

**AGRONOMY PROGRESS REPORT**

**2015 CALIFORNIA ALFALFA VARIETY TRIAL YIELD RESULTS,  
INCLUDING ROUND-UP READY VARIETIES**

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**ABSTRACT**

This publication details alfalfa yield trial data for single harvest, single year, and multiple-year summaries for the year 2015. Both conventional and Roundup-Ready (RR) lines have been tested. Yield trials were conducted in 6 regions in California: the Intermountain area (1 locations), the Sacramento Valley (1 location), the Stanislaus Valley (1 location), the San Joaquin Valley (2 locations) and the Imperial Valley (low desert, Figure 1). The alfalfa variety trial data from the University of California is placed online; often well in advance of this published report (<http://alfalfa.ucdavis.edu/>).

**INTRODUCTION**

Choosing superior varieties of alfalfa is a significant economic factor for alfalfa growers. A large number of commercial varieties are currently available, enabling wide range of options for producers. These UC trials provide unbiased data from a wide range of environments related to variety performance of alfalfa. In California, alfalfa is grown from the Oregon border to the Mexican border, and throughout the Great Central Valley, which consists of the Sacramento and San Joaquin Valleys (Figure 1). These sites represent 3-4 cut systems (dormant varieties) in the **Intermountain Region**, 6-8 cut systems (dormant, semi-dormant, or non-dormant 90% varieties) in the **Northern Central Valley**, 7-8 cut systems (semi-dormant to non-dormant varieties) in the **Southern Central Valley** and 8-11 cut systems (non-dormant varieties)

**California Alfalfa Acreages by Section**

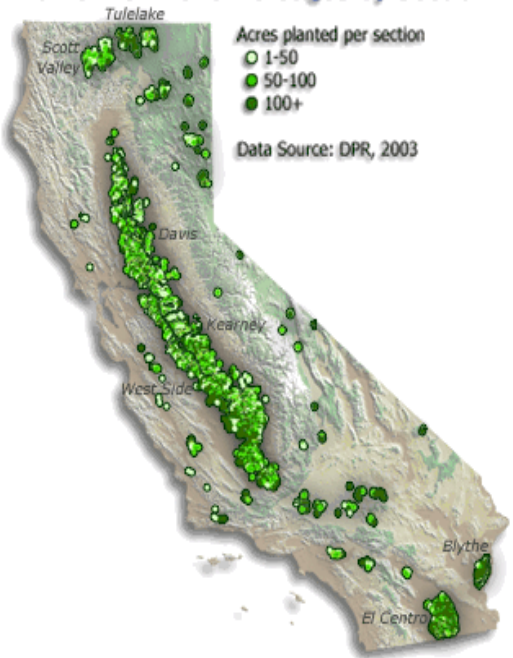


Figure 1. California alfalfa acreage. The Intermountain region is represented by Tulelake and Scott Valley, Sacramento Valley by Davis, San Joaquin Valley by Kearney and West Side Locations, high desert by the Lancaster trial, and Low Desert by the El Centro trial.

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in the **Low Desert Environment** in the south. The **High Desert environment** generally is a 5-6 cut system.

Both private and public varieties and experimental lines are tested. These data are frequently used by growers to choose varieties, and by breeders to help guide further selection. We test both private and public varieties, and experimental lines destined for release within the next few years. This report provides single year and over-the-year summary from alfalfa trials harvested in California in 2015.

## **2015 ALFALFA PRODUCTION YEAR**

The 2015 production season again was characterized by a much drier winter season with only 60-70% its historic average rainfall which caused the reservoirs to be diminished from their previous levels. Alfalfa is a perennial crop that remains in production for four to five years and needs water to be productive. Essentially none of the state's alfalfa fields have had 'winter re-charge' from rainfall which carries the crop into spring until irrigation is initiated. Driven primarily by global demand, Western U.S. hay prices have nearly doubled in the last 10 years, up from an average of \$100 per ton to \$200-\$250/ton in some of the key dairy areas of Central California. This new average for prices is expected to hold, despite potential challenges with shipping, product testing, and the ongoing drought in California.

With California is in its 4<sup>th</sup> year of drought conditions, there are increased water limitations in most regions due to low water supplies for irrigation. The minimal rainfall during the early spring allowed earlier harvests from the growers in the San Joaquin Valley and southern regions. The Intermountain areas also had a fairly dry spring. The moderate and dry fall months enabled excellent late production (high yields and high quality) for many growers. The October 9 Crop Production report forecasts all U.S. hay production in 2015 at 142.4 million tons, up 2.6 million from 2014 due to increased yields. Based on October 1 conditions, the all-hay yield is expected to be 2.52 tons per acre, up from 2.45 tons per acre in 2014. Harvested acres are forecast at 56.5 million acres, down slightly from 57.0 million last year. U.S. hay prices remained high in 2015 and were well above the 10-year average. This situation continued through the summer and fall months.

## **TESTING ALFALFA VARIETIES - METHODS**

**Yield Trials.** The California Alfalfa Cultivar Yield, Fall Dormancy, and Forage Quality Trials are open to any certified alfalfa cultivar, which is sold or is likely to be sold in California. Blends or brands (unless they are certified blends) are not included in these trials. Experimental cultivars with a high likelihood of release within the next few years are tested as space permits. In the fall of 2014 three new trials were established: the UC Davis Trial was planted on 9/13/2014, the Stanislaus Trial was planted on 10/9/2014 and the Westside Salinity Trial was planted on 10/21/2014. In the UC Davis Trial we installed a drip irrigation system.

Six alfalfa variety yield trials were harvested from Tulelake, Davis, Modesto, Parlier, Five Points and El Centro, CA in 2015. Specific planting dates for each trial are given on the results table for

that trial. The plantings were at approximately 25 lbs/acre live seed. Plots were 3' to 4' wide and 13 to 20 feet long, depending upon location and specific layout. Four to six replicates of each cultivar were planted at each location, depending upon the expected variation at that site. Experimental design was a randomized complete block design. Harvests for yield estimation were obtained from approximately a 3' x 18' area per plot using a flail-type or cutter-bar type forage harvester, and dry matter yield determined by oven-drying sub samples to a constant weight. A representative group of 5-6 varieties were taken at each harvest, and the average dry matter used for yield determination. Three to four harvests were taken in the intermountain region, while up to nine cuttings were taken in the Imperial Valley. Cutting schedules were determined by the most common practice in that region and are the same for all varieties within a trial. The data is obtained from each of the locations and analyzed and summarized at the UC Davis campus.

**Note on Statistical Inference:** In 2006, we elected to analyze and report significance of variety testing data (calculation of F-test and LSD Values) based upon a probability value of 10% vs. the traditional 5%. In doing so, we are accepting a 90% confidence level vs. a 95% confidence level. This is due to the fact that growers routinely base decisions based upon degrees of confidence that are far lower than 95% confidence levels we have routinely used. A 10% probability level (the probability that the declared difference is based solely upon chance) is sufficiently conservative to prevent choosing varieties based upon false differences—such decisions are always a compromise between practical factors and statistical vigor. The practical implication of this decision: it does not change the rankings or yield averages, but it makes the groups that are considered similar (those that share the same letter A,B,C designations based upon LSD values) smaller in number. To put this in non-technical language: We report that variety X is significantly different than variety Y, and have accepted a 10% chance that the apparent difference is due to random variation, not due to the variety. We feel a 90% confidence level is sufficient for making decisions on alfalfa varieties.

## 2015 YIELD RESULTS

### Intermountain Region

**2013 UC Tulelake Yield Trial** -- A new trial was planted with 42 entries on August 21, 2013 in Tulelake. Four cuttings were conducted during the 2015 season with the first cutting taking place on June 8, 2015. Single year results from the 2015 harvests are provided in Table 1. The average yield across all varieties was 8.2 tons/acre. The yearly yield averages between high and low varieties were about 1.4 tons. Yields averaged over the two years were a little over 8.9 tons/acre (Table 2). The across-the-years yield average between high and low varieties was 1.9 tons/acre. The CVs were relatively low; indicating control of varieties was stable over each cut in this trial.

### Sacramento Valley

**2014 UC Davis Yield Trial**— A new trial was planted with 36 entries September 9, 2014 in the U.C. Davis research fields.. Eight cuttings were conducted during the season with the first cutting in the season on April 3, 2015. Single year results from the eight harvests are provided in

Table 3. The yield across all varieties was 10 tons/acre. The yearly yield average between high and low varieties was 2.5 tons/acre difference. The CVs were moderate; indicating control of varieties was stable over each cut in this trial.

### **Stanislaus County**

**2014 UC Stanislaus Yield Trial--** A new trial was planted with 36 entries October 9, 2014 at the Stanislaus Farm Supply research fields. This is the first year yields for the Stanislaus Yield Trial. Six cuttings were conducted during the 2015 season with the first cutting taking place on May 5, 2015. Single year results from the 2015 harvests are provided in Table 4. The average yield across all varieties was 14 tons/acre. The yearly yield averages between high and low varieties were about 4.2 tons/acre difference. The fall dormancy ranges were from 5-10.

### **San Joaquin Valley**

**2013 UC Kearney Yield Trial –** This is the second year of yield data for the Kearney Trial. Five cuttings were conducted during the 2015 season with the first cutting taking place on May 11, 2015. Single year results from the 2015 harvests are provided in Table 5. The average yield across all varieties was over 11 tons/acre. The yearly yield averages between high and low varieties were over 5 tons/acre difference. The fall dormancy ranges were from 7-10. Multiple year yield (Table 6) differences from highest to lowest yielding variety were approximately 2.9 tons/acre. The average yield across all varieties was 11.6 tons/acre.

**2014 UC Westside Salinity Yield Trial –** A new variety trial was established in October 9, 2014 with 36 varieties in 5 replications at the West Side Research and Extension Center, Five Points. This includes proper controls (salt tolerant and salt susceptible lines developed for greenhouse screening by seed companies). Table 7 presents the yields and Table 8 presents the yield reduction due to salinity.

### **Low Desert**

**2012 UC Imperial Yield Trial –** This is the third and final year of the Imperial Valley yield trial. Nine cuttings were conducted during the 2015 season with the first cutting taking place on Jan 20, 2015. The trial had drip tape installed to insure better irrigation management. Single year results from the 2015 harvests are provided in Table 7. The average yield across all varieties was 11.4 tons/acre. The yearly yield averages between high and low varieties was nearly 2.3 tons/acre difference, and CVs were moderate, indicating average control of variation in this trial. The fall dormancy ranges were from 9-10. Multiple year yield (Table 8) differences from highest to lowest yielding variety were approximately 2.0 tons/acre. The average yield across all varieties was 12.12 tons/acre.

