Virginia Cooperative Extension
Virginia Tech • Virginia State University
www.ext.vt.edu

Small Grain Forage Variety Testing, 2017

Wade Thomason, Extension Grains Specialist, Steve Gulick, Farm Manager, retired, Northern Piedmont Center, Brad Lael, Farm Manager, retired, Northern Piedmont Center, Elizabeth Hokanson, Research Associate, Grains Crops Testing

Introduction

A forage production trial of commercial barley, oats, rye, triticale, and wheat cultivars has been conducted yearly from 1994-2017 at the Northern Piedmont AREC, Orange. Results from the 2016-17 crop season are presented in this report.

Management and Weather

Pre-plant fertilizer of 32-60-41 was applied on October 4, 2016. Plots were planted on Oct. 06, 2016 and were seven, seven inch rows wide by 13 feet long, trimmed to 9 feet for harvest. Nitrogen as UAN at a rate of 60 lb of N per acre was applied on February, 21, 2017. All plots were targeted for harvest when each entry reached the boot (GS 45-50) stage, however the average growth stage was 53 at harvest timing due to warm weather in late winter. Two rows, the entire length of the plots, were harvested with a 12-inch Jari sickle-bar mower and weighed with an electronic hanging scale.

Statewide temperatures and rainfall in fall 2016 were generally favorable wheat seeding after fields dried from the soaking from Hurricane Matthew. By mid-October, wheat planting reached 20% of intentions, compared with a five year average of 25% by this date. Continued favorable weather allowed 41% and 72% of the wheat and barley crops, respectively to be planted by October 3. By mid-November, planting progress was near the five year average for all small grains reported with 53 and 60% of barley and wheat acres reported as good or excellent. Dry conditions persisted through late November results in a decline in the number of wheat and barley acres rated excellent, though this did allow successful late seeding in some areas. Rainfall in early December returned the total season precipitation to near normal, followed by mild and wet conditions through much of January. February was unseasonably warm with limited rainfall, resulting in soil moisture depletion. Barley and wheat rated were rated good or excellent on 46 and 68% of acres, respectively. March brought mostly mild temperatures with a freeze mid-month. Seventy-five % of the winter wheat crop was rated good or excellent for the week ending March 26. Statewide rains were received in mid-March, but season total rainfall continued below normal. By end of the third week of March, 33% of the wheat crop was reported as headed up 14% from last year and 23% from the five-yr

average. Dry soil conditions continued through mid-April with temperature above average through the last half of the month. At the end of April, 75% of the winter wheat crop was still rated good or excellent.

Figure 1. 2016-17 and 76-yr mean monthly growing season precipitation measured at the Northern Piedmont Center, Orange, VA

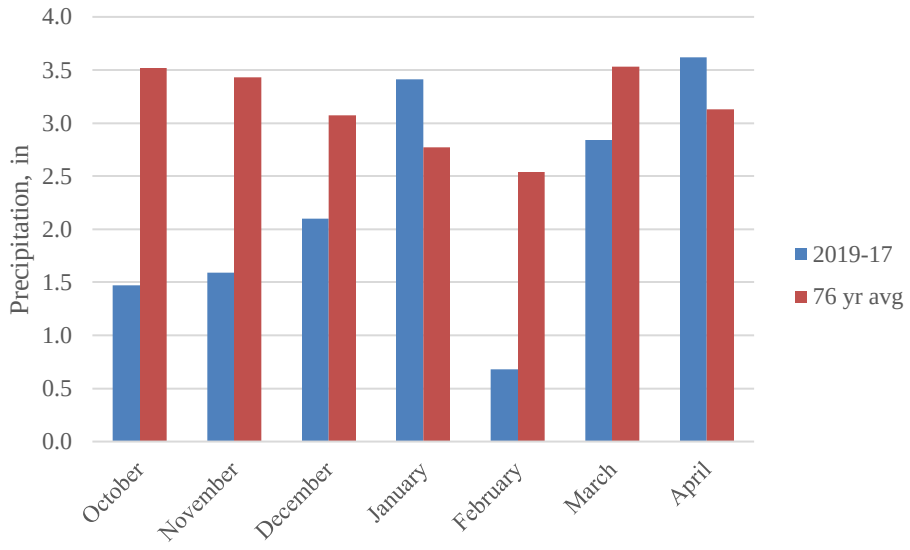
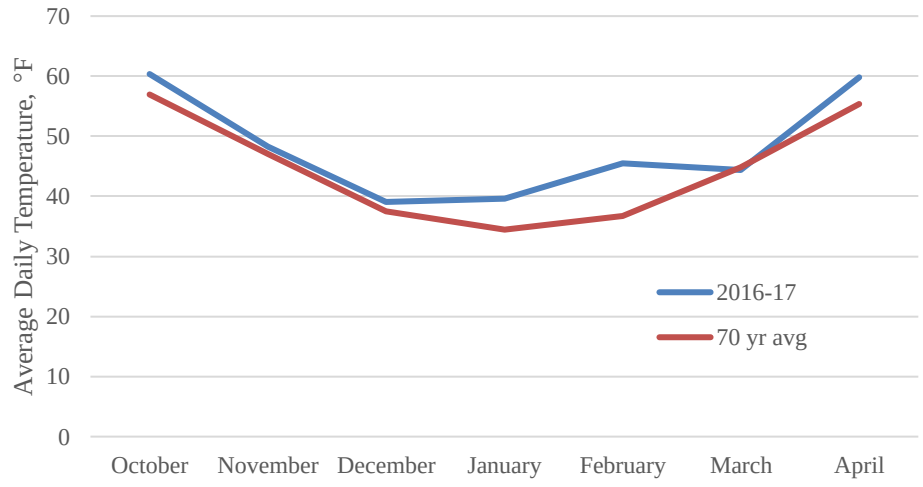


Figure 2. Monthly average growing season temperatures, 2016-17 and 70-yr mean, Northern Piedmont Center, Orange, VA.



