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2021
Texas Cool-Season Annual Forage Results

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Forage Variety Results

Texas Cool-Season Annual Variety Trials

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Introduction

The statewide Cool-Season Annual Forage Variety Trial data presented in the following pages are the results from five trials coordinated and implemented by Texas A&M AgriLife Extension and Research faculty and staff. We also appreciate the cooperation from County Extension Agents, producers, and private industry partners that contributed land property, seed, time, and other assets for the effective implementation of these trials. The purpose of this publication is to provide unbiased yield data for forage producers across the state. We hope that this information can assist Texas forage producers in identifying the most appropriate forage varieties for the growing conditions in their geographic regions.

Variety Selection:

The selection of an appropriate cool-season forage variety is one of the most important decisions a producer will make relative to their livestock operation. This decision can impact the potential forage yield, forage nutritive value, disease and insect management, and maturity of the crop, and thus, overall livestock performance. Producers need diversity in the varieties planted on their farms to minimize production risks. The choice of varieties depends on the intended use of the crop (forage only or dual-purpose) and when forage is most needed. Even though total forage production may be similar, certain species/varieties tend to produce more forage during the fall, winter, and/or spring. Variety diversification spreads the risk associated with potentially devastating pests (leaf and stripe rust, Hessian fly, wheat curl mite, greenbugs, etc.) and yield loss from adverse environmental factors (freeze, drought, etc.).

Producers should choose no fewer than two varieties to plant on their farms and preferably more, depending upon size, location, and purpose of fields. Variety selection should be based upon multiple years of sound data produced from university trials and other reliable sources. High yields over multiple years and multiple locations demonstrate a variety potential to perform well over diverse environments. Stable yield performance of forage is the best variety selection tool. It is important to consider decreasing yields over a two or three-year period, which may reflect a change in disease and/or insect resistance in those instances when weather conditions remained similar across years.

When selecting a variety for the 2021-22 season, producers should consider the variables that limited yield in the previous growing seasons, which may have had a negative impact on the results presented in the following pages. We strongly encourage producers to look at multiple year averages and to look at numerous relevant variety trial locations.

Interpreting the Data:

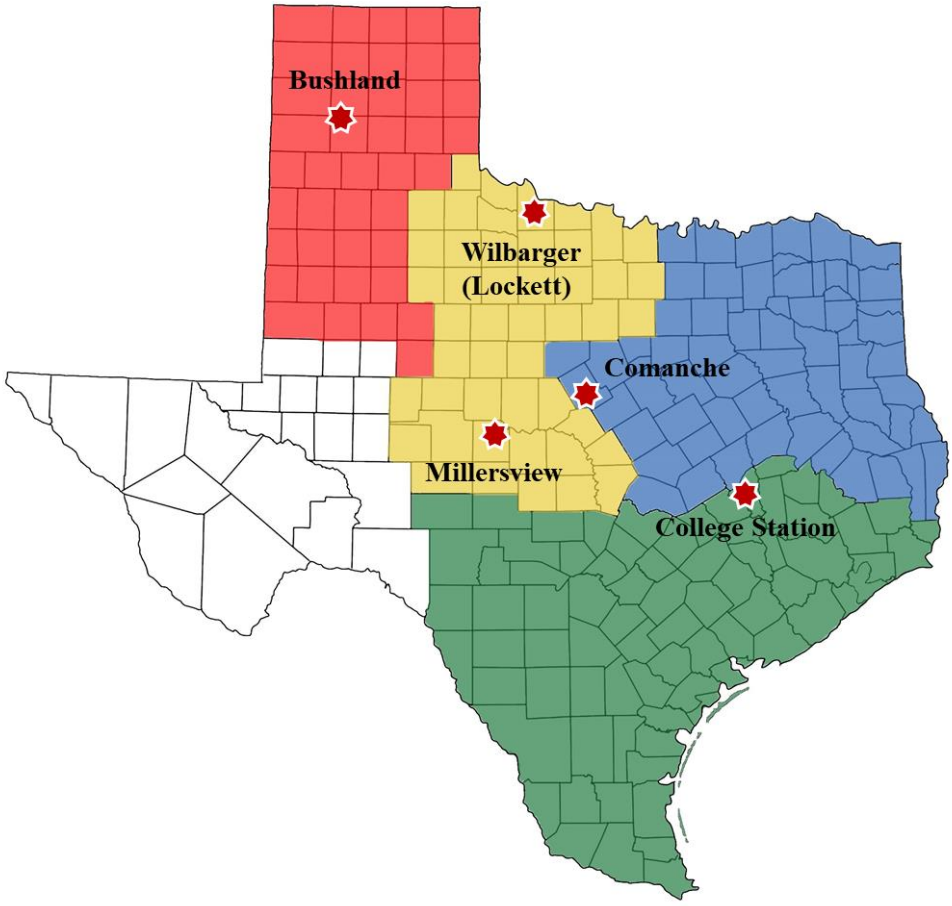
Forage yield at each location has been analyzed using appropriate statistical procedures. The statistical analysis provides the mean, CV, and LSD values. It is important to note these statistical values to prevent misinterpretation of any replicated data.

The mean is another term for the average. Therefore, mean yield is the average of all the plots within a trial. Individual variety yields can be compared to the mean yield to determine how these varieties performed within the trial (i.e., were they above or below average?). This average can also be used as an indication of the environment for that location. A low mean yield can indicate poor growing conditions during the season; likewise, a high yield average can indicate favorable growing conditions.

The CV (Coefficient of Variation) value, expressed as a percentage, indicates the level of unexplained variability present within the trial. A high CV value indicates considerable variability existed within the trial not related to normal variations that might be expected among the varieties in the test. This variability may be the result of non-uniform stands, non-uniform insect or disease pressure, variability in harvesting, or other issues. Generally, CV values above 25% for forage trials signify that there were problems in the trial, leading the reader to question the validity of the data as a true representation of varietal performance.

