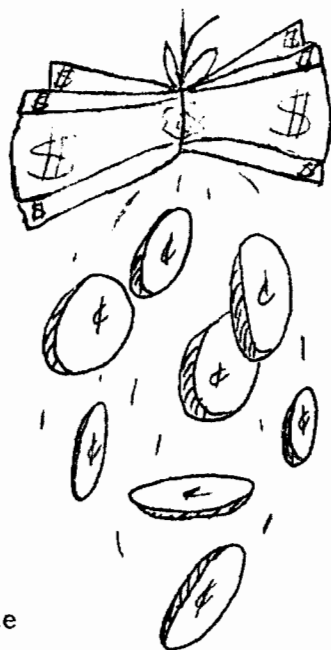
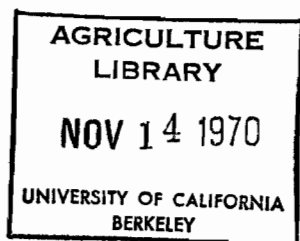


# SAMPLE COST OF PRODUCTION -

## CLARKSBURG AREA

1969



Farm & Home Advisor's Office  
Yolo County  
70 Cottonwood Street  
Woodland, California

*The authors are indebted to and wish to thank a group of growers from the Clarksburg area for their help in developing this enterprise study. These growers provided the basic information on machinery, operations and a farming unit. Their thinking and guidance was greatly appreciated.*

*We also wish to thank those in allied industries who provided information on costs of items and services.*

*Without the help of these growers and those in industry, the development of an enterprise cost study would have been much, much more difficult.*

*Again, thanks to all.*

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*Prepared by  
University of California  
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Woodland, California  
1969*

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To simplify information, when trade names of products have been used, no endorsement of named products is intended, nor criticism implied of similar products which are not mentioned.

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## INTRODUCTION

The Clarksburg area is located along the west side of the Sacramento River south of the city of Sacramento. The Clarksburg area is primarily located in the south-eastern portion of Yolo County. Three reclamation districts are considered to be included as part of the Clarksburg area - District 999, Hollandland; District 150, Herritt Island; and District 307, Lisbon Island.

The climate, the soil, and the farming practices are somewhat different than that for much of Yolo County. The outlying flat ground usually is a clay or clay loam soil and is associated with a high water table that varies from 20" to 40" below the soil surface. The other major soil, often referred to as a bench soil, is a sandy loam to loam and is located along the levees. Frequently seepage is a problem with these bench soils during periods of high river flows.

The use of sprinkler systems for irrigation is a standard practice for many crops. This is to avoid overly saturated soils and keep the soil salts in the lower soil layers. The use of furrow irrigation methods is frequently used on the bench soils.

The area is located within the sea breeze channel as the ocean air flows into the interior valley. Thus evenings are cooler and humidities usually are higher. The windy conditions sometimes interfere with farming operations.

## REASONS FOR STUDY

The business of farming has been operating within an increasingly tighter economic squeeze. Efficiency in the use of equipment is essential for economic production of crops. A grower needs to know his inputs, all the inputs, into a crop before he can determine his net returns. Too frequently, hidden costs are overlooked as costs of production.

Many questions are asked about the economics of production for the area. *Where the costs are? What the comparative costs of production are for individual crops? What the essential production practices are? General information for the area.*

Costs vary from farm to farm because of individual differences in soil, rotations, equipment, size of units, and management. Growers are urged to use their own data to develop a true cost for their operations. This study should be used as a guide only.

## BASIS FOR COSTS

This enterprise study presents information on costs of producing several crops that are important in the Clarksburg area. Average yields for the area were used as a basis for unit costs of production. The cost figures used represent a calculated estimate and not a specific or exact average figure. The figures are based on 1968-69 usual costs and on farming operations commonly used to produce the various crops.

In a few places, a recommended practice is used in place of the general practice when the general practice is in error with established information or the practice is excessive. Growers themselves recognize that certain practices are excessive but are reluctant to cut back.

## CROPS & ACREAGE

It was necessary to select representative crops, assume certain acreages, and estimate equipment usage for the acreage, in order to determine costs of operation for equipment. Costs were developed on the basis of 250 acres of corn, 160 acres of alfalfa, 100 acres of safflower, 150 acres of tomatoes, 100 acres of sugar beets, and 40 acres of grain - a total of 300 acres. There may be some disagreement as to crops and proportions of the crops. Specialized equipment should be used on sufficient acreage to justify its ownership and economical usage. To figure costs for crops not included in the study, simply substitute equipment usage information. The cost would be applicable for good cost information.

## EQUIPMENT COSTS

Equipment costs which are determined by hours of usage are divided into cash cost and fixed costs. Cash costs include fuel, repairs, insurance and taxes. Fixed costs include depreciation and interest on investment. Generally the more a piece of equipment is used, the less it will cost per hour or per acre. Equipment costs change rapidly. The prices shown on Page 18 may be below current costs. The increased cost should be considered when using this cost study.

Cash costs are itemized in the detailed crop operation sheets under fuel and repairs. The annual fixed costs are totaled together and shown under investment costs. Fixed costs are pro-rated to the individual crop on the basis of usage of the equipment on that crop.

Irrigation equipment is shown as a separate item in investment cost because it is a sizable charge and cost. Irrigation equipment includes the rain machine, pipes and pipe trailer.

Harvest equipment is shown as a separate investment item for tomatoes. Harvest equipment is a sizable figure for tomatoes.

A few operations were shown as custom or contract work. Custom work was used when this is the common practice. Certain pieces of equipment were rented. Fertilizer equipment frequently is rented.

Many growers have more and different equipment. Many are difficult to justify on a usage basis. Many of these were acquired for special conditions and have continued in ownership. For the purposes of this study and for efficiency, the listed machinery was considered sufficient.

