



## AGRONOMY PROGRESS REPORT

# 2022 CALIFORNIA ALFALFA VARIETY TRIAL RESULTS

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## SUMMARY

This publication details alfalfa yield trial data conducted in California for the year 2022. Yield trials were conducted in the Intermountain area (Tulelake and Scott Valley), the San Joaquin Valley (Parlier) and the Sacramento Valley (Davis). A total of 169 varieties were tested, from 3 to 7 cuts/year, with a total of 3,260 yield observations. Trials were conducted on UC field research facilities, farmer's fields, and the USDA-ARS Parlier research facility. The alfalfa variety trial data from the University of California is placed online well in advance of this published report, see (<https://alfalfa.ucdavis.edu> –click on variety).

## INTRODUCTION

Choosing superior varieties of alfalfa is a significant economic factor for alfalfa growers. A number of commercial varieties are currently available, enabling a wide range of options in the different fall dormancy (FD) groups. 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 (semi-dormant, or non-dormant varieties) in the **Northern Central Valley (Sacramento Valley)**, 7-8 cut systems (semi-

### California Alfalfa Acreages by Section

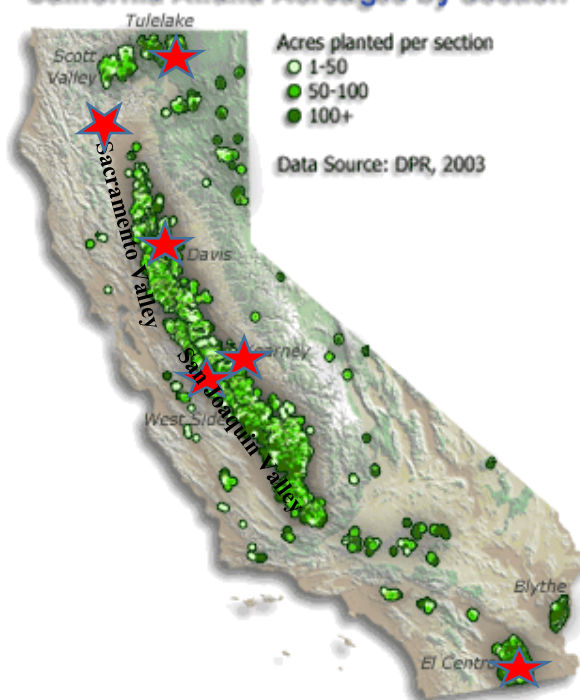


Figure 1. California alfalfa acreage. The Intermountain region is represented by Tulelake and Scott Valley, Sacramento Valley by Davis, San Joaquin Valley by Parlier and Five Points locations.

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dormant to non-dormant varieties) in the **Southern Central Valley (San Joaquin Valley)** and 8-11 cut systems (non-dormant varieties) in the **Low Desert**. These data are frequently used by growers to choose varieties, and by breeders to help guide further selection. Both private and public varieties are tested, and experimental lines as space allows. This report provides single year and over-the-year summary from alfalfa trials harvested in California in 2022.

## VARIETY TESTING 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. Six alfalfa-variety yield trials were harvested in 2022 at Tulelake, Scott Valley, Parlier and Davis, CA. There are currently no trials planted in the Low Desert environment at El Centro, CA due to cost. Specific planting dates for each trial are given on the results table for each trial. Seed was planted at approximately 25 lbs./acre live seed in 3' to 4' wide plots x 18 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 subsamples 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 seven to eight cuttings taken in the Sacramento and San Joaquin valleys. Cutting schedules followed 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:** We have 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% level of uncertainty. 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. 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, yet represents good mean separation. Such decisions are always a compromise between practical factors and statistical vigor.

## 2022 YIELD RESULTS

### *Intermountain Region*

**2017 UC Tulelake Drought Trial** -- This trial was planted with 44 entries on May 22, 2017. IN 2022, THIS TRIAL WAS CONDUCTED WITH ZERO ADDITIONAL IRRIGATION WATER. This was due to the sudden cutoff of water in the Klamath irrigation project due to the drought and Endangered Species Act – but it also gave us an opportunity to test lines under drought. Approximately 8” of rainfall was contributed during the winter rainy period, far below normal for this region. Thus, this should be considered a ‘drought’ trial, with the crop growing based only upon residual moisture with zero additions of moisture starting in mid-first cutting growth period. Three cuttings were taken during the 2022 season with the first cutting taking

place on June 24, 2022. Surprisingly, these first two cuttings of 2022 were similar to 2021 (also not irrigated that year), and the first two cuttings under fully irrigated conditions in 2020 (see results on-line at <https://alfalfa.ucdavis.edu> for previous year's trials). This trial demonstrated that substantial yields can be achieved with only natural rainfall and residual moisture in these soil types. Single year results from the 2022 harvests are provided in Table 1. The average yield across all varieties was 7.1 tons/acre. The yearly yield averages between high and low varieties (8.0 t/A and 6.2 t/A respectively) varied by 1.8 tons or about 29% of the lowest yielding line. Yields for 2017-2022 averaged nearly 7.3 tons/acre, ranging from 6.6 -7.7 t/A (Table 2). It should be pointed out that this trial was spring planted, and thus yields were understandably low for 2017, and no additional irrigation for the final two years of the trial in 2021-2022. The CVs were relatively low; indicating good control of variation over each cut in this trial.

**THE NEARLY FULL YIELD OF THIS TRIAL DURING 2021 AND 2022 UNDER RAIN-FED (DROUGHT) CONDITIONS IS NOTHING SHORT OF ASTOUNDING.** Yields were reduced approximately 1.5 to 2 tons/acre in year 4 and 5 (with zero irrigation water) compared with years 2 and 3, which were fully watered. Plants survived well. Yields declined especially in the third cutting of each year compared with previous year's fully watered trials. Vernal control, normally at the bottom of our trials, was mid-pack in this trial. The top 1/3 of this trial may be considered as candidates for rainfed (dryland) types of production. However, the excellent performance of this trial during drought is an unusual result and should not be extrapolated to other soil types. These high organic matter Tulelake soils have tremendous depth and water-holding capacity, a residue of the old Tule Lake bed. We have observed rooting depths of greater than 8 feet in trenches dug here. We would expect very different results on a high mineral soil and especially on sandy or sandy-loam soils, so this data should be view with caution.

**2021 UC Tulelake Variety Trial-** This 24 entry trial was planted 8/19/21 to replace the 2017 planting. Three harvests were taken in 2022, the first year of harvest. The average yield for this trial was 7.6 t/A with a spread of 7.0-8.3 t/A among varieties (Table 3). Unlike the 2017-planted trial, this trial was fully irrigated throughout 2022.

**2019 Scott Valley Yield Trial** – This trial was planted with 24 entries on Sept 5, 2019 and this was the third year of harvest. Single year results from the 2022 harvests are provided in Table 4. Three cuts were taken, and the average yield across all varieties was 8.5 tons/acre. The yearly yield averages between high and low varieties (9.3 t/A and 7.5 t/A respectively) varied by 1.8 tons or about 24% of the lowest yielding line. Results for the 2020-2022 yield average can be found in Table 5.

### ***Sacramento Valley Region***

**2019 UC Davis Variety Trial.** This trial was planted Oct. 4, 2019 and includes 31 entries. This was the third and final year of this trial. Seven cuttings were taken in 2022, with the first cutting taking place on April 13. Single year results from the 2022 harvests are provided in Table 6. The average yield across all varieties was 9.4 tons/acre. The yearly yield averages between high and low varieties (11.1 t/A and 7.3 t/A respectively) varied by 3.8 tons or about 52% above the lowest yielding line. Results for the 2020-2022 yield average can be found in Table 7.

### ***Low Desert Region***

There are currently no trials planted or harvested in the Low Desert environment at El Centro,

CA, due to cost factors.

## *San Joaquin Valley Region*

**2021 UC Kearney Yield Trial-** Trial was planted Oct. 19, 2021 and includes 26 entries. This was the first year of harvest. Seven harvests were taken during the 2022 season with first cut on May 9. The average yield across varieties was 10.7 tons/acre, with a spread of 8.8-12.5 tons/acre between the lowest and highest yielding varieties (Table 8).

