



# The 2010 New Mexico Alfalfa Variety Test Report



Agricultural Experiment Station  
College of Agricultural, Consumer  
and Environmental Sciences

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## Introduction

During 2010, 220,000 acres of alfalfa (*Medicago sativa*) were in production in New Mexico, down from 240,000 acres in 2009. Hay yields were still estimated at 1.14 million tons. At a January through October 2010 average of \$154/ton (down from \$174 in 2009), estimated gross returns from 1.14 million tons of alfalfa hay produced in 2010 will total approximately \$176 million. While this is a decline from the \$218 million estimated in The 2009 New Mexico Alfalfa Variety Test Report, alfalfa hay remains New Mexico's No. 1 cash crop (New Mexico Agricultural Statistics Service, [www.nass.usda.gov/nm](http://www.nass.usda.gov/nm)). Alfalfa also is the legume of choice in irrigated perennial pastures. Whether used as pasture or hay, the value of alfalfa to New Mexico is greatly magnified by its contribution to livestock production and receipts from the sale of meat, milk, and other products generated by livestock enterprises.

Choosing a good alfalfa variety is a key step in establishing a highly productive stand of alfalfa, whether for hay or pasture. Differences between the highest- and lowest-yielding varieties in irrigated tests included in this report ranged from 0.78 to 2.58 tons per acre in 2010. If sold as hay, this translates to a difference in returns of \$120 to \$397 per acre due to variety, or a potential increase of at least \$26.4 million for the industry in 2010 alone. Stand longevity, as affected by winter hardiness and pest resistance, also is partially determined by variety.

This report, which is a collaborative effort of New Mexico State University scientists at agricultural science centers throughout the state, provides yield data for alfalfa varieties included in yield trials in New Mexico. While consistently high yields compared to other varieties over a number of years and locations within a region is the best indication of varietal adaptation and persistence, other factors should be considered in the variety selection process (see NMSU's Cooperative Extension Service Circular 654, *Selecting alfalfa varieties for New Mexico*). In addition to fall dormancy and winter hardiness, high levels of pest resistance are critical to protecting an

alfalfa stand for long-term production. Alfalfa grown in New Mexico should have at least a resistant (R) rating for bacterial wilt, Fusarium wilt, anthracnose, Phytophthora root rot, spotted alfalfa aphid, blue alfalfa aphid, pea aphid, stem nematode, and southern rootknot nematode. Seed quality also should be high. Selecting an alfalfa variety based on seed cost is a gamble producers often lose. To be assured of achieving a long-lasting, highly productive stand, buy either certified or Plant Variety Protected (PVP) seed, which guarantees the genetics and performance. The best choice of seed of any variety is one that was treated with a fungicide and nitrogen-fixing bacteria before it was bagged.

## Description of Tests

Replicated alfalfa variety tests included in this report were conducted under research controls at NMSU's Agricultural Science Centers at Artesia (2006 and 2008), Los Lunas (2007 and 2009), Tucumcari (2007), and Farmington (2007 and 2009). A test sown in 2008 at the Leyendecker Plant Science Research Center at Las Cruces was discontinued after 2009 due to the formation of crevices related to soil type that inhibited the safe use of harvesting equipment. Weather data for 2010 and the long-term averages from all locations are presented in table 1.

Yield data (on a dry matter basis) are presented in tables 2-9. Varieties are listed in order from highest to lowest average annual production. Yields are given by cutting for 2010 and by year for each production year. Statistical analyses were performed on all alfalfa yield data (including experimentals) to determine if the apparent differences are truly due to variety or just to chance. The variety with the highest numerical yield in each column is marked with two asterisks (\*\*), and those varieties not significantly different from that variety are marked with one asterisk (\*). Those are the varieties from which to make an initial selection. Otherwise, to determine if two varieties are truly different, compare the difference between the two varieties to the Least Significant Difference (LSD) at the bottom of the column. If the difference is equal to or greater than the LSD, the varieties are truly different in yield when grown under the conditions at a given location. If NS is given for the LSD, there was no statistical difference between the highest and lowest yielding varieties. The Coefficient of Variation (CV), which is a measure of the variability of the data, is included for each column of means. Low variability (<20 percent) is desirable, and increased variability within a

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study results in higher CVs and larger LSDs. There might be a difference between previously published data and the data given in this publication for the same tests because of differences in the programs used for statistical analysis.

Table 10 summarizes information about proprietors, Roundup Ready genetics, fall dormancy, winter survival (measured in the northern United States), pest resistance, and yield performance across years and locations for all varieties currently included in NMSU's alfalfa variety testing program. Varieties are listed alphabetically by fall dormancy category. As in the data tables, the variety with the highest numerical yield in each column is marked with two asterisks (\*\*), and those varieties not significantly different from that variety are marked with one asterisk (\*). Remember, good performance across several years and locations is the best indicator of broad adaptation, pest resistance, and persistence.

Seed labeled "common," "variety not stated," or "variety unknown", particularly that from other states, is of unknown genetic background and may or may not have the necessary disease or insect resistance. New Mexico Common and African Common seed used in all tests throughout the state has come from the same supplier and seed fields in New Mexico. Seed purchased from other dealers may or may not be of the same quality and performance.

