The 2018 **New Mexico Alfalfa Variety** Test Report

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Leonard Lauriault, Ian Ray, Chris Pierce, Owen Burney, Koffi Djaman, Robert Flynn, Mark Marsalis, Samuel Allen, Gasper Martinez, Charles Havlik, and Margaret West[1]

Introduction

In 2018, 180,000 acres of alfalfa (*Medicago sativa*) were in production in New Mexico, which was a 10,000 acre decrease from 2017. Hay production was estimated at 918,000 tons reflecting another 2% increase in yield/acre. At a January through August 2018 average of $215/ton (up from $180/ton in 2017), estimated gross returns from alfalfa hay produced in 2018 will total just over $197 million, a $26 million increase over 2017. Besides its value for hay, 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 established irrigated tests included in this report ranged from 0.99 to 2.41 tons per acre in 2018. If sold as hay, this translates to a potential difference in returns of $213 to $518 per acre due to variety, or an increase of at least $38 million for the industry in 2018 alone.

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 [2016 (late summer planted) and 2018 (spring planted)], Tucumcari (2015 irrigated with treated municipal wastewater), Los Lunas (2016), and Farmington (2014). Weather data for 2018 and the long-term averages from all locations are presented in table 1.

Yield data (on a dry matter basis) are presented in tables 2-6. Varieties are listed in order from highest to lowest average annual production. Yields are given by cutting for 2018 and by year for each production year. Statistical analyses were performed on all alfalfa yield data (including experimental entries) 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 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 7 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. For information about other varietal characteristics, such as grazing, salt, or traffic tolerance or GMO traits besides Roundup Ready® genetics, check the National Alfalfa and Forage Alliance website for the Alfalfa Variety Leaflet (https://www.alfalfa.org/varietyLeaflet.php). In Table 7, 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.

[1]Forage Crop Management Scientist and Superintendent, NMSU Agricultural Science Center at Tucumcari; Alfalfa Breeder, NMSU, Las Cruces; Forage Research Scientist, NMSU, Las Cruces; Superintendent, NMSU John T. Harrington Forestry Research Center at Mora; Agronomist, NMSU Agricultural Science Center at Farmington; Extension Agronomist, NMSU Agricultural Science Center at Artesia; Extension Forage Specialist, NMSU Agricultural Science Center at Los Lunas; Agricultural Research Scientist, NMSU Agricultural Science Center at Farmington; Agricultural Research Assistant, NMSU Agricultural Science Center at Tucumcari; Senior Research Assistant, NMSU Agricultural Science Center at Los Lunas; and Agricultural Research Scientist, NMSU Agricultural Science Center at Farmington, respectively.

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 properly 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 yields that can be baled during the rest period; however, these can still be grazed. For additional information about alfalfa management, refer to the other NMSU Agricultural Experiment Station and Cooperative Extension Service publications listed in table 8.

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Table 1. Temperature and precipitation data for 2018 and the long-term averages for the New Mexico Alfalfa Variety Test locations.

