




The 2000 New Mexico Alfalfa Variety Test Report



Agricultural Experiment Station
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Introduction

In 2000, New Mexico had 290,000 acres of alfalfa (*Medicago sativa*) production. An estimated 1.5 million tons of hay were harvested. At an average of \$121/ton (up from \$116 in 1999), gross returns will total approximately \$182 million, making alfalfa hay New Mexico's No. 1 cash crop (New Mexico Agricultural Statistics Service Weekly AgUpdate). Alfalfa is also the legume of choice in irrigated perennial pastures. Choosing a good alfalfa variety is a key step in establishing a highly productive stand of alfalfa for hay or pasture. Differences between the highest- and lowest-yielding varieties in tests included in this report ranged from 0.42 to 3.36 tons per acre in 1999. If sold as hay, this translates to a difference in returns of \$51 to \$406 per acre due to variety. 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 researchers located at agricultural science centers throughout the state, provides current yield data on alfalfa varieties included in yield trials in New Mexico and guidelines for variety selection.

Considerations in selecting an alfalfa variety

Local adaptation and persistence. High yields in variety tests over a range of years and locations within a region are the best indication that a variety is locally adapted and persistent. In addition to personal observations, New Mexico alfalfa producers are encouraged to select varieties based on information collected from trials conducted at New Mexico State University's agricultural science centers located throughout the state. These tests are independent of any company bias. Look first at data collected from the agricultural science center(s) closest to you. For your convenience, data from the Centers are grouped by similar latitudes and elevations, which affect winter hardiness and, thus, yield and persistence. Persistence is the ability of individual plants of a variety to survive field conditions over time. It is strongly influenced by winter hardiness, harvest frequency, and pest resistance. Higher persistence will permit a longer economical stand life, allowing more time to recover establishment costs. Alfalfa stands should be replaced when there are less than 5 plants (or 40 stems) per square foot. Producers should rotate to another irrigated crop for at least one year before reseeding alfalfa into the same field to avoid seedling death due to autotoxicity. If stand life expectancy is only 3 to 4 years, as is the case in crop rotation

systems, higher yields in those early years are more important than persistence.

Winter hardiness. The winter hardiness of alfalfa is determined by its ability to survive cold temperatures. Winter hardiness can be assessed by the fall dormancy rating (FD), which indicates the variety's tendency to stop growing in the fall. Fall dormancy categories range from 1 (very dormant) to 9 (non-dormant). The more dormant (FD 1 to 3) varieties will be slower to "green up" in the spring and quicker to stop growing in the fall, regardless of local climate. This will have an impact on yield in areas with warmer climates. Additionally, non-dormant varieties (7 to 9) will yield more because of earlier spring "green up" and later fall production. But they might not survive severe winters. These varieties may be suitable for use in a short-term rotation system, in which alfalfa is used for 4 years or less. Otherwise, producers should select varieties with sufficient dormancy to survive winter conditions at their location, while optimizing forage production during the growing season.

Disease resistance. In New Mexico, alfalfa producers should select adapted varieties that have the highest available resistance, preferably a rating of MR (moderate resistance) or greater rating bacterial wilt (Bw), fusarium wilt (Fw), Phytophthora root rot (PRR) and anthracnose (An) (Alfalfa Analyst, Certified Alfalfa Seed Council).

Bacterial and fusarium wilt are infections of the water-conducting tissues of alfalfa's roots that do not cause any noticeable root rot. These diseases prevent water flow to leaves, resulting in wilting of shoots and the eventual death of infected plants. Roots infected with bacterial wilt often will have a yellowish brown discoloration of the taproot's inner woody cylinder. Fusarium infection can be recognized by brown to red streaks in the inner woody cylinder of the taproot.

Phytophthora root rot is a fungal disease associated with excessive soil moisture. This disease causes yellowish to brown areas on roots and crowns that eventually become black and rotten. The topgrowth of infected plants appears stunted and yellow.

Anthracnose, also caused by a fungus, attacks alfalfa stems, preventing water flow to the rest of the shoot and causing sudden wilting. These wilted shoots have a characteristic "shepherd's crook" appearance. Anthracnose can also cause a bluish-black crown rot.

There are many other diseases of alfalfa that occur in New Mexico, resistances to which have not yet been developed. The best protection against these diseases is proper management. B

¹Forage Agronomist, NMSU Agricultural Science Center at Tucumcari; Alfalfa Breeder, NMSU, Las Cruces; Superintendent, NMSU Agricultural Science Center at Los Lunas; Superintendent, NMSU Agricultural Science Center at Artesia; and Superintendent, NMSU Agricultural Science Center at Farmington, respectively.

as producers know, even that at times is not sufficient.

Insect resistance. There are many insects that feed on alfalfa. Currently, the most detrimental insects to New Mexico's alfalfa production for which varietal resistance is available include spotted alfalfa aphid (SAA), pea aphid (PA), and blue alfalfa aphid (BAA). As with disease resistance, select varieties having at least an MR rating for these insects. Varieties without resistance to insects that are not adapted to your area are not preferred.

Varietal resistance to other insects, such as alfalfa weevil and potato leafhopper may be available in the near future. Historically, though, resistance has not been protective of the plant, but rather a masked the symptoms. Currently, the best protection against those insect pests is good harvest management and proper pesticide use. Using pesticides also may be necessary even with resistant varieties, when pest pressure is excessive.

Seed quality. Selecting an alfalfa variety based on seed cost is like playing Russian roulette. Seed labeled as "common", "variety not stated", or "variety unknown" are of unknown genetic background and may not be locally adapted or have necessary disease or insect resistance. For a long lasting, highly productive stand, buy either certified or Plant Variety Protected (PVP) seed, which guarantees the genetics and performance. Look for the blue tag that must be attached to all bags of certified seed. Or look for PVP labeling, which is the proprietor's guarantee. Regardless of the variety, be sure to read the seed tag, which gives important information about purity; amounts of other crop and weed seed (as well as listing any noxious weed seed); germination; and the test date, which should be within the previous 9 months to accurately reflect the germination. Order seed well in advance of planting time to assure that it will be available when needed.

Forage quality. High quality alfalfa hay possesses the following characteristics: greater than 19% crude protein, less than 31% acid detergent fiber, less than 40% neutral detergent fiber, leafiness, and no foreign material. Varietal differences in quality are relatively small compared to other factors. Cultural and management practices such soil fertility, irrigation, weed and insect control, maturity at cutting, baling, and storage conditions are major factors affecting alfalfa quality. The optimum balance between forage yield and quality occurs at 1-10% bloom. Harvesting at pre-bloom increases quality but sacrifices yield. Continually harvesting at pre-bloom reduces stand life, because the plant is not able to replenish root reserves for subsequent growth and overwintering. Since some hay buyers specify pre-bloom, producers must weigh price against decreased yields and stand life. Pre-bloom harvests in the middle cuttings are likely to be less detrimental to stand life than for the first and last cuttings of any given year. Cutting at greater than 10% bloom increases yield, but quality declines rapidly as fiber increases and mineral content decreases (Alfalfa for Dairy Animals, Certified Alfalfa Seed Council). Leaf retention, which is affected by insect feeding, maturity (as the plant matures the lower leaves drop), and baling, is important because the digestibility and nutrient content in leaves is greater than in stems.