# INTERPRETING YIELD TRIAL RESULTS

*We suggest the following procedure for selecting varieties:*

1. **Select a group of high-yielding varieties** for your region (generally the top ¼ to 1/3 of a trial which is closest to your area) from Tables 1-9 over-the years summaries (or from our website). Since this report contains single-year summaries, we recommend that you see the over-the years summaries from the relevant locations which is on our website: <http://alfalfa.ucdavis.edu>
2. **Determine the Pest Resistance and Fall Dormancy needs** for your region. The FD scores are provided on these tables and in the Alfalfa Alliance Website (see #3).
3. **Consider the Fall Dormancy and Pest resistance Ratings** of individual varieties – available at the Alfalfa Alliance Website ([www.alfalfa.org](http://www.alfalfa.org)).
4. **Choose those high yielding varieties** with the best Pest Resistance package for your region.
5. **Consider evidence for high quality** if available (such information is not always widely available, but generally more dormant varieties tend to be higher in quality).
6. **Consider Biotech Traits** such as the Glyphosate-Resistance that could be available in the near future. This should be compared as a comprehensive weed control strategy, not just a variety.
7. **Test a variety on portions of your farm** to see how it does under your soil conditions.
8. **Consider the price of seed, availability and Service.**

## ACKNOWLEDGMENTS

The authors are grateful for the help of Dale Pattigan for help with the field plots at UC Kearney Ag Center, Rafael Solorio and crews for help with the field plots at Westside Research and Extension Center, Rob Wilson's crew at the Intermountain Research and Extension Center, Paul McCormick at the Stanislaus Farms facility, Francisco Maciel's crew at the Desert Research and Extension Center, and Jim Jackson for help on the U.C. Davis plots.

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**TABLE 1. 2015 YIELDS, TULELAKE ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 8/21/13**

Note: Single year data should not be used to evaluate alfalfa varieties or choose alfalfa cultivars

		Cut 1	Cut 2	Cut 3	Cut 4	YEAR		% of
	FD	8-Jun	7-Jul	11-Aug	5-Oct	TOTAL		VERNAL
		Dry t/a						%
<b>Released Varieties</b>								
AmeriStand 455TQ RR	4	2.6 ( 9)	2.6 ( 1)	2.0 (15)	1.5 (28)	8.7 ( 2)	A B	110.6
DG 4210	4	2.7 ( 1)	2.3 (12)	2.1 ( 4)	1.6 (15)	8.6 ( 3)	A B C	110.1
Mutiny	4	2.6 (12)	2.4 ( 4)	2.1 ( 3)	1.6 (16)	8.6 ( 4)	A B C D	109.5
Integra 8400	4	2.7 ( 2)	2.1 (31)	2.1 ( 6)	1.7 ( 3)	8.5 ( 5)	A B C D E	108.8
Integra 8420 (EM)	5	2.4 (33)	2.2 (15)	2.1 ( 2)	1.8 ( 1)	8.5 ( 6)	A B C D E	108.8
Archer III	5	2.5 (17)	2.3 (11)	2.1 ( 7)	1.7 ( 7)	8.5 ( 7)	A B C D E F	108.0
WL 363HQ	5	2.6 ( 3)	2.2 (21)	2.0 (20)	1.6 (17)	8.5 ( 8)	A B C D E F	107.8
Masterpiece II	4	2.6 (10)	2.3 (13)	2.0 (29)	1.6 ( 9)	8.4 (10)	A B C D E F G	107.5
6547R	4	2.5 (18)	2.3 ( 8)	2.0 (21)	1.5 (26)	8.4 (11)	A B C D E F G H	106.4
WL 354HQ	4	2.6 (13)	2.1 (27)	2.0 (19)	1.6 (14)	8.3 (13)	A B C D E F G H I	105.9
6585Q	5	2.3 (36)	2.4 ( 3)	2.0 ( 8)	1.5 (29)	8.3 (14)	B C D E F G H I J	105.4
Camas	4	2.3 (38)	2.3 ( 7)	2.0 (11)	1.6 (13)	8.3 (15)	B C D E F G H I J	105.1
DKA44-16RR	4	2.6 ( 5)	2.2 (16)	1.9 (37)	1.5 (37)	8.3 (16)	B C D E F G H I J	105.1
RR Tonnica	5	2.5 (19)	2.3 ( 6)	1.9 (33)	1.5 (36)	8.2 (17)	C D E F G H I J K	104.8
Integra 8401RR	4	2.6 ( 8)	2.0 (38)	2.0 ( 9)	1.6 (10)	8.2 (18)	C D E F G H I J K	104.6
6401N	4	2.4 (24)	2.2 (20)	2.0 (30)	1.6 (22)	8.2 (19)	C D E F G H I J K	104.6
RR NemaStar	4	2.4 (26)	2.3 ( 9)	2.0 (24)	1.5 (27)	8.2 (20)	C D E F G H I J K	104.5
6422Q	4	2.5 (21)	2.3 (10)	2.0 (26)	1.5 (33)	8.2 (21)	D E F G H I J K	104.5
6516R	5	2.4 (30)	2.2 (17)	2.0 (10)	1.5 (32)	8.2 (23)	E F G H I J K	103.8
Integra 8420 (OGP)	4	2.3 (35)	2.1 (34)	2.0 (23)	1.7 ( 2)	8.1 (24)	E F G H I J K	103.6
AmeriStand 415NT RR	4	2.4 (25)	2.2 (18)	2.0 (17)	1.5 (38)	8.1 (25)	E F G H I J K	103.6
WL 372HQ.RR	4	2.4 (31)	2.2 (22)	2.0 (12)	1.5 (31)	8.1 (26)	E F G H I J K	103.4
Rhino	4	2.6 ( 7)	1.9 (40)	2.0 (14)	1.6 (20)	8.1 (27)	F G H I J K	103.2
AmeriStand 445NT	4	2.4 (28)	2.1 (28)	1.9 (31)	1.6 (21)	8.1 (28)	F G H I J K	102.9
Integra 8444RR	4	2.4 (27)	2.2 (24)	2.0 (25)	1.5 (35)	8.1 (29)	F G H I J K	102.9
Nimbus	5	2.3 (39)	2.1 (30)	2.1 ( 1)	1.6 (25)	8.1 (31)	F G H I J K	102.5
Trophy	4	2.5 (14)	1.9 (39)	2.0 (28)	1.6 (12)	8.0 (32)	F G H I J K	102.4
DKA43-22RR	4	2.5 (15)	2.1 (29)	1.9 (41)	1.5 (30)	8.0 (33)	G H I J K	102.3
6497R	4	2.4 (29)	2.3 (14)	1.9 (40)	1.5 (34)	8.0 (34)	G H I J K	102.2
Integra 8420 (OGP+EM)	6	2.3 (37)	2.1 (33)	1.9 (32)	1.6 ( 8)	8.0 (36)	H I J K	101.7
Integra 8420	4	2.3 (41)	2.0 (36)	1.9 (34)	1.7 ( 6)	7.9 (38)	I J K	100.4
Integra 8420 (QR)	7	2.3 (42)	2.1 (32)	1.9 (35)	1.6 (18)	7.9 (39)	J K	100.0
Vernal	2	2.5 (16)	2.0 (35)	1.9 (36)	1.4 (41)	7.9 (40)	J K	100.0
AmeriStand 427	4	2.3 (40)	2.2 (19)	1.9 (38)	1.4 (40)	7.8 (41)	K	99.5
<b>Experimental Varieties</b>								
FG 49W202	5	2.6 ( 6)	2.4 ( 2)	2.0 (13)	1.7 ( 5)	8.7 ( 1)	A	111.1
FG 49W201	5	2.4 (23)	2.4 ( 5)	2.1 ( 5)	1.6 (19)	8.4 ( 9)	A B C D E F G	107.5
SW4332	4	2.6 ( 4)	2.0 (37)	2.0 (18)	1.7 ( 4)	8.3 (12)	A B C D E F G H	106.1
SW4351	4	2.5 (20)	2.2 (25)	1.9 (39)	1.6 (11)	8.2 (22)	D E F G H I J K	104.2
SW4328	4	2.4 (32)	2.2 (26)	2.0 (27)	1.6 (23)	8.1 (30)	F G H I J K	102.9
FG R57OK217	5	2.4 (34)	2.2 (23)	2.0 (22)	1.4 (39)	8.0 (35)	G H I J K	102.1
FG R49W215	4	2.4 (22)	1.9 (41)	2.0 (16)	1.6 (24)	7.9 (37)	I J K	100.5
SW3304	3	2.6 (11)	1.9 (42)	1.8 (42)	1.1 (42)	7.3 (42)	L	92.8
MEAN		2.47	2.18	1.98	1.56	8.20		
CV		7.9	8.6	6.6	7.1	4.5		
LSD (0.1)		0.23	0.22	NS	0.13	0.44		

Trial seeded at 25 lb/acre viable seed at Intermountain Research and Extension Center, Tulelake, CA.

Entries followed by the same letter are not significantly different at the 10% probability level according to Fisher's (protected) LSD.

FD = Fall Dormancy reported by seed companies.