Location	Artesia				Tucumcari				Los Lunas				Farmington			
Elevation	3366 ft.				4091 ft.				4840 ft.				5640 ft.			
Latitude	32° 45' N				35° 12' N				34° 46' N				36° 41' N			
	Temp. (°F)		Precip. (in.)		Temp. (°F)		Precip. (in.)		Temp. (°F)		Precip. (in.)		Temp. (°F)		Precip. (in.)	
Month	**2018**	**Avg.**	**2018**	**Avg.**	**2018**	**Avg.**	**2018**	**Avg.**	**2018**	**Avg.**	**2018**	**Avg.**	**2018**	**Avg.**	**2018**	**Avg.**
Nov-17	53	49	0.31	0.53	54	48	0.01	0.74	49	44	0.00	0.46	48	41	0.14	0.65
Dec-17	43	41	0.28	0.51	41	39	0.00	0.60	35	35	0.00	0.52	35	31	0.00	0.47
Jan-18	38	40	0.10	0.39	38	38	0.00	0.42	35	35	0.02	0.38	35	30	0.25	0.51
Feb-18	46	45	0.10	0.42	43	42	0.03	0.50	43	40	0.35	0.41	39	36	0.09	0.49
Mar-18	54	42	0.03	0.43	52	49	0.16	0.78	50	47	0.12	0.47	44	44	0.09	0.62
Apr-18	60	60	0.00	0.62	56	58	0.51	1.18	61	55	0.00	0.47	55	51	0.20	0.60
May-18	73	69	1.89	1.20	72	66	1.82	1.99	69	63	0.07	0.47	64	60	0.32	0.55
Jun-18	81	78	1.67	1.40	81	76	0.56	2.00	78	73	1.30	0.55	74	70	0.80	0.25
Jul-18	81	80	1.72	1.76	81	79	1.16	2.77	79	77	1.14	1.37	80	76	0.60	0.84
Aug-18	80	78	1.38	1.67	78	77	3.63	2.88	76	75	0.65	1.69	76	74	0.21	1.03
Sep-18	72	71	1.92	1.81	72	71	0.78	1.65	69	67	0.78	1.18	69	66	0.14	1.10
Oct-18	59	61	3.01	1.16	58	60	4.27	1.37	56	56	2.22	1.04	53	54	0.81	0.93
Annual	62	60	12.41	11.90	61	58	12.93	16.88	58	56	6.65	8.97	56	53	3.65	8.04

Table 2. Dry matter yields (tons/acre) of sprinkler-irrigated alfalfa varieties sown September 16, 2016, at NMSU's Agricultural Science Center at Artesia†.

	2017	2018 Harvests					2018	2-Yr
Variety Name	Total	8-May	7-Jun	3-Jul	6-Aug	17-Sep‡	Total	Average
SW 7408	9.41**	1.72**	1.54*	1.62*	2.00**	1.69*	8.28*	9.05**
NuMex Bill Melton	9.16*	1.59*	1.71*	1.62*	1.82*	1.61*	8.22*	8.64*
MS sunstra 155203	8.67*	1.61*	1.76**	1.63*	1.87*	1.66*	8.42*	8.60*
African Common	8.05*	1.60*	1.51*	1.69*	1.95*	1.83**	8.45**	8.36*
SW 8412	8.09*	1.34*	1.58*	1.82**	1.92*	1.63*	8.20*	8.32*
SW 8476	8.29*	1.65*	1.63*	1.48*	1.61*	1.76*	7.96*	8.18*
Zia	7.64*	1.34*	1.56*	1.71*	1.70*	1.64*	7.77*	7.88*
MS sunstra 155204	7.99*	1.64*	1.47*	1.33*	1.59*	1.78*	8.06*	7.87*
SW 8409	8.08*	1.45*	1.48*	1.48*	1.61*	1.32*	7.75*	7.69*
55ER08	7.78*	1.57*	1.45*	1.29*	1.79*	1.58*	7.70*	7.69*
SW 7473	7.78*	1.14*	1.43*	1.60*	1.80*	1.66*	7.64*	7.63*
New Mexico 11-1	7.63*	1.38*	1.02*	1.63*	1.75*	1.71*	7.98*	7.62*
NM Common	7.36*	1.44*	1.78*	1.54*	1.62*	1.50*	7.71*	7.55*
Dona Ana	7.82*	0.78*	1.18*	1.32*	1.69*	1.60*	6.67*	7.19*
Mean	8.13	1.45	1.51	1.55	1.77	1.64	7.92	8.02
LSD (0.05)	NS	NS	NS	NS	NS	NS	NS	NS
CV%	10.50	32.70	27.10	15.44	14.76	12.00	9.93	9.25

†Data were analyzed using analysis of covariance where check plots of AmeriStand 803T were used as the covariate.