**2020 USDA Parlier Trial--** A trial was planted March, 2020 with 20 non-dormant varieties on the USDA-ARS facility at Parlier, CA. This is a cooperative project between USDA-ARS and UC Davis. This trial is harvested 7-8 times per season. Single year results from the 2022 harvests are provided in Table 9. The average yield across all varieties was 12.3 tons/acre. Results for the 2020-2022 yield average can be found in Table 10. It should be noted that only 4 harvests were taken in 2020, the year of establishment.

### 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 in the multiple-year 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. Please see <https://www.alfalfa.org/varietyLeaflet.php> for a current (2022) listing of available alfalfa varieties marketed in the US along with pest resistance ratings.
3. **Consider the Fall Dormancy (FD) and pest resistance Ratings** of individual varieties – available at the National Alfalfa and Forage Alliance Website ([www.alfalfa.org](http://www.alfalfa.org)).
4. **Choose a group of 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). HarvXtra is a trait that confers higher quality, and yields normally when combined with later cutting schedules.
6. **Consider biotech traits** such as glyphosate-resistance and the HarvXtra trait. RR should be compared as a comprehensive weed control strategy, not just a variety.
7. **Test a variety in strips on your farm** to see how it does under your soil conditions.
8. **Consider the price of seed, availability and service.**

### ACKNOWLEDGMENTS

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**TABLE 1. 2022 YIELDS, TULELAKE ALFALFA CULTIVAR TRIAL (DROUGHT). TRIAL PLANTED 5/22/17**

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

		Cut 1	Cut 2	Cut 3	YEAR		% of
		24-Jun	4-Aug	26-Sep	TOTAL		VERNAL
	FD		Dry t/a				
<b>Released Varieties</b>							
Nexgrow 6422Q	4	3.36 ( 1)	2.93 ( 1)	1.65 (19)	7.95 ( 1)	A	108.3
54Q29	4	3.32 ( 5)	2.65 ( 7)	1.80 ( 1)	7.77 ( 2)	A B	105.9
Hybriforce-3600	6	3.18 (11)	2.80 ( 2)	1.78 ( 2)	7.76 ( 3)	A B	105.8
Integra 8450	4	3.33 ( 3)	2.72 ( 5)	1.65 (21)	7.71 ( 4)	A B C	105.0
WL365HQ	5	3.11 (15)	2.78 ( 3)	1.73 ( 8)	7.62 ( 5)	A B C D	103.9
SW4107	4	3.33 ( 4)	2.61 (10)	1.68 (12)	7.62 ( 6)	A B C D E	103.8
SW5210	6	3.26 ( 9)	2.60 (12)	1.71 ( 9)	7.56 ( 7)	A B C D E F	103.1
Hybriforce-3420/Wet	4	3.16 (12)	2.59 (15)	1.76 ( 3)	7.52 ( 8)	A B C D E F	102.5
Archer III	5	3.32 ( 6)	2.54 (21)	1.66 (18)	7.51 ( 9)	A B C D E F G	102.3
Nexgrow 6585Q	5	2.96 (27)	2.74 ( 4)	1.75 ( 6)	7.46 (11)	A B C D E F G H	101.7
Integra 8420	4	3.09 (18)	2.61 (11)	1.76 ( 5)	7.46 (12)	A B C D E F G H	101.6
Hybriforce-4400	4	3.28 ( 7)	2.46 (28)	1.68 (11)	7.43 (13)	B C D E F G H I	101.3
WL377HQ	5	3.07 (20)	2.60 (13)	1.76 ( 4)	7.43 (14)	B C D E F G H I	101.2
PG459	4	3.26 ( 8)	2.63 ( 9)	1.49 (33)	7.38 (15)	B C D E F G H I J	100.6
Vernal	2	3.36 ( 2)	2.52 (24)	1.46 (34)	7.34 (17)	B C D E F G H I J K	100.0
FG R513W227S	5	3.14 (14)	2.54 (20)	1.64 (23)	7.32 (18)	B C D E F G H I J K L	99.7
Dekalb 43-13	4	3.09 (19)	2.55 (18)	1.67 (13)	7.31 (19)	B C D E F G H I J K L	99.7
Xtra-3	4	2.93 (31)	2.66 ( 6)	1.66 (15)	7.26 (20)	C D E F G H I J K L M	98.9
FG R513W224S	5	3.05 (22)	2.55 (17)	1.65 (20)	7.26 (21)	C D E F G H I J K L M	98.9
Ameristand 445-NT	4	3.14 (13)	2.55 (19)	1.53 (29)	7.22 (22)	C D E F G H I J K L M	98.4
WL363HQ	5	3.02 (23)	2.54 (22)	1.66 (16)	7.21 (23)	D E F G H I J K L M	98.3
4R200	4	2.94 (30)	2.55 (16)	1.70 (10)	7.20 (24)	D E F G H I J K L M	98.0
Ameristand 427TQ	4	3.10 (16)	2.48 (27)	1.55 (26)	7.13 (25)	E F G H I J K L M	97.1
Genuity-RR	4	2.95 (28)	2.49 (26)	1.67 (14)	7.11 (26)	F G H I J K L M	96.9
SW5213	5	3.09 (17)	2.53 (23)	1.40 (40)	7.02 (27)	G H I J K L M N	95.6
AmeriStand 545NT RR	5	2.91 (34)	2.44 (29)	1.66 (17)	7.01 (28)	H I J K L M N	95.6
FG R513M225S	5	2.89 (36)	2.51 (25)	1.54 (28)	6.94 (29)	I J K L M N O	94.6
Integra 8444R	4	2.92 (33)	2.37 (33)	1.64 (22)	6.93 (30)	J K L M N O	94.4
WL 372HQ-RR	5	2.92 (32)	2.42 (31)	1.58 (25)	6.92 (31)	J K L M N O	94.2
Hi-Gest 360	3	3.01 (24)	2.29 (39)	1.55 (27)	6.85 (32)	K L M N O	93.3
Hybriforce-3430	3	2.99 (26)	2.30 (37)	1.53 (31)	6.82 (34)	M N O P	92.9
FG R410W253	4	2.90 (35)	2.43 (30)	1.45 (35)	6.79 (35)	M N O P Q	92.5
<b>Experimental Varieties</b>							
msSunstra-143146	3	3.25 (10)	2.59 (14)	1.63 (24)	7.47 (10)	A B C D E F G H	101.8
msSunstra-155202	6	3.00 (25)	2.63 ( 8)	1.74 ( 7)	7.38 (16)	B C D E F G H I J	100.5
RRL414M104	4	2.95 (29)	2.36 (34)	1.53 (30)	6.84 (33)	L M N O	93.2
SW4466	4	3.06 (21)	2.29 (38)	1.43 (37)	6.78 (36)	M N O P Q	92.4
H0415QT111	4	2.83 (38)	2.38 (32)	1.38 (42)	6.59 (37)	N O P Q R	89.8
RRL514W209	5	2.88 (37)	2.23 (42)	1.42 (38)	6.54 (38)	N O P Q R	89.1
H0415A3144	4	2.72 (41)	2.30 (36)	1.50 (32)	6.53 (39)	N O P Q R	88.9
H0415ST202	4	2.78 (39)	2.24 (40)	1.45 (36)	6.46 (40)	O P Q R	88.1
RRL414M377	4	2.76 (40)	2.16 (44)	1.42 (39)	6.34 (41)	P Q R	86.4
H0515QT102	5	2.68 (42)	2.23 (43)	1.40 (41)	6.31 (42)	Q R	85.9
RRL514W201	5	2.57 (44)	2.30 (35)	1.32 (43)	6.20 (43)	R	84.5
RRL414W208	4	2.68 (43)	2.23 (41)	1.24 (44)	6.16 (44)	R	83.9
MEAN		3.04	2.50	1.59	7.12		
CV		5.11	8.44	11.14	5.85		
LSD (0.1)		0.18	0.25	0.21	0.50		

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.

