



Virginia Small Grain Forage Trials, 2024

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Introduction

A forage production trial of commercial barley, oats, rye, triticale, and wheat cultivars has been conducted yearly since 1994 at the Northern Piedmont Center, Orange, VA. Results from the 2023-24 crop season are presented in this report.

Season 2023-24

Growing Conditions

The 2023-2024 growing season was variable for Virginia producers. Heat and drought during the grain fill period led to rapid maturation and reduced grain test weight for the 2023-2024 growing season. Fortunately, precipitation throughout the region during mid- to late grain fill largely saved the small grain crop. Another period of heat and low precipitation at maturation helped mature the crop 1-2 weeks earlier than typical and allowed growers to get into the field to harvest with plenty of time. Disease pressure was high in some regions. Barley yellow dwarf virus had very high infection rates in Eastern and Southern Virginia, and especially in fields that were planted early. Leaf rust came in earlier than typical in Eastern Virginia and the Eastern Shore and was particularly detrimental for those Eastern growers who did not apply fungicides to treat Fusarium Head blight (scab) infection. Powdery mildew was observed in Eastern Virginia but low pressure due to high temperatures and dry conditions shortly after disease onset. Fusarium head blight (scab) pressure was moderate across most of the state and came on slightly later than typical years.

Management Practices

Pre-plant fertilizer of 30-60-30 was applied on October 12, 2023. Plots were planted mid-October 2023 and were seven, seven-inch rows wide by 13 feet long, trimmed to 9 feet for harvest. Nitrogen, as UAN, was applied at a rate of 50 lb of N per acre along with 0.5 oz per acre Harmony Extra mid- February, and late March. All plots were targeted for harvest when each entry reached the boot stage (GS 45-50), and the average growth stage was 46 at the time of harvest. 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.

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 table and graph below 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 LSD to be believed to truly exist.

Table 1. Small Grain Forage Variety Test, Northern Piedmont AREC, Orange, VA, 2023-24, boot stage harvest.

Cultivar	Species	Harvest Date	Maturity Zadok's	Height inches	CP %	ADF %	NDF %	TDN %	35% DM Yield ton/a	DM Yield ton/a
VA20W-142	Wheat	21-Apr	57	25.8	16.4	27.9	51.5	68.3	5.3	1.9
18VTK12-60	Wheat	15-Apr	46	22.5	19.0	29.8	52.7	66.9	4.9	1.7
VT Beahm	Barley	7-Apr	46	29.3	16.7	32.3	48.4	65.2	4.8	1.7
Nomini	Barley	7-Apr	42	26.0	18.2	30.3	45.6	66.6	3.9	1.4
Marouetta	Barley	9-Apr	45	29.0	15.8	28.1	46.6	68.2	5.4	1.9
KWS SH-06	Rye	15-Apr	48	34.3	16.9	35.9	56.5	62.7	5.1	1.8
KWS SH-07	Rye	9-Apr	45	31.0	18.5	29.5	52.2	67.2	5.4	1.9
KWS H95075	Rye	7-Apr	41	28.5	16.5	31.2	52.1	66.0	5.1	1.8
KWS H10129	Rye	21-Apr	51	34.3	16.4	34.6	54.6	63.6	6.1	2.1
KWS H238	Rye	15-Apr	46	29.0	16.4	34.6	54.6	63.6	4.2	1.5
KWS H240	Rye	15-Apr	45	31.3	16.2	35.9	56.4	62.7	4.8	1.7
KWS AVIATOR	Rye	15-Apr	44	28.8	17.0	34.0	55.4	64.0	5.3	1.9
KWS PROGAS	Rye	15-Apr	45	31.8	18.4	33.6	54.5	64.3	4.7	1.7
Surge	Triticale	28-Apr	55	35.3	14.6	32.1	53.1	65.4	7.4	2.6
Thor	Triticale	28-Apr	49	36.0	14.8	33.1	54.1	64.7	7.9	2.8
BCT23002	Triticale	22-Apr	47	30.0	14.8	29.9	53.1	66.9	6.2	2.2
BCT23003	Triticale	22-Apr	43	32.8	17.2	29.1	51.8	67.5	5.5	1.9
BCT23004	Triticale	22-Apr	44	33.3	16.7	30.2	52.8	66.7	7.0	2.5
Mean				30.5	16.7	31.8	52.6	65.6	5.5	1.9
CV				11.7	7.5	8.1	5.7	2.7	19.0	19
LSD (0.05)				5.06	1.7	3.6	4.3	2.6	1.5	0.52

CP – Crude Protein; ADF – Acid Detergent Fiber; NDF – Neutral Detergent Fiber; TDN – Total Dry Matter; 35% DM Yield – Dry Matter Yield @35% moisture; DM Yield – Dry Matter Yield.

Entries

KWS Cereals, 495 County Road 1300 N, Champaign, IL 61822 – KWS SH-06, KWS SH-07, KWS H95075, KWS H10129, KWS H238, KWS H240, KWS AVIATOR, KWS PROGAS.

Legacy Agripartners, 290 Depot Street, Scandinavia, Wisconsin 54977 – Surge, Thor.

Seed-Link Inc., 208 St. David Street, Lindsay, Ontario K9V 4Z4 – BCT23002, BCT23003, BCT23004.

Virginia Tech and Virginia Crop Improvement Association (VT and VCIA), 9142 Atlee Station Road, Mechanicsville, VA 23111 – VA20W-142, 18VTK12-60, VT Beahm, Nomini, Marouetta.

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