



Current Report

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ALFALFA VARIETY TESTS

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Selecting the correct variety of alfalfa can be just as important as variety selection in wheat, sorghum, or any other crop.

Alfalfa breeders have been able to incorporate genetic resistance to several major insects and diseases into some varieties of alfalfa. This can result in less expense to bring the crop to a harvestable stage of growth, longer life for a stand of alfalfa, and more profit per acre.

The Oklahoma State University Agricultural Experiment Station has enlarged its alfalfa variety testing program to include those varieties reportedly tolerant to alfalfa weevil infestations as well as experimental breeding lines from public and private sources.

OSU is also participating in a Regional Alfalfa Improvement Program for developing alfalfa strains. This provides access to new strains of alfalfa before they are released as named varieties. These programs give Oklahoma the benefits of alfalfa breeders throughout the United States.

Hay yields of varieties and experimental strains tested in 1971 and previous years are reported in the following tables. A list of varieties seeded during the fall of 1971 and some of their characteristics is also included.

Phosphorus, potassium, and lime requirements were adequately supplied in each of these tests.

Brief Description of Varieties Not Described Elsewhere

- Alfa - Developed in Sweden. Susceptible to bacterial wilt.
- Atra 55 - Developed by Arnold Thomas Seed Co. Bacterial wilt resistant.
- Cardinal - Developed in France. Similar to Du Puits. Susceptible to bacterial wilt.
- Du Puits - Developed in France. Fast recovery after cutting. Susceptible to crown rot and bacterial wilt.
- KS-10 - Kansas Agricultural Experiment Station - not released.
- N-78 - Developed by Arnold Thomas Seed Co. Resistant to bacterial wilt and spotted alfalfa aphid.
- Ranger - Developed by Nebraska Agricultural Experiment Station and USDA. Resistant to bacterial wilt. Somewhat susceptible to leaf spot diseases.

Yield Performance of Three New Alfalfa Varieties in Comparison with Cody And Common (Okla-Unselected)

Test Location ^{1/} Year	Tons Dry Forage Per Acre Produced by				
	Dawson	Kanza	Team	Cody	Okla Common
Chickasha 1970	3.15	3.78	3.75	4.06	3.89
1971	5.83	6.59	6.14	6.61	6.41
2-Yr. Ave.	4.49	5.19	4.95	5.34	5.15
Altus 1970	2.96	2.80	2.81	2.55	2.64
1971	2.22	1.81	1.93	1.94	1.84
2-Yr. Ave.	2.59	2.31	2.37	2.25	2.24
Tipton 1969	4.58	--	--	4.47	4.34
1970	8.03	--	--	8.51	8.03
1971	8.83	--	--	10.30	7.07
3-Yr. Ave.	7.15			7.76	6.66
Mangum 1970	4.60	--	--	5.10	5.19
1971	4.28	--	--	5.02	5.03
2-Yr. Ave.	4.44	--	--	5.06	5.11

^{1/}Chickasha test received supplemental water in dry periods. Tipton test irrigated. Altus and Mangum tests dryland.

Irrigation Research Station-Altus, Oklahoma
Seeded September, 1969
Soil Series: Hollister-Tillman Clay Loam
Dryland Test

Entry	1970 TONS DRY MATTER/ACRE				Total
	5/14	7/01	8/03	9/08	
N-102	0.50	0.68	0.78	1.09	3.05
Dawson	0.40	0.66	0.92	0.98	2.96
Buffalo	0.44	0.69	0.75	0.94	2.82
Team	0.45	0.66	0.84	0.86	2.81
Kanza	0.43	0.68	0.74	0.95	2.80
Atra-55	0.38	0.77	0.69	0.86	2.70
Common*	0.44	0.61	0.70	0.89	2.64
Common**	0.38	0.57	0.84	0.84	2.63
N-78	0.35	0.53	0.75	0.94	2.57
Cody	0.43	0.53	0.71	0.88	2.55