## EQUIPMENT TAXES AND INSURANCE

The tax rate used for this study was 6.0% of the assessed value. The assessed value was considered to be 25% of the average value. The average value was assumed to be the half life or 50% of the new cost. *NOTE: In practice, the assessed value is more accurately determined by use of tables for this purpose. For this study, the short cut method used is sufficiently accurate for realistic figures.*

New Price X 50% = Average Value

Average Value X 25% = Assessed Value

Assessed Value X 6.0% (tax rate) - Tax on equipment

The insurance - all risk - was charged at 52 cents per \$100 insurable value. Insurable value is 30% of the market value or what a similar piece of equipment could be purchased for. For this study, market value was assumed to be 50% of the new cost. For example, if a piece of equipment originally cost \$2,000, the half life or current cost of a comparable replacement would be \$1,000. The insurable value would be 30% of \$1,000 or \$300. The insurance charge would be 52¢ X 8 or \$4.16 for the piece of equipment.

### LABOR CHARGES

Labor costs are based on \$1.75 per hour for tractor drivers and \$1.65 per hour for irrigators and general labor. Additional labor costs are for Social Security, Workmen's Compensation Insurance and other miscellaneous benefits. Additional labor costs amount to 15% of the hourly cash wage.

In the Clarksburg area many of the foremen, supervisors, and tractor drivers are furnished transportation, quite a few are also furnished housing and utilities. In addition many receive vacation with pay and an annual bonus. Allowances for some of these additional costs are included in the miscellaneous production costs.

For seasonal and part time labor - weeding crews, sorters, some irrigators, etc - an additional labor cost is charged at the rate of \$2.50 per day per man. This charge is paid to the labor supervisor to defray his costs which include recruiting, housing, bookkeeping, field supervision, supplies, transportation to fields, etc.

These less obvious costs for labor are frequently overlooked and often not considered. Only the cash wage is quoted.

### LAND TAXES & INVESTMENT CHARGES

The land tax and investment charge is based on an assumed \$1,000 per acre. Interest on the investment is charged at 6% of the land value. The land tax is charged at 6.17% per \$100 of assessed value. Assessed value is 25% of assumed value.

$$\$1,000 \times 6.0\% = \$60 \text{ per acre investment charge}$$

$$\$1,000 \times 25\% = \$250 \text{ assessed value}$$

$$\$250 \times 6.17\% = \$15.50 \text{ per acre tax}$$

### RECLAMATION DISTRICT CHARGES

The reclamation districts charge a fee per acre to maintain levees for flood control and to maintain ditches for drainage and water supplies.

This charge varies from district to district, but it is based on the location within the district, probable maintenance required, productive ability of the soil, possible crops grown, potential production problems, etc.

A calculated overall average of \$5.10 per acre reclamation district charge is used in this study. (Based on the average for District 999).

## MISCELLANEOUS OPERATING CHARGES

There are a number of cost and charges that are difficult to assign to any one place in the production schedule. These are definite costs. To cover these costs a charge is made at the rate of 11% of the growing or cultural costs.

A few of the more important and sizable items included in the miscellaneous operating cost are interest on operating capital, use of pickup, transportation for full time labor, phone, bookkeeping, roadway maintenance, general weed control, vacations etc. Some growers feel that an 11% charge is not enough when 8% is charged for borrowed operating capital but operating capital is usually a short term loan.

## MANAGEMENT CHARGE

A management charge is shown. This is charged at 5% of the gross return for the individual crop. The management charge is shown separately so it can be deducted easily if an individual wishes to discount this item.

## THE RENT OPERATOR

The grower who operates rented ground and is comparing his operations with this enterprise cost study, would deduct the land tax, the reclamation charges, the investment costs for land and buildings. He would and should include investment costs for tractors, equipment, and irrigation equipment.

In place of investment and overhead charges for land and facilities, the rent grower should include a charge for rental. Listed below are share rental rates commonly used in the Clarksburg area. Share rents are based on a percentage of the gross income for the crop.

Tomatoes	18%
Corn	33%
Barley & Wheat	33%
Alfalfa	30% (27% to 33%)
Safflower	33%
Sugar Beets	25%
Grain Sorghum	33%
Onions .	17%
Beans	30%

Rental rates will vary according to what the landlord supplies or equipment furnished or land preparation done. In many of the share rent agreements, the landlord shares in the drying costs and/or hauling costs. In some the landlord also shares in the cost of fertilizers or insecticides.

Share rents are on the dry weight basis or marketable product basis. Drying is deducted before yields are calculated.

Cash rents are frequently in the \$55-\$60 per acre range depending on length of the rental term.

ALFALFA HAY  
160 Acres - 4 Yr. Life  
Yield - 6-1/2 tons - 40 Acres in - 40 Acres out/Yr.

	Hours Per Acre	Cash & Labor Costs Per Acre				Total
		Labor	Fuel & Repairs		Material	
			Tractor	Implts.		
<b>GROWING COSTS</b>						
Weed Control						
Springtooth	.17	.30	.40	.10		.80
Insect Control						
Alfalfa Weevil	.10	.10	.08	.10		.36
Material - Methoxychlor - 1/2 gal @ \$4.50/gal					2.50	2.50
Pea Aphid	.10	.18	.08	.10		.36
Material - Systox - 1/2 pt/acre @ \$16.60/gal					1.04	1.04
Irrigation - 4% - Sprinkler - 2 men handling 3 units						
Labor - 2 men	2.66	4.39 (1/3 x 2 x 4 x 1.0 Ac/hr).				4.39
Equipment	4.00	-	-	11.36		11.36
Move equip., set up & service @ 10% of time (20% for irrigation)	<u>.56</u>	<u>.92</u>	<u>-</u>	<u>.05</u>	<u>-</u>	<u>.97</u>
<b>TOTAL</b>	<b>7.59</b>	<b>5.97</b>	<b>.56</b>	<b>11.71</b>	<b>3.54</b>	<b>\$ 21.78</b>

**MISCELLANEOUS GROWING COSTS**

Pickup, phone, postage, interest on operating capital, meetings, roadways, etc. @ 11% of growing costs						2.55
Social Security, Workmen's Comp. Ins., Transportation, vacations, housing, utilities, bonuses, etc. @ 15% of cash hourly wage						.90
Additional charge for seasonal labor @ \$2.50/day/man (irrigators) includes labor managers' fees, bookkeeping etc.						<u>.67</u>
<b>TOTAL MISC.</b>						<b>\$ 4.12</b>
Taxes - Land tax and reclamation dist. charges						<b>\$ 20.60</b>
<i>Cost Up To Harvest</i>						<b>\$ 46.50</b>
<i>Cost Per Ton - Growing Costs</i>						<b>\$ 7.15</b>