Results

Results are reported for 35 percent dry matter (DM) yield, DM yield, and nutritive value for all crops including mixtures.

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 than the LSD to be believed to truly exist.

Table 1. Small Grain Forage Variety Test, Northern Piedmont AREC, Orange, Va 2016-2017, Boot Stage Harvest

Northern Piedmont Center, Orange, Va 2015-16											
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)
Secretariat	B	10-Apr	55	22	0	9.95	33.29	57.18	59.03	4.06	1.42
Thoroughbred	B	10-Apr	54	22	0	9.70	32.47	55.70	59.58	3.50	1.22
Nomini	B	10-Apr	56	23	0	9.88	33.87	57.14	58.56	3.34	1.17
NE96T441	T	3-May	56	38	0	7.58	42.62	70.35	51.00	8.75	3.06
Hy Octane	T	3-May	56	34	0	7.68	39.80	68.53	53.20	7.22	2.53
NE422T	T	3-May	54	44	0	7.96	41.70	70.37	51.84	7.12	2.49
NE426GT	T	28-Apr	53	43	0	8.46	37.82	65.42	55.01	7.07	2.47
Trical 815	T	28-Apr	55	35	0	9.14	39.57	67.27	53.91	6.79	2.38
Trical 336	T	28-Apr	55	35	0	8.16	39.14	66.34	53.89	6.23	2.18
NT09423	T	28-Apr	54	30	0	8.72	38.72	67.97	54.41	5.87	2.05
NT07403	T	18-Apr	55	33	0	9.15	36.87	63.28	55.99	5.71	2.00
Bolt	T	26-Apr	55	36	0	7.54	40.92	68.20	52.29	5.61	1.96
Mercer Brand Arcia	T	18-Apr	53	32	0	9.89	35.27	61.15	57.49	5.32	1.86
Trical Gainer 154	T	17-Apr	56	34	0	9.05	37.07	63.26	55.80	4.95	1.73
NT05421	T	17-Apr	52	32	0	9.28	36.36	61.24	56.43	4.79	1.68
NT11428	T	17-Apr	50	34	0	11.62	34.74	59.39	58.52	4.70	1.64
NS202567	T	17-Apr	51	33	0	10.69	37.12	62.05	56.35	4.18	1.46
NT13416	T	17-Apr	55	34	0	10.09	36.69	63.51	56.47	4.16	1.46
NT06422	T	17-Apr	54	33	0	9.17	38.10	64.14	55.05	3.87	1.35
NT11406	T	10-Apr	47	22	0	11.97	29.39	52.41	62.77	3.72	1.30
Trical 342	T	17-Apr	55	29	0	10.11	35.82	61.91	57.14	3.65	1.28
NT01451	T	10-Apr	47	23	0	12.54	30.05	53.31	62.46	3.63	1.27
NT13443	T	10-Apr	46	24	0	12.51	29.31	52.76	63.02	3.53	1.23
Mercer Brand EX 88	T	17-Apr	55	30	0	10.13	35.63	61.47	57.30	3.28	1.15
Hilliard	W	26-Apr	55	37	0	7.82	37.03	63.19	55.39	6.17	2.16
Featherstone VA-258	W	10-Apr	45	23	0	11.19	27.14	47.88	64.22	2.31	0.81
Soil Builder Plus	M	3-May	57	33	0	8.34	39.24	66.36	53.87	5.50	1.92
LSD 0.05						**1.24**	**1.51**	**2.39**	**1**	**1.82**	**0.64**
† B - Barley, HB - Hulless Barley, R - Rye, T - Triticale, W- Wheat, M - Mixture											

Compared to 2016, forage yield over all entries was 0.2 tons/ac less in 2017. Crude protein was, over all entries, slightly lower than last year while TDN was 8% lower. Overall, the triticale lines had the highest yield average of 5.25 ton/ac with NE86T441 producing the highest yield overall. Hulled barley entries, the triticale lines NT11406, NT01451 and NG13443 and Featherstone VA258 wheat reached harvest maturity one week prior to other entries. This difference in maturity should be considered when evaluating the performance among species. The Soil Builder Plus is a prepackaged mixture of TriCal 815 triticale, crimson clover, hairy vetch, MO1 and KB Supreme annual ryegrass, and daikon radish

Entries

Eddie Mercer Agri-Services, Inc., 6900 Linganore Rd, Frederick, MD 21701 – Mercer Brand Arcia triticale, Mercer Brand EX 88 triticale.
Featherstone Farm Seed, 13941 Genito Rd, Amelia, VA 23002 – Featherstone VA-258 wheat.
King's AgriSeeds, Inc., 60 N. Ronks Rd Suite K, Ronks, PA 17572 – Bolt triticale, Soil Builder Plus mixture.
Northern Seed LLC, 2355 Rice Pike, Union, KY 41091 – Trical Gainer 154, Trical 336, Trical 815, Trical 342, NS202567 (all triticales.)
Seedway LLC, 5901 Vera Cruz Rd, Emmaus, PA 18049 – HyOctane triticale.
University of Nebraska-Lincoln, 1071 County Rd G Room C, Ithaca, NE 68033 – NE422T, NE426GT, NE96T441, NT01451, NT05421, NT06422, NT07403, NT09423, NT11406, NT11428, NT13416, NT13443 (all triticales.)
Virginia Crop Improvement Association, 9142 Atlee Station Rd, Mechanicsville, VA 23111 – Nomini barley, Secretariat barley, Thoroughbred barley, Hilliard wheat.