2017 Harvest dates:16-May, 22-Jun, 21-Jul, 24-Aug, and 16-Oct.

‡The sixth harvest was not taken due to excessive precipitation.

**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 3. Dry matter yields (tons/acre) of sprinkler-irrigated alfalfa varieties sown April 18, 2018, at NMSU's Agricultural Science Center at Artesia†.

	2018 Harvest
Variety Name	**12-Sep‡**
SW 8476	1.44**
SW 7408	1.43*
SW 8412	1.26*
MS sunstra 155203	1.24*
SW 8409	1.19*
Hi-Gest 660	1.14*
Zia	1.14*
SW 8421S	1.07*
SW 7473	1.07*
Dona Ana	1.01*
NM Common	0.90*
African Common	0.89*
Mean	1.15
LSD (0.05)	NS
CV%	26.68

†Data were analyzed using analysis of covariance where check plots of Pioneer 55VR08 were used as the covariate

‡A prior harvest was not measured due to excessive weeds.

**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 at the 5% level.

Table 4. Dry matter yields (tons/acre) of alfalfa varieties sown May 12, 2015, at NMSU's Agricultural Science Center at Tucumcari and sprinkler-irrigated twice per week with treated municipal wastewater†.

			2018 Harvests‡					
Variety Name	2016 Total	2017 Total	10-Jul	14-Aug	11-Sep	30-Oct	2018 Total	3-Yr Average
NuMex Bill Melton	4.62**	5.85**	0.79*	0.66**	0.51*	0.19*	2.14**	4.20**
6829R	4.38*	5.68*	0.76*	0.53*	0.57**	0.23**	2.08*	4.05*
NM14BMHS1	4.19*	5.36*	0.84**	0.56*	0.50*	0.20*	2.09*	3.88*
African Common	3.65	5.59*	0.76*	0.54*	0.51*	0.19*	1.99*	3.74*
NM14BMHR2	4.17*	5.33*	0.65	0.46	0.39	0.13	1.63	3.71
Mallard	3.98*	5.23*	0.58	0.54*	0.43	0.13	1.68	3.63
NM14BMC0	3.99*	5.26*	0.62	0.37	0.42	0.13	1.53	3.59
Malone	3.77	5.22*	0.66	0.43	0.45	0.15	1.68	3.55
NM14BM1008251	3.94*	5.00	0.69	0.39	0.42	0.19*	1.68	3.54
NM14MalHS3	3.69	5.12	0.64	0.55*	0.44	0.16	1.78*	3.53
NM Common	3.52	5.10	0.70*	0.42	0.46	0.17	1.74	3.45
Zia	3.23	4.94	0.64	0.49*	0.47*	0.17	1.76*	3.31
NM14MLLS2	3.65	4.50	0.56	0.34	0.32	0.15	1.37	3.17
SW 5213	3.27	4.93	0.52	0.30	0.32	0.11	1.24	3.15
ICON	3.33	4.51	0.63	0.42	0.37	0.14	1.56	3.13
SW 5909	3.27	4.61	0.52	0.34	0.38	0.10	1.33	3.07
Red Falcon BR	3.19	4.19	0.52	0.35	0.42	0.12	1.40	2.93
SW 5113	3.10	4.28	0.53	0.35	0.39	0.11	1.38	2.92
Roadrunner	3.03	4.50	0.52	0.25	0.29	0.09	1.15	2.89
Mean	3.68	5.01	0.64	0.43	0.42	0.15	1.64	3.44
LSD (0.05)	0.72	0.72	0.15	0.19	0.11	0.05	0.39	0.48
CV%	13.85	10.18	16.49	30.51	18.46	23.64	16.60	17.12

†Data were detrended using nearest neighbor analysis and analyzed using analysis of variance.

‡Irrigation water delivery system failures at the wastewater plant prevented irrigation from October 2017 through May 2018 and in August 2018.