### Summary

Consistent production of high alfalfa yields is the result of selecting good varieties and implementing good management techniques. Soil fertility should be maintained at recommended levels based on soil tests, irrigation should be prop-

erly applied, weeds and insects should be controlled using appropriate cultural and/or chemical methods, and harvest management should allow sufficient time to restock root energy prior to winter. For dormant (FD 1 to 3) and semidormant (FD 4 to 6) varieties, a 6-week rest period before a dormancy-inducing freeze (27°F) is recommended to allow plants to replenish root reserves for winter survival and initiate spring growth, after which harvesting might be done either mechanically or by grazing. Non-dormant (FD 7 to 9) varieties also might benefit from this rest period. Removing fall growth is beneficial to reducing weevil populations the following year as eggs are laid in and overwinter in stems. Harvesting established stands at early bloom would result in 3 to 5 cuttings per year before initiation of the rest period in most areas of New Mexico. More dormant varieties might not produce balable yields during the rest period; however, these can still be grazed. For further information about alfalfa management, refer to the other NMSU Cooperative Extension Service publications listed in table 11.

### Acknowledgements

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**Table 1. Temperature and precipitation data for 2010 and the long-term averages for the New Mexico Alfalfa Variety Test locations.**

Location	Las Cruces <sup>1</sup> 3832 ft. 32° 12' N				Artesia 3366 ft. 32° 45' N				Tucumcari 4091 ft. 35° 12' N				Los Lunas 4840 ft. 34° 46' N				Farmington 5577 ft. 36° 41' N			
	Temp. (°F)		Precip. (in.)		Temp. (°F)		Precip. (in.)		Temp. (°F)		Precip. (in.)		Temp. (°F)		Precip. (in.)		Temp. (°F)		Precip. (in.)	
Month	10	Avg.	10	Avg.	10	Avg.	10	Avg.	10	Avg.	10	Avg.	10	Avg.	10	Avg.	10	Avg.	10	Avg.
Nov-09	48	50	1.28	0.53	50	49	0.13	0.54	53	47	0.25	0.70	44	43	0.00	0.52	43	41	0.32	0.67
Dec-09	40	42	0.45	0.68	36	41	1.42	0.50	34	39	0.56	0.62	32	34	0.12	0.48	26	32	0.42	0.45
Jan-10	39	42	1.04	0.56	38	41	0.68	0.39	38	38	0.99	0.40	34	35	0.72	0.39	26	30	1.34	0.50
Feb-10	45	46	0.50	0.37	42	45	1.36	0.43	35	42	0.96	0.47	38	40	0.28	0.42	33	36	0.95	0.48
Mar-10	62	52	0.01	0.22	49	52	0.20	0.43	48	49	1.27	0.81	44	47	0.30	0.56	41	43	0.82	0.67
Apr-10	69	59	0.26	0.21	60	60	0.28	0.63	60	58	0.63	1.10	56	54	0.70	0.46	51	51	0.26	0.60
May-10	80	68	0.00	0.29	68	69	1.26	1.22	66	66	0.30	2.11	62	63	0.15	0.48	57	60	0.10	0.52
Jun-10	79	77	0.30	0.72	81	78	1.05	1.42	82	75	1.26	2.04	76	72	0.56	0.57	72	70	0.10	0.25
Jul-10	79	80	1.67	1.36	78	80	3.64	1.76	80	79	3.93	2.65	78	77	0.72	1.33	76	76	0.65	0.83
Aug-10	79	78	0.94	2.29	80	78	1.31	1.70	79	77	2.42	2.74	76	75	1.40	1.59	72	74	2.50	1.05
Sep-10	74	72	1.64	1.38	75	71	1.85	1.80	76	77	0.93	1.49	71	67	0.86	1.17	67	66	0.84	1.06
Oct-10	63	61	0.11	0.91	66	61	0.06	1.18	63	60	0.94	1.40	59	56	0.80	1.11	56	54	1.32	0.98
Annual	63	61	8.20	9.52	60	60	13.24	12.00	60	59	14.44	16.53	56	55	6.61	9.08	52	53	9.62	8.06

<sup>1</sup>Long-term averages for the Las Cruces test site are from NMSU's weather station, located approximately 5.5 miles to the north.

Table 2. Dry matter yields (tons/acre) of alfalfa varieties sown March 18, 2008, at NMSU's Leyendecker Plant Science Research Center at Las Cruces and flood-irrigated every 14 days<sup>†</sup>.

