

Cost of Producing

PRUNES

Napa County

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NAPA COUNTY PRUNE ENTERPRISE COST DATA SHEETS

Introduction

These cost data sheets are designed to provide Napa County prune growers with information regarding sample costs of prune production in this area on established orchards. They were prepared with the assistance of a committee of Napa County growers cooperating with the University of California.

Two sample cost data sheets are included. One is for a 40-acre, non-irrigated orchard with an assumed yield of 1.5 dry tons per acre, with a minimum amount of equipment, and without the inclusion of any special labor saving devices. The second cost data sheet is for an 80-acre, irrigated prune orchard with an assumed yield of 2.5 dried tons per acre, and with a wider range of equipment including some labor-saving devices for harvest that are typical of those being used in the area.

The reason mechanical aids to harvest were not included in the 40-acre data sheet is that it would be difficult, if not impossible, for the owner of a 40-acre orchard to amortize the cost of this relatively expensive equipment with the small amount of total expected production.

These cost data sheets are SAMPLE COSTS ONLY, assuming good land adapted to prunes and operated in accordance with good farm management practices. These sheets DO NOT REPRESENT, NOR ARE THEY INTENDED TO REPRESENT, AVERAGE COSTS OR YIELDS FOR THE COUNTY. Wide deviations from these sample costs frequently occur.

The Basis of Cost Calculations

Certain assumptions must be made as to size of orchard and yield per acre. This information is indicated on each of the sample cost sheets. Drying ratio was assumed at 2.5 to 1. Ordinary labor was figured at \$1.40 per hour and tractor labor at \$1.75 per hour, including compensation insurance, Social Security, and other benefits. Tractor use cash cost was figured at \$1.20 per hour and pickup cash costs at \$2.00 per hour. Interest and depreciation on these items are included in the depreciation and investment interest portions of the table.

Some operations such as pruning, spraying and harvesting were based on a piece work basis or at a commercial rate, when this was assumed to have been done by a contract operator.

It should be pointed out that no allowance is made in the data sheets for management costs. Growers generally must receive more than the total cost of production per ton for their crop, excluding management, to stay in business.

Compare Your Costs

Provision has been made in the cost data sheets to insert what you believe to be YOUR costs under each item. In this way you can compare your total costs with those of the sample sheets. In operations where your costs per ton exceed those of the study, there may be adjustments made to reduce costs. Should your yield per acre be less with correspondingly higher costs, look for places in your operation that influence tonnage, such as pruning, irrigation procedure, bearing surface, spraying practices, and tree stand. The real purpose of this study is to help you analyze your operation and improve it by comparing it with sample costs.

Frost protection

Frost protection has NOT been included as an item in either of these cost data sheets. The need for frost protection varies a great deal throughout Napa County and indeed may vary within the boundaries of any individual orchard. Also, the degree to which frost protection is needed may be quite variable.

You will find items labeled "frost protection" in the tables under cash costs, depreciation costs, and interest on investment, with no figures in the sample costs but space where you can enter them under your own costs. When only a portion of the orchard has frost protection, such costs on a per acre basis would usually apply only to the acreage protected. An average for the entire acreage could also be calculated in arriving at average total costs for all prunes produced in your orchard. Frost protection can be justified only on the basis of returns from higher yields over a period of years at least offsetting such increased costs.

SAMPLE COSTS TO PRODUCE PRUNES IN NAPA COUNTY - NON-IRRIGATED - 1964

Based on a 40-acre orchard with a yield of 1.5 dry tons per acre. Drying ratio 2.5 to 1. Man labor at \$1.40 and \$1.75 per hour including compensation insurance, Social Security and other benefits. Tractor per hour cash cost at \$1.20 and pickup at \$2.00.