Alfalpa Hay, Con't

	Hours Per Acre	Cash & Labor Costs Per Acre				Total
		Labor	Fuel & Repairs		Material	
			Tractor	Implts.		
<u>HARVEST COSTS</u>						
Green Chop - Contract @ \$6.50/ton - 6.5 tons (Dry hay basis)						<u>42.25</u>
<i>Total</i>						\$ 42.25
Management Charges - @ 5% of gross income (6.5 ton @ \$25.00/ton = \$162.50 x .05 = \$8.13)						<u>8.13</u>
<i>Total Growing and Harvest Costs</i>						\$ 96.88
<i>Cost Per Ton</i>						\$ 14.90
<u>Investment Costs (Establish, Destroy &amp; Crop Production)</u>						
Land - \$1,000 @ 6%						60.00
Buildings \$20/acre						1.60
Irrigation Equipment						16.30
Tractors and Equipment (Est. & destroy ÷ 4 years + crop)						4.95
Stand Establishment (and Destroy) \$52.96/Ac ÷ 4 yrs. = \$13.24 + Interest @ \$1.59						<u>14.83</u>
<i>Total Investment Cost</i>						\$ 97.68
<i>Investment Cost Per Ton</i>						\$ 15.02
<i>Total Cost All Costs</i>						\$194.56
<i>Total Cost Per Ton</i>						\$ 29.93

Alfalfa Hay - Establish Stand

	Hours Per Acre	Cash & Labor Costs Per Acre				Total
		Labor	Fuel & Repairs		Material	
			Tractor	Implts.		
<u>FALL</u>						
Disc	.25	.44	.59	.08		1.11
Landplane - 2X	.66	1.16	1.56	.55		3.27
Chisel	.67	1.17	1.58	.99		3.54
<u>SPRING</u>						
Springtooth	.17	.30	.40	.29		.99
Float, Harrow - & roll 2X	.40	.70	.80	.18		1.68
Harrow & Roll	.17	.30	.40	.06		.76
<u>PLANTING</u>						
Plant by air					1.25	1.25
Seed 30#/acre @ 70¢/lb.					23.40	23.40
Harrow & Roll	.17	.30	.40	.06		.76
Roll (after emergence)	.13	.30	.11	.09		.50
Irrigate 1X (rest charged to production)						
Sprinkler Labor	.66	1.09	(2 men - 3 units (1/3 x 2 x 1 A/hr))			1.09
Equipment	1.0	-	-	2.84		2.84
Move equip., set up and service @ 10% of time (20% for irrigation)	.44	.77	-	.08		.85
<i>Total</i>	<i>3.04</i>	<i>6.53</i>	<i>5.84</i>	<i>5.02</i>	<i>24.65</i>	<i>\$42.04</i>
<u>MISC. COSTS</u>						
Pickup, phone, postage, bookkeeping, interest on operating capital, meetings, etc. @ 11% of cultural costs						4.61
Social Security, Workmen's Comp., transportation, vacation, housing, bonuses, etc. @ 15% of hourly wage						<u>.98</u>
<i>Total Misc.</i>						<i>\$ 5.59</i>
<i>Total Cost to Establish</i>						<i>\$47.63</i>

ALFALFA HAY - Destroy Stand

Cost to Destroy

Plow 2X	1.34	2.34	1.63	1.13		5.10
Move equip., set up & service @ 10% of time	.13	.23	-	-	-	.23
<i>Total</i>	<i>1.47</i>	<i>2.57</i>	<i>1.63</i>	<i>1.13</i>		<i>\$ 5.33</i>
<i>Total Cost To Establish &amp; Destroy -</i>						<i>\$52.96</i>

**BARLEY OR WHEAT**  
40 Acres Following Alfalfa - Yield 4500 lbs.

**Cash & Labor Costs Per Acre**

	Hours Per Acre	Cash & Labor Costs Per Acre				Total
		Labor	Fuel & Repairs		Material	
			Tractor	Implts.		
<b><u>GROWING COSTS</u></b>						
Disc	.17	.30	.40	.24		.94
Float	.20	.35	.47	.03		.85
Fertilize	.17	.30	.40			.70
Rent fertilizer applicator @ \$1.00/acre					1.00	1.00
40 lbs. Nitrogen @ .08 lbs.					3.20	3.20
Harrow & Roll	.17	.30	.40	.06		.76
Plant - Grain drill	.33	.58	.27	.24		1.09
Seed - 100 lbs. @ .04¢/lb.					4.00	4.00
Weed spray	.10	.18	.08	.10		.36
2,4-D amine @ 1/2 lb/acre					.45	.45
Move equipment, set up and service at 12% of time	.14	.25				.25
<i>Total</i>	<i>1.28</i>	<i>2.26</i>	<i>2.02</i>	<i>.67</i>	<i>8.65</i>	<i>\$ 13.60</i>

**MISCELLANEOUS**

Compensation, Insurance, Social Security @ 15% of cash wage .34  
 Phone, pickup, roadside weed control, interest on loans @ 11% of growing costs 1.53

*Total Growing Costs* \$ 1.87

Taxes (Land) & Reclamation District Charges 20.60

*Total Costs Up To Harvest* \$ 36.07

*Costs Per 100 lbs. Up To Harvest* \$ .80

**Harvest**

Combine .67 1.31\* 2.24 3.55

**Post Harvest Costs**

Disc .25 .49\* .59\* .08 1.16

*Total Growing and Harvesting Costs* \$ 40.78

*Growing & Harvest Cost Per 100 lbs.* \$ .91

Management - 5% of 45 cwt @ 2.40/cwt 5.40

**INVESTMENT COSTS**

Land \$1,000 @ 6% 60.00

Buildings \$20 per acre 1.60

Tractors and Equipment 10.74

*Total Investment Costs* \$ 72.34

*Investment Cost Per 100 lbs.* \$ 1.60

*Total All Costs* \$118.52

*Cost Per 100 lbs.* \$ 2.63

\*Includes compensation insurance & social security.