\*No supplemental irrigation used for 2022 harvests (only natural rainfall and residual soil moisture)

**TABLE 2. 2017-2022 YIELDS, TULELAKE ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 5/22/17**

	2017	2018	2019	2020	*2021	*2022	Average		% of	
	Yield	Yield	Yield	Yield	Yield	Yield			Vernal	
	FD			Dry Va						
<b>Released Varieties</b>										
WL365HQ	5	3.80 ( 9)	9.64 ( 9)	9.42 ( 2)	9.23 ( 1)	6.74 ( 13)	7.62 ( 5)	7.74 ( 1)	A	113.2
Integra 8450	4	3.76 ( 11)	9.72 ( 7)	9.03 ( 5)	8.88 ( 6)	7.03 ( 5)	7.71 ( 4)	7.69 ( 2)	A B	112.5
Nexgrow 6422Q	4	3.03 ( 35)	9.89 ( 1)	9.27 ( 3)	8.98 ( 3)	6.87 ( 9)	7.95 ( 1)	7.66 ( 3)	A B	112.1
HybriForce-4400	4	4.14 ( 4)	9.74 ( 6)	8.95 ( 10)	8.63 ( 21)	6.76 ( 10)	7.43 ( 13)	7.61 ( 4)	A B C	111.3
SW4107	4	3.04 ( 29)	9.84 ( 2)	9.50 ( 1)	8.84 ( 8)	6.65 ( 18)	7.62 ( 6)	7.58 ( 6)	A B C D E	110.9
54Q29	4	3.04 ( 30)	9.76 ( 5)	8.95 ( 9)	8.63 ( 20)	7.24 ( 1)	7.77 ( 2)	7.56 ( 7)	A B C D E F	110.7
SW5210	6	3.74 ( 12)	9.51 ( 12)	9.05 ( 4)	8.92 ( 4)	6.53 ( 25)	7.56 ( 7)	7.55 ( 8)	A B C D E F	110.5
HybriForce-3600	6	4.28 ( 2)	9.25 ( 23)	8.32 ( 36)	8.53 ( 24)	7.06 ( 4)	7.76 ( 3)	7.53 ( 9)	A B C D E F G	110.2
WL377HQ	5	3.04 ( 27)	9.66 ( 8)	8.98 ( 6)	8.88 ( 7)	6.95 ( 6)	7.43 ( 14)	7.49 ( 10)	B C D E F G H	109.6
FG R513W224S	5	3.64 ( 18)	9.50 ( 13)	8.92 ( 12)	8.64 ( 18)	6.89 ( 8)	7.26 ( 21)	7.48 ( 11)	B C D E F G H I	109.4
FG R513W227S	5	3.27 ( 24)	9.20 ( 26)	8.96 ( 8)	9.01 ( 2)	7.09 ( 2)	7.32 ( 18)	7.48 ( 12)	B C D E F G H I	109.3
Nexgrow 6585Q	5	3.74 ( 13)	9.25 ( 22)	8.83 ( 15)	8.89 ( 5)	6.65 ( 19)	7.46 ( 11)	7.47 ( 13)	B C D E F G H I	109.3
WL363HQ	5	3.78 ( 10)	9.26 ( 21)	8.94 ( 11)	8.75 ( 13)	6.58 ( 22)	7.21 ( 23)	7.42 ( 14)	C D E F G H I J	108.5
Genuity-RR	4	3.74 ( 14)	9.20 ( 25)	8.81 ( 17)	8.53 ( 23)	7.09 ( 3)	7.11 ( 26)	7.41 ( 15)	C D E F G H I J	108.4
SW5213	5	3.51 ( 22)	9.51 ( 11)	8.82 ( 16)	8.61 ( 22)	6.92 ( 7)	7.02 ( 27)	7.40 ( 16)	C D E F G H I J K	108.2
Dekalb 43-13	4	3.81 ( 8)	9.27 ( 19)	8.71 ( 19)	8.38 ( 28)	6.74 ( 14)	7.31 ( 19)	7.37 ( 17)	D E F G H I J K L	107.8
HybriForce-3420/Wet	4	4.09 ( 5)	9.57 ( 10)	8.55 ( 30)	8.25 ( 36)	6.19 ( 36)	7.52 ( 8)	7.36 ( 18)	E F G H I J K L	107.7
PG459	4	4.16 ( 3)	9.01 ( 31)	8.64 ( 23)	8.25 ( 35)	6.67 ( 17)	7.38 ( 15)	7.35 ( 19)	F G H I J K L	107.6
Xtra-3	4	3.54 ( 21)	9.41 ( 15)	8.89 ( 13)	8.39 ( 27)	6.59 ( 21)	7.26 ( 20)	7.35 ( 20)	F G H I J K L	107.5
AmeriStand 545NT Rf	5	3.41 ( 23)	9.35 ( 17)	8.83 ( 14)	8.66 ( 16)	6.68 ( 16)	7.01 ( 28)	7.33 ( 21)	G H I J K L	107.2
FG R410W253	4	3.61 ( 20)	9.20 ( 24)	8.67 ( 21)	8.82 ( 9)	6.75 ( 11)	6.79 ( 35)	7.31 ( 22)	G H I J K L M	106.9
FG R513M225S	5	3.71 ( 16)	9.19 ( 27)	8.69 ( 20)	8.80 ( 11)	6.38 ( 31)	6.94 ( 29)	7.29 ( 23)	H I J K L M	106.6
Archer III	5	3.03 ( 38)	9.41 ( 16)	8.62 ( 27)	8.32 ( 32)	6.69 ( 15)	7.51 ( 9)	7.26 ( 24)	I J K L M N	106.2
HybriForce-3430	3	3.98 ( 6)	9.79 ( 4)	8.66 ( 22)	8.37 ( 29)	5.91 ( 44)	6.82 ( 34)	7.26 ( 25)	I J K L M N	106.1
Integra 8444R	4	3.72 ( 15)	9.27 ( 20)	8.42 ( 34)	8.67 ( 15)	6.44 ( 29)	6.93 ( 30)	7.24 ( 26)	J K L M N	106.0
Integra 8420	4	3.03 ( 34)	9.42 ( 14)	8.44 ( 33)	8.28 ( 33)	6.42 ( 30)	7.46 ( 12)	7.18 ( 28)	K L M N O P	105.0
4R200	4	3.67 ( 17)	8.72 ( 37)	8.29 ( 37)	8.24 ( 37)	6.38 ( 32)	7.20 ( 24)	7.08 ( 31)	M N O P Q	103.6
WL 372HQ-RR	5	3.02 ( 42)	9.19 ( 28)	8.56 ( 29)	8.18 ( 38)	6.45 ( 28)	6.92 ( 31)	7.05 ( 32)	N O P Q R	103.2
Hi-Gest 360	3	3.03 ( 39)	9.30 ( 18)	8.63 ( 26)	8.17 ( 39)	6.10 ( 41)	6.85 ( 32)	7.01 ( 33)	O P Q R	102.6
Ameristand 445-NT	4	3.04 ( 26)	8.86 ( 35)	8.12 ( 40)	7.82 ( 42)	6.23 ( 35)	7.22 ( 22)	6.88 ( 37)	Q R S	100.6
Ameristand 427TQ	4	3.04 ( 25)	8.95 ( 32)	8.24 ( 38)	7.77 ( 43)	6.12 ( 40)	7.13 ( 25)	6.87 ( 38)	Q R S	100.5
Vernal	2	3.03 ( 32)	8.68 ( 39)	8.10 ( 41)	7.69 ( 44)	6.18 ( 38)	7.34 ( 17)	6.84 ( 42)	R S	100.0
<b>Experimental Varieties</b>										
msSunstra-143146	3	4.30 ( 1)	9.83 ( 3)	8.73 ( 18)	8.50 ( 25)	6.75 ( 12)	7.47 ( 10)	7.60 ( 5)	A B C D	111.1
msSunstra-155202	6	3.86 ( 7)	9.03 ( 30)	8.04 ( 42)	8.26 ( 34)	6.60 ( 20)	7.38 ( 16)	7.20 ( 27)	J K L M N O	105.3
SW4466	4	3.62 ( 19)	9.13 ( 29)	8.98 ( 7)	8.36 ( 30)	6.03 ( 42)	6.78 ( 36)	7.15 ( 29)	L M N O P	104.6
RRL414M104	4	3.03 ( 40)	8.69 ( 38)	8.63 ( 24)	8.76 ( 12)	6.57 ( 23)	6.84 ( 33)	7.09 ( 30)	M N O P Q	103.7
RRL514W209	5	3.03 ( 31)	8.63 ( 40)	8.57 ( 28)	8.70 ( 14)	6.47 ( 26)	6.54 ( 38)	6.99 ( 34)	O P Q R	102.3
RRL414M377	4	3.04 ( 28)	8.86 ( 34)	8.52 ( 31)	8.82 ( 10)	6.15 ( 39)	6.34 ( 41)	6.95 ( 35)	P Q R	101.7
H0415ST202	4	3.03 ( 37)	8.87 ( 33)	8.63 ( 25)	8.36 ( 31)	6.18 ( 37)	6.46 ( 40)	6.92 ( 36)	Q R S	101.2
H0415QT111	4	3.02 ( 44)	8.46 ( 41)	8.00 ( 44)	8.63 ( 19)	6.53 ( 24)	6.59 ( 37)	6.87 ( 39)	Q R S	100.5
H0415A3144	4	3.03 ( 36)	8.73 ( 36)	8.45 ( 32)	8.44 ( 26)	6.00 ( 43)	6.53 ( 39)	6.86 ( 40)	Q R S	100.4
H0515QT102	5	3.02 ( 41)	8.43 ( 42)	8.33 ( 35)	8.65 ( 17)	6.34 ( 33)	6.31 ( 42)	6.84 ( 41)	R S	100.1
RRL414W208	4	3.02 ( 43)	8.42 ( 43)	8.15 ( 39)	8.14 ( 40)	6.46 ( 27)	6.16 ( 44)	6.72 ( 43)	S T	98.3
RRL514W201	5	3.03 ( 33)	8.20 ( 44)	8.01 ( 43)	7.90 ( 41)	6.24 ( 34)	6.20 ( 43)	6.60 ( 44)	T	96.5
MEAN		3.44	9.20	8.66	8.51	6.55	7.12	7.25		
CV		8.16	3.66	3.47	3.97	6.87	5.85	2.63		
LSD (0.1)		0.33	0.40	0.36	0.40	0.53	0.50	0.23		

