UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION SAN JOAQUIN COUNTY

Field Crops Report

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Alfalfa Issue

USDA Crop Acreage Report Shows CA Alfalfa Hay Acres Down in 2004
May 1 hay stocks up from a year ago, but…

By Seth Hoyt, Senior Economist with the California Agricultural Statistics Service

For the second consecutive year, the USDA National Agricultural Statistics Service (NASS) crop acreage report shows a decline in alfalfa hay acres in California. The 2004 NASS report issued June 30 estimated alfalfa hay acres at 1,050,000, down 4% from 2003. Alfalfa hay acres in the seven western states were estimated at 4,225,000, down 3% from last year.

While it appears that alfalfa hay acres converted to cotton in the Central Valley are less than the industry predicted last fall, the decline in alfalfa hay acres in the southern desert made up for it. The Imperial Irrigation District reported alfalfa hay acres on June 14, 2004 at 135,373, down nearly 20,000 acres from 2003. Alfalfa hay acres in the Palo Verde Valley (Blythe area) in June were reported at 42,328, down 10,000 acres from June 2003. The proposed water agreement between the Palo Verde Irrigation District and Metropolitan Water District is expected to dry down 26,000 acres of farmland this fall.

Hay Stock Analysis
May 1 hay stocks in California were estimated at 300,000 tons, up from 200,000 tons on May 1 of last year. The 10-year average on May 1 hay stocks in California is 284,000 tons. Hay stocks in the seven western states on May 1, 2004 were up 11% from a year ago. The higher May 1 hay stocks in California are a little misleading. First, it appeared that most of the excess hay on May 1 was in the Imperial Valley and northern mountains, according to sources. Unsold inventories of old crop, dry cow alfalfa hay in the Imperial Valley declined substantially in May due to strong demand from Southern San Joaquin Valley dairies. Secondly, due to the **poor** financial situation in the dairy industry the first half of 2003, many dairies used up old crop hay supplies and were not as aggressive in buying new crop hay. Consequently, it appeared that old crop hay supplies on May 1, 2003 at the dairies were lower than normal, making for a poor year-to-year comparison.

Good First Half
The alfalfa hay market in California the first half of 2004 was much improved from the first half of 2003. The strong hay market was driven by sharply higher milk prices and profitability in the dairy industry. According to Market News, Supreme alfalfa hay delivered to Tulare in May averaged $172.14, up $26.50 per ton from May 2003. The biggest year-to-year increase was seen on Good quality alfalfa hay, which increased $37.50 per ton and averaged $148.55 delivered. Fair quality (dry cow) alfalfa hay in May averaged $112.22 per ton delivered to

Tulare, up $15.06 from May of last year. Ample supplies of old crop, dry cow alfalfa hay in the southern desert tempered the year-to-year price increase in Fair quality alfalfa hay.

Second Half Factors

When analyzing what the alfalfa hay market could do the second half of 2004, there are probably more factors indicating that the price will hold rather than weaken. If there is any weakness it may be in the middle quality hay in some areas. Several exporters have gone out of business in recent years and export demand for "Good" quality alfalfa hay is down compared to past years. It doesn't appear that the top quality alfalfa hay market will soften.

The biggest bearish factor in the hay market the second half of the year is the projected drop in milk prices. (On July 8, Milk Futures prices on the Chicago Board of Trade for July thru December ranged from $12.35 to $14.85 cwt., down from prices of a few months ago). Sources indicate the lower milk prices are due to buyer resistance to the record high dairy product prices. Additionally, milk production in California in May was up 2% from 2003. While input costs for dairy producers have increased, it appears the dairy industry could still be profitable the second half of the year, barring a further decline in milk price projections and/or increased production costs. A positive for dairy producers is a 25% drop in corn prices since early April. Unless Corn Belt weather deteriorates in the coming weeks, projections are for a record corn harvest in 2004. Corn exports the past month were below expectations.

Other bullish factors in the alfalfa hay market include lower production in California and lower availability of milk cow quality hay in the West. One area that may see the biggest year-to-year decline in alfalfa hay production is the southern desert. With the early start to the 2004 season, alfalfa yields are running ahead of 2003 in some areas. However, yields were disappointing in June in north central California and with the uncertain water picture, yearly production could be negatively impacted. Some Central Valley growers are concerned about water supplies for late season irrigation. The levee break in the Stockton-Delta and the availability of water from mountain runoff made irrigation supplies more questionable. One source in the north central area indicated that TDN tests in June were above normal, but yields were lower than normal. This source also reported that alfalfa hay inventories in growers' hands on July 1 in his area were significantly below the same time last year. He said growers were moving large volumes of hay to aggressive dairy buyers.

