

Fall-Winter California Forage Outlook With "Fewer" Cows^{1/}

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Evaluating the present forage supply-demand-price situation involves an understanding of general production, supply and usage in the seven western states, as well as a grasp of the special present situation in the western dairy industry--alfalfa's prime user.

Alfalfa production is on the upturn, and until recently, so have been dairy numbers. However, the subsidized liquidation of the nation's dairy herd raises some doubt in regards to future alfalfa usage, particularly in view of seemed present dairy industry effort to reduce dairy cow numbers and production over the longer term.

The objectives of this analysis involve the following: (1) evaluate acreage-production trends in the western region, (2) evaluate acreage-production trends in California, (3) evaluate the current status of the dairy liquidation program on dairy cow numbers in California, and (4) provide a view of the short term price outlook for California forages based on the previous influences.

Regional January 1 Hay Stocks

Aggregate forage stocks in the seven western states were less on January 1 this year than the year previous, and this despite the fact 1985 acreage was greater in 1985 than in 1984. Despite greater acreage, lower per acre yields resulted in less total production, and the latter fact may be mainly attributed to poorer 1985 growing conditions. This fact, coupled with historically large regional dairy numbers and poor over wintering conditions, pulled down January 1 stock levels to the lowest levels in several years (Table 1). The largest relative reduction occurred in Idaho, where January 1 stocks were nearly 29 percent less than in 1985.

Regional May 1 Hay Stocks

As a result of regionally rigorous over wintering conditions and high usage, May 1 stocks this year, like January 1 stocks, were lower than in several years. Particularly, reductions in Arizona, Idaho, Nevada and Oregon, more than offset inventory increases in California, Utah and Washington (Table 2).

May 1 stocks in themselves are indicative of supply-demand volatility, but are not the only major factors in determining prices and evaluating fluctuation in alfalfa prices which may occur throughout a marketing season. Other major considerations are important, especially, anticipated acreage and yield, as well as spring growing conditions, the relative economic health of the consuming industries and anticipated supplies of competing feedstuffs and byproducts. They are of major interest because all of these aspects, taken together, provide insight as to both the direction and volatility of prices during the producing season, as well as during that portion of the season when available supplies are emanating from producer inventory. The fact January 1- May 1 stock levels have been trending downward in the West are lead indicators in explaining why alfalfa prices have been so volatile in recent years. But other information is also necessary when attempting to gain an understanding of the alfalfa market. Anticipated production, as measured by total acreage and yield per acre, is the most important element in that particular equation.

^{1/} Updated from a Cooperative Extension Forage Meeting, Presented at El Centro, September 4, 1986. The author is indebted to Crop and Livestock Reporting Service and Federal-State Market News Service for continued statistical support for these analyses

Regional Acreage Less than in 1985, But

Based on August 1 estimates, four of the seven western states will have less 1986 alfalfa acreage than in 1985 and one of them, Arizona, has the same area seeded as last year. Alfalfa production is becoming more unprofitable in specific high water cost regions in Oregon, Washington, Idaho and Nevada and this phenomena helps explain why acreage is declining in those states (Table 3). While alfalfa prices have remained stable or tended to move downward, energy rates have been increasing and this has been reflected in higher water costs and ultimately, in the cost of production. No particular state has been immune from this happening, and those regions with deep wells have thus far tended to be the hardest hit.

The "Problem" of High Production Per Acre

Despite the fact alfalfa acreage has declined in the west, total production is expected to increase in 1986 over 1985. Six of the seven states are expected to increase yield per acre this year (Table 4). This will translate into greater total production in six of the seven states and in the aggregate, nearly six percent more alfalfa will be produced in the region this year as compared to last (Table 5).

We can expect this prior phenomena to be the tendency for the next several years. During periods of falling prices, farmers tend to remove unproductive acres from the rotation and concentrate technology and management on the remaining, thus output per acre is often increased sufficiently to maintain or increase aggregate output. In most of the commodity areas, the reaction is to increase production, rather than cut back, when lower prices are first encountered. This phenomena tends to confound neophyte analysts and policy makers but is of no surprise to anyone with experience in the field.