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.

\*No supplemental irrigation used for 2021-22 harvests (only natural rainfall and residual soil moisture)

**TABLE 3. 2022 YIELDS, TULELAKE ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 8/19/21**

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

		Cut 1	Cut 2	Cut 3	YEAR		% of	
		24-Jun	8-Aug	14-Sep	TOTAL		VERNAL	
	FD	Dry t/a						
<b>Released Varieties</b>								
Magna150RR	4	3.69 ( 4)	3.04 ( 1)	1.61 ( 2)	8.33 ( 1)	A	110.3	
54Q29	4	3.78 ( 1)	2.89 ( 3)	1.59 ( 4)	8.26 ( 2)	A	109.3	
HybriForce-4420/Wet	4	3.66 ( 5)	2.83 ( 5)	1.63 ( 1)	8.11 ( 3)	A B	107.4	
54VQ52	4	3.72 ( 3)	2.62 (14)	1.55 ( 6)	7.90 ( 4)	A B C	104.6	
AWS 455 salt	4	3.46 (11)	2.82 ( 6)	1.59 ( 3)	7.87 ( 6)	A B C D	104.2	
AWS 418RL	4	3.50 (10)	2.86 ( 4)	1.51 (13)	7.87 ( 7)	A B C D	104.2	
WL377 HQ	5	3.63 ( 7)	2.64 (10)	1.43 (18)	7.71 ( 8)	B C D E	102.1	
6453Q	4	3.59 ( 8)	2.60 (16)	1.51 (12)	7.70 ( 9)	B C D E	102.0	
Ameristand 428TQ	4	3.53 ( 9)	2.68 ( 8)	1.45 (16)	7.66 (10)	B C D E	101.4	
Bison Alfalfa	3.5	3.15 (24)	2.98 ( 2)	1.51 (11)	7.64 (11)	C D E	101.1	
AFX 439	4	3.64 ( 6)	2.54 (21)	1.38 (23)	7.56 (12)	C D E F	100.1	
Vernal	2	3.45 (12)	2.74 ( 7)	1.36 (24)	7.55 (13)	C D E F G	100.0	
6585Q	5	3.28 (19)	2.66 ( 9)	1.54 ( 7)	7.48 (14)	C D E F G	99.1	
Nexgrow 6516R	4.5	3.38 (14)	2.56 (19)	1.52 (10)	7.46 (15)	C D E F G	98.8	
WL341 HVXRR	4	3.43 (13)	2.59 (17)	1.39 (22)	7.42 (16)	D E F G	98.3	
LG5R300	5	3.33 (18)	2.63 (13)	1.46 (15)	7.41 (17)	D E F G	98.2	
WL375 HVXRR	4.6	3.34 (17)	2.63 (12)	1.41 (20)	7.37 (18)	E F G	97.5	
AWS 390	3.9	3.22 (20)	2.57 (18)	1.57 ( 5)	7.35 (19)	E F G	97.3	
Ameristand 416NT RR	4	3.36 (16)	2.56 (20)	1.40 (21)	7.32 (20)	E F G	96.9	
LG4R300	4	3.36 (15)	2.47 (23)	1.42 (19)	7.25 (21)	E F G	96.1	
Ameristand 446NT	4	3.16 (23)	2.63 (11)	1.46 (14)	7.25 (22)	E F G	96.0	
Ameristand 518NT	5	3.16 (22)	2.47 (22)	1.53 ( 9)	7.16 (23)	F G	94.8	
WL3441 RR	4	3.18 (21)	2.45 (24)	1.45 (17)	7.08 (24)	G	93.8	
<b>Experimental Varieties</b>								
SW4615	5	3.74 ( 2)	2.60 (15)	1.53 ( 8)	7.87 ( 5)	A B C D	104.3	
MEAN		3.45	2.67	1.49	7.61			
CV		6.41	7.27	7.25	5.11			
LSD (0.1)		0.27	0.24	0.13	0.47			

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 4. 2022 YIELDS, SCOTT VALLEY ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 9/5/19**