2016 Harvest dates: 24-May, 22-Jun, 9-Aug, 13-Sep, and 8-Nov.

2017 Harvest dates: 19-May, 20-Jun, 19-Jul, 15-Aug, 11-Sep, and 30-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 5. Dry matter yields (tons/acre) of flood-irrigated alfalfa varieties sown September 20, 2016, at NMSU's Agricultural Science Center at Los Lunas†.

	2017	2018 Harvests					2018	2-Yr
Variety Name	Total	1-Jun	3-Jul	9-Aug	12-Sep	7-Nov	Total	Average
Roadrunner	6.57*	1.90***	1.85*	1.66*	1.16*	0.89	7.46**	7.01**
WL 454HQ.RR	6.83*	1.42	1.86*	1.65*	1.22*	0.99**	7.14*	6.98*
NM14BMHS1	6.78*	1.72**	1.82*	1.59*	1.19*	0.83	7.15*	6.96*
NM14MalHS3	6.70*	1.69*	1.83*	1.66*	1.16*	0.84	7.18*	6.94*
AmeriStand 715NT RR	6.73*	1.56*	1.84*	1.61*	1.14*	0.98*	7.13*	6.93*
NuMex Bill Melton	7.03**	1.46	1.77*	1.64*	1.07	0.85	6.79	6.91*
Artesian Sunrise	6.62*	1.65*	1.80*	1.63*	1.19*	0.89	7.16*	6.89*
Meadowlark	6.59*	1.67*	1.97**	1.62*	1.09	0.79	7.13*	6.86*
SW 7473	6.32*	1.70*	1.79*	1.77**	1.07	0.96*	7.29*	6.80*
msSunstra 155204	6.41*	1.61*	1.67*	1.66*	1.25**	0.98*	7.16*	6.79*
Transition 6.10 RR	6.51*	1.47	1.72*	1.71*	1.16*	0.91*	6.97	6.74*
HybriForce 2600	6.41*	1.53	1.84*	1.65*	1.12	0.86	7.00	6.70*
NM14ALWLHQ	6.17	1.69*	1.73*	1.69*	1.15*	0.85	7.11*	6.64*
Dona Ana	6.20	1.61*	1.77*	1.57*	1.25**	0.87	7.07	6.64*
Stratica RR	6.32*	1.51	1.86*	1.57*	1.10	0.89	6.93	6.63*
WL 440HQ	6.29*	1.51	1.86*	1.63*	1.10	0.83	6.93	6.61*
Archer III	6.44*	1.41	1.73*	1.73*	1.05	0.79	6.72	6.58
msSunstra 155206	6.41*	1.34	1.66*	1.63*	1.06	0.87	6.56	6.49
SW 7408	5.95	1.51	1.74*	1.64*	1.15*	0.93*	6.96	6.46
WL 552HQ.RR	5.83	1.41	1.78*	1.70*	1.17*	0.97*	7.03	6.43
Six Shooter RR	6.08	1.43	1.68*	1.56*	1.17*	0.90*	6.74	6.41
Malone	5.97	1.30	1.84*	1.50*	1.18*	0.87	6.69	6.33
Tonnica RR	5.95	1.32	1.80*	1.55*	1.14*	0.90*	6.71	6.33
Hi-Gest 660	6.04	1.45	1.70*	1.55*	1.11	0.81	6.61	6.33
NM Common	5.59	1.54	1.75*	1.57*	1.23*	0.84	6.92	6.25
WL 372HQ.RR	6.10	1.22	1.60*	1.65*	1.03	0.82	6.32	6.21
AmeriStand 855T RR	5.75	1.25	1.73*	1.51*	1.11	0.92*	6.53	6.14
NM14BM1008251	5.54	1.40	1.76*	1.57*	1.11	0.82	6.65	6.09
Mean	6.29	1.51	1.78	1.62	1.14	0.88	6.93	6.61
LSD (0.05)	0.76	0.19	NS	NS	0.13	0.10	0.39	0.41
CV%	8.61	8.92	8.12	8.40	7.95	7.68	4.00	6.28

