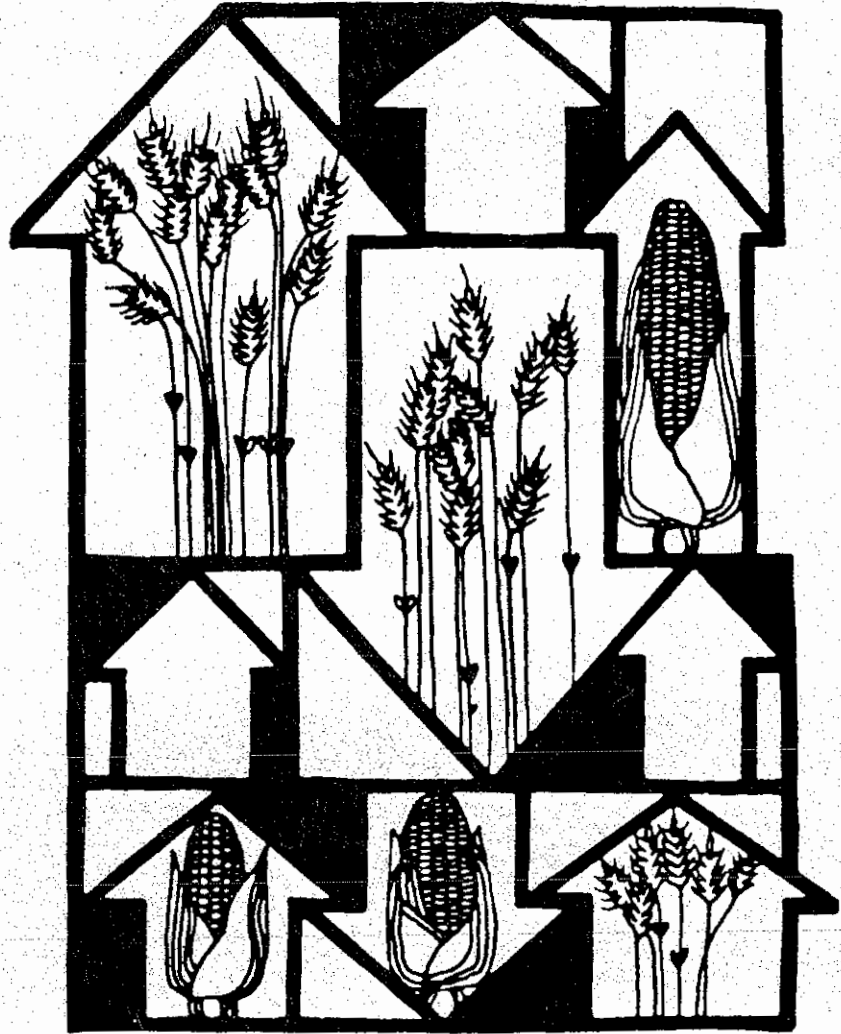


# ECONOMIC MANAGEMENT

## 1986-87 CROP COST STUDIES

\$1.00



Cooperative Extension  
University of California

SACRAMENTO COUNTY

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PRODUCTION COST STUDIES IN SACRAMENTO COUNTY  
1986-87

JACK P. ORR & WYNETTE PEMBERTON

GENERAL REMARKS

The following crop production studies represent an average cost estimate to assist growers in economic management of their individual enterprises. Individual line items per study represent the average cost to accomplish the task. In this study five major crops grown in the region were analyzed. Also included are cost of production estimates of five alternate crops. Since the county soils encompass both mineral and organic soil types, cost estimates are also provided for corn and wheat grown on either soil.

The intent of this study is to supply growers, lending institutions, consultants, chemical advisors, UC Farm Advisors, and all interested persons with information concerning potential returns and line item cultural costs. Actual cost will vary from grower to grower, due to various soil patterns, salaries and wages, water costs, etc. Provided with each study is a blank column for growers to insert their own cost for each item. The cost estimates provided represent only annual cash cost for each crop. Provided, but not included, in the total cash cost per acre is an estimate of the non-cash cost in the farming enterprise.

The authors wish to express gratitude to those growers, industry personnel, and interested individuals who assisted in providing cost information and review of this study.

PARAMETERS

HYPOTHETICAL FARM OPERATION

<u>CROP</u>	<u>ACRES</u>
Canning Tomatoes	500
Wheat	300
Sugarbeets	500
Corn	700
Alfalfa	500
<hr/>	
TOTAL	2500

ALTERNATE CROPS

Safflower	300
Grain Sorghum	300
Ladino Clover seed	100
Sudangrass	100
Sunflowers	100

**EQUIPMENT** - \$750,000 investment in new equipment depreciated in 10 years. Interest rate at 12%.

**PRODUCTION LOANS** - \$750,000 at 14% with annual payback, three times per year.

**LABOR** - Cultural labor at \$5/hr. Irrigation labor at \$4/hr; operations based on 10 hour days.

**FUEL** - .50/gal.

**BUILDINGS** - 2 metal type including shop, 5 grain storage bins, 1 pole type, 1 employee house, misc. storage (chemicals, etc.). Estimated value at \$186,000; \$165,000 loan at 12% for 30 years.

**REPAIRS AND MAINTENANCE** - Based on total farm operation with each crop being charged a proportionate share.

**IRRIGATION** - Pumping charges for electricity and diesel usage.

**SHARE RENTS** - 15% of the gross for all crops.

**INTEREST RATES** - Based on average rates charged by loan institutions as of August 1986. Included are variable rate loans that would change at pay-off time.

**MANAGEMENT SALARY** - Owner/management income is calculated at \$30,000/year plus \$20,000 in benefits.

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION  
 SAMPLE COST OF PRODUCTION  
 JACK ORR, WYNETTE PEMBERTON - FARM ADVISORS SACRAMENTO COUNTY  
 1986/76

SAMPLE COST TO PRODUCE CANNING TOMATOES

CROP: CANNING TOMATO	MARKET PRICE: \$52.00 (Priv. Cannery)
YIELD/A: 27 TONS	\$42.00 (Coop.)
GROSS INCOME: \$1404 (Priv. Cannery)	NET INCOME: \$174.61
\$1134 (Cooperative)	\$-54.89

EXPENSE/AC \$1229.39 (Priv. Cannery); \$1188.89 (Cooperative)

<u>CULTURAL COSTS: FUEL, ELECTRICITY, SEED</u>	<u>COST/A</u>	<u>YOUR COST/A</u>
Chop corn stubble	0.28	-----
Disc 2x	1.08	-----
Plow	1.00	-----
Level plane 1x	0.25	-----
Chisel/flat roll	0.80	-----
roundup application		-----
Disc 1x (spring)	0.54	-----
Float ringroll	1.00	-----
List beds	0.83	-----
Lilly rotterra, tagalong	1.25	-----
Preplant herb inc/roll	1.25	-----
Plant, starter fert (2men)	0.62	-----
Cultivate 4x sidedr nitrogen	2.40	-----
Layby herbicide sidedr 8-24-6 15gal	1.00	-----
Seed, hybrid 0.43#/a	86.00	-----
Employee pickups	3.14	-----
	<u>3.14</u>	-----
TOTAL:	\$101.44	-----

IRRIGATION

Sprinkler 4x		-----
Furrow 5x		-----
Electricity/Diesel	\$31.29	-----
Reclamation Cost	15.00	-----
	<u>15.00</u>	-----
TOTAL:	\$46.29	-----

PESTICIDES, FERTILIZER

	<u>COST/A</u>	<u>APPLICATION</u>	<u>YOUR COST/A</u>
Tillam bd cast	37.00	1.00	_____
Devrinol	14.80		_____
Eptam layby	11.87		_____
Thiodan beetles	5.12	5.50	_____
Sevin cutworms 40#	22.00	5.50	_____
Sulfur mites 5#	4.65		_____
Difolitan mold 2.5#	14.93	55.24	_____
Pydrin worms 8oz	8.04	2x	_____
Ethrel ripening 3pts	24.75	5.50	_____
Sidedress nitrogen 120#	22.80		_____
Dyfonate 0.5 gal/a centipedes	22.00		_____
Dithane M45 3#	11.64	5.50	_____
Roundup lpt/a	9.38	5.50	_____
TOTAL:	\$236.60	\$39.50	_____

LABOR

Irrigation (\$4.00/A)	42.00		_____
Shop Mechanic	10.00		_____
Hand Hoeing (Nightshade)	150.00		_____
Cultural (\$5.00/hr)	30.98		_____
Overtime (Moving Equip.)	4.64		_____
TOTAL:	\$237.62		_____

HARVEST

Harvester lease	79.00		_____
Fruit inspection	0.96		_____
CTRI dues	2.50		_____
Machine fuel	3.00		_____
Tractors bulk 2x	1.00		_____
Move & set up			_____
Machine driver	94.00		_____
Machine sorters 7			_____
Tractor drivers 2			_____
Electronics refurbishing	16.67		_____
TOTAL:	\$197.13		_____

DEBT SERVICE

Interest on loan	35.00		_____
Interest on equip.	4.50		_____
TOTAL:	\$ 39.50		_____

CASH OVERHEAD

COST/A

YOUR  
COST/A

Share rent (15%)	210.60	(170.10 Coop.)	_____
Management salary/benefits	21.73		_____
Repairs, maint., supplies	54.25		_____
Employee benefits (30%)	26.28		_____
Office management expense	10.86		_____
Insurance	5.00		_____
Taxes on equipment	<u>2.59</u>		_____
TOTAL:	\$331.31		_____

TOTAL CASH EXPENSES:	\$1229.39 (Cannery)	\$1188.89 (Coop)	_____
NET INCOME @ 27 TONS/A:	\$ 174.61 (Cannery)		_____
NET LOSS @ 27 TONS/A:	- 54.89 (Coop)		_____

NON-CASH COSTS

Equip. Depreciation	37.50		_____
Interest on buildings	10.67		_____
Building depreciation	<u>4.44</u>		_____
TOTAL:	\$52.61		_____

## 1986 SAMPLE COST TO PRODUCE CANNING TOMATOES

**SOILS** - Tomatoes are grown on a wide variety of soil types. Generally, soils must be free of salts, diseases, at least four or more feet of root zone, have a good moisture holding capacity. Tomatoes should not be grown where rhizoctonia, fusarium, verticillium, or phytophthora has been a problem.