Entry	1971 TONS DRY MATTER/ACRE				Total
	7/01	8/06	9/16		
Dawson	0.52	1.02	0.72	2.22	
N-102	0.53	0.94	0.66	2.13	
Buffalo	0.41	0.86	0.76	2.03	
N-78	0.41	0.86	0.69	1.96	
Cody	0.35	0.87	0.72	1.94	
Team	0.42	0.88	0.63	1.93	
Atra-55	0.47	0.79	0.65	1.91	
Common**	0.34	0.82	0.68	1.84	
Common*	0.43	0.78	0.62	1.83	
Kanza	0.31	0.85	0.65	1.81	

Two Year Summary

Entry	TONS DRY MATTER/ACRE		
	1970	1971	2-Yr
	4-cuts	3-cuts	AVG.
N-102	3.05	2.13	2.59
Dawson	2.96	2.22	2.59
Buffalo	2.82	2.03	2.43
Team	2.81	1.93	2.37
Atra-55	2.70	1.91	2.31
Kanza	2.80	1.81	2.31
N-78	2.57	1.96	2.27
Cody	2.55	1.94	2.25
Common*	2.64	1.83	2.24
Common**	2.63	1.84	2.24

* Oklahoma - Elsener
** Oklahoma - Graham

Oklahoma Cotton Research Station
Chickasha, Oklahoma Seeded 9-29-69
Soil Series: Yahola Silt Loam

Entry	1970 TONS DRY MATTER/ACRE				Total
	5/13	6/17	7/20	9/09	
N-102	1.61	0.94	1.07	0.84	4.46
Atra-55	1.31	0.99	0.98	0.83	4.11
Cody	1.08	0.98	0.97	1.03	4.06
N-78	1.18	0.75	1.04	1.07	4.04
Common*	1.29	0.83	0.90	0.87	3.89
Kanza	1.33	0.65	1.04	0.76	3.78
Team	1.56	0.76	0.97	0.46	3.75
Buffalo	1.06	0.86	1.09	0.62	3.60
Dawson	1.05	0.65	0.85	0.60	3.15
Common**	0.59	0.67	0.80	0.57	2.63

Entry	1971 TONS DRY MATTER/ACRE ^{1/}				Total
	5/17	6/18	7/21	8/27	
N-78	3.90	1.80	0.91	0.97	7.58
N-102	3.12	2.11	0.89	1.07	7.19
Atra-55	2.92	2.09	0.91	1.06	6.98
Cody	2.40	1.99	1.04	1.18	6.61
Kanza	2.83	1.84	0.82	1.10	6.59
Common*	2.37	1.83	1.00	1.21	6.41
Team	2.69	1.79	0.68	0.98	6.14
Dawson	2.51	1.96	0.59	0.77	5.83
Buffalo	2.04	1.69	0.86	1.12	5.71
Common**	2.14	1.72	0.67	1.05	5.58

^{1/} Supplemental water applied in dry periods.

Two Year Summary

Entry	TONS DRY MATTER/ACRE ^{1/}		
	1970	1971	2-Yr
	4-cuts	4-cuts	AVG.
N-102	4.46	7.19	5.83
N-78	4.04	7.58	5.81
Atra-55	4.11	6.98	5.55
Kanza	3.78	6.59	5.19
Common*	3.89	6.41	5.15
Cody	4.06	6.61	5.34
Team	3.75	6.14	4.95
Buffalo	3.60	5.71	4.66
Dawson	3.15	5.83	4.49
Common**	2.63	5.58	4.11

^{1/} Supplemental water supplied in dry periods.
* Oklahoma-Elsener
** Oklahoma-Graham

Sandy Land Research Station Mangum, Oklahoma
Seeded Fall, 1969 Soil Series: Meno Sandy Loam