†Data were detrended using nearest neighbor analysis and analyzed using analysis of variance.
2017 Harvest dates: 6-Jun, 18-Jul, 1-Sep, and 6-Nov.
***Highest numerical value in the column.
**Second highest numerical value in the column; not significantly different from the highest numerical value in the column based on the 5% LSD.
*Not significantly different from the second 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 6. Dry matter yields (tons/acre) of sprinkler-irrigated alfalfa varieties sown August 21, 2014, at NMSU's Agricultural Science Center at Farmington†.

Variety Name	2015 Total	2016 Total	2017 Total	2018 Harvests				2018 Total	4-Yr Average
				31-May	3-Jul	7-Aug	10-Oct		
Raven	10.48*	10.13*	7.29*	1.00**	2.30*	2.37**	1.97*	7.64**	8.88**
Ranger	10.23*	10.31*	7.26*	0.89*	2.36*	2.23*	1.98**	7.45*	8.81*
Lahonton	10.32*	9.86*	7.11*	0.80*	2.36*	2.01*	1.67*	6.84*	8.53*
Arrowhead II	10.18*	10.15*	7.08*	0.69	2.21*	2.30*	1.43	6.63	8.51*
Mallard	10.50*	10.07*	6.79*	0.83*	2.40**	1.88*	1.56	6.67	8.51*
MagnaGraze II	9.87*	10.50**	7.36**	0.80*	2.18*	1.84*	1.44	6.26	8.50*
Roadrunner	10.77**	9.30	6.47*	0.97*	2.15*	2.30*	1.56	6.97*	8.38*
GrandStand	9.52	9.90*	6.80*	0.94*	1.82	1.76*	1.67*	6.18	8.10
Archer III	10.48	9.34	5.99	0.92*	2.22*	1.90*	1.48	6.52	8.08
PGI 424	10.04*	9.37	6.32	0.77*	1.97*	2.19*	1.61*	6.54	8.07
Hi-Gest 360	9.87*	9.54*	6.01	0.71	2.33*	2.18*	1.60	6.81*	8.05
4S417	10.04*	9.92*	6.49*	0.74	1.74	1.69*	1.57	5.74	8.05
NM Common	9.90*	9.35	6.18	0.66	1.89*	2.02*	1.73*	6.30	7.93
Mountaineer 2.0	9.81*	9.61*	6.31	0.84*	1.67	1.91*	1.55	5.95	7.92
WL 363HQ	9.90*	9.98*	5.81	0.61	1.89*	1.90*	1.40	5.79	7.87
Gunner	9.61	9.18	6.52*	0.86*	1.93*	1.60*	1.40	5.79	7.78
54VR03	9.64	8.75	6.20	0.86*	1.95*	2.02*	1.43	6.24	7.71
Dona Ana	9.52	9.22	5.76	0.69	2.05*	1.80*	1.72*	6.26	7.69
Wilson	9.33	8.82	5.64	0.72	1.93*	1.91*	1.95*	6.51	7.57
WL 354HQ	9.86*	9.19	5.62	0.60	2.04*	1.61*	1.12	5.38	7.51
Malone	8.87	8.71	6.03	0.68	1.90*	1.69*	1.38	5.65	7.31
Zia	8.87	8.12	5.43	0.67	1.30	1.73*	1.53	5.23	6.91
Mean	9.89	9.51	6.38	0.78	2.03	1.95	1.58	6.33	8.03
LSD (0.05)	1.06	0.98	0.96	0.24	0.56	NS	0.38	0.95	0.63
CV%	7.55	7.26	10.67	21.48	19.46	18.71	16.86	10.63	11.13

†Data were detrended using nearest neighbor analysis, and analyzed using analysis of variance.
2015 Harvest dates: 2-Jun, 6-Jul, 17-Aug, and 9-Oct.
2016 Harvest dates: 2-Jun, 11-Jul, 17-Aug, and 5-Oct.
2017 Harvest dates: 7-Jun, 11-Jul, and 24-Aug (equipment failure prevented fourth harvest).
**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 7. Characteristics and performance of alfalfa varieties across years and tests in New Mexico.

