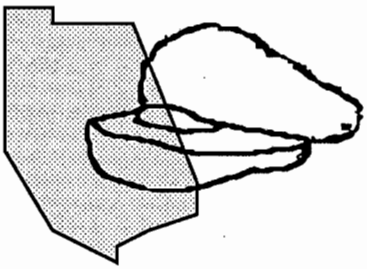
AVOCADO

DEVELOPMENT AND PRODUCTION COSTS
VENTURA COUNTY
1987



by

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AVOCADO INFORMATION SERIES NO. 1

DEVELOPMENT AND PRODUCTION COSTS FOR AVOCADOS - 1987

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How much did it cost you to develop your orchard? What is it costing you to operate it each year? Is it turning out to be a worthwhile investment in the long run? How much are you paying for water, fertilizer, weed control and pest control compared to other growers?

These and many other questions can be answered by looking at a Cost Study. Two studies will be presented here: costs of developing an orchard and costs of operating a producing orchard. A cost/return analysis will also be provided to attempt to answer the big question: Can I make money growing avocados?

These sample costs are based on records from cooperating growers, management companies, and related businesses in the Central Coast area. The figures presented are not average costs but represent what a grower can expect to pay for each of the practices listed. Because of the high variation between slopes, soils and climatic conditions, individual orchards may vary considerably from these figures in their costs and returns. Growers are encouraged to substitute their own costs in this framework to make the studies more relevant to their particular situation.

ASSUMPTIONS

Planting: 10 acres, Hass variety, spacing 20' x 20', 109 trees per acre

Labor rate: $8.00 per hour including fringe benefits. This is an average figure for both skilled and unskilled labor, including working foremen.

Water use: For young trees, water use (in addition to rainfall) is assumed to be 1/5 acre-foot per year of age of the trees. Mature avocado trees may use 1-3 acre-feet of water per year (in addition to rainfall), depending on the climate and the distance from the ocean. An average figure of 2 acre-feet per year is used for this study. Water costs also vary from as low as $50 per acre-foot for well or creek water to as much as $300 or more per acre-foot from some water districts. A cost of $200 per acre-foot is used for this study.

Fruit yield: Production on young trees usually starts in the 3rd year, but amounts vary widely. For this study it is assumed that yields are: 3rd year 500 lbs. per acre, 4th year 1500 lbs. per acre, 5th year 3000 lbs. per acre. Production in mature orchards is also variable, depending on soil type, quality of care, climate and other factors. In addition, yields fluctuate considerably from year to year due to alternate bearing. Average yields in Ventura and

ANALYSIS

Developing an avocado orchard is an expensive venture. The Development Cost analysis shows that it takes $20,015 per acre to bring the trees into commercial production. The annual cost of production for a mature orchard is $5,651 per acre. These figures include a 12 percent return on the investment, which can also be interpreted as a 12 percent interest rate. It can be seen from these studies that the average grower obtaining $0.37 per pound for his fruit and a crop of 10,000 pounds per acre does not make much money growing avocados. When depreciation is considered (as it should be), the profit on an acre of avocados is only $156. How much of a return is this on the initial investment? The "simple rate of return" is defined as:

((annual net revenue - depreciation) / (cost of the investment)) x 100

In the case of the Production Cost study, the annual net revenue is $1,247, depreciation is $1,091 and the investment cost is $29,115 (land + improvements + equipment). The rate of return on this investment is approximately 0.5 %.

Profit is defined as: (Yield x Price) - Expenses. This can be determined either before or after depreciation, depending on your investment objectives. Including depreciation (as a reserve for replacement) is most important for a grower who intends to stay in the business long enough that he will need to replace the equipment and trees at some point (10-20 years).

Figure 1 shows the profit and break-even point at a range of yields and fruit prices, before (1) and after (2) depreciation. The gross income in the study presented here is ($0.37/lb. x 10,000 lbs./acre) = $3,700. Expenses before depreciation (after cash costs and harvesting) are $2,453 per acre. This leaves us with a return of $1,247 per acre. The break-even point at a yield of 10,000 pounds per acre is a fruit price of $0.25. At a fruit price of $0.37, a yield of 6,631 pounds per acre is required to break even.

If we include depreciation, expenses are $3,544 per acre, the return is $156 per acre and the break-even point for a yield of 10,000 pounds is $0.35 . At a price of $0.37, a yield of 9,578 pounds per acre is required to break even. It is clear from this analysis that the growers who manage to sell their fruit at a time of year when prices are high, or who get higher than average yields, make the most profit.

Expenses are shown graphically in Fig. 2. Growers may be able to reduce some of these expenses and improve the profit picture. Two of the greatest expenses are for irrigation and harvesting. If well water is available, the pumping costs will often be less than the cost of district water. Some growers have installed reservoirs to catch winter rainfall or runoff from a seasonal creek. Irrigation can also be minimized by using drip irrigation until the trees reach a size where more extensive coverage is needed.

Growers may be able to reduce harvesting costs by minimizing the number of picks that are conducted each year, and by negotiating with picking crews directly rather than by going through a packinghouse.

