

Alfalfa

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ALFALFA PRODUCTION FOR SAN LUIS OBISPO COUNTY

by  
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Alfalfa occupies more acreage than any other single crop in California. In San Luis Obispo County, alfalfa is grown on only six per cent of the total harvested acres for all field crops. However, in 1966 it was the second most important single field crop grown in the county with a total value of 2,183,000.

By consulting Table #1, you can see that over the last ten years alfalfa has increased slightly in total acreage, but has doubled in total value. Average price received per ton has fluctuated from year to year ranging from 22 to 30 dollars. Yields per acre have increased steadily and now average over six tons per acre.

About half the crop is sold commercially as hay. The other half is grown and consumed on livestock ranches in the form of hay, green chop or pasture.

Because of its soil improving characteristics, alfalfa is a key crop in the rotation system, leaving the soil in good condition for succeeding crops. It does best on fertile soils. The soil should be deep and well-drained and should not contain excess salts or alkali.

IMPORTANT FACTORS OF PRODUCTION

Land preparation - Failure in the alfalfa business is often due to improper site selection or land preparation. The soil should be at least four feet deep and have good drainage.

TABLE I

Alfalfa - San Luis Obispo County - Ten Year Period

Year	Acres	Yield per Acre	Total tons	Price (dollars)	Total Value
1966	13,100	6	78,600	28	\$2,183,000
1965	12,900	6.5	83,850	26	2,172,000
1964	12,100	6	72,600	26	1,938,000
1963	11,900	6	71,400	30	2,159,900
1962	12,000	6	72,000	23	1,656,000
1961	12,100	5	64,500	22	1,419,000
1960	16,500	5	78,400	24	1,881,600
1959	14,200	5	67,500	27	1,822,500
1958	10,800	5	51,300	26	1,297,900
1957	10,700	4	42,800	28	1,112,800
Ten Year Average	12,630	5.5	68,295	26	1,764,270

If the crop is to be check irrigated the selection of proper grade, width and length of check should receive careful consideration. Irrigation water must cover the checks evenly and quickly. Drainage must be good within the field (and on the lower ends on heavier soils). Checks of about one acre in size are recommended. Checks which are too long or too wide usually result in weedy, poor quality hay and short-lived stands.

If the above factors are not planned properly there is very little that can be done to correct the situation once the crop is planted.

Planting - October and November plantings produce nearly a full yield the first year. However, the young alfalfa plants make little growth during the cool winter months and the first spring cutting is often low in quality due to heavy weed infestation.

In northern San Luis Obispo County spring planting should be made as soon as possible after the first of February in order to take full advantage of spring rains, and no later than March 15th. From 20 to 30 pounds of alfalfa seed per acre is used. Alfalfa is seeded with a drill, or broadcast and covered with a culti-packer, or applied by airplane. Inoculated seed should be used on soil not previously planted to alfalfa.

Varieties - Aphid resistant varieties such as Lahontan and Moapa are recommended in areas where the spotted alfalfa aphid may be a problem (the north county area). There are many non-resistant aphid varieties on the market which can be used in aphid free areas. The selection of variety depends on climatic conditions, insect problems and longevity of stand desired.

Irrigation - In San Luis Obispo County most alfalfa is sprinkle irrigated. Regardless of the method of applying water, good water management is extremely important. Enough water must be applied to wet the soil to depth of rooting. Excess water or too frequent watering will reduce yields, induce disease and weaken the stand.

A grower should plan on three to four acre feet of water per season. In low rainfall years it is often a good practice to pre-irrigate a stand once or twice before the growing season starts. This enables the producer to fill the soil profile with water at a time when adequate water is available.

Fertilization - Adequate phosphate is essential for good growth. If the soil is well supplied there is no advantage in applying additional phosphate. If soil tests, tissue analysis or test plots indicate phosphorus is needed, then 65 to 85 pounds of "P" should be applied 12 inches deep before planting and annual applications of 35 to 45 pounds should be made each year during the winter. Alfalfa normally does not need nitrogen fertilization. Small amounts may be used to establish the stand but this often increases the weed problem.

Hay Quality - Hay quality is more important today than ever before. A grower producing quality hay will always have a market. Dairymen need high quality hay in order to maintain present high production standards. There is no way to feed average or poor quality hay to high-producing dairy cows without losing money.

Alfalfa should be cut at one-tenth bloom stage. This usually results in the most favorable relationship between maximum tonnage and quality.

In recent years dairymen have found that chemical analysis is superior to visual observation when determining hay quality. Chemical analysis is relatively inexpensive (\$8 to \$10 per sample) and should be used by both the producer and the consumer in determining hay quality. It has been clearly demonstrated that hay testing 52 per cent total digestible nutrients or more will "milk well".

#### THE HAY MARKET

Southern California dairymen and the beef feeding industry of the entire state have been shifting away from alfalfa to concentrates in their feeding programs. Local dairies, however, will undoubtedly continue to feed large amounts of high quality hay. There is no doubt that in the future only high quality hay will command a price high enough to pay for the costs of producing and handling.

Marketing - There is no standard marketing procedure. Most of our commercial hay is sold locally on the basis of supply and demand. The Los Angeles Weekly Edition of the Hay Market News is used as a guideline for determining prices. Since local alfalfa hay quotations are not included in the report, quotations for southern and central California are used, plus or minus transportation differentials.

Outlook - The supply and demand and therefore price of alfalfa hay is difficult to predict. Supply is influenced by climatic conditions, insect and disease infestation, and competition from crops that can be grown on alfalfa land. Demand is influenced by cattle numbers and availability of other cattle feeds. It appears that for the near future, price will range from \$26 to \$30 per ton.

What's New - Alfalfa hay is grown, handled and marketed much the same as it has been for the past 30 years or more. In an attempt to lower costs and to reduce the amount of labor needed, several changes are taking place.

Swathers are doing the job cheaper and sometimes producing better hay than the conventional mower and rake.

Automatic bale pickup wagons are picking the bales up from the fields and stacking them, saving money and much backbreaking labor.

The feeding of alfalfa cubes is on the increase. Cubes offer several advantages over bales - including mechanized handling and feeding, and reductions in storage requirements and feeding waste. These advantages, among others have produced a good demand for cubes.

#### CHEMICAL RESIDUE PROBLEM

Without a doubt, the threat posed by pesticide residue problems is as great as the spotted alfalfa aphid problem was several years ago. The "zero tolerance" established for chlorinated hydrocarbon (DDT and others) residues in dairy products has been a difficult one to live with. Hay which becomes contaminated with chlorinated hydrocarbons represents a potential hazard to the livestock industry and consequently when it can not be sold it represents a financial loss to the hay producer.

San Luis Obispo County hay is generally free of contamination since hay is grown in areas where chlorinated hydrocarbons are not generally used on other crops. This is a real advantage to local hay producers and dairymen.

ALFALFA HAY PRODUCTION IN SAN LUIS OBISPO COUNTY - 1967

Cost Analysis Worksheet

by  
John H. Evans, Farm Advisor

Costs are based on a yield of 8 tons per acre for 5 years  
Man labor, \$1.65; medium horsepower wheel tractor \$1.95; pickup \$1.70

	Hours per Acre				Suggest. Costs		Your Cost Per Ac or Ton
	Man Labor	Spec. Mach.	Wheel Tractor	Pickup	Per Acre	Per Ton	
Irrigate, 8 times	8.0			0.5	14.05	1.76	
Misc. cultural care, fertilizing gopher control, etc.	3.0		1.0	0.5	7.75	.97	
<b>Total cultural cost</b>	<b>11.0</b>		<b>1.0</b>	<b>1.0</b>	<b>21.80</b>	<b>2.73</b>	
Mowing, 6 times	2.0		2.0		7.20	.90	
Rake and turn	3.0		3.0		10.80	1.35	
Bale (contract @ \$3.75/ton)					30.00	3.75	
Haul & stack (contract @\$1.50/ton)					12.00	1.50	
<b>Total harvest cost</b>	<b>5.0</b>		<b>5.0</b>		<b>60.00</b>	<b>7.50</b>	
<b>Total cultural &amp; harvest cost</b>	<b>16.0</b>		<b>6.0</b>	<b>1.0</b>	<b>81.80</b>	<b>10.23</b>	
Irrigation water, 4 ac ft @ \$5/ac ft (electrical power only)					20.00	2.50	
Fertilizer, 100% P <sub>2</sub> O <sub>5</sub> , (44P) @11¢					11.00	1.38	
Insecticides & misc. materials					4.00	.50	
<b>Total cultural materials</b>					<b>35.00</b>	<b>4.38</b>	
<b>Total cultural, harvest and material cost</b>					<b>116.80</b>	<b>14.60</b>	
General and office expenses (5% of above)					5.84	.73	
County taxes - land \$12, equipment \$1.50					13.50	1.68	
Repairs, miscellaneous					1.80	.23	
Compensation and other insurance					1.80	.23	
<b>Total cash overhead</b>					<b>22.94</b>	<b>2.87</b>	
<b>TOTAL CASH COSTS</b>					<b>\$139.74</b>	<b>\$17.47</b>	
	Dollars per Acre						
Investment Overhead	Av. Invest	6% Interest	Depreci- ation				
Land	600.00	36.00					
Building and equipment	7.00	.42	.50				
Irrigation system	100.00	6.00	20.00				
<b>Subtotal, real estate</b>	<b>707.00</b>	<b>42.42</b>	<b>20.50</b>				
Alfalfa stand: 45 ÷ 5	22.50	1.35	9.00				
Pickup & tractors for harvest	22.00	1.32	3.00				
Mower and rake	8.00	.48	1.71				
<b>Total tenants investment</b>	<b>52.50</b>	<b>3.15</b>	<b>13.71</b>				
<b>Total owner-operator deprec.</b>	<b>759.50</b>	<b>45.57</b>	<b>34.21</b>		<b>34.21</b>	<b>4.28</b>	
<b>TOTAL CASH &amp; DEPREC. COST</b>					<b>\$173.95</b>	<b>\$21.75</b>	
<b>Total interest on investment</b>					<b>45.57</b>	<b>5.70</b>	
<b>TOTAL ALL COST</b>					<b>\$219.52</b>	<b>\$27.45</b>	

COST PER TON AT VARYING YIELDS:	Yield-Tons/Acre	Cash Cost/Ton	Total Cost/Ton
	6	21.54	34.83
	7	19.21	30.61
	8	17.47	27.45
	9	16.11	24.97
	10	15.02	23.00