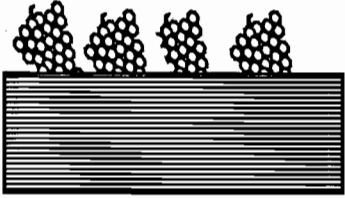
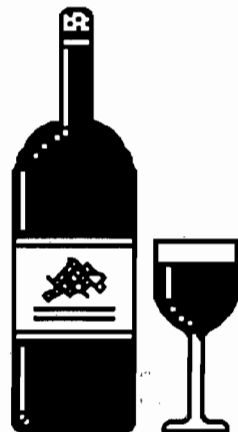
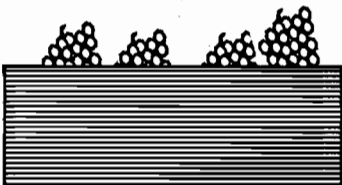
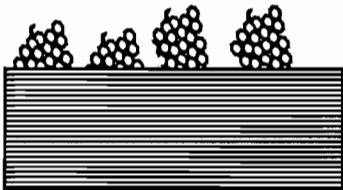


# GRAPES



## ZINFANDEL WINE GRAPES

## AMADOR COUNTY 1987



SAMPLE COSTS TO ESTABLISH AND PRODUCE  
ZINFANDEL WINE GRAPES IN AMADOR COUNTY  
1987

by

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This cost study provides detailed information on the sample costs of establishing and producing a Zinfandel vineyard of headtrained vines in Amador County. A hypothetical 40 acre vineyard is considered for the purposes of this study.

This study contains five tables and a List of General Assumptions. Part A of Tables 1, 2 and 3 contain Sample Costs to Establish Zinfandel Grapes for each of the three years of establishment. Part B of Tables 1, 2, and 3 contain a Monthly Summary of Sample Costs of Establishment for each of the three years. Table 4A contains a Cost of Production Worksheet, Table 4B contains a Monthly Summary of Sample Costs of Production and Table 5 is an Equipment List. Costs given in this sample study are for those of a typical well managed vineyard and are not intended to reflect an average of all vineyards in Amador County. Costs are based on current dollars - no inflationary factors over a three year establishment period have been considered; nor have the three year costs been discounted to present value.

Practices listed are based on those production procedures considered typical for this crop and area. Sample costs given for labor, materials, equipment and contract services are based on 1987 figures. Some costs or practices listed in this study may not be applicable to your situation. The study is intended only as a guide and can be used as an aid in making production decisions, determining potential returns, preparing budgets and evaluating production loans. A blank "Your Costs" column is provided to enter your actual costs on the Cost of Production Worksheets.

For explanation of calculations used for the study refer to the attached list of General Assumptions or call Agricultural Economics Extension, University of California, Davis, California (916) 752-2745.



4. Equipment costs:

In allocating the equipment costs per acre, the following calculations were made: (a) "Original Cost" of equipment is the new cost including sales tax. (b) "Depreciation" is straight line with an adjustment for salvage value. It is calculated by dividing new cost per acre adjusted for salvage value by the years to trade. (c) "Interest" on investment is figured as one-half of the new cost per acre plus salvage value multiplied by the interest rate. One-half of the new cost plus salvage value is the average value of the equipment during its useful life. (d) The investment per acre used in the cost study is calculated at 60% of the depreciation and interest costs for all new equipment to reflect a mix of new and used equipment.

5. Irrigation assumptions:

10 irrigations - 24 hour/2 acre sets - drip every 9 feet - Water applied: 5.3 acre inches/acre/year (48 acre inches/irrigated acre/year.)  
2 HP Submersible Pump. Capacity: 20 gal/min at 30 PSI and 80 foot lift.  
Electricity costs @ 50% plant efficiency = \$16.34/acre.

6. Pest and disease control during the third year of establishment includes:  
2 Grasshopper sprays - June & July - \$15/acre for material - .6 hr/acre.  
2 Miticide sprays - June & July - \$20/acre for material - .6 hr/acre.

Information on pest and disease control and other material applications is included on the Establishment and Production Tables in this study.

7. Office and business costs include phone, office supplies, accounting fees, etc.
8. County taxes are calculated at 1% of land at acquisition plus 1% of the average value of vines, equipment, buildings and improvements.
9. Insurance is for equipment (calculated at 0.5% of equipment costs) plus pick-up and liability insurance.
10. Pickup costs are based on 280 hours and 12,000 miles/year of vehicle operation.
11. Interest:  
Interest for establishment costs is based on the accumulated cash costs from previous years (less interest) plus monthly cash costs for the current year pro-rated at 11%.

Interest on operating capital is based on monthly cash costs pro-rated at 11%. Interest costs are not calculated after harvest.

12. Management:

The vineyard is assumed to be owner operated. The owner's salary is not charged as a cost in this study. The profit shown when vines reach production include both return to management and return on investment.