Description of tests

Replicated alfalfa variety tests included in this report were conducted under research controls at NMSU's agricultural science centers at Las Cruces (sown in 1999), Artesia (1996 and 1999), Tucumcari (1997 and 1999), Los Lunas (1996 and 1999), and

Farmington (1996 and 1999). Weather data for 2000 and the long-term averages from these locations are presented (table 1). Yield data (on a dry matter basis) for all tests are presented (table 2 to 12). Varieties are listed in order from highest to lowest average annual production. Yields are given by cutting for 2000 and by year for each year of production. Any management information pertinent to an individual trial is given at the bottom of the table. Statistical analyses were performed on all alfalfa yield data (including experimentals) to determine if the apparent differences are truly due to variety or just due to chance (Agrobase). 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 (*). 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. 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%) is desirable and increased variability within a study results in higher CV's and larger LSD's.

Information about proprietors, fall dormancy, pest resistance and yield performance across years and locations for all varieties currently included in NMSU's Alfalfa Variety Testing Program is summarized in table 13. Varieties are listed by alphabetical order within fall dormancy. In table 13, shaded areas indicate the variety was not in that particular test (labeled at the top of the column), while clear blocks mean the variety was in the test. As before, a double asterisk (**) indicates that the variety was the highest yielding variety in the test for that year, and a single asterisk (*) means that the variety was not significantly different from the highest yielding variety based on the 5% LSD. It is best to choose a variety that has performed well over several years and locations indicated by the asterisks. Tests are grouped by location; locations are grouped by similar elevations and latitudes.

Once you've chosen a variety using table 13, look at cutting data (tables 2 to 12) to make sure it will be productive during the desired season. Varieties selected for grazing should produce over a longer season. Those to be used for hay should produce well in times of the season when problems are less prevalent. For instance, because of blister beetle infestations in the later cutting horse hay should be harvested early in the season. Higher value dairy hay may be produced later in the season to avoid spring weed problems.

Notice that "common" varieties may yield well in one area but not in another. Also, those that do yield well may not do so consistently across years. Generally, those that produce well will do so until a pest problem occurs. Then the stand can be lost, requiring a waiting period before reseeding.

Summary

Consistent production of high yields of alfalfa results from good variety selection and using good management techniques. Soil fertility should be maintained at recommended levels based on soil tests, and weeds and insects should be controlled using appropriate cultural and/or chemical methods. For dormant (FD 1 to 3) and semi-dormant (FD 4 to 6) varieties, a seven week rest

period before a dormancy inducing freeze (27°F) is recommended. This allows the plant to replenish root reserves for winter survival and initiation of spring growth, after which grazing or mechanical harvesting may begin. Removing fall growth helps reduce weevil populations the following year, because eggs overwinter in stems.

Throughout most of New Mexico, harvesting established stands early bloom will result in four to five cuttings per year before the rest period begins. For further information about alfalfa management, refer to the recommended NMSU Cooperative Extension Service publications (table 14).

Table 1. Temperature and precipitation data for 2000 and the long-term averages for the New Mexico Alfalfa Variety Test locations.

Location	Las Cruces ¹				Artesia				Tucumcari				Los Lunas				Farmington			
	Elevation		Latitude		Temp. (iF)		Precip. (In)		Temp. (iF)		Precip. (In)		Temp. (iF)		Precip. (In)		Temp. (iF)		Precip. (In)	
Month	00	Ave.	00	Ave.	00	Ave.	00	Ave.	00	Ave.	00	Ave.	00	Ave.	00	Ave.	00	Ave.	00	Ave.
Nov-99	50	50	0.00	0.53	52	48	0.00	0.50	51	47	0.05	0.63	46	49	0.00	0.45	46	40	0.06	0.72
Dec-99	39	42	0.57	0.68	39	40	0.30	0.47	41	39	0.82	0.58	33	35	0.18	0.51	30	31	0.12	0.43
Jan-00	46	42	0.00	0.56	43	39	0.10	0.52	44	38	0.01	0.35	38	44	0.00	0.34	35	30	0.62	0.50
Feb-00	50	46	0.04	0.37	49	44	0.00	0.41	50	42	0.00	0.48	43	44	0.27	0.46	41	36	0.25	0.42
Mar-00	55	52	0.11	0.22	53	51	0.20	0.37	52	49	1.75	0.69	47	54	2.02	0.50	43	43	2.05	0.67
Apr-00	70	59	0.00	0.21	62	60	0.30	0.50	61	56	0.74	1.13	57	52	0.45	0.46	53	51	0.20	0.61
May-00	76	68	0.00	0.29	74	68	0.00	1.20	73	65	0.85	1.98	67	64	0.00	0.46	63	60	0.02	0.55
Jun-00	77	77	2.71	0.72	78	75	3.80	1.54	76	75	1.17	1.92	74	73	0.80	0.56	72	70	0.12	0.29
Jul-00	80	80	1.74	1.36	81	79	1.00	1.50	82	79	2.25	2.66	78	78	2.03	1.24	76	75	0.80	0.89
Aug-00	78	78	0.67	2.29	79	77	0.50	2.12	83	77	0.26	2.74	77	76	0.96	1.80	75	74	1.22	1.11
Sep-00	73	72	0.14	1.38	73	70	0.00	2.11	75	70	0.07	1.50	70	66	0.10	1.30	58	66	0.50	1.08
Oct-00	60	61	1.05	0.91	60	59	2.80	1.19	60	59	3.83	1.27	59	69	2.59	0.97	64	53	2.16	0.92
Annual	63	61	7.03	9.40	62	59	8.10	12.43	63	58	11.80	15.95	57	59	9.40	9.05	55	52	8.14	8.15

¹Long-term averages for the Las Cruces test site are from the State University weather station, located approximately 5.5 miles to the north.

Table 2. Dry matter yields (tons/acre) of alfalfa varieties sown 8 September 1999, at NMSU's Leyendecker Plant Sciences Farm at Las Cruces and flood irrigated every 14 days.

