

COSTS TO DEVELOP AN OLIVE ORCHARD IN

An outline map of Glenn County, California, showing its irregular shape with a jagged eastern border. The word "GLENN" is printed in the upper left portion of the map, and "COUNTY" is printed in the lower right portion.

GLENN

COUNTY

UNIVERSITY OF CALIFORNIA
AGRICULTURAL EXTENSION SERVICE
ORLAND, CALIFORNIA

UC Cooperative Extension

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BASIS FOR COST OF ESTABLISHING OLIVES
UNDER GLENN COUNTY CONDITIONS

1. This information is based on a *fifty acre planting in a one-hundred acre operation*. The land considered is gravelly loam of Class I or II Profile or Class III clay loam. Some of the locally available soils are not deep, ranging from 2 feet to 3.5 feet in profile depth. All have fair to good vertical and surface drainage. These soils based on local observation could not be expected to produce large, deep rooted trees. Thus, the close plantings of 14' x 28' (111 trees/acre) are being used for sample development costs. If more fertile, deep profile soils are used, then obviously fewer trees per acre at wider spacing would be considered.

Minimum required pruning is considered desirable, so long as the tree frame development is not inhibited. Early bearing relates to light pruning. Thick plantings brought into early bearing will help in off-setting the cost of orchard development.

2. In allocating, the equipment cost per acre in the equipment list the following calculations were made:
- (a) *Original Cost* of equipment is the estimated new cost to orchardist. Unless so stated, all equipment listed is based on the estimated new costs.
 - (b) *Cost Per Acre* is the equipment costs divided by the number of acres the equipment will be used on.
 - (c) *Depreciation* is based on the *per acre cost* divided by the expected life of the equipment.
 - (d) Interest on development is figured on one-half of the new or used cost per acre multiplied by 7%. Land is not considered a depreciable item. Therefore, land interest is figured 7% of the full value.

3. *Miscellaneous Expenses* have been found to be about 6% of the total cultural and harvest costs. Such costs include preparing roadways, office costs, bookkeeping, interest for short-term (less than 6 months) operating funds.
4. *Labor Costs* are based on \$2.50 hourly rate for skilled labor and \$2.25 per hour for unskilled labor. Included in labor costs are cash wages, compensation insurance, social security, and other benefits that the employer must pay.
5. *Equipment Operating Costs* are listed under fuel and repair. Included is the cost of fuel, maintenance, replacement parts, tires, etc. Tractor charge is based on a 50 HP wheel tractor at \$1.40 per hour. Horsepower is based on 75% of maximum.
6. The attached table shows how the cost of operation for the various items of equipment is calculated.
7. Management is at a rate of \$10.00 per acre per year during the first four years.
8. The column under each year has space for you to inject your costs. Remember this cost study is an example and may be slightly less or may exceed your exact cost of development.
9. Credits for fruit shown in years 3 and 4 can vary according to price per ton and in relation to yields. Cultural practices that effect yields on young trees include:
 - (a) Weed competition
 - (b) Severity of pruning
 - (c) Adequate irrigation and
 - (d) Available plant nutrients
10. This information was gathered from experienced production fieldmen, growers and observations of olive orchard development in Glenn County by local Farm Advisor.

COSTS TO DEVELOP AN OLIVE ORCHARD (One Acre)
IN GLENN COUNTY

Based on 111 trees per acre at 14' x 28' spacing

Years

| | 1 | Your Cost | 2 | Your Cost | 3 | Your Cost | 4 | Your Cost |
|---|----------|--------------|----------|--------------|----------|--------------|----------|--------------|
| Yield - tons | --- | | --- | | .6 | | 1.0 | |
| Planting | | | | | | | | |
| Land Preparation | \$ 9.03 | | | | | | | |
| Layout and plant | 33.30 | | \$ 1.80 | | \$.90 | | | |
| Trees @ \$1.75 (inspected) | 194.25 | | 10.50 | | 5.25 | | | |
| Total | \$236.58 | | \$12.30 | | \$6.15 | | | |
| Cultural | | | | | | | | |
| Prune | | | \$ 4.50 | | \$ 6.75 | | \$ 7.89 | |
| Spray | | | | | 16.55 | | 19.29 | |
| Fertilizer | \$ 2.43 | | 3.93 | | 5.60 | | 8.30 | |
| Disk or cultivate and shred | 10.86 | | 4.76 | | 11.08 | | 13.00 | |
| Irrigate | 3.53 | | 3.53 | | 4.73 | | 5.93 | |
| Strip spray weeds; shred middles 3rd year | | | | | 10.62 | | 10.62 | |
| Misc. labor suckering, staking & rodents, etc. | 17.00 | | 7.00 | | 7.00 | | 6.00 | |
| Misc. Materials | 3.00 | | 3.00 | | 3.00 | | 2.00 | |
| Total | \$36.82 | | \$26.72 | | \$65.33 | | \$73.03 | |
| Harvest | | | | | | | | |
| Pick and haul \$100 per ton | | | | | 60.00 | | 100.00 | |
| Total | --- | | --- | | \$60.00 | | \$100.00 | |
| Cash Overhead | | | | | | | | |
| Miscellaneous | \$16.40 | | \$ 2.34 | | \$ 7.89 | | \$10.38 | |
| Taxes | 11.04 | | 11.04 | | 11.04 | | 11.04 | |
| Total | \$27.44 | | \$13.38 | | \$18.93 | | \$21.42 | |
| Total Cash Cost | \$300.84 | | \$52.40 | | \$150.41 | | \$194.45 | |
| Management | \$10.00 | | \$10.00 | | \$10.00 | | \$10.00 | |
| Depreciation | 23.10 | | 23.10 | | 27.30 | | 27.30 | |
| