

# 1947 ALFALFA SEED PRODUCTION STUDY

## IMPERIAL COUNTY

An analysis of production, yields, income and costs on eight alfalfa ranches, covering 565.1 acres for the year 1947

Statistical data is also shown on the acreage, production, average yields and farm value by states, and for the United States for the past 15 years

Keep the Lygus Bug out of  
Alfalfa Seed Fields.



Prepared by the  
Agricultural Extension Service  
University of California and U. S. Department of Agriculture  
Cooperating with  
Alfalfa Seed Growers in Imperial County  
California

INTRODUCTION

The purpose of this study is to acquaint the people of Imperial County with the fact that alfalfa seed can be successfully produced in Imperial Valley. Seed has been produced in the Bard area of Imperial County for many years; however, seed production in the Valley has always been extremely hazardous. There has never been any assurance that a satisfactory seed crop could be produced here.

Two years ago local farmers cooperating with the Agricultural Extension Service began a series of field tests based on the assumption that lygus bug control would make alfalfa seed production possible in Imperial Valley. DDT controlled this pest and the resulting seed yields showed that this original assumption was true. The following study of the 1947 seed production brings out the fact that where sufficient and properly timed DDT dustings were accomplished, good seed yields were obtained. The records show that at least two applications of 5 percent DDT dust should be made and that each application should be at the rate of 25 to 30 pounds per acre.

It is shown in the following tables that alfalfa seed production can be a commercially successful industry in Imperial Valley and it will, if developed, become a new source of income for the people of this area.

The other purposes of this study are to analyze the costs and income in alfalfa seed production so that the strong and weak spots in management practices may be discovered and thereby lead to an increase in efficiency and profits. Also the relative merits of seed production and straight hay production are compared.

The price of alfalfa seed in 1947 dropped about 50 percent compared to the 1946 price. The table on U. S. production shows that total production has been over 100,000,000 pounds in 1946 and 1947, compared to the 70 to 75 millions of pounds in previous years. California production has increased to 8.3 millions in 1947 compared to 3 to 3.5 millions in previous years. The four states, Colorado, New Mexico, Arizona, and California produced 25.6 million pounds in 1947, compared to 13.6 millions in 1945. This increased supply has had, and will continue to have, a bearish effect on prices.

The tables in this study are compiled from records and data furnished by eight alfalfa seed growers. The yield of seed varied from 139 to 627 pounds per acre, with the average of 301 pounds. In addition to seed 2.7 tons of hay was harvested per acre. The total per acre cost varied from \$64.48 to \$122.29, with an average of \$82.67 per acre. Total income varied widely, with an average, from all sources, of \$136.22 per acre.

A careful study of the tables should disclose some interesting and valuable information for alfalfa growers.

Copies of this report may be obtained by applying to the Farm Advisor's Office, Court House, El Centro, California

Summarized and analyzed by:  
Wallace Sullivan  
Extension Specialist in  
Farm Management  
College of Agriculture  
Berkeley 4, California

John E. Swift  
Assistant Farm Advisor  
Court House  
El Centro, California

Table 1 - Main Profit Determining Factors in Alfalfa Seed Production

Serial number	No. Acres	Average Yield per Acre				Income per Acre			Costs per Acre				Mgt. income	
		Hay tons	cleaned seed pounds	screenings pounds	alfalfa straw tons	Hay	Seed crop	Total*	Cultural labor & field power	Harvest labor & field power	Material	All overhead costs		Total
1	52	8.20	627	45	.38	188.82	125.47	314.29	10.10	44.17	35.59	32.43	122.29	192.00
2	65	2.92	478	54	.48	69.00	165.40	244.09	8.12	32.31	20.37	18.93	79.73	164.36
3	17.5	2.00	200	97	1.0	50.00	85.00	163.00	8.25	46.97	17.28	32.58	105.08	57.92
4	33.6	1.84	193	--	--	44.28	68.05	112.33	4.72	25.23	10.38	24.46	64.79	47.54
5	95	2.63	285	50	--	66.63	51.58	124.57	20.87	16.27	28.03	30.57	95.74	28.83
6	47	2.56	139	52	--	69.36	23.57	92.93	10.06	25.29	6.80	21.56	65.71	27.22
7	140	.50	366	58	--	11.75	66.24	97.99	9.32	17.97	26.83	28.46	82.58	15.41
8	115	2.26	100	25	--	50.68	17.00	71.50	5.63	29.76	6.98	22.11	64.48	7.02
Av.	565.1	2.7	301	49	.51	59.68	67.75	136.22	10.20	26.08	20.28	26.11	82.67	53.55

\* Includes income from pasture.

The above table shows the main factors in determining profit or loss in alfalfa seed production. Each record in the survey is given a serial number and they are arrayed in descending order of management income per acre. The average for the 8 records is shown at the bottom of the table. The data in these tables were obtained from the growers at the end of the year from their book and their best estimate for other items. The averages should not be taken as representing the average for the industry as a whole. The records were obtained in widely separated parts of the valley. Yields, income and costs vary widely and in that respect do represent the great variation in alfalfa seed production.

