Small Grain Forage Variety Testing, 2010.

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A forage production trial of commercial barley, oat, rye, triticale, and wheat cultivars has been conducted yearly from 1994-2010 at the Northern Piedmont AREC, Orange. Long-term results were published in 2004 and are available on the web at http://pubs.ext.vt.edu/418/418-019/418-019.html

This report presents the weather and results from this trial in the 2009-10 growing season.

Management and Weather

Preplant fertilizer of 25-64-0 was applied on September 24, 2009. Plots were planted on Oct. 7, 2009 and were seven, seven inch rows wide by 16 feet long, trimmed to 12 feet for harvest. Tillers were counted and ground cover was estimated on March 24, 2010. Nitrogen as UAN at a rate of 60 lb of N per acre was applied on March 8, 2010. 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.

Small grain plantings in early fall proceeded at a rapid pace due to favorable conditions but soon slowed because of wet weather. Cold, wet weather in late November and December slowed growth dramatically and waterlogging in parts of some fields resulted in dead spots. As of December 15, the wheat crop was rated 36% Fair and 47% good. Barley was estimated to be in better condition with 67% of the crop rated as good. Soggy, cold conditions persisted throughout the winter. Many producers had difficulty being timely with late winter nitrogen and herbicide applications due to snow and wet fields. However by late March, fieldwork was back in full swing. On April 10, the wheat crop was rated 55% good and 36% fair. April was warmer and drier than normal, allowing crop growth to progress favorably. But hot, dry, and windy conditions prevailed and by May 10, approximately 70% of the wheat crop had headed, compared to a 5-year average of 38% by this date. Dry and unseasonably warm weather persisted during pollination and reduced both forage and grain yields statewide.

Figure 1. Deviation of 2009-10 monthly average temperatures from 30-yr mean.

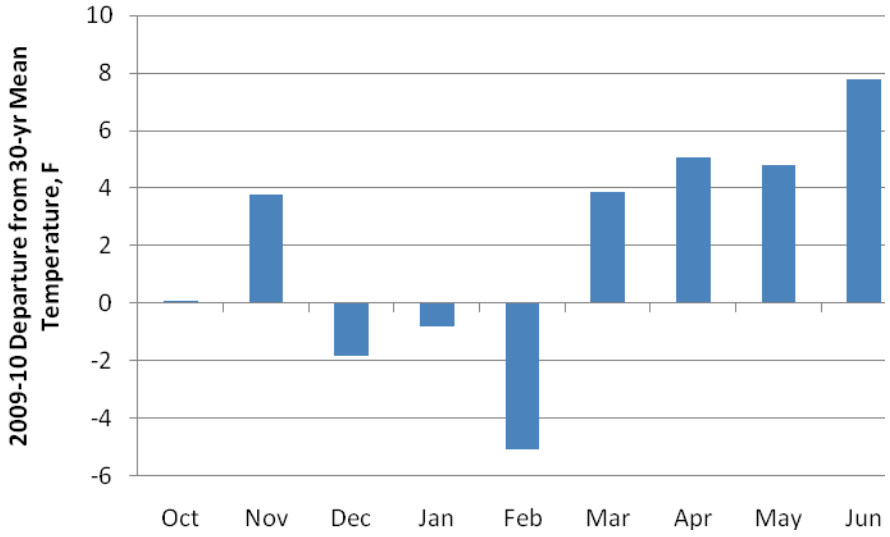
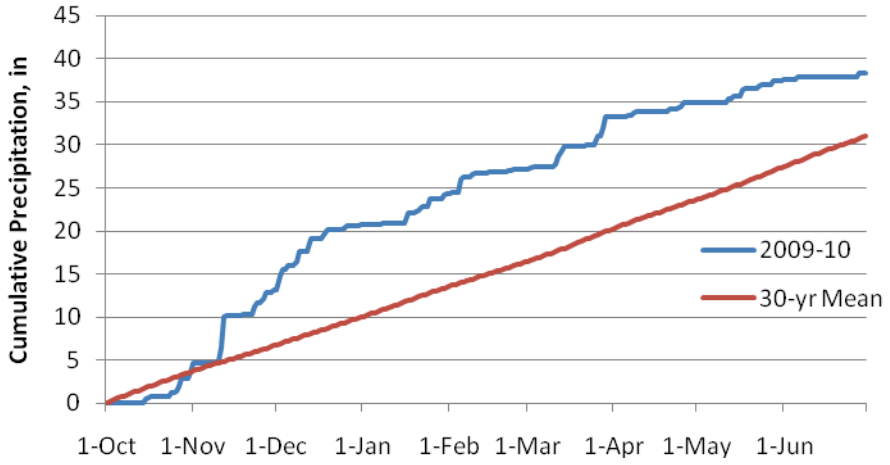


Figure 2. Cumulative daily precipitation, 2009-10 season and 30-yr mean.



Results

Results are reported for 35 percent dry matter (DM) yield, DM yield, and nutritive value for oats, 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 2009-2010, Boot Stage Harvest

Small Grain Forage Variety Test
Northern Piedmont AREC, Orange, Va 2009-2010
Boot Stage