Rain in the northern mountains of California caused damage or reduced TDN tests on some first cutting alfalfa. Many northern California dairies purchase milk cow quality alfalfa hay from this area in the summer. Additionally, the amount of high quality new crop alfalfa available in some other western states, particularly Utah and Idaho, was down due to spring rains. One source reported that if the hay didn't get rained on, it was less than milk cow quality because growers delayed harvest.

Alfalfa hay shipments into California from out-of –state in the January thru May 2004 period were up 18% from the same period last year. However, the key to summer shipments depends on available supplies of high test, new crop alfalfa hay in Utah and Nevada. The June shipment report should give us an indication.

Another positive for hay growers was a 25% reduction in dairy cow slaughter in April and May compared to a year ago due to high milk prices and a very strong springer heifer market. Dairy producers will probably return to more normal culling in the coming months. The current slaughter cow market is very strong and could prompt some additional culling near term. A

partial offset to heavier culling is that placements of heifers into herds the first half of the year was up from last year. In the January thru May period, 25,000 more milk replacement heifers were shipped into California than the same period last year, a 53% increase. Due to uncertainties in milk prices in the coming months, the top of the springer heifer market at one central valley auction was $1,800 to $2,100 per head in early July, down $200 to $300 from their highs in April and May.

Conclusion

The outlook for alfalfa hay prices in the coming months continues to be filled with many variables. The bright spots for hay growers are the return of profitability in the dairy industry and the fewer acres of alfalfa hay in California and the West. With dairy producers accounting for approximately 80% of the outlet for alfalfa hay in California, profitability in the dairy industry will be key to the alfalfa hay market in the months ahead.

Using varieties or cutting schedules to achieve quality hay
What are the tradeoffs?

Dan Putnam and Steve Orloff[1]

The use of 'high quality' varieties has been proposed as a method to achieve high forage quality. However, there is strong evidence that high quality often comes at the expense of yield. Studies conducted at UC Davis indicate the powerful influence of varietal Fall Dormancy (FD) on both yield potential and forage quality. More dormant varieties (FD 2-4) produce lower fiber, higher TDN (approximately 2 points ADF) and higher protein forage (approximately 2 points CP on the average) than nondormant lines (FD 8-10). However, yields were almost always lower with the more dormant varieties. The average yield penalty for each unit of FD ranged from about 0.3 tons/acre to 0.6 tons/acre per year in theses studies – total annual yield differences of up to 3.5 tons/A between some varieties. Cutting intervals varying from 24 days to 33 days between cuts had a stronger influence on quality than did variety. *Early* cutting schedules (24 days) resulted in 85% production in the 'Premium' and 'Supreme' categories, whereas *Medium* (28 days) and *Late* (33 days) cutting schedules resulted in 53% and 45% of the production in those categories, respectively in 2002 (average of 18 varieties). Growers need to determine the amount of yield loss that can be sacrificed for higher quality under different market conditions, since under some market conditions the yield sacrifice is justified while in other market conditions it is not. While selecting varieties with lower FD has the potential to improve quality, the tradeoff between yield and quality are fundamental issues when choosing a variety for improved forage quality.

Important factors for choosing alfalfa varieties in approximate order of importance:

- Yield Potential
- Fall Dormancy
- Disease Resistance
- Stand Persistence
- Forage Quality Potential
- Price

Forage quality of alfalfa hay produced in California has been of major importance in recent years. Differences between hay quality categories on the order of $40-$70 per ton (difference between top to bottom categories) have been observed. The 'premium' for high quality hay is especially intense in so-called 'down' years, when hay supplies are plentiful in relation to demand (such as 2002-2003). Unrelenting pressure for high quality hay by California

dairies has caused many growers to scramble for any method that allows them to achieve a high quality hay product.

There are a number of agronomic practices that affect quality, the most important of which are cutting schedule, harvest management, and weed control (Putnam et al., 2000). However, several other factors influence quality as well, including time of day for harvesting, insect pressure, soil type, and choice of alfalfa variety.