**TABLE 2. 2014-2015 YIELDS, TULELAKE ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 8/21/13**

		2014	2015	Average		% of
	FD	Yield	Yield			VERNAL
			Dry t/a			%
<b>Released Varieties</b>						
Masterpiece II	4	10.3 ( 1)	8.4 (10)	9.4 ( 2)	AB	109.6
AmeriStand 455TQ RR	4	10.0 ( 8)	8.7 ( 2)	9.3 ( 3)	ABC	109.0
Integra 8420 (EM)	5	10.1 ( 4)	8.5 ( 6)	9.3 ( 4)	ABCD	108.6
Archer III	5	10.0 ( 5)	8.5 ( 7)	9.3 ( 5)	ABCDE	108.1
WL 363HQ	5	10.0 ( 6)	8.5 ( 8)	9.3 ( 6)	ABCDEF	108.0
Integra 8400	4	9.9 (10)	8.5 ( 5)	9.2 ( 7)	ABCDEFGF	107.9
DG 4210	4	9.7 (22)	8.6 ( 3)	9.2 (10)	BCDEFGHI	106.9
RR NemaStar	4	10.0 ( 7)	8.2 (20)	9.1 (11)	BCDEFGHIJ	106.4
Mutiny	4	9.6 (30)	8.6 ( 4)	9.1 (12)	BCDEFGHIJK	106.0
6422Q	4	9.9 (11)	8.2 (21)	9.1 (13)	CDEFGHIJKL	105.7
Integra 8420 (OGP)	4	9.9 ( 9)	8.1 (24)	9.0 (14)	CDEFGHIJKL	105.5
6547R	4	9.7 (21)	8.4 (11)	9.0 (15)	CDEFGHIJKLM	105.3
6585Q	5	9.7 (18)	8.3 (14)	9.0 (16)	DEFGHIJKLMN	105.1
6401N	4	9.8 (15)	8.2 (19)	9.0 (17)	DEFGHIJKLMN	105.1
DKA44-16RR	4	9.7 (19)	8.3 (16)	9.0 (20)	DEFGHIJKLMNO	104.9
WL 354HQ	4	9.6 (25)	8.3 (13)	9.0 (21)	EFGHIJKLMNO	104.7
WL 372HQ.RR	4	9.7 (17)	8.1 (26)	8.9 (22)	FGHIJKLMNOP	104.3
Integra 8401RR	4	9.6 (24)	8.2 (18)	8.9 (23)	GHIJKLMNOP	104.2
RR Tonnica	5	9.6 (27)	8.2 (17)	8.9 (24)	H IJKLMNOP	103.9
6516R	5	9.6 (26)	8.2 (23)	8.9 (25)	IJKLMNOPQ	103.6
Trophy	4	9.7 (20)	8.0 (32)	8.9 (26)	IJKLMNOPQ	103.5
Nimbus	5	9.7 (23)	8.1 (31)	8.9 (27)	IJKLMNOPQR	103.4
Integra 8444RR	4	9.6 (28)	8.1 (29)	8.8 (28)	J KLMNOPQR	103.1
AmeriStand 445NT	4	9.5 (31)	8.1 (28)	8.8 (30)	J KLMNOPQR	102.9
Camas	4	9.3 (38)	8.3 (15)	8.8 (31)	J KLMNOPQR	102.8
AmeriStand 415NT RR	4	9.5 (34)	8.1 (25)	8.8 (32)	J KLMNOPQR	102.7
Rhino	4	9.4 (36)	8.1 (27)	8.8 (33)	KLMNOPQR	102.3
6497R	4	9.5 (32)	8.0 (34)	8.8 (34)	KLMNOPQR	102.3
Integra 8420 (OGP+EM)	6	9.5 (33)	8.0 (36)	8.7 (35)	LMNOPQR	101.9
Integra 8420 (QR)	7	9.6 (29)	7.9 (39)	8.7 (36)	MNOPQR	101.7
Integra 8420	4	9.4 (35)	7.9 (38)	8.7 (38)	OPQR	101.1
DKA43-22RR	4	9.2 (41)	8.0 (33)	8.6 (39)	PQR	100.5
Vernal	2	9.3 (39)	7.9 (40)	8.6 (40)	QR	100.0
AmeriStand 427	4	9.2 (40)	7.8 (41)	8.5 (41)	R	99.6
						0.0
						0.0
<b>Experimental Varieties</b>						
FG 49W202	5	10.3 ( 2)	8.7 ( 1)	9.5 ( 1)	A	111.0
SW4332	4	10.1 ( 3)	8.3 (12)	9.2 ( 8)	ABCDEFGH	107.5
FG 49W201	5	9.9 (12)	8.4 ( 9)	9.2 ( 9)	BCDEFGHI	107.0
SW4351	4	9.8 (14)	8.2 (22)	9.0 (18)	DEFGHIJKLMN	105.0
SW4328	4	9.9 (13)	8.1 (30)	9.0 (19)	DEFGHIJKLMNO	104.9
FG R49W215	4	9.8 (16)	7.9 (37)	8.8 (29)	J KLMNOPQR	103.0
FG R57OK217	5	9.4 (37)	8.0 (35)	8.7 (37)	NOPQR	101.4
SW3304	3	8.0 (42)	7.3 (42)	7.6 (42)		89.1
MEAN		9.66	8.20	8.93		
CV		4.4	4.5	3.0		
LSD(0.1)		0.51	0.44	0.32		

Trial seeded at 25 lb/acre viable seed at Intermountain Research and Extension Center, Tulalake, CA.

Entries followed by the same letter are not significantly different at the 10% probability level according to Fisher's (protected) LSD.

FD = Fall Dormancy reported by seed companies.

**TABLE 3. 2015 YIELDS, UC DAVIS ALFALFA CULTIVAR TRIAL TRIAL PLANTED 9/30/14**

Note: Single year data should not be used to evaluate alfalfa varieties or choose alfalfa cultivars

		Out 1	Out 2	Out 3	Out 4	Out 5	Out 6	Out 7	Out 8	YEAR		% of
		3-Apr	6-May	28-May	24-Jun	23-Jul	20-Aug	17-Sep	26-Oct	TOTAL		CUF 10'
	FD	Dry/a										%
<b>Released Varieties</b>												
Desert Sun 8.10 RR	8	1.3 ( 8)	1.4 ( 4)	1.3 ( 7)	1.4 ( 5)	1.8 ( 5)	1.5 ( 4)	1.1 ( 5)	1.0 ( 5)	10.8 ( 2)	A	106.3
UC Impalo	8	1.3 (10)	1.3 (16)	1.3 ( 7)	1.3 (14)	1.8 ( 4)	1.6 ( 1)	1.2 ( 1)	1.0 ( 6)	10.8 ( 3)	AB	106.2
UC415	9	1.3 ( 7)	1.3 ( 8)	1.3 ( 7)	1.3 (16)	1.8 ( 2)	1.4 (15)	1.1 (10)	1.1 ( 3)	10.7 ( 4)	AB	105.2
8R100	8	1.4 ( 3)	1.3 ( 5)	1.3 (11)	1.3 (16)	1.8 ( 6)	1.5 ( 5)	1.1 (12)	0.9 (17)	10.6 ( 6)	ABC	104.4
AmeriStand 803T	8	1.2 (20)	1.3 ( 8)	1.4 ( 3)	1.4 (11)	1.7 (13)	1.4 (12)	1.1 ( 2)	1.0 ( 6)	10.5 ( 8)	ABC	103.6
SW9215	9	1.1 (30)	1.2 (21)	1.4 ( 3)	1.4 ( 7)	1.7 (13)	1.4 ( 7)	1.1 ( 5)	1.0 (10)	10.4 (12)	ABCDE	102.0
DC9212	9	1.3 ( 8)	1.3 (12)	1.3 (15)	1.3 (16)	1.8 ( 2)	1.4 (16)	1.0 (20)	0.9 (23)	10.3 (14)	ABCDEF	101.4
AmeriStand 715NTRR	7	1.3 (15)	1.3 ( 7)	1.3 (16)	1.3 (22)	1.7 (12)	1.4 (12)	1.1 (15)	0.9 (20)	10.3 (15)	ABCDEF G	101.2
Cuf 101	9	1.2 (27)	1.1 (30)	1.3 (17)	1.4 (11)	1.7 (10)	1.4 (18)	1.1 (11)	1.0 ( 6)	10.2 (17)	ABCDEF G H	100.0
SV8421.S	8	1.4 ( 3)	1.3 (13)	1.3 (13)	1.3 (16)	1.7 (20)	1.3 (20)	1.0 (22)	0.9 (27)	10.1 (18)	ABCDEF G H	99.8
6R200	6	1.3 (14)	1.3 (10)	1.3 (19)	1.4 ( 5)	1.8 ( 8)	1.3 (25)	1.0 (24)	0.9 (26)	10.1 (19)	ABCDEF G H	99.7
9R100	9	1.1 (29)	1.2 (27)	1.3 (11)	1.4 ( 9)	1.7 (20)	1.4 (12)	1.1 (12)	0.9 (15)	10.1 (20)	ABCDEF G H I	99.5
Integra 8800	8	1.2 (24)	1.2 (21)	1.2 (23)	1.4 ( 7)	1.7 (18)	1.3 (20)	1.0 (21)	1.0 (11)	10.0 (21)	ABCDEF G H I J	98.7
ICCN	6	1.2 (22)	1.4 ( 2)	1.3 (14)	1.3 (24)	1.6 (29)	1.3 (29)	0.9 (30)	0.7 (33)	9.7 (24)	DEF G H I J K	95.6
Pacifico	8	1.1 (28)	1.3 (18)	1.3 (19)	1.3 (23)	1.6 (29)	1.3 (25)	0.9 (27)	0.8 (29)	9.7 (25)	EFG H I J K	95.1
NuMexBill Melton	7	1.2 (22)	1.3 (18)	1.1 (32)	1.2 (30)	1.6 (25)	1.3 (22)	1.0 (26)	0.9 (27)	9.6 (27)	EFG H I J K	94.5
Arriba II	6	1.2 (19)	1.2 (21)	1.2 (25)	1.2 (30)	1.6 (29)	1.3 (27)	0.9 (31)	0.9 (20)	9.5 (28)	F G H I J K L	94.0
Camas	4	1.0 (33)	1.2 (26)	1.2 (30)	1.3 (24)	1.7 (10)	1.3 (27)	0.9 (27)	0.8 (30)	9.4 (30)	H I J K L	92.6
Integra 8600	6	1.2 (20)	1.2 (25)	1.1 (34)	1.2 (34)	1.7 (16)	1.3 (32)	0.8 (35)	0.7 (34)	9.2 (33)	KL	90.2
Integra 8420	4	1.0 (34)	1.1 (34)	1.2 (31)	1.3 (28)	1.6 (25)	1.3 (32)	0.8 (32)	0.9 (25)	9.1 (34)	KL	90.1
4R200	4	1.1 (32)	1.1 (35)	1.0 (35)	1.2 (35)	1.5 (35)	1.3 (29)	0.9 (29)	0.7 (36)	8.8 (35)	LM	86.2
Integra 8444 RR	4	1.0 (35)	1.0 (36)	1.0 (35)	1.1 (36)	1.4 (36)	1.3 (29)	0.7 (36)	0.7 (34)	8.3 (36)	M	81.6
<b>Experimental Varieties</b>												
SW8208	8	1.2 (16)	1.2 (20)	1.4 ( 1)	1.4 ( 3)	1.8 ( 1)	1.5 ( 2)	1.1 ( 4)	1.1 ( 2)	10.8 ( 1)	A	106.5
UC2671	9	1.3 (11)	1.3 ( 5)	1.3 (19)	1.4 (11)	1.7 (22)	1.5 ( 3)	1.1 ( 2)	1.1 ( 1)	10.6 ( 5)	ABC	104.5
R89M935	9	1.2 (16)	1.4 ( 2)	1.4 ( 2)	1.4 ( 1)	1.8 ( 7)	1.5 ( 5)	1.0 (18)	0.9 (19)	10.6 ( 7)	ABC	104.2
SW8357	8	1.3 (11)	1.3 (10)	1.3 ( 7)	1.4 ( 3)	1.7 ( 9)	1.4 ( 8)	1.1 (15)	1.0 (11)	10.5 ( 9)	ABC	103.5
CA058071	8	1.4 ( 1)	1.4 ( 1)	1.3 (18)	1.4 ( 1)	1.7 (16)	1.4 (16)	1.0 (24)	0.9 (17)	10.5 (10)	ABCD	103.5
R99T939	8	1.4 ( 2)	1.3 (16)	1.4 ( 3)	1.3 (14)	1.7 (13)	1.4 ( 8)	1.1 ( 7)	0.9 (20)	10.5 (11)	ABCD	103.5
SW8421.RRS	8	1.2 (24)	1.3 (13)	1.4 ( 6)	1.3 (21)	1.7 (18)	1.4 ( 8)	1.1 ( 7)	1.0 ( 9)	10.3 (13)	ABCDEF	101.8
R88T829	9	1.4 ( 5)	1.2 (21)	1.3 (22)	1.3 (27)	1.6 (25)	1.3 (19)	1.1 (12)	1.0 (11)	10.2 (16)	ABCDEF G H	100.2
UC2693	9	1.1 (30)	1.1 (32)	1.2 (25)	1.3 (16)	1.7 (22)	1.4 ( 8)	1.1 (15)	1.1 ( 4)	10.0 (22)	BCDEF G H I J	98.2
SW9215.RRS	9	1.2 (24)	1.2 (28)	1.2 (24)	1.4 (10)	1.5 (34)	1.3 (22)	1.1 ( 7)	1.0 (14)	9.8 (23)	CDEF G H I J K	96.9
UC410	9	1.2 (18)	1.2 (28)	1.2 (27)	1.2 (32)	1.6 (28)	1.2 (34)	1.0 (19)	0.9 (15)	9.6 (26)	EFG H I J K	94.8
SW6334	6	1.3 ( 6)	1.3 (13)	1.1 (33)	1.2 (33)	1.6 (32)	1.2 (34)	0.8 (33)	0.9 (23)	9.5 (29)	G H I J K L	93.4
CA096043	6	1.0 (35)	1.1 (31)	1.2 (27)	1.3 (28)	1.7 (24)	1.3 (22)	1.0 (22)	0.8 (31)	9.3 (31)	I J K L	91.6
Artisan Sunrise	8	1.3 (11)	1.1 (32)	1.2 (29)	1.3 (24)	1.5 (33)	1.2 (36)	0.8 (34)	0.8 (32)	9.3 (32)	J K L	91.2
MEAN		1.22	1.24	1.26	1.32	1.68	1.36	1.00	0.91	9.99		
CV		10.8	9.0	9.4	8.6	8.5	10.1	11.2	11.2	6.8		
LSD (0.1)		0.16	0.13	0.14	0.14	0.17	0.16	0.13	0.12	0.81		