Variety	2000 Harvests						2000
	3 May	1 Jun	7 Jul	4 Aug	16 Sep	2 Nov	Total
NM9D11A-PAR	4.46*	2.76*	2.30**	1.63*	1.98**	0.79*	13.92**
C/W 5875	4.38*	2.78*	2.14*	1.69*	1.98**	0.90*	13.87*
C/W 68115	4.46*	2.72*	2.25*	1.64*	1.93*	0.82*	13.82*
Rio Grande	4.62**	2.73*	2.01	1.52*	1.90*	0.85*	13.63
NM Common	4.17*	2.70*	2.25*	1.73**	1.87*	0.79*	13.51
C/W 78122	4.32*	2.72*	2.08*	1.58*	1.93*	0.86*	13.49
DS482	4.48*	2.63*	2.13*	1.64*	1.79*	0.79*	13.46
C/W 5666	4.41*	2.70*	2.18*	1.52*	1.84*	0.81*	13.46
ZX9889B	4.50*	2.79*	2.16*	1.49	1.73	0.75	13.42
AmeriLeaf 721	4.55*	2.81**	2.11*	1.45	1.72	0.70	13.35
NM Stress 94	4.32*	2.68*	2.16*	1.52*	1.80*	0.86*	13.34
Mesa	4.62**	2.67*	2.06*	1.42	1.72	0.73	13.22
WL442	4.24*	2.74*	2.20*	1.58*	1.73	0.71	13.20
Arriba	4.27*	2.73*	2.11*	1.45	1.84*	0.73	13.13
5715	4.37*	2.67*	2.09*	1.48	1.73	0.76	13.10
13R Supreme	4.10	2.56	2.02	1.65*	1.93*	0.83*	13.09
57Q77	4.19*	2.73*	1.93	1.62*	1.72	0.82*	13.01
WL612	3.90	2.56	2.02	1.64*	1.88*	0.91**	12.91
PGI8000	4.44*	2.69*	1.97	1.48	1.62	0.69	12.89
UN41-8	4.18*	2.66*	2.06*	1.52*	1.70	0.75	12.87
Signal 8000	4.20*	2.48	2.02	1.48	1.78*	0.77	12.73
AmeriGraze	4.27*	2.65*	2.08*	1.48	1.61	0.64	12.73
ZL9876	3.93	2.55	2.09*	1.53*	1.70	0.70	12.50
ZG9891	4.23*	2.53	1.95	1.40	1.65	0.73	12.49
Monsanto	3.97	2.55	1.90	1.50	1.72	0.78	12.42
Wilson	3.99	2.55	2.01	1.43	1.68	0.68	12.34
WL525HQ	3.87	2.50	1.93	1.45	1.66	0.81*	12.22
ZX9894	3.82	2.45	1.82	1.39	1.64	0.75	11.87
Dona Ana	3.73	2.43	1.94	1.35	1.66	0.71	11.82
58N57	3.39	2.24	1.81	1.18	1.45	0.48	10.55
LSD (0.05)	0.51	0.22	0.26	0.23	0.24	0.13	1.17
CV%	8.61	6.01	8.83	10.69	9.87	12.29	6.41

**Highest numerical value in the column.

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

LSD (0.05) stands for the Least Significant Difference at the 5% level. If the difference between two numbers within a column is equal to or greater than the LSD, then we are 95% certain that they are truly different.

ns means there are no significant differences between the varieties at the 5% level.

Table 3. Dry matter yields (tons/acre) of alfalfa varieties sown 8 September 1999, at NMSU's Leyendecker Plant Sciences Research Center at Las Cruces and flood irrigated every 28 days.

Variety	2000 Harvests					2000 Total
	1 Jun	7 Jul	8 Aug	8 Sep	4 Oct	
C/W 78122	1.93*	2.07*	1.06	1.12*	0.84**	7.02**
Signal 8000	2.11*	2.02*	1.02*	1.02*	0.71*	6.88*
13R Supreme	2.04*	1.78*	1.03**	1.15**	0.83*	6.83*
C/W 5875	2.02*	2.09**	0.93*	0.99*	0.77*	6.80*
ZX9889B	1.99*	1.89*	0.98*	0.98*	0.74*	6.58*
NM Stress 94	1.97*	1.88*	0.97*	1.00*	0.75*	6.57*
C/W 68115	2.07*	1.79*	0.99*	0.97*	0.74*	6.56*
Mesa	1.88*	2.04*	1.01*	0.91*	0.66*	6.50*
57Q77	2.09*	1.80*	0.98*	0.87	0.70*	6.44*
UN41-8	1.91*	1.82*	0.98*	0.99*	0.72*	6.42*
PGI8000	2.08*	1.80*	0.95*	0.88	0.67*	6.38*
DS482	1.97*	1.79*	0.91*	0.95*	0.76*	6.38*
ZX9894	2.02*	1.79*	0.91*	0.96*	0.68*	6.36*
ZG9891	1.84*	1.87*	0.90*	1.03*	0.71*	6.35*
NM Common	1.82*	1.93*	0.94*	0.91*	0.71*	6.31*
NM9D11A-PAR	1.83*	1.93*	0.91*	0.89*	0.60	6.16*
WL525HQ	2.14**	1.56	0.83	0.91*	0.71*	6.15*
Rio Grande	1.85*	1.85*	0.81	0.96*	0.63	6.10*
Wilson	1.84*	1.74	0.80	0.95*	0.65	5.98
WL612	1.66	1.85*	0.86	0.88	0.60	5.85
5715	1.83*	1.67	0.86	0.80	0.68*	5.84
Monsanto 180ML	1.61	1.82*	0.80	0.88	0.68*	5.79
C/W 5666	1.90*	1.54	0.81	0.83	0.65	5.73
ZL9876	1.84*	1.75	0.77	0.77	0.58	5.71
Arriba	1.72	1.72	0.80	0.73	0.55	5.52
AmeriLeaf 721	1.86*	1.60	0.78	0.79	0.49	5.52
Dona Ana	1.62	1.54	0.75	0.88	0.61	5.40
WL442	1.60	1.61	0.78	0.83	0.52	5.34
58N57	1.60	1.50	0.57	0.66	0.44	4.77
AmeriGraze 701	1.49	1.25	0.66	0.61	0.47	4.48
LSD (0.05)	0.37	0.35	0.17	0.27	0.19	1.04
CV%	14.23	13.83	13.95	21.32	20.35	12.12

**Highest numerical value in the column.

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

LSD (0.05) stands for the Least Significant Difference at the 5% level. If the difference between two numbers within a column is equal to or greater than the LSD, then we are 95% certain that they are truly different.

ns means there are no significant differences between the varieties at the 5% level.

Notes:

-Yield data was not collected on 3 May because the test had received an unscheduled irrigation prior to cutting.

Table 4. Dry matter yields (tons/acre) of flood irrigated alfalfa varieties sown September 1996, at NMSU's Agricultural Science Center at Artesia.

Variety	1997	1998	1999	2000 Harvests					2000	4-yr
	Total	Total	Total	2-May	9-Jun	7-Jul	4-Aug	7-Sep	Total	Mean
6B77	10.10**	9.79**	8.42*	1.20	3.10*	2.62*	1.70	1.80*	10.42*	9.68**
C/W 4791	9.98*	8.86*	8.64**	1.39*	2.97*	2.52*	2.17**	1.99**	11.04**	9.63*
5681	10.05*	8.96*	8.41*	1.21	3.07*	2.64**	1.96	1.76	10.64*	9.52*
Rio	9.83*	9.66*	8.53*	1.57**	2.83*	2.35	1.86	1.84*	10.45*	9.51*
Parade	9.98*	9.11*	8.49*	1.15	2.72*	2.47*	1.84	1.86*	10.04	9.51*
LM 459	9.56*	9.22*	8.47*	1.41*	3.06*	2.57*	1.90	1.80*	10.74*	9.50*
Monsanto 166	10.03*	9.35*	8.62*	1.12	2.85*	2.51*	1.72	1.80*	10.00	9.50*
Pecos	9.47*	8.79*	8.52*	1.32*	2.96*	2.48*	2.11*	1.81*	10.68*	9.37*
C/W 4598	9.80*	9.06*	8.10*	0.78	3.03*	2.55*	1.92	1.91*	10.19	9.29*
C/W 4692	9.53*	9.47*	8.08*	0.93	2.90*	2.40*	1.78	1.84*	9.85	9.23*
5715	9.45*	8.57*	8.57*	1.51*	2.69*	2.24	1.93	1.75	10.12	9.18*
LM 455	9.33	8.87*	8.33*	1.00	3.13**	2.44*	1.81	1.67	10.05	9.15*
ZX9193	9.04	8.89*	8.34*	1.28*	2.40	2.45*	2.02	1.85*	10.00	9.07
WL414	8.88	9.46*	8.10*	1.11	2.52	2.49*	1.81	1.83*	9.76	9.05
C/W 46106	9.74*	9.19*	7.66	1.54*	2.62	2.19	1.56	1.51	9.42	9.00
WL525HQ	9.07	8.55*	8.17*	1.38*	2.24	2.09	2.14*	1.86*	9.71	8.88
NC+X700	8.85	8.99*	7.65	1.01	2.39	2.32	1.84	1.60	9.16	8.66
5939	8.55	8.33*	8.06*	1.36*	2.23	2.21	1.76	1.66	9.22	8.54
WL325HQ	8.40	8.51*	7.46	0.47	2.82*	2.50*	1.68	1.56	9.03	8.35
Salado	7.87	8.48*	7.08	0.91	2.47	1.85	1.18	1.29	7.70	7.78
LSD (0.05)	0.69	ns	0.72	0.35	0.47	0.26	0.15	0.23	0.81	0.61
CV%	5.21	10.47	6.18	20.62	12.07	7.67	5.71	9.12	5.78	10.50