When we combine expected 1986 alfalfa production with May 1 stocks, an estimate of total supply is obtained. Total regional supplies are expected to be slightly over 20 million tons, about 4.7 percent higher than last year (Table 6).

Trends in California Alfalfa and Grass Hay Acreage

Acreage of both alfalfa and grass hay has increased this year, as compared to last. In addition, farmers have been able to increase production per acre an imperceptible, but steadily increasing amount over time. Since 1980, California producers have consistently been averaging 6.5 tons per acre, and in two of those years, 1982 and this year, producers have exceeded 6.5 tons per acre. This year producers will cultivate the greatest alfalfa acreage since 1978--1,080 thousand acres. In addition, about 600 thousand acres of grass hay, averaging 2.5 tons per acre will be harvested (Table 7).

Trends in California Alfalfa and Grass Hay Production

From the previous information, one might suspect total California production has been increasing, and indeed, this has been the case. Total production of alfalfa has increased from about 5.9 million tons in 1978 to more than 7.1 million tons expected this year (Table 8). Grass hay production has increased as well, and this year is expected to total some 1.5 million tons. This will result in a total crop of about 8.6 million tons, the largest since 1978. Adding 1986 production to the May 1 carryover results in a total 1986 supply of about 9 million tons, the largest since 1978.

But What About Consumption....?"

Analysts continue to speculate about the impact of the dairy herd reduction, but as of July, 1986, U.S. milk production had only fallen 1 percent from last year and cow numbers were down only 2.3 percent. California cow numbers were about the same on July 1 of this year as at the same time last year. By late September, cow numbers were down about 2 percent from 1985, but production per cow had increased about 4.4 percent resulting in a net increase in aggregate production of about 2 percent. If the propensity to reduce the number of productive units and intensify output from the remaining units is consistent with other industries, little change in total production will occur this year. Thus, it could be argued that when measured from the viewpoint of output, less change in total alfalfa demand is likely to occur than one might first expect in a cursory examination of the DTP. The major practices likely to be altered are those associated

with the total ration mix. From this standpoint, we can expect more grain and other byproducts to be fed. An examination of concentrate feeding indicates dairy producers were feeding about 4.4 percent more concentrates during September than at the same time last year. The aggregate impact of this practice over time will likely be substantial.

From a grain producer's point-of-view, the situation is disastrous. The present estimate is for the third or fourth largest crop in history to be harvested and the 1986-87 carryover will amount to more than 5 billion bushels, with prices at the low point falling to the \$1.15-1.25 per bushel paid to the Corn Belt grower. This huge umbrella of supply will depress all the grains and have some effect on forage prices, but the overall implications are not yet fully felt nor understood. In California, for example, we would expect harvested corn acreage to continue to decline, and in all likelihood, a substantial portion of this acreage will go into alfalfa or some other forage crop.

More Price Volatility This Year.

When all is said and done, this looks like another year of highly volatile industry prices. Our winter outlook called for prices "falling out of bed" if favorable weather conditions prevailed throughout the summer, and this came to pass. We called for summer time lows falling at least \$10 per ton below last year, and this proved to be the case. What about this fall and winter? I am inclined to be a bit more optimistic than the "typical" analyst about the winter situation, since supplies are still not at levels considered to be disastrous. We are at or near the low point for the marketing year, and prices should continue to move up this winter to levels about \$10 per ton less than the high's of last year's winter marketing season. I also expect the differential between Premium and Good hay to be even greater than last year, perhaps more than \$10 per ton. We are in another "weather market" and if conditions continue dry and unfavorable to forage production during the winter, some real excitement could be induced into the market

Longer Term Economic Implications

Economic conditions from 1980 to 1985 were friendly and favorable to the alfalfa producer. At the 1979 Symposium I indicated "... (alfalfa prices) will probably average at or above \$80-85 per ton during the next three to five years..."^{2/} and in fact could average close to \$100 per ton in many areas. This seems relatively mundane now, but at the time raised some eyebrows.