The LSD (Least Significant Difference) value is a numeric range to help the reader determine if the varieties performed differently from one another within the trial. If the LSD value is 500 lb/ac in a trial in which Variety A yielded 6000 lb/ac and Variety B yielded 5000 lb/ac, then Variety A is said to be significantly better. In that same trial with an LSD value of 500 lb/ac at a 0.05 (5%) significance level, the statistical inference one could say is that Variety A would yield better than Variety B in 19 out of 20 trials conducted in which there was at least a 500 lb/ac difference in yield. In this hypothetical comparison, you might have a 20^{th} trial with a 500 lb/ac difference that there is not truly a difference between Variety A and B, but random chance caused the 500 lb difference.

Texas Regional Map: 2021 Forage Trials



Legend:

- Texas High Plains
- Texas Rolling Plains
- Texas Blacklands
- South Texas
- West Texas

2021 Texas Region Overview

Texas High Plains: Supplemental water from irrigation was required for proper planting and adequate stands for forage crops due to the observed drought in late 2020 in the region. The severe freeze in February 2021 caused some injury in southern, more mature fields, but across the region there was minimal injury. Much of the region received several inches of snow before the onset of sub-zero temperatures, which prevented potential injury on the forage crops. Late April and early May were hot and dry resulting in water stress across much of the region, but conditions quickly improved in mid-May.

Texas Rolling Plains: The wheat season started with mild soil temperatures in the fall of 2020. However, dry conditions persisted during the planting season through March 2021, which reduced forage production. Besides, the snowstorm of February 2021 slowed the crop's growth, which further reduced forage production. Despite the dry winter conditions, cool temperatures and above average precipitation in April and May increased yields in the region.

Texas Blacklands: Variable conditions characterized the start of the growing season in the region. Adequate planting conditions were observed with the exception of the south-west area, where severe drought delayed the planting of small grain forage crops. The unprecedented freezing temperatures observed in early February caused severe injury to oat and barley crop species devoted to forage. Unrelenting rains in April and May prevented and delayed harvest of the forage crops.

South Texas: The 2020/2021 season started with appropriate conditions for most of the region. The freezing temperature conditions observed in early February affected to some degree the normal growth of the small grain forage crops. Unrelented wet conditions in April and May caused severe lodging in some areas and prevented or delayed harvest of the forage crops.

Forage Trial Agronomic Data

Location[1]	Cooperator(s)	Limiting Issues	Planting Date	Fertilizer Total (lb N/A)	Pesticide Applied (Date)
Bushland[2]	Texas A&M AgriLife Research and Extension Center Amarillo	Severe freezing storm	09/15/20	0	Quelex (3/23/21)
College Station	Texas A&M Research and Extension Agronomy Farm	Severe freezing storm, excessive rain in April & May 2020	10/14/20	92	Ally/Amber (1/22/21)
Comanche[2]	Indian Creek Farm, Rodney Stephens	Severe freezing storm, excessive rain in April & May 2020	9/29/20	80	None
Wilbarger (Lockett)	Texas A&M AgriLife Research and Extension Center Vernon	Severe freezing storm	9/16/2020	180	None
Eula	Susan Davis	Severe freezing storm	10/20/20	0	None

[1]These locations were planted with a seeding rate of 1.2 million seed/ac except for ryegrass which was 25 lb/ac. All seed was treated with Cruiser Maxx Vibrance for Cereals.
[2]Bushland and Comanche were the only locations where irrigation was available.

2021 Cool Season Forage Variety Trial - Total Season Forage Yield Statewide.

Species[1]	Variety	Source	Dry Matter Yield (lb/ac)				
			Bushland (Irrigated)	Comanche (Irrigated)	College Station	Eula	Wilbarger
Barley	F5-92	TAMU	--	--	5940	--	--
	MW 76-2	TAMU	--	--	4135	--	--
	TAMbar 505	TAMU	--	--	--	2649	--
	Valor	Agribrands	4836	9324	3836	--	--
Oat	FL 0720	Angelina Seed	--	--	5447		--
	TAMO412	TAMU	--	4738	3392	--	--
	TAMO606	TAMU	--	4561	4119	2559	--
	Trical Exp Oat	Agribrands	3830	1503	4244	--	--
	TX14OCS5212*	TAMU	--	--	3776	--	--
	TX15OCS6142*	TAMU	--	1992	4479	--	--
	TX15OCS6163*	TAMU	--	3413	4309	--	--
	TX16OCS7015*	TAMU	--	2209	2957	--	--
	TX16OCS7048*	TAMU	--	--	3740	--	--
	TX16OCS7077*	TAMU	--	--	4242	--	--
	TX16OCS7093*	TAMU	--	--	4419	--	--
	TX16OCS7100*	TAMU	--	--	5353	--	--
Rye	Bates RS4	Noble Res.	--	4634	5274	--	--
	Elbon	Noble Res.	--	7240	3908	2648	--
	NF95319B	Noble Res.	--	3857	4919	--	--
	NF97325	Noble Res.	--	6095	5095	--	--
	NF99362	Noble Res.	--	3538	5270	--	--
	Trical Rye	Agribrands	7346	3821	5128	--	--
SRWW	DH12SRW057-006	Specialty Seed	--	5877	3671	--	--
Triticale	NF201	Noble Res.	--	4181	6139	--	--
	NF97226	Noble Res.	--	4359	6006	--	--
	SlickTrit Grazer	Watley Seed	6419	5773	--	--	9677
	SlickTrit II	Watley Seed	4652	--	--	--	--
	Trical 131	Agribrands	--	4163	5237	2927	--
	Trical 344	Agribrands	7383	1990	5251		--
	Trical 813	Agribrands	7124	5928	5306	2956	--
	Trical Exp 114	Agribrands	7075	7402	5991	2744	--
	Trical Exp 305	Agribrands	7112	--	--	--	--
	Trical Exp 621	Agribrands	7797	5194	6444	1994	--
	Trical Exp 735	Agribrands	6280	4934	5413	--	--
	Trical Flex 719	Agribrands	5798	6010	4271	--	--
	Trical Gunner	Agribrands	6501	--	--	--	--
	Trical Surge	Agribrands	6421	4349	5853	--	--
	Trical Thor	Agribrands	6368	--	--	--	--
	TX14VT70526*	TAMU	9205	6767	4905	2929	10720
	TX16VT68295*	TAMU	7620	4997	--	2869	13302
HRWW	AP EverRock	Syngenta	4709	--	--	--	11804
	AP Roadrunner	Syngenta	4174	--	--	--	12600
	AP15T 22413	Syngenta	5062	--	--	--	10775
	Bob Dole	Syngenta	--	--	--	--	11239
	Gallagher	OSU	--	--	--	2427	
	NF00108	Noble Res.	--	6335	4759	--	--
	NF101	Noble Res.	--	5521	4599	--	--
	NF97117	Noble Res.	--	6327	5371	--	--
	ON1366277	Noble Res.	--	6965	4424	--	--
	ON13P016	Noble Res.	--	6753	4354	--	--
	SY Razor	Syngenta	--	--	--	2705	--
	TAM 112	Watley Seed	5689	--	--	--	--
	TAM 114	Adaptive Genetics	--	--	--	2878	--
	TAM 115	Watley Seed	5710	--	--	--	--
	TAM 204**	Watley Seed	5062	5254	--	--	--
	TAM 205	TAMU	--	--	--	2437	--
	TX14A001035*	TAMU	4814	--	3113	--	9930
	TX14A001249*	TAMU	5492	--	3536	--	11804

2021 Cool Season Forage Variety Trial- Total Season Forage Yield Statewide Continued.

Species[1]	Variety	Source	Dry Matter Yield (lb/ac)				
			Bushland (Irrigated)	Comanche (Irrigated)	College Station	Eula	Wilbarger
	TX14M7061*	TAMU	5291	--	4628	--	14989
	TX14V70214*	TAMU	5035	6251	3981	--	11151
	TX15M8024*	TAMU	7454	--	3741	--	13423
	TX16M9216*	TAMU	5279	--	3646	--	12473
	Weathermaster	Unknown	--	--	--	2498	--
	LSD (0.05)		**1597**	**1646**	**1640**	**NS**	**2559**
	CV (%)		**19**	**20**	**22**	**24**	**13**
	Mean		**6053**	**5066**	**4650**	**2659**	**11838**

*Experimental Lines.

**Awnless/Beardless.

[1]Hard Red Winter Wheat (HRWW); Soft Red Winter Wheat (SRWW).

2021 Cool-season Forage Variety Trial- Total Yield (lb/ac) by Species. Statewide.

Species[1]	Dry Matter Yield (lb/ac)				
	Bushland (Irrigated)†	**Comanche (Irrigated)‡**	**College Station#**	**Eula##**	**Wilbarger††**
Barley	4836	9324	4637	2616	--
HRWW	5314	6201	4161	2566	12019
Oat	3830	3069	4245	2592	--
Rye	7346	4878	4932	2648	--
SRWW	--	5877	3671		--
Triticale	6840	5081	5529	2756	11233
LSD (0.05)	**1494**	**1560**	**935**	**NS**	**NS**
CV (%)	**22**	**29**	**23**	**24**	**16**
Mean	**5633**	**5738**	**4529**	**2635**	**11626**

†Total Clip1 + Clip2
‡Clip2
#Total Clip2 + Clip3
##Total Clip1 + Clip3
††Total Clip1 + Clip 2 + Clip3
[1]Hard Red Winter Wheat (HRWW); Soft Red Winter Wheat (SRWW)

2021 Cool-season Forage Variety Trial - Total Yield (lb/ac) by Species. Bushland.

		Dry Matter Yield (lb/ac)		
		Clip1	Clip2	Total
Rank†	Species[1]	1/9/20	3/10/21	7/13/05
1	Rye	2194	5152	7346
2	Triticale	1807	5033	6840
3	HRWW	1347	3967	5314
4	Barley	1039	3797	4836
5	Oat	998	2831	3830
	LSD (0.05)	**618**	**1192**	**1494**
	CV (%)	**35**	**24**	**22**
	Mean	**1477**	**4156**	**5633**

†Varieties were ranked according to 2021 total yield.
[1]Hard Red Winter Wheat (HRWW).

2021 Cool-season Forage Variety Trial- Total Yield (lb/ac) by Species. College Station.

		Dry Matter Yield (lb/ac)		
		Clip2	Clip3	Total
Rank†	Species[1]	2/1/21	3/3/21	2021
1	Triticale	3695	1834	5529
2	Rye	2659	2273	4932
3	Barley	2060	2578	4637
4	Oat	2441	1804	4245
5	HRWW	1770	2391	4161
6	SRWW	1860	1811	3671
	LSD (0.05)	**924**	**536**	**935**
	CV (%)	**41**	**29**	**23**
	Mean	**2414**	**2115**	**4529**

†Varieties were ranked according to 2021 total yield.

[1]Hard Red Winter Wheat (HRWW), Soft Red Winter Wheat (SRWW).