TABLE 1B  
MONTHLY SUMMARY OF PER ACRE  
SAMPLE COSTS TO ESTABLISH ZINFANDEL GRAPES  
YEAR 1 of 3  
Amador County - 1987

Interest Rate: 11%

Operation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
<b>Cultural Costs:</b>													
Surveying			50										\$50
Disc 3X	10		10	10									30
Planting			644										644
Stakes (5' metal)			447										447
Rodent control 2X		3		3									5
Harrow					13								13
Herbicide strip spray		13											13
Irrigate 10X					4	15	15	4					38
Labor					3	10	10	3					25
Grasshopper Cntrl 2X						10	10						21
Misc. Labor and Mat.						15							15
Costs for pick up	8	8	8	8	8	8	8	8	8	8	8	8	92
<b>TOTAL CULTURAL COSTS</b>	<b>\$18</b>	<b>\$23</b>	<b>\$1,159</b>	<b>\$20</b>	<b>\$26</b>	<b>\$58</b>	<b>\$43</b>	<b>\$14</b>	<b>\$8</b>	<b>\$8</b>	<b>\$8</b>	<b>\$8</b>	<b>\$1,392</b>
<b>Cash overhead:</b>													
Office/business costs	8	8	8	8	8	8	8	8	8	8	8	8	100
County Taxes				21								21	41
Insurance	42												42
Int. on accum. costs	1	1	12	12	12	13	13	14	14	14	14	14	134
<b>TOTAL CASH OVERHEAD</b>	<b>\$51</b>	<b>\$9</b>	<b>\$20</b>	<b>\$41</b>	<b>\$21</b>	<b>\$21</b>	<b>\$22</b>	<b>\$22</b>	<b>\$22</b>	<b>\$22</b>	<b>\$22</b>	<b>\$43</b>	<b>\$317</b>
<b>TOTAL CASH COSTS</b>	<b>\$69</b>	<b>\$32</b>	<b>\$1,179</b>	<b>\$61</b>	<b>\$47</b>	<b>\$79</b>	<b>\$65</b>	<b>\$36</b>	<b>\$30</b>	<b>\$30</b>	<b>\$30</b>	<b>\$51</b>	<b>\$1,709</b>

TABLE 1A  
 SAMPLE COSTS TO ESTABLISH ZINFANDEL GRAPES - YEAR 1  
 Amador County - 1987

Labor Rate: \$5.60/hr. skilled labor      Interest Rate: 11%  
 \$5.00/hr. field labor      Yield (Tns/acre): 0

Operation	Tractor/ Implement		Hrs/A	Cash and Labor Costs per Acre				Total Cost	Your Cost
	No. #	No. #		Labor Cost/A	Fuel & Repairs	Material Cost	Custom /Rent		
<b>Cultural Costs:</b>									
Surveying			9.0	50				\$50	
Disc 3X	1	2	3.0	18	11			30	
Planting (rooted cuttings)			32.0	160		484		644	
Stakes (5' metal)						447		447	
Rodent control 2X			.8	4		1		5	
Harrow	1	5	1.4	9	4			13	
Herbicide strip spray	1	4	.3	2	1	10		13	
Irrigate 10X	9	10	120.0		21	16		38	
Labor			5.0	25				25	
Grasshopper Control 2X	1	4	.7	4	2	15		21	
Misc. Labor and Materials			2.0	10		5		15	
Costs for pick up truck		8	11.2		92			92	
<b>TOTAL CULTURAL COSTS</b>			185	\$282	\$131	\$978		\$1,392	
<b>Cash overhead:</b>									
Office and business costs								\$100	
County Taxes								41	
Insurance								42	
Interest on Accumulated Cash Costs for Year 1 (from Table 1B)								134	
<b>TOTAL CASH OVERHEAD COSTS</b>								\$317	
<b>TOTAL CASH COSTS</b>								\$1,709	
<b>Investment</b>									
			Per producing Acre	Annual Cost					
				Depreciation	Interest @ 11%				
Land (bare)			\$3,000			\$330		\$330	
Equipment & buildings*			1,865	\$158		107		265	
<b>TOTAL INVESTMENT COSTS</b>			\$4,865	\$158		\$437		\$595	
<b>TOTAL COSTS PER ACRE</b>								\$2,304	

\* See Table 5 for details on equipment.

TABLE 2A  
 SAMPLE COSTS TO ESTABLISH ZINFANDEL GRAPES - YEAR 2  
 Amador County - 1987

Labor Rate: \$5.60/hr. skilled labor Interest Rate: 11%  
 \$5.00/hr. field labor Yield (Tns/acre): 8

Operation	Tractor/ Implement		Hrs/A	Cash and Labor Costs per Acre				Total Cost	Your Cost
	No. *	No. *		Labor Cost/A	Fuel & Repairs	Material Cost	Custom /Rent		
<b>Cultural Costs:</b>									
Prune		6	6.0	30	\$9			\$39	
Train and sucker		6	20.0	123	31			154	
Disc 2X	1	2	2.0	12	8			20	
Replant (5% of vines)			3.0	15		24		39	
Rodent control 2X			.8	4		1		5	
Harrow	1	5	1.4	9	4			13	
Herbicide strip spray	1	4	.3	2	1	10		13	
Irrigate 10X	9	10	120.0		21	16		38	
Labor			5.0	25				25	
Grasshopper Control 2X	1	4	.7	4	2	15		21	
Misc. Labor and Materials			2.0	10		5		15	
Costs for pick up truck		8	11.2		92			92	
<b>TOTAL CULTURAL COSTS</b>			172	\$234	\$167	\$72		\$473	
<b>Cash overhead:</b>									
Office and business costs								\$100	
County Taxes								41	
Insurance								42	
Interest on Accumulated Cash Costs for Years 1 and 2 (from Table 2B)								220	
<b>TOTAL CASH OVERHEAD COSTS</b>								\$403	
<b>TOTAL CASH COSTS</b>								\$877	
<b>Investment</b>									
			Per producing Acre	Annual Cost					
				Depreciation	Interest @ 11%				
Land (bare)			\$3,000			\$330		\$330	
Equipment & buildings*			1,865	\$158	107			265	
<b>TOTAL INVESTMENT COSTS</b>			\$4,865	\$158	\$437			\$595	
<b>TOTAL COSTS PER ACRE</b>								\$1,472	

\* See Table 5 for details on equipment.