Trial seeded at 25 lb/acre viable seed on Yolo clay loam soil at the Univ. of California Agronomy Farm, Davis, CA.

Entries followed by the same letter are not significantly different at the 10% probability level according to Fishers (protected) LSD.

FD=Fall Dormancy reported by seed companies.



**TABLE 4. 2015 YIELDS, MODESTO ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 10/9/2014**

Note: Single year data should not be used to evaluate alfalfa varieties or choose alfalfa cultivars

		Cut 1	Cut 2	Cut 3	Cut 4	Cut 5	Cut 6	YEAR		% of
	FD	5-May	8-Jun	7-Jul	10-Aug	8-Sep	5-Oct	TOTAL		CUF 101
		Dry t/a								%
<b>Released Varieties</b>										
Pacifico	8	3.3 ( 6)	2.6 ( 1)	2.8 ( 3)	3.3 ( 1)	2.0 ( 4)	2.7 ( 1)	16.7 ( 1)	A	118.9
AmeriStand 901TS	9	3.3 ( 7)	2.2 (32)	2.6 (14)	3.1 ( 2)	1.9 ( 8)	2.4 ( 2)	15.5 ( 2)	AB	110.6
Farm Valley 7	7	3.3 ( 8)	2.4 (10)	2.7 ( 7)	2.7 (11)	2.1 ( 3)	2.0 (11)	15.2 ( 4)	ABC	108.2
Integra 8600	6	3.1 (17)	2.3 (30)	2.6 (15)	3.0 ( 4)	1.9 ( 9)	2.3 ( 3)	15.1 ( 5)	ABCD	107.7
SuperSonic	9	3.6 ( 1)	2.3 (23)	2.6 (17)	2.4 (24)	1.9 ( 7)	2.1 ( 5)	15.0 ( 6)	BCDE	106.4
Transition 6.1	6	3.3 ( 9)	2.6 ( 2)	2.6 (12)	2.8 ( 5)	1.7 (18)	1.8 (24)	14.9 ( 8)	BCDEF	105.7
8R100	8	2.9 (25)	2.3 (21)	2.7 ( 4)	2.6 (17)	2.2 ( 2)	1.9 (23)	14.6 (10)	BCDEFGH	104.1
Grandslam	8	3.2 (10)	2.4 (16)	2.5 (21)	2.6 (14)	1.6 (23)	2.1 ( 7)	14.4 (12)	BCDEFGH	102.6
Integra 8800	8	2.8 (27)	2.3 (26)	2.8 ( 2)	2.6 (13)	1.5 (25)	2.1 ( 5)	14.2 (14)	BCDEFGHI	101.2
AmeriStand 803T	8	2.7 (31)	2.3 (21)	2.9 ( 1)	2.8 ( 7)	1.4 (31)	1.9 (18)	14.1 (17)	BCDEFGHI	100.6
9R100	9	2.7 (30)	2.5 ( 8)	2.6 (13)	2.3 (28)	2.2 ( 1)	1.8 (25)	14.1 (18)	BCDEFGHI	100.5
Cuf 101	9	2.7 (29)	2.5 ( 5)	2.6 (10)	2.5 (20)	1.7 (18)	2.0 ( 9)	14.1 (20)	BCDEFGHI	100.0
DG9212	9	3.0 (23)	2.4 (14)	2.6 (10)	2.6 (18)	1.5 (28)	1.9 (22)	14.0 (21)	BCDEFGHI	99.5
AmeriStand 715NT RR	7	3.1 (15)	2.6 ( 3)	2.5 (25)	2.6 (15)	1.5 (25)	1.6 (33)	14.0 (22)	BCDEFGHI	99.4
SW 9106	9	2.8 (28)	2.1 (34)	2.4 (30)	2.8 ( 8)	1.7 (13)	2.0 (16)	13.8 (23)	CDEFGHI	98.2
RR Six Shooter	6	3.2 (10)	2.4 (16)	2.5 (19)	2.2 (32)	1.6 (22)	1.7 (31)	13.7 (25)	CDEFGHI	97.6
Desert Sun 8.10RR	8	3.4 ( 4)	2.1 (33)	2.4 (32)	2.0 (36)	1.7 (13)	2.0 (14)	13.7 (26)	CDEFGHI	97.4
Farm Valley 6	6	2.5 (32)	2.3 (23)	2.7 ( 7)	2.5 (19)	1.4 (30)	1.9 (17)	13.5 (27)	DEFGHI	95.8
Nimbus	5	3.2 (14)	2.0 (36)	2.4 (28)	2.4 (21)	1.6 (24)	1.8 (27)	13.4 (28)	EF GHI	95.4
AmeriStand 915TS RR	9	2.4 (34)	2.4 (14)	2.4 (32)	2.3 (28)	1.7 (20)	2.1 ( 8)	13.2 (29)	EF GHI	94.2
WL662HQ RR	9	3.0 (22)	2.4 (16)	2.3 (35)	2.2 (32)	1.6 (21)	1.7 (30)	13.2 (31)	F GHI	94.1
6R200	6	3.0 (18)	2.5 ( 7)	2.5 (25)	2.3 (30)	1.4 (35)	1.5 (36)	13.1 (32)	GHI	93.5
6829R	8	2.9 (26)	2.4 (20)	2.4 (29)	2.0 (35)	1.5 (29)	1.8 (29)	12.9 (33)	HI	91.9
RR NemaStar	5	2.2 (36)	2.4 (10)	2.7 ( 6)	2.4 (23)	1.4 (34)	1.5 (35)	12.7 (34)	I	90.2
RR Tonnica	5	2.4 (33)	2.4 (16)	2.4 (34)	2.3 (31)	1.4 (32)	1.7 (32)	12.6 (35)	I	89.4
<b>Experimental Varieties</b>										
SW 8357	8	3.5 ( 2)	2.5 ( 5)	2.5 (21)	2.6 (15)	1.9 ( 9)	2.3 ( 4)	15.2 ( 3)	ABC	108.3
CW058071	8	3.4 ( 3)	2.6 ( 4)	2.5 (18)	2.8 ( 8)	1.7 (13)	1.9 (19)	14.9 ( 7)	BCDEF	106.2
UC 2671	9	3.2 (13)	2.3 (25)	2.6 (15)	3.0 ( 3)	1.8 (12)	1.9 (19)	14.8 ( 9)	BCDEFG	105.2
SW 1037	10	3.4 ( 5)	2.3 (28)	2.5 (23)	2.4 (21)	2.0 ( 5)	2.0 (12)	14.5 (11)	BCDEFGH	103.2
SW 9215-RRS	9	3.1 (16)	2.5 ( 8)	2.5 (19)	2.4 (26)	1.9 ( 6)	1.9 (21)	14.2 (13)	BCDEFGHI	101.3
RD 71	8	3.0 (21)	2.3 (26)	2.5 (25)	2.6 (12)	1.8 (11)	2.0 (12)	14.2 (15)	BCDEFGHI	101.0
SW 8421-RRS	8	3.0 (24)	2.4 (13)	2.4 (30)	2.8 ( 6)	1.7 (17)	1.8 (25)	14.2 (16)	BCDEFGHI	100.7
CW050085	10	3.0 (19)	2.4 (10)	2.7 ( 4)	2.4 (25)	1.5 (25)	2.0 (10)	14.1 (19)	BCDEFGHI	100.1
UC 2693	9	3.0 (19)	2.0 (35)	2.2 (36)	2.7 (10)	1.7 (13)	2.0 (15)	13.7 (24)	CDEFGHI	97.6
RD 132	8	3.2 (12)	2.3 (29)	2.5 (23)	2.2 (32)	1.3 (36)	1.8 (28)	13.2 (30)	F GHI	94.1
RD 121	9	2.4 (35)	2.2 (31)	2.7 ( 9)	2.3 (27)	1.4 (32)	1.6 (34)	12.5 (36)	I	89.3
MEAN		3.00	2.35	2.55	2.55	1.70	1.94	14.09		
CV		21.0	15.7	14.9	18.8	26.2	24.6	11.4		
LSD (0.1)		0.68	NS	NS	0.51	0.48	NS	1.71		

Trial seeded at 25 lb/acre viable seed on Stanislaus sandy soil at Stanislaus Farm Supply, Modesto CA.

Entries followed by the same letter are not significantly different at the 10% probability level according to Fishers (protected) LSD.

FD = Fall Dormancy reported by seed companies.