Variety Name	2008 Total	2009 Harvests						2009 Total	2010 Total	2-yr Average
		5-May	2-Jun	8-Jul	11-Aug	29-Sep	5-Nov			
59N59	6.30**	2.34	1.27*	1.64	1.70*	1.56*	1.01*	9.52*	The study was abandoned after 2009 due to large crevices resulting from soil type issues.	7.91**
NM0307	5.85	2.68**	1.40**	1.85**	1.62*	1.53*	0.87*	9.94**		7.89*
AmeriStand 802	5.97*	2.32	1.22	1.80*	1.71**	1.63*	1.04**	9.70*		7.84*
Tres Padres	5.98*	2.47*	1.32*	1.64	1.60*	1.46*	0.78	9.26*		7.62*
Integra 8800	5.93*	2.38	1.31*	1.70*	1.56	1.46*	0.88*	9.29*		7.61*
58N57	6.13*	2.22	1.25	1.66	1.61*	1.51*	0.77	9.01		7.57*
Malone	5.83	2.29	1.20	1.62	1.59*	1.59*	0.83	9.11*		7.47*
NM0313	5.59	2.15	1.23	1.67	1.68*	1.64**	0.97*	9.34*		7.47*
Sal T96	5.76	2.33	1.21	1.61	1.68*	1.43*	0.90*	9.15*		7.45*
Arriba II	5.87	2.32	1.22	1.70*	1.53*	1.41*	0.84	9.03		7.45*
Grandslam	5.93*	2.13	1.18	1.71*	1.60	1.47*	0.86*	8.96		7.44*
Un Padre	5.88	2.24	1.23	1.59	1.59*	1.37	0.89*	8.90		7.39*
HybriForce-800	5.67	2.21	1.23	1.69	1.52	1.49*	0.88*	9.02		7.35*
CutMor	5.56	2.23	1.25	1.74*	1.63*	1.36	0.80	9.00		7.28
NM0306	5.86	2.12	1.15	1.59	1.49	1.49*	0.86*	8.70		7.28
WL 535HQ	5.46	2.08	1.24	1.83*	1.65*	1.39	0.88*	9.05		7.25
AmeriStand 813T	5.72	2.45*	1.12	1.57	1.50	1.34	0.80	8.77		7.24
NM MPR	5.84	2.20	1.13	1.57	1.51	1.43*	0.78	8.63		7.23
NM0601	5.59	2.11	1.06	1.60	1.37	1.40	0.74	8.27		6.93
NM0303	5.61	1.94	1.03	1.45	1.40	1.34	0.84	7.99		6.80
Chema 1	5.04	1.90	1.11	1.50	1.58*	1.43	0.97	8.49		6.77
HybriForce-620	5.58	2.00	0.95	1.40	1.38	1.26	0.72	7.69		6.63
Cimarron VL600	5.43	2.25	1.02	1.41	1.33	1.28	0.50	7.77		6.60
Wilson	5.21	2.17	0.97	1.43	1.39	1.25	0.70	7.90	6.55	
Dona Ana	5.34	1.96	0.99	1.44	1.39	1.23	0.71	7.71	6.52	
Dura 843	5.38	2.02	0.91	1.37	1.19	1.23	0.50	7.20	6.29	
Mean	5.70	2.21	1.16	1.61	1.53	1.42	0.82	8.75	7.22	
5% LSD	0.40	0.25	0.15	0.16	0.14	0.24	0.19	0.84	0.61	
CV%	4.95	7.90	9.43	7.26	6.56	11.81	16.13	6.82	11.80	

<sup>†</sup>Data were detrended using nearest neighbor analysis, and analyzed using analysis of variance.

2008 Harvest dates: 9-Jun, 22-Jul, 26-Aug, 1-Oct, and 3-Nov.

\*\*Highest numerical value in the column.

\*Not significantly different from the highest numerical value in the column based on the 5% LSD (least significant difference).

NS means that there were no significant differences between the varieties within that column at the 5% level.

Table 3. Dry matter yields (tons/acre) of alfalfa varieties sown September 26, 2006, at NMSU's Agricultural Science Center at Artesia and flood-irrigated approximately once per month†.

Variety Name	2007 Total	2008 Total	2009 Total	2010 Harvests					2010 Total	4-yr Average
				5-May	3-Jun	7-Jul	12-Aug	15-Sep		
CW046081	10.46*	11.38**	6.78	1.86*	1.30*	2.08**	1.54*	1.29	8.06*	9.19**
Mountaineer 2.0	10.63**	11.14*	6.44	1.90**	1.28*	1.98*	1.46*	1.33	7.86*	9.08*
TS-7009	10.32*	10.96*	7.00	1.79*	1.35*	1.89*	1.66*	1.36	7.92*	9.06*
R65BD278	10.18*	11.33*	6.47	1.63	1.29*	1.84*	1.75*	1.47	7.92*	9.02*
R65BD280	10.62*	11.10*	7.21	1.40	1.40*	1.79*	1.42*	1.29	7.41	9.02*
WL 530HQ	10.26*	11.16*	6.54	1.75*	1.29*	1.73*	1.70*	1.44	7.90*	9.00*
African Common	9.22	10.58*	7.95**	1.47	1.32*	1.94*	1.92**	1.69**	8.27**	8.98*
58N57	9.69*	11.33*	6.99	1.48	1.28*	1.87*	1.50*	1.37	7.53	8.90*
Wilson	9.19	10.95*	7.14	1.62	1.42**	1.80*	1.53*	1.62*	8.01*	8.88*
Yosemite	10.43*	10.62*	6.53	1.61	1.29*	1.86*	1.47*	1.45	7.75*	8.80*
R65BD277	10.26*	10.96*	6.47	1.40	1.32*	1.77*	1.77*	1.34	7.74*	8.78*
NM Common	9.23	10.31*	7.38	1.48	1.29*	1.94*	1.69*	1.49*	7.83*	8.70*
CW17075	9.63	10.65*	6.89	1.58	1.25*	1.83*	1.54*	1.32	7.51	8.70*
TS-0002	9.97*	10.67*	6.59	1.35	1.27*	1.73*	1.70*	1.34	7.36	8.67*
AL 798	10.00*	10.77*	6.28	1.62	1.25*	1.90*	1.71*	1.30	7.86*	8.66*
WL 535HQ	9.24	10.50*	7.29	1.36	1.39*	1.71*	1.71*	1.31	7.49	8.60*
56S82	9.48	11.06*	6.39	1.58	1.32*	1.76*	1.52*	1.40	7.67*	8.59*
AmeriLeaf 721	9.87*	10.08*	6.56	1.55	1.26*	1.84*	1.54*	1.40	7.65*	8.55*
Dona Ana	9.77*	10.41*	6.47	1.78*	1.23*	1.72*	1.56*	1.31	7.63*	8.53*
R65BD279	9.82*	10.61*	6.44	1.52	1.32*	1.58*	1.50*	1.33	7.18	8.53*
AB 90	9.18	10.31*	7.24	1.39	1.28*	1.76*	1.58*	1.37	7.30	8.47
6R100	9.41	11.36*	5.92	1.33	1.16*	1.69*	1.37*	1.32	6.85	8.45
Dura 843	9.20	10.14*	6.91	1.37	1.26*	1.68*	1.46*	1.33	7.09	8.33
WL 550RR	9.52	10.52*	5.55	1.40	1.07*	1.77*	1.36*	1.08	6.73	8.12
Mean	9.81	10.79	6.73	1.55	1.29	1.81	1.58	1.37	7.61	8.73
LSD (0.05)	0.97	NS	0.57	0.23	NS	NS	NS	0.22	0.70	0.69
CV%	8.60	7.38	7.41	12.72	11.03	15.12	18.32	13.82	8.01	13.81

†Data were analyzed using analysis of covariance where alternating plots of WL 530HQ were used as the covariate.

