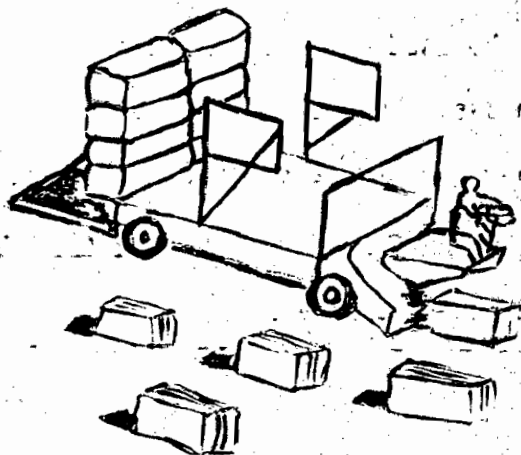


# ALFALFA HAY

## COSTS & GENERAL HINTS ON PRODUCTION

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## A B O U T T H E S E C O S T D A T A

The costs of production in any agricultural enterprise will vary considerably from ranch to ranch. The input and cost data in this booklet are sample costs. They are intended to be used only as educational guides in assisting you to appraise and plan your own crop and livestock program.

These cost data do not represent industry averages.

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## OF ALFALFA HAY.

By

David R. Woodruff, Farm Advisor

## GENERAL:

High yields of alfalfa are possible in Kern County because of favorable climatic conditions coupled with good soil and water. High quality alfalfa hay depends upon the proper timing of irrigations, cutting and curing. With good management a crop of alfalfa can produce high quality hay and high yields offering profit potential to the grower.

## SOIL REQUIREMENTS:

Alfalfa will do best on the best soil. Shallow soils, those with hardpan or other impervious layers, are not well suited for good alfalfa production. Special management practices must be done if such conditions exist.

## VARIETIES:

There are several good varieties available. Some of these are Experiment Station releases and others are private company releases. Almost every variety has some weak points to consider along with the strong points. One should contact seed company representatives or the local University of California Agricultural Extension office for characteristics of the various varieties. Remember this though, quite often a mistimed irrigation or improper cutting or curing will cause more yield loss than differences due to varieties.

## SOIL PREPARATION AND PLANTING:

Since the alfalfa crop is going to be on the land for several years, improper soil preparation can be very costly. Careful consideration of leveling the field should be taken to prevent low spots that drown out and high spots that do not get enough water. Both types of areas are costly not only in lost production but also from weed establishment problems.

A booklet on border irrigation with suggestions for check sizes for different soil types may be obtained by request from the University of California Agricultural Extension office.

After the field has been leveled for water control, a good seedbed is necessary for good emergence. A good seedbed is firm and moist. After initial land preparation, a preirrigation will show where high or low spots are which may be corrected before planting. This irrigation gives the firm and moist seedbed that is required. A light harrow or ring roller can be used to prepare the final seedbed.

If sprinkler irrigation is to be used, then precise leveling will not be required since water is controlled by the sprinklers. If the use of sprinklers are possible for the first couple of irrigations, then the seed may be planted dry and irrigated up. Be careful of crusting soil if this method is used.

Broadcasting or planting with an alfalfa drill are both successful.

### PLANTING RATE:

If broadcasting, 15 to 25 pounds per acre, or if drilling, 10 to 15 pounds per acre are sufficient.

## PLANTING TIME:

Fall or spring planting offers the best insurance against frost. Plants should have about six weeks of growth to sustain heavy frosts which usually occur the latter part of December and January. There have been successful plantings made throughout the winter but the chance for frost killing the stand is always present during the coldest part of winter.

## PLANTING DEPTH:

Depth of planting should not exceed three-quarters of an inch in most soils and shallower placement is preferred in some instances.

## FERTILIZATION:

If any fertilizer is needed, it will be phosphorus. In several fields throughout the county, phosphorus has been shown to be deficient. If the use of phosphorus on other crops has proved to be beneficial, then application for alfalfa should be done. The rate to use should fall between 80 and 100 pounds of  $P_2O_5$  per acre (200 to 240 pounds of Treble Super Phosphate).

## DISEASES:

Phytophthora root rot can cause severe losses. When plants become infected, leaves become yellow and drop off, many plants die. Tap roots will have discolored areas and many times the lower roots will be rotted off. Excessive irrigation is the main cause of phytophthora flare-ups.

There are several leaf diseases which affect alfalfa but usually the economic loss is not great. For further detailed information on alfalfa diseases ask for "Diseases of Alfalfa in California" at your local University of California Agricultural Extension Office.

## ALFALFA HAY PRODUCTION

Sample Costs to Produce Alfalfa Hay in Kern County - 1973

Man labor \$2.30 per hour total and equipment operator \$2.50

which includes employer's Social Security and Workman's Compensation insurance payments.

50 h.p. wheel diesel tractor per hour cash costs \$1.50, depreciation 75¢ and interest 40¢.

