



Small Grain Forage Variety Testing, 2018

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Introduction

A forage production trial of commercial barley, oats, rye, triticale, and wheat cultivars has been conducted yearly from 1994-2018 at the Northern Piedmont AREC, Orange. Results from the 2017-18 crop season are presented in this report.

Management and Weather

Pre-plant fertilizer of 30-60-0 was applied on October 5, 2017. Plots were planted on Oct. 18, 2017 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 March 5, 2018. 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. 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.

Most of Virginia was unseasonably warm and dry through early fall. By mid-October winter wheat seeding had reached 38% of intended acres, compared with the five year average of 31% by this time. Seventy-two percent of barley acres were seeded by October 20, which was similarly to the long-term trend for this date. Statewide topsoil moisture was reported to be adequate in 52% of fields and short in 37%. On November 26, 87 and 65% of wheat and barley acres, respectively were reported in good or excellent condition. While topsoil moisture conditions were improved over October, most areas in the state were two to four inches below normal rainfall totals since September 1. January brought below normal precipitation and cold weather. Crop condition deteriorated slightly with 61% of the wheat crop reported to be in good or excellent condition. February was mostly wet, with warmer temperatures, and most areas in the state still reporting a deficit in rainfall since December 1. March was cooler than normal which resulted in delayed development of both wheat and barley. Dry conditions persisted into early April with most areas reporting a deficit of two to four inches since January 1. The wheat crop was rated as 78% good or excellent. Cooler temperatures and rainfall ended the month of April with 29% of the wheat crop headed, compared with 51% by this date last year. By mid-May, rainfall had increased in most areas of the state. Wheat was 74% headed. Widespread heavy rainfall occurred throughout the last half of May, with heavy rain in many areas. Rain continued through early June, limiting barley harvest to 9% of acres,

compared with 21% in 2017. By June 17, 43 and 30% of barley and wheat acres were harvested, down significantly from the same time in 2017, due to continued rain and wet weather. The USDA-NASS expects farmers to harvest 11 million bushels of wheat, up 15% from 2017. Farmers planted 230,000 acres in fall, 2017 and are expected to harvest 175,000 with an average yield of 63 bu/ac.

Figure 1. 2017-18 and 77-yr mean monthly growing season precipitation measured at the Northern Piedmont Center, Orange, VA