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

		Cut 1 21-Jun	Cut 2 29-Jul	Cut 3 13-Sep	YEAR TOTAL	
	FD	Dry t/a				
LG EXTERRA (5FD)	5	3.72 (13)	3.35 (2)	2.22 (1)	9.29 (1)	A
SW 4412Y	4	4.41 (1)	2.98 (5)	1.88 (13)	9.27 (2)	A
Ameristand 518 NT	5.2	3.81 (10)	3.36 (1)	2.05 (3)	9.22 (3)	A
6422Q	4	4.09 (5)	2.85 (13)	1.99 (7)	8.93 (4)	A B
AFX Magnum 8	4	3.87 (9)	2.97 (7)	2.07 (2)	8.91 (5)	A B C
LG Camas	4	4.11 (4)	2.83 (15)	1.97 (9)	8.91 (6)	A B C
AFX Hybriforce 4400	4	3.91 (7)	2.96 (8)	1.98 (8)	8.84 (7)	A B C
SW5210	5	4.12 (3)	2.80 (17)	1.81 (17)	8.73 (8)	A B C
6585 Q	5	3.62 (16)	2.98 (6)	2.04 (4)	8.64 (9)	A B C D
Hybriforce 3400	4	3.74 (11)	2.89 (10)	1.99 (6)	8.63 (10)	A B C D
Ameristand 427TQ	4	3.97 (6)	2.90 (9)	1.74 (23)	8.62 (11)	A B C D
AFX 460	4	4.17 (2)	2.63 (22)	1.76 (22)	8.56 (12)	A B C D
SW4107	4	3.46 (20)	3.04 (3)	2.04 (5)	8.53 (13)	A B C D
Ameristand 415 NT RR	4.3	3.74 (12)	2.76 (19)	1.81 (16)	8.31 (14)	B C D E
WL 377 HQ	5	3.89 (8)	2.54 (24)	1.87 (14)	8.31 (15)	B C D E
AFX 579	5	3.55 (18)	2.81 (16)	1.90 (11)	8.26 (16)	B C D E
SW3407	3	3.61 (17)	2.87 (12)	1.78 (21)	8.25 (17)	B C D E
AFX 360 Hi-Gest	3	3.68 (14)	2.68 (20)	1.79 (20)	8.14 (18)	B C D E
DG 5315	5	3.47 (19)	2.77 (18)	1.87 (15)	8.11 (19)	B C D E
Nexgrow 6516	5	3.29 (22)	2.84 (14)	1.95 (10)	8.08 (20)	B C D E
DG 4210 Dynagrow	4	3.67 (15)	2.58 (23)	1.79 (18)	8.05 (21)	C D E
LG 4R300	4.1	2.92 (24)	2.99 (4)	1.90 (12)	7.80 (22)	D E
LG 5R300 (5FD)	5	3.21 (23)	2.65 (21)	1.79 (19)	7.65 (23)	E
Ameristand 545 NT RR	5.4	3.39 (21)	2.88 (11)	1.26 (24)	7.54 (24)	E
MEAN		3.73	2.87	1.89	8.48	
CV		13.00	10.26	14.30	8.45	
LSD (0.1)		0.59	0.36	0.33	0.87	

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 5. 2020-2022 YIELDS, SCOTT VALLEY ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 9/5/19**

		2020	2021	2022	Average		% of
	FD	Yield	Yield	Yield			LG 4R300
		Dry t/a					
Ameristand 518 NT	5.2	5.53 ( 7)	9.58 ( 1)	9.22 ( 3)	8.11 ( 1)	A	114.0
LG EXTERRA (5FD)	5	5.56 ( 5)	9.11 ( 4)	9.29 ( 1)	7.98 ( 2)	A B	112.2
Hybriforce 3400	4	5.86 ( 3)	9.40 ( 2)	8.63 (10)	7.96 ( 3)	A B C	111.9
SW 4412Y	4	5.31 (17)	9.26 ( 3)	9.27 ( 2)	7.95 ( 4)	A B C D	111.7
AFX Hybriforce 4400	4	5.69 ( 4)	8.99 ( 6)	8.84 ( 7)	7.84 ( 5)	A B C D E	110.2
6585 Q	5	5.96 ( 1)	8.73 (12)	8.64 ( 9)	7.77 ( 6)	A B C D E F	109.2
SW5210	5	5.48 (11)	9.05 ( 5)	8.73 ( 8)	7.75 ( 7)	A B C D E F G	108.9
AFX Magnum 8	4	5.36 (14)	8.80 ( 9)	8.91 ( 5)	7.69 ( 8)	A B C D E F G H	108.0
SW4107	4	5.52 ( 9)	8.93 ( 7)	8.53 (13)	7.66 ( 9)	A B C D E F G H	107.7
LG Camas	4	5.31 (16)	8.70 (13)	8.91 ( 6)	7.64 (10)	A B C D E F G H	107.4
AFX 579	5	5.54 ( 6)	8.89 ( 8)	8.26 (16)	7.56 (11)	B C D E F G H I	106.3
Nexgrow 6516	5	5.95 ( 2)	8.43 (18)	8.08 (20)	7.49 (12)	B C D E F G H I J	105.2
SW3407	3	5.39 (13)	8.79 (10)	8.25 (17)	7.48 (13)	B C D E F G H I J	105.1
AFX 460	4	5.21 (19)	8.61 (14)	8.56 (12)	7.46 (14)	C D E F G H I J	104.8
6422Q	4	4.96 (23)	8.44 (17)	8.93 ( 4)	7.44 (15)	D E F G H I J	104.5
DG 4210 Dynagrow	4	5.41 (12)	8.73 (11)	8.05 (21)	7.39 (16)	E F G H I J	103.9
Ameristand 427TQ	4	4.83 (24)	8.61 (15)	8.62 (11)	7.35 (17)	E F G H I J	103.3
Ameristand 415 NT RR	4.3	5.33 (15)	8.40 (19)	8.31 (14)	7.35 (18)	E F G H I J	103.2
DG 5315	5	5.25 (18)	8.54 (16)	8.11 (19)	7.30 (19)	F G H I J	102.6
WL 377 HQ	5	5.02 (22)	8.38 (20)	8.31 (15)	7.24 (20)	G H I J	101.7
AFX 360 Hi-Gest	3	5.53 ( 8)	7.96 (23)	8.14 (18)	7.21 (21)	H I J K	101.3
LG 4R300	4.1	5.49 (10)	8.06 (22)	7.80 (22)	7.12 (22)	I J K	100.0
LG 5R300 (5FD)	5	5.13 (20)	8.28 (21)	7.65 (23)	7.02 (23)	J K	98.7
Ameristand 545 NT RR	5.4	5.09 (21)	7.49 (24)	7.54 (24)	6.70 (24)	K	94.2
MEAN		5.40	8.67	8.48	7.52		
CV		8.35	8.69	8.45	5.71		
LSD (0.1)		0.55	0.91	0.87	0.52		

Trial seeded at 25 lb/acre viable seed at Scott Valley, 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. 2022 Yields, UC Davis Alfalfa Cultivar Trial (Trial planted Oct. 4, 2019)**