**TABLE 5. 2015 YIELDS, UC KEARNEY ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 9/18/13**

Note: Single year data should not be used to evaluate alfalfa varieties or choose alfalfa cultivars

	FD	Cut 1	Cut 2	Cut 3	Cut 4	Cut 5	Cut 6	Cut 7	YEAR	% of CUF 101	
		11-May	9-Jun	7-Jul	4-Aug	3-Sep	6-Oct	13-Nov	TOTAL		
		Dry t/a									%
<b>Released Varieties</b>											
Sun Quest	9	1.9 ( 5)	2.8 ( 1)	2.2 ( 5)	2.0 ( 7)	1.6 (25)	1.1 (12)	1.2 (20)	12.7 ( 3)	AB	147.8
RRALF 9R100	9	1.6 (20)	2.3 (20)	2.3 ( 3)	2.0 ( 5)	1.8 ( 5)	1.1 ( 6)	1.2 (15)	12.4 ( 4)	ABC	144.2
DG 9212	9	1.8 (11)	2.6 ( 8)	2.1 (17)	1.9 (15)	1.8 ( 7)	1.0 (17)	1.2 (25)	12.3 ( 5)	ABC	143.2
WL 662HQ.RR	9	1.9 ( 2)	2.8 ( 4)	2.1 (12)	1.8 (22)	1.4 (42)	1.0 (20)	1.2 (24)	12.3 ( 6)	ABCD	142.7
WL 550 RR	8	1.8 ( 6)	2.6 ( 6)	2.1 (13)	1.7 (41)	1.6 (26)	1.0 (22)	1.3 ( 8)	12.2 ( 8)	ABCDE	141.7
6906N	9	1.5 (25)	2.2 (26)	2.1 (18)	1.9 (12)	1.9 ( 2)	1.2 ( 5)	1.2 (13)	12.1 (10)	ABCDE	140.2
RRALF 9R100	9	1.8 ( 9)	2.6 ( 5)	2.2 ( 7)	1.8 (34)	1.5 (33)	1.0 (30)	1.1 (35)	12.0 (12)	ABCDEF	139.6
Catalina (OGP)	9	1.5 (31)	2.4 (16)	2.1 (11)	2.0 (10)	1.8 ( 6)	1.1 (11)	1.1 (27)	12.0 (13)	ABCDEF G	139.1
Supersonic	9	1.9 ( 1)	2.8 ( 1)	2.1 (15)	1.8 (37)	1.4 (47)	1.0 (40)	1.0 (46)	11.9 (14)	ABCDEF G	138.9
6015R	10	1.8 ( 8)	2.5 (11)	2.1 (20)	1.8 (30)	1.6 (29)	1.0 (20)	1.1 (34)	11.9 (15)	ABCDEF G	138.5
Ameristand 915TS RR	9	1.7 (15)	2.4 (15)	2.1 (19)	1.8 (30)	1.4 (45)	1.0 (18)	1.3 ( 5)	11.7 (18)	ABCDEF GH	136.5
AR-370	10	1.7 (16)	2.3 (19)	2.1 (25)	1.8 (27)	1.7 (14)	1.0 (24)	1.1 (32)	11.7 (19)	ABCDEF GH	136.2
6015R	10	1.7 (17)	2.2 (24)	2.1 (22)	1.8 (36)	1.7 (15)	1.1 (14)	1.2 (23)	11.7 (21)	ABCDEF GH	135.9
Saltana	9	1.4 (37)	2.2 (25)	2.0 (30)	1.9 (11)	1.7 (10)	1.1 (10)	1.3 ( 9)	11.7 (22)	ABCDEF GH	135.8
Ameristand 901TS	9	1.6 (21)	2.4 (14)	2.2 ( 7)	1.8 (17)	1.5 (35)	1.0 (31)	1.1 (29)	11.7 (23)	ABCDEF GH	135.7
Catalina (QR)	9	1.4 (39)	2.3 (21)	2.1 (21)	1.8 (21)	1.7 (19)	1.0 (34)	1.1 (31)	11.4 (26)	BCDEF GH	133.1
SW9628	9	1.9 ( 3)	2.1 (30)	2.0 (33)	1.8 (25)	1.6 (31)	1.0 (26)	1.0 (42)	11.4 (27)	BCDEF GH	132.9
WL 550 RR	8	1.8 ( 7)	2.3 (18)	2.0 (27)	1.7 (40)	1.4 (44)	1.0 (37)	1.0 (43)	11.3 (29)	BCDEF GH	131.2
WL 662HQ.RR	9	1.8 (10)	2.5 (13)	2.0 (34)	1.6 (43)	1.3 (51)	1.0 (43)	1.2 (19)	11.3 (30)	BCDEF GH	131.2
Integra 8800	8	1.5 (28)	2.3 (23)	1.9 (35)	1.8 (35)	1.6 (30)	1.0 (32)	1.1 (33)	11.2 (31)	BCDEF GHI	129.8
SW8421-S	8	1.5 (33)	2.2 (28)	1.9 (39)	1.8 (28)	1.6 (28)	0.9 (45)	1.2 (26)	11.0 (33)	BCDEF GHI J	128.2
WL656HQ	9	1.5 (27)	1.9 (40)	1.9 (37)	1.8 (23)	1.7 (15)	1.0 (33)	1.1 (30)	11.0 (34)	BCDEF GHI J	128.0
WL552HQ.RR	10	1.8 (12)	2.6 ( 9)	1.8 (45)	1.5 (48)	1.4 (48)	0.9 (51)	1.0 (44)	11.0 (35)	BCDEF GHI J	127.6
Catalina (EM)	9	1.5 (32)	1.9 (46)	1.9 (43)	1.8 (26)	1.7 (21)	1.1 (16)	1.2 (18)	10.9 (37)	BCDEF GHI J	126.7
Ameristand 915TS RR	9	1.6 (19)	2.0 (35)	1.9 (38)	1.6 (47)	1.4 (46)	1.0 (27)	1.2 (12)	10.8 (40)	BCDEF GHI J K	125.4
Catalina	9	1.3 (44)	2.0 (34)	1.9 (40)	1.7 (38)	1.5 (36)	1.0 (44)	1.1 (40)	10.5 (44)	CDEF GHI J KL	121.9
WL552HQ.RR	10	1.5 (29)	1.9 (41)	1.9 (42)	1.5 (51)	1.3 (53)	0.9 (49)	1.1 (38)	10.0 (48)	GHI J KLM	116.0
Catalina (OGP+QR)	9	1.2 (46)	1.6 (50)	1.7 (49)	1.7 (39)	1.4 (41)	1.0 (39)	1.1 (36)	9.8 (49)	HI J KLM	113.7
PGI 908s	9	1.0 (51)	1.5 (53)	1.5 (54)	1.5 (49)	1.4 (40)	1.0 (38)	1.0 (44)	9.0 (51)	J KLM	104.9
Ameristand 445NT	4	1.2 (48)	1.8 (48)	1.6 (51)	1.4 (54)	1.4 (43)	0.8 (54)	0.7 (54)	8.9 (52)	KLM	102.9
Cuf 101	9	1.0 (53)	1.6 (52)	1.6 (52)	1.4 (53)	1.3 (49)	0.8 (53)	0.8 (53)	8.6 (53)	L M	100.0
<b>Experimental Varieties</b>											
108T813	9	1.9 ( 4)	2.8 ( 3)	2.4 ( 1)	2.2 ( 1)	1.6 (26)	1.2 ( 2)	1.4 ( 1)	13.5 ( 1)	A	157.5
SW9106	9	1.5 (34)	2.5 (12)	2.3 ( 2)	2.1 ( 3)	1.9 ( 1)	1.1 ( 8)	1.4 ( 4)	12.7 ( 2)	AB	148.2
SW9108	9	1.8 (13)	2.4 (17)	2.2 ( 9)	2.0 ( 8)	1.7 (17)	1.0 (23)	1.2 (11)	12.3 ( 7)	ABCD	142.5
CW060046	10	1.1 (49)	2.1 (31)	2.3 ( 3)	2.1 ( 2)	1.9 ( 3)	1.2 ( 1)	1.4 ( 2)	12.1 ( 9)	ABCDE	140.7
FG 98T812	10	1.4 (37)	2.3 (22)	2.1 (13)	1.9 (13)	1.7 (12)	1.2 ( 4)	1.3 ( 6)	12.0 (11)	ABCDEF	140.0
UC 419	9	1.5 (24)	2.0 (36)	2.2 ( 6)	2.0 ( 4)	1.8 ( 7)	1.1 ( 7)	1.2 (14)	11.9 (16)	ABCDEF G	138.4
UC 417	9	1.7 (14)	2.2 (27)	2.1 (26)	1.8 (18)	1.8 ( 4)	1.0 (25)	1.2 (16)	11.9 (17)	ABCDEF G	138.0
AR-380	9	1.5 (35)	2.6 ( 7)	2.1 (16)	1.9 (16)	1.7 (23)	1.0 (41)	1.1 (37)	11.7 (20)	ABCDEF GH	136.1
SW9107	9	1.5 (23)	1.9 (39)	2.2 (10)	2.0 ( 6)	1.5 (34)	1.1 ( 9)	1.3 ( 7)	11.6 (24)	ABCDEF GH	134.7
FG 106T701	10	1.4 (41)	2.6 (10)	2.0 (29)	1.8 (29)	1.7 (18)	1.0 (36)	1.1 (39)	11.5 (25)	BCDEF GH	134.0
UC 416	9	1.4 (42)	2.0 (33)	2.0 (31)	1.9 (14)	1.7 (13)	1.0 (19)	1.3 (10)	11.4 (28)	BCDEF GH	132.2
UC 101	9	1.5 (36)	1.9 (42)	2.0 (27)	2.0 ( 9)	1.6 (24)	1.0 (28)	1.1 (28)	11.1 (32)	BCDEF GHI	129.6
SW1037	10	1.3 (43)	1.8 (47)	2.1 (23)	1.8 (33)	1.7 (11)	1.0 (29)	1.2 (17)	10.9 (36)	BCDEF GHI J	127.2
SW8341	8	1.5 (26)	2.0 (38)	2.1 (24)	1.8 (19)	1.5 (38)	0.9 (45)	1.1 (41)	10.9 (38)	BCDEF GHI J	126.5
98T811	9	1.2 (47)	1.6 (51)	1.9 (41)	1.8 (20)	1.8 ( 9)	1.2 ( 3)	1.4 ( 3)	10.9 (39)	BCDEF GHI J K	126.2
RD132	8	1.4 (40)	2.1 (29)	2.0 (32)	1.7 (42)	1.6 (32)	0.9 (47)	1.0 (47)	10.7 (41)	CDEF GHI J K	124.2
AR-12	9	1.3 (45)	1.9 (42)	1.8 (47)	1.8 (30)	1.7 (19)	1.1 (15)	1.2 (22)	10.7 (42)	CDEF GHI J K	124.2
UC 418	9	1.0 (52)	1.9 (44)	1.9 (36)	1.8 (24)	1.7 (21)	1.1 (13)	1.2 (20)	10.6 (43)	CDEF GHI J KL	123.3
RD121	10	1.6 (22)	2.0 (37)	1.9 (43)	1.6 (44)	1.5 (39)	0.9 (50)	0.9 (50)	10.3 (45)	DEF GHI J KLM	119.4
Vulcan	9	1.7 (18)	2.0 (32)	1.8 (46)	1.5 (50)	1.3 (50)	1.0 (42)	0.9 (51)	10.2 (46)	EF GHI J KLM	118.3
SW7339	7	1.5 (30)	1.9 (45)	1.7 (48)	1.6 (44)	1.5 (36)	0.9 (48)	0.9 (49)	10.0 (47)	F GHI J KLM	116.7
CW058071	8	1.0 (50)	1.7 (49)	1.7 (50)	1.6 (46)	1.2 (54)	1.0 (34)	0.9 (48)	9.2 (50)	I J KLM	106.6
NeMex Melton	7	1.0 (54)	1.5 (54)	1.6 (53)	1.4 (52)	1.3 (52)	0.8 (52)	0.9 (52)	8.4 (54)	M	98.1
MEAN		1.52	2.17	2.00	1.78	1.58	1.01	1.13	11.20		
CV		28.3	30.9	16.8	12.4	15.6	9.2	12.0	15.2		
LSD (0.1)		0.51	NS	0.40	0.26	0.29	0.11	0.16	2.01		

Trial seeded at 25 lb/acre viable seed on Hanford fine sandy loam soil at the Univ. of Calif. Kearney Agricultural Center, Parlier, CA.