Harvest dates:

1997: 30 Apr, 28 May, 23 Jun, 21 Jul, 29 Aug, and 1 Oct.

1998: 13 Apr, 4 Jun, 30 Jun, 25 Jul, 25 Aug, and 28 Sep.

1999: 7 May, 8 Jun, 6 Jul, 5 Aug, 7 Sep, and 22 Oct.

**Highest numerical value in the column.

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

LSD (0.05) stands for the Least Significant Difference at the 5% level. If the difference between two numbers within a column is equal to or greater than the LSD, then we are 95% certain that they are truly different.

ns means there are no significant differences between the varieties at the 5% level.

Notes:

-The test was flood irrigated.

-Heavy rains throughout Oct and Nov 2000 prevented a late season harvest.

Table 5. Dry matter yields (tons/acre) of flood irrigated alfalfa varieties sown 1 and 2 September 1999, at NMSU's Agricultural Science Center at Artesia.

Variety	2000 Harvests				2000 Total
	3 May	14 Jun	20 Jul	21 Aug	
Evergreen 2.0	1.72*		2.09*		
58N57		2.31*		2.25*	8.58*
57Q77	1.72*	2.40*	1.95*	2.33*	8.40*
DS771	1.64*	2.32*	1.97*	2.19*	8.12*
Arriba	1.70*	2.27*	1.95*	2.18*	8.10*
ZS9890	1.69*	2.19*	1.90*	2.17*	7.95*
ZX9886	1.55*	2.30*	1.84*	2.18*	7.87*
AmeriGraze 701	1.54*	2.24*	1.81*	2.24*	7.83*
WL414	1.61*	2.25*	1.85*	2.10*	7.81*
DS981	1.52*	2.19*	1.94*	2.11*	7.76*
WL442	1.55*	2.12*	1.91*	2.12*	7.70*
Magna 901	1.66*	2.02*	1.85*	2.12*	7.65*
UN41-8	1.62*	1.95*	1.89*	2.12*	7.58*
WL525HQ	1.51*	1.99*	1.87*	2.16*	7.53*
C/W 5666	1.43*	2.06*	1.86*	2.13*	7.48*
Rio Grande	1.44*	2.10*	1.81*	2.13*	7.48*
C/W 68115	1.51*	2.02*	1.76*	2.19*	7.48*
C/W 5875	1.46*	2.23*	1.72*	2.00*	7.41*
ZX9393	1.42*	1.99*	1.81*	2.09*	7.31*
Tahoe	1.49*	1.97*	1.75*	2.03*	7.24*
NM9D11A-PAR	1.51*	1.87*	1.85*	1.98*	7.21*
Monsanto 180ML	1.52*	1.78*	1.78*	2.04*	7.12*
C/W 78122	1.28*	2.01*	1.73*	2.00*	7.02*
DS681FQ	1.24*	1.91*	1.73*	1.97*	6.85*
LSD (0.05)	ns	ns	ns	ns	ns
CV%	27.42	16.53	14.97	12.30	15.08

**Highest numerical value in the column.

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

LSD (0.05) stands for the Least Significant Difference at the 5% level. If the difference between two numbers within a column is equal to or greater than the LSD, then we are 95% certain that they are truly different.

ns means there are no significant differences between the varieties at the 5% level.

Notes:

-Heavy rains throughout Oct and Nov 2000 prevented a late season harvest.

Table 6. Dry matter yields (tons/acre) of furrow irrigated alfalfa varieties sown 30 April 1997, at NMSU's Agricultural Science at Tucumcari to compare fall dormancy categories.

Variety	FD	1997	1998	1999	2000 Harvests						2000	4-yr
		Total	Total	Total	16 May	20 Jun	18 Jul	16 Aug	11 Sep	1 Nov	Total	Mean
Wilson	6	4.03	9.43**	9.31**	2.39*	2.51**	2.38*	1.50*	1.05	0.86	10.70**	8.37**
Signal 7000	7	4.68**	9.41*	8.69	2.28*	2.17	2.02*	1.60**	1.14*	1.07	10.28*	8.26*
Dona Ana	7	4.53*	9.12*	8.82*	2.30	2.33*	2.24*	1.59*	1.05	0.95	10.46*	8.23*
Tahoe	6	4.43*	9.32*	8.52	2.19	2.35*	2.01*	1.54*	1.02	1.06	10.18*	8.11*
13R Supreme	8	4.06	8.83*	9.17*	2.08	2.19	2.39*	1.59*	1.10*	1.03	10.37*	8.11*
WL525HQ	8	4.23*	8.61	8.87*	2.14	2.24	2.14*	1.57*	1.16**	1.17**	10.41*	8.03*
Landmark	4	3.70	9.38*	9.02*	2.48**	2.37*	2.40*	1.41	0.77	0.58	10.02*	8.03*
WL612	9	4.13	8.80*	8.81*	1.94	2.11	2.19*	1.58*	1.14*	1.11*	10.07*	7.95
Jade II	4	3.74	9.30*	8.51	2.48**	2.45*	2.00*	1.51*	0.85	0.51	9.80	7.84
Archer	5	3.87	9.19*	8.54	2.34*	2.24	2.09*	1.38	0.82	0.65	9.53	7.78
Salado	9	4.35	8.74	8.15	1.89	2.04	1.88	1.50*	0.90	1.03	9.24	7.62
Viking I	2	3.74	8.50	8.11	2.40*	2.31*	1.99*	1.27	0.76	0.53	9.26	7.40
Baralfa54	5	3.48	8.75*	8.18	2.33*	2.24	1.94	1.30	0.79	0.57	9.17	7.39
Rainier	2	3.54	8.38	7.76	2.36*	2.35*	2.45**	1.28	0.77	0.44	9.64	7.33
Garst 645	3	3.32	8.22	8.32	2.41*	2.18	2.12*	1.31	0.78	0.35	9.16	7.26
Monsanto 127	3	3.34	8.12	8.03	2.42*	2.36*	2.21*	1.15	0.78	0.43	9.35	7.21
LSD (0.05)		0.46	0.69	0.59	0.18	0.22	0.47	0.19	0.10	0.08	0.77	0.42
CV, %		11.78	7.84	7.01	8.00	9.75	21.95	13.05	10.71	10.30	7.89	5.45

Harvest dates:

1997: 21 Jul, 8 Aug, 16 Sep, and 28 Oct.