TABLE 2B  
MONTHLY SUMMARY OF PER ACRE  
SAMPLE COSTS TO ESTABLISH ZINFANDEL GRAPES  
YEAR 2 of 3  
Amador County - 1987

Interest Rate: 11%

Operation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
<b>Cultural Costs:</b>													
Prune		39											\$39
Train and sucker					154								154
Disc 2X				10	10								20
Replant (5% of vines)			39										39
Rodent control 2X		3		3									5
Harrow					13								13
Herbicide strip spray		13											13
Irrigate 10X					4	15	15	4					38
Labor					3	10	10	3					25
Grasshopper Cntrl 2X						10	10						21
Misc. Labor and Mat.						15							15
Costs for pick up	8	8	8	8	8	8	8	8	8	8	8	8	92
<b>TOTAL CULTURAL COSTS</b>	<b>\$8</b>	<b>\$62</b>	<b>\$47</b>	<b>\$20</b>	<b>\$190</b>	<b>\$58</b>	<b>\$43</b>	<b>\$14</b>	<b>\$8</b>	<b>\$8</b>	<b>\$8</b>	<b>\$8</b>	<b>\$473</b>
<b>Cash overhead:</b>													
Office/business costs	8	8	8	8	8	8	8	8	8	8	8	8	100
County Taxes				21								21	41
Insurance	42												42
Int. on accum. costs	15	16	16	17	18	19	19	20	20	20	20	20	220
<b>TOTAL CASH OVERHEAD</b>	<b>\$65</b>	<b>\$24</b>	<b>\$24</b>	<b>\$45</b>	<b>\$27</b>	<b>\$27</b>	<b>\$28</b>	<b>\$28</b>	<b>\$28</b>	<b>\$28</b>	<b>\$28</b>	<b>\$49</b>	<b>\$403</b>
<b>TOTAL CASH COSTS</b>	<b>\$73</b>	<b>\$86</b>	<b>\$71</b>	<b>\$66</b>	<b>\$217</b>	<b>\$86</b>	<b>\$71</b>	<b>\$42</b>	<b>\$36</b>	<b>\$36</b>	<b>\$36</b>	<b>\$57</b>	<b>\$877</b>



TABLE 3A  
 SAMPLE COSTS TO ESTABLISH ZINFANDEL GRAPES - YEAR 3  
 Amador County - 1987

Labor Rate: \$5.60/hr. skilled labor      Interest Rate: 11%  
 \$5.00/hr. field labor                      Yield (Tns/acre): 2.0

Operation	Tractor/ Implement		Hrs/A	Cash and Labor Costs per Acre				Total Cost	Your Cost
	No. #	No. #		Labor Cost/A	Fuel & Repairs	Material Cost	Custom /Rent		
<b>Cultural Costs:</b>									
Prune and tie		6	8.5	43	\$13	11		\$67	
Train and sucker		6	10.0	50	15			65	
Fertilize 20# N	1	4	.4	2	1	7		10	
Disc 2X	1	2	2.0	12	8			20	
Rodent control			.4	2		1		3	
Harrow	1	5	1.4	9	4			13	
Herbicide strip spray	1	4	.3	2	1	16		19	
Irrigate 10X	9	10	120.0		21	16		38	
Labor			5.0	25				25	
Pest & Disease Control 4X	1	4	1.2	7	3	35		46	
Dusting 3X	1	3	.9	5	2	19		25	
Misc. Labor and Materials			3.0	15		7		22	
Costs for pick up truck		8	11.2		92			92	
<b>TOTAL CULTURAL COSTS</b>			164	\$172	\$161	\$112		\$445	
<b>Harvest Costs:</b>									
Picking (\$50/ton)						100		100	
Hauling (\$20/ton)						40		40	
Forklift rental (1 month rent)						20		20	
Tractor rental (1 month rent)						20		20	
<b>TOTAL HARVEST COSTS</b>						180		\$180	
<b>Cash overhead:</b>									
Office and business costs								\$100	
County Taxes								41	
Insurance								42	
Interest on Accumulated Net Cash Costs for Years 1 through 3 (from Table 3B)								259	
<b>TOTAL CASH OVERHEAD COSTS</b>								\$452	
<b>TOTAL CASH COSTS</b>								\$1,076	
<b>CREDIT FOR SALES FROM HARVEST @ \$325/TON</b>								\$650	
<b>NET CASH COST OF PRODUCTION</b>								\$426	
<b>NET PROFIT ABOVE CASH COST</b>								\$0	
<b>Investment</b>									
			Per producing Acre	Annual Cost					
				Depreciation	Interest @ 11%				
Land (bare)			\$3,000			\$330		\$330	
Equipment & buildings*			1,865	\$150		107		255	
<b>TOTAL INVESTMENT COSTS</b>			\$4,865	\$150		\$437		\$595	
<b>TOTAL NET COST PER ACRE</b>								\$1,021	
<b>ACCUMULATED NET COST PER ACRE FOR YEARS 1 THROUGH 3</b>								\$4,797	