2021 Cool-season Forage Variety Trial - Total Yield (lb/ac) by Species. Comanche.

		Dry Matter Yield (lb/ac)
		Clip2‡
Rank†	Species[1]	3/30/21
1	Barley	9324
2	HRWW	6201
3	SRWW	5877
4	Triticale	5081
5	Rye	4878
6	Oat	3069
	LSD (0.05)	**1560**
	CV (%)	**29**
	Mean	**5738**

†Varieties were ranked according to 2021 total yield.

[1]Hard Red Winter Wheat (HRWW), Soft Red Winter Wheat (SRWW).

‡Only Clip2 was collected on 3/30/2021due to logistical reasons and very wet conditions thereafter.

2021 Cool-season Forage Variety Trial - Total Yield (lb/ac) by Species. Eula.

		Dry Matter Yield (lb/ac)		
		Clip1	Clip3	Total
Rank†	Species[1]	3/8/21	5/13/21	2021
1	Triticale	706	2049	2756
2	Rye	464	2184	2648
3	Barley	683	1933	2616
4	Oat	581	2011	2592
5	HRWW	542	2024	2566
	LSD (0.05)	**NS**	**NS**	**NS**
	CV (%)	**40**	**28**	**24**
	Mean	**595**	**2040**	**2635**

†Varieties were ranked according to 2021 total yield.

[1]Hard Red Winter Wheat (HRWW)

2021 Cool-season Forage Variety Trial - Total Yield (lb/ac) by Species. Wilbarger.

		Dry Matter Yield (lb/ac)			
		Clip1	Clip2	Clip3	Total
Rank†	Species[1]	12/10/20	1/29/21	4/8/21	2021
1	Triticale	4045	2759	4429	12019
2	HRWW	3649	2443	5926	11233
	LSD (0.05)	**NS**	**NS**	**831**	**NS**
	CV (%)	**26**	**31**	**19**	**16**
	Mean	**3847**	**2601**	**5178**	**11626**

†Varieties were ranked according to 2021 total yield.

[1]Hard Red Winter Wheat (HRWW).

2021 Cool-season Forage Variety Trial – Total yield (lb/ac) by species. Comanche County Uniform Forage Trial.

		Dry Matter Yield (lb/ac)
		Clip2
Rank	Species	3/30/21
1	Rye	9545
2	Barley	7368
3	Ryegrass	5841
4	HRWW	5836
5	Triticale	5415
6	SRWW	5074
7	Oat	2091
	LSD (0.05)	**1673**
	CV (%)	**27**
	Mean	**5881**

†Varieties were ranked according to 2021 total yield.

[1]Hard Red Winter Wheat (HRWW).

2021 Cool-season Forage Variety Trial - Bushland (Irrigated).

				Dry Matter Yield (lb/ac)		
				Clip 1	Clip 2	Total
Rank†	Variety	Species[1]	Source	12/9/21	3/10/21	2021
1	TX14VT70526*	Triticale	TAMU	2222	6983	9205
2	Trical Exp 621	Triticale	Agribrands	2196	5601	7797
3	TX16VT68295*	Triticale	TAMU	2169	5451	7620
4	TX15M8024*	HRWW	TAMU	1415	6040	7454
5	Trical 344	Triticale	Agribrands	1931	5451	7383
6	Trical Rye	Rye	Agribrands	2194	5152	7346
7	Trical 813	Triticale	Agribrands	1954	5170	7124
8	Trical Exp 305	Triticale	Agribrands	2085	5027	7112
9	Trical Exp 114	Triticale	Agribrands	1937	5138	7075
10	Trical Gunner	Triticale	Agribrands	1745	4756	6501
11	Trical Surge	Triticale	Agribrands	2038	4383	6421
12	SlickTrit Grazer	Triticale	Watley Seed	1429	4990	6419
13	Trical Thor	Triticale	Agribrands	1550	4818	6368
14	Trical Exp 735	Triticale	Agribrands	1798	4482	6280
15	Trical Flex 719	Triticale	Agribrands	1281	4516	5798
16	TAM 115	HRWW	Watley Seed	1443	4266	5710
17	TAM 112	HRWW	Watley Seed	2007	3682	5689
18	TX14A001249*	HRWW	TAMU	1427	4065	5492
19	TX14M7061*	HRWW	TAMU	1372	3920	5291
20	TX16M9216*	HRWW	TAMU	1279	4000	5279
21	AP15T 22413	HRWW	Syngenta	1287	3774	5062
22	TAM 204**	HRWW	Watley Seed	1292	3770	5062
23	TX14V70214*	HRWW	TAMU	1226	3809	5035
24	Valor	Barley	Agribrands	1039	3797	4836
25	TX14A001035*	HRWW	TAMU	1218	3596	4814
26	AP EverRock	HRWW	Syngenta	1259	3450	4709
27	SlickTrit II	Triticale	Watley Seed	964	3688	4652
28	AP Roadrunner	HRWW	Syngenta	939	3235	4174
29	Trical Exp Oat	Oat	Agribrands	998	2831	3830
	LSD (0.05)			**740**	**1302**	**1597**
	CV (%)			**33**	**21**	**19**
	Mean			**1576**	**4477**	**6053**

†Varieties were ranked according to 2021 total yield.

*Experimental Lines.

**Awnless/Beardless.

[1]Hard Red Winter Wheat (HRWW).

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2021 Cool-season Forage Variety Trial - Bushland (Irrigated).