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 CUF101	
		13-Apr	2-May	8-Jun	7-Jul	4-Aug	7-Sep	20-Oct	TOTAL		
		Dry t/a									
SW8421-S	8	1.63 ( 5)	1.30 ( 3)	1.45 ( 1)	1.98 ( 4)	1.83 ( 4)	1.61 ( 1)	1.26 ( 2)	11.06 ( 1)	A	118.4
Ameristand 901TS	9	1.66 ( 4)	1.22 ( 6)	1.45 ( 2)	1.98 ( 3)	1.96 ( 1)	1.54 ( 2)	0.98 ( 18)	10.79 ( 2)	A B	115.5
Alphatec 821	8	1.72 ( 1)	1.32 ( 2)	1.25 ( 12)	2.00 ( 2)	1.86 ( 3)	1.53 ( 4)	1.07 ( 14)	10.75 ( 3)	A B	115.1
Alphatec 921	9	1.69 ( 3)	1.30 ( 4)	1.45 ( 2)	1.78 ( 10)	1.77 ( 8)	1.47 ( 6)	1.12 ( 10)	10.58 ( 4)	A B C	113.2
SW9813	9	1.50 ( 12)	1.17 ( 12)	1.37 ( 6)	2.00 ( 1)	1.87 ( 2)	1.50 ( 5)	1.12 ( 11)	10.52 ( 5)	A B C D	112.6
59N59	9	1.41 ( 18)	1.11 ( 17)	1.42 ( 4)	1.78 ( 12)	1.83 ( 4)	1.54 ( 3)	1.26 ( 2)	10.35 ( 6)	A B C D E	110.8
Alphatec 621	6	1.50 ( 10)	1.18 ( 10)	1.29 ( 8)	1.91 ( 5)	1.80 ( 6)	1.43 ( 8)	1.22 ( 4)	10.33 ( 7)	A B C D E	110.6
Ameristand 618NT	7	1.71 ( 2)	1.33 ( 1)	1.42 ( 4)	1.84 ( 6)	1.74 ( 10)	1.37 ( 13)	0.87 ( 27)	10.28 ( 8)	A B C D E F	110.1
SuperNova	9	1.56 ( 8)	1.21 ( 8)	1.23 ( 13)	1.81 ( 7)	1.74 ( 10)	1.43 ( 11)	1.29 ( 1)	10.27 ( 9)	A B C D E F	110.0
SW9215	9	1.47 ( 14)	1.08 ( 20)	1.29 ( 10)	1.81 ( 7)	1.80 ( 7)	1.40 ( 12)	1.15 ( 8)	10.00 ( 10)	A B C D E F G	107.1
Catalina	9	1.47 ( 14)	1.18 ( 11)	1.31 ( 7)	1.81 ( 7)	1.58 ( 20)	1.43 ( 8)	1.19 ( 5)	9.97 ( 11)	A B C D E F G	106.7
PGI 908-S	9	1.56 ( 7)	1.22 ( 7)	1.18 ( 19)	1.62 ( 22)	1.70 ( 12)	1.43 ( 8)	1.19 ( 5)	9.91 ( 12)	A B C D E F G	106.1
Saltana	9	1.53 ( 9)	1.19 ( 9)	1.26 ( 11)	1.78 ( 10)	1.61 ( 17)	1.47 ( 6)	1.01 ( 16)	9.86 ( 13)	A B C D E F G	105.5
WL656HQ	6	1.50 ( 10)	1.15 ( 13)	1.18 ( 19)	1.75 ( 15)	1.70 ( 13)	1.33 ( 15)	1.19 ( 5)	9.80 ( 14)	A B C D E F G	104.9
Hi-Gest 660	6	1.41 ( 19)	1.10 ( 19)	1.29 ( 8)	1.68 ( 19)	1.77 ( 8)	1.37 ( 13)	1.15 ( 8)	9.76 ( 15)	A B C D E F G H	104.5
CUF101	9	1.37 ( 22)	1.07 ( 21)	1.21 ( 15)	1.64 ( 21)	1.70 ( 13)	1.26 ( 19)	1.08 ( 12)	9.34 ( 16)	A B C D E F G H I	100.0
Ameristand 803T	8	1.33 ( 25)	1.02 ( 26)	1.07 ( 26)	1.78 ( 12)	1.64 ( 16)	1.33 ( 15)	1.05 ( 15)	9.21 ( 17)	A B C D E F G H I	98.6
SW6330	6	1.34 ( 24)	1.04 ( 24)	1.21 ( 15)	1.68 ( 17)	1.67 ( 15)	1.30 ( 17)	0.94 ( 24)	9.18 ( 18)	B C D E F G H I	98.3
SW9812	9	1.41 ( 19)	1.11 ( 18)	1.23 ( 13)	1.72 ( 16)	1.51 ( 22)	1.23 ( 20)	0.98 ( 18)	9.18 ( 19)	B C D E F G H I	98.3
SuperSonic	9	1.60 ( 6)	1.23 ( 5)	1.18 ( 21)	1.62 ( 22)	1.45 ( 26)	1.09 ( 25)	0.94 ( 23)	9.11 ( 20)	B C D E F G H I J	97.5
AFX647	6	1.31 ( 26)	1.01 ( 27)	1.21 ( 15)	1.68 ( 17)	1.54 ( 21)	1.26 ( 18)	1.08 ( 13)	9.10 ( 21)	B C D E F G H I J	97.4
UC Highline	9	1.47 ( 17)	1.13 ( 16)	1.15 ( 22)	1.78 ( 14)	1.51 ( 23)	1.16 ( 22)	0.87 ( 27)	9.08 ( 22)	B C D E F G H I J	97.1
UC Impalo	9	1.39 ( 21)	1.05 ( 22)	1.14 ( 23)	1.59 ( 25)	1.59 ( 19)	1.12 ( 24)	0.89 ( 26)	8.77 ( 23)	C D E F G H I J	93.9
6906N	9	1.47 ( 14)	1.14 ( 15)	1.04 ( 28)	1.49 ( 28)	1.41 ( 27)	1.16 ( 22)	1.01 ( 16)	8.73 ( 24)	C D E F G H I J	93.4
57Q53	7	1.49 ( 13)	1.14 ( 14)	1.06 ( 27)	1.48 ( 29)	1.47 ( 25)	1.07 ( 28)	0.96 ( 22)	8.68 ( 25)	D E F G H I J	92.9
Magna 715	7	1.16 ( 29)	0.86 ( 29)	1.09 ( 25)	1.65 ( 20)	1.60 ( 18)	1.22 ( 21)	0.97 ( 20)	8.55 ( 26)	E F G H I J	91.6
Hybriforce-3600	6	1.18 ( 28)	1.05 ( 23)	1.21 ( 15)	1.62 ( 24)	1.48 ( 24)	1.09 ( 27)	0.84 ( 29)	8.46 ( 27)	F G H I J	90.6
SW7410	7	1.34 ( 23)	1.04 ( 25)	1.12 ( 24)	1.56 ( 27)	1.41 ( 27)	1.09 ( 25)	0.84 ( 29)	8.41 ( 28)	G H I J	90.0
Bulldog 805	8	1.21 ( 27)	1.00 ( 28)	0.90 ( 29)	1.46 ( 30)	1.35 ( 29)	1.06 ( 29)	0.91 ( 25)	7.90 ( 29)	H I J	84.6
Ameristand 518NT	5	1.07 ( 31)	0.80 ( 31)	0.90 ( 30)	1.59 ( 26)	1.35 ( 29)	0.99 ( 30)	0.80 ( 31)	7.51 ( 30)	I J	80.4
CW 704	7	1.08 ( 30)	0.85 ( 30)	0.87 ( 31)	1.43 ( 31)	1.25 ( 31)	0.84 ( 31)	0.97 ( 21)	7.27 ( 31)	J	77.8
MEAN		1.44	1.12	1.21	1.72	1.63	1.29	1.04	9.44		
CV		16.59	18.20	20.24	19.48	19.06	22.89	22.86	16.48		
LSD (0.1)		0.29	0.24	0.29	NS	NS	0.36	NS	1.87		

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 7. 2020-2022 YIELDS, UC Davis ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 10/4/2019**

		2020	2021	2022	Average		% of
		Yield	Yield	Yield	Yield		CUF101
	FD	Dry t/a					
Ameristand 901TS	9	12.20 ( 5)	10.94 ( 2)	10.79 ( 2)	11.31 ( 1)	A	104.2
SW9813	9	11.56 (13)	10.77 ( 3)	10.52 ( 3)	10.95 ( 2)	A B	100.9
SW9215	9	12.32 ( 3)	10.41 ( 6)	10.00 ( 7)	10.91 ( 3)	A B	100.6
WL656HQ	6	11.85 ( 6)	11.01 ( 1)	9.80 (11)	10.89 ( 4)	A B	100.3
59N59	9	11.83 ( 7)	10.38 ( 7)	10.35 ( 4)	10.85 ( 5)	A B	100.0
CUF101	9	12.59 ( 1)	10.63 ( 4)	9.34 (13)	10.85 ( 6)	A B	100.0
SW8421-S	8	11.40 (16)	9.99 ( 9)	11.06 ( 1)	10.82 ( 7)	A B	99.7
SuperNova	9	11.74 ( 9)	9.87 (10)	10.27 ( 6)	10.63 ( 8)	A B C	97.9
UC Impalo	9	12.26 ( 4)	10.48 ( 5)	8.77 (20)	10.50 ( 9)	A B C	96.8
PGI 908-S	9	12.35 ( 2)	9.07 (17)	9.91 ( 9)	10.44 (10)	A B C	96.2
Saltana	9	11.21 (17)	9.82 (11)	9.86 (10)	10.30 (11)	A B C D	94.9
Catalina	9	11.12 (19)	9.60 (12)	9.97 ( 8)	10.23 (12)	A B C D E	94.3
SW6330	6	11.66 (10)	9.43 (13)	9.18 (15)	10.09 (13)	A B C D E	93.0
SW9812	9	10.74 (23)	10.25 ( 8)	9.18 (16)	10.06 (14)	A B C D E	92.7
Ameristand 803T	8	11.46 (14)	9.31 (14)	9.21 (14)	9.99 (15)	A B C D E	92.1
UC Highline	9	11.79 ( 8)	9.10 (15)	9.08 (19)	9.99 (16)	A B C D E	92.0
AFX647	6	11.64 (11)	9.09 (16)	9.10 (18)	9.94 (17)	A B C D E	91.6
Ameristand 618NT	7	10.61 (24)	8.49 (20)	10.28 ( 5)	9.80 (18)	B C D E	90.3
6906N	9	11.44 (15)	9.03 (18)	8.73 (21)	9.73 (19)	B C D E	89.7
Hi-Gest 660	6	10.89 (21)	8.45 (21)	9.76 (12)	9.70 (20)	B C D E	89.4
57Q53	7	11.60 (12)	8.69 (19)	8.68 (22)	9.66 (21)	B C D E	89.0
SuperSonic	9	11.18 (18)	8.27 (24)	9.11 (17)	9.52 (22)	B C D E F	87.7
Magna 715	7	11.05 (20)	8.22 (25)	8.55 (23)	9.28 (23)	C D E F	85.5
Hybriforce-3600	6	10.82 (22)	8.34 (23)	8.46 (24)	9.21 (24)	C D E F	84.9
Bulldog 805	8	10.33 (25)	8.35 (22)	7.90 (26)	8.86 (25)	D E F G	81.7
SW7410	7	10.31 (26)	7.77 (26)	8.41 (25)	8.83 (26)	E F G	81.4
Ameristand 518NT	5	10.12 (27)	6.92 (27)	7.51 (27)	8.18 (27)	F G	75.4
CW 704	7	9.57 (28)	5.93 (28)	7.27 (28)	7.59 (28)	G	70.0
MEAN		11.34	9.24	9.32	9.97		
CV		10.60	16.61	17.26	12.04		
LSD (0.1)		1.45	1.85	NS	1.45		