**PLANTING DATES** - February through May. Schedule planting to assure about the same acreage available for harvest each week. Plant when the true leaf is about 1/2 inch long in the seedlings of the previous planting.

**HARVEST DATES** - August, September, or until stopped by rain in the fall, usually mid-October.

**VARIETIES** - Canners require that a percentage of the contracted acreage be planted to designated varieties. Growers are advised to consult their local UC Farm Advisor, seed company representative, and canner for varieties and cultural characteristics necessary for optimum production.

**SEEDING RATES** - Open pollinated varieties are usually planted at 0.75 to 1.0 lbs/ac. Hybrid varieties are planted at 0.6 to 0.8 lbs/ac. Growers are advised to maintain the same seeding rates on either single or double row plantings to insure uniform stand establishment.

**FERTILIZER** - Preplant nitrogen applied at 100 to 150 lbs/ac. Starter fertilizer is applied 1 inch to the side and 1-2 inches below the seed. Research has shown that starter 25-30 gal/A 8-24-6 can be of benefit in stand establishment. Various products can be used either liquids or drys.

**IRRIGATION** - Tomato plants must have adequate water at all times especially prior to and during bloom. Soil moisture should be depleted by harvest. Irrigation cut-off times are dependent upon soil type and environmental conditions. Normally tomatoes will use between 3 and 4 acre feet of water. Over and/or excessive irrigation will cause root pruning and disease.

**WEED CONTROL** - Devrinol + Tillam is a standard preplant incorporated treatment for weed control on tomatoes. Hairy nightshade control is best with Tillam when incorporated no deeper than 2 inches. Yellow nutsedge control is best when Tillam is put on broadcast. Sencor is used for fall beds to keep broadleaf species under control. Herbicides for use layby include Eptam, Treflan and Tillam.



SAMPLE COST TO PRODUCE SUGARBEETS

CROP..... SUGARBEETS-flatplanted	GROSS INCOME PER ACRE..... \$858.00
YIELD/ACRE IN TONS. 26	TOTAL CASH COST/ACRE..... 890.63
MARKET VALUE/TON... \$33.00 @ 15% sugar	NET LOSS/ACRE..... - 32.63

<u>CULTURAL COSTS: FUEL &amp; SEED</u>	<u>COST/A</u>	<u>COST/A</u> <u>LABOR</u>	<u>YOUR</u> <u>COST/A</u>
Chop Corn Stubble	0.28	1.42	_____
Disc 2x	1.08	1.66	_____
Plow	1.00	1.25	_____
Chisel 1x - flatroll	0.80	1.00	_____
Disc 2x	1.08	1.66	_____
Float ringroll 3x	1.62	2.49	_____
Plant	0.40	2.00	_____
Preemerg. herb. (Nortron) app.	0.20	0.64	_____
Postemerg. herb. Betamix app.	0.20	0.64	_____
Postemerg. herb. Poast app.	0.20	0.64	_____
Cultivate 4x/side dress nitrogen	0.40	1.00	_____
Pickups	<u>3.14</u>	_____	_____
TOTAL:	10.40	14.40*	_____

IRRIGATION - Sprinkler 8x

Pumping cost (diesel)(elect.)	35.00	_____
Reclamation	15.00	_____
Drain Maintenance	<u>2.50</u>	_____
TOTAL:	52.50	_____

\* Included in labor budget

CHEMICALS/SEEDPEST/FERT  
COST/AAPPLICATION  
COST/AYOUR  
COST/A

## Herbicides

Antor preemergence	7.55		
Betamix postemergence broadleaf	12.65		
Poast-oil postemergence	7.24		
grass 1.5 pts/A			

## Insecticides

Lorsban 1 1/2pt worms	7.37	5.50	
Sevin bait 40#	22.00	5.50	
Dusting sulfur 25#/A 4x mildew	11.67	22.00	
Temik 7#/A aphids with seed	20.00		
@ planting			
Seed, Hybrid 1.5 #/A	18.00		
Side dress Nitrogen 100#	19.00		
20 gal 8-24-6	15.30		

TOTAL:	140.78	33.00	
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HARVESTCOST/A

Top & Dig \$2.50/t	65.00	
Hauling \$4/t	104.00	

TOTAL:	169.00	
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LABOR

Cultural (\$5/hr)	14.40	
Irrigation (\$4/hr)	61.44	
Hand hoeing & thin	83.00	
Shop mechanic	10.00	
Overtime	2.21	

TOTAL:	171.05	
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CASH OVERHEAD

Share rent 15%	128.70	
Manager Salary + benefits	21.73	
Repairs & maintenance	54.25	
Employee benefits	51.31	
Office expense	10.86	
Taxes on equipment	2.57	
Insurance	5.00	

TOTAL:	274.42	
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DEBT SERVICE

COST/A

YOUR  
COST/A

Interest on loan @ 13%  
Equipment

4.50  
35.00

\_\_\_\_\_

\_\_\_\_\_

TOTAL:

39.50

\_\_\_\_\_

TOTAL GROSS INCOME: \$858.00

TOTAL CASH COSTS: 890.63

\_\_\_\_\_

\_\_\_\_\_

NET LOSS: \$-32.63

\_\_\_\_\_

## 1986 SAMPLE COSTS TO PRODUCE SUGARBEETS

**SOIL REQUIREMENTS** - Deep, fertile, well-drained soil of organic or mineral type. Texture can range from sandy loam to clay. Avoid hardpan and claypan.

**PLANTING DATES** - February, March, April; during May in over-wintered areas.

**VARIETIES** - Plant disease-resistant hybrids furnished by contracting sugar company.

**SEEDING RATES** - For mechanical thinning, plant 2 inches apart. Thin mechanically 100 to 150 plants per 100 feet of row, not more than 20% doubles of three or more plants. For synchronous thinner plant 2.75 inches apart. Final stand should equal 6 to 7 inches between plants.

**WEED CONTROL** - Roneet or Tillam are available for preplant weed control. Do not use prior to March 1. Poor control results under cool conditions. Betamix is available for control of broadleaf weed species. Nortron has given good control when used in combination with Betamix, post-emergence. Nortron can also be used pre-emergence. Good results have been obtained with the combination of Nortron and Pyramin pre-emergence under fall applications. Antor has given excellent results when applied pre-emergence in the spring. Poast can be used post-emergence for control of escaped grasses. Poast is not effective on annual bluegrass. Herbicide 273 applied post-emergence will give good control of smartweed.

**FERTILIZER** - 100 to 200 lbs/ac nitrogen preplant, 25 to 30 gallons 6-24-6 under the seed at planting. Plants should run out of nitrogen 30 days prior to harvest.

**IRRIGATION** - 2.5 to 3.5 acre feet needed. On peat, sprinkler or sub-irrigate or on mineral soils, sprinkle or furrow irrigation. Do not permit wilting.

**ROTATION** - Four years between beet crops for good soil management, and to control sugarbeet nematode, and sclerotium root rot. Five years has been suggested for control of cyst nematode.

**SPECIAL PROBLEMS AND CONTROL MEASURES -**

- Mildew: 40 lbs/ac sulfur when mildew first appears.
- Salts: Irrigate every other row or plant on slanted beds.
- Yellows: Beet free periods plus elimination of carrier plants; control of green peach aphid; plant in May in over-wintered areas.
- Nematodes: Rotation first choice: fumigation second choice.
- Poor Stands: Maintain seedbed moisture, avoid severe wire worm and damping-off areas, use only treated seed.
- Inadequate Irrigation: Resulting in excessive wilting better management
- Late-emerging Weeds: Can reduce yield and cause harvest problems. Also, infest soil with weed seed. Hoe or use Betamex.
- Very Late Spring Harvest: Due to wet spring harvest problems, produces bolting and volunteer problems, and lower sugar yield.