				Dry Matter Yield (lb/ac) ‡			
Rank†	Variety	Species[1]	Source	4-year	3-year	2-year	2021
1	TAM 115	HRWW	Watley Seed	10870	6114	5137	5710
2	SlickTrit II	Triticale	Watley Seed	9810	6332	4156	4652
3	TX14VT70526*	Triticale	TAMU		7936	7416	9205
4	TX16VT68295*	Triticale	TAMU		7601	6660	7620
5	TX14A001035*	HRWW	TAMU		6475	4868	4814
6	TX14M7061*	HRWW	TAMU		6163	5212	5291
7	TX14V70214*	HRWW	TAMU		6130	4984	5035
8	TX15M8024*	HRWW	TAMU			6259	7454
9	Trical 813	Triticale	Agribrands			6066	7124
10	Trical Flex 719	Triticale	Agribrands			5936	5798
11	Trical Surge	Triticale	Agribrands			5758	6421
12	Trical Thor	Triticale	Agribrands			5653	6368
13	Valor	Barley	Agribrands			5066	4836
14	Trical Exp 621	Triticale	Agribrands				7797
15	Trical 344	Triticale	Agribrands				7383
16	Trical Rye	Rye	Agribrands				7346
17	Trical Exp 305	Triticale	Agribrands				7112
18	Trical Exp 114	Triticale	Agribrands				7075
19	Trical Gunner	Triticale	Agribrands				6501
20	SlickTrit Grazer	Triticale	Watley Seed				6419
21	Trical Exp 735	Triticale	Agribrands				6280
22	TAM 112	HRWW	Watley Seed				5689
23	TX14A001249*	HRWW	TAMU				5492
24	TX16M9216*	HRWW	TAMU				5279
25	AP15T_22413	HRWW	Syngenta				5062
26	TAM 204**	HRWW	Watley Seed				5062
27	AP EverRock	HRWW	Syngenta				4709
28	AP Roadrunner	HRWW	Syngenta				4174
29	Trical Exp Oat	Oat	Agribrands				3830
	LSD (0.05)			**NS**	**1032**	**1048**	**1597**
	CV (%)			**19**	**19**	**19**	**19**
	Mean			**10340**	**6679**	**5629**	**6053**

*Experimental Lines.

**Awnless/Beardless.

†Varieties were ranked according to 4-year, 3-year, 2-year, then 2021 total yield.

[1]Hard Red Winter Wheat (HRWW).

‡4-year average was based on 2018, 2019, 2020, and 2021 yields.

2021 Statewide Cool-season Forage Variety Trial - College Station (Limited Irrigation).

Rank†	Variety	Species[1]	Source	Dry Matter Yield (lb/ac)		
				Clip 2	Clip 3	Total
				2/1/21	3/321	2021
1	Trical Exp 621	Triticale	Agribrands	5064	1381	6444
2	NF201	Triticale	Noble Res.	3862	2278	6139
3	NF97226	Triticale	Noble Res.	3389	2617	6006
4	Trical Exp 114	Triticale	Agribrands	3573	2418	5991
5	F5-92	Barley	TAMU	3505	2435	5940
6	Trical Surge	Triticale	Agribrands	4370	1484	5853
7	FL 0720	Oat	Angelina Seed	4328	1119	5447
8	Trical Exp 735	Triticale	Agribrands	3974	1439	5413
9	NF97117	HRWW	Noble Res.	2965	2406	5371
10	TX16OCS7100*	Oat	TAMU	2463	2890	5353
11	Trical 813	Triticale	Agribrands	3151	2155	5306
12	Bates RS4	Rye	Noble Res.	3159	2115	5274
13	NF99362	Rye	Noble Res.	2749	2521	5270
14	Trical 344	Triticale	Agribrands	4710	541	5251
15	Trical 131	Triticale	Agribrands	3629	1608	5237
16	Trical Rye	Rye	Agribrands	3033	2095	5128
17	NF97325	Rye	Noble Res.	2995	2100	5095
18	NF95319B	Rye	Noble Res.	2666	2253	4919
19	TX14VT70526*	Triticale	TAMU	2934	1971	4905
20	NF00108	HRWW	Noble Res.	2478	2281	4759
21	TX14M7061*	HRWW	TAMU	1784	2844	4628
22	NF101	HRWW	Noble Res.	2337	2262	4599
23	TX15OCS6142*	Oat	TAMU	3203	1275	4479
24	ON1366277	HRWW	Noble Res.	1638	2786	4424
25	TX16OCS7093*	Oat	TAMU	2550	1869	4419
26	ON13P016	HRWW	Noble Res.	1414	2940	4354
27	TX15OCS6163*	Oat	TAMU	1843	2465	4309
28	Trical Flex 719	Triticale	Agribrands	1994	2278	4271
29	Trical Exp Oat	Oat	Agribrands	2886	1358	4244
30	TX16OCS7077*	Oat	TAMU	2680	1562	4242
31	MW 76-2	Barley	TAMU	959	3176	4135
32	TAMO606	Oat	TAMU	1872	2247	4119
33	TX14V70214*	HRWW	TAMU	1823	2158	3981
34	Elbon	Rye	Noble Res.	1354	2555	3908
35	Valor	Barley	Agribrands	1715	2121	3836
36	TX14OCS5212*	Oat	TAMU	1693	2084	3776
37	TX15M8024*	HRWW	TAMU	1455	2287	3741
38	TX16OCS7048*	Oat	TAMU	2340	1400	3740
39	DH12SRW057-006	SRWW	Specialty Seed	1860	1811	3671
40	TX16M9216*	HRWW	TAMU	1310	2336	3646
41	TX14A001249*	HRWW	TAMU	1338	2198	3536
42	TAMO412	Oat	TAMU	1297	2094	3392
43	TX14A001035*	HRWW	TAMU	1004	2109	3113
44	TX16OCS7015*	Oat	TAMU	1390	1568	2957
	LSD (0.05)			**1422**	**793**	**1640**
	CV (%)			**34**	**23**	**22**
	Mean			**2562**	**2088**	**4650**

*Experimental Lines.

†Varieties were ranked according to 2021 total yield.

[1]Hard Red Winter Wheat (HRWW), Soft Red Winter Wheat (SRWW).

2021 Statewide Cool-season Forage Variety Trial - College Station (Limited Irrigation).

				Dry Matter Yield (lb/ac) ‡			
Rank†	**Variety**	**Species[1]**	**Source**	**4-year**	**3-year**	**2-year**	**2021**
1	FL 0720	Oat	Angelina Seed	4638	5636	5837	5447
2	TAMO606	Oat	TAMU	4327	4926	5008	4119
3	NF201	Triticale	Noble Res.	4271	4971	5164	6139
4	NF97226	Triticale	Noble Res.		5650	6271	6006
5	NF99362	Rye	Noble Res.		5111	5089	5270
6	NF97117	HRWW	Noble Res.		4994	5057	5371
7	ON13P016	HRWW	Noble Res.		4809	4486	4354
8	NF95319B	Rye	Noble Res.		4793	5039	4919
9	NF97325	Rye	Noble Res.		4766	4903	5095
10	NF101	HRWW	Noble Res.		4578	4549	4599
11	TAMO412	Oat	TAMU		4427	3991	3392
12	Elbon	Rye	Noble Res.		4252	4123	3908
13	Trical Surge	Triticale	Agribrands			5699	5853
14	Trical 813	Triticale	Agribrands			4981	5306
15	TX14M7061*	HRWW	TAMU			4932	4628
16	TX16OCS7100*	Oat	TAMU			4908	5353
17	TX15OCS6163*	Oat	TAMU			4770	4309
18	NF00108	HRWW	Noble Res.			4721	4759
19	Valor	Barley	Agribrands			4651	3836
20	TX15OCS6142*	Oat	TAMU			4389	4479
21	TX14OCS5212*	Oat	TAMU			4351	3776
22	ON1366277	HRWW	Noble Res.			4158	4424
23	TX15M8024*	HRWW	TAMU			4097	3741
24	TX14V70214*	HRWW	TAMU			4027	3981
25	TX14A001035*	HRWW	TAMU			3545	3113
26	Trical Exp 621	Triticale	Agribrands				6444
27	Trical Exp 114	Triticale	Agribrands				5991
28	F5-92	Barley	TAMU				5940
29	Trical Exp 735	Triticale	Agribrands				5413
30	Bates RS4	Rye	Noble Res.				5274
31	Trical 344	Triticale	Agribrands				5251
32	Trical 131	Triticale	Agribrands				5237
33	Trical Rye	Rye	Agribrands				5128
34	TX14VT70526*	Triticale	TAMU				4905
35	TX16OCS7093*	Oat	TAMU				4419
36	Trical Flex 719	Triticale	Agribrands				4271
37	Trical Exp Oat	Oat	Agribrands				4244
38	TX16OCS7077*	Oat	TAMU				4242
39	MW 76-2	Barley	TAMU				4135
40	TX16OCS7048*	Oat	TAMU				3740
41	DH12SRW057-006	SRWW	Specialty Seed				3671
42	TX16M9216*	HRWW	TAMU				3646
43	TX14A00124*9	HRWW	TAMU				3536
44	TX16OCS7015*	Oat	TAMU				2957
	LSD (0.05)			**NS**	**NS**	**1339**	**1640**
	CV (%)			**21**	**22**	**25**	**22**
	Mean			**4412**	**49.09**	**4750**	**4650**

*Experimental Lines.

†Varieties were ranked according to 4-year, 3-year, 2-year, then 2021 total yield.

[1]Hard Red Winter Wheat (HRWW), Soft Red Winter Wheat (SRWW).

‡4-year average was based on 2018, 2019, 2020, and 2021 yields.

2021 Statewide Cool-season Forage Variety Trial - Comanche.

Rank†	Variety	Species[1]	Source	Dry Matter (lb/ac) ‡ Clip 2 3/30/31
1	Valor	Barley	Agribrands	9324
2	Trical Exp 114	Triticale	Agribrands	7402
3	Elbon	Rye	Noble Res.	7240
4	ON1366277	HRWW	Noble Res.	6965
5	TX14VT70526*	Triticale	TAMU	6767
6	ON13P016	HRWW	Noble Res.	6753
7	NF00108	HRWW	Noble Res.	6335
8	NF97117	HRWW	Noble Res.	6327
9	TX14V70214*	HRWW	TAMU	6251
10	NF97325	Rye	Noble Res.	6095
11	Trical Flex 719	Triticale	Agribrands	6010
12	Trical 813	Triticale	Agribrands	5928
13	DH12SRW057-006	SRWW	Specialty Seed	5877
14	SlickTrit Grazer	Triticale	Watley Seed	5773
15	NF101	HRWW	Noble Res.	5521
16	TAM 204**	HRWW	Watley Seed	5254
17	Trical Exp 621	Triticale	Agribrands	5194
18	TX16VT68295*	Triticale	TAMU	4997
19	Trical Exp 735	Triticale	Agribrands	4934
20	TAMO412	Oat	TAMU	4738
21	Bates RS4	Rye	Noble Res.	4634
22	TAMO606	Oat	TAMU	4561
23	NF97226	Triticale	Noble Res.	4359
24	Trical Surge	Triticale	Agribrands	4349
25	NF201	Triticale	Noble Res.	4181
26	Trical 131	Triticale	Agribrands	4163
27	NF95319B	Rye	Noble Res.	3857
28	Trical Rye	Rye	Agribrands	3821
29	NF99362	Rye	Noble Res.	3538
30	TX15OCS6163*	Oat	TAMU	3413
31	TX16OCS7015*	Oat	TAMU	2209
32	TX15OCS6142*	Oat	TAMU	1992
33	Trical 344	Triticale	Agribrands	1990
34	Trical Exp Oat	Oat	Agribrands	1503
	LSD (0.05)			**1646**
	CV (%)			**20**
	Mean			**5066**

*Experimental Lines.