2007 Harvest dates: 23-Apr, 31-May, 2 Jul, 7-Aug, and 18-Sep.

2008 Harvest dates: 29-Apr, 12-Jun, 22-Jul, 20-Aug, 25-Sep, and 29-Oct.

2009 Harvest dates: 8-May, 8-Jun, 10-Jul, 6-Aug, 3-Sep, and 9-Oct.

\*\*Highest numerical value in the column.

\*Not significantly different from the highest numerical value in the column based on the 5% LSD.

NS means that there were no significant differences between the varieties within that column at the 5% level.

Table 4. Dry matter yields (tons/acre) of sprinkler-irrigated alfalfa varieties sown September 18, 2008, at NMSU's Agricultural Science Center at Artesia<sup>1</sup>.

Variety Name	2009 Total	2010 Harvests						2010 Total	2-yr Average
		6-May	7-Jun	14-Jul	16-Aug	16-Sep	7-Oct		
59N59	7.80**	1.46*	1.76**	1.74**	1.61**	1.05*	0.41*	8.03**	7.93**
HybriForce-800	7.70*	1.29	1.50*	1.61*	1.37*	1.06*	0.40*	7.21	7.45*
Wilson	7.26*	1.52*	1.62*	1.68*	1.36	0.94*	0.36	7.50*	7.36
NM Common	7.08	1.41*	1.56*	1.64*	1.52*	0.96*	0.45*	7.55*	7.31
HybriForce-700	7.32*	1.39*	1.66*	1.51*	1.41*	0.93*	0.35	7.33	7.31
African Common	7.32*	1.20	1.51*	1.36*	1.33	1.09**	0.48**	6.93	7.15
WL 530HQ	7.21	1.35*	1.49*	1.59*	1.32	0.80*	0.36	6.89	7.06
msSunstra 809	7.05	1.52*	1.62*	1.60*	1.23	0.99*	0.14	7.10	7.05
Malone	6.89	1.26	1.50*	1.40*	1.34	0.86*	0.41*	6.67	6.82
AmeriStand 407TQ	6.72	1.39*	1.53*	1.52*	1.26	0.93*	0.26	6.91	6.81
Dona Ana	6.74	1.35*	1.41*	1.59*	1.34	0.90*	0.35	6.80	6.78
Magna 901	6.83	1.28	1.42*	1.43*	1.17	0.90*	0.40*	6.60	6.73
WL 535HQ	6.59	1.36*	1.49*	1.30*	1.47*	0.83*	0.45*	6.84	6.72
56S82	6.60	1.44*	1.56*	1.44*	1.17	0.83*	0.31	6.81	6.69
WL 440HQ	6.56	1.51*	1.53*	1.43*	1.21	0.77*	0.26	6.73	6.64
Dura 843	6.42	1.53**	1.54*	1.58*	1.09	0.81*	0.14	6.79	6.60
MagnaGraze	6.50	1.38*	1.47*	1.62*	1.15	0.94*	0.15	6.66	6.60
msSunstra 808	6.70	1.42*	1.55*	1.37*	1.18	0.80*	0.11	6.44	6.55
WL 711	6.46	1.15	1.36*	1.33*	1.31	0.93*	0.42*	6.59	6.53
PGI 459	6.56	1.31	1.40*	1.51*	1.17	0.86*	0.13	6.42	6.49
6552	6.54	1.41*	1.35*	1.36*	1.18	0.86*	0.21	6.30	6.44
FSG 639ST	6.54	1.30	1.42*	1.25*	1.15	0.83*	0.20	6.23	6.35
FSG 528SF	6.24	1.28	1.47*	1.54*	1.11	0.83*	0.16	6.35	6.29
WL 319HQ	6.00	1.30	1.29*	1.32*	1.09	0.78*	0.13	5.92	5.96
Mean	6.82	1.37	1.50	1.49	1.27	0.89	0.29	6.82	6.82
5% LSD	0.58	0.20	NS	NS	0.25	NS	0.09	0.62	0.50
CV%	7.43	12.77	14.10	17.83	17.46	19.80	25.71	7.90	9.11

<sup>1</sup>Data were analyzed using analysis of covariance where alternating plots of WL 535HQ were used as the covariate. 2009 Harvest dates: 26-May, 25-Jun, 28-Jul, 25-Aug, and 24-Sep.

\*\*Highest numerical value in the column.

\*Not significantly different from the highest numerical value in the column based on the 5% LSD (least significant difference). NS means that there were no significant differences between the varieties within that column at the 5% level.

Table 5. Dry matter yields (tons/acre) of alfalfa varieties sown September 15, 2007, at NMSU's Agricultural Science Center at Tucumcari and furrow-irrigated once per cutting<sup>†</sup>.