## CORN

250 Acres Following Fall Harvested Sugar Beets - Yield 8,000 lbs.

	Hours Per Acre	Cash & Labor Costs Per Acre.				Total
		Labor	Fuel & Repairs		Material	
			Tractor	Implts.		
<u>Seed Bed Preparation</u>						
Fall						
Plow	.67	1.17	.82	.57		2.56
Spring						
Float	.20	.35	.47	.03		.85
Disc	.17	.30	.40	.24		.94
Fertilize	.17	.30	.40			.70
Rent fertilizer applicator @ 1.00/acre					1.00	1.00
200 lbs. Nitrogen @ .08 lbs.					16.00	16.00
Harrow, float and roll 2X	.33	.58	.78	.16		1.52
Harrow and roll	.17	.30	.40	.13		.83
Move equipment, set up and service @ 10% of time	.17	.30				.30
<i>Total</i>	<i>1.88</i>	<i>3.30</i>	<i>3.27</i>	<i>1.13</i>	<i>17.00</i>	<i>\$24.70</i>
<u>Planting</u>						
Plant & Fertilize	.33	.58	.40	.16		1.14
Seed Varies with variety & plant population desired					10.00	10.00
Rent fertilizer applicator @ .50/acre					.50	.50
100 lbs. 6-20-20 @ \$86.50/ton					4.33	4.33
Move equipment, set up and service @ 15% of time	.05	.09				.09
<i>Total</i>	<i>.38</i>	<i>.67</i>	<i>.40</i>	<i>.16</i>	<i>14.83</i>	<i>\$ 16.06</i>
<u>GROWING COSTS</u>						
Cultivate & furrow 3X	1.50	2.63	1.22	.26		4.11
Ditch for irrigating 3X	.15	.26	.35	.04		.65
Irrigate 5X (Furrow)	2.50	4.13		.83		4.96
Weed spray	.10	.18	.08	.10		.36
2,4-D amine @ 1 lb/acre					.90	.90
Miticide	.10	.18	.08	.10		.36
Kelthane MF @ 1 lb/acre					4.25	4.25
Move equipment, set up and service @ 15% of time	.65	1.12				1.12
<i>Total</i>	<i>5.00</i>	<i>8.50</i>	<i>1.73</i>	<i>1.33</i>	<i>5.15</i>	<i>\$16.71</i>
<u>Miscellaneous</u>						
Compensation Insurance, Social Security, bonuses, etc. @ 15% of cash wage						1.37
Phone, pickup, roadside weed control, interest on operating capital, etc. @ 11% of growing costs						6.61
<i>Total</i>						<i>\$ 8.48</i>
<u>Taxes</u> - (Land) & Reclamation District Charges						<u>20.60</u>
<i>TOTAL COSTS UP TO HARVEST</i>						<i>\$ 86.55</i>
<i>Cost per 100 lbs. Up to Harvest</i>						<i>\$ 1.08</i>

Corn, con't.	Acre Per Acre	Cash & Labor Costs Per Acre				Total
		Labor	Fuel & Repairs		Material	
			Tractor	Implts.		
<u>Harvesting Costs</u>						
Harvest	1.00	1.96*	3.34	1.75		7.05
Drying 4 ton @ \$3.50/ton (custom)					14.00	14.00
<i>Total</i>	1.00	1.96	3.34	1.75	14.00	\$ 21.05
<u>Post-Harvest Costs</u>						
Chop stubble	.33	.65*	.27	.13		1.05
Disc <sup>2</sup> X	.50	.99*	1.18	.17		2.34
<i>Total</i>	.83	1.64	1.45	.30		\$ 3.39
<i>TOTAL GROWING AND HARVESTING COSTS</i>						\$110.99
<i>Growing and Harvest Cost per 100 lbs.</i>						\$ 1.39
Management - charge @ 5% of 80 cwt. @ 2.50/cwt						10.00
<u>INVESTMENT COSTS</u>						
Land \$1,000 @ 6%						60.00
Buildings \$20 per acre						1.60
Irrigation pumps & syphon tubes						.89
Tractors and equipment						<u>25.32</u>
<i>Total Investment Costs</i>						\$ 87.81
<i>Investment Cost per 100 lbs.</i>						\$ 1.10
<i>TOTAL ALL COSTS</i>						\$208.80
<i>COST PER 100 LBS.</i>						\$ 2.61

\*Includes compensation insurance and social security.

SAFFLOWER  
100 Acres Following Corn - Yield 3,000 lbs.

	Hours Per Acre	Cash & Labor Costs Per Acre				Total
		Labor	Fuel & Repairs		Material	
			Tractor	Implts.		
<u>Seed bed preparation</u>						
Fall						
Plow	.67	1.17	.82	.57		2.56
Spring						
Float	.20	.35	.47	.03		.85
Fertilize	.17	.30	.40			.70
Rent fertilizer applicator @ \$1.00/acre					1.00	1.00
100 lbs. Nitrogen @ .08 lb.					8.00	8.00
Disc & spray herbicide	.17	.30	.40	.24		.94
Herbicide					6.00	6.00
Rent tag-a-long sprayer @ .50/acre					.50	.50
Disc	.17	.30	.40	.24		.94
Harrow & roll. 2X	.33	.58	.78	.11		1.47
Move equipment, set up and service @ 10% of time	.17	.30				.30
<i>Total</i>	<i>1.88</i>	<i>3.30</i>	<i>3.27</i>	<i>1.19</i>	<i>15.50</i>	<i>\$23.26</i>
<u>Planting</u>						
Plant - Grain drill	.33	.58	.27	.24		1.09
Seed 35 lbs/acre @ .09/lb.					3.15	3.15
Move equipment, set up and service @ 15% of time	.05	.09				.09
<i>Total</i>	<i>.38</i>	<i>.67</i>	<i>.27</i>	<i>.24</i>	<i>3.15</i>	<i>\$ 4.33</i>
<u>Miscellaneous</u>						
Compensation insurance, Social Security @ 15% of cash wage						.60
Phone, pickup, roadside weed control, interest on operating capital @ 11% of growing costs						3.09
<i>Total</i>						<i>\$ 3.69</i>
<u>Taxes</u> - (Land) & Reclamation District Charges						<i>\$ 20.60</i>
<i>TOTAL COSTS UP TO HARVEST</i>						<i>\$ 51.88</i>
<i>Cost Per 100 lbs. up To Harvest</i>						<i>\$ 1.73</i>
<u>Harvest</u>						
Combine	.67	1.31*	2.24			3.55

\*Includes compensation insurance and social security.