David R. Woodruff, Farm Advisor

	Sample Costs		My Costs	
	Per acre	Per ton	Per acre	Per ton
<u>Pre-Harvest Cash Costs</u>				
Irrigate 13 times: labor 8 hrs.	\$ 18.40			
Power for 5 ac. ft. water @ \$8.00	40.00			
Fertilize: 44 lbs. phosphate	11.00			
Bulk spread fertilizer	2.00			
Weed control: including application	10.00			
Insect control: total	5.00			
Taxes	18.00			
Repairs to irrigation system & equipment except tractor	4.25			
Miscellaneous labor, materials, 1 hr., man and tractor	5.00			
Business expense, office, car, etc., 6% of pre-harvest and harvest costs	10.90			
<b>TOTAL PRE-HARVEST CASH COSTS</b>	<b>\$124.55</b>	<b>\$14.65</b>		
<u>Harvesting Costs</u>				
Swath 7 X: contract \$2.25 per time	\$ 15.75			
Turn: contract 7 X at 50¢	3.50			
Bale: contract \$4.00 per ton	34.00			
Roadside: contract \$1.75 per ton	14.90			
<b>TOTAL HARVESTING COSTS</b>	<b>\$ 68.15</b>	<b>\$ 8.02</b>		
<b>TOTAL CASH COSTS</b>	<b>\$192.70</b>	<b>\$22.67</b>		
<u>Depreciation</u>				
Irrigation system and equipment, \$200.00, 12 year life	\$ 16.65			
Tractor: 1 hr.	.75			
Stand: cost \$76.75, 3 years	25.60			
<b>TOTAL DEPRECIATION</b>	<b>\$ 43.00</b>	<b>\$ 5.06</b>		
<u>Interest on investment at 7%</u>				
Irrigation system and equipment: ½ cost \$100.00	\$ 7.00			
Tractor 1 hr.	.40			
Stand: ½ cost \$38.38	2.70			
Land: \$800.00 per acre	56.00			
<b>TOTAL INTEREST ON INVESTMENT</b>	<b>\$ 66.10</b>	<b>\$ 7.78</b>		
<b>TOTAL COST OF PRODUCTION</b>	<b>\$301.80</b>	<b>\$35.51</b>		

No allowance has been included for the cost of management. No income from sheep grazing has been indicated, although this is sometimes earned by hay growers. Costs are based on a yield of 8½ tons per acre average, with a three year stand life. Costs per acre are rounded to the nearest 5¢.

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ALFALFA HAY PRODUCTION

Sample Expense

Flow Sheet

Activity	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	TOTAL
Irrigate		4.50	4.50	8.98	8.98	8.98	8.98	8.98	4.50				58.40
Fertilize											13.00		13.00
Weed Control		10.00											10.00
Insect Control								5.00					5.00
Taxes				9.00								9.00	18.00
Repairs	2.13						2.12						4.25
Misc. labor, Materials, Etc.	2.50						2.50						5.00
Business Expense		.99	.99	.99	.99	.99	.99	.99	.99	.99	.99	1.00	10.90
Harvest			9.74	9.74	9.74	9.74	9.73	9.73	9.73				68.15
Depreciation	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.59	3.59	3.59	3.59	43.00
Interest on investment	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.50	5.50	66.10
Total	13.72	24.58	24.32	37.80	28.80	28.80	33.41	33.79	24.32	10.09	23.08	19.09	301.80

## ALFALFA HAY PRODUCTION

### Sample Costs of Production at Varying Yields

Yield Tons Per Acre	Average				Exceptional	
	7	8	9	10	11	12
Cash Costs Per Ton	\$26.30	\$23.73	\$21.73	\$20.13	\$18.83	\$17.74
Total Costs Per Ton	\$41.88	\$37.36	\$33.85	\$31.04	\$28.74	\$26.83

### Sample Costs of Production at Indicated Yields Per Acre With Varying Water Costs

Yield: Tons Per Acre	Total Cost* of Alfalfa Hay Per Ton At The Indicated Water Cost Per Acre-Foot			
	\$ 6.00	\$ 8.00	\$10.00	\$12.00
7	40.45	41.88	43.31	44.74
8	36.12	37.36	38.62	39.86
9	32.74	33.85	34.96	36.08
10	30.04	31.04	32.04	33.04
11	27.83	28.74	29.65	30.56
12	25.99	26.83	27.66	28.49

\* Investment per acre in the irrigation system was assumed to be constant in this table.



## IRRIGATION:

Irrigation will depend upon the soil type. Usually two irrigations per cutting are sufficient. Care should be taken not to allow water to stand for any length of time during hot weather. A physiological distress occurs in the plants and the plant dies. The control of water at the end of checks will insure the growth of alfalfa rather than weeds.

The water requirement will be 55 to 60 inches per year.

## WEED CONTROL:

There is no better weed control method than to have a good strong healthy stand of alfalfa. The regrowth, if cut at the proper time and there is moisture in the soil, will soon shade out most weed seeds that would otherwise germinate. There are, however, times that the stand will not out-do the weeds. There are several chemical controls that may be used. For further information on proper use of these chemicals, ask for "Weed Control Recommendations" published periodically by the University of California.

## HARVEST:

Quality hay depends upon timely cutting and proper curing. The best time for cutting is at the one-tenth bloom stage or when the regrowth at the crown is one-half to one inch tall. There are times of the year when the alfalfa plant does not go into bloom so the regrowth method is much more reliable.

Quality is lost when the alfalfa is allowed to lay in the windrow longer than necessary or baled when the hay is too dry causing leaves to fall off.