TABLE 3B  
MONTHLY SUMMARY OF PER ACRE  
SAMPLE COSTS TO ESTABLISH ZINFANDEL GRAPES  
YEAR 3 of 3  
Amador County - 1987

Interest Rate: 11%

Operation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
<b>Cultural Costs:</b>													
Prune and tie		67											\$67
Train and sucker					65								65
Fertilize 20# N		10											10
Disc 2X				10	10								20
Rodent control				3									3
Harrow					13								13
Herbicide strip spray		19											19
Irrigate 10X					4	15	15	4					38
Labor					3	10	10	3					25
Pest & Disease Cntrl						23	23						46
Dusting					9	9	9						26
Misc. Labor and Mat.						22							22
Costs for pick up	8	8	8	8	8	8	8	8	8	8	8	8	92
<b>TOTAL CULTURAL COSTS</b>	<b>\$8</b>	<b>\$103</b>	<b>\$8</b>	<b>\$21</b>	<b>\$110</b>	<b>\$86</b>	<b>\$64</b>	<b>\$14</b>	<b>\$8</b>	<b>\$8</b>	<b>\$8</b>	<b>\$8</b>	<b>\$445</b>
<b>Harvest Costs:</b>													
Picking								100					100
Hauling								40					40
Forklift rental								20					20
Tractor rental								20					20
<b>TOTAL HARVEST COSTS</b>								<b>\$180</b>					<b>\$180</b>
<b>Cash overhead:</b>													
Office/business costs	8	8	8	8	8	8	8	8	8	8	8	8	100
County Taxes				21								21	41
Insurance	42												42
Int. on Accum. Costs	21	22	22	23	24	25	25	21	21	21	22	22	259
<b>TOTAL CASH OVERHEAD</b>	<b>\$71</b>	<b>\$30</b>	<b>\$30</b>	<b>\$52</b>	<b>\$32</b>	<b>\$33</b>	<b>\$34</b>	<b>\$29</b>	<b>\$30</b>	<b>\$30</b>	<b>\$30</b>	<b>\$51</b>	<b>\$452</b>
<b>TOTAL CASH COSTS</b>	<b>\$79</b>	<b>\$133</b>	<b>\$38</b>	<b>\$72</b>	<b>\$142</b>	<b>\$119</b>	<b>\$98</b>	<b>\$223</b>	<b>\$37</b>	<b>\$37</b>	<b>\$38</b>	<b>\$59</b>	<b>\$1,076</b>
<b>CREDIT FOR SALES</b>								<b>\$650</b>					<b>\$650</b>
<b>NET CASH COST OF PROD.</b>	<b>\$79</b>	<b>\$133</b>	<b>\$38</b>	<b>\$72</b>	<b>\$142</b>	<b>\$119</b>	<b>\$98</b>	<b>\$0</b>	<b>\$37</b>	<b>\$37</b>	<b>\$38</b>	<b>\$59</b>	<b>\$426</b>
<b>NET PROFIT</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$427</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

TABLE 4A  
 SAMPLE COSTS TO PRODUCE ZINFANDEL GRAPES  
 Amador County - 1987

Labor Rate: \$5.60/hr. skilled labor Interest Rate: 11%  
 \$5.00/hr. field labor Yield (Tns/acre): 4.0

Operation	Tractor/ Implement		Hrs/A	Cash and Labor Costs per Acre				Total Cost	Your Cost
	No. #	No. #		Labor Cost/A	Fuel & Repairs	Material Cost	Custom /Rent		
<b>Cultural Costs:</b>									
Disc 2X	1	2	2.0	12	\$8			\$20	
Harrow	1	5	1.4	9	4			12	
Prune		6	11.0	55	17			72	
Fertilize - 40# N, Boron	1	4	.4	2	1	\$16		19	
Miticide 2X	1	4	.6	4	2	20		25	
Dusting 3X	1	3	.9	6	2	19		27	
Herbicide strip spray	1	4	.3	2	1	16		19	
Costs for pick up truck		8	11.2		92			92	
<b>TOTAL CULTURAL COSTS</b>			28	\$90	\$126	\$71		\$287	
<b>Harvest Costs:</b>									
Picking (\$50/ton)							200	\$200	
Hauling (\$20/ton)							80	80	
Forklift rental (1 month rent)							20	20	
Tractor rental (1 month rent)							20	20	
<b>TOTAL HARVEST COSTS</b>							320	\$320	
<b>TOTAL HARVEST COSTS PER TON</b>								\$80	
<b>Cash overhead:</b>									
Office and business costs								\$100	
County Taxes								89	
Equipment Insurance								42	
Interest on operating capital (from Table 4B)								24	
<b>TOTAL CASH OVERHEAD COSTS</b>								\$255	
<b>TOTAL CASH COSTS</b>								\$862	
<b>TOTAL CASH COST PER TON</b>								\$215	
<b>Investment</b>									
			Per producing Acre	Annual Cost					
				Depreciation	Interest @ 11%				
Land (bare)			\$3,000			\$300		\$330	
Equipment & buildings*			1,865	158	107			265	
Vines (25 Year life)			4,797	192	264			456	
<b>TOTAL INVESTMENT COSTS</b>			\$ 9,662	\$350	\$701			\$1,051	
<b>TOTAL COSTS PER ACRE</b>								\$1,912	
<b>Cost per ton at yield of 4 tons/acre</b>								\$478	

\* See Table 5 for details on equipment.