Entry	1970 TONS DRY MATTER/ACRE						Total
	5/9	6/4	7/6	8/4	9/11	10/20	
Common	1.28	0.95	1.14	0.69	0.59	0.54	5.19
Cody	1.28	1.11	0.70	0.60	0.74	0.67	5.10
Buffalo	1.01	0.82	1.05	0.55	0.74	0.65	4.82
KS-10	1.57	1.15	0.64	0.46	0.53	0.44	4.79
Ranger	1.10	1.01	0.98	0.50	0.55	0.54	4.68
Lahontan	0.99	0.93	0.94	0.51	0.68	0.59	4.64
Dawson	1.37	0.96	0.63	0.47	0.58	0.59	4.60
Du Puits	0.88	0.68	0.49	0.43	0.29	0.19	2.96
Cardinal	0.77	0.78	0.47	0.35	0.23	0.32	2.92
Alfa	0.70	0.73	0.39	0.26	0.39	0.33	2.80

Entry	1971 TONS DRY MATTER/ACRE					Total
	5/19	6/22	7/20	8/18	10/04	
Common	1.03	1.12	0.66	1.41	0.81	5.03
Cody	1.27	1.14	0.63	1.23	0.75	5.02
Lahontan	1.07	1.18	0.67	1.29	0.64	4.85
Ranger	0.98	1.08	0.43	1.69	0.56	4.74
Buffalo	0.86	1.09	0.67	1.11	0.74	4.47
KS-10	1.32	1.16	0.47	0.93	0.59	4.47
Dawson	1.05	1.14	0.45	1.03	0.61	4.28
Cardinal	0.53	0.60	0.26	0.44	0.38	2.21
Alfa	0.54	0.64	0.24	0.30	0.32	2.04
Du Puits	0.41	0.54	0.24	0.30	0.30	1.79

Two Year Summary

Entry	1970	1971	2-Yr
	6-cuts	5-cuts	AVG.
Common	5.19	5.03	5.11
Cody	5.10	5.02	5.06
Lahontan	4.64	4.85	4.75
Ranger	4.68	4.74	4.71
Buffalo	4.82	4.47	4.65
KS-10	4.79	4.47	4.63
Dawson	4.60	4.28	4.44
Cardinal	2.92	2.21	2.66
Alfa	2.80	2.04	2.42
Du Puits	2.96	1.79	2.38

Southwestern Cotton Sub-Station Tipton, Oklahoma
Seeded September, 1968 Soil Series: Tipton Silt Loam

Entry 1969	TONS DRY MATTER/ACRE ^{1/}			
	7/11	8/22	10/16	Total
Dawson	1.95	1.38	1.25	4.58
Cody	1.74	1.52	1.21	4.47
Buffalo	2.04	1.27	1.08	4.39
Common*	1.77	1.30	1.27	4.34
Ranger	1.85	1.32	1.13	4.30
Common**	1.77	1.30	1.00	4.07
Lahontan	1.93	1.19	0.89	4.01
Du Puits	1.75	1.24	0.98	3.97
Alfa	1.49	1.04	0.97	3.50

Entry 1970	TONS DRY MATTER/ACRE ^{1/}						
	5/05	6/09	7/07	8/05	9/10	10/27	Total
Cody	1.97	1.77	1.68	1.32	1.04	0.73	8.51
Ranger	1.78	1.50	1.51	1.49	1.04	0.72	8.04
Dawson	1.98	1.49	1.59	1.28	1.08	0.61	8.03
Common*	1.88	1.52	1.48	1.51	0.94	0.70	8.03
Common**	1.80	1.53	1.57	1.27	1.08	0.72	7.97
Lahontan	1.99	1.35	1.46	1.12	1.02	0.59	7.53
Du Puits	1.98	1.39	1.38	1.07	0.90	0.53	7.25
Buffalo	1.64	1.42	1.37	1.15	0.92	0.62	7.12
Alfa	1.99	1.27	1.34	1.04	0.80	0.53	6.97