**Awnless/Beardless.

†Varieties were ranked according to 2021 total yield.

[1]Hard Red Winter Wheat (HRWW), Soft Red Winter Wheat (SRWW).

‡ Only Clip2 was collected due to logistical problems and very wet conditions late in the season.

2021 Statewide Cool-season Forage Variety Trial - Comanche.

Rank†	Variety	Species[1]	Source	Dry Matter Yield (lb/ac) ‡ 4-year	3-year	2-year	2021
1	NF97325	Rye	Noble Res.	8195	7896	8132	6095
2	ON13P016	HRWW	Noble Res.	8007	7438	7713	6753
3	NF95319B	Rye	Noble Res.	7568	7242	7155	3857
4	NF97117	HRWW	Noble Res.	7441	7241	7300	6327
5	NF97226	Triticale	Noble Res.	7078	6480	6031	4359
6	TX14VT70526*	Triticale	TAMU		7579	7420	6767
7	NF101	HRWW	Noble Res.		7336	7220	5521
8	NF99362	Rye	Noble Res.		7190	7158	3538
9	Elbon	Rye	Noble Res.		7101	7219	7240
10	TAMO606	Oat	TAMU		6651	6597	4561
11	TAMO412	Oat	TAMU		6584	6602	4738
12	NF201	Triticale	Noble Res.		6480	5940	4181
13	TX16VT68295*	Triticale	TAMU		6333	5995	4997
14	Valor	Barley	Agribrands			9126	9324
15	Trical 813	Triticale	Agribrands			8837	5928
16	ON1366277	HRWW	Noble Res.			7978	6965
17	TX14V70214*	HRWW	TAMU			7678	6251
18	Trical Surge	Triticale	Agribrands			7638	4349
19	NF00108	HRWW	Noble Res.			7052	6335
20	TX15OCS6163*	Oat	TAMU			6109	3413
21	TX15OCS6142*	Oat	TAMU			5530	1992
22	Trical Exp 114	Triticale	Agribrands				7402
23	Trical Flex 719	Triticale	Agribrands				6010
24	DH12SRW057-006	SRWW	Specialty Seed				5877
25	SlickTrit Grazer	Triticale	Watley Seed				5773
26	TAM 204**	HRWW	Watley Seed				5254
27	Trical Exp 621	Triticale	Agribrands				5194
28	Trical Exp 735	Triticale	Agribrands				4934
29	Bates RS4	Rye	Noble Res.				4634
30	Trical 131	Triticale	Agribrands				4163
31	Trical Rye	Rye	Agribrands				3821
32	TX16OCS7015*	Oat	TAMU				2209
33	Trical 344	Triticale	Agribrands				1990
34	Trical Exp Oat	Oat	Agribrands				1503
	LSD (0.05)			**NS**	**NS**	**1905**	**1646**
	CV (%)			**14**	**18**	**23**	**20**
	Mean			**7658**	**7042**	**7163**	**5066**

*Experimental Lines.

**Awnless/Beardless.

†Varieties were ranked according to 4-year,3-year, 2-year, then 2021 total yield.

[1]Hard Red Winter Wheat (HRWW), Soft Red Winter Wheat (SRWW).

‡3-year average was based on 2018, 2019, 2020 and 2021 yields.

2021 Statewide Cool-season Forage Variety Trial - Eula.

				Dry Matter (lb/ac)		
Rank†	Variety	Species[1]	Source	Clip 1 3/8/21	Clip 3 5/13/21	Total 2021
1	TAM Trical 813*	Triticale	TAMU	719	2237	2956
2	TX14VT 70526*	Triticale	TAMU	663	2266	2929
3	TAM Trical 131	Triticale	TAMU	942	1985	2927
4	TAM 114	HRWW	Adaptive Genetics	663	2215	2878
5	TX16VT 68295*	Triticale	TAMU	670	2199	2869
6	TAM Trical Exp 114	Triticale	TAMU	579	2166	2744
7	SY Razor	HRWW	Syngenta	627	2079	2705
8	TAMbar 505	Barley	TAMU	708	1941	2649
9	Elbon	Rye	Noble Res.	464	2184	2648
10	TAMO 606	Oat	TAMU	556	2003	2559
11	Weathermaster	HRWW	Unknown	536	1962	2498
12	TAM 205	HRWW	TAMU	503	1934	2437
13	Gallagher	HRWW	OSU	428	1999	2427
14	TAM Trical Exp 621	Triticale	TAMU	618	1376	1994
	LSD (0.05)			**NS**	**NS**	**NS**
	CV (%)			**43**	**30**	**25**
	Mean			**620**	**2039**	**2659**

*Experimental line.

†Varieties were ranked according to 2021 total yield.

[1]Hard Red Winter Wheat (HRWW).

2021 Statewide Cool-season Forage Variety Trial - Wilbarger.

				Dry Matter Yield (lb/ac)			
Rank†	Variety	Species[1]	Source	Clip 1 12/10/20	Clip 2 1/29/21	Clip 3 4/8/21	Total 2021
1	TX14M7061*	HRWW	TAMU	4870	3328	6791	14989
2	TX15M8024*	HRWW	TAMU	4826	2672	5924	13423
3	TX16VT68295*	Triticale	TAMU	4429	3353	5521	13302
4	AP Roadrunner	HRWW	Syngenta	3669	2777	6154	12600
5	TX16M9216*	HRWW	TAMU	4253	2179	6042	12473
6	AP EverRock	HRWW	Syngenta	3216	2554	6034	11804
7	TX14A001249*	HRWW	TAMU	2963	2788	6053	11804
8	Bob Dole	HRWW	Syngenta	2746	1970	6522	11239
9	TX14V70214*	HRWW	TAMU	3158	2492	5501	11151
10	AP15T22413	HRWW	Syngenta	3350	2036	5389	10775
11	TX14VT70526*	Triticale	TAMU	3973	2642	4105	10720
12	TX14A001035*	HRWW	TAMU	3441	1638	4851	9930
13	SlickTrit Grazer	Triticale	Watley Seed	3732	2283	3663	9677
	LSD (0.05)			**NS**	**NS**	**1771**	**2559**
	CV (%)			**23**	**30**	**19**	**13**
	Mean			**3471**	**2516**	**5581**	**11838**

*Experimental Lines

†Varieties were ranked according to 2021 total yield.