SAFFLOWER (con't.)

	Hours Per Acre	Cash & Labor Costs Per Acre				Total
		Labor	Fuel & Repairs		Material	
			Tractor	Impls.		
<u>Post Harvest Costs</u>						
Chop stubble	.33	.65*	.27	.13		1.05
Disc	<u>.25</u>	<u>.49*</u>	<u>.59</u>	<u>.08</u>		<u>1.16</u>
<i>Total</i>	.58	1.14	.86	.21		\$2.21
<i>TOTAL GROWING &amp; HARVESTING COSTS</i>						\$ 57.64
<i>Cost Per 100 lbs.</i>						\$ 1.92
Management charge @ 5% of 30 cwt @ \$4.30/cwt						6.45
<u>Investment Costs</u>						
Land \$1,000 @ 6%						60.00
Buildings \$20/acre						1.60
Tractors and Equipment						<u>14.24</u>
<i>Total Investment Costs</i>						\$ 75.84
<i>TOTAL ALL COSTS</i>						\$139.93
<i>Cost Per 100 lbs.</i>						\$ 4.66

\*Includes compensation insurance and social security.

Sugar Beets - 100 Acres  
20 Tons/Acre - Following Tomatoes

	Hours Per Acre	Cash & Labor Costs Per Acre				Total
		Labor	Fuel & Repairs		Material	
			Tractor	Impls.		
<u>Seed Bed Preparation</u>						
<u>Fall</u>						
Disc (2X)	.50	.88	1.13	.72		2.78
Landplane	.33	.58	.79	.27		1.64
Chisel	.67	1.17	1.58	.79		3.54
<u>Spring</u>						
Springtooth & Harrow	.17	.30	.40	.11		.81
Pre-fertilize (inject)	.20	.35	.47	-		.82
Nitrogen 75#/acre @ 8¢/lb.					6.00	6.00
Rent - fertilizer injection Rig @ \$1/acre					1.00	1.00
Float & Harrow & Roll (2X)	.40	.70	.94	.38		2.02
Move equip., set up & service @ 10% of operating time	<u>.23</u>	<u>.40</u>	<u>-</u>	<u>.08</u>		<u>.48</u>
<i>Total</i>	2.50	4.38	5.36	2.35	7.00	19.09
<u>Planting</u>						
Plant	.33	.58	.40	.41		1.39
Seed 2.5 lbs/acre @ \$1.25/lb.					3.13	3.13
Roll	.13	.23	.11	.09		.43
Move equip., set up & service @ 15% of operating time	<u>.07</u>	<u>.12</u>	<u>-</u>	<u>.03</u>		<u>.15</u>
<i>Total</i>	.53	.93	.51	.53	3.13	\$ 5.10
<u>Growing Costs</u>						
Roll - (Pre-thin)	.13	.23	.11	.09		.43
Apply Herbicide	.30	.52	.23	.28	-	1.03
Materials - Post emergence herbicide - 6" band - \$1.25/A -					3.75	3.75
Thin Mechanically	.83	1.45	.67	.22		2.34
Trim & Hoe, Hoe - 2X - \$35.50 (\$15.50, \$10.00 - 2X)						35.50
Cultivate (2X early)	1.50	2.63	1.22	.45		4.30
Cultivate (2X late)	.75	1.31	.92	.13		2.36
Insect Control (Aphid 2X)	.20	.35	.15	.19	7.20	7.89
Irrigate - 5X Rain Machine	5.00	-	-	14.20		14.20
Labor (2 men handling 3 units - (1/3 x 5 x 2) = 3-1/3 hrs. @ \$1.65						5.49
Misc. additional operation due to unexpected problem - an extra rolling or cultivation or insect control or irrigation or hoeing or replanting, or combination, etc.					7.50	7.50
Move equip., set up & service @ 15% of operating time	<u>1.31</u>	<u>.98</u>	<u>-</u>	<u>.22</u>		<u>1.20</u>
<i>Total</i>	10.02	42.97	3.30	15.78	18.45	\$ 85.99



Sugar Beets - Con't

	Hours Per Acre	Cash & Labor Costs Per Acre				Total
		Labor	Fuel & Repairs		Material	
			Tractor	Implts.		
<u>Misc. Growing Costs</u>						
Phone, pickup, postage, interest on operating capital, Misc. weed control, etc. @ 11% of growing costs						13.06
Social Security, Workmen's Compensation, bonus, vacations, etc. @ 15% of cash wage						1.92
Additional labor charge @ \$2.50 per day per man for temporary help - includes transportation, supervision, labor managers' fees, etc. (irrigators, other contract)						<u>6.66</u>
<i>Total Misc.</i>						\$ 21.64
<i>Total Production Costs</i>						\$131.82
Taxes (Land) & Reclamation District Charges						<u>20.60</u>
<i>Total Cost Up To Harvest</i>						\$152.42
<i>Cost Per Ton - (20 tons)</i>						<u>\$ 7.62</u>
<u>Harvest Costs</u>						
Dig - Contract - @ \$1.25/ton*						25.00
Load and Haul - Contract @ \$1.10/ton						<u>22.00</u>
<i>Total Harvest Cost</i>						\$47.00
Management charges @ 5% of gross income (20 ton of 16% sucrose beets @ 3¢ NSP + \$2.25/ton government payment = \$311.20/acre)						\$15.56
<i>Total Growing and Harvest Costs</i>						\$214.98
<i>Cost Per Ton</i>						\$ 10.74
<u>Investment Cost</u>						
Land \$1,000/acre @ 6%						60.00
Buildings - \$20/acre						1.60
Irrigation Equipment						16.30
Tractors and Equipment						<u>19.22</u>
<i>Total Investment Cost</i>						\$97.12
<i>Total All Cost</i>						<u>\$312.10</u>
<i>Cost Per Ton</i>						\$ 15.60

\*After hauling tare deducted.