1998: 12 May, 16 Jun, 21 Jul, 17 Aug, 15 Sep, and 29 Oct.

1999: 21 May, 16 Jun, 13 Jul, 11 Aug, 9 Sep, and 25 Oct.

**Highest numerical value in the column.

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

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ns means there are no significant differences between the varieties at the 5% level.

Table 7. Dry matter yields (tons/acre) of furrow irrigated alfalfa varieties sown 19 September 1997, at NMSU's Agricultural Science Center at Tucumcari and grown under soil and moisture constraints.

Variety	1999	2000 Harvests						2000	2-yr
	Total	16 May	20 Jun	20 Jul	17 Aug	11 Sep	2 Nov	Total	Mean
Dryland: not irrigated since 5-Oct 1997									
OK49	1.73*	0.16*	0.19**	0.19*	0.00	0.00	0.00	0.54*	1.22**
Salado	1.78**	0.09*	0.05*	0.16*	0.00	0.00	0.00	0.30*	1.04*
CO Common	1.40*	0.26**	0.07*	0.17*	0.00	0.00	0.00	0.50*	0.95*
AmeriGraze 401+Z	1.41*	0.07*	0.02*	0.08*	0.00	0.00	0.00	0.17*	0.79*
ABT405	0.86	0.17*	0.16*	0.26**	0.00	0.00	0.00	0.59**	0.77*
SuperCuts	1.14*	0.10*	0.07*	0.11*	0.00	0.00	0.00	0.28*	0.71*
Alfagraze	0.90	0.04*	0.04*	0.12*	0.00	0.00	0.00	0.20*	0.60*
LSD (0.05)	0.66	ns	ns	ns				ns	ns
CV%	33.85	77.53	97.68	52.99				58.79	67.01
Poorly drained: soil has 700 ppm sodium in the surface 6 inches.									
OK49	3.72*	1.25*	1.90**	1.35**	1.15**	0.63**	0.22	6.50**	5.12**
Salado	4.15**	1.13*	1.52*	1.11*	0.94*	0.60*	0.61**	5.91*	5.03*
SuperCuts	2.97	1.60**	1.80*	1.18*	0.88*	0.34*	0.10	5.90*	4.44*
CO Common	2.90	1.35*	1.75*	1.33*	0.91*	0.35*	0.04	5.73*	4.31*
AmeriGraze 401+Z	3.00	1.42*	1.59*	1.13*	0.88*	0.26*	0.06	5.34*	4.17*
Alfagraze	2.83	1.57*	1.60*	1.03*	0.81*	0.28*	0.06	5.35*	4.08*
ABT405	2.75	1.23*	1.43*	1.03*	0.86*	0.32*	0.07	4.94*	3.84*
LSD (0.05)	0.79	ns	ns	ns	ns	0.17	0.19	ns	ns
CV%	16.70	43.20	17.08	26.63	18.23	28.14	77.71	19.50	24.82
Standard irrigation: once before each harvest.									
OK49	5.08**	1.38**	1.53**	1.00*	0.75*	0.29*	0.23*	5.18**	5.13**
Salado	4.37*	0.94*	1.16	1.15**	0.74*	0.31**	0.32**	4.62*	4.49*
SuperCuts	3.97	0.94*	1.26*	1.14*	0.82**	0.28*	0.11	4.55*	4.26*
ABT405	3.90	1.04*	1.28*	0.95*	0.70*	0.15*	0.08	4.20*	4.05*
CO Common	3.18	0.96*	1.10	0.85*	0.65*	0.20*	0.05	3.81*	3.49
AmeriGraze 401+Z	3.21	0.95*	0.99	0.91*	0.51*	0.13*	0.06	3.55*	3.38
Alfagraze	3.04	1.01*	0.82	0.80*	0.55*	0.13*	0.06	3.37*	3.20
LSD (0.05)	1.11	ns	0.37	ns	ns	ns	0.08	ns	1.19
CV%	19.59	25.37	21.23	34.26	25.78	58.38	44.29	24.13	28.35
Winter irrigation: same as standard but also monthly during winter.									
OK49	8.17*	2.73*	1.81**	1.18*	1.01**	0.58**	0.51**	7.82**	7.99**
CO Common	8.22**	2.70*	1.56*	1.22*	0.89*	0.39*	0.12	6.88*	7.55*
Alfagraze	7.65*	3.11**	1.78*	1.10*	0.84*	0.38*	0.10	7.31*	7.48*
AmeriGraze 401+Z	7.65*	2.82*	1.76*	1.12*	0.83*	0.38*	0.20	7.11*	7.38*
SuperCuts	7.42*	2.68*	1.54*	1.23**	0.89*	0.37*	0.15	6.86*	7.13*
Salado	7.58*	2.21*	1.50*	1.07*	0.88*	0.48*	0.50*	6.64*	7.11*
ABT 405	5.96*	2.58*	1.20*	1.03*	0.73*	0.30*	0.07	5.91*	5.93*
LSD (0.05)	ns	ns	ns	ns	ns	ns	0.15	ns	ns
CV%	16.69	13.78	17.26	20.75	20.52	36.56	43.22	14.45	19.43

Harvest dates:

1998: none taken so that other data could be collected.

1999: 21 May, 16 Jun, 13 Jul, 11 Aug, 9 Sep, and 25 Oct, except for the dryland test, which was not harvested 9 Sep.

**Highest numerical value in the column.

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

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ns means there are no significant differences between the varieties at the 5% level.

Notes:

-Soil types were Canez and Quay Fine Sandy Loam and Canez Fine Sandy Loam, Calcareous variant.

Table 8. Dry matter yields (tons/acre) of furrow irrigated alfalfa varieties sown 14 September 1999, at NMSU's Agricultural Science Center at Tucumcari.

Variety	2000 Harvests					2000
	21 Jun	20 Jul	17 Aug	11 Sep	2 Nov	Total
NC+X600	1.01**	1.19**	0.86*	0.69*	0.57*	4.32**
NM9D11A-PAR	0.93*	1.04*	0.92*	0.73*	0.66**	4.28*
Wilson	0.85*	1.01*	0.88*	0.74**	0.64*	4.12*
5681	0.78*	1.06*	0.99**	0.67*	0.60*	4.10*
Rio Grande	0.80*	1.05*	0.83*	0.69*	0.60*	3.97*
ZX9362	0.82*	1.05*	0.87*	0.64*	0.53*	3.91*
WL442	0.81*	0.95*	0.82*	0.65*	0.63*	3.86*
Archer II	0.76*	1.01*	0.90*	0.69*	0.44	3.80*
Magna 601	0.82*	0.94*	0.84*	0.66*	0.40	3.66*
Ram	0.70	0.97*	0.72	0.59*	0.38	3.36*
Dona Ana	0.59	0.89	0.65	0.62*	0.48	3.23
Abilene+Z	0.68	0.95*	0.75	0.57*	0.27	3.22
WL327	0.67	0.90	0.77*	0.57*	0.26	3.17
NM Common	0.63	0.80	0.68	0.57*	0.42	3.10
Cimarron-3i	0.76*	0.87	0.65	0.48	0.21	2.97
Dagger+EV	0.59	0.83	0.67	0.50	0.34	2.93
Sutter	0.66	0.80	0.65	0.54	0.26	2.91
54Q53	0.57	0.76	0.68	0.57*	0.25	2.83
ABT350	0.70	0.83	0.66	0.48	0.14	2.81
ABT400SCL	0.66	0.79	0.65	0.47	0.19	2.76
Monsanto 142	0.65	0.81	0.62	0.43	0.20	2.71
Magnum-V	0.63	0.77	0.64	0.45	0.19	2.68
GH766	0.63	0.81	0.64	0.40	0.17	2.65
Garst655	0.44	0.72	0.60	0.53	0.36	2.65
Garst642	0.65	0.84	0.59	0.41	0.12	2.61
SD Common	0.56	0.69	0.62	0.35	0.09	2.31
GH750	0.54	0.66	0.45	0.38	0.18	2.21
PGI4372	0.32	0.47	0.39	0.33	0.12	1.63
LSD (0.05)	0.27	0.29	0.24	0.19	0.15	1.00
CV%	27.99	23.94	23.44	25.16	30.15	22.39