Entries followed by the same letter are not significantly different at the 10% probability level according to Fisher's (protected) LSD.

FD = Fall Dormancy reported by seed companies.

**TABLE 6. 2014-2015 YIELDS. UC KEARNEY ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 9/18/13**

		2014	2015	Average	% of
	FD	Yield	Yield		CUF 101
			Dry t/a		%
<b>Released Varieties</b>					
DG 9212	9	14.4 ( 1)	11.0 ( 5)	12.7 ( 1)	122.3
6906N	9	14.2 ( 2)	10.6 ( 13)	12.4 ( 4)	119.5
6015R	10	14.1 ( 5)	10.6 ( 11)	12.3 ( 5)	119.1
Sun Quest	9	13.2 ( 27)	11.3 ( 2)	12.3 ( 6)	118.7
Catalina (OGP)	9	13.9 ( 8)	10.6 ( 12)	12.3 ( 7)	118.4
RRALF 9R100	9	13.4 ( 21)	10.7 ( 9)	12.1 ( 10)	116.4
WL 662HQ.RR	9	13.2 ( 30)	10.9 ( 6)	12.1 ( 11)	116.3
Ameristand 901TS	9	13.7 ( 11)	10.4 ( 20)	12.0 ( 12)	116.2
AR-370	10	13.6 ( 15)	10.4 ( 19)	12.0 ( 13)	116.0
WL 662HQ.RR	9	14.0 ( 6)	9.9 ( 29)	12.0 ( 14)	115.7
RRALF 9R100	9	12.9 ( 39)	11.0 ( 4)	11.9 ( 16)	115.3
WL 550 RR	8	13.7 ( 10)	10.1 ( 27)	11.9 ( 18)	114.9
6015R	10	13.4 ( 24)	10.3 ( 21)	11.8 ( 19)	114.2
Saltana	9	13.4 ( 22)	10.2 ( 24)	11.8 ( 20)	113.7
WL552HQ.RR	10	13.8 ( 9)	9.8 ( 33)	11.8 ( 21)	113.7
WL 550 RR	8	12.8 ( 46)	10.7 ( 10)	11.7 ( 23)	113.3
Catalina (QR)	9	13.3 ( 25)	10.1 ( 26)	11.7 ( 24)	113.0
SW9628	9	13.2 ( 29)	10.2 ( 25)	11.7 ( 25)	112.8
Supersonic	9	12.6 ( 49)	10.8 ( 8)	11.7 ( 26)	112.8
Ameristand 915TS RR	9	13.1 ( 32)	10.2 ( 23)	11.7 ( 28)	112.7
Integra 8800	8	13.4 ( 19)	9.9 ( 31)	11.6 ( 31)	112.4
Ameristand 915TS RR	9	13.6 ( 16)	9.4 ( 40)	11.5 ( 32)	110.9
Catalina (EM)	9	13.4 ( 23)	9.5 ( 38)	11.4 ( 34)	110.3
SW8421-S	8	12.9 ( 38)	9.7 ( 35)	11.3 ( 38)	109.1
Catalina (OGP+QR)	9	14.0 ( 7)	8.5 ( 49)	11.2 ( 41)	108.5
WL656HQ	9	12.8 ( 45)	9.7 ( 34)	11.2 ( 42)	108.5
WL552HQ.RR	10	13.0 ( 36)	8.8 ( 48)	10.9 ( 47)	105.2
Catalina	9	12.2 ( 53)	9.2 ( 43)	10.7 ( 50)	103.7
PGI 908s	9	13.1 ( 34)	7.8 ( 52)	10.5 ( 51)	101.0
Cuf 101	9	13.1 ( 33)	7.6 ( 53)	10.4 ( 52)	100.0
Ameristand 445NT	4	11.7 ( 54)	7.9 ( 51)	9.8 ( 54)	94.9
<b>Experimental Varieties</b>					
SW9108	9	14.1 ( 4)	10.8 ( 7)	12.4 ( 2)	120.1
108T813	9	12.9 ( 43)	11.9 ( 1)	12.4 ( 3)	119.7
FG 106T701	10	14.1 ( 3)	10.3 ( 22)	12.2 ( 8)	117.6
SW9106	9	13.1 ( 31)	11.2 ( 3)	12.2 ( 9)	117.3
FG 98T812	10	13.5 ( 18)	10.5 ( 14)	12.0 ( 15)	115.7
UC 417	9	13.4 ( 20)	10.4 ( 17)	11.9 ( 17)	115.1
CW060046	10	13.0 ( 37)	10.5 ( 15)	11.7 ( 22)	113.3
UC 419	9	12.9 ( 40)	10.5 ( 16)	11.7 ( 27)	112.7
SW8341	8	13.7 ( 12)	9.6 ( 36)	11.7 ( 29)	112.6
AR-380	9	12.9 ( 41)	10.4 ( 18)	11.7 ( 30)	112.6
RD121	10	13.7 ( 13)	9.2 ( 45)	11.4 ( 33)	110.3
UC 101	9	12.9 ( 42)	9.8 ( 32)	11.4 ( 35)	109.6
Vulcan	9	13.6 ( 17)	9.1 ( 46)	11.3 ( 36)	109.5
SW1037	10	13.1 ( 35)	9.5 ( 37)	11.3 ( 37)	109.2
AR-12	9	13.2 ( 26)	9.3 ( 41)	11.3 ( 39)	108.9
98T811	9	13.2 ( 28)	9.3 ( 42)	11.3 ( 40)	108.6
SW9107	9	12.3 ( 52)	10.1 ( 28)	11.2 ( 43)	108.0
UC 416	9	12.4 ( 51)	9.9 ( 30)	11.2 ( 44)	107.9
RD132	8	12.6 ( 47)	9.5 ( 39)	11.1 ( 45)	106.7
UC 418	9	12.6 ( 48)	9.2 ( 44)	10.9 ( 46)	105.4
CW058071	8	13.7 ( 14)	8.1 ( 50)	10.9 ( 48)	105.0
SW7339	7	12.8 ( 44)	8.9 ( 47)	10.9 ( 49)	104.8
NeMex Melton	7	12.6 ( 50)	7.4 ( 54)	10.0 ( 53)	96.6
MEAN		13.25	9.88	11.56	
CV		8.3	16.5	9.3	
LSD (0.1)		NS	1.93	NS	

Trial seeded at 25 lb/acre viable seed on Hanford fine sandy loam soil at the Univ. of Calif. Kearney Agricultural Center, Parlier, CA. Entries followed by the same letter are not significantly different at the 10% probability level according to Fisher's (protected) LSD. FD = Fall Dormancy reported by seed companies.

TABLE 7. 2015 YIELDS. WESTSIDE ALFALFA SALINITY CULTIVAR TRIAL. TRIAL PLANTED 10/21/14

Variety	Salinity Treatment	Yield (lbs/acre)	Stdev	ANOVA	Df	Sum Sq	Mean Sq	F-Value	Pr(>F)
9R100	Non-saline	9.1	2.1	Variety	20	19.96	1	0.575	0.923 NS
AmeriStand 901TS	Non-saline	8.6	0.7	Salinity Treatment	1	159.63	159.63	92.028	0.000 ***
AmeriStand 915TS RR	Non-saline	8.9	0.9	Replicate	3	63	21	12.108	0.000 ***
AZ-88NDC	Non-saline	8.7	1.4	Variety by Salinity Treatment	20	27.71	1.39	0.799	0.711 NS
AZ-90NDC-ST	Non-saline	9.2	1.0	Residuals	123	213.35	1.73		
CUF101	Non-saline	9.2	0.7						
CW050085	Non-saline	9.1	1.2						
CW058071 (Impalo)	Non-saline	9.4	1.1						
Desert Sun 8.10RR	Non-saline	8.7	0.5						
FG R814W257S	Non-saline	9.0	0.3						
FG R814W258S	Non-saline	8.2	1.4						
FG R914W259S	Non-saline	9.7	1.2						
Saltana	Non-saline	8.7	0.8						
Sun Quest	Non-saline	8.6	1.6						
SW 8421_RRS	Non-saline	9.1	0.8						
SW 8421-S	Non-saline	9.0	0.1						
SW 9215-RRS	Non-saline	8.9	1.4						
SW 9813	Non-saline	9.3	0.9						
SW9106	Non-saline	9.8	0.7						
SW9215	Non-saline	8.0	1.1						
SW9812	Non-saline	7.6	1.7						
9R100	Saline	7.3	2.8						
AmeriStand 901TS	Saline	6.6	0.6						
AmeriStand 915TS RR	Saline	7.4	1.1						
AZ-88NDC	Saline	6.5	0.9						
AZ-90NDC-ST	Saline	6.4	2.2						
CUF101	Saline	7.4	0.8						
CW050085	Saline	6.6	2.3						
CW058071 (Impalo)	Saline	6.4	1.8						
Desert Sun 8.10RR	Saline	6.7	2.7						
FG R814W257S	Saline	6.6	1.9						
FG R814W258S	Saline	6.8	0.8						
FG R914W259S	Saline	8.1	1.3						
Saltana	Saline	7.2	2.0						
Sun Quest	Saline	6.9	1.5						
SW 8421_RRS	Saline	7.7	1.7						
SW 8421-S	Saline	6.3	1.8						
SW 9215-RRS	Saline	6.4	1.7						
SW 9813	Saline	7.6	2.1						
SW9106	Saline	6.2	1.8						
SW9215	Saline	7.3	2.1						
SW9812	Saline	7.8	1.2						

This analysis shows:

- 1) There is no significant difference in yield between varieties or the varietyXsalinity treatment interaction.
- 2) There was a significant difference in yield between the salinity treatments.
- 3) Replicate also had a significant effect on yields.