Entry 1971	TONS DRY MATTER/ACRE ^{1/}						
	4/28 ^{2/}	6/08	7/28	8/06	9/09	10/22	Total
Cody	1.74	1.81	1.77	2.76	1.42	0.80	10.30
Lahontan	1.45	1.83	1.42	2.35	1.11	0.70	8.86
Dawson	1.64	1.98	1.44	2.08	1.18	0.51	8.83
Common**	0.34	1.72	1.35	2.32	1.39	0.82	7.94
Ranger	0.67	1.59	1.40	2.37	1.19	0.62	7.84
Common*	0.41	1.63	1.27	1.88	1.24	0.64	7.07
Buffalo	0.29	1.54	1.19	1.72	1.18	0.67	6.59
Du Puits	0.21	0.55	0.85	0.94	0.61	0.17	3.33
Alfa	0.14	0.76	0.30	0.42	0.83	0.11	2.56

Entry	Three Year Summary			
	TONS DRY MATTER/ACRE ^{1/}			
	1969 3-cuts	1970 6-cuts	1971 ^{2/} 6-cuts	3-Yr AVG.
Cody	4.47	8.51	10.30	7.76
Dawson	4.58	8.03	8.83	7.15
Lahontan	4.01	7.53	8.86	6.80
Ranger	4.30	8.04	7.84	6.73
Common**	4.07	7.97	7.94	6.66
Common*	4.34	8.03	7.07	6.58
Buffalo	4.39	7.12	6.59	6.03
Du Puits	3.97	7.25	3.33	4.85
Alfa	3.50	6.97	2.56	4.34

^{1/} Irrigated Test

^{2/} Susceptible varieties severely damaged by spotted alfalfa aphids in late April

* Oklahoma-Elsener

** Oklahoma-Commercial

ALFALFA VARIETIES AND STRAINS FOR FALL 1971 TEST ESTABLISHMENT AT GOODWELL, MANGUM, AND TIPTON

Variety-Strain	Source	Released Date	Characteristics
1. Kanza	USDA and Kan Ag Expt Sta	1968	Resistance to bacterial wilt, pea aphid, spotted alfalfa aphid.
2. Dawson	USDA and Neb Ag Expt Sta	1967	Resistant to pea aphid, spotted alfalfa aphid and bacterial wilt.
3. Team	USDA-ARS N. Carolina, Va.	1968	Tolerance to alfalfa weevil, resistance to pea aphid.
4. Cody	USDA-ARS and Kan Ag Expt Sta	1959	Highly resistant to spotted alfalfa aphid. Resistant to bacterial wilt.
5. Buffalo	USDA-ARS and Kan Ag Expt Sta	1943	Bacterial wilt resistance.
6. Gemini	Northrup King	*	Unknown
7. Lahontan	USDA-ARS and Nev Ag Expt Sta	1954	Resistant to bacterial wilt, stem nematode, and spotted alfalfa aphid.
8. Washoe	USDA-ARS and Nev Ag Expt Sta	1965	Resistant to pea aphids, spotted alfalfa aphids, stem nematodes and bacterial wilt.
9. Thor	Northrup King	1970	Highly resistant to bacterial wilt.
10. KO-2	Northrup King	*	Tolerance to alfalfa weevil.
11. K9-100	Northrup King	*	Tolerance to alfalfa weevil.
12. Weevlchek	Farmers Forage Research Coop	1970	Tolerant to alfalfa weevil.
13. WL-214	Waterman-Loomis	1967	Resistance to spotted alfalfa aphid.
14. WL-215	"	1968	Parent plants selected from populations growing under alfalfa weevil infestations.
15. WL-305	"	1968	High seed yield, leafhopper yellowing resistance.
16. WL-306	"	1969	Resistance to pea and spotted alfalfa aphid.
17. WL-307	"	*	
18. WL-309	"	*	
19. WL-508	"	1970	Non-dormant resistance to pea and spotted alfalfa aphids.
20. Oklahoma Common			From W.A. Elsener, Tipton, Oklahoma.

* Experimental not released