Cultivar	Species†	Harvest Date	Zadoks Maturity	Height (inches)	% Ground Cover	Lodging %	% Crude Protein	ADF %	NDF %	TDN %	35% DM Yield (tons/ac)	DM Yield (tons/ac)
Nomini	B	4/19	46	28	90	0	12.00	25.77	48.37	73	7.30	2.56
Thoroughbred	B	4/23	46	28	90	0	14.33	26.83	49.97	71	7.22	2.53
Wheeler	R	4/27	45	46	100	0	16.90	28.13	53.27	70	6.48	2.27
Early Grazer	R	4/9	45	34	100	0	19.10	25.47	48.93	71	4.24	1.48
RSI 202718	T	4/28	44	40	93	0	14.47	32.43	58.20	68	12.19	4.27
TRICAL 342	T	4/19	45	29	90	0	14.37	25.23	47.37	74	10.87	3.80
RSI 04T90141	T	4/28	44	39	90	0	13.67	32.07	57.13	69	10.52	3.68
TRICAL 2700	T	4/28	44	38	90	0	12.07	31.17	56.27	70	10.06	3.52
NCT05-2651	T	4/19	45	27	100	0	15.80	27.43	50.10	71	10.02	3.51
TRICAL 308	T	4/19	45	28	93	0	15.10	26.80	48.37	72	9.14	3.20
RSI 09TF 3047	T	4/19	45	28	90	0	15.57	26.83	49.63	72	9.00	3.15
TRICAL 336	T	4/27	45	31	97	0	14.93	29.37	54.73	71	8.90	3.11
NCPT01-1433	T	4/23	45	28	100	0	14.93	28.83	52.93	70	8.76	3.07
RSI 09TF 4244	T	4/23	45	32	90	0	16.50	27.67	49.37	71	8.23	2.88
RSI 09TF 7246	T	4/27	46	35	93	0	15.87	27.27	50.77	72	8.02	2.81
TRICAL 815	T	4/27	45	31	93	0	15.33	29.10	53.97	71	7.88	2.76
RSI 05TF125	T	4/27	44	28	93	0	19.27	27.33	49.07	71	6.63	2.32
Featherstone 176	W	4/23	45	25	90	0	14.60	25.57	47.17	73	7.76	2.72
VA 05-258	W	4/27	45	29	90	0	14.67	26.93	49.27	73	7.69	2.69
NC04-20814	W	4/27	46	29	90	0	13.73	27.53	51.53	72	7.47	2.61
SS MPV 57	W	4/27	45	31	90	0	13.30	26.60	49.13	72	7.40	2.59
Merl	W	4/27	46	28	90	0	14.07	26.47	49.37	72	6.90	2.41
Sisson	W	4/23	45	27	90	0	15.00	24.60	43.90	74	6.78	2.37
Jamestown	W	4/23	45	24	90	0	15.20	25.07	45.53	73	6.60	2.31
LSD 0.05							**2.66**	**1.64**	**2.71**	**2**	**2.40**	**0.84**

† B - Barley, R - Rye, T - Triticale, W- Wheat

Compared to 2009, overall 35% DM forage yield at the boot state was approximately 1.6 ton/ac less and crude protein 6% lower in 2010. This is likely due to very warm temperatures in April that accelerated crop development. The highest yielding entry at the boot stage harvest was 'RSI 202718' 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 2009-2010
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	5/21	85	36	0	8.20	35.23	61.03	68	16.01	5.60
Nomini	B	5/14	85	36	0	8.10	33.00	58.40	69	12.62	4.42
Early Grazer	R‡	4/28	63	65	0	12.37	35.60	61.00	67	12.75	4.46
Wheeler	R	5/14	68	67	0	11.07	36.90	65.00	66	12.73	4.46
RSI 202718	T	6/8	85	62	0	6.37	42.50	68.60	61	24.88	8.71
RSI 09TF 4244	T	6/4	84	53	0	7.33	40.20	69.30	59	21.11	7.39
NCPT01-1433	T	6/4	86	47	0	6.50	38.40	62.90	64	21.07	7.37
RSI 05TF125	T	6/8	84	43	0	8.07	40.63	68.20	62	20.49	7.17
RSI 09TF 3047	T	6/4	86	50	0	6.90	39.30	66.47	59	20.08	7.03
RSI 04T90141	T	6/8	85	59	0	7.17	40.80	68.60	61	19.99	7.00
TRICAL 336	T	6/4	84	46	0	7.37	38.93	65.37	61	19.90	6.96
TRICAL 2700	T	6/8	85	56	0	6.17	40.03	67.13	60	19.10	6.69
TRICAL 815	T	6/8	85	46	0	6.67	40.83	68.60	60	18.98	6.64
NCT05-2651	T	6/4	86	46	0	6.73	40.27	68.37	58	18.50	6.48
TRICAL 308	T	6/4	86	38	0	6.77	40.10	68.30	58	18.50	6.48
TRICAL 342	T	6/4	84	54	0	6.03	41.13	67.53	58	18.39	6.44
RSI 09TF 7246	T	6/8	85	50	0	6.73	39.00	65.20	61	18.03	6.31
NC04-20814	W	5/28	85	37	0	7.53	38.00	61.33	65	17.46	6.11
Featherstone 176	W	5/28	86	39	0	6.70	37.87	61.57	64	16.84	5.89
VA 05-258	W	5/28	85	40	0	8.60	33.47	57.43	68	16.79	5.88
SS MPV 57	W	5/28	84	37	0	7.73	35.43	58.43	65	15.88	5.56
Jamestown	W	5/28	85	35	0	7.47	36.33	58.77	66	15.25	5.34
Sisson	W	5/28	84	35	0	8.07	34.87	56.80	68	14.28	5.00
Merl	W	6/1	86	34	0	6.83	36.50	59.90	62	13.36	4.68
LSD 0.05						**1.53**	**2.83**	**4.27**	**3**	**3.63**	**1.27**

† B - Barley, R - Rye, T - Triticale, W- Wheat

‡ - Rye was harvested at flowering

The highest yielding entry harvested at the soft dough stage was RSI 202718 triticale. Over all entries, 35% DM yield was approximately 1.5 tons/ac less than in 2009. Crude protein over species averaged 7.6% which is 2.3% below the long-term mean for CP at this stage.