TABLE 8. 2015 YIELDS. WESTSIDE ALFALFA SALINITY CULTIVAR TRIAL. TRIAL PLANTED 10/21/14

Variety	Yield reduction due to salinity (lbs/acre)	Stdev
9R100	1.81	2.36
AmeriStand 901TS	1.96	1.15
AmeriStand 915TS RR	1.51	1.64
AZ-88NDC	2.21	1.40
AZ-90NDC-ST	2.86	1.74
CUF101	1.81	1.12
CW050085	2.53	2.67
CW058071 (Impalo)	3.01	1.56
Desert Sun 8.10RR	2.08	2.87
FG R814W257S	2.44	1.89
FG R814W258S	1.44	1.32
FG R914W259S	1.66	0.76
Saltana	1.48	1.38
Sun Quest	1.61	1.62
SW 8421_RRS	1.40	1.34
SW 8421-S	2.75	1.87
SW 9215-RRS	2.46	2.08
SW 9813	1.68	2.35
SW9106	3.70	2.34
SW9215	0.76	2.64
SW9812	-0.20	1.19

ANOVA	Df	Sum Sq	Mean Sq	F-Value	Pr(>F)
Variety	20	55.41	2.771	0.871	0.621
Rep	3	28.72	9.573	3.011	0.037 *
Residuals	60	190.78	3.18		

This analysis shows:

1) There is no significance difference between the varieties in terms of how much the yield declined due to saline irrigation relative to the control.

Therefore, this is the only meaningful summary:

Trtmt	Yield	Yieldstdev
NS	8.89	1.11
Sal	6.95	1.63

This summarizes the yield difference between the non saline and the saline treatment for each variety.

Note: the standard deviation between replicates is quite large.

**TABLE 9. 2015 YIELDS, UC IMPERIAL VALLEY ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 10/8/2012**

Note: Single year data should not be used to evaluate alfalfa varieties or choose alfalfa cultivars

		Cut 1	Cut 2	Cut 3	Cut 4	Cut 5	Cut 6	Cut 7	Cut 8	Cut 9	YEAR	% of	
	FD	20-Jan	25-Feb	31-Mar	7-May	5-Jun	6-Jul	6-Aug	9-Sep	9-Oct	TOTAL	CUF 101	
		Dry t/a										%	
<b>Released Varieties</b>													
Un Padre	9	0.8 ( 2)	1.1 ( 2)	1.5 ( 5)	2.5 ( 2)	2.0 ( 11)	1.9 ( 14)	1.2 ( 3)	0.9 ( 1)	0.6 ( 1)	12.5 ( 1)	A	112.7
FGI 118T816	9	0.7 ( 6)	1.0 ( 4)	1.3 ( 32)	2.3 ( 18)	2.0 ( 5)	2.1 ( 1)	1.4 ( 1)	0.9 ( 2)	0.6 ( 2)	12.4 ( 2)	AB	111.7
FGI 96T706	9	0.7 ( 20)	1.0 ( 6)	1.4 ( 19)	2.3 ( 15)	2.0 ( 6)	2.1 ( 2)	1.3 ( 2)	0.9 ( 3)	0.5 ( 5)	12.2 ( 3)	ABC	110.4
Excelente MultiLeaf 10	9	0.8 ( 1)	1.1 ( 1)	1.6 ( 2)	2.4 ( 5)	2.0 ( 18)	1.9 ( 10)	1.1 ( 14)	0.7 ( 27)	0.4 ( 16)	12.0 ( 5)	ABCD	108.8
CW 1010	9	0.6 ( 30)	1.0 ( 12)	1.5 ( 4)	2.4 ( 3)	2.1 ( 1)	1.9 ( 12)	1.1 ( 6)	0.8 ( 12)	0.4 ( 20)	11.9 ( 6)	ABCDE	107.6
UC Impalo	9	0.8 ( 3)	1.0 ( 11)	1.4 ( 8)	2.2 ( 23)	2.0 ( 12)	2.0 ( 7)	1.1 ( 15)	0.8 ( 6)	0.5 ( 7)	11.9 ( 7)	ABCDEF	107.2
Catalina	9	0.7 ( 14)	1.0 ( 17)	1.4 ( 9)	2.2 ( 30)	2.0 ( 9)	2.0 ( 6)	1.2 ( 4)	0.8 ( 7)	0.5 ( 7)	11.8 ( 8)	ABCDEFG	106.7
AmeriStand 901TS(Opt)	9	0.7 ( 8)	1.0 ( 10)	1.4 ( 10)	2.4 ( 11)	2.0 ( 10)	2.0 ( 9)	1.1 ( 12)	0.7 ( 20)	0.4 ( 13)	11.8 ( 9)	ABCDEFG	106.4
FGI 106T701	9	0.7 ( 17)	1.1 ( 3)	1.4 ( 15)	2.4 ( 12)	2.0 ( 7)	1.9 ( 18)	1.1 ( 13)	0.7 ( 22)	0.4 ( 19)	11.6 ( 12)	BCDEFGHI	104.8
Tres Padres	9	0.7 ( 12)	1.0 ( 5)	1.4 ( 12)	2.3 ( 20)	2.0 ( 17)	1.9 ( 20)	1.1 ( 9)	0.7 ( 15)	0.4 ( 12)	11.6 ( 13)	BCDEFGHI	104.4
CW 080046	9	0.7 ( 18)	0.9 ( 24)	1.4 ( 7)	2.3 ( 14)	2.0 ( 15)	2.0 ( 4)	1.0 ( 26)	0.7 ( 17)	0.4 ( 17)	11.5 ( 14)	BCDEFGHI	104.3
WL 656HQ	6	0.7 ( 13)	0.9 ( 26)	1.4 ( 22)	2.2 ( 30)	2.0 ( 19)	2.0 ( 8)	1.1 ( 8)	0.7 ( 16)	0.5 ( 9)	11.5 ( 15)	CDEFGHI	104.1
Saltana	9	0.7 ( 7)	1.0 ( 21)	1.3 ( 28)	2.2 ( 25)	1.9 ( 26)	1.9 ( 13)	1.2 ( 5)	0.8 ( 8)	0.4 ( 14)	11.5 ( 17)	CDEFGHI J	103.6
Highline	9	0.7 ( 10)	1.0 ( 14)	1.4 ( 14)	2.4 ( 9)	2.0 ( 14)	1.8 ( 23)	1.1 ( 16)	0.7 ( 29)	0.4 ( 24)	11.4 ( 19)	CDEFGHI J	103.2
Excelente Plus	9	0.7 ( 21)	1.0 ( 8)	1.4 ( 18)	2.4 ( 7)	1.9 ( 22)	1.8 ( 30)	1.0 ( 27)	0.7 ( 21)	0.4 ( 15)	11.4 ( 20)	DEFGHI J K	102.6
Excelente 11	9	0.7 ( 23)	0.9 ( 34)	1.4 ( 17)	2.4 ( 10)	1.9 ( 23)	1.9 ( 15)	1.1 ( 18)	0.8 ( 10)	0.3 ( 30)	11.4 ( 21)	DEFGHI J K	102.6
AmeriStand 901TS	9	0.7 ( 22)	0.9 ( 31)	1.4 ( 16)	2.2 ( 28)	1.9 ( 29)	1.9 ( 11)	1.1 ( 11)	0.7 ( 13)	0.4 ( 26)	11.3 ( 22)	DEFGHI J K L	101.9
UC Cibola	9	0.6 ( 25)	1.0 ( 23)	1.3 ( 31)	2.3 ( 13)	2.0 ( 16)	1.8 ( 21)	1.1 ( 21)	0.7 ( 28)	0.4 ( 18)	11.2 ( 24)	DEFGHI J K L	101.4
Westar	9	0.6 ( 32)	0.9 ( 25)	1.4 ( 11)	2.4 ( 6)	2.0 ( 13)	1.8 ( 24)	0.9 ( 36)	0.6 ( 33)	0.3 ( 32)	11.1 ( 25)	EFGHI J K L	100.6
Cuf 101	9	0.7 ( 11)	1.0 ( 15)	1.4 ( 21)	2.3 ( 16)	2.0 ( 8)	1.8 ( 27)	1.0 ( 30)	0.6 ( 36)	0.3 ( 34)	11.1 ( 26)	F G H I J K L M	100.0
AmeriStand 901TS(EMD)	9	0.6 ( 35)	1.0 ( 19)	1.4 ( 26)	2.2 ( 22)	1.9 ( 30)	1.8 ( 25)	1.0 ( 29)	0.7 ( 14)	0.4 ( 21)	11.0 ( 28)	G H I J K L M	99.3
Sun Quest	6	0.7 ( 24)	0.9 ( 32)	1.3 ( 29)	2.2 ( 27)	1.8 ( 33)	1.7 ( 31)	1.1 ( 19)	0.8 ( 11)	0.4 ( 11)	11.0 ( 29)	G H I J K L M	99.2
Excelente XL	9	0.6 ( 33)	0.9 ( 33)	1.4 ( 24)	2.3 ( 19)	1.9 ( 28)	1.8 ( 28)	1.0 ( 33)	0.7 ( 25)	0.4 ( 22)	10.9 ( 31)	H I J K L M	98.1
4N900	9	0.6 ( 34)	0.9 ( 29)	1.3 ( 33)	2.2 ( 29)	1.9 ( 24)	1.8 ( 29)	1.0 ( 25)	0.7 ( 23)	0.4 ( 28)	10.8 ( 32)	I J K L M	98.0
WL 712	10	0.6 ( 28)	0.9 ( 30)	1.3 ( 30)	2.3 ( 17)	1.8 ( 36)	1.6 ( 36)	1.0 ( 34)	0.7 ( 30)	0.3 ( 31)	10.6 ( 34)	K L M	95.5
La Jolla	9	0.6 ( 27)	0.8 ( 35)	1.4 ( 20)	2.2 ( 35)	1.8 ( 34)	1.6 ( 35)	1.0 ( 31)	0.6 ( 34)	0.4 ( 27)	10.4 ( 35)	L M	94.4
HybridForce-800	9	0.5 ( 36)	0.8 ( 36)	1.2 ( 36)	2.1 ( 36)	1.8 ( 34)	1.7 ( 32)	1.1 ( 21)	0.7 ( 25)	0.3 ( 35)	10.2 ( 36)	M	92.5
<b>Experimental Varieties</b>													
UC-412	9	0.7 ( 5)	1.0 ( 6)	1.5 ( 3)	2.4 ( 8)	2.0 ( 3)	1.9 ( 17)	1.1 ( 10)	0.9 ( 5)	0.5 ( 4)	12.1 ( 4)	ABCD	108.9
DS919	9	0.7 ( 16)	1.0 ( 13)	1.6 ( 1)	2.4 ( 4)	2.0 ( 4)	1.9 ( 16)	1.0 ( 28)	0.6 ( 32)	0.3 ( 29)	11.7 ( 10)	ABCDEFGH	105.6
UC-411	9	0.7 ( 9)	1.0 ( 9)	1.5 ( 6)	2.2 ( 24)	2.1 ( 2)	2.0 ( 5)	1.1 ( 20)	0.7 ( 24)	0.4 ( 23)	11.6 ( 11)	BCDEFGHI	104.9
UC-415	9	0.6 ( 31)	1.0 ( 16)	1.3 ( 34)	2.2 ( 32)	1.9 ( 21)	1.9 ( 19)	1.1 ( 7)	0.9 ( 4)	0.5 ( 3)	11.5 ( 16)	CDEFGHI J	103.7
UC-409	9	0.7 ( 14)	0.9 ( 27)	1.4 ( 23)	2.2 ( 26)	1.9 ( 25)	2.0 ( 3)	1.1 ( 17)	0.7 ( 17)	0.5 ( 6)	11.5 ( 18)	CDEFGHI J	103.5
UC-413	9	0.7 ( 4)	1.0 ( 22)	1.4 ( 25)	2.2 ( 34)	1.9 ( 31)	1.8 ( 22)	1.1 ( 23)	0.8 ( 9)	0.5 ( 10)	11.2 ( 23)	DEFGHI J K L	101.6
DS1064	9	0.6 ( 26)	1.0 ( 18)	1.4 ( 12)	2.5 ( 1)	1.9 ( 32)	1.7 ( 33)	1.0 ( 32)	0.6 ( 31)	0.3 ( 36)	11.0 ( 27)	G H I J K L M	99.4
UC-414	9	0.7 ( 19)	1.0 ( 20)	1.3 ( 35)	2.2 ( 33)	1.9 ( 27)	1.8 ( 26)	1.0 ( 24)	0.7 ( 19)	0.4 ( 25)	10.9 ( 30)	H I J K L M	98.7
UC-410	9	0.6 ( 29)	0.9 ( 28)	1.4 ( 26)	2.3 ( 21)	1.9 ( 20)	1.7 ( 34)	0.9 ( 35)	0.6 ( 35)	0.3 ( 33)	10.7 ( 33)	J K L M	96.4
MEAN		0.67	0.98	1.40	2.30	1.96	1.87	1.08	0.73	0.41	11.39		
CV		13.7	11.5	11.1	8.4	8.5	9.6	11.2	16.2	28.0	7.5		
LSD (0.1)		0.09	0.11	0.15	0.19	NS	0.18	0.12	0.12	0.11	0.84		