TABLE 48  
MONTHLY SUMMARY OF PER ACRE  
SAMPLE COSTS TO PRODUCE ZINFANDEL GRAPES

Amador County - 1987

Interest Rate: 11%

Operation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
<b>Cultural Costs:</b>													
Disc 2X			10	10									\$20
Harrow				12									12
Prune	72												72
Fertilize - 40# N, 8		19											19
Miticide 2X						13	13						25
Dusting 3X					9	9	9						27
Herbicide strip spray		19											19
Costs for pick up	8	8	8	8	8	8	8	8	8	8	8	8	92
<b>TOTAL CULTURAL COSTS</b>	<b>\$80</b>	<b>\$46</b>	<b>\$18</b>	<b>\$30</b>	<b>\$17</b>	<b>\$29</b>	<b>\$29</b>	<b>\$8</b>	<b>\$8</b>	<b>\$8</b>	<b>\$8</b>	<b>\$8</b>	<b>\$287</b>
<b>Harvest Costs:</b>													
Picking (\$50/ton)								200					200
Hauling (\$20/ton)								80					80
Forklift rental-1 mo.								20					20
Tractor rental-1 mo.								20					20
<b>TOTAL HARVEST COSTS</b>								<b>\$320</b>					<b>\$320</b>
<b>Cash overhead:</b>													
Office/business costs	8	8	8	8	8	8	8	8	8	8	8	8	100
County Taxes				45								45	89
Equipment Insurance	42												42
Int.-operating capital	1	2	2	3	3	3	4	7					24
<b>TOTAL CASH OVERHEAD</b>	<b>\$51</b>	<b>\$10</b>	<b>\$10</b>	<b>\$56</b>	<b>\$11</b>	<b>\$12</b>	<b>\$12</b>	<b>\$15</b>	<b>\$8</b>	<b>\$8</b>	<b>\$8</b>	<b>\$83</b>	<b>\$255</b>
<b>TOTAL CASH COSTS</b>	<b>\$131</b>	<b>\$56</b>	<b>\$28</b>	<b>\$86</b>	<b>\$28</b>	<b>\$41</b>	<b>\$41</b>	<b>\$343</b>	<b>\$16</b>	<b>\$16</b>	<b>\$16</b>	<b>\$61</b>	<b>\$852</b>

TABLE 5  
EQUIPMENT AND BUILDING LIST FOR ZINFANDEL GRAPES\*  
Amador County - 1987

Interest Rate: 11%

Fuel Cost per Gallon \$ .68 diesel  
\$ .78 unleaded gasoline

ITEM #	DESCRIPTION	NEW COST	SALVAGE VALUE	ANNUAL USE (ACRES)	COST LIFE (HRS)	YEARS TO DEPRECIATION		OVERHEAD INTEREST		ANNUAL USE (HRS)	TAR	HOURLY COSTS		
						TRADE	ATION	USE	INTEREST			FUEL	REPAIRS	TOTAL
Tractors:														
1	35 HP wheel diesel	12,000	\$2,336	40	10,000	15	16.11	19.71	225	18%	\$1.41	\$ .64	\$2.05	
2	Offset Disc 7' 6"	3,700	355	40	2,500	15	5.57	5.58	160	112		1.73	1.73	
3	Duster	700	124	40	2000	10	1.44	1.13	50	30		.42	.42	
4	Weedsprayer	1,200	212	40	1,200	10	2.47	1.94	60	38		.76	.76	
5	Springtooth 6'	1,500	144	40	2,500	15	2.26	2.26	140	94		.67	.67	
6	Misc. vineyard equipment	5,000		40		4	31.25	6.88	325	40		1.54	1.54	
7	4 Trailers - 8 Bins	8,000	800	40		15	12.00	12.10						
8	Pick-up, 1/2 ton	12,000	1,200	40	2,000	7	38.57	18.15	280	61	4.49	3.73	8.22	
	SUBTOTAL	\$44,100					\$110	\$68						
	60% OF NEW COSTS*	\$26,460					\$66	\$41						
9	Submerg. Irri. Pump 5HP	3,000		40		25	3.00	4.13	6,400	92		.02	.02	
10	Drip Irrigation System	32,000		40		10	80.00	44.00	3,000	15		.16	.16	
11	Storage shed	12,500		40		35	8.93	17.19						
12	2 Fuel Tanks	\$625.00		40		30	.52	.85						
	TOTAL COST	\$74,585					\$158	\$107						

\* DEFINITIONS:

YEARS TO TRADE ——— The projected life of the machine in years adjusted for excessive annual use.

OVERHEAD ——— Per acre per year.

SALVAGE VALUE ——— A machine's worth at the end of its useful life.

DEPRECIATION ——— ("NEW COST" - "SALVAGE VALUE") divided by "ACRES USE" divided by "YEARS TO TRADE" = Depreciation cost per acre per year.

INTEREST ——— ("NEW COST" + "SALVAGE VALUE") divided by "ACRES USE" X ("INTEREST RATE" divided by 2) = average interest cost per acre per year.

TAR ——— Total accumulated repairs. The total cost of repairs during the machine's life expressed as a percent of "NEW COST". Calculated from equations based on equipment type and annual use.

