6.00
LSD 0.05						**1.76**	**3.42**	**4.18**	**3**	**2.91**	**1.02**
† B - Barley, R - Rye, T - Triticale, W- Wheat											

The highest yielding entry harvested at the soft dough stage was TRICAL 718 triticale. Over all entries, 35% DM yield was approximately 3.5 tons/ac more than in 2010. Crude protein over species averaged 6.3% and TDN 58.2% which is below the long-term mean for both measures at this stage.