SAMPLE COST TO PRODUCE FIELD CORN ON MINERAL SOIL

CROP.....	FIELD CORN	GROSS INCOME PER ACRE.....	\$375.00
YIELD/ACRE IN TONS...	5	TOTAL CASH COST/ACRE.....	518.87
MARKET VALUE/TONS....	75.00	NET LOSS/ACRE.....	-143.87

<u>CULTURAL COSTS: FUEL</u>	<u>COST/A</u>	<u>COST/A LABOR</u>	<u>YOUR COST/A</u>
Chop Stubble	0.28	1.42	_____
Disc 2x	1.08	1.66	_____
Chisel 2x, flat roll	2.50	1.66	_____
Disc 1x	0.54	0.83	_____
Float, harrow, ringroll	0.66	1.25	_____
Pre nitrogen, ringroll	0.70	1.00	_____
Float, roll	0.54	0.83	_____
Pre herbicide, Do all 2x	0.71	1.42	_____
Float ringroll	0.54	0.83	_____
Plant	0.83	0.83	_____
Cultivate 1x lilliston	0.34	1.00	_____
Side dress nitrogen	0.50	1.66	_____
Open, close ditches	0.20	0.40	_____
Pickups	<u>3.14</u>	_____	_____
TOTAL:	12.56	14.79*	_____

IRRIGATION

Irrigate 9x pumping elect.	10.00	_____
Reclamation	15.00	_____
Drain Maintenance	<u>2.50</u>	_____
TOTAL:	27.50	_____

CHEMICALS/SEED

APPLICATION

Pre N (150#/A)	28.00	_____
Sidedress N 50#/A	9.50	_____
Lasso/Bladex	30.31	_____
Sevin 40#/A	22.00	5.50
Dyfonate 10#/A	10.30	_____
Comite 1 qt/A	12.17	5.50
8-24-6 30/gal. starter	33.15	_____
Seed	<u>23.00</u>	_____
TOTAL:	168.43	11.00

\* Included in labor budget

<u>HARVEST</u>	<u>COST/A</u>	<u>YOUR COST/A</u>
<u>Fuel/Electricity</u>		
Trucks	0.70	_____
Combine	1.00	_____
Storage (Drying) \$3.00/T	<u>16.30</u>	_____
TOTAL:	18.00	_____
<u>Labor</u>		
Harvest (1 man)	3.00	_____
Cultural (\$5.00/hr)	14.79	_____
Irrigation (4.00/hr)	36.00	_____
Shop mechanic	10.00	_____
Storage labor 2 men	4.36	_____
Overtime	<u>2.21</u>	_____
TOTAL:	70.36	_____
<u>CASH OVERHEAD</u>		
Share Rent (15%) (\$375)	56.00	_____
Repairs/Maint.	54.25	_____
Mgmt. Salary/Benefits	21.73	_____
Employee Benefits (30%)	21.11	_____
Office Management	10.86	_____
Taxes on Equipment	2.57	_____
Insurance	<u>5.00</u>	_____
TOTAL:	171.52	_____
<u>DEBT SERVICE</u>		
Interest on Loan	35.00	_____
Interest on Equipment	<u>4.50</u>	_____
TOTAL:	39.50	_____
TOTAL CASH EXPENSES: \$ 518.87		_____
GROSS INCOME: \$ 375.00		_____
NET LOSS: \$ 143.87		_____
<u>NON-CASH COSTS</u>		
Equip. Depreciation	37.50	_____
Interest on Buildings	10.67	_____
Building Depreciation	<u>4.44</u>	_____
TOTAL:	\$52.61	_____

SAMPLE COSTS TO PRODUCE CORN ON PEAT TYPE SOILS

CROP.....=	CORN	GROSS INCOME/ACRE....=	319.50
YIELD/ACRE IN TONS..=	4.5	TOTAL CASH COSTS/ACRE=	402.39
MARKET VALUE/TON....=	71.00	NET LOSS/ACRE.....=	-82.89

EXPENSES

TYPE OF COST	COST/A	COST/A	COST/A	YOUR
CULTURAL COSTS: FUEL AND LABOR	FUEL	LABOR	TOTAL	COST/A
STUBBLE CHOP	.45	1.00	1.45	_____
DISC	.50	.80	1.30	_____
PLOW	1.00	1.40	2.40	_____
LEVEL PLANE OR FLOAT	.55	.90	1.45	_____
WINTER SPUD DITCH	1.25	1.40	2.65	_____
ERADICANE APPL. (DISC 2X OR DO ALL 1X)	.90	1.50	2.40	_____
PLANT SEED/APPLY DYFONATE/STARTER FERT.	.90	.90	1.80	_____
CULTIVATE 2X	.70	2.00	2.70	_____
SPRING SPUD DITCH	2.50	2.80	5.30	_____
EMPLOYEE PICKUPS	3.14		3.14	_____
DRAIN MAINTENANCE		2.50	2.50	_____
RECLAMATION FEES			15.00	_____
	-----	-----	-----	_____
TOTAL	11.89	15.20	42.09	_____

CHEMICAL AND SEED COSTS	COST/A	COST/A	COST/A	
	MATERIAL	APPLIC.	TOTAL	
STARTER 8-24-6 + ZINC	33.15		33.15	_____
SEED	23.00		23.00	_____
ROUNDUP/1 PINT BY AIR	9.28	5.50	14.78	_____
DYFONATE @ 10 LBS/A	10.30		10.30	_____
ERADICANE @ 7 1/3 PINTS/A	22.63		22.63	_____
COMITE @ 1 QUART/A, AIR APPL.	12.17	5.50	17.67	_____
	-----	-----	-----	_____
TOTAL	110.53	11.00	121.53	_____

HARVEST				
TRUCKS			.70	_____
COMBINE			1.00	_____
STORAGE (COMMERCIAL DRYING) \$6.00/TON			27.00	_____
			-----	_____
		TOTAL:	28.70	_____



	COST/A	YOUR COST/A
LABOR COSTS		
IRRIGATE 3X	3.00	-----
MECHANIC	10.00	-----
HARVEST LABOR (1 MAN)	3.00	-----
OVERTIME	2.21	-----
	-----	-----
TOTAL:	18.21	-----
DEBT SERVICE		
INTEREST ON LOAN	35.00	-----
INTEREST ON EQUIPMENT	4.50	-----
	-----	-----
TOTAL:	39.50	-----
CASH OVERHEAD		
SHARE RENT (15% OF GROSS INCOME)	47.93	-----
REPAIR/MAINTENANCE	54.25	-----
MANAGEMENT SALARY & BENEFITS	21.73	-----
EMPLOYEE BENEFITS (30% OF LABOR COSTS)	10.02	-----
OFFICE MANAGEMENT	10.86	-----
TAXES ON EQUIPMENT	2.57	-----
INSURANCE	5.00	-----
	-----	-----
TOTAL:	152.36	-----
*****TOTAL CASH EXPENSES PER ACRE*****	402.39	-----
NON-CASH COSTS		
INTEREST ON BUILDINGS	10.67	-----
BUILDING DEPRECIATION	4.44	-----
EQUIPMENT DEPRECIATION	37.50	-----
	-----	-----
TOTAL:	52.61	-----
*****TOTAL COSTS PER ACRE FOR CORN*****	455.00	-----

NET PROFIT OR LOSS PER ACRE OF CORN, ASSUMING \$402/ACRE CASH COSTS

YIELD TONS/A	MARKET PRICE PER TON					
	\$68	\$70	\$72	\$74	\$76	\$78
3.60	-157.59	-150.39	-143.19	-135.99	-128.79	-121.59
3.80	-143.99	-136.39	-128.79	-121.19	-113.59	-105.99
4.00	-130.39	-122.39	-114.39	-106.39	-98.39	-90.39
4.20	-116.79	-108.39	-99.99	-91.59	-83.19	-74.79
4.40	-103.19	-94.39	-85.59	-76.79	-67.99	-59.19
4.60	-89.59	-80.39	-71.19	-61.99	-52.79	-43.59
4.80	-75.99	-66.39	-56.79	-47.19	-37.59	-27.99
5.00	-62.39	-52.39	-42.39	-32.39	-22.39	-12.39
5.20	-48.79	-38.39	-27.99	-17.59	-7.19	3.21
5.40	-35.19	-24.39	-13.59	-2.79	8.01	18.81
5.60	-21.59	-10.39	.81	12.01	23.21	34.41
5.80	-7.99	3.61	15.21	26.81	38.41	50.01
6.00	5.61	17.61	29.61	41.61	53.61	65.61
6.20	19.21	31.61	44.01	56.41	68.81	81.21
6.40	32.81	45.61	58.41	71.21	84.01	96.81
6.60	46.41	59.61	72.81	86.01	99.21	112.41
6.80	60.01	73.61	87.21	100.81	114.41	128.01
7.00	73.61	87.61	101.61	115.61	129.61	143.61
7.20	87.21	101.61	116.01	130.41	144.81	159.21
7.40	100.81	115.61	130.41	145.21	160.01	174.81
7.60	114.41	129.61	144.81	160.01	175.21	190.41

## 1986 SAMPLE COSTS TO PRODUCE CORN ON MINERAL AND PEAT SOILS

**SOIL REQUIREMENTS** - Fertile, well-drained soils of organic or mineral type.

**PLANTING DATES** - March 20 to May 20. Early plantings are dependent upon soil temperatures. Longer season varieties should be planted first.