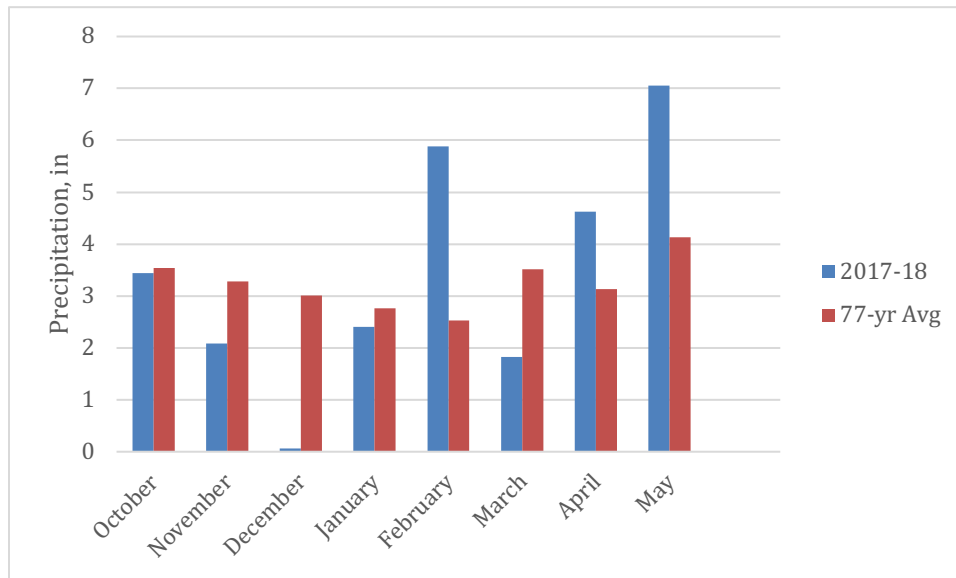
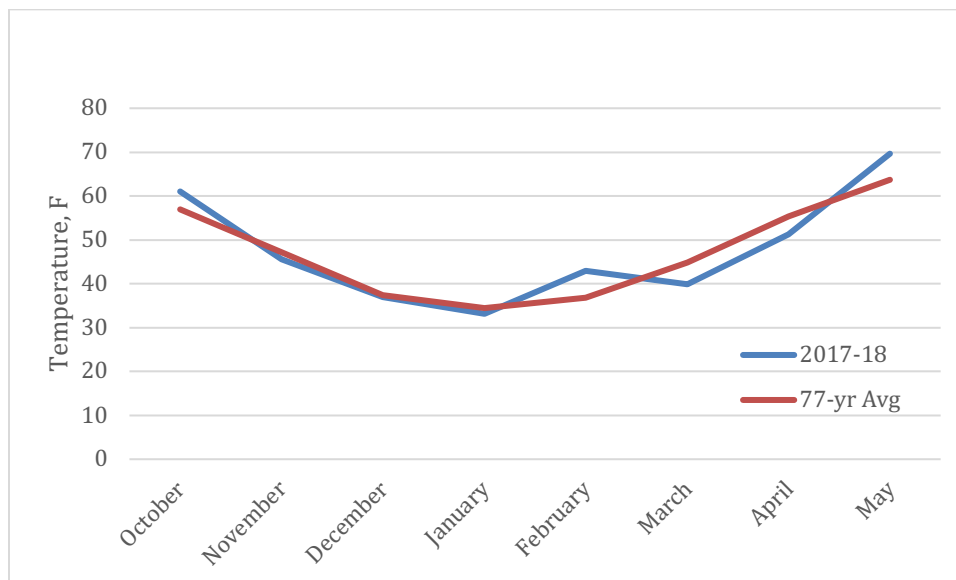


Figure 2. Monthly average growing season temperatures, 2017-18 and 77-yr mean, Northern Piedmont Center, Orange, VA.



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 2017-2018, Boot Stage Harvest

Northern Piedmont Center, Orange, Va 2017-18											
Boot Stage											
		Harvest	Zadoks	Height	Lodging	% Crude	ADF	NDF	TDN	35% DM	DM Yield
Cultivar	Species [†]	Date	Maturity	(inches)	%	Protein	%	%	%	Yield (tons/ac)	(tons/ac)
Nomini	B	26-Apr	57	40	0	13.03	36.03	61.34	58.03	6.09	2.13
Secretariat	B	26-Apr	54	37	0	13.47	34.06	59.96	59.71	6.02	2.11
Thoroughbred	B	26-Apr	45	36	0	13.97	33.38	57.27	60.42	5.72	2.00
SS 76-50	O	10-May	57	32	0	12.86	34.40	61.25	59.22	6.06	2.12
SS 76-30	O	8-May	57	28	0	15.32	31.58	57.38	62.28	3.81	1.33
TriCal Exp 917	T	9-May	51	44	0	10.70	39.03	65.98	54.89	11.73	4.11
NT13416	T	9-May	48	52	0	11.03	38.86	64.82	55.14	11.38	3.98
TriCal Exp 08TF01	T	10-May	45	45	0	12.08	39.89	66.34	54.72	10.80	3.78
TriCal Flex 719	T	10-May	57	43	0	11.89	39.03	65.79	55.32	10.65	3.73
TriCal Exp 30113	T	10-May	54	44	0	11.53	39.24	64.93	55.02	10.63	3.72
NE96T441	T	10-May	45	45	0	11.24	38.84	62.56	55.23	10.51	3.68
TriCal 813	T	9-May	54	48	0	11.53	39.58	64.79	54.77	10.07	3.52
NT12414	T	30-Apr	48	35	0	12.97	32.88	55.71	60.44	10.00	3.50
Merlin Max	T	10-May	57	41	0	11.20	40.58	67.41	53.87	9.87	3.46
NT13443	T	9-May	45	56	0	11.29	38.02	65.13	55.87	9.69	3.39
TriCal 141	T	10-May	48	43	0	11.97	40.00	66.22	54.60	9.64	3.38
HyOctane	T	8-May	57	43	0	12.69	37.02	63.16	57.15	9.49	3.32
NT11428	T	9-May	54	52	0	12.58	35.59	61.18	58.21	9.43	3.30
TriCal Surge	T	9-May	57	49	0	10.91	41.22	67.76	53.28	9.23	3.23
NT11406	T	8-May	57	42	0	11.43	37.39	64.62	56.41	9.07	3.17
NT09423	T	8-May	57	43	0	12.40	36.60	63.92	57.37	8.91	3.12
NT12434	T	8-May	57	39	0	13.46	35.97	61.22	58.24	7.93	2.78
NT12403	T	30-Apr	54	37	0	13.68	33.64	57.13	60.11	7.47	2.61
Mercer Brand Arcia	T	8-May	48	38	0	13.87	31.51	54.17	61.82	7.10	2.48
Mercer Brand EXP508	T	26-Apr	57	36	0	14.80	33.88	57.83	60.33	6.85	2.40
TriCal Gainer 154	T	26-Apr	57	38	0	14.02	33.49	56.76	60.34	6.78	2.37
NT07403	T	26-Apr	57	40	0	12.90	35.06	58.76	58.74	6.57	2.30
SS 1414	T	8-May	48	35	0	13.46	33.20	56.42	60.37	6.52	2.28
NT09404	T	26-Apr	45	33	0	16.25	30.67	54.74	63.32	5.49	1.92
Hilliard	W	30-Apr	57	31	0	13.62	32.53	55.76	60.94	7.53	2.64
Featherstone VA-258	W	30-Apr	51	31	0	13.46	30.22	53.62	62.67	7.33	2.57
LSD 0.05				4		1.89	2.68	3.19	2.54	2.19	0.77

[†] B - Barley, O - Oats, T - Triticale, W- Wheat

Compared to 2017, forage yield over all entries was 3.3 tons greater than in 2017. Crude protein was, over all entries, 3.2% higher than last year while TDN was 1.3% lower. Overall, the triticale lines had the highest yield average of 8.99 ton/ac with Trical Exp 917 producing the highest yield overall. Hulled barley entries, the triticale lines NT 07403, NT09404, Mercer Brand EXP508 and TriCal Gainer 154 reached harvest maturity four to 10 days prior to other entries. This difference in maturity should be considered when evaluating the performance among species.

Entries

Eddie Mercer Agri-Services, Inc, 6900 Linganore Rd, Frederick, MD 21701 – Arcia triticales and EXP 508 triticales.

Featherstone Seed Company, 13941 Genito Rd, Amelia, VA 23002 – Featherstone 258 wheat.

University of Nebraska 1071 County Road 10 Ithaca, NE 68033 – (all triticales) NE96T441, NT07403, NT09404, NT11406, NT11428, NT12403, NT12414, NT12434, NT13416, NT13443, and NT09423.

Seedway LLC, 5901 Vera Cruz Rd, Emmaus, PA 18049 – HyOctane triticales.

Southern States, 6606 West Broad St, Richmond, VA 23230 – SS 1414 triticales SS 76-30 oat, SS 76-50 oat.

TriCal Superior Forage, 2355 Rice Pike Union, KY 41091 – (all triticales) TriCal Gainer 154, TriCal Flex 719, TriCal 813, TriCal Surge, TriCal 141, TriCal Exp 08TF01, TriCal Exp 917, TriCal Exp 30113, and TriCal Exp 70126.

Virginia Crop Improvement Association, 9142 Atlee Station Rd, Mechanicsville, VA 23111 – Nomini barley, Secretariat barley, Thoroughbred barley, and Hilliard wheat.