Variety Name	2008 Total	2009 Total	2010 Harvests				2010 Total	2-yr Average
			21-Jul	19-Aug	14-Sep	26-Oct		
NM0307	6.64**	No yields were measured in 2009 due to insufficient irrigation water	1.83*	0.66*	0.57*	1.01**	4.07*	5.35**
HybriForce-620	6.53*		1.84**	0.65*	0.51	0.92*	3.92*	5.23*
NM Common	6.61*		1.59	0.65*	0.63*	0.87	3.75*	5.18*
African Common	6.21*		1.66	0.76**	0.69**	0.97*	4.08**	5.14*
Wilson	6.42*		1.68	0.68*	0.56*	0.92*	3.83*	5.13*
NM0313	6.54*		1.74*	0.54	0.44	0.95*	3.68	5.11*
NM0601	6.50*		1.67	0.50	0.59*	0.91*	3.68	5.09*
Dona Ana	6.32*		1.69*	0.57	0.51	0.83	3.59	4.95*
NM0306	6.38*		1.74*	0.45	0.41	0.83	3.42	4.90*
A 5225	6.12*		1.49	0.59	0.47	0.94*	3.49	4.81*
AmeriStand 407TQ	6.21*		1.52	0.50	0.50	0.89*	3.40	4.80*
Chema 1	6.69*		1.51	0.38	0.32	0.68	2.89	4.79*
CW500	6.46*		1.49	0.45	0.43	0.75	3.12	4.79*
56S82	6.49*		1.53	0.37	0.29	0.70	2.89	4.69
FSG528SF	5.85*		1.60	0.53	0.52	0.76	3.41	4.63
PGI 459	6.06*		1.62	0.38	0.39	0.75	3.14	4.60
Mean	6.38		1.64	0.54	0.49	0.85	3.52	4.95
5% LSD	NS	0.17	0.14	0.14	0.13	0.34	0.64	
CV%	9.47	7.38	18.28	19.70	10.93	6.73	12.09	

<sup>†</sup>Data were detrended using nearest neighbor analysis, and analyzed using analysis of variance.

2008 Harvest dates: 24-Jun, 23-Jul, 20-Aug, 16-Sep, and 27-Oct.

\*\*Highest numerical value in the column.

\*Not significantly different from the highest numerical value in the column based on the 5% LSD (least significant difference). NS means that there were no significant differences between the varieties within that column at the 5% level.

Table 6. Dry matter yields (tons/acre) of alfalfa varieties sown September 19, 2007, at NMSU's Agricultural Science Center at Los Lunas and flood-irrigated twice per cutting<sup>†</sup>.

Variety Name	2008 Total	2009 Total	2010 Harvests					2010 Total	3-yr Average
			19-May	30-Jun	3-Aug	8-Sep	28-Oct		
PGI 424	8.43**	6.63**	1.97*	1.74*	2.17**	1.23*	0.94**	8.05**	7.70**
Tango	8.31*	6.36*	2.07*	1.78*	1.86*	1.25*	0.90*	7.86*	7.51*
Cimarron VL600	8.18*	6.60*	1.96*	1.76*	1.77*	1.28*	0.90*	7.68*	7.48*
Archer III	7.61	6.51*	2.04*	1.78*	1.84*	1.29*	0.93*	7.88*	7.33*
AmeriLeaf 721	8.34*	5.91*	1.76*	1.90**	1.85*	1.27*	0.85*	7.63*	7.29*
GT 13R	7.71*	6.28*	1.82*	1.65*	2.08*	1.25*	0.93*	7.73*	7.24*
Dona Ana	7.68	6.36*	1.75*	1.80*	1.84*	1.22*	0.91*	7.51*	7.18*
WL 442	7.73*	6.30*	1.76*	1.64*	1.87*	1.24*	0.87*	7.38*	7.14*
African Common	7.43	6.40*	1.88*	1.66*	1.80*	1.33**	0.90*	7.56*	7.13*
Rancher Special	8.15*	6.09*	1.93*	1.51*	1.87*	0.98*	0.80*	7.08*	7.10*
AmeriStand 407TQ	7.01	6.47*	2.09**	1.64*	1.98*	1.23*	0.89*	7.83*	7.10*
Wilson	7.31	6.21*	2.09**	1.65*	1.97*	1.17*	0.88*	7.76*	7.09*
SS120	7.60	6.04*	1.76*	1.49*	1.76*	1.23*	0.82*	7.05*	6.90
NM Common	7.14	6.23*	1.85*	1.53*	1.89*	1.18*	0.87*	7.31*	6.89
SW6403	7.41	5.91*	1.83*	1.59*	1.70*	1.16*	0.84*	7.11*	6.81
WL 343HQ	7.15	5.78*	1.85*	1.59*	1.69*	1.12*	0.82*	7.05*	6.66
Mean	7.70	6.25	1.90	1.67	1.87	1.21	0.88	7.53	7.16
5% LSD	0.74	NS	NS	NS	NS	NS	NS	NS	0.64
CV%	6.72	11.00	13.89	13.21	14.65	12.27	8.21	8.37	10.82

<sup>†</sup>Data were detrended using nearest neighbor analysis, and analyzed using analysis of variance.

2008 Harvest dates: 2-Jun, 10-Jul, 15-Aug, and 1-Oct.

2009 Harvest dates: 1-Jun, 7-Jul, 21-Aug, and 6-Oct.

\*\*Highest numerical value in the column.

\*Not significantly different from the highest numerical value in the column based on the 5% LSD (least significant difference). NS means that there were no significant differences between the varieties within that column at the 5% level.



Table 7. Dry matter yields (tons/acre) of alfalfa varieties sown September 30, 2009, at NMSU's Agricultural Science Center at Los Lunas and flood-irrigated twice per cutting<sup>†</sup>.