What is Important for Variety Selection?

Yield performance, fall dormancy (FD), disease resistance, stand persistence and forage quality are important criteria for variety selection, in approximate order of importance. Current yield performance of alfalfa varieties at UC Davis is listed in Tables 1 & 2. The use of yield as the primary criteria for variety selection is usually justified, given the large impact of crop yield on profitability. Yield potential (over multiple years) integrates many factors, including stand persistence, fall dormancy and disease resistance. However, forage quality has become a much more important factor affecting profitability in recent years – we estimate over $300 million in value is ascribed to quality factors in California alone. There has been a trend in recent years in the Sacramento Valley and Northern San Joaquin Valley to plant lower dormancy varieties (3-4) in order to obtain higher forage quality (Table 3), even if these varieties may be lower yielding. Growers have perceived the demand for high quality to be so intense that sacrifice in yield may be justified in order to maintain marketability of the product. In some market years (2003 being a good example), *Medium* and low quality hay simple does not sell.

Cutting schedules also have a profound effect on forage quality. This raises the question as to which strategy is more profitable: select a nondormant variety for optimum yield and obtain high quality only through shorter cutting schedules or select a more dormant variety which may allow longer cutting schedules while still achieving high quality. This second approach would result in fewer cuttings, lower harvesting costs and longer alfalfa life. Furthermore, since more dormant varieties grow more slowly, these may allow a larger window of opportunity for high quality cuttings during very busy periods of the year.

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Table 1. UC DAVIS ALFALFA CULTIVAR TRIAL 2002-2003 YIELDS. TRIAL PLANTED 9/17/01

		2002	2003			% OF
		----------Yield----------		Average		CUF 101
		----------Dry tons/acre----------				%
Released Varieties	**Fall Dormancy***					
AL999Plus	9	11.60 (2)	12.66 (1)	12.13 (1)	A	112.4
WL625HQ	9	11.21 (10)	11.99 (4)	11.60 (3)	A B C	107.5
DS681FQ		11.23 (8)	11.90 (5)	11.56 (4)	A B C	107.2
59N49	9	11.46 (5)	11.52 (8)	11.49 (6)	A B C D	106.5
WL711WF	7	11.22 (9)	11.66 (6)	11.44 (7)	A B C D E	106.0
SW7410	7	11.32 (6)	11.41 (10)	11.37 (8)	A B C D E F	105.4
CW57104		11.28 (7)	11.42 (9)	11.35 (9)	A B C D E F	105.2
Achiever	7	10.94 (13)	11.16 (14)	11.05 (13)	A B C D E F G H	102.4
Fiesta	8	11.05 (12)	10.83 (20)	10.94 (15)	A B C D E F G H	101.4
SW9720	9	10.93 (14)	10.83 (21)	10.88 (16)	A B C D E F G H	100.9
58N57	8	10.51 (21)	11.10 (17)	10.81 (18)	B C D E F G H	100.2
Sedona	10	10.54 (19)	11.07 (18)	10.80 (19)	B C D E F G H	100.1
CUF 101	9	10.27 (25)	11.30 (11)	10.79 (20)	B C D E F G H	100.0
Dura765	7	10.61 (16)	9.92 (29)	10.26 (24)	D E F G H I J	95.1
El Tigre Verde	8	9.39 (33)	10.95 (19)	10.17 (25)	E F G H I J K	94.3
Magna601	6	10.02 (28)	10.25 (27)	10.13 (26)	F G H I J K	93.9
Tahoe	6	10.46 (22)	9.54 (31)	10.00 (27)	G H I J K	92.7
Sutter	7	9.78 (29)	10.20 (28)	9.99 (28)	G H I J K	92.6
54Q53	4	10.05 (27)	9.87 (30)	9.96 (29)	G H I J K	92.3
Tango	6	9.17 (35)	10.69 (22)	9.93 (30)	H I J K	92.0
Aspire	6	10.26 (26)	9.45 (32)	9.86 (32)	H I J K	91.3
WL325HQ	3	9.63 (30)	9.11 (33)	9.37 (33)	I J K L	86.8
Dura 512	5	9.47 (31)	8.79 (34)	9.13 (34)	J K L	84.6
Archer II	5	9.18 (34)	8.63 (35)	8.91 (35)	K L	82.5
Plumas	4	8.98 (36)	7.57 (36)	8.27 (36)	L	76.7
CV		7.5	10.5	8.7		
LSD (.05)		1.28	1.83	1.28		

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 5% probability level according to Fisher's (protected) LSD.