Another expense which may be reduced is that for herbicides and other chemicals. Optimum use of pre-emergent herbicides will reduce the need for expensive spot-treatment materials like Roundup(R) later on. Once the orchard begins to crowd and leaves cover much of the orchard floor, there is usually

very little need for weed control. For young orchards, the use of drip irrigation will not only save water but also discourage weed growth at distances more than a few feet from the emitters during the dry season. When purchasing chemicals, buy the largest quantities at any one time that you can afford (and store safely). List prices are 10-30% lower for large containers than for small ones, and many dealers offer additional discounts for larger purchases.

Growers in areas with expensive district water (more than $200 per acre-foot) may be wondering what effect this is having on their returns. Fig. 3 shows the profit (after depreciation) at a range of water costs and water use figures. This graph was constructed by subtracting the total water cost (water use in acre-feet x water cost in $/acre-foot) from the profit after cash costs (except water), harvesting and depreciation ($556). Growers with inland orchards should use the higher water-use rates, whereas coastal growers can use the lower rates. It can be seen from this figure that it will be difficult to make a profit at water costs greater than $200 per acre-foot unless your water use is very low. If the water cost exceeds this amount, you will have to achieve better than the average $0.37 fruit price or 10,000 pound yield which is plotted here.

CONCLUSION

We have seen that it is not easy to make money growing avocados. There are at least three ways to help insure a profit: to sell your fruit at a time when the prices are high, to obtain consistently higher than average yields, and to minimize costs as much as possible. The grower that has been able to achieve one or more of these goals will be insured a healthy future in the years to come.

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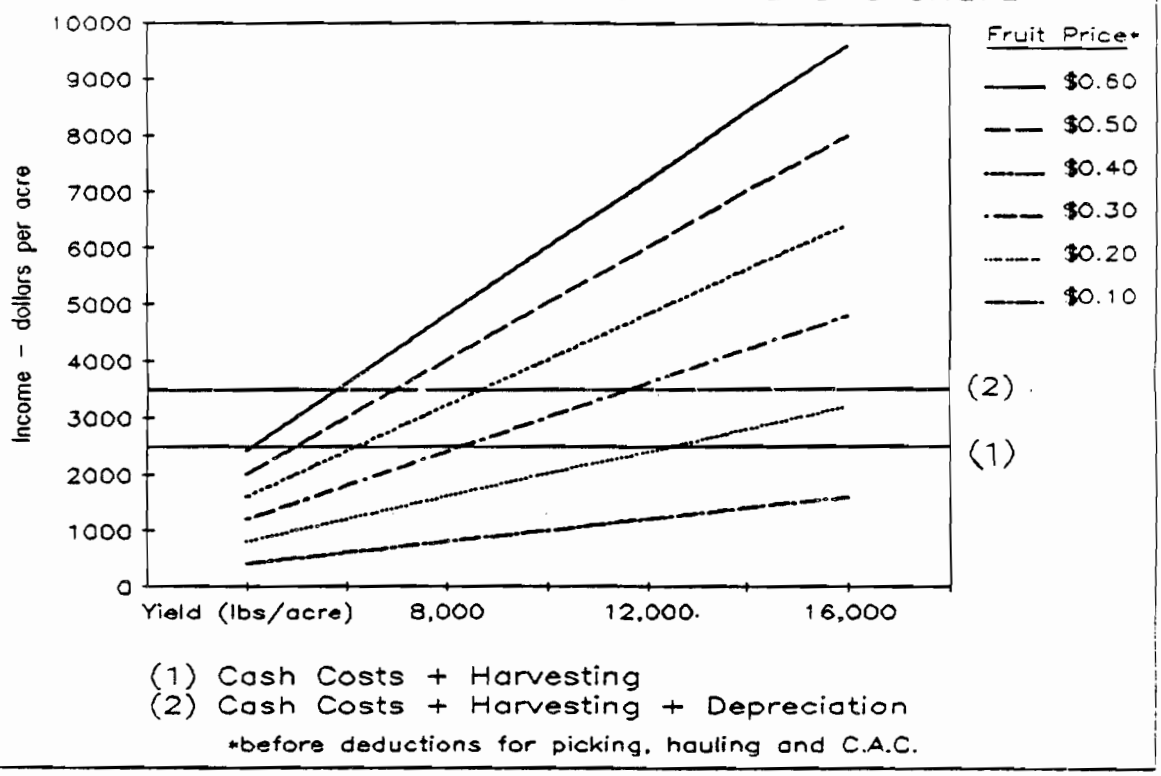
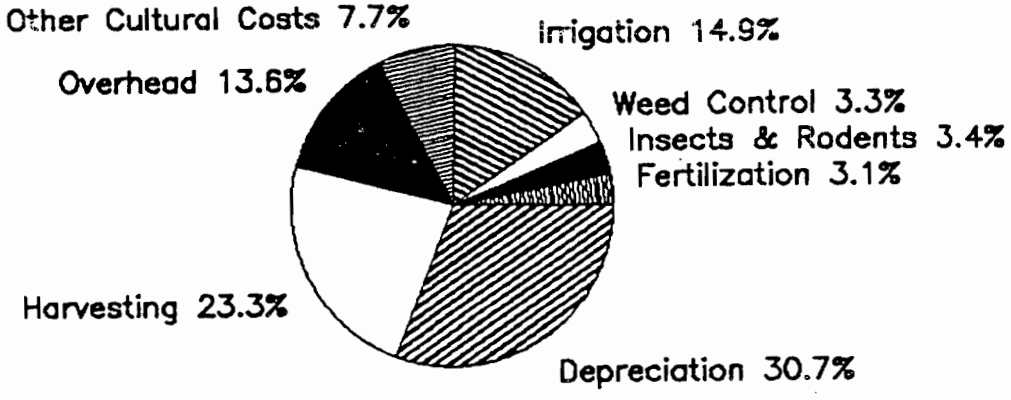
Fig. 1. Income, Expenses and Profit for a Central Coast Avocado Orchard