HOURLY COST OF FUEL — Diesel fuel, oil and lube costs per hour = HP x cost of diesel fuel/gal X 0.0667.  
Gasoline fuel, oil and lube costs per hour = HP x cost of gasoline/gal X 0.0889.

HOURLY COST OF REPAIRS— ("NEW COST" X "TAR") divided by ("YEARS TO TRADE" X "ANNUAL USE IN HOURS")

60% OF NEW COSTS ——— Used to reflect a mix of new and used equipment.

COSTS TO PRODUCE GRAPES AT VARYING YIELDS

	TONS PER ACRE					
	1	2	3	4	6	8
<b>Cash Costs:</b>						
Preharvest cost	287	287	287	287	287	287
Harvest cost	110	180	250	320	460	600
Overhead cost	253	254	254	255	256	258
<b>Total Cash Costs</b>	<b>650</b>	<b>721</b>	<b>791</b>	<b>862</b>	<b>1,003</b>	<b>1,145</b>
<b>Investment Costs:</b>						
Equipment & Buildings	265	265	265	265	265	265
<b>Establishment Costs</b>						
Land @ \$3,000/acre	785	785	785	785	785	785
Land @ \$4,000/acre	944	944	944	944	944	944
Land @ \$5,000/acre	1,102	1,102	1,102	1,102	1,102	1,102
Land @ \$6,000/acre	1,260	1,260	1,260	1,260	1,260	1,260
Land @ \$7,000/acre	1,418	1,418	1,418	1,418	1,418	1,418
Land @ \$8,000/acre	1,576	1,576	1,576	1,576	1,576	1,576
<b>Total Costs:</b>						
Land @ \$3,000 /acre	1,700	1,771	1,841	1,912	2,053	2,195
Land @ \$4,000 /acre	1,859	1,930	2,000	2,071	2,212	2,354
Land @ \$5,000 /acre	2,017	2,088	2,158	2,229	2,370	2,512
Land @ \$6,000 /acre	2,175	2,246	2,316	2,387	2,528	2,670
Land @ \$7,000 /acre	2,333	2,404	2,474	2,545	2,686	2,828
Land @ \$8,000 /acre	2,491	2,562	2,632	2,703	2,844	2,986

INCOME ABOVE CASH COSTS AT VARYING YIELDS AND PRICES

\$ per Ton	TONS PER ACRE					
	1	2	3	4	6	8
100	-550	-521	-491	-462	-403	-345
200	-450	-321	-191	-62	197	455
300	-350	-121	109	338	797	1,255
400	-250	79	409	738	1,397	2,055
500	-150	279	709	1,138	1,997	2,855
600	-50	479	1,009	1,538	2,597	3,655
700	50	679	1,309	1,938	3,197	4,455
800	150	879	1,609	2,338	3,797	5,255
900	250	1,079	1,909	2,738	4,397	6,055
1,000	350	1,279	2,209	3,138	4,997	6,855

INCOME ABOVE TOTAL COSTS AT VARYING YIELDS AND PRICES  
Land Valued at \$3,000 per Acre

\$ per Ton	TONS PER ACRE					
	1	2	3	4	6	8
100	-1,600	-1,571	-1,541	-1,512	-1,453	-1,395
200	-1,500	-1,371	-1,241	-1,112	-853	-595
300	-1,400	-1,171	-941	-712	-253	205
400	-1,300	-971	-641	-312	347	1,005
500	-1,200	-771	-341	88	947	1,805
600	-1,100	-571	-41	488	1,547	2,605
700	-1,000	-371	259	888	2,147	3,405
800	-900	-171	559	1,288	2,747	4,205
900	-800	29	859	1,688	3,347	5,005
1,000	-700	229	1,159	2,088	3,947	5,805

INCOME ABOVE TOTAL COSTS AT VARYING YIELDS AND PRICES  
Land Valued at \$4,000 per Acre

\$ per Ton	TONS PER ACRE					
	1	2	3	4	6	8
100	-1,759	-1,730	-1,700	-1,671	-1,612	-1,554
200	-1,659	-1,530	-1,400	-1,271	-1,012	-754
300	-1,559	-1,330	-1,100	-871	-412	46
400	-1,459	-1,130	-800	-471	188	846
500	-1,359	-930	-500	-71	788	1,646
600	-1,259	-730	-200	329	1,388	2,446
700	-1,159	-530	100	729	1,988	3,246
800	-1,059	-330	400	1,129	2,588	4,046
900	-959	-130	700	1,529	3,188	4,846
1,000	-859	70	1,000	1,929	3,788	5,646

INCOME ABOVE TOTAL COSTS AT VARYING YIELDS AND PRICES  
Land Valued at \$5,000 per Acre

\$ per Ton	TONS PER ACRE					
	1	2	3	4	6	8
100	-1,917	-1,888	-1,858	-1,829	-1,770	-1,712
200	-1,817	-1,688	-1,558	-1,429	-1,170	-912
300	-1,717	-1,488	-1,258	-1,029	-570	-112
400	-1,617	-1,288	-958	-629	30	688
500	-1,517	-1,088	-658	-229	630	1,488
600	-1,417	-888	-358	171	1,230	2,288
700	-1,317	-688	-58	571	1,830	3,088
800	-1,217	-488	242	971	2,430	3,888
900	-1,117	-288	542	1,371	3,030	4,688
1,000	-1,017	-88	842	1,771	3,630	5,488