Trial seeded at 25 lb/acre viable seed on Yolo clay loam soil at Univ. of California Agronomy Farm, Davis 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 8. 2022 YIELDS, UC KEARNEY ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 10/19/21**

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	YEAR		% of
		9-May	7-Jun	12-Jul	17-Aug	13-Sep	11-Oct	15-Nov	TOTAL		CUF101
	FD	Dry t/a									
VL 668HQ.RR	9	2.23 ( 1)	1.97 ( 1)	2.61 ( 1)	2.07 (11)	1.49 ( 3)	1.22 ( 1)	0.94 ( 1)	12.54 ( 1)	A	121.6
NM1705PAR	7	1.99 ( 3)	1.82 ( 4)	2.47 ( 6)	2.36 ( 1)	1.58 ( 1)	1.16 ( 2)	0.86 (10)	12.25 ( 2)	A B	118.8
AmeriStand 835NT RI	8	1.96 ( 5)	1.92 ( 2)	2.44 ( 7)	2.12 ( 4)	1.34 (13)	1.12 ( 4)	0.90 ( 2)	11.81 ( 3)	A B C	114.5
SW 9813s	9	2.07 ( 2)	1.92 ( 3)	2.37 ( 8)	1.99 (16)	1.33 (15)	1.13 ( 3)	0.85 (13)	11.67 ( 4)	A B C D	113.2
Alphatec 921	9	1.85 ( 7)	1.81 ( 5)	2.49 ( 3)	2.18 ( 2)	1.39 ( 7)	1.08 ( 8)	0.84 (15)	11.63 ( 5)	A B C D	112.8
6829R	8	1.94 ( 6)	1.79 ( 9)	2.49 ( 3)	1.98 (17)	1.50 ( 2)	1.01 (16)	0.79 (18)	11.49 ( 6)	A B C D	111.5
NM1703PAR	7	1.77 ( 9)	1.75 (12)	2.51 ( 2)	2.11 ( 8)	1.45 ( 4)	1.01 (16)	0.88 ( 7)	11.49 ( 7)	A B C D	111.4
AmeriStand 803T	8	1.42 (22)	1.80 ( 7)	2.49 ( 3)	2.11 ( 6)	1.35 (11)	1.09 ( 7)	0.90 ( 2)	11.16 ( 8)	A B C D E	108.2
NM170506PAR	7	1.57 (15)	1.64 (18)	2.26 (12)	2.10 ( 9)	1.42 ( 6)	1.11 ( 5)	0.85 (11)	10.95 ( 9)	A B C D E F	106.2
Magna 995	9	1.33 (24)	1.76 (10)	2.37 ( 9)	2.15 ( 3)	1.43 ( 5)	1.01 (16)	0.85 (11)	10.91 (10)	A B C D E F	105.8
AmeriStand 901TS	9	1.58 (13)	1.63 (19)	2.23 (15)	2.04 (13)	1.34 (12)	1.03 (14)	0.89 ( 6)	10.75 (11)	B C D E F G	104.3
SW 9812	9	1.55 (17)	1.72 (13)	2.25 (13)	2.03 (15)	1.33 (15)	1.02 (15)	0.84 (14)	10.73 (12)	B C D E F G	104.1
Highline	9	1.55 (17)	1.59 (20)	2.21 (16)	2.04 (13)	1.36 ( 9)	1.06 (11)	0.90 ( 2)	10.71 (13)	B C D E F G	103.8
RRALF 9R100	9	1.36 (23)	1.66 (16)	2.18 (17)	2.11 ( 6)	1.36 ( 9)	1.08 ( 8)	0.87 ( 9)	10.63 (14)	B C D E F G	103.1
NM1701PAR	7	1.50 (19)	1.79 ( 8)	2.18 (17)	1.92 (20)	1.38 ( 8)	1.05 (12)	0.79 (17)	10.61 (15)	B C D E F G	102.9
NM1702PAR	7	1.47 (21)	1.76 (11)	2.12 (21)	2.05 (12)	1.33 (15)	1.07 (10)	0.80 (16)	10.60 (16)	B C D E F G	102.8
Alphatec 821	8	1.65 (11)	1.54 (21)	2.28 (11)	2.12 ( 4)	1.29 (19)	1.00 (20)	0.73 (21)	10.60 (17)	B C D E F G	102.8
NM1704PAR	7	1.47 (20)	1.65 (17)	2.37 ( 9)	1.96 (19)	1.31 (18)	1.05 (12)	0.77 (19)	10.59 (18)	B C D E F G	102.7
VL 656HQ	9	1.25 (25)	1.69 (14)	2.14 (20)	2.08 (10)	1.34 (13)	1.10 ( 6)	0.90 ( 5)	10.51 (19)	C D E F G H	101.9
CUF101	9	1.56 (16)	1.80 ( 6)	2.16 (19)	1.85 (21)	1.24 (21)	0.82 (25)	0.88 ( 7)	10.31 (20)	C D E F G H	100.0
RRL913T455	8	1.80 ( 8)	1.44 (24)	1.98 (23)	1.97 (18)	1.27 (20)	1.01 (19)	0.68 (22)	10.15 (21)	C D E F G H	98.5
6601N	6	1.98 ( 4)	1.40 (25)	2.25 (14)	1.69 (26)	1.21 (22)	0.85 (24)	0.58 (24)	9.95 (22)	D E F G H	96.5
AmeriStand 715NT RI	7	1.74 (10)	1.68 (15)	1.63 (26)	1.84 (23)	1.16 (24)	0.94 (22)	0.59 (23)	9.59 (23)	E F G H	93.0
Magna 801FQ	8	1.17 (26)	1.52 (22)	1.93 (25)	1.85 (22)	1.18 (23)	0.98 (21)	0.76 (20)	9.38 (24)	F G H	91.0
AmeriStand 518 NT	5	1.61 (12)	1.45 (23)	2.01 (22)	1.74 (25)	1.10 (25)	0.74 (26)	0.42 (25)	9.06 (25)	G H	87.9
HybriForce-4420/Wet	4	1.58 (13)	1.13 (26)	1.94 (24)	1.84 (23)	1.06 (26)	0.88 (23)	0.37 (26)	8.81 (26)	H	85.4
MEAN		1.65	1.68	2.24	2.01	1.33	1.02	0.79	10.73		
CV		37.74	19.41	16.43	12.40	10.34	14.90	12.46	13.40		
LSD (0.1)		NS	NS	NS	NS	0.17	0.18	0.12	1.74		