*FD range from 1-10
1 = very dormant
10 = nondormant

Table 2. UC DAVIS ALFALFA CULTIVAR TRIAL 2003 YIELDS. TRIAL PLANTED 9/30/02 (most recent planting).

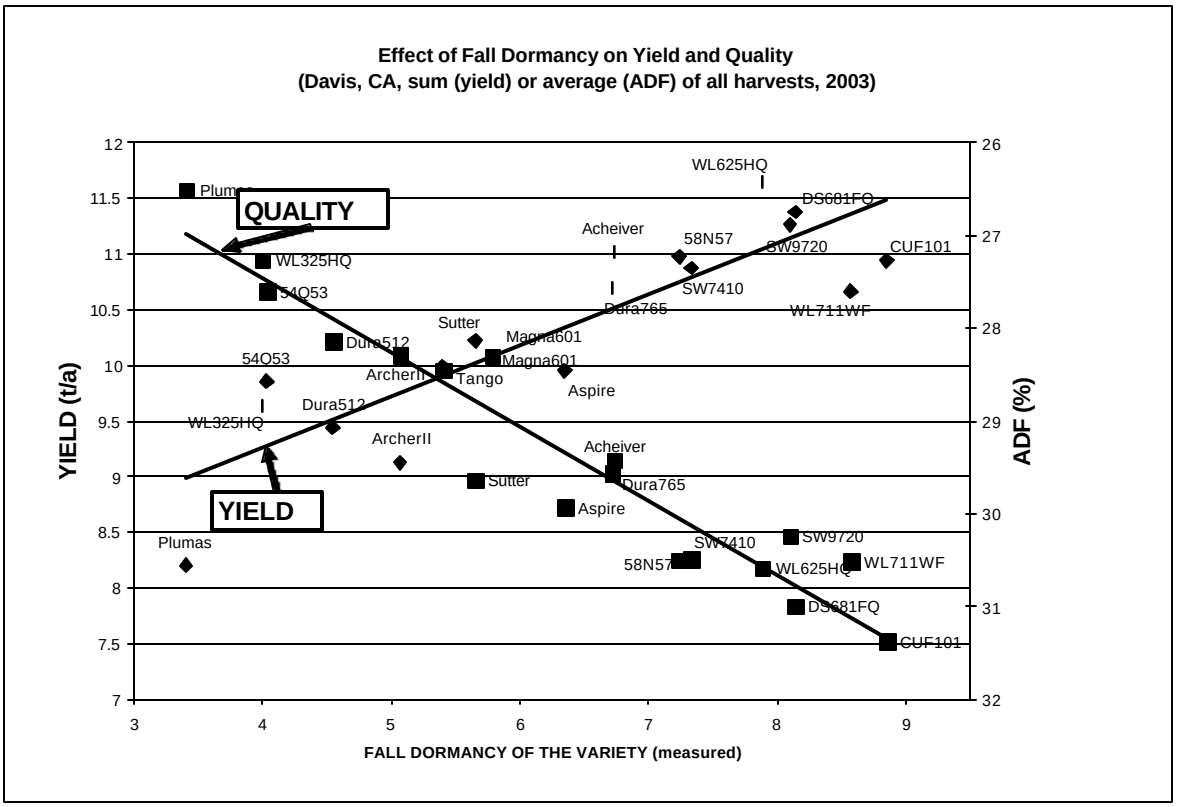
NOTE: SINGLE YEAR DATA SHOULD NOT BE USED TO EVALUATE ALFALFA VARIETIES OR CHOOSE ALFALFA CULTIVARS