Variety Name	2010 Harvests					2010 Total
	19-May	30-Jun	3-Aug	8-Sep	29-Oct	
Dona Ana	1.58	1.77*	1.49*	1.18**	0.97*	6.99**
Dura 843	1.81**	1.73*	1.39*	1.03*	0.99*	6.95*
4S417	1.75*	1.68*	1.45*	1.02*	0.96*	6.85*
WL 440HQ	1.59	1.70*	1.51*	1.06*	0.96*	6.81*
Artesian Sunrise	1.66*	1.61*	1.45*	1.01*	1.06**	6.78*
Wilson	1.39	1.82*	1.49*	1.13*	0.94*	6.76*
Mountaineer 2.0	1.64*	1.56*	1.44*	1.12*	0.95*	6.70*
Velvet	1.49	1.64*	1.61*	1.07*	0.87	6.67*
HybriForce-2400	1.63*	1.61*	1.42*	1.13*	0.88	6.66*
Rugged	1.58	1.69*	1.63**	0.95*	0.81	6.66*
Malone	1.40	1.82**	1.41*	1.10*	0.91	6.63*
WL 363HQ	1.38	1.73*	1.45*	1.03*	0.93*	6.51*
6422Q	1.37	1.55*	1.59*	1.03*	0.97*	6.50*
HybriForce-2420/Wet	1.58	1.45*	1.58*	0.92*	0.90	6.43*
NM Common	1.54	1.60*	1.29*	1.00*	0.99*	6.41*
MaxiGraze GT	1.42	1.61*	1.53*	1.03*	0.78	6.37*
LegenDairy 5.0	1.40	1.73*	1.40*	0.94*	0.89	6.36*
AmeriStand 201+Z	1.64	1.57*	1.38*	0.92*	0.80	6.30*
African Common	1.37	1.46*	1.33*	1.04*	0.86	6.06*
63Q105	1.41	1.34*	1.42*	0.83*	0.82	5.81*
Mean	1.53	1.63	1.46	1.03	0.91	6.56
5% LSD	0.21	NS	NS	NS	0.14	NS
CV%	9.92	17.31	9.74	14.16	10.81	8.43

<sup>†</sup>Data were detrended using nearest neighbor analysis, and analyzed using analysis of variance.

\*\*Highest numerical value in the column.

\*Not significantly different from the highest numerical value in the column based on the 5% LSD (least significant difference). NS means that there were no significant differences between the varieties within that column at the 5% level.

Table 8. Dry matter yields (tons/acre) of alfalfa varieties sown September 20, 2007, at NMSU's Agricultural Science Center at Farmington and sprinkler-irrigated three times per week<sup>†</sup>.

Variety Name	2008 Total	2009 Total	2010 Harvests				2010 Total	3-yr Average
			3-Jun	13-Jul	18-Aug	13-Oct		
Mountaineer 2.0	8.18*	10.32*	4.87**	3.22*	2.00*	1.28*	11.36*	9.95**
AmeriStand 444NT	8.24*	10.05*	4.45*	3.45**	2.24*	1.35*	11.48**	9.92*
Masterpiece	8.26**	10.38*	4.38*	3.16*	2.31**	1.17	11.01*	9.88*
54V09	7.82*	10.13*	4.67*	2.75*	1.98*	1.06	10.45*	9.47*
FSG 528SF	7.22*	10.39**	3.98	2.88*	2.29*	1.27*	10.42*	9.34*
CW500	7.51*	9.97*	3.86	3.05*	2.25*	1.20	10.36*	9.28*
NM0306	7.52*	9.71*	3.84	3.18*	2.05*	1.23*	10.30	9.17
PGI 459	7.61*	9.51	3.96	2.95*	2.17*	1.30*	10.38*	9.16
AmeriStand 407TQ	7.72*	9.00	3.98	3.12*	2.09*	1.16	10.35*	9.02
Integra 8400	7.41*	9.41	4.20*	2.84*	1.82	1.22*	10.09	8.97
Archer III	7.33*	9.27	4.07	2.86*	2.04*	1.28*	10.24	8.95
Legend	6.48*	9.40	4.51*	3.20*	2.18*	1.02	10.91*	8.93
A 5225	7.09*	9.49	4.22*	2.95*	1.80	1.13	10.10	8.89
Dona Ana	7.19*	9.26	4.10	2.89*	1.91	1.22*	10.12	8.85
Archer II	6.97*	9.54	4.43*	2.74*	1.85	1.02	10.04	8.85
Wilson	6.97*	8.93	3.76	3.22*	2.28*	1.27*	10.53*	8.81
Grandstand	7.09*	9.21	4.16*	2.97*	1.84	1.03	9.99	8.76
Medalist	7.01*	9.13	4.11*	3.09*	1.89	1.05	10.13	8.76
Ranger	7.19*	9.11	4.22*	2.88*	1.87	0.82	9.78	8.70
African Common	7.28*	9.41	3.20	2.78*	1.85	1.36*	9.18	8.62
NM0307	6.88*	9.11	3.33	2.71*	2.06*	1.29*	9.38	8.45
WL 343HQ	6.92*	8.46	3.76	2.98*	1.77	1.17	9.68	8.35
NM0313	6.99*	8.77	3.14	2.55*	1.82	1.40**	8.90	8.22
NM Common	6.52*	8.21	2.93	2.89*	2.22*	1.20	9.24	7.99
Mean	7.31	9.42	4.00	2.97	2.02	1.19	10.18	8.97
5% LSD	NS	0.78	0.77	NS	0.39	0.20	1.08	0.76
CV%	12.61	5.90	13.60	11.30	13.53	11.72	7.53	10.36

<sup>†</sup>Data were detrended using nearest neighbor analysis, and analyzed using analysis of variance.

2008 Harvest dates: 12-Jun, 16-Jul, 21-Aug, and 3-Oct.

2009 Harvest dates: 4-Jun, 15-Jul, 20-Aug, and 9-Oct.

\*\*Highest numerical value in the column.

\*Not significantly different from the highest numerical value in the column based on the 5% LSD (least significant difference).