**Highest numerical value in the column.

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ns means there are no significant differences between the varieties at the 5% level.

Notes:

-No yields were measured in May 2000 because a nurse crop had been used when planting.

Table 9. Dry matter yields (tons/acre) of flood irrigated alfalfa varieties sown 9 September 1996, at NMSU's Agricultural Science Center at Los Lunas.

Variety	1997	1998	1999	2000 Harvests					2000	4-yr
	Total	Total	Total	9 May	15 Jun	24 Jul	2 Sep	1 Nov	Total	Mean
Archer	6.59**	8.23**	7.86**	2.21**	2.31*	1.77*	1.76**	1.29*	9.34**	8.04**
ABI9252	6.11*	8.11*	7.52*	2.19*	2.32**	1.64*	1.75*	1.37**	9.27*	7.73*
6B77	6.04*	7.85*	7.31*	1.96*	2.13*	1.80**	1.72*	1.15	8.76*	7.44*
WL414	5.88*	7.68*	7.08*	1.93*	2.02*	1.57*	1.64*	1.18	8.34*	7.35*
Pecos	5.67*	7.35*	7.24*	1.99*	2.07*	1.69*	1.66*	1.25*	8.66*	7.26*
WL325HQ	5.76*	7.82*	7.14*	2.13*	2.07*	1.56*	1.45*	1.02	8.23*	7.15*
LSD	ns	ns	ns	ns	ns	ns	ns	0.15	ns	ns
CV%	9.26	6.99	6.86	14.40	12.27	10.09	8.84	8.36	9.32	13.64

Harvest dates:

1997: 29 May, 27 Jun, 15 Aug, and 27 Sep.

1998: 19 May, 29 Jun, 1 Aug, 8 Sep, and 12 Oct.

1999: 1 Jun, 2 Jul, 10 Aug, and 4 Oct.

**Highest numerical value in the column.

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

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ns means there are no significant differences between the varieties at the 5% level.

Table 10. Dry matter yields (tons/acre) of flood irrigated alfalfa varieties sown 1 September 1999, at NMSU's Agricultural Science Center at Los Lunas.

Variety	2000 Harvests					2000
	9 May	13 Jun	24 Jul	2 Sep	1 Nov	Total
C/W 55112	2.67*	2.22*	3.01**	1.67**	1.85**	11.42**
Evergreen 2.0	2.67*	2.26*	2.86*	1.63*	1.82*	11.24*
C/W 5567	2.74**	2.31**	2.58	1.62*	1.79*	11.04*
C/W 6699	2.38*	2.08*	2.37	1.54*	1.73*	10.10*
LSD (0.05)	ns	ns	0.31	ns	ns	ns
CV%	11.99	9.61	6.91	4.09	3.12	5.70

**Highest numerical value in the column.

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

LSD (0.05) stands for the Least Significant Difference at the 5% level. If the difference between two numbers within a column is equal to or greater than the LSD, then we are 95% certain that they are truly different.

ns means there are no significant differences between the varieties at the 5% level.

Table 11. Dry matter yields (tons/acre) of sprinkler irrigated alfalfa varieties sown 26 August 1996, at NMSU's Agricultural Science Center at Farmington.

Variety	1997	1998	1999	2000 Harvests				2000	4-yr
	Total	Total	Total	31 May	6 Jul	8 Aug	21 Sep	Total	Mean
Monsanto 127	5.01*	6.37*	5.87**	2.33**	1.88*	1.60*	1.15*	6.96*	6.04**
Legend	5.13*	6.78**	5.83*	1.98*	1.78*	1.33*	1.20*	6.29*	5.99*
C/W 4599	4.61*	6.00*	5.61*	2.28*	1.83*	1.68**	1.25*	7.04*	5.81*
WL324	4.48*	6.36*	5.61*	2.05*	2.08*	1.58*	1.15*	6.86*	5.81*
Champ	4.52*	6.07*	5.55*	2.10*	2.10**	1.60*	1.28**	7.08**	5.79*
UN 44	4.73*	6.16*	5.31*	2.28*	1.88*	1.38*	1.23*	6.77*	5.74*
Rushmore	4.62*	6.40*	5.78*	1.90*	1.68*	1.43*	1.13*	6.14*	5.73*
Evergreen	5.05*	6.22*	5.23*	1.78*	1.75*	1.45*	1.20*	6.18*	5.68*
Archer	4.72*	5.76*	5.56*	1.98*	1.80*	1.50*	1.28*	6.56*	5.65*
Rio	5.34**	6.30*	5.67*	1.55*	1.40*	1.18*	0.93*	5.06*	5.59*
WL325HQ	4.59*	5.76*	5.49*	1.88*	1.63*	1.55*	1.15*	6.21*	5.52*
CW 4693	4.69*	6.16*	5.19*	1.65*	1.78*	1.38*	1.05*	5.86*	5.47*
Benchmark	4.62*	5.36*	5.56*	2.03*	1.98*	1.30*	1.03*	6.34*	5.46*
Vernema	4.48*	5.66*	5.24*	1.88*	1.93*	1.43*	1.03*	6.27*	5.39*
Union 330	4.36*	5.64*	5.65*	1.88*	1.50*	1.38*	0.95*	5.71*	5.36*
3L171	4.69*	5.71*	4.70*	1.78*	1.68*	1.40*	1.03*	5.89*	5.25*
Ranger	3.87*	5.42*	5.19*	2.08*	1.68*	1.48*	0.98*	6.22*	5.19*
Parade	4.25*	5.07*	4.86*	2.03*	2.03*	1.35*	1.13*	6.54*	5.17*
LSD (0.05)	ns	ns	ns	ns	ns	ns	ns	ns	ns
CV%	14.18	17.55	9.37	16.04	20.77	17.43	18.20	12.37	21.87

Harvest dates:

1997: 3 Jun, 8 Jul, 29 Aug, and 8 Sep.

1998: 9 Jun, 10 Jul, 12 Aug, and 23 Sep.

1999: 4 Jun, 7 Jul, 24 Aug, and 4 Oct.

**Highest numerical value in the column.

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

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ns means there are no significant differences between the varieties at the 5% level.