**INCOME ABOVE TOTAL COSTS AT VARYING YIELDS AND PRICES**  
**Land Valued at \$6,000 per Acre**

\$ per Ton	TONS PER ACRE					
	1	2	3	4	6	8
100	-2,075	-2,046	-2,016	-1,987	-1,928	-1,870
200	-1,975	-1,846	-1,716	-1,587	-1,328	-1,070
300	-1,875	-1,646	-1,416	-1,187	-728	-270
400	-1,775	-1,446	-1,116	-787	-128	530
500	-1,675	-1,246	-816	-387	472	1,330
600	-1,575	-1,046	-516	13	1,072	2,130
700	-1,475	-846	-216	413	1,672	2,930
800	-1,375	-646	84	813	2,272	3,730
900	-1,275	-446	384	1,213	2,872	4,530
1,000	-1,175	-246	684	1,613	3,472	5,330

**INCOME ABOVE TOTAL COSTS AT VARYING YIELDS AND PRICES**  
**Land Valued at \$7,000 per Acre**

\$ per Ton	TONS PER ACRE					
	1	2	3	4	6	8
100	-2,233	-2,204	-2,174	-2,145	-2,086	-2,028
200	-2,133	-2,004	-1,874	-1,745	-1,486	-1,228
300	-2,033	-1,804	-1,574	-1,345	-886	-428
400	-1,933	-1,604	-1,274	-945	-286	372
500	-1,833	-1,404	-974	-545	314	1,172
600	-1,733	-1,204	-674	-145	914	1,972
700	-1,633	-1,004	-374	255	1,514	2,772
800	-1,533	-804	-74	655	2,114	3,572
900	-1,433	-604	226	1,055	2,714	4,372
1,000	-1,333	-404	526	1,455	3,314	5,172

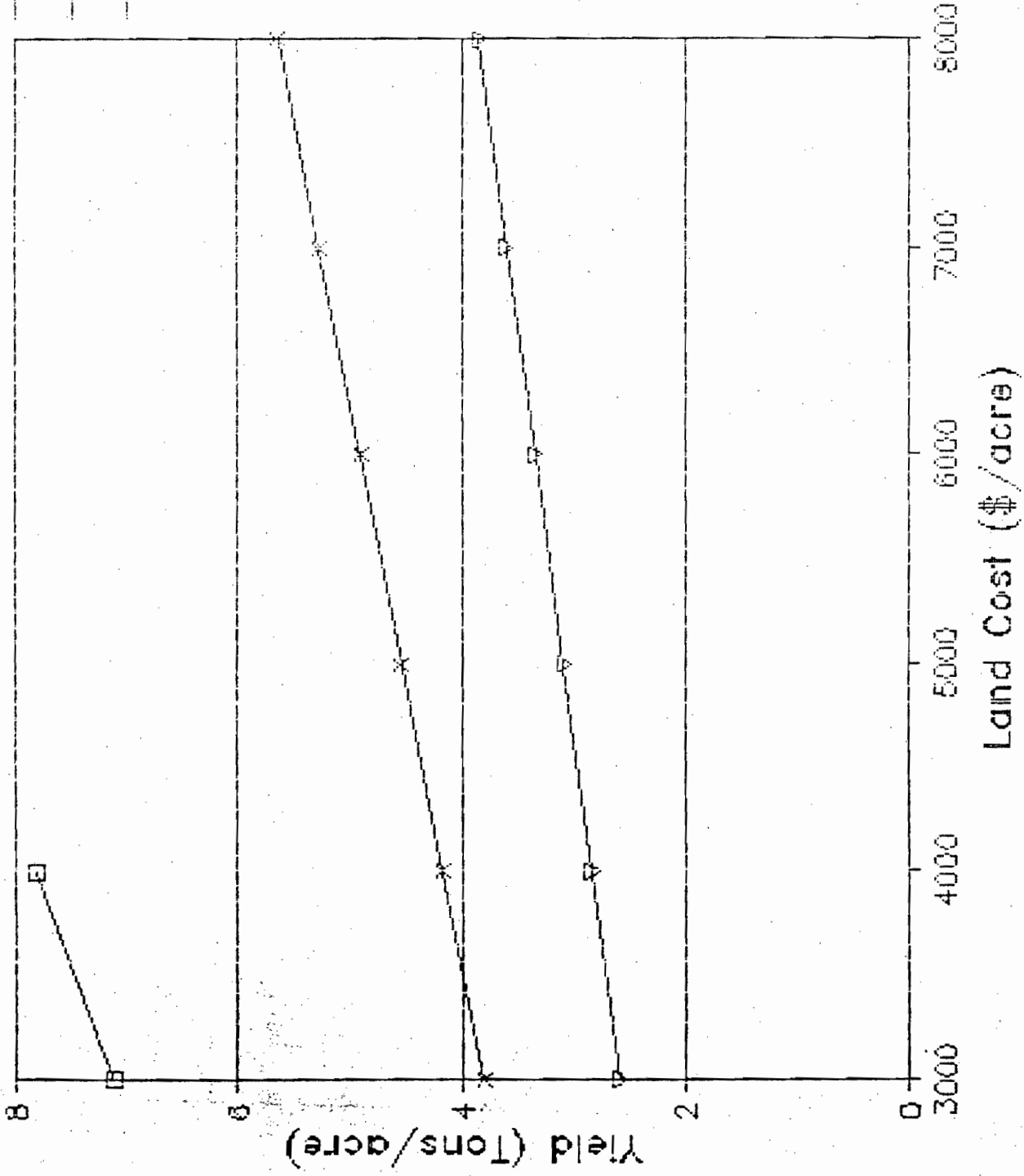
**INCOME ABOVE TOTAL COSTS AT VARYING YIELDS AND PRICES**  
**Land Valued at \$8,000 per Acre**