**HARVEST DATES** - September 15 to November 15.

**VARIETIES** - Superior performance of single cross hybrids the past few years has caused a rapid change from the 4-way crosses. Consult local UC Farm Advisor for current variety recommendations adapted to your location. Varieties change rapidly.

**SEEDING RATES** - 10 to 15 lbs/ac depending on seed size, seed drop is usually 6-7 inches in the row resulting in stands of 24,000 to 28,000 plants/acre. Populations greater than 30,000 plants/acre have resulted in lodging.

**FERTILIZER** - Organic soils, 200 lbs/acre 6-20-20, or 30 gallons 8-24-6 +Zn as starter. Cold wet soils increase the need for nitrogen. Mineral soils, same starter fertilizers plus 100 lbs nitrogen pre-plant plus sidedress or water-run 50 lbs/ac if beeded. If potash levels are low, 400 lbs/ac should be applied broadcast and disced in. Potassium increases the stalk strength of corn.

**IRRIGATION** - 2.5 to 3.5 acre feet of water. On peat, sub-irrigate 3 times; on mineral soil 8-9 irrigations depending on variety and growing temperatures. Early irrigation is essential for high yields. If corn is stressed yields will be reduced.

**WEED CONTROL** - Timely cultivation for watergrass and broadleaf weeds. 2,4-D directed for escaped broadleaf or atrazine + oil early post-emergence when weeds are less than 1.5 inches tall. Sutan, Surpass, Lasso, Dual plus Bladex in combination (except on peat soils) have provided excellent preplant incorporated weed control.

**INSECT CONTROL** - Mites; Kelthane or Comite provides fair to good control. Apply before plants are 3-4 feet tall. For cutworms apply seven bait, best to irrigate and then apply.

### **DISEASE CONTROL** -

**Sugar Cane Mosaic:** Control Johnsongrass in surrounding fields with Roundup.

**Root and Stalk Rots:** Avoid plant stresses, use adapted varieties.

**Fusarium Ear Rot:** Avoid irrigation during calm, hot highly humid weather during milk and dough stage; use adapted varieties; do not allow fields to stress.

**Head Smut:** Provide favorable seedbed conditions, use adapted varieties, rotations and good weed control. Use same control measures for Boil Smut.

SAMPLE COST TO PRODUCE WHEAT ON MINERAL SOIL

CROP.....	WHEAT	GROSS INCOME PER ACRE.....	\$300.10
YIELD/ACRE IN TONS.....	2.7	TOTAL CASH COST/ACRE.....	378.98
MARKET VALUE/TON.....	\$75.00	NET LOSS/ACRE.....	-78.88

<u>TYPE</u>	<u>\$ EXPENSES</u>	<u>\$ LABOR/AC</u>	<u>YOUR</u>
	<u>PER ACRE</u>		<u>COST/A</u>

CULTURAL FUEL/ELECTRICITY

Chop Stubble	\$ 0.28	\$ 1.42	_____
Disc 2x	1.08	1.66	_____
Plow	1.00	1.25	_____
Spring tooth flat roll	0.70	1.00	_____
Level Plan 1x	0.25	0.50	_____
Pre N/roller	0.70	1.00	_____
Float/ringroller	0.54	0.83	_____
List Beds/Flatroll	0.75	1.25	_____
Plant Drill	0.15	1.00	_____
Employee pick-ups	<u>3.14</u>	_____	_____
TOTAL	8.59	9.91*	_____

IRRIGATION

Irrigation 2x (elect)	8.00	_____
Reclamation	15.00	_____
Drain Maint.	<u>2.50</u>	_____
TOTAL	25.50	_____

CHEMICALS/SEED

Aqua Preplant N	13.30	_____
Herb. (2.4-D) 1 1/2 pt	2.18	5.50
Herb. (Hoelon) 1 1/2 pt	10.32	5.50
AmNO3 top dress 2x 50#	30.88	11.00
Starter 11-48-0 100#	15.90	_____
Seed 150#/A	<u>12.00</u>	_____
TOTAL	84.58	22.00

AIR APPLICATIONS

\* Included in labor budget

	<u>\$ EXPENSES</u> <u>PER ACRE</u>	<u>YOUR</u> <u>COST/A</u>
<u>HARVEST</u>		
Truck fuel	0.25	_____
Harvester fuel	<u>0.50</u>	_____
TOTAL	0.75	_____
 <u>LABOR</u>		
Irrigation (\$4/hr) 2x	18.20	_____
Cultural (\$5/hr)	9.91	_____
Harvest/2 men	3.33	_____
Shop mechanic	10.00	_____
Overtime	<u>2.71</u>	_____
TOTAL	44.15	_____
 <u>CASH OVERHEAD</u>		
Management Sal/Benefits	21.73	_____
Maint/Repairs	54.25	_____
Share Rent (15%)	45.00	_____
Emp. Benefits (30%)	14.74	_____
Taxes on Equip.	2.33	_____
Office Mgmt Exp.	10.86	_____
Secretary/Bookkeeper		_____
Insurance	<u>5.00</u>	_____
TOTAL	153.91	_____
 <u>DEBT SERVICE</u>		
Interest on Loan 13%	35.00	_____
Interest on Equipment	<u>4.50</u>	_____
TOTAL	39.50	_____
 TOTAL CASH EXPENSES: \$378.98		
GROSS INCOME: \$300.10		
NET LOSS: \$ 78.88		
 <u>NON-CASH COSTS:</u>		
Equip. Depreciation	37.50	_____
Interest on Buildings	10.67	_____
Building Depreciation	<u>4.44</u>	_____
TOTAL:	\$52.61	_____

SAMPLE COSTS TO PRODUCE WHEAT ON PEAT TYPE SOILS

CROP.....=	WHEAT	GROSS INCOME/ACRE....=	301.10
YIELD/ACRE IN TONS....=	2.7	TOTAL CASH COSTS/ACRE=	330.59
MARKET VALUE PER TON..=	75.00	NET LOSS/ACRE.....=	-29.49
GOVERNMENT PAYMENT/TON=	36.52		

EXPENSES

TYPE OF COST	COST/A	COST/A	COST/A	YOUR
CULTURAL COSTS: FUEL AND LABOR	FUEL	LABOR	TOTAL	COST/A
STUBBLE CHOP	.45	1.00	1.45	_____
DISC 2X	1.00	1.60	2.60	_____
PLOW	1.00	1.40	2.40	_____
DISC 2X	1.00	1.60	2.60	_____
SPUD DITCH	1.25	1.40	2.65	_____
PLANT SEED & APPLY STARTER FERT.	.50	.90	1.40	_____
EMPLOYEE PICKUPS	3.14		3.14	_____
IRRIGATE 1X		1.00	1.00	_____
RECLAMATION			15.00	_____
IRRIGATION DRAIN MAINTENANCE		2.50	2.50	_____
	-----	-----	-----	_____
TOTAL	8.34	11.40	34.74	_____

CHEMICAL AND SEED COSTS	COST/A	COST/A	COST/A	
	MATERIAL	APPLIC.	TOTAL	
STARTER 11-48-0 @ 100 LBS/A	15.90		15.90	_____
SEED @ 175 LBS/ACRE	14.00		14.00	_____
HOELON FOR GRASSES @ 1.5 PINTS/A BY AIR	10.30	5.50	15.80	_____
2,4-D FOR BROADLEAF WEEDS @ 1.5 PINTS/A	2.20	5.50	7.70	_____
AMMON. NITRATE TOP DRESS 2X; 100 LBS TOTAL	30.88	11.00	41.88	_____
	-----	-----	-----	_____
TOTAL	73.28	22.00	95.28	_____

HARVEST				
TRUCKS			.25	_____
HARVESTER FUEL			.50	_____
			-----	_____
		TOTAL:	.75	_____

LABOR COSTS				
MECHANIC			10.00	_____
HARVEST LABOR (2 MEN)			3.33	_____
			-----	_____
		TOTAL:	13.33	_____

	COST/A	YOUR COST/A
<b>DEBT SERVICE</b>		
INTEREST ON LOAN @ %13	35.00	_____
INTEREST ON EQUIPMENT	4.50	_____
	-----	_____
TOTAL:	39.50	-----
<b>CASH OVERHEAD</b>		
SHARE RENT (15% OF GROSS INCOME)	45.17	_____
REPAIR/MAINTENANCE	54.25	_____
MANAGEMENT SALARY & BENEFITS	21.73	_____
EMPLOYEE BENEFITS (30% OF LABOR COSTS)	7.42	_____
OFFICE MANAGEMENT: SECRETARY/ACCOUNTANT	10.86	_____
TAXES ON EQUIPMENT	2.57	_____
INSURANCE	5.00	_____
	-----	_____
TOTAL:	146.99	-----
*****TOTAL CASH EXPENSES PER ACRE*****	330.59	-----
<b>NON-CASH COSTS</b>		
INTEREST ON BUILDINGS	10.67	_____
BUILDING DEPRECIATION	4.44	_____
EQUIPMENT DEPRECIATION	37.50	_____
	-----	_____
TOTAL:	52.61	-----
*****TOTAL COSTS PER ACRE FOR WHEAT*****	383.20	-----