NS means that there were no significant differences between the varieties within that column at the 5% level.

Table 9. Dry matter yields (tons/acre) of alfalfa varieties sown August 26, 2009, at NMSU's Agricultural Science Center at Farmington<sup>†</sup>.

Variety Name	2010 Harvests				2010 Total
	4-Jun	14-Jul	24-Aug	14-Oct	
Lahontan	3.48*	3.27**	1.83*	1.19	9.76**
HybriForce-2400	3.54**	2.97*	1.87*	1.03	9.40*
Mountaineer 2.0	3.32*	3.00*	1.71*	1.32*	9.35*
Dura 843	2.94	3.21*	1.83*	1.30*	9.29*
LegenDairy 5.0	3.32*	3.09*	1.69*	1.11	9.22*
4S417	3.36*	3.09*	1.75*	0.99	9.19*
African Common	2.81	3.01*	1.82*	1.52**	9.16*
Dona Ana	3.01	3.04*	1.83*	1.27	9.15*
WL 363HQ	3.12	2.99*	1.64*	1.40*	9.14*
WL 440HQ	3.03	3.12*	1.67*	1.28*	9.09
Artesian Sunrise	2.94	3.03*	1.68*	1.38*	9.03
SW435	3.01	3.19*	1.76*	1.02	8.99
NM Common	2.72	3.03*	1.66*	1.49*	8.90
SW6330	2.89	2.91	1.70*	1.41*	8.90
Wilson	2.62	2.83	1.81*	1.47*	8.74
HybriForce-2420/Wet	3.20*	2.85	1.74*	0.91	8.69
Rugged	3.23*	2.74	1.73*	0.92	8.62
Velvet	3.01	2.82	1.77*	1.02	8.62
Malone	2.78	2.95*	1.59*	1.29*	8.60
AmeriStand 201+Z	2.97	2.91	1.79*	0.93	8.59
Ranger	3.14	2.64	1.73*	1.01	8.52
63Q105	2.83	2.81	1.96**	0.90	8.51
6422Q	3.04	2.72	1.46*	1.15	8.37
MaxiGraze GT	2.91	2.85	1.76*	0.74	8.25
Mean	3.05	2.96	1.74	1.17	8.92
5% LSD	0.36	0.33	NS	0.25	0.63
CV%	8.42	7.90	17.34	15.15	4.99

<sup>†</sup>Data were detrended using nearest neighbor analysis, and analyzed using analysis of variance.

\*\*Highest numerical value in the column.

\*Not significantly different from the highest numerical value in the column based on the 5% LSD (least significant difference). NS means that there were no significant differences between the varieties within that column at the 5% level.



Table 10 (cont.). Characteristics and performance of alfalfa varieties across years and tests in New Mexico.		Varietal Characteristics <sup>1</sup>											Las Cruces		Artesia			Tucumcari			Los Lunas		Farmington											
		Pest resistance											2008 <sup>2</sup>		2006			2008			2007		2009											
		Y	5	2	HR	HR	HR	HR	R	HR	n/r	HR	R			*	*	*			*	*	*	*										
Mountaineer 2.0	Croplan Genetics		5	2	HR	HR	HR	HR	R	HR	n/r	HR	R			**	*	*	*									*	*	*	*	*		
56S82	Pioneer HiBred Int'l		6	5	HR	HR	HR	HR	HR	HR	HR	HR	HR			*	*	*	*	*														
6R100	Eureka Seeds	Y	6	n/r	R	HR	HR	HR	R	HR	MR	R	HR			*	*	*	*	*														
Arriba II	America's Alfalfa		6	n/r	HR	HR	HR	HR	HR	n/r	n/r	HR	HR																					
Cimarron VL600	Great Plains Research		6	n/r	R	HR	HR	HR	R	HR	HR	R	MR								*	*	*											
CW 046081	Cal/West Seeds		6	n/r	MR	HR	n/r	HR	n/r	n/r	HR	n/r	n/r			*	**	*	**	*														
FSG 639ST	Allied Seed		6	3	HR	HR	R	HR	n/r	R	n/r	R	n/r																					
Lahontan	USDA, Univ. of Nevada		6	n/r	R	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r															*	*	**				
msSunstra 808	Dairyland Seed Co.		6	n/r	HR	HR	HR	HR	n/r	n/r	n/r	n/r	n/r																					
msSunstra 809	Dairyland Seed Co.		6	n/r	HR	HR	HR	HR	n/r	n/r	n/r	n/r	n/r																					
R65BD277	Forage Genetics Int'l	Y	6	n/r	n/r	n/r	R	HR	n/r	n/r	n/r	HR	n/r			*	*	*	*	*														
R65BD278	Forage Genetics Int'l	Y	6	n/r	n/r	n/r	HR	HR	n/r	n/r	n/r	HR	n/r			*	*	*	*	*														
R65BD279	Forage Genetics Int'l	Y	6	n/r	n/r	n/r	HR	HR	n/r	n/r	n/r	HR	n/r			*	*	*	*	*														
R65BD280	Forage Genetics Int'l	Y	6	n/r	n/r	n/r	HR	HR	n/r	n/r	n/r	HR	n/r			*	*	*	*	*														
SW6330	S & W Seeds		6	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r																					
Tango	Eureka Seeds		6	4	HR	HR	HR	HR	HR	HR	R	R	R								*	*	*	*										
Wilson	New Mexico State University		6	n/r	R	R	n/r	n/r	MR	R	n/r	MR	n/r			*	*	*	*	*		*	*	*	*			*	*	*	*	*	*	
WL440HQ	W-L Research		6	n/r	HR	HR	R	HR	HR	HR	HR	HR	HR																					
AmeriLeaf 721	America's Alfalfa		7	n/r	R	HR	HR	HR	HR	R	MR	MR	R			*	*	*	*	*		*	*	*	*									
Artesian Sunrise	Croplan Genetics		7	n/r	MR	HR	R	HR	HR	HR	R	R	n/r																					
CW 17075	Cal/West Seeds		7	n/r	n/r	n/r	n/r	HR	n/r	n/r	n/r	n/r	n/r			*	*	*	*	*														
Dona Ana	New Mexico State University		7	n/r	MR	MR	LR	R	MR	R	n/r	n/r	n/r			*	*	*	*	*		*	*	*	*			*	*	**	*	*	*	
HybriForce-620	Dairyland Seed Co.		7	n/r	n/r	HR	n/r	HR	n/r	n/r	n/r	n/r	n/r									*	*	*	*									
HybriForce-700	Dairyland Seed Co.		7	n/r	MR	HR	n/r	HR	HR	R	n/r	HR	R					*	*	*														
Malone	New Mexico State University		7	n/r	R	HR	R	R	R	HR	S	MR	n/r																					
NM0307	New Mexico State University		7	n/r	MR	R	R	R	R	MR	MR	n/r	n/r	**								*	*	*	*			*	*	*	*	*	*	
SW6403	S & W Seeds		7	n/r	LR	HR	MR	MR	R	MR	HR	n/r	R			*	*	*	*	*														
TS-7009	Producer's Choice Seed		7	n/r	n/r	n/r	R	HR	n/r	n/r	n/r	n/r	n/r			*	*	*	*	*														
WL442	W-L Research		7	n/r	R	HR	HR	HR	HR	HR	HR	HR	n/r									*	*	*	*									
58N57	Pioneer HiBred Int'l		8	6	LR	R	HR	HR	R	HR	HR	MR	HR	*		*	*	*	*	*														
AmeriStand 802	America's Alfalfa		8	n/r	HR	HR	R	HR	HR	HR	HR	R	HR	*	*																			
AmeriStand 813T	America's Alfalfa		8	n/r	MR	R	R	HR	R	R	n/r	n/r	n/r																					
Dura 843	Croplan Genetics		8	n/r	MR	HR	n/r	HR	HR	HR	HR	HR	R	n/r		*	*	*	*	*														*
GrandSlam	Western Farm Service		8	n/r	R	HR	R	HR	HR	HR	HR	HR	R	n/r	*																			
GT 13R	America's Alfalfa		8	n/r	MR	HR	R	HR	HR	HR	R	R	n/r								*	*	*	*										
HybriForce-800	Dairyland Seed Co.		8	n/r	MR	HR	HR	R	n/r	MR	n/r	HR	R					*	*	*														