	Cut 1 5/27	Cut 2 6/23	Cut 3 7/22	Cut 4 8/19	Cut 5 9/18	Cut 6 10/20	YEAR TOTAL		% OF CUF101
	----------Dry tons/acre----------								%
Released Varieties									
Dura765	1.80 (3)	2.07 (5)	2.32 (8)	1.64 (13)	1.32 (15)	1.14 (21)	10.29 (4)	A B C D	113.9
Magna901	1.53 (21)	1.96 (14)	2.28 (12)	1.85 (1)	1.32 (17)	1.32 (2)	10.25 (6)	A B C D E	113.5
Magna801FQ	1.55 (19)	1.93 (15)	2.27 (13)	1.75 (3)	1.37 (7)	1.21 (9)	10.07 (7)	A B C D E F	111.5
WL525HQ	1.42 (29)	1.91 (17)	2.31 (9)	1.72 (6)	1.40 (3)	1.28 (3)	10.04 (8)	A B C D E F	111.2
Tulare	1.64 (10)	1.91 (16)	2.37 (4)	1.63 (16)	1.32 (16)	0.99 (34)	9.85 (12)	A B C D E F G H I	109.1
59N49	1.41 (31)	1.89 (23)	2.25 (16)	1.65 (12)	1.37 (8)	1.21 (10)	9.77 (14)	A B C D E F G H I	108.1
Pershing	1.49 (24)	1.79 (31)	2.26 (15)	1.69 (9)	1.33 (11)	1.20 (16)	9.75 (15)	A B C D E F G H I	108.0
Moapa69	1.49 (25)	1.90 (21)	2.25 (17)	1.64 (14)	1.26 (28)	1.20 (14)	9.74 (16)	A B C D E F G H I	107.8
58N57	1.45 (26)	1.91 (18)	2.16 (29)	1.60 (20)	1.30 (20)	1.16 (20)	9.59 (20)	B C D E F G H I	106.2
Dura843	1.49 (23)	1.77 (34)	2.24 (18)	1.62 (18)	1.18 (35)	1.23 (7)	9.54 (21)	B C D E F G H I J	105.6
Sequoia	1.33 (35)	1.75 (35)	2.17 (28)	1.59 (22)	1.38 (4)	1.26 (5)	9.49 (26)	D E F G H I J	105.0
WL530HQ	1.42 (30)	1.83 (28)	2.24 (19)	1.60 (21)	1.30 (19)	1.09 (24)	9.48 (27)	D E F G H I J	105.0
Beacon	1.40 (32)	1.73 (37)	2.26 (14)	1.54 (25)	1.27 (22)	1.18 (18)	9.38 (29)	F G H I J	103.9
WL325HQ	1.79 (4)	2.02 (10)	2.22 (22)	1.37 (35)	1.12 (38)	0.80 (40)	9.32 (31)	F G H I J	103.1
Dura512	1.80 (2)	2.07 (6)	2.05 (35)	1.31 (39)	1.14 (37)	0.92 (37)	9.29 (32)	F G H I J	102.8
CUF101	1.39 (34)	1.77 (33)	1.92 (39)	1.59 (24)	1.27 (23)	1.10 (23)	9.03 (38)	I J	100.0
Recover	1.52 (22)	1.81 (29)	1.99 (38)	1.26 (40)	1.26 (26)	0.93 (36)	8.76 (39)	J K	97.0
Sutter	1.32 (36)	1.80 (30)	1.80 (40)	1.31 (38)	0.94 (40)	0.82 (39)	8.00 (40)	K	88.6
MEAN	1.52	1.91	2.21	1.58	1.28	1.12	9.61		
CV	15.4	11.4	7.5	8.9	11.8	7.5	6.2		
LSD (.05)	0.33	NS	0.23	0.2	0.21	0.12	0.83		

Trial seeded at 25 lb/acre viable seed on Hanford fine sandy loam soil at the Univ. of Cal., Davis, CA.

Entries followed by the same letter are not significantly different at the 5% probability level according to Fisher's (protected) LSD.

Table 3.



California AgrAbility Partnership between UC Davis and Easter Seals

The CalAgrAbility is committed to assisting people with disabilities by offering a wide range of services and opportunities to agriculture workers. Their services are available in Spanish too. They provide education and assistance to farmers and workers with disabilities and their families. The University of California, Davis Farm Safety Program partnered with Easter Seals Superior California to accomplish the goal of assisting individuals determined to continue in their professions in agriculture by helping them overcome disability barriers and linking them to services. This project is available to disabled farmworkers and farmers in 13 counties in California. For more information, visit their website at www.calagrability.ucdavis.edu Or contact Mary C. Reyna, CalAgrAbility Case Manager, at 916-679-3117, or email at maryr@easterseals-superiorca.org

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Field Crops Report
Alfalfa Issue

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