		Varietal Characteristics[1]													Artesia			Tucumcari			Los Lunas		Farmington			
						Pest resistance									2016		2018	2015			2016		2014			
Variety	Proprietor	RR	FD	WS	Or	BW	FW	AN	PRR	SAA	PA	BAA	SN	RKN	17	18	18	16	17	18	17	18	15	16	17	18
Arrowhead II	Alforex Seeds		2	2		HR	HR	HR	HR	n/r	R	n/r	HR	n/r									*	*	*	*
Hi-Gest 360	Alforex Seeds		3	n/r		HR	HR	HR	HR	n/r	n/r	R	n/r	n/r									*	*		
MagnaGraze II	Sharp Brothers		3	2		HR	HR	HR	n/r	R	n/r	n/r	R	n/r									*	**	*	*
Ranger	USDA/Univ. of Nebraska		3	n/r		R	n/r	n/r	n/r	R	n/r	n/r	R	n/r									*	*	*	*
4S417	Mycogen Seeds		4	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r									*	*	*	
54VR03	Pioneer HiBred Int'l	Y	4	n/r		HR	HR	HR	HR	n/r	HR	n/r	n/r	n/r									*			
GrandStand	Crop Production Services		4	2		HR	HR	HR	HR	R	HR	n/r	MR	n/r										*	*	
Meadowlark	Blue River Hybrids		4	2	Y	HR	HR	HR	HR	R	HR	n/r	R	n/r							*	*				
PGI 424	Alforex Seeds		4	2		HR	HR	HR	HR	R	R	n/r	R	n/r									*		*	
Raven	Blue River Hybrids		4	2	Y	HR	R	R	R	R	HR	R	R	n/r									*	*	**	**
Red Falcon BR	Blue River Hybrids		4	2	Y	HR	HR	HR	HR	n/r	n/r	n/r	R	n/r												
Roadrunner	Blue River Hybrids		4	2	Y	HR	HR	HR	HR	HR	LR	n/r	R	n/r							*	**	**	.	*	*
RR Stratica	Croplan Genetics	Y	4	n/r		HR	HR	HR	HR	HR	R	n/r	R	n/r							*					
WL 354HQ	W-L Research		4	1		HR	HR	HR	HR	HR	HR	n/r	R	n/r									*			
55VR05	Pioneer HiBred Int'l	Y	5	n/r		HR	HR	HR	HR	n/r	n/r	n/r	HR	n/r												
55VR08	Pioneer HiBred Int'l	Y	5	2		R	HR	HR	HR	R	HR	n/r	n/r	n/r	*	*										
Archer III	America's Alfalfa		5	2		HR	HR	HR	HR	n/r	HR	n/r	HR	HR							*		*		*	
Gunner	Croplan Genetics		5	1		HR	HR	HR	HR	HR	R	n/r	R	n/r												
Mallard	Blue River Hybrids		5	2	Y	HR	HR	HR	HR	R	HR	n/r	R	n/r				*					*	*	*	*
Mountaineer 2.0	Croplan Genetics		5	2		HR	HR	HR	HR	R	HR	n/r	HR	R									*	*	*	
RR Tonnica	Croplan Genetics	Y	5	n/r		HR	HR	HR	HR	n/r	R	n/r	R	n/r												
SW 5113	S & W Seeds		5	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r												
SW 5213	S & W Seeds		5	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r												
SW 5909	S & W Seeds		5	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r												
WL 363HQ	W-L Research		5	2		HR	HR	HR	HR	R	R	MR	MR	MR									*	*		
WL 372HQ.RR	W-L Research	Y	5	2		HR	HR	HR	HR	HR	HR	n/r	HR	n/r												
Zia	Roswell Seed		5	n/r		MR	MR	S	S	MR	S	S	n/r	n/r	*	*	*			*						
56S82	Pioneer HiBred Int'l		6	5		HR	HR	HR	HR	HR	HR	HR	HR	HR												
Hi-Gest 660	Alforex Seeds		6	n/r		R	HR	HR	R	n/r	n/r	R	n/r	n/r												