Table 2. Some Important Factors in Alfalfa Seed Production

Serial Number	1	2	3	4	5	6	7	8
Variety	Common	India	India	African Common	Common	Common	Common	Common
Age of Stand - yrs.	2	1	1	3	4	2-5	3	3
No. Cuttings Hay	6	2½	1	2	4	2½	½	2
No. Irrigations	17	14	14	12	14	18	17	14
Kind of Soil	Soft	Soft	Medium	Soft	Med. Loam	Soft	Medium	Soft
Kind of Fertilizer	Phos. 53%	Phos. 18%	Liquid Phos.	Phos. 18%	Phos. 44% Lic. Nit. 200	Phos. 18%	Liquid Phos.	Phos. 18%
Pounds Fertilizer per A.	480	400	--	300	100	300	100	150
No. Dustings	2	2	2	1	2	0	2	½*
Pounds 5% DDT per A.	50	55	50	30	60	0	60	30
Pounds Seed per A.	627	478	200	193	285	139	366	100

\* Only half of the acreage involved was dusted and the majority of the seed produced came from this dusted area.

The above table presents some of the management practices and other items that probably account for some of the wide variations in yield, income and costs. All but one reported using some DDT dust for the control of the lygus bug. The use of phosphate fertilizer is a generally accepted practice.

Table 3 - Analysis of Alfalfa Seed Production Cost and Income - Average of 8 records

Total Costs per Acre			Total	Cost of Seed Crop per Acre	Cost of Hay Crop per Acre
	Labor & Materials field power				
Pre-harvest costs					
Renovating, etc.	1.47		1.47	Dusting 6.29	Harvesting 10.83
Fertilizing	.41	7.20	7.61	Harvesting 15.25	Irrigation 75% 9.69
Irrigation	5.87	7.05	12.92	Fertilizer 50% 3.80	Fertilizer 50% 3.80
Dusting	1.97	4.32	6.29	Irrigation 25% 3.23	Other pre harvest 50% 1.55
Miscellaneous	.48	1.15	1.63	Other pre harvest 50% 1.55	Cash overhead 50% 2.52
Total preharvest	10.20	19.72	29.92	Cash overhead 50% 2.52	Depreciation 50% 4.52
Harvesting costs				Depreciation 50% 4.52	Int. on invest. 50% 6.01
Hay crop				Interest on inv. 50% 6.01	
Cut & windrow	2.20		2.20	Total 43.17	Total 38.92
Haul and stack	1.98		1.98	Less income straw, etc. 1.27	Less income from pasture 8.79
Bale	6.65		6.65	Net cost of seed 41.90	Net cost hay 30.13
Total hay harvest	10.83		10.83	Cost per lb. (301#) 13.92	Cost per ton (2.7) 11.16
Seed crop				Income per acre	Income per acre
Cut & windrow	1.34		1.34	Seed 66.48	Hay 2.7 T. 59.68
Thresh or combine	9.93		9.93	Screening .00	Pasture 8.79
Re-clean seed	3.24		3.24	Straw 1.27	Total 68.47
Straw	.23		.23	Total 67.73	Management income 29.55
Haul	.51		.51	Management income 24.58	
Total seed crop	15.25		15.25		
Total all harvest	26.08		26.08		
Total labor & mat.	36.28	19.72	56.00		
Cash overhead			5.05		
Sub-total			61.05		
Depreciation			9.04		
Sub-total			70.09		
Interest on investment			12.02		
Total all costs	36.28	19.72	82.11		
Total income			136.22		
Management income			54.11		

This table presents an estimated breakdown of cost and income from the seed crop and the hay crop as shown in the last two sections. The harvesting costs of hay are low because a considerable amount was sold standing in the field to the dehydrator.

Table 4. U.S. Acreage, Production, Average Yields, and Farm Value by States 1933-42 Average, Annual 1943, 1944, 1945, 1946, and 1947