Unfortunately, conditions will likely be much more unfavorable for the alfalfa producer for the next three to five years, and I list the following as items for thought.

- (1) The continued crunch in the cereals industry will cause individuals to shift to other extensive enterprises, and alfalfa is a likely alternative
- (2) The "attractive" cash-flow aspects of alfalfa will favor expansion of alfalfa acreage, despite apparent enterprise unprofitability
- (3) Government programs subsidize the production of competing forages, as well as additional alfalfa production
- (4) The dairy program favors the retention of fewer, higher producing cows, and this translates to intensification of cereals feeding

One final word. Detailed enterprise cost-of-production records should be a byword for the successful producer. Over the next three to five years successful producers will need to deal with market prices averaging \$10-15 per ton less than during the last five years. And in addition, much more seasonal price volatility will need to be successfully managed.

^{2/} J.H. Cothorn, "Some Factors Influencing the Market for Alfalfa in California," Presented at the Ninth Annual Alfalfa Symposium, Fresno, December 13, 1979.

Table 1
Hay Stocks on Farms and Ranches
Jan. 1, 1982-86

	1982	January 1 1983	1984	1985	1986
-1,000 Tons-					
Arizona	207.0	137.0	116.0	111.0	177.0
California	2,669.0	1,608.0	1,323.0	1,414.0	1,598.0
Idaho	3,073.0	2,712.0	2,850.0	3,036.0	2,162.0
Nevada	628.0	749.0	781.0	808.0	846.0
Oregon	2,165.0	1,958.0	2,185.0	2,023.0	1,495.0
Utah	1,530.0	1,328.0	1,089.0	1,231.0	1,146.0
Washington	1,652.0	1,337.0	1,528.0	1,490.0	1,246.0
Seven Western States	11,924.0	9,829.0	9,872.0	10,113.0	8,670.0
United States	99,476.0	106,650.0	89,280.0	100,589.0	96,818.0
Seven Western/ United States	.1199	.0922	.1106	.1005	.0895

*Source: Statistical Reporting Service, USDA

Table 2
Hay Stocks on Farms and Ranches
May 1, 1982-86

	1982	May 1 1983	1984	1985	1986
-1000 Tons-					
Arizona	109.0	333.0	73.0	66.0	55.0
California	471.0	337.0	368.0	314.0	400.0
Idaho	757.0	489.0	393.0	522.0	245.0
Nevada	105.0	125.0	195.0	135.0	130.0
Oregon	289.0	267.0	281.0	218.0	179.0
Utah	328.0	236.0	206.0	238.0	271.0
Washington	508.0	262.0	237.0	158.0	182.0
Seven Western States	2,567.0	2,049.0	1,753.0	1,651.0	1,462.0
United States	26,155.0	29,052.0	20,558.0	26,863.0	27,148.0
Seven Western/ United States	.0981	.0705	.0853	.0615	.0538

*Source: Statistical Reporting Service, USDA

Table 3
Alfalfa Hay Acreage
Seven Western States and U.S., 1983-86

STATE	Area Harvested			
	1983	1984	1985	1986
-1,000 Acres-				
Arizona	145.0	150.0	155.0	155.0
California	950.0	1,020.0	1,030.0	1,080.0
Idaho	1,030.0	1,050.0	1,070.0	1,060.0
Nevada	230.0	235.0	240.0	230.0
Oregon	440.0	445.0	450.0	480.0
Utah	455.0	470.0	470.0	460.0
Washington	440.0	475.0	500.0	430.0
Seven Western States	3,690.0	3,845.0	3,915.0	3,895.0