[1]RR=Roundup Ready if "Y"; FD=Fall Dormancy (1 & 2 Very dormant; 3 & 4 Dormant; 5 Moderately dormant; 6 & 7 Semi-dormant; 8 & 9 Non-dormant; 10 & 11 Very non-dormant), WS=Winter Survival (1=No injury, 6=Dead plants), Or=Organically certified seed, 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); (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).

[2]Establishment year.

[3]Harvest year.

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

**Highest yielding variety in the test for that yea.

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

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						Pest resistance									2016		2018	2015			2016		2014			
Variety	Proprietor	RR	FD	WS	Or	BW	FW	AN	PRR	SAA	PA	BAA	SN	RKN	17	18	18	16	17	18	17	18	15	16	17	18
HybriForce-2600	Alforex Seeds		6	2		HR	HR	HR	HR	n/r	R	n/r	HR	R			*				*					
ICON	S & W Seeds		6	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/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 155203	Alforex Seeds		6	n/r		n/r	n/r	n/r	n/r	n/r	n/r	HR	n/r	n/r	*	*	*									
msSunstra 155204	Alforex Seeds		6	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	*	*					*	*				
msSunstra 155206	Alforex Seeds		6	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r							*					
RR Six Shooter	Croplan Genetics	Y	6	n/r		HR	HR	HR	HR	HR	HR	n/r	HR	R												
Wilson	Roswell Seed		6	n/r		R	R	n/r	n/r	MR	R	n/r	MR	n/r												
WL 440HQ	W-L Research		6	n/r		HR	HR	HR	HR	HR	HR	n/r	HR	HR												
WL 454HQ.RR	W-L Research	Y	6	n/r		R	HR	HR	HR	HR	HR	n/r	HR	n/r							*	*				
6829R	Nexgrow Alfalfa		7	n/r		R	R	HR	HR	HR	HR	R	HR	n/r				*	*	*						
Ameristand 715NTRI	America's Alfalfa	Y	7	n/r		R	HR	HR	HR	HR	HR	n/r	HR	n/r							*	*				
Artesian Sunrise	Croplan Genetics		7	n/r		MR	HR	R	HR	HR	HR	R	R	n/r							*	*				
Dona Ana	Roswell Seed		7	n/r		MR	MR	LR	R	MR	R	n/r	n/r	n/r	*	*	*									
Malone	Roswell Seed		7	n/r	Y	R	HR	R	R	R	HR	S	MR	n/r					*							
NuMex Bill Melton	New Mexico State University		7	n/r		MR	R	R	R	R	MR	MR	n/r	n/r	*	*		**	**	**	**	*				
SW 7408	S & W Seeds		7	n/r		R	n/r	HR	HR	n/r	n/r	n/r	R	n/r	**	*	*									
SW 7410	S & W Seeds		7	n/r		R	R	HR	MR	HR	R	R	MR	R												
SW 7473	S & W Seeds		7	n/r		R	n/r	HR	HR	n/r	n/r	n/r	HR	n/r	*	*	*				*	*				
Transition 6.10RR	Croplan Genetics	Y	7	n/r		R	R	R	HR	R	HR	n/r	MR	n/r							*					
58N57	Pioneer HiBred Int'l		8	n/r		LR	R	HR	HR	R	HR	HR	MR	HR												
Ameristand 855TRR	America's Alfalfa	Y	8	n/r		R	R	R	HR	HR	n/r	n/r	R	R												
SW 8409	S & W Seeds		8	n/r		HR	HR	HR	HR	HR	HR	n/r	R	n/r	*	*	*									
SW 8412	S & W Seeds		8	n/r		HR	R	HR	HR	HR	HR	n/r	HR	n/r	*	*	*									
SW 8421S	S & W Seeds		8	n/r		n/r	HR	LR	R	R	n/r	n/r	R	n/r			*									
SW 8476	S & W Seeds		8	n/r		R	n/r	R	R	n/r	n/r	n/r	n/r	n/r	*	*	**									
WL 535HQ	W-L Research		8	n/r		n/r	HR	n/r	HR	HR	n/r	n/r	R	R												
WL 552HQ.RR	W-L Research	Y	8	n/r		R	R	R	HR	HR	R	n/r	R	R												
DG9212	Crop Production Services		9	n/r		LR	HR	HR	HR	HR	HR	HR	HR	n/r												