TOMATOES - Following Safflower or Grain  
150 Acres - 22 ton yield

	Hours Per Acre	Cash & Labor Costs Per Acre				Total
		Labor	Fuel & Repairs		Material	
			Tractor	Implts.		
<u>Seed Bed Preparation</u>						
<u>Fall</u>						
Disc 2X	.50	.88	1.18	.17		2.23
Landplane 2X	.66	1.16	1.56	.55		3.27
Plow	.67	1.17	.82	.57		2.56
<u>Late Winter (early spring)</u>						
Float	.20	.35	.47	.03		.85
<u>Spring</u>						
Springtooth	.17	.30	.40	.10		.80
Pre-fertilize - (chisel in 6")	.17	.30	.40			.70
Nitrogen - 30 lbs/acre @ 8¢/lb.					2.40	2.40
Rent fertilizer rig @ \$1.00 per acre					1.00	1.00
Harrow & Roll - 2X	.34	.60	.80	.11		1.51
Move equip., set up and service @ 10% of operating time	.27	.47		.09		.56
<i>Total</i>	<i>2.98</i>	<i>5.23</i>	<i>5.63</i>	<i>1.62</i>	<i>3.40</i>	<i>\$15.88</i>
<u>Planting</u>						
List beds, & apply fertilizer	.25	.44	.59			1.03
Fertilizer - 10 gal/acre @ .47 per gal.					4.70	4.70
Rent - fertilizer rig @ \$1.00/acre					1.00	1.00
Roll	.13	.23	.11	.09		.43
Plant & Incorporate Herbicide	.50	.88	.61	.47		1.96
Material - 30" band (Twin Row) = 1/2 of 5#/acre = 2-1/2 @ \$5/lb.						12.50
Seed - 1#/acre @ \$15 per lb.					15.00	15.00
Move equip., set up and service @ 15% of operating time	.13	.23	-	.05		.28
<i>Total</i>	<i>1.01</i>	<i>1.78</i>	<i>1.31</i>	<i>.61</i>	<i>20.70</i>	<i>\$36.90</i>
<u>GROWING COSTS</u>						
Cultivate & Roll (Pre-thin)	.50	.88	.41	.50		1.79
Thin - Mechanical	.83	1.45	.67	.22		2.34
Trim & hoe, hoe	8.50	14.03				14.03
Fertilize - sidedress	.50	.88	.41			1.29
Nitrogen - 30 lbs. @ 8¢/lb					2.40	2.40
Rent - tag-a-long @ 50¢					.50	.50
Cultivate 3X	1.50	2.63	1.42	.45		4.50
Irrigate - 7X - Rain machine	7.0			19.88		19.88
Labor - 2 men - (handling 3 units) = 11 hrs x 2 men ÷ 3 = 7 hrs @ \$1.65						11.55
Insect Control - ground rig						
Seedling Stage 1X	.10	.18	.08	.14		.40
Material = Thiodan 1#/A = (Band 1/3 area)					1.85	1.85

Tomatoes, Con't.

Growing Costs, con't.	Hours Per Acre	Cash & Labor Costs Per Acre				Total
		Labor	Fuel & Repairs		Material	
			Tractor	Impts.		
Worm Control 2X	.20	.33	.12	.19		.64
Material - Sevin sprayable @ 2.3 lbs/A x 2 x \$1.11					5.12	5.12
Mite Control - Air					2.00	2.00
Material - Sulfur - 35# @ 6¢/lb					2.10	2.10
Misc. Control - Unexpected problems - stinkbugs, armyworms, cut worms, leaf miners, etc. (Air)					2.50	2.50
Materials - Thiodan-Parathion @ 1# + 1# =					7.87	7.87
Move equip., set up and service @ 15% of operating time	<u>.54</u>	<u>.95</u>				<u>.95</u>
<i>Total</i>	4.17	40.57	3.11	21.38	24.34	\$81.71

MISC. OPERATING AND GROWING COSTS

Pickup, phone, postage, bookkeeping, meetings, roadways, interest on operating capital, @ 11% of cultural costs						16.01
Social Security, Workmen's Compensation, transportation, vacations, bonuses, etc. @ 15% of hourly wage						7.14
Additional charges for seasonal and part time labor @ \$2.50/day/man (Includes transportation, bookkeeping, crew supervision, labor managers' fees, etc.)						<u>3.88</u>
<i>Total</i>						\$ 27.03
<i>Total Growing Costs</i>						\$161.52
<u>Taxes</u>						15.50
Taxes (land) and Reclamation District Charges						<u>5.10</u>
						20.60
<i>Total Cost - Pre-Harvest</i>						\$182.12
<i>Pre-Harvest Costs Per Ton (22 ton)</i>						\$ 8.27

HARVESTING COSTS

Machine - 3.5 acres/day	2.85			15.73		15.73
Driver @ \$1.75/hr	3.40	5.95				5.95
Sorters - 15 @ \$1.65/hr	2.85	70.54				70.54
Trailers - (2)	2.85			.26		.26
Tractors (2)	2.85		4.48			4.48
Drivers (2) @ \$1.75/hr	2.85	9.98				9.98
Forklift	2.85		4.22			4.22
Driver @ \$1.75/hr	3.40	5.95				5.95

Tomatoes, Con't

Harvesting Costs, con't.	Hours Per Acre	Cash & Labor Costs Per Acre			Total
		Labor	Fuel & Repairs		
			Tractor	Impls.	
Swamper - 1 @ \$1.65/hr	2.85	4.70			4.70
Other labor (Mech., Supervisor)	3.4	8.50			8.50
Misc. equip. (Loading area, headland work - disc, scraper and washing equip., pickup, etc.) @ \$3.60/acre					3.60
Misc. supplies - drinking water, sodas, goggles, etc. @ \$1.25/Acre					1.25
Toilet facilities - 2 units @ \$40/mo.- 2 months - \$160					1.00
Inspection @ 20¢/ton - 22 tons					4.40
Din Rental @ 40¢/ton - 22 tons					8.80
Tomato Growers Assoc. dues @ 10¢/ton - 22 tons					2.20
Rejected loads - 0.5% of harvested fruit					2.97
Social Security, Workmen's Compensation, bonuses, transportation, etc., @ 15% of hourly wage for steady employees					3.81
Additional charges for seasonal and part time labor (sorters, swamper, trailer man) @ \$2.50/day/man. Includes bookkeeping, transportation, supervision, etc.					<u>12.07</u>
<i>Total Harvesting Costs (cash)</i>					\$170.41
<i>Harvest Cost Per Ton</i>					\$ 7.74
Management charges @ 5% of Gross income (22 ton @ \$27.00/ton)					<u>29.70</u>
<i>Total Growing and Harvesting Costs</i>					\$382.23
<i>Cost Per Ton</i>					<u>\$ 17.37</u>