Study abandoned due to large crowding caused by soil expansion and contraction.

Irrigation water was not available to produce measurable yields.

<sup>1</sup>RR=Roundup Ready if "Y"; WS=Winter Survival (1=No injury, 6=Dead plants), FD=Fall Dormancy (2=Vernal, 3=5246, 4=Legend, 5=Archer, 6=ABI 700, 7=Dona Ana, 8=Pierce, 9-CUF101), 10=UC1887, BW=Bacterial wilt, PRR=Phytophthora root rot, FW=Fusarium wilt, AN=Anthracnose, SAA=Spotted alfalfa aphid, PA=Pea aphid, BAA=Blue alfalfa aphid, SN=Stem nematode, RKN=Rootknot nematode (southern or northern); (S=Susceptible, LR=Low resistance, MR=Moderate resistance, R=Resistant, HR=High resistance).

n/r indicates either that the variety was not rated for that characteristic or no rating was available.

<sup>2</sup>Establishment year.

<sup>3</sup>F=full irrigation, 18 inches; L=limited irrigation, 10 inches, plus 10 inches of precipitation in each study. Due to irrigation problems in 2007, no data were collected from these studies.

<sup>4</sup>Harvest year.

Shaded boxes indicate that the variety was not in the test.

\*\*Highest yielding variety in the test for that year.

\*Not significantly different from the highest yielding variety in the test for that year.

L.M. Lauriault, I.M. Ray, C.A. Pierce, R.P. Flynn, M.K. O'Neill, and T. Place. New Mexico St. Univ. College of Agricultural, Consumer and Environmental Sciences. Agric. Exp. Stn and Coop. Ext. Ser.



**Table 11. New Mexico State University Agricultural Experiment Station and Cooperative Extension Service publications related to alfalfa management.**

Number	Title
A-114	Test your soil
A-122	Soil test interpretations
A-123	Sampling for plant tissue analysis
A-129	Nitrogen fixation by legumes
A-130	Inoculation of legumes
A-133	Calculating fertilizer costs
A-134	Selecting synthetic fertilizers in New Mexico
A-325	Managing weeds in alfalfa
A-326	Downy mildew on alfalfa
BL-796	Perennial cool-season forage legume performance in diverse soil moisture treatments, Southern High Plains, USA
CR-585	Species selection and establishment for irrigated pastures in New Mexico
CR-586	Grazing systems and management for irrigated pastures in New Mexico
CR-641	Hay quality, sampling and testing
CR-644	Assessing alfalfa stands after winter injury, freeze damage, or any time renovation is considered in New Mexico
CR-646	Managing alfalfa during drought
CR-654	Selecting alfalfa varieties for New Mexico
RR-766	Furrow-irrigated alfalfa dry matter yield is not affected by different seeding rates in the Southern High Plains, USA

These publications, and alfalfa variety test reports from previous years, are available from your county office of the NMSU Cooperative Extension Service or online at [aces.nmsu.edu/pubs/](http://aces.nmsu.edu/pubs/)