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 9. 2022 YIELDS, USDA ARS PARLIER ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 3/10/20**

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	YEAR	% of	
		7-Apr	11-May	14-Jun	20-Jul	24-Aug	29-Sep	3-Nov	TOTAL	CUF 101	
	FD										
										Dry t/a	
<b>Released Varieties</b>											
SW8421-S	8	2.59 ( 3)	1.98 ( 1)	2.62 ( 1)	2.52 ( 1)	2.16 ( 1)	1.61 ( 1)	1.03 ( 1)	14.52 ( 1)	A	117.1
SW88-304	8	2.18 (15)	1.70 (12)	2.55 ( 2)	2.50 ( 2)	2.16 ( 2)	1.59 ( 2)	0.92 ( 6)	13.60 ( 2)	A B	109.7
Desert Rose	8	2.37 ( 6)	1.96 ( 2)	2.47 ( 7)	2.11 ( 5)	1.99 ( 6)	1.53 ( 4)	0.93 ( 5)	13.36 ( 3)	A B	107.8
SW8421RRS	8	2.77 ( 1)	1.87 ( 4)	2.54 ( 3)	1.97 ( 8)	2.00 ( 5)	1.37 (12)	0.81 (12)	13.33 ( 4)	A B	107.5
SW9813	9	2.35 ( 8)	1.78 ( 8)	2.54 ( 5)	1.96 ( 9)	2.02 ( 3)	1.49 ( 6)	0.89 ( 7)	13.01 ( 5)	A B C	104.9
Super Sonic	9	2.68 ( 2)	1.85 ( 5)	2.52 ( 6)	1.76 (15)	1.83 (10)	1.42 ( 9)	0.95 ( 4)	13.01 ( 6)	A B C	104.9
SW9812	9	2.23 (13)	1.82 ( 6)	2.54 ( 4)	1.76 (14)	1.87 ( 9)	1.54 ( 3)	0.99 ( 2)	12.74 ( 7)	B C D	102.8
HVX840RR	8	2.03 (18)	1.60 (17)	2.40 (10)	2.15 ( 4)	2.01 ( 4)	1.50 ( 5)	0.96 ( 3)	12.64 ( 8)	B C D	101.9
SW9215RRS	9	2.13 (17)	1.57 (18)	2.43 ( 9)	2.18 ( 3)	1.99 ( 7)	1.49 ( 7)	0.84 ( 8)	12.62 ( 9)	B C D	101.8
CUF 101	9	2.41 ( 4)	1.75 ( 9)	2.43 ( 8)	2.01 ( 7)	1.69 (16)	1.29 (15)	0.81 (13)	12.40 (10)	B C D	100.0
AFX779	7	2.33 ( 9)	1.80 ( 7)	2.35 (11)	1.83 (12)	1.77 (12)	1.38 (11)	0.82 ( 9)	12.30 (11)	B C D	99.2
UC Cibola	9	2.19 (14)	1.62 (15)	2.35 (12)	2.06 ( 6)	1.89 ( 8)	1.31 (14)	0.80 (14)	12.23 (13)	B C D	98.6
SW10	10	2.32 (10)	1.66 (13)	2.15 (16)	1.95 (10)	1.73 (14)	1.48 ( 8)	0.82 (10)	12.12 (14)	B C D	97.8
Magna 905	9	2.29 (12)	1.60 (16)	2.33 (14)	1.93 (11)	1.77 (11)	1.29 (16)	0.76 (18)	11.98 (15)	B C D	96.6
715RR	7	2.15 (16)	1.72 (11)	2.23 (15)	1.52 (17)	1.69 (15)	1.35 (13)	0.80 (16)	11.46 (16)	C D	92.4
UC Highline	9	2.38 ( 5)	1.65 (14)	2.15 (17)	1.58 (16)	1.56 (18)	1.21 (18)	0.77 (17)	11.29 (17)	C D	91.1
UC Impalo	9	2.35 ( 7)	1.73 (10)	2.07 (18)	1.38 (18)	1.64 (17)	1.23 (17)	0.80 (15)	11.21 (18)	D	90.4
<b>Experimental Varieties</b>											
98218	8	2.31 (11)	1.90 ( 3)	2.34 (13)	1.78 (13)	1.75 (13)	1.41 (10)	0.82 (11)	12.30 (12)	B C D	99.2
UC 2705	9	1.70 (19)	1.25 (19)	1.30 (19)	1.11 (19)	1.28 (19)	0.89 (19)	0.50 (19)	8.03 (19)	E	64.8
UC 2693	9	1.07 (20)	0.72 (20)	1.01 (20)	0.74 (20)	0.61 (20)	0.45 (20)	0.29 (20)	4.88 (20)	F	39.4
MEAN		2.24	1.68	2.27	1.84	1.77	1.34	0.82	11.95		
CV		18.16	14.80	14.55	26.03	16.13	13.23	15.35	12.09		
LSD (0.1)		0.50	0.30	0.40	0.59	0.35	0.22	0.15	1.77		

Trial seeded at 25 lb/acre viable seed at San Joaquin Valley Agricultural Sciences 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 10. 2020-2022 YIELDS. USDA ARS PARLIER ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 3/10/2020**

		2020	2021	2022	Average	
		Yield	Yield	Yield		
	FD	Dry t/a				
<b>Released Varieties</b>						
SW8421-S	8	4.85 ( 3)	13.64 ( 6)	14.52 ( 1)	11.00 ( 1)	A
Desert Rose	8	4.81 ( 4)	14.52 ( 2)	13.36 ( 3)	10.90 ( 2)	A
SW9812	9	4.89 ( 2)	14.96 ( 1)	12.74 ( 7)	10.87 ( 3)	A
SW9813	9	5.26 ( 1)	14.16 ( 4)	13.01 ( 5)	10.81 ( 4)	A B
SW8421RRS	8	3.92 (14)	14.23 ( 3)	13.33 ( 4)	10.50 ( 5)	A B C
SW88-304	8	4.36 ( 7)	13.25 ( 9)	13.60 ( 2)	10.40 ( 6)	A B C D
CUF 101	9	4.12 (10)	14.05 ( 5)	12.40 (10)	10.19 ( 7)	A B C D E
Super Sonic	9	3.97 (13)	13.31 ( 7)	13.01 ( 6)	10.09 ( 8)	A B C D E F
AFX779	7	4.52 ( 5)	13.31 ( 8)	12.30 (11)	10.04 ( 9)	A B C D E F
HVX840RR	8	4.29 ( 9)	12.57 (14)	12.64 ( 8)	9.83 (10)	B C D E F G
SW9215RRS	9	4.00 (12)	12.71 (12)	12.62 ( 9)	9.78 (11)	C D E F G
715RR	7	4.48 ( 6)	13.09 (10)	11.46 (16)	9.68 (12)	C D E F G
UC Cibola	9	3.54 (16)	12.71 (13)	12.23 (13)	9.49 (13)	C D E F G
SW10	10	4.01 (11)	12.26 (15)	12.12 (14)	9.47 (15)	D E F G
Magna 905	9	3.79 (15)	12.05 (17)	11.98 (15)	9.27 (16)	E F G
UC Highline	9	3.40 (17)	12.74 (11)	11.29 (17)	9.14 (17)	F G
UC Impalo	9	3.32 (18)	12.17 (16)	11.21 (18)	8.90 (18)	G
<b>Experimental Varieties</b>						
98218	8	4.29 ( 8)	11.86 (18)	12.30 (12)	9.48 (14)	C D E F G
UC 2705	9	2.77 (20)	9.70 (19)	8.03 (19)	6.83 (19)	H
UC 2693	9	2.79 (19)	7.30 (20)	4.88 (20)	4.99 (20)	
MEAN		4.07	12.73	11.95	9.58	
CV		18.40	10.23	12.09	8.74	
LSD (0.1)		0.92	1.59	1.77	1.02	

Trial seeded at 25 lb/acre viable seed at San Joaquin Valley Agricultural Sciences 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.

**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.