NET PROFIT OR LOSS PER ACRE OF WHEAT, ASSUMING \$330/ACRE CASH COSTS

YIELD TONS/A	MARKET PRICE PLUS GOVERNMENT PAYMENT PER TON					
	\$104	\$106	\$108	\$110	\$112	\$114
1.60	-164	-161	-158	-155	-151	-148
1.80	-143	-140	-136	-133	-129	-125
2.00	-123	-119	-115	-111	-107	-103
2.20	-102	-97	-93	-89	-84	-80
2.40	-81	-76	-71	-67	-62	-57
2.60	-60	-55	-50	-45	-39	-34
2.80	-39	-34	-28	-23	-17	-11
3.00	-19	-13	-7	-1	5	11
3.20	2	9	15	21	28	34
3.40	23	30	37	43	50	57
3.60	44	51	58	65	73	80

1986 SAMPLE COSTS TO PRODUCE WHEAT ON MINERAL AND PEAT SOIL

**PLANTING DATES** - November 1 to January 1; Delta plantings as late as February.

**HARVEST DATES** - June 20 - August 1.

**VARIETIES** - Anza and Yolo are best suited for this area. Tadinia is a new variety about to be released for septoria resistance.

**SEEDING RATES** - 100 to 125 lbs/ac dryland; 125 to 150 lbs/ac irrigated; up to 180 lbs/ac on peat soils planted late.

**FERTILIZER** - 100 lbs/ac nitrogen preplant; 100 to 130 lbs/ac 11-48-0 with seed as starter. Topdress 50 lbs/ac nitrogen in January-February followed by rain. Use urea early in season and ammonium nitrate later when conditions are warmer.

**IRRIGATION** - Plant on beds for drainage and irrigation. Irrigate when needed, before dough stage. Spud ditch if growing in delta.

**ROTATIONS** - Useful for drying out sub-irrigated soils. This helps in restoring row crop productivity especially tomatoes following wheat.

**YIELDS** - 2000 to 4000 lbs/ac dryland; 5000 to 7000 irrigated.

**DISEASES** - Stripe rust can be devastating on non-resistant varieties. Yellow dwarf, powdery mildew and root rots are occasional problems. Septoria can be a problem during wet winters.

**WEED CONTROL** - Apply 2,4-D for broadleaf weed control when crop is well established and tillered, but before boot stage. Bromoxynil can also be used for broadleaf weeds when crop has reached the 2 leaf stage and before the boot stage, and weeds are in early seedling stage. Severe injury can occur if wheat is sprayed with 2,4-D too early; prior to tillering. For grassey weeds use Avenge for wild oats and Hoelon for Ryegrass and wild oats. Hoelon can be tank mixed with bromoxynil for single applications. Injury can occur when Hoelon is applied to stressed wheat.



SAMPLE COST OF PRODUCTION

CROP: ESTABLISH ALFALFA HAY (1st year)

<u>CULTURAL FUEL/COSTS</u>	<u>COST/A</u>	<u>LABOR</u>	<u>APPLICATION</u>	<u>YOUR COST/A</u>
Disc 2x	1.08	1.66		_____
Plow	1.00	1.25		_____
Disc 1x	0.54	0.83		_____
Level Plane 2x	0.50	1.00		_____
Herbicide inc./Float ringroll	1.08	1.66		_____
Shape borders	0.30	1.00		_____
Harrow/Ringroll	0.70	1.00		_____
Float/Ringroll 2x	1.62	2.49		_____
Plant/air				_____
Ringroll	<u>0.54</u>	<u>0.83</u>		_____
TOTAL:	7.36	11.72*		_____

IRRIGATION

Sprinkler up 3x	13.12	23.04		_____
Pumping (elect,diesel)				_____
Reclamation	<u>15.00</u>			_____
TOTAL:	28.12	23.04		_____

PESTICIDE/FERTILIZER

Balan (herbicide)	16.67			_____
P205 150# 0-25-0	13.65		5.50	_____
Seed 125 #	<u>56.25</u>		<u>5.50</u>	_____
TOTAL:	86.57		11.00	_____

LABOR

Cultural	11.72			_____
Irrigation	23.04			_____
Employee Benefits (30%)	11.09			_____
Overtime	<u>2.21</u>			_____
TOTAL:	48.06			_____

TOTAL STAND ESTABLISHMENT COST: \$181.11  
 Amortized/ 5 years = \$ 36.22/yr.

\*included in labor budget

SAMPLE COST TO PRODUCE ESTABLISHED ALFALFA (yrs 2-5)

Stand Estab. Cost  
Amortized over 5 yrs. = \$36.22

CROP.....	ALFALFA	GROSS INCOME PER ACRE.....	\$560.00
YIELD/ACRE IN TONS...	7	TOTAL CASH COST/ACRE.....	\$588.62
MARKET VALUE/TON.....	\$80.00	NET LOSS/ACRE.....	\$-28.62

<u>IRRIGATION</u>	<u>COST/A</u>	<u>APPLICATION</u>	<u>YOUR COST/A</u>
Irrigation 5x (diesel, elect)	21.87		_____
Ditch Maint.	2.50		_____
Reclamation	<u>15.00</u>		_____
TOTAL:	39.37		_____

<u>PESTICIDES/FERTILIZER</u>			
	<u>COST/A</u>	<u>APPLICATION</u>	<u>YOUR COST/A</u>
Furadan 1 pt	7.56	5.50	_____
Treflan 10g 20#	20.00	5.50	_____
Velpar	<u>20.14</u>	<u>5.50</u>	_____
TOTAL:	47.70	16.50	_____

<u>HARVEST</u>			
	<u>COST/A</u>	<u>APPLICATION</u>	<u>YOUR COST/A</u>
Custom (\$24/t)@ 7t	168.00		_____

<u>LABOR</u>			
	<u>COST/A</u>	<u>APPLICATION</u>	<u>YOUR COST/A</u>
Shop mechanic	10.00		_____
Irrigation	<u>38.40</u>		_____
TOTAL:	48.40		_____

CASH OVERHEAD

COST/A

YOUR  
COST/A

Share Rent (15%) 7 ton @ \$80	84.00	_____
Management Sal/Benefits	21.73	_____
Repairs Maint.	54.25	_____
Employee Benefits (30%)	14.52	_____
Insurance	5.00	_____
Office Mgmt. exp.	10.86	_____
sects., accountant, etc.		_____
Taxes equip.	<u>2.57</u>	_____

TOTAL: 192.93

DEBT SERVICE

Interest loan at 15%	35.00	_____
Interest equip.	<u>4.50</u>	_____

TOTAL: 39.50

GROSS INCOME:

\$80.00 x 7 ton/A: 560.00  
TOTAL CASH COSTS: 588.62

NET LOSS: - 28.62

NON-CASH COSTS:

Interest on buildings	10.67	_____
Building depreciation	4.44	_____
Equipment depreciation	<u>37.50</u>	_____

TOTAL: 52.61

## 1986 COST OF PRODUCTION STUDY FOR ALFALFA HAY

**SOIL REQUIREMENTS** - Deep, well-drained soils. Avoid hardpans and claypans or soils with a high or fluctuating water table. (Some success has been observed on marginal silts where alfalfa is planted on raised 60 inch beds.)

**PLANTING DATES** - Fall planting in September to early October is preferred. Spring plantings between February and April will produce good stands; however, weed control can be more difficult and expensive.

**HARVEST DATES** - 6-7 cuttings per season. First cutting is usually in April. Cut at 1/10 bloom or when crown regrowth is 12 inches tall.

**VARIETIES** - Semi-dormant varieties have been the best producers in this region. Public and private varieties resistant to the spotted alfalfa aphid and tolerance to the pea aphid, leaf spot, downy mildew and phytophthora root rot are suggested. On heavy, poorly drained soils phytophthora root rot becomes very important.

**SEEDING RATES** - On good seedbeds 20 to 25 lbs/ac broadcast and ringrolled. 15 to 20 lbs/ac drilled. Inoculate seed before planting, or plant pelleted, inoculated seeds.

**FERTILIZER** - Starter fertilizer at planting time providing 10 to 20 lbs N, 30 to 35 lbs P and 30 to 35 lbs. K/acre. Soil and tissue analysis can be used to determine fertilizer needs of established stands and soil tests can be used to determine preplant fertilizer needs.

**IRRIGATION** - One to two irrigations per cutting depending on soil type.

**ROTATION** - Usually in rotation with row crops. Three to four years alfalfa then 4 to 6 years of annual crops.

**YIELDS** - Six to nine tons per acre; average 7 tons/ac/y for a four year stand life.

**INSECT PROBLEMS** - Alfalfa weevil (Feb.-Mar.), armyworm, alfalfa caterpillar, pea aphid, root knot nematodes. Spotted alfalfa aphid on non-resistant varieties.