(1) Cash Costs + Harvesting
(2) Cash Costs + Harvesting + Depreciation

*before deductions for picking, hauling and C.A.C.

Fig. 2. Where does the Money go? (based on Production Cost study)



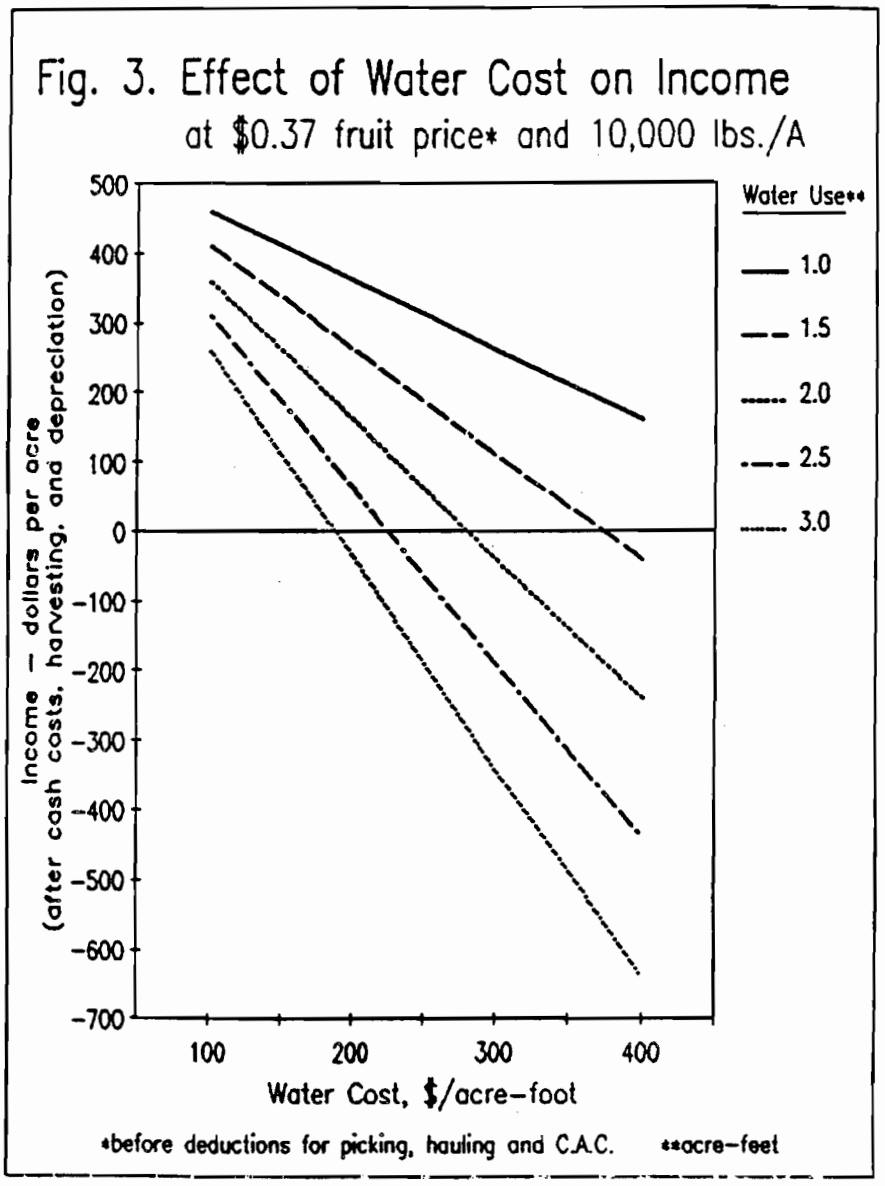


Fig. 3. Effect of Water Cost on Income
at $0.37 fruit price* and 10,000 lbs./A
Income - dollars per acre
(after cash costs, harvesting, and depreciation)
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
100
200
300
400
Water Cost, $/acre-foot
Water Use**
1.0
1.5
2.0
2.5
3.0
*before deductions for picking, hauling and C.A.C.
**acre-feet