[1]Hard Red Winter Wheat (HRWW).

2021 Statewide Cool-season Forage Variety Trial - Wilbarger.

				Dry Matter Yield (lb/ac)		
Rank†	Variety	Species[1]	Source	3-year	2-year	2021
1	TX14VT70526*	Triticale	TAMU	13841	11620	10720
2	TX16VT68295*	Triticale	TAMU	13796	12859	13302
3	TX14M7061*	HRWW	TAMU	12136	12535	14989
4	TX14V70214*	HRWW	TAMU	12131	11502	11151
5	TX14A001035*	HRWW	TAMU	11312	9817	9930
6	TX15M8024*	HRWW	TAMU		12385	13423
7	AP Roadrunner	HRWW	Syngenta			12600
8	TX16M9216*	HRWW	TAMU			12473
9	AP EverRock	HRWW	Syngenta			11804
10	TX14A001249*	HRWW	TAMU			11804
11	Bob Dole	HRWW	Syngenta			11239
12	AP15T22413	HRWW	Syngenta			10775
13	SlickTrit Grazer	Triticale	Watley Seed			9677
	LSD (0.05)			**1588**	**1639**	**2559**
	CV (%)			**13**	**12**	**13**
	Mean			**12643**	**1176**	**11838**

*Experimental Lines

†Varieties were ranked according to 3-year, 2-year then 2021 total yield.

[1]Hard Red Winter Wheat (HRWW).

‡3-year average was based on 2019, 2020 and 2021 yields.

2021 Cool-season Forage Variety Trial - Comanche County Uniform Forage Trial.

				Dry Matter (lb/ac)
				Clip 2
Rank†	Variety	Species[1]	Source	3/30/31
1	Wintergrazer	Rye	Noble Res.	10456
2	Elbon	Rye	Noble Res.	8634
3	OK_Corral	HRWW	OSU	8021
4	2011-F5-135-4	Barley	TAMU	7380
5	2011-F5-64-1	Barley	TAMU	7356
6	Slicktrit_II	Triticale	Watley Seed	6603
7	Marshall	Ryegrass	Mississippi State Univ.	6496
8	TAM_114	HRWW	TAMU	6408
9	Big_Country**	HRWW	OSU	6020
10	TAM_204**	HRWW	TAMU	5861
11	Green_Hammer	HRWW	OSU	5261
12	Nelson	Ryegrass	TAMU	5186
13	SY_Razor**	HRWW	Syngenta	5099
14	Oakes	SRWW	Syngenta	5074
15	NF_201	Triticale	Noble Res.	4226
16	SY_131	HRWW	Syngenta	4183
17	TAMO_606	Oat	TAMU	3327
18	Heavy_Grazer_II	Oat	East Texas Seed	2580
19	Walken	Oat		1800
20	Florida 501	Oat	Univ. of Florida	658
	LSD (0.05)			**2000**
	CV (%)			**22**
	Mean			**5531**

†Varieties were ranked according to 2021 total yield.

**Awnless/Beardless.

[1]Hard Red Winter Wheat (HRWW), Soft red Winter Wheat (SRWW).

2021 Statewide Cool-season Forage Variety Trial - Comanche County.

Rank†	Variety	Species[1]	Source	Dry Matter Yield (lb/ac) ‡			
				4-year	3-year	2-year	2021
1	TAM 114	HRWW	TAMU	7570	6718	8663	6408
2	Elbon	Rye	Noble Res.	6890	6082	7624	8634
3	TAM 204	HRWW	TAMU	6609	5667	7333	5861
4	Oakes	SRWW	Syngenta	6547	5350	6791	5074
5	SY Razor	HRWW	Syngenta	5785	4675	6095	5099
6	NF 201	Triticale	Noble Res.	5627	4645	5596	4226
7	Nelson	Ryegrass	TAMU	5166	4440	5622	5186
8	Wintergrazer	Rye	Noble Res.		7078	9310	10456
9	Marshall	Ryegrass	Mississippi State Univ.		5145	6495	6496
10	TAMO 606	Oat	TAMU		4396	5748	3327
11	OK Corral	HRWW	OSU				8021
12	2011-F5-135-4	Barley	TAMU				7380
13	2011-F5-64-1	Barley	TAMU				7356
14	Slicktrit II	Triticale	Watley Seed				6603
15	Big Country	HRWW	OSU				6020
16	Green Hammer	HRWW	OSU				5261
17	SY 131	HRWW	Syngenta				4183
18	Heavy Grazer II	Oat	East Texas Seed				2580
19	Walken	Oat					1800
20	Florida 501	Oat	Univ. of Florida				658
	LSD (0.05)			**662**	**1011**	**1524**	**2000**
	CV (%)			**13**	**20**	**19**	**22**
	Mean			**6313**	**5420**	**6927**	**5531**

**Awnless/Beardless.

†Varieties were ranked according to 3-year, 2-year, then 2021 total yield.

[1]Hard Red Winter Wheat (HRWW), Soft red Winter Wheat (SRWW).

‡4-year average was based on 2018, 2019, 2020 and 2021 yields.

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