*Source: Statistical Reporting Service, USDA

Table 4
Alfalfa Hay, Average Yields
Seven Western States and U.S., 1983-86

STATE	Yield			
	1983	1984	1985	1986
-Tons-				
Arizona	7.3	7.2	7.4	7.7
California	6.4	6.5	6.4	6.6
Idaho	3.9	3.8	3.6	3.7
Nevada	3.9	4.0	3.9	4.1
Oregon	4.2	4.1	4.0	4.1
Utah	3.9	4.0	3.9	3.7
Washington	4.0	4.3	4.1	4.2

*Source: Statistical Reporting Service, USDA

Table 5
Alfalfa Hay, Total Production
Seven Western States and U.S., 1983-86

	1983	Production 1984	1985	1986
-1,000 Tons-				
Arizona	1,059.0	1,080.0	1,030.0	1,194.0
California	6,080.0	6,732.0	6,695.0	7,128.0
Idaho	4,017.0	3,938.0	3,570.0	3,922.0
Nevada	897.0	940.0	964.0	943.0
Oregon	1,848.0	1,825.0	1,823.0	1,944.0
Utah	1,775.0	1,880.0	1,794.0	1,702.0
Washington	1,760.0	2,043.0	1,755.0	1,806.0
Seven Western States	17,436.0	18,438.0	17,631.0	18,639.0

*Source: Statistical Reporting Service, USDA

Table 6
Total Alfalfa Supply
Seven Western States and U.S., 1983-86

	1983	Total Supply Available 1984	1985	1986
-1,000 Tons-				
Arizona	1,392.0	1,153.0	1,096.0	1,249.0
California	6,417.0	7,100.0	7,009.0	7,528.0
Idaho	4,506.0	4,331.0	4,092.0	4,167.0
Nevada	1,022.0	1,135.0	1,099.0	1,073.0
Oregon	2,115.0	2,106.0	2,041.0	2,123.0
Utah	2,011.0	2,086.0	2,032.0	1,973.0
Washington	2,022.0	2,280.0	1,913.0	1,988.0
Seven Western States	19,485.0	20,191.0	19,282.0	20,101.0

*Source: Statistical Reporting Service, USDA

Table 7
California Hay Crop Production and Yield: 1978-86
Alfalfa and Other Hay Mixtures

Year	Alfalfa	Yield	Other Hay	Yield	Total Crop	Ave. Yield
	-1000 Acres-	-Tons-	-1000 Acres-	-Tons-	-1000 Acres-	-Tons-
1978	1,090	5.45	520	1.95	1,610	4.31
1979	1,050	6.00	510	1.95	1,560	4.67
1980	1,030	6.40	520	2.20	1,550	4.99
1981	1,050	6.30	515	2.40	1,565	5.01
1982	960	6.70	510	2.40	1,470	5.20
1983	950	6.20	530	2.50	1,480	4.87
1984	1,020	6.60	530	2.40	1,550	5.16
1985	1,030	6.50	540	2.40	1,570	5.02
1986	1,080	6.60	600	2.50	1,680	5.14

*Source: California Crop and Livestock Reporting Service

Table 8
California Hay Crop Production and Inventories: 1978-86

Year	Carryover	Carryover	Alfalfa	Other Hay	Total Crop	Total
	: January 1	: May 1	: Production	: Production	: Production	: Supply
			-1000 Tons-			
1978	2,226	1,082	5,940	1,014	6,954	8,036
1979	2,043	765	6,300	995	7,295	8,060
1980	2,708	620	6,592	1,144	7,736	8,356
1981	2,669	542	6,615	1,236	7,851	8,393
1982	1,800	471	6,432	1,224	7,656	8,127
1983	1,608	337	5,890	1,325	7,215	7,552
1984	1,323	368	6,732	1,272	8,004	8,372
1985	1,414	314	6,592	1,296	7,888	8,202
1986	1,598	400	7,128	1,500	8,628	9,028

*Source: California Crop and Livestock Reporting Service