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Variety	Proprietor	RR	FD	WS	Or	BW	FW	AN	PRR	SAA	PA	BAA	SN	RKN	17	18	18	16	17	18	17	18	15	16	17	18
African Common	Roswell Seed		n/r	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	*	**	*		*	*						
NM Common	Roswell Seed		n/r	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	*	*	*						*			
NM11-1	New Mexico State University		n/r	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	*	*										
NM14ALWLHQ	New Mexico State University		n/r	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r								*				
NM14BM1008251	New Mexico State University		n/r	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r				*								
NM14BMC0	New Mexico State University		n/r	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r				*	*							
NM14BMHR2	New Mexico State University		n/r	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r				*	*							
NM14BMHS1	New Mexico State University		n/r	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r				*	*	*	*	*				
NM14MALHS3	New Mexico State University		n/r	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r							*	*				
NM14MALHS3	New Mexico State University		n/r	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r						*						
NM14MLLS2	New Mexico State University		n/r	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r												
SW 8208	S & W Seeds		n/r	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r												
SW 8357	S & W Seeds		n/r	n/r		n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r												

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Table 8. New Mexico State University Agricultural Experiment Station and Cooperative Extension Service publications related to alfalfa management.

Number	Title
A-123	Sampling for plant tissue analysis
A-129	Nitrogen fixation by legumes
A-130	Inoculation of legumes
A-131	Certified seed
A-137	Soil analysis: A key to soil nutrient management
A-145	Certified noxious weed free program
A-229	Phymatotrichum root rot
A-325	Managing weeds in alfalfa
A-326	Downy mildew on alfalfa
A-333	User manual of the alfalfa yield predictor
A-334	Beet armyworm in New Mexico Hay
A-335	Variegated cutworm in New Mexico Hay
A-336	Managing Roundup Ready alfalfa and conventional or organic alfalfa hay in nearby fields in New Mexico
A-337	Recommendations for Roundup Ready alfalfa weed management and stand removal in New Mexico
A-338	Alfalfa weevil control options in New Mexico
A-339	Alfalfa integrated pest management: Aphids
H-158	How to collect and send plant specimens for disease diagnosis
CR-536	Blister beetles in alfalfa
CR-633	Using a computer application to predict irrigated alfalfa yield
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
CR-659	Whitefringed beetle in New Mexico alfalfa
CR-668	Reducing harvest and post-harvest losses of alfalfa and other hay
RR-766	Furrow-irrigated alfalfa dry matter yield is not affected by different seeding rates in the Southern High Plains, USA
RR-772	Observations on how cowpea aphid affects alfalfa

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 http://forages.nmsu.edu/resources.html and aces.nmsu.edu/pubs/

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The College of Agricultural, Consumer and Environmental Sciences is an engine for economic and community development in New Mexico, improving the lives of New Mexicans through academic, research, and Extension programs.