\$ per Ton	TONS PER ACRE					
	1	2	3	4	6	8
100	-2,391	-2,362	-2,332	-2,303	-2,244	-2,186
200	-2,291	-2,162	-2,032	-1,903	-1,644	-1,386
300	-2,191	-1,962	-1,732	-1,503	-1,044	-586
400	-2,091	-1,762	-1,432	-1,103	-444	214
500	-1,991	-1,562	-1,132	-703	156	1,014
600	-1,891	-1,362	-832	-303	756	1,814
700	-1,791	-1,162	-532	97	1,356	2,614
800	-1,691	-962	-232	497	1,956	3,414
900	-1,591	-762	68	897	2,556	4,214
1,000	-1,491	-562	368	1,297	3,156	5,014



# BREAKEVEN YIELDS

- — \$300/Ton
- × — \$500/Ton
- △ — \$700/Ton

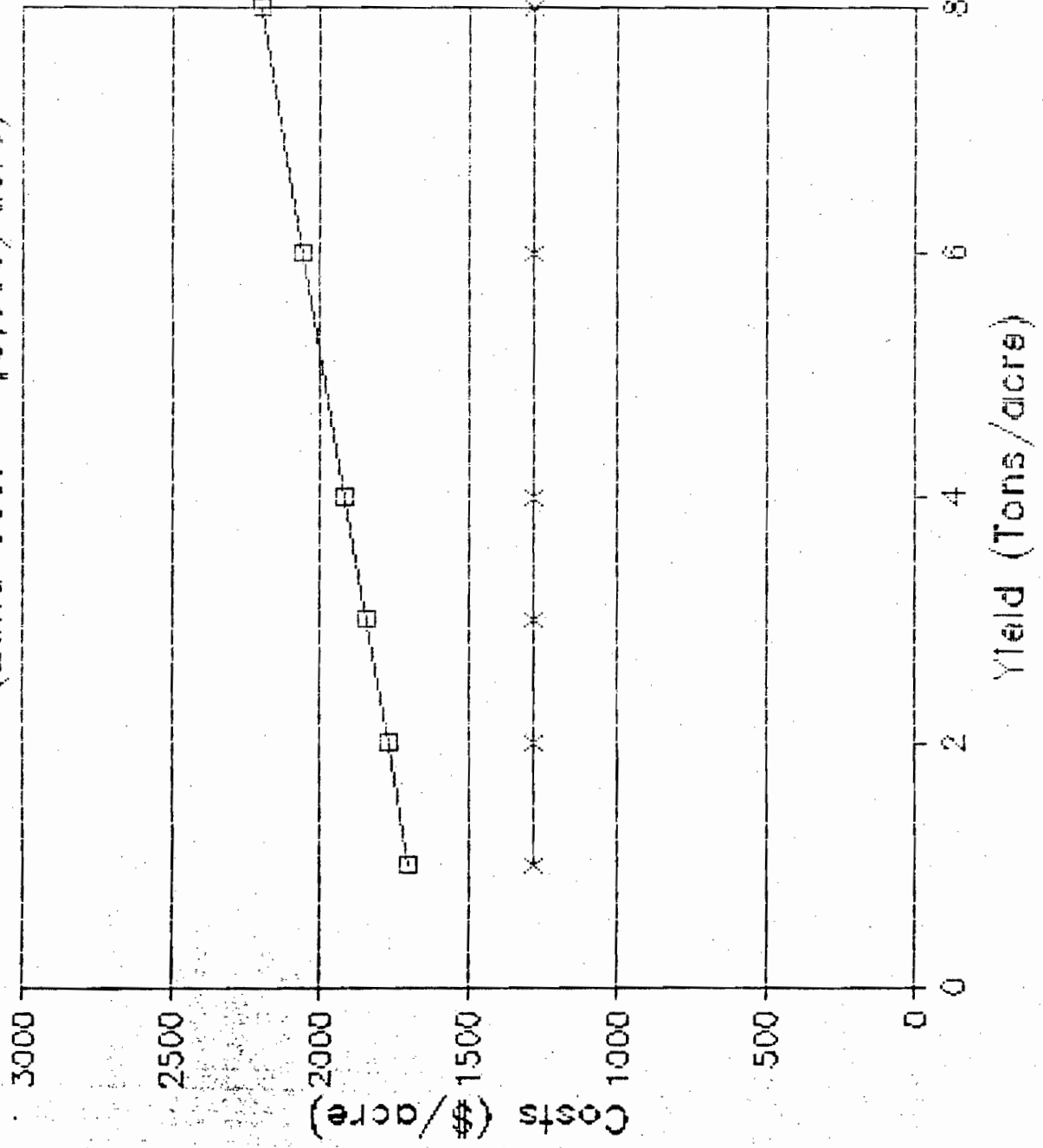


# FIXED AND VARIABLE COSTS PER ACRE

(Land Cost = \$3,000/acre)

—□— Variable Costs

—x— Fixed Costs



# FIXED AND VARIABLE COSTS PER ACRE

(Land Cost = \$6,000/acre)

---□--- Variable Costs

---x--- Fixed Costs