INVESTMENT COSTS

Land - \$1,000 @ 6%	60.00
Buildings - \$20/acre	1.60
Irrigation Equipment	22.82
Tractors & Equipment	25.31
Harvest Equipment	<u>36.11</u>
<i>Total</i>	\$145.84
<i>Investment Cost Per Ton (22 ton)</i>	\$ 6.63
<i>TOTAL ALL COSTS</i>	<u>\$528.07</u>
<i>COST PER TON</i>	\$ 24.00

ANNUAL COSTS OF EQUIPMENT - OVERHEAD AND CASH - YOLO COUNTY 1968 - CLARKSBURG AREA

Equipment	Size	Acres Per Hour	Annual Overhead Costs					Cash Costs					Total Hours Used	Costs Per Hour		
			Orig. Cost	Life Yrs.	Depreciation Amount Per Yr.	Int. 7% of Avg. Value	Total Ann. Overhead Costs	% Orig. Cost	Repairs Amount Per Yr.	Taxes and Ins.	Total Cash Costs	Total All Costs		Cash	Fixed	Total
Chisel	9'	1.5	1200	15	\$ 80.00	\$ 42.00	\$ 122.00	8.0	\$ 100.00	\$ 11.62	\$ 111.62	\$ 233.62	94	1.18	1.30	2.48
Landplane	10'x60'	3.0	4500	15	300.00	157.50	457.50	2.2	100.00	43.11	143.11	600.61	172	.83	2.66	3.49
Plow (2 way)	4-18"	1.5	3000	10	300.00	105.00	405.00	10.0	300.00	28.74	328.74	733.74	389	.85	1.04	1.89
Disc - Cover Crop	16'	4.0	3000	15	200.00	105.00	305.00	1.7	50.00	28.74	78.74	383.74	235	.33	1.30	1.63
Disc - Seed Bed	20'	6.0	3000	10	300.00	105.00	405.00	5.0	150.00	28.74	178.74	583.74	124	1.44	3.26	4.70
Float	20'	5.0	800	20	40.00	28.00	68.00	3.1	25.00	7.66	32.66	100.66	216	.15	.31	.46
Springtooth	20'	6.0	1500	15	100.00	52.50	152.50	1.7	25.00	14.37	39.37	191.87	66	.59	2.31	2.90
Harrow - Spike Tooth	20'	6.0	550	12	45.83	19.25	65.08	1.8	10.00	5.26	15.26	80.34	274	.06	.23	.29
Roller - Flat	22'	8.0	1600	20	80.00	56.00	136.00	1.2	20.00	15.33	35.33	171.33	51	.69	2.66	3.35
Roller - (2) Western	22'	8.0	4400	20	220.00	154.00	374.00	0.5	20.00	42.15	62.15	436.15	229	.27	1.63	1.90
Implement Carrier	25'	-	2000	20	100.00	70.00	170.00	2.5	50.00	19.16	69.16	239.16	196	.35	.87	1.22
Tool Bar - 2 - Rear	6 row	2.0	3000	10	300.00	105.00	405.00	3.3	100.00	28.74	128.74	533.74	750	.17	.54	.71
Tool Bar - 1 Front	6 row	2.0	1500	10	150.00	52.50	202.50	6.7	100.00	14.37	114.37	316.87	875	.13	.23	.36
Thinner	6 row	1.2	1200	12	100.00	42.00	142.00	3.3	40.00	11.50	51.50	193.50	207	.27	.68	.93
Sled Planter & Incorp.	2 row	2.0	2200	10	220.00	77.00	297.00	9.0	200.00	21.08	221.08	518.08	233	.94	1.27	2.22
Planter Units - 6	6 row	3.0	900	10	90.00	31.50	121.50	6.6	60.00	8.62	68.62	190.12	233	.29	.52	.81
Drill - Grain	10'	3.0	2000	20	100.00	70.00	170.00	0.7	15.00	19.16	34.16	204.16	46	.74	3.69	4.43
Sprayer - 500 Gal.	30'	10.0	3000	20	150.00	105.00	255.00	2.0	60.00	28.74	88.74	343.74	135	.95	1.89	2.84
Stalk - Chopper	7'	3.0	1000	10	100.00	35.00	135.00	3.5	35.00	9.58	44.58	179.58	115	.39	1.17	1.55
Tomato Harvester	-	0.5	21000	7	3000.00	735.00	3735.00	9.3	1950.00	201.18	2151.18	5886.18	428	5.52*	8.73	14.25
Trailers - 2	6 bin	0.5	2000	10	200.00	70.00	270.00	3.0	60.00	19.16	79.16	349.16	855	.09	.31	.40
Forklift	-	-	6000	10	600.00	210.00	810.00	7.7	460.00	57.48	517.48	1327.48	427	1.48*	1.89	3.37
Combine	12'	1.5	12000	10	120.00	420.00	1620.00	5.0	600.00	114.96	714.96	2334.96	261	3.34*	6.20	9.54
Corn Header	3 row	1.0	4000	5	800.00	140.00	940.00	10.0	400.00	38.32	438.32	1378.32	250	1.75	3.76	5.51
Ditcher	Medium	20.0	500	20	25.00	17.50	42.50	2.0	10.00	4.79	14.79	57.29	54	.27	.79	1.06
Tracklayer	75 HPD		23000	20	1150.00	805.00	1955.00	3.0	690.00	220.34	910.34	2865.34	534	2.36*	3.66	6.02
Tracklayer	75 HPD		23000	20	1150.00	805.00	1955.00	3.0	690.00	220.34	910.34	2865.34	535	2.36*	3.65	6.02
Wheel Tractor	90 HPD		9100	12	758.33	318.50	1076.83	4.0	364.00	87.18	451.18	1528.01	1409	1.22*	0.76	1.98
Wheel Tractor	50 HPD		6000	12	500.00	210.00	710.00	4.0	240.00	57.48	297.48	1007.48	1028	.81*	0.69	1.50
Wheel Tractor	30 HPD		5000	12	416.66	175.00	591.66	4.0	200.00	47.90	247.90	837.56	563	.76*	1.05	1.81
Pickup - ilew	1/2 ton		2500	10	250.00	87.50	337.50	3.0	75.00	23.95	98.95	436.45	} *Includes fuel. Charges made under misc. items.			
Pickup - Used	1/2 ton		400	3	133.33	14.00	147.33	15.0	60.00	3.83	63.83	211.16				
Truck and Bed	1 1/2 ton		3600	8	450.00	126.00	576.00	3.0	108.00	34.48	142.48	718.48				
Irrigation Equipment																
Sprinkler Systems (3)		1.0	38250	20	1912.50	1338.75	3251.25	4.7	1800.00	366.46	2166.46	5417.71	1150	2.68	2.82	5.50
Pipe Trailer			500	15	33.33	17.50	50.83	3.0	15.00	4.79	19.79	70.62	115	.16	.44	.60
Centrifugal - Low Lift - (2)	10"		1300	15	120.00	63.00	183.30	0.8	15.00	17.24	32.24	215.24	865	.33	.21	0.54
Syphons - 200	1 1/2"															