	Sample Costs		Your Cost	
	Per Acre	Per Ton	Per Acre	Per Ton
PRE-HARVEST CASH COSTS:				
Prune: 75 trees @ 50¢	\$ 37.50			
Brush disposal: 1.2 M & 0.4 TR hrs.	2.30			
Fertilize: 0.4 M & 0.2 TR hr.	.87			
Fertilizer: 60 lbs. N @ 10¢	6.00			
Spraying: 2 times - contract 400 gal. @ 2¢	8.00			
Spray material	9.20			
Cultivate: 3 hrs. man & tractor	8.85			
Prop, tie & wire: 3 M & 1½ TK hrs.	7.73			
Misc. labor: 3 M, 1 TR & 1 TK hr.	8.10			
Misc. material	4.00			
County taxes	21.00			
Office, car, int. on oper. capital, etc.	12.75			
Repairs except tractor & pickup	3.50			
*Frost protection				
TOTAL PRE-HARVEST CASH AND LABOR COST	\$ 129.80	\$ 86.53		
HARVESTING AND DEHYDRATION COSTS+:				
Shake: 2 times - @ \$9.50/hr.	16.00	10.67		
Pick from ground @ \$13/ton (fresh)	48.75	32.50		
Move bins & load @ 50¢/ton (fresh)	1.88	1.25		
Haul to dehydrator & return bins @ \$3/ton	11.25	7.50		
Dehydrate @ \$16 per fresh ton	60.00	40.00		
TOTAL HARVESTING AND DEHYDRATION	\$137.88	\$ 91.92		
TOTAL CASH AND LABOR COSTS	\$267.68	\$178.45		
DEPRECIATION COSTS:				
Trees: cost \$900 - 30 yr. life	30.00			
Buildings: \$100 cost - 25 yrs.	4.00			
Tractor and pickup: \$150 cost - 10 yrs.	15.00			
Other equipment: \$75 cost - 10 yrs.	7.50			
*Frost protection equipment				
TOTAL DEPRECIATION COST	\$ 56.50	\$ 37.67		
TOTAL CASH AND DEPRECIATION COST	\$324.18	\$216.12		
INTEREST ON INVESTMENT @ 6%:				
Trees: on ½ cost (\$450)	27.00			
Buildings: on ½ cost (\$50)	3.00			
Tractor and pickup: on ½ cost \$75	4.50			
Other equipment: on ½ cost \$37.50	2.25			
*Frost protection equipment on ½ cost				
Land @ \$1,000	60.00			
TOTAL INTEREST ON INVESTMENT COST	\$ 96.25	\$ 64.17		
TOTAL COST OF PRODUCTION	\$420.43	\$280.29		

* See note on frost protection in text.

SAMPLE COSTS TO PRODUCE PRUNES IN NAPA COUNTY - IRRIGATED - 1964

Based on an 80-acre orchard with a yield of 2.5 dry tons per acre. Drying ratio 2.5 to 1. Man labor at \$1.40 and \$1.75 per hour including compensation ins., Social Security and other benefits. Tractor per hour cash cost at \$1.20, fork lift @ \$1.00 and pickup at \$2.00.

	Sample Costs	Your Cost
	Per Acre	Per Ton
PRE-HARVEST CASH COSTS:		
Prune: 75 trees @ 75¢	\$56.25	
Brush disposal: 1.8 man & 0.6 tractor hr.	\$3.75	
Fertilize: 0.4 man & 0.2 tractor hr.	\$0.87	
Fertilizer: 80 lbs. N @ 10¢	\$8.00	
Spraying: 2 times - contract 600 gal. @ 2¢	12.00	
Spray material	13.20	
Irrigate: 3 times - 4½ man hours @ 1.40	\$16.30	
Water: power to apply 12 inches	\$8.60	
Cultivate: 3 hrs. man & tractor	8.85	
Prop, tie & wire: 4 man & 2 truck hrs.	10.30	
Misc. labor: 4 man, 1 tractor & 1 truck hrs.	\$9.50	
Misc. material	4.00	
County taxes	23.00	
Office, car, int. on oper. capital, etc.	16.50	
Repairs except tractor and pickup	16.00	
*Frost protection		
TOTAL PRE-HARVEST CASH AND LABOR COST	\$186.82	\$ 74.73
HARVESTING AND DEHYDRATION COSTS:		
Shake & catch with harvesting unit; load with fork lift; 2 times over; 18 M & 3 hrs. TR & fork lift	\$33.91	\$13.56
Clean-up by hand; 8¼ boxes @ \$1.00	\$8.25	\$3.30
Bin rental @ \$1/ton (fresh)	6.25	\$2.50
Haul to dehydrator & return bins @ \$3/ton	18.75	7.50
Dehydrate @ \$16 per fresh ton	100.00	40.00
TOTAL HARVESTING AND DEHYDRATION	\$167.16	\$66.86
TOTAL CASH AND LABOR COST	\$353.98	\$141.59
DEPRECIATION COSTS:		
Trees: cost \$900 - 30 yr. life	\$30.00	
Buildings for equip. & housing: \$50-25 yrs.; housing \$75-30 yrs.	4.50	
Sprinkler irrigation facil.: cost \$240/Ac.	15.00	
Tractor, pickup & fork lift: cost \$120 - 10 yrs.	12.00	
Other equipment & shop: cost \$50 - 10 yrs.	5.00	
*Frost protection equipment		
TOTAL DEPRECIATION COST	66.50	26.60
TOTAL CASH AND DEPRECIATION COST	\$420.48	\$168.19
INTEREST ON INVESTMENT @ 6%:		
Trees: on ½ cost (\$450)	27.00	
Buildings for equip. & housing: on ½ cost (\$62.50)	3.75	
Sprinkler irrig. facil.: on ½ cost (\$120)	7.20	
Tractor, pickup & fork lift: on ½ cost (\$60)	3.60	
Other equipment & shop: on ½ cost (\$25)	1.50	
*Frost protection equipment on ½ cost		
Land at \$1,000	60.00	
TOTAL INTEREST ON INVESTMENT COST	\$103.05	\$ 41.22
TOTAL COST OF PRODUCTION	\$523.53	\$ 209.41