Table 12. Dry matter yields (tons/acre) of sprinkler irrigated alfalfa varieties sown 13 August 1999, at NMSU's Agricultural Science Center at Farmington.

Variety	2000 Harvests				2000
	30 May	5 Jul	8 Aug	20 Sep	Total
IFA-07	2.18*	2.43**	2.25**	1.53*	8.39**
Geneva	2.28**	2.40*	2.18*	1.35*	8.21*
Monsanto	2.05*	2.28*	2.13*	1.68**	8.14*
Pinnacle	2.10*	2.25*	2.05*	1.50*	7.90*
Affinity	2.20*	2.23*	2.05*	1.40*	7.88*
Millenni	2.00*	2.30*	1.95*	1.53*	7.78*
ZX9351	1.88*	2.23*	1.98*	1.40*	7.49*
Novartis 58	1.85*	2.10*	2.08*	1.33*	7.36*
Archer II	1.73*	2.00*	2.10*	1.53*	7.36*
LSD (0.05)	ns	ns	ns	ns	ns
CV%	31.12	14.30	8.53	10.50	12.09

**Highest numerical value in the column.

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

LSD (0.05) stands for the Least Significant Difference at the 5% level. If the difference between two numbers within a column is equal to or greater than the LSD, then we are 95% certain that they are truly different.

ns means there are no significant differences between the varieties at the 5% level.

Table 13. Characteristics and performance of alfalfa varieties across years and tests in New Mexico.		Varietal Characteristics ¹									Las Cruces		Artesia					Tucumcari										Los Lunas					Farmington													
											1999 ²							1997										1996					1999													
		Pest resistance ³									F ⁴	L ⁵	1996					99	Fall Dormancy ⁶					D ⁷	P ⁸	S ⁹	W ¹⁰	99	1996					99	1996					99						
		Variety	Proprietor	FD ¹¹	BW	PRR	FW	AN	SAA	PA	BAA	00 ¹²	00	97	98	99	00	00	97	98	99	00	99	00	99	00	99	00	99	00	99	00	97	98	99	00	00	97	98	99	00	00				
Common, CO	Colorado Variety Not Stated	?	?	?	?	?	?	?	?													*	*		*		*	**	*																	
Common, NM	New Mexico VNS	?	?	?	?	?	?	?	?	*	*																																			
Common, SD	South Dakota VNS	?	?	?	?	?	?	?	?																																					
NM Stress 94	New Mexico State University	?	?	?	?	?	?	?	?	*	*																																			
NM9D11A-PAR	New Mexico State University	?	?	?	?	?	?	?	?	**	*					*																								*						
AlfaGraze	America's Alfalfa	2	R	LR	R	MR	?	R	?																																					
Viking I	Novartis Seeds	2	R	R	HR	R	?	MR	MR																																					
ABT350	AgriBioTech	3	HR	HR	HR	HR	R	R	?																																					
Benchmark	Research Seeds	3	HR	HR	HR	HR	?	?	?																															*	*	*	*			
Champ	Research Seeds	3	R	MR	HR	?	?	HR	?																																*	*	*	**		
Garst 645	Garst Seed	3	HR	HR	R	HR	MR	R	?																																					
GH766	Golden Harvest	3	HR	HR	HR	HR	?	R	R																																					
Monsanto 127	Monsanto Global Seed Group	3	HR	HR	R	HR	HR	HR	?																																*	*	*	*		
Novartis 58	Novartis Seed	3	HR	HR	HR	HR	?	?	?																																			*		
Rainier	Novartis Seeds	3	HR	HR	HR	HR	HR	HR	?																																					
Ranger	Public	3	MR	LR	LR	LR	LR	LR	LR																																	*	*	*	*	
WL324	WL Research	3	HR	HR	HR	HR	R	HR	?																																	*	*	*	*	
WL325HQ	WL Research	3	HR	HR	HR	HR	R	R	MR				*																	*	*	*	*								*	*	*	*		
330	Union Seed	4	HR	HR	HR	HR	HR	R	R																																*	*	*	*		
3L171	Forage Genetics	4	HR	HR	HR	HR	HR	R	?																																*	*	*	*		
54Q53	Pioneer HiBred Int'l	4	HR	HR	R	R	MR	MR	?																																					
ABT400SCL	AgriBioTech	4	HR	HR	HR	HR	R	HR	?																																					
ABT405	AgriBioTech	4	HR	HR	HR	HR	?	R	?													*	*	*	*	*																				
Affinity + Z	America's Alfalfa	4	HR	HR	HR	HR	?	R	?													*	**	*	*	*	*																	*		
AmeriGraze 401+Z	America's Alfalfa	4	HR	HR	HR	HR	?	R	?													*	**	*	*	*	*																			
Cimarron 3i	Great Plains Research	4	HR	R	HR	HR	R	R	?																																					
Focus HSN	Arkansas Valley Seed Co.	4	HR	HR	HR	HR	HR	MR	?																																				*	
Garst 6420	Garst Seed Co.	4	HR	HR	HRR	R	R	R	?																																					
Geneva	Novartis Seeds, Inc.	4	HR	HR	HR	HR	HR	R	?																																				*	
GH750	Golden Harvest	4	H	HR	HR	HR	R	R	R																																					
IFA-07	IFA	4	HR	HR	HR	HR	R	R	MR																																					**
Jade II	NC+ Hybrids	4	MR	R	HR	MR	R	R	MR					*																																
Landmark	Geertson Farms	4	R	HR	R	R	?	R	?					*	*																															
Legend	Cenex	4	HR	HR	HR	HR	LR	R	?																																*	**	**	*		
Magnum V	Dairyland Seed Co.	4	HR	HR	HR	R	R	R	MR																																					
Millenea	IFA	4	HR	HR	HR	HR	R	R	?																																					*
Monsanto 142	Monsanto Global Seed Group	4	HR	HR	HR	R	?	HR	HR																																					*