State	Acreage Harvested						Yield Per Acre					
	1933 - 42*	1943	1944	1945	1946	1947	1933 - 42*	1943	1944	1945	1946	1947
Acres	Acres	Acres	Acres	Acres	Acres	Acres	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
Ohio	18,200	2,000	50,000	13,000	6,500	5,200	58	42	51	36	39	39
Ind.	9,930	1,500	30,000	8,600	8,200	5,000	54	45	42	42	30	45
Mich.	79,200	25,000	118,000	30,000	50,000	53,000	59	39	51	39	51	60
Wis.	30,690	10,000	40,000	16,000	24,000	22,000	58	42	48	54	66	102
Minn.	84,800	66,000	60,000	51,000	55,000	55,000	73	54	42	51	72	66
Iowa	14,920	8,600	11,000	7,500	9,000	8,500	73	54	33	42	42	42
N.Dak.	16,490	24,000	30,000	37,000	41,000	39,000	56	48	54	39	54	51
S.Dak.	18,280	26,000	32,000	50,000	45,000	58,000	65	63	42	54	69	60
Neb.	67,200	105,000	67,000	118,000	215,000	108,000	81	75	57	60	78	66
Kans.	88,300	170,000	141,000	178,000	299,000	239,000	95	84	66	66	90	78
Okla.	61,300	92,000	105,000	100,000	108,000	120,000	114	120	96	99	102	120
Tex.	5,970	5,000	12,000	17,000	17,000	19,000	169	135	150	240	180	210
Mont.	42,200	67,000	84,000	80,000	92,000	70,000	122	87	60	90	78	96
Idaho	46,800	29,000	25,000	21,000	23,000	23,000	162	123	126	114	108	96
Wyo.	18,250	20,000	19,000	16,900	16,000	12,000	119	84	78	66	81	78
Colo.	20,570	32,000	30,000	22,000	25,000	21,000	122	120	96	96	108	120
N.Mex.	5,320	5,000	7,500	11,500	14,000	15,000	178	120	219	168	186	186
Ariz.	28,300	31,000	44,000	40,000	46,000	61,000	259	192	105	150	156	198
Utah	35,300	30,000	35,000	38,000	44,000	46,000	112	96	72	72	150	120
Wash.	3,367**	1,700	2,000	2,000	3,500	3,000	128**	162	120	180	150	240
Oreg.	6,630	4,000	5,000	7,000	6,000	5,500	142	120	102	108	120	138
Calif.	17,710	14,000	20,000	24,000	27,000	33,000	195	210	198	150	222	252
U.S.	718,380	768,800	967,500	888,500	1,174,200	1,021,200	102	91	71	60	93	100

\* 10 year average/\*\* short time average.

\*\*\* In millions of pounds

Source: Av. 1933-42 and 1943, U.S.D.A. Agricultural Statistics -45:26: 1944-46. B. A. E. Farm Production, etc. 1944-45:29 May, 1946.

Prepared by Wallace Sullivan, Extension Specialist in Farm Management and Associate on Giannini Foundation, Berkeley, Calif.

Table 4 -  
Continued

State	Production in Millions of Pounds						Value of Production					
	1933*	1943	1944	1945	1946	1947	1933-1942*	1943	1944	1945	1946	1947
	42 Pounds***	Pounds	Pounds	Pounds	Pounds	Pounds	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Ohio	1,073	84	2,520	468	252	204	211	31	895	165	102	71
Ind.	520	66	1,260	360	246	228	108	24	454	127	101	80
Mich.	4,584	972	6,000	1,170	2,520	3,180	963	358	2,120	411	1,004	1,192
Wis.	1,854	420	1,920	864	1,560	2,220	426	77	666	301	681	796
Minn.	6,168	3,540	2,520	2,580	3,960	3,600	1,213	1,030	882	903	1,525	1,200
Iowa	1,061	462	360	312	378	360	239	177	128	107	151	117
N. Dak.	971	1,152	1,620	1,440	2,220	1,980	191	405	570	516	851	627
S. Dak.	1,152	1,620	1,320	2,700	3,120	3,480	238	460	464	950	1,206	1,102
Neb.	5,417	7,860	3,840	7,080	16,800	7,140	993	2,529	1,350	2,490	6,104	2,202
Kans.	8,150	14,280	9,300	11,760	26,880	18,660	1,386	3,900	3,038	3,822	9,094	4,354
Okla.	6,750	11,040	10,080	9,900	11,040	14,400	945	3,494	3,091	3,135	3,754	2,880
Texas	996	672	1,800	4,080	3,060	3,960	148	202	579	1,312	1,076	891
Montana	5,156	5,820	5,040	7,200	7,200	6,720	1,048	2,066	1,823	2,556	2,916	2,240
Idaho	7,523	3,540	3,120	2,400	2,460	2,220	1,555	1,137	1,243	968	1,086	740
Wyoming	2,111	1,680	1,500	1,116	1,320	936	398	802	530	398	532	312
Colorado	2,570	3,840	2,880	2,100	2,700	2,520	463	1,274	970	707	963	672
N. Mexico	877	600	1,620	1,920	2,580	2,760	132	180	529	653	929	575
Arizona	6,750	5,940	4,620	6,000	7,200	12,060	972	1,911	1,532	2,020	2,580	2,211
Utah	3,966	2,880	2,520	2,760	6,600	5,520	727	1,287	949	1,095	2,739	1,610
Wash.	359**	276	240	360	528	720	81**	99	89	136	219	228
Oregon	951	480	510	756	720	756	195	151	199	287	301	233
Calif.	3,440	2,940	3,960	3,600	6,000	8,340	538	946	1,287	1,290	2,200	2,016
U. S.	72,339	70,164	68,550	70,926	109,344	101,964	13,021	22,540	23,388	24,349	40,114	26,349
Total yearly production of 4 western states: Colorado, N.M., Ariz. & Calif.	13,637	13,320	13,080	13,620	18,480	25,680						