**DISEASE PROBLEMS** - Phytophthora root rot, mildew, and leaf spot.

**WEED PROBLEMS** - Grasses and some broadleaf weeds. Common groundsel and fiddleneck are poisonous to livestock and should be controlled. 2,4-DB, for post-emergence broadleaf weeds. IPC, Kerb post-emergence for seedling stands and grassey weeds. Sencor, Karmex, + weed oil for established stands, both broadleaf and grassey weeds. Treflan 10g, 20 lbs/A, should be applied in January for control of yellow and green foxtail. See your local PCA or UC Farm Advisor for current or other recommendations.

SAMPLE COSTS TO ESTABLISH LADINO CLOVER  
 TOTAL ESTABLISHMENT COSTS/ACRE: 99.60

EXPENSES

TYPE OF COST	TOTAL	YOUR
CULTURAL COSTS	COST/A	COST/A
CHOP SUDAN STUBBLE	6.00	_____
BURN PERMIT	.50	_____
FERTILIZER APPLICATION COSTS	4.50	_____
SEEDING COSTS (BY AIR)	6.00	_____
IRRIGATE 1X	7.00	_____
	-----	-----
SUBTOTAL:	24.00	_____

	TOTAL	YOUR
CHEMICAL AND SEED COSTS	COST/A	COST/A
FERT. 400 LBS P2O5, \$153/TON	30.60	_____
SEED BY AIR, 3 LBS/A, \$5/LB	15.00	_____
WINTER WEED CONTROL (INCL. APPLIC. COSTS)	30.00	_____
	-----	-----
SUBTOTAL:	75.60	_____

TOTAL COSTS FOR ESTABLISHMENT: 99.60 \_\_\_\_\_

SAMPLE COSTS TO PRODUCE LADINO CLOVER SEED

CROP.....=	LADINO	GROSS INCOME/ACRE.....=	442.00
YIELD/ACRE IN LBS...=	340	CASH COSTS/ACRE.....=	521.86
MARKET VALUE/POUND..=	1.30	1/3 ESTABL. COSTS.....=	29.88
		NET LOSS/ACRE.....=	-109.74

EXPENSES

TYPE OF COST	COST PER ACRE	YOUR COST
<b>CULTURAL COSTS</b>		
HERBICIDE APPLICATION COSTS	13.50	_____
SPRING CUTBACK	6.25	_____
SPRING IRRIGATION (9X)	55.00	_____
POLLINATION .5-1 HIVES/A, 10\$/HIVE	5.00	_____
DEFOLIATION--VERY VARIABLE	11.00	_____
EMPLOYEE PICKUPS	3.14	_____
	-----	-----
SUBTOTAL FOR CULTURAL COSTS:	93.89	_____
 <b>CHEMICAL</b>		
HERBICIDE COSTS (RANGE FROM \$0 TO \$60/A)	37.00	_____
PARAQUAT @ \$12/A, GOAL @ \$25/A, 2,4-DB @ \$12/A		
POAST HERBICIDE	20.00	_____
RODENT CONTROL	5.00	_____
INSECTICIDE SPRAYS AMMO, MALATHION	40.00	_____
	-----	-----
SUBTOTAL FOR CHEMICAL COSTS:	102.00	_____
 <b>HARVEST, CLEANING AND STORAGE COSTS</b>		
HARVEST (DIRECT COMBINE)	60.00	_____
HAULING	1.50	_____
SEED CLEANING (.18/LB X 340 LBS)	61.20	_____
STORAGE (6.00/ton)	1.02	_____
INSPECTION FEE	.25	_____
	-----	-----
SUBTOTAL HARVEST, CLEANING & STORAGE:	123.97	_____

LABOR COSTS		
IRRIGATION LABOR	6.00	-----
MECHANIC	10.00	-----
	<u>16.00</u>	-----
SUBTOTAL FOR LABOR:	16.00	-----

DEBT SERVICE		
INTEREST ON LOAN	50.00	-----
INTEREST ON EQUIPMENT	9.00	-----
	<u>59.00</u>	-----
SUBTOTAL FOR DEBT SERVICE:	59.00	-----

CASH OVERHEAD		
CASH RENTAL AGREEMENT (Range from \$60-\$70/A)	60.00	-----
REPAIR/MAINTENANCE	30.00	-----
TAXES ON EQUIPMENT	2.00	-----
MANAGEMENT SALARY & OFFICE EXPENSES	30.00	-----
INSURANCE	5.00	-----
	<u>127.00</u>	-----
SUBTOTAL FOR CASH OVERHEAD:	127.00	-----

TOTAL CASH COSTS/A FOR LADINO CLOVER:	521.86	-----
PLUS 1/3 ESTABLISH. COSTS AMORTIZED	29.88	-----
	<u>551.74</u>	-----

NON-CASH COSTS		
INTEREST ON BUILDINGS	10.67	-----
BUILDING DEPRECIATION	4.44	-----
EQUIPMENT DEPRECIATION	37.50	-----
	<u>52.61</u>	-----
SUBTOTAL FOR NON-CASH COSTS:	52.61	-----

## LADINO CLOVER

**SOIL REQUIREMENTS** - Ladino does well on shallow soils (as shallow as 12-18 inches), which are underlain by a tight clay or hardpan. Saline soils are unfavorable for Ladino. When planting Ladino on deep, fertile soils, proper water management is crucial for maximum seed production.

**PLANTING DATES** - Seed between September 15 and November 15. Early fall plantings result in larger, more productive Ladino plants. Spring plantings are also successful where winter weeds are a problem. February 1-15th is the approximate time for spring plantings. Seed yield decreases when plantings are delayed beyond March. Ladino is a long lived perennial with a 3 year average for stand longevity. A common rotation schedule includes 2 years in clover followed by 2 years planted to a non-legume such as corn, wheat or sudangrass.

**HARVEST DATES** - 90 to 110 days following spring cutback. Harvest usually occurs from August 20 through October 1.

**VARIETIES** - Proprietary varieties must be certified by the California Crop Improvement Association.

**SEEDING RATES** - 3-4 lbs per acre flown on by airplane. Smaller fields (less than 15 acres) can be seeded by ground equipment. Seed may require inoculation.

**FERTILIZATION** - Depending on soil fertility, varying amounts of nitrogen, phosphorous, and sulfur may be needed. 15-20 pounds of Nitrogen and 60-80 pounds of phosphorous per acre are commonly used for stand establishment. Nitrogen should not be required by well-inoculated stands after the first year.

**IRRIGATION** - Irrigation may be required every 7-12 days during late spring and summer. 3-5 acre feet of water are needed annually. Leaves begin to cup together when the plant is moisture stressed. Afternoon wilting can be tolerated, but morning wilt indicates that irrigation is overdue.

**POLLINATION** - Ladino clover flowers are highly self-incompatible and therefore must be cross pollinated to produce seed. 1/2 to 1 1/2 honeybee hives per acre should be sufficient.

**YIELDS** - 300-450 pounds of seed per acre.

**INSECT PROBLEMS** - Lygus feeds on buds, flowers, and developing seeds. Spider mites can cause the leaves to become cupped, yellowish, and spotted. The pea aphid and clover aphids may cause stem and flower head damage. Weevils, grasshoppers, armyworms, cutworms, clover case bearer, thrips, and leafhoppers are also potential pests of Ladino clover.

**DISEASE PROBLEMS** - Crown and root rot caused by Sclerotinia sclerotiorum can occur in the winter or early spring. Pepper spot and rust are two common foliar diseases. Several mosaic viruses afflict clover. Aster yellows is a very important clover disease transmitted by leafhoppers.

**WEED PROBLEMS** - Ryegrass, burclover, canary grass, knotweed, nutsedge, lovegrass, dallisgrass, johnsongrass, bristly ox-tongue, yellow star thistle, suckling clover, dodder, watergrass, plantain, and curly dock are common weeds found in Ladino clover.