* See note on frost protection in text.

Yield As Related to Cost

Yield per acre is one of the most important factors in determining cost per ton. The following tables show how the cost per acre and the cost per ton will vary under different assumed yields. You should note that while the cost per acre increased with higher yields, the cost per ton of prunes produced decreases. You will also note that as a grower you are faced with certain fixed operating costs, regardless of yield. The increased costs per acre are almost entirely the result of harvesting costs.

In the 40-acre sample orchard, total cost per acre and per ton are computed on an assumption of 1.5 dry tons to the acre. The following table shows what these costs would approximate with two assumed lower yields and two assumed higher yields.

Yield in Dry Tons per Acre	1.0	1.25	1.50	1.75	2.00
All Costs Except Harvesting	\$ 282.55	\$ 282.55	\$ 282.55	\$ 282.55	\$ 282.55
Harvesting Cost at \$91.92/T	\$ 91.92	114.90	137.88	160.86	183.84
Total Cost per Acre	\$ 374.47	\$ 397.45	\$ 420.43	\$ 443.41	\$ 466.39
Total Cost per Ton	\$ 374.47	\$ 317.96	\$ 280.29	\$ 253.38	\$ 233.20

In the 80-acre sample orchard, total cost per acre and per ton are computed on an assumption of 2.5 dry tons to the acre. The following table shows what these costs would approximate with two assumed lower yields and two assumed higher yields.

Yield in Dry Tons per Acre	1.5	2.0	2.5	3.0	3.5
All Costs Except Harvesting	\$ 356.37	\$ 356.37	\$ 356.37	\$ 356.37	\$ 356.37
Harvesting Cost at \$66.86/T.	\$ 100.29	133.72	167.15	200.58	234.01
Total Cost per Acre	\$ 456.66	\$ 490.09	\$ 523.52	\$ 556.95	\$ 590.38
Total Cost per Ton	\$ 304.44	\$ 245.05	\$ 209.41	\$ 185.65	\$ 168.68

Any price you receive for your fruit above the costs as computed here is management income. Any tasks you are able to perform yourself will provide you with labor income. A combination of these two, along with interest charged on your equity in the business will provide you with some measure of your total earnings from the enterprise.

Quality Control

While high yields per acre are important in reducing production costs per ton, it is important to remember that price per ton is dependent on quality. A prune grower may have high yields but if quality is sub-standard, he may still lose money on the crop.

Quality is controlled by good management practices including especially proper attention to pruning to make certain that the fruit is properly distributed throughout the tree and that new fruit wood is continuously being produced. In addition, adequate spraying for pest and disease control and proper maintenance of moisture levels are important factors in both the quality and size of the fruit.

Harvesting, drying, and storing fruit is the area which is most demanding of growers if quality is to be maintained. Fruit must be ripe yet not overripe. Shaking in a manner to prevent splitting and careful handling from the orchard to the dehydrator fit into this scene. Major size differences require different dehydration practices.

The crop needs to be harvested with the highest sugar content possible; however, soft, overripe fruit in the orchard means a lower quality in the finished product.