Trial planted at 25 lb/acre viable seed in Imperial clay loam soil at the UC Desert Research and Extension Center, Holtville, CA.

Entries followed by the same letter are no significantly different at the 10% probability level according to Fishers (protected) LSD.

FD = Fall Dormancy reported by seed companies.

**TABLE 10. 2013-2015 YIELDS. UC IMPERIAL VALLEY ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 10/8/12**

		2013	2014	2015	Average			
	FD	Yield	Yield	Yield				
		Dry t/a						
<b>Released Varieties</b>								
Un Padre	9	15.7 ( 4)	10.5 ( 6)	12.5 ( 1)	12.9 ( 1)	A	107.9	
AmeriStand 901TS(Opt)	9	16.0 ( 1)	10.9 ( 1)	11.8 ( 9)	12.9 ( 2)	AB	107.7	
FGI 118T816	9	15.0 (17)	10.9 ( 2)	12.4 ( 2)	12.8 ( 4)	ABC	106.7	
FGI 96T706	9	15.2 ( 8)	10.7 ( 4)	12.2 ( 3)	12.7 ( 5)	ABC	106.5	
Catalina	9	15.2 ( 9)	10.8 ( 3)	11.8 ( 8)	12.6 ( 7)	ABCDE	105.5	
Excelente HQML	9	15.2 (11)	10.5 ( 5)	12.0 ( 5)	12.6 ( 8)	ABCDEF	105.3	
CW 1010	9	15.2 (12)	10.3 (10)	11.9 ( 6)	12.5 ( 9)	ABCDEFG	104.4	
Highline	9	15.5 ( 5)	10.1 (14)	11.4 (19)	12.3 (10)	ABCDEFGH	103.2	
CW 080046	9	15.0 (22)	10.5 ( 8)	11.5 (14)	12.3 (11)	ABCDEFGH	103.2	
FGI 106T701	9	15.0 (21)	10.2 (12)	11.6 (12)	12.3 (13)	ABCDEFGHIJ	102.7	
UC Impalo	9	14.8 (27)	10.0 (16)	11.9 ( 7)	12.2 (14)	ABCDEFGHIJ	102.3	
Tres Padres	9	15.3 ( 6)	9.8 (25)	11.6 (13)	12.2 (15)	ABCDEFGHIJ	102.2	
UC Cibola	9	15.2 (13)	10.1 (13)	11.2 (24)	12.2 (16)	ABCDEFGHIJ	101.9	
WL 656HQ	6	15.0 (19)	9.9 (22)	11.5 (15)	12.1 (17)	ABCDEFGHIJ	101.6	
Westar	9	15.2 (10)	10.0 (20)	11.1 (25)	12.1 (18)	BCDEFGHIJ	101.3	
Excelente Plus	9	15.2 (14)	9.8 (24)	11.4 (20)	12.1 (19)	CDEFGHIJ	101.3	
AmeriStand 901TS	9	14.9 (24)	10.1 (15)	11.3 (22)	12.1 (20)	CDEFGHIJ	101.1	
Excelente 11	9	15.0 (16)	9.7 (28)	11.4 (21)	12.0 (23)	CDEFGHIJ	100.7	
Sun Quest	6	15.1 (15)	10.0 (17)	11.0 (29)	12.0 (24)	CDEFGHIJ	100.6	
Cuf 101	9	15.0 (20)	9.8 (26)	11.1 (26)	12.0 (25)	DEFGHIJ	100.0	
Saltana	9	14.6 (29)	9.7 (29)	11.5 (17)	11.9 (26)	DEFGHIJ	99.8	
4N900	9	14.8 (26)	10.0 (18)	10.8 (32)	11.9 (27)	EFGHIJ	99.4	
AmeriStand 901TS(EMD)	9	14.4 (32)	9.9 (21)	11.0 (28)	11.8 (29)	GHIJ	98.3	
WL 712	10	15.0 (23)	9.5 (33)	10.6 (34)	11.7 (30)	HIJK	97.6	
Excelente XL	9	14.1 (33)	9.8 (23)	10.9 (31)	11.6 (32)	HIJK	96.8	
La Jolla	9	13.5 (36)	9.0 (35)	10.4 (35)	11.0 (35)	K	91.8	
HybridForce-800	9	13.6 (35)	9.0 (36)	10.2 (36)	10.9 (36)	K	91.5	
<b>Experimental Varieties</b>								
UC-412	9	15.8 ( 3)	10.5 ( 9)	12.1 ( 4)	12.8 ( 3)	ABC	106.9	
DS919	9	15.9 ( 2)	10.5 ( 7)	11.7 (10)	12.7 ( 6)	ABCD	106.1	
UC-415	9	15.2 ( 7)	10.3 (11)	11.5 (16)	12.3 (12)	ABCDEFGHI	103.1	
UC-411	9	14.9 (25)	9.7 (27)	11.6 (11)	12.1 (21)	CDEFGHIJ	101.0	
UC-409	9	14.8 (28)	10.0 (19)	11.5 (18)	12.1 (22)	CDEFGHIJ	100.9	
UC-414	9	15.0 (18)	9.5 (30)	10.9 (30)	11.8 (28)	FGHIJ	99.0	
DS1064	9	14.5 (30)	9.5 (34)	11.0 (27)	11.7 (31)	HIJK	97.6	
UC-413	9	13.9 (34)	9.5 (31)	11.2 (23)	11.6 (33)	IJK	96.7	
UC-410	9	14.4 (31)	9.5 (32)	10.7 (33)	11.5 (34)	JK	96.5	
MEAN		14.95	10.01	11.39	12.12			
CV		5.9	8.7	7.5	6.5			
LSD (0.1)		0.86	0.85	0.84	0.77			

Trial planted at 25 lb/acre viable seed in Imperial clay loam soil at the UC Desert Research and Extension Center, Holtville, CA.

Entries followed by the same letter are no significantly different at the 10% probability level according to Fishers (protected) LSD.

FD = Fall Dormancy reported by seed companies.

**SUGGESTED FALL DORMANCY RANGE AND MINIMUM ALFALFA CULTIVAR PEST RESISTANCE RATINGS FOR SIX CALIFORNIA CLIMATE ZONES.** Growers selecting varieties from different regions should emphasize the pests that are most important for their area.

Production Zone	Rating Factor										
	FD	SAA	PA	BAA	PRR	BW	FW	An	Stn	RKN	VW
Intermountain	2--4	S	R	MR	R	R	HR	R	R	R	R
Sacramento Valley	4--8	MR	HR	HR	HR	MR	HR	R	R	R	R
San Joaquin Valley	7--9	R	HR	HR	HR	MR	HR	R	HR	HR	R
Coastal	5--7	MR	HR	HR	HR	MR	HR	R	HR	HR	R
High Desert	4--7	R	R	R	R	MR	HR	MR	HR	HR	R
Low Desert	8--9	HR	HR	HR	HR	S	HR	HR	R	HR	S

NOTE: These pest resistance recommendations were originally developed by Dr. Vern Marble, Extension Agronomist, UC Davis, based upon decades of experience with alfalfa varieties in various locations in California. Zones correspond to the principle regions of alfalfa production in California.

**EXPLANATION OF PEST RESISTANCE.** Alfalfa varieties consist of a population of plants which have varying degrees of resistance to an insect or disease. Since alfalfa fields can sustain considerable loss of individual plants without reducing productivity, alfalfa varieties with 51% or over are considered to be highly resistant, since resistant plants will make up for losses from other plants.

Resistance Level	Abbreviation	Percent resistance <sup>1</sup>
Highly Resistant	HR	>51%
Resistant	R	31-50%
Moderately Resistant	MR	15-30%
Low Resistance	LOW	6-14%
Susceptible	S	<5%
Tolerant	T	(see definition)

<sup>1</sup> Percent of plants in a population resistant to a given pest

**Definitions**

**I - Immune** -- Not subject to attack for a specified pest. Immunity is absolute, and seldom occurs in alfalfa.

**R - Resistant** -- The ability of plants to withstand pest attack. Resistance is not absolute but varies by degree. Even highly resistant varieties will have some plants that are susceptible (see above percentages). NOTE: Very high insect populations or very severe disease conditions can overwhelm pest resistance in alfalfa.

**S - Susceptible** -- Damage commonly occurs when in the presence of a specified pest. Inability of a variety to withstand adverse disease or insect conditions.

**T - Tolerant** -- Ability of plants to sustain yields when confronted with a pest attack or environmental condition (e.g. salt or grazing). Tolerant varieties are affected by the condition, but still maintain yields at high levels relative to less tolerant varieties.