## GENERAL TRACTOR AND EQUIPMENT COSTS OF OPERATIONS\*

Costs of operations have been calculated for varying sized tractors and different pieces of equipment. A grower developing costs of production for his operation can utilize these costs to figure costs for his equipment.

The first table presents a general formula for fuel consumption by different types of tractors.

The second table presents cash costs of operation for varying sizes of tractors and different pieces of equipment.

### TRACTOR FUEL CONSUMPTION

<u>Tractor type</u>	<u>Gallons fuel per hour per horsepower @ 75% of maximum horsepower</u>
Wheel, gasoline	.085
Wheel, diesel	.065
Tracklayer, gasoline	.090
Tracklayer, diesel	.075

### SAMPLE COSTS OF OPERATION FOR TRACTORS AND EQUIPMENT

<u>Implement</u>	<u>Size</u>	<u>Cash Operating Costs</u>		
		<u>Fuel</u>	<u>Repairs</u>	<u>Total</u>
		<u>(Dollars per hour)</u>		
Tractor - HP - 75% maximum				
wheel, gasoline	15 HP	.26	.28	.54
	30 HP	.52	.43	.95
	40 HP	.68	.56	1.24
	50 HP	.85	.67	1.52
	70 HP	.75	.90	1.65
wheel, diesel	30 HP	.32	.50	.82
	40 HP	.42	.60	1.02
	50 HP	.52	.75	1.27
	70 HP	.75	.90	1.65
track, gasoline	20 HP	.36	.35	.71
	30 HP	.54	.50	1.04
track, diesel	30 HP	.36	.61	.97
	40 HP	.48	.76	1.24
	55 HP	.66	1.38	2.04
	90 HP	1.08	1.82	2.90
	140 HP	1.68	2.84	4.52
		<u>Cents per mile</u>		
Pickup	1/2 ton	2.2	2.6	4.8
	3/4 ton	2.3	2.9	5.2
Truck	1 1/2 ton	4.2	4.3	8.5
	2 ton	4.5	5.3	9.8

\*Adapted from Machinery Costs and Performance - published November 1966 by A.D. Reed, Extension Economist, University of California, Davis, California.

Cash Operating Costs

<u>Implement</u>	<u>Size</u>	<u>Dollars Per Hour</u>		
		<u>Fuel</u>	<u>Repairs</u>	<u>Total</u>
Baler, motor, twine	--	.70	.80	1.50
Baler, motor wire	--	.70	1.40	2.10
Baler, Sp., twine	--	.80	1.60	2.40
Baler, Sp., wire	--	.80	1.35	2.65
Baler, Sp., 3 wire	--	.80	2.65	3.45
Combine, Sp.	10'	.50	2.25	2.75
Combine, Sp.	12'	.60	2.80	3.40
Combine, Sp.	14'	.70	3.35	4.05
Combine, Sp.	16'	.80	3.50	4.30
Combine, Sp.	20'	.90	3.70	4.60
Forklift	--	.27	.23	.50
Swather	10'	.24	2.96	3.20
Swather	12'	.25	3.30	3.55
Swather	14'	.26	3.54	3.80
Swather	16'	.28	3.67	3.95
Tomato Harvester	--	.50	4.90	5.40
Sprayer, weed	200 gal.	.30	.40	.70

<u>Implement</u>	<u>Size</u>	<u>Size of Tractor</u>	<u>Cash Operating Cost Per Hour For Implement</u>
Chisel	8'	C40	.50
Chisel	12'	C90	.65
Disk Harrow	9'	W30	.60
Disk Harrow	12'	C40	1.15
Disk Harrow	18'	C60	1.75
Disk Harrow	24'	C80	2.45
Spike Harrow	20'	W40	.20
Spike Harrow	28'	W50	.28
Springtooth Harrow	12'	W20	.45
Springtooth Harrow	20'	W40	.65
Sub Soiler	8'	C60	1.40
Sub Soiler	12'	C120	2.10
Thinner	2 Row	W20	.20
Thinner	4 Row	W20	.30
Thinner	6 Row	W30	.40
Broadcaster	1500 lb.	W20	.15
Grain Drill	12'	W20	.80
Beet Harvester	2 Row	W60	1.45
Beet Harvester	4 Row	C140	1.85
Tool Bar	9'	-	.40
Tool Bar	12'	-	.50
Tool Carrier	18'	-	.14
Tool Carrier	26'	-	.15

Information on many more pieces of equipment not listed can be found in the publication - Machinery Costs and Performances - compiled by A. D. Reed, Extension Economist, November 1966.