SAMPLE COSTS TO PRODUCE SUDANGRASS SEED

CROP.....=SUDANGRASS	GROSS INCOME PER ACRE....=	500.00
YIELD/ACRE IN LBS...= 2500	TOTAL CASH COSTS/ACRE....=	526.50
MARKET VALUE/POUND..= .20	NET LOSS/ ACRE.....=	-26.50

EXPENSES

TYPE OF COST	COST	YOUR COST
CULTURAL COSTS: FUEL, ELECTRICITY, SEED	PER ACRE	
DISC 2X @ \$7.50	15.00	_____
CHISEL, APPLY FERT, PULL FLOAT	15.00	_____
PLANE 1X	6.70	_____
BORDER CONSTRUCTION	1.00	_____
PLANE 1X BETWEEN BORDERS	6.70	_____
HERBICIDE APPLICATION COSTS	4.50	_____
PLANTING	6.70	_____
INSECTICIDE AIR APPLICATION COSTS	6.00	_____
IRRIGATE 8X (3 ac/ft total)	55.00	_____
EMPLOYEE PICKUPS	3.14	_____
	-----	_____
SUBTOTAL FOR CULTURAL COSTS:	119.74	_____

CHEMICAL AND SEED COSTS		
SEED: HYBRID 30 LBS/A, .50/LB	15.00	_____
ATRAZINE HERBICIDE	8.00	_____
ROUNDUP FOR JOHNSONGRASS (OUTSIDE FIELD)	.20	_____
2,4-D HERBICIDE @ 1 1/4 PINT/ACRE	1.81	_____
FERT. 200 LBS. 11-52-0 @ .115/LB	23.00	_____
FERT. 200 LBS NH3 @ .105/LB	21.00	_____
SEVIN/NUDRIN INSECTICIDE	10.00	_____
	-----	_____
SUBTOTAL FOR CHEM. & SEED:	79.01	_____

HARVEST/CLEANING COSTS

SWATHER	11.00	_____
HARVESTER	40.00	_____
HAULING @ .002/LB, 3000 LBS	6.00	_____
SEED CLEANING .02*2500 LBS	50.00	_____
STORAGE TEST .011*2500 LBS	27.50	_____
INSPECTION FEE .25/ACRE	.25	_____

SUBTOTAL HARVEST & CLEANING: 134.75

LABOR COSTS

IRRIGATION LABOR	6.00	_____
MECHANIC	10.00	_____

SUBTOTAL FOR LABOR: 16.00

DEBT SERVICE

INTEREST ON LOAN @ %13	35.00	_____
INTEREST ON EQUIPMENT	4.50	_____

SUBTOTAL FOR DEBT SERVICE: 39.50

CASH OVERHEAD

CASH RENTAL AGREEMENT (Range from \$60-\$80)	70.00	_____
REPAIR/MAINTENANCE	30.00	_____
TAXES ON EQUIPMENT	2.50	_____
MANAGEMENT SALARY & OFFICE EXPENSES	30.00	_____
INSURANCE	5.00	_____

SUBTOTAL FOR CASH OVERHEAD: 137.50

TOTAL CASH COSTS/ACRE FOR SUDAN: 526.50

NON-CASH COSTS

INTEREST ON BUILDINGS	10.67	_____
BUILDING DEPRECIATION	4.44	_____
EQUIPMENT DEPRECIATION	37.50	_____

SUBTOTAL FOR NON-CASH COSTS: 52.61

## **SUDAN GRASS**

**SOIL REQUIREMENTS** - Can be grown on shallow soils.

**PLANTING DATES** - Plant anytime after May 1st, up through June. Later plantings can be wind/rain damaged near harvest. Plant with a drill or broadcaster.

**HARVEST DATES** - August, September, October harvest.

**VARIETIES** - Hybrid varieties, depending on seed contracts. The public varieties include: Piper, Sweet, and Greenleaf.

**SEEDING RATE** - Sudangrass is planted at 20-30 pounds of seed per acre.

**FERTILIZER** - Apply 100-200 pounds of Nitrogen as NH<sub>3</sub> preplant. Fertilizer 11-52-0 is commonly applied at 200 pounds per acre, at seeding.

**IRRIGATION** - Irrigation may be needed every 10 days between May and September, amounting to about 9 irrigations for a total of 3 acre-feet.

**YIELDS** - Average 2,500 pounds of seed per acre.

**INSECT PROBLEMS** - Beet armyworm is the most common insect pest.

**WEED PROBLEMS** - Sudangrass grown for seed **MUST BE FREE FROM JOHNSONGRASS!** Atrazine for grass control and 2,4-D for broadleaf weed control are commonly used in sudangrass seed production. Roundup can be used for spot treatments of johnsongrass outside the field. Morningglory (field bindweed) is a common broadleaf weed of concern to many growers.

CROP..... SAFFLOWER  
 YIELD/ACRE IN TONS... 1.5  
 MARKET VALUE/TON..... \$175.00

GROSS INCOME PER ACRE..... \$262.50  
 TOTAL CASH COST/ACRE..... 282.32  
 NET LOSS/ACRE..... -19.82

<u>CULTURAL COSTS FUEL</u>	<u>COST/A</u>	<u>LABOR</u>	<u>YOUR COST/A</u>
Chop corn stubble	0.28	1.42	_____
Disc 2x	1.08	1.66	_____
Plow	1.00	1.25	_____
Disc 2x	1.08	1.66	_____
Preplant Nitrogen			_____
Aqua/Ringroller	0.70	1.00	_____
Float ringroller	0.54	0.53	_____
Herb. application	0.76	0.76	_____
Float ringroller	0.54	0.83	_____
Plant	0.80	2.00	_____
Pickup	3.40		_____
Reclamation	15.00		_____
<b>TOTAL:</b>	<b>25.18</b>	<b>11.11*</b>	_____

<u>CHEMICALS/SEED</u>			
Nitrogen 150#	28.50		_____
Treflan 1.0#/A	8.03		_____
Seed 40 #/A	17.00		_____
<b>TOTAL:</b>	<b>53.53</b>		_____

<u>HARVEST</u>			
Harvester (fuel)	1.25		_____

<u>LABOR</u>			
Cultural	11.11		_____
Harvest	1.25		_____
Shop Mechanic	10.00		_____
<b>TOTAL:</b>	<b>22.36</b>		_____

\* Included in labor budget

CASH OVERHEAD

COST/A

YOUR  
COST/A

Share Rent (15%)	39.38
Mgmt. Sal/Benefits	21.73
Employee Benefits (30%)	6.71
Taxes on Equip.	2.57
Repairs/Maint.	54.25
Office/Mgmt. Exp.	10.86
Insurance	<u>5.00</u>

TOTAL: 140.50

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\_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_

DEBT SERVICE

Interest on Loan	35.00
Interest on Equip.	<u>4.50</u>

TOTAL: 39.50

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TOTAL GROSS INCOME: \$262.50  
CASH EXPENSE: 282.32

NET LOSS: \$-19.82

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NON-CASH COSTS

Equipment depreciation	37.50
Interest on buildings	10.67
Building depreciation	<u>4.44</u>

TOTAL: 52.61

1986 SAMPLE COST TO PRODUCE SAFFLOWER

**AREAS OF ADAPTATION** - Deep soils of Sacramento County yield 1-1.5 tons/A. On marginal soils, except where hardpans exist in the Elk Grove area should not be planted.

**PLANTING DATES** - February 15 to April 15.

**HARVEST DATES** - August 1 to September 15, when moisture content of seed is about 8%.

**SOIL REQUIREMENTS** - Clays, clay loams, muck, non-hardpan soils.

**VARIETIES** - Check seed companies or local UC Farm Advisors office for current recommendations.

**SEEDING RATES** - 35 to 50 lbs/acre, row planted on 7-20 inch rows. Increase seeding 10 lbs/ac for drilled plantings on sub-irrigated land.

**FERTILIZER REQUIREMENTS** - 120 lbs/ac nitrogen depending on previous crops and soil moisture conditions. Starter fertilizer can be beneficial especially on cold soils.

**IRRIGATION** - Usually none. Planting should be to moisture.

**ROTATION** - Not recommended to plant prior to growing tomatoes. Dodder problems seem to be worse after safflower. Soil tends to dry out and take land out of level.

**YIELDS** - 2000 to 3000 lbs/acre.

**SPECIAL INSECT PROBLEMS** - Cutworms, aphids, lygus, and thrips. Early plantings preferred to decrease possibility of damage from latter two.

**WEED CONTROL** - Treflan, Prowl, Eptam and Dual preplant incorporated for control of grass and broadleaf weeds.

SAMPLE COSTS TO PRODUCE SUNFLOWER OIL

CROP.....=	SUNFLOWER	GROSS INCOME/ACRE....=	288.00
YIELD/ACRE IN TONS..=	1.2	TOTAL CASH COSTS/ACRE=	342.04
MARKET VALUE/TON....=	240.00	NET LOSS/ACRE.....=	-54.04

EXPENSES

TYPE OF COST	COST/A	COST/A	COST/A	YOUR
CULTURAL COSTS: FUEL AND LABOR	FUEL	LABOR	TOTAL	COST/A
STUBBLE CHOP	.28	1.42	1.70	_____
DISC 2X	1.08	1.66	2.74	_____
PLOW	1.00	1.25	2.25	_____
LIST UP BEDS	.70	1.00	1.70	_____
INCORPORATE HERBICIDE	1.00	1.25	2.25	_____
PLANT SEED	1.00	2.00	3.00	_____
CULTIVATE	.35	1.00	1.35	_____
IRRIGATE 2X-3X	8.00	18.00	26.00	_____
EMPLOYEE PICKUPS	3.14		3.14	_____
DRAIN MAINTENANCE		2.50	2.50	_____
RECLAMATION FEES			15.00	_____
	-----	-----	-----	_____
TOTAL	16.55	30.08	61.63	_____