Table 13. Characteristics and performance of alfalfa varieties across years and tests in New Mexico.		Varietal Characteristics ¹									Las Cruces		Artesia					Tucumcari										Los Lunas					Farmington							
											1999 ²							1997																						
		Pest resistance ³									F ⁴	L ⁵	1996					99	Fall Dormancy ⁶					D ⁷	P ⁸	S ⁹	W ¹⁰	99	1996					99	1996					99
											FD ¹¹	BW	PRR	FW	AN	SAA	PA	BAA	00 ¹²	00	97	98	99	00	00	97	98	99	00	99	00	99	00	99	00	99	00	97	98	99
Variety	Proprietor																																							
AmeriLeaf 721	America's Alfalfa	7	R	R	HR	HR	HR	R	MR	*																														
Arriba	America's Alfalfa	7	R	R	HR	R	HR	HR	HR	*				*																										
C/W 46106	Cal/West Seeds	7	?	HR	?	HR	HR	?	HR				*	*	*																									
C/W 4791	Cal/West Seeds	7	R	HR	HR	HR	HRE	R	HR				*	*	**	**																								
C/W 5666	Cal/West Seeds	7	?	HR	HR	HR	HR	HR	HR	*					*																									
Dona Ana	New Mexico State University	7	MR	R	MR	LR	MR	R	?						*	*	*																							
DS 771	Dairyland Seed Co.	7	MR	HR	HR	MR	HR	HR	R						*																									
DS 981	Dairyland Seed Co.	7	MR	HR	HR	LR	HR	HR	HR						*																									
Evergreen 2.0	Arkansas Valley Seed	7	?	HR	HR	HR	HR	R	R						**																				*					
Parade	Union Seed	7	MR	HR	HR	HR	HR	HR	R				*	*	*																					*	*	*	*	
Pecos	America's Alfalfa	7	MR	R	HR	MR	R	R	MR				*	*	*	*												*	*	*	*									
Rio	Great Plains	7	R	HR	HR	HR	HR	HR	HR				*	*	*	*																			*	*	*	*		
Signal 7000	Helena Chemical	7	R	R	HR	R	R	R	MR						**	*																								
Sutter	PGI/MBS - Helena Chemical	7	R	HR	HR	?	HR	R	MR																															
WL442	WL Research	7	R	HR	HR	HR	HR	HR	HR	*					*																						*			
ZL9876	ABI Alfalfa	7	?	?	HR	?	?	?	?																															
13R Supreme	America's Alfalfa	8	MR	R	R	MR	R	R	MR							*	*																							
5715	Pioneer HiBred Int'l	8	LR	R	HR	HR	HR	HR	HR	*		*	*	*																										
58N57	Pioneer HiBred Int'l	8	LR	HR	R	HR	R	HR	HR						*																									
ABI9193	ABI Alfalfa	8	MR	R	HR	R	HR	R	R				*	*																										
C/W 5875	Cal/West Seeds	8	HR	HR	HR	HR	HR	HR	HR	*	*				*																									
C/W 68115	Cal/West Seeds	8	HR	HR	HR	HR	HR	HR	HR	*	*				*																									
C/W 78122	Cal/West Seeds	8	HR	HR	HR	HR	HR	?	HR	**	*																													
DS 681FQ	Dairyland Seed Co.	8	R	HR	HR	MR	HR	R	R						*																									
GT 13-R Plus	America's Alfalfa	8	R	R	HR	?	R	MR	LR	*	*																													
Mesa	PGI/MBS - Helena Chemical	8	MR	R	HR	?	HR	HR	R	*	*																													
Monsanto 180ML	Monsanto Global Seed Group	8	MR	HR	HR	HR	HR	HR	HR						*																									
Pershing	Dairyland Seed Co.	8	HR	HR	HR	LR	HR	R	R	*	*																													
PGI 8000	PGI/MBS - Helena Chemical	8	?	?	?	?	?	?	?	*	*																													
Rio Grande	Great Plains Research	8	MR	HR	HR	HR	HR	HR	HR	*	*																										*			
Signal 8000	Helena Chemical	8	?	?	?	?	?	?	?	*	*																													
UN41-8	Union Seed Co.	8	LR	HR	HR	R	HR	HR	HR	*					*																									
WL525HQ	WL Research	8	MR	HR	MR	?	HR	HR	HR		*		*	*		*	*	*	*																					
ZG9891	ABI Alfalfa	8	?	R	HR	HR	?	?	R		*																													
ZX9886	ABI Alfalfa	8	?	HR	?	R	?	?	HR						*																									
ZX9889B	ABI Alfalfa	8	?	R	?	R	?	?	R	*	*																													
5939	Pioneer HiBred Int'l	9	LR	HR	HR	R	HR	R	R				*	*																										

Table 13. Characteristics and performance of alfalfa varieties across years and tests in New Mexico.		Varietal Characteristics ¹									Las Cruces		Artesia						Tucumcari										Los Lunas					Farmington					
											1999 ²								1997																				
		Pest resistance ³									F ⁴	L ⁵	1996			99	Fall Dormancy ⁶			D ⁷	P ⁸	S ⁹	W ¹⁰	99	1996			99	1996			99							
Variety	Proprietor	FD ¹¹	BW	PRR	FW	AN	SAA	PA	BAA	00 ¹²	00	97	98	99	00	00	97	98	99	00	99	00	99	00	99	00	99	00	97	98	99	00	00	97	98	99	00	00	
Magna 901	Dairyland Seed Co.	9	MR	HR	HR	R	HR	R	HR							*																							
Salado	America's Alfalfa	9	?	LR	R	LR	R	MR	HR				*				*	*			**	**	*	*															
WL612	WL Research	9	?	HR	HR	LR	HR	HR	HR	*							*	*																					
ZS9890	ABI Alfalfa	9	R	R	HR	R	HR	MR	HR							*																							
ZX9393	ABI Alfalfa	9	MR	R	HR	R	HR	R	HR							*																							
ZX9894	ABI Alfalfa	9	?	R	HR	R	?	HR	R		*																												
¹ FD=Fall Dormancy, Bw=Bacterial wilt, PRR=Phytophthora root rot, Fw=Fusarium wilt, An=Anthracnose, SAA=Spotted alfalfa aphid, PA=Pea aphid, BAA=Blue alfalfa aphid.																							² Establishment year																
³ Pest Resistance Ratings: S=Susceptible, LR=Low Resistance, MR=Moderate Resistance, R=Resistant, HR=High Resistance.															⁴ Test irrigated every 14 days.					⁵ Test irrigated every 28 days.																			
⁶ Test sown to determine which FD category was best suited to the Tucumcari area.										⁷ Dryland: Test irrigated once after seeding.					⁸ Poorly drained: Soil contains 700 ppm Na; irrigated as needed.																								
⁹ Standard: Irrigated once before each harvest.			¹⁰ Winter: Same as Standard, but also irrigated monthly during winter.						¹¹ FD: 2=Vernal, 3=Ranger, 4=Saranac, 5=Archer, 6=ABI 700, 7=Dona Ana, 8=Maricopa, 9=CUF101																														
¹² 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.A. Ray, L.M. English, M.W. Murray, and M.K. O'Neill. NMSU CAHE AES CES																																							

Table 14. New Mexico State University Cooperative Extension Service publications related to alfalfa management.

Number	Title	On-line ?
A-107	Managing saline soils	
A-113	Selection of fertilizers	Y
A-114	Test your soil	Y
A-122	Soil test interpretations	Y
A-123	Sampling for plant tissue analysis	
A-128	Fertilizer guide for New Mexico	Y
A-128	Nitrogen fixation by legumes	Y
A-130	Inoculation of legumes	Y
A-131	Certified seed	Y
A-133	Calculating fertilizer costs	Y
A-134	Selecting synthetic fertilizers in New Mexico	Y
A-18	Micronutrient fertility guide	
A-216	Know what is in a bag of seed	Y
A-309	Alfalfa weevil and clover leaf weevil	
A-316	Structure of a hay bale	
A-317	Alfalfa fertilization in New Mexico	
A-318	Reducing alfalfa harvest losses	Y
A-325	Managing weeds in alfalfa	Y
A-327	Introduction to hay testing	Y
A-328	Sampling guidelines for hay testing	Y
A-329	Variations in hay grading	Y
A-330	Alfalfa growth stages	Y
A-331	Alfalfa quality definitions	Y
B-115	Balancing forage supply and demand	Y
CR-536	Blister beetles in alfalfa	Y
HB-11	Suggestions for managing insects in alfalfa 19 and clover 1996	
W-01	Submitting plants for plant tissue analysis	
W-13	Alfalfa disease control	

These publications are available from your county office of the NMSU Cooperative Extension Service. To view publications on-line from the internet visit <http://www.cahe.nmsu.edu/cahe>