CHEMICAL AND SEED COSTS	COST/A	COST/A	COST/A	
	MATERIAL	APPLIC.	TOTAL	
NITROGEN @ 100 LBS/ACRE, @ .19/LB	19.00		19.00	_____
HERBICIDE, TREFLAN	5.50		5.50	_____
SEED @ 3.5-4 LBS/A, @ \$4/LB	16.00		16.00	_____
HEAD MOTH CNTRL, AIR-THIODAN/SUPRACIDE	11.50	5.50	17.00	_____
	-----	-----	-----	_____
TOTAL	52.00	5.50	57.50	_____

HARVEST				
COMBINE			12.00	_____
BANKOUT WAGON			5.00	_____
			-----	_____
		TOTAL:	17.00	_____

	COST/A	YOUR COST/A
LABOR COSTS		
MECHANIC	10.00	_____
HARVEST LABOR (1 MAN)	3.00	_____
OVERTIME	2.21	_____
	-----	_____
TOTAL:	15.21	_____
DEBT SERVICE		
INTEREST ON LOAN @ 13%	35.00	_____
INTEREST ON EQUIPMENT	4.50	_____
	-----	_____
TOTAL:	39.50	_____
CASH OVERHEAD		
SHARE RENT (15% OF GROSS INCOME)	43.20	_____
REPAIR/MAINTENANCE	54.25	_____
MANAGEMENT SALARY & BENEFITS	21.73	_____
EMPLOYEE BENEFITS (30% OF LABOR COSTS)	13.59	_____
OFFICE MANAGEMENT	10.86	_____
TAXES ON EQUIPMENT	2.57	_____
INSURANCE	5.00	_____
	-----	_____
TOTAL:	151.20	_____
*****TOTAL CASH EXPENSES PER ACRE*****	342.04	_____
NON-CASH COSTS		
INTEREST ON BUILDINGS	10.67	_____
BUILDING DEPRECIATION	4.44	_____
EQUIPMENT DEPRECIATION	37.50	_____
	-----	_____
TOTAL:	52.61	_____
*****TOTAL COSTS PER ACRE FOR SUNFLOWER*****	394.65	_____



## 1986 SAMPLE COSTS TO PRODUCE SUNFLOWER OIL

**AREAS OF ADAPTATION** - Successful plantings have occurred on a wide variety of soil types and climatic conditions.

**PLANTING DATES** - Acceptable yields have resulted from mid March-May plantings, depending on insect, disease, and weather conditions. Earlier plantings risk flooding and cool temperatures. On the other hand, June-July plantings show a marked decline in productivity.

**HARVEST INFORMATION** - Harvest depends on crop moisture content. Loads with greater than 12% moisture are rejected. 10-12% moisture receives a dockage. Therefore, harvest should not take place if moisture is greater than 10%. Optimum moisture for harvest ease is 7-8%.

**VARIETIES** - The high oleic oil producing varieties are most desirable. Contact local oil contractors or the farm advisor's office for the varieties currently recommended.

**SEEDING RATES** - 3.5-4 pounds per acre. Sunflowers can be planted on 30 inch beds, with plants being 7-9 inches apart within a row. Planting depths of 2.5-3 inches are suitable for germination.

**FERTILIZER** - Great variability exists on fertilizer use, but positive yield results have been obtained up to 100 pounds of nitrogen per acre.

**IRRIGATION** - Two-three irrigations are commonly needed per season. Water stress between bloom and seed fill can reduce yields significantly.

**ROTATION** - Sunflowers fit well as a substitute for corn in a wheat/corn rotation. Volunteer sunflowers in the following crop can be controlled with herbicides.

**WEED CONTROL** - Treflan is commonly used in sunflowers. Amiben can be used for broadleaf weeds. Eptam is another potential herbicide for grass control.

**POLLINATION** - Sunflowers require pollination by bees placed at 1 hive/3 acres.

**INSECTS** - The number one insect is the sunflower head moth, which should be closely monitored. Thiodan or Supracide can be used. Cutworms have been a problem in other counties, but so far Sacramento growers have not been affected significantly.

**DISEASES** - Most varieties have resistance to rust, verticillium, and mildew.

**YIELDS** - Sunflowers, like any agricultural commodity, are a risk. Growers have had very disappointing yields of .5-.75 tons/acre in some fields. However, on a county-wide basis, growers have averaged 1-1.3 tons/acre.

SAMPLE COSTS TO PRODUCE GRAIN SORGHUM

CROP.....=	SORGHUM	GROSS INCOME/ACRE....=	204.00
YIELD/ACRE IN TONS..=	3	TOTAL CASH COSTS/ACRE=	332.10
MARKET VALUE/TON....=	68.00	NET LOSS/ACRE.....=	-128.10

EXPENSES

TYPE OF COST	COST/A	COST/A	COST/A	YOUR
CULTURAL COSTS: FUEL AND LABOR	FUEL	LABOR	TOTAL	COST/A
STUBBLE CHOP	.28	1.42	1.70	_____
DISC 2X	1.08	1.66	2.74	_____
PLOW	1.00	1.25	2.25	_____
DISC 2X	1.08	1.66	2.74	_____
PRE-PLANT NITROGEN /ROLLER	.70	1.00	1.70	_____
FLOAT/RINGROLLER	.55	.55	1.10	_____
PLANT SEED	.80	2.00	2.80	_____
CULTIVATE 2X	.70	1.00	1.70	_____
EMPLOYEE PICKUPS	3.14		3.14	_____
DRAIN MAINTENANCE		2.50	2.50	_____
RECLAMATION FEES			15.00	_____
TOTAL	9.33	13.04	37.37	_____

CHEMICAL AND SEED COSTS	COST/A	COST/A	COST/A	
	MATERIAL	APPLIC.	TOTAL	
SEED @ 18 LBS/A, @ .70/LB	12.60		12.60	_____
NITROGEN @ 150 LBS/ACRE, @ .19/LB	28.50		28.50	_____
ATRAZINE + OIL, AIR (1.5 LBS + 1 GAL/A)	10.13	5.50	15.63	_____
STARTER FERTILIZER 6-20-20	16.00		16.00	_____
TOTAL	67.23	5.50	72.73	_____

HARVEST				
COMBINE			1.00	_____
HAULING (\$4/TON)			12.00	_____
			-----	_____
		TOTAL:	13.00	_____

	COST/A	COST/A
LABOR COSTS		
IRRIGATE 3X-5X	16.00	_____
MECHANIC	10.00	_____
HARVEST LABOR (1 MAN)	3.00	_____
OVERTIME	2.21	_____
	-----	_____
TOTAL:	31.21	_____

DEBT SERVICE		
INTEREST ON LOAN @ 13%	35.00	_____
INTEREST ON EQUIPMENT	4.50	_____
	-----	_____
TOTAL:	39.50	_____

CASH OVERHEAD		
SHARE RENT (15% OF GROSS INCOME)	30.60	_____
REPAIR/MAINTENANCE	54.25	_____
MANAGEMENT SALARY & BENEFITS	21.73	_____
EMPLOYEE BENEFITS (30% OF LABOR COSTS)	13.28	_____
OFFICE MANAGEMENT	10.86	_____
TAXES ON EQUIPMENT	2.57	_____
INSURANCE	5.00	_____
	-----	_____
TOTAL:	138.29	_____

*****TOTAL CASH EXPENSES PER ACRE*****	332.10	_____
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NON-CASH COSTS		
INTEREST ON BUILDINGS	10.67	_____
BUILDING DEPRECIATION	4.44	_____
EQUIPMENT DEPRECIATION	37.50	_____
	-----	_____
TOTAL:	52.61	_____

*****TOTAL COSTS PER ACRE FOR SORGHUM*****	384.71	_____
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## 1986 SAMPLE COST TO PRODUCE GRAIN SORGHUM

**SOIL REQUIREMENTS** - Sorghum grows well on highly productive organic or mineral soils and deeper upland soils.

**PLANTING DATES** - Main season is May 10 to June 15; double crop between June 15 and July 15. Soil temperature at planting depth should be over 65F. Poor pollination can occur when night time temperatures fall below 40F.

**HARVEST DATES** - September 15 to December 15.

**VARIETIES** - Check with your seed representative or local UC Farm Advisor for current recommendations for your area.

**SEEDING RATES** - Full season, 15 to 18 lbs/ac. Early maturing varieties planted late require 8-25 lbs/ac.

**FERTILIZER** - Organic soils: 30-45 lbs P205/acre. For mineral soils, use starter with N, P, and K. If soil is very P deficient, use 100 to 150 lbs N preplant plus 30 to 45 lbs P205/acre.

**IRRIGATION** - 1.5 to 2 acre feet of water is needed. On organic soils sub-irrigate. On mineral soils sprinkle, flood or furrow irrigate. Three to five irrigations needed.

**WEED CONTROL** - Cultivate 2 to 4 times. 2,4-D may be used for broadleaf weeds. Atrazine + oil can be applied early post-emergence for both water grass and broadleaf weed control.

**INSECT CONTROL** - Greenbug can be a severe problem, especially when sorghum is young. Control is not as essential once plants head out. Some varieties have greenbug resistance.

**DISEASE CONTROL** - Many varieties are resistant to head smut. To avoid root rot and lodging, prevent moisture stress, especially in salt/alkaline areas. Plant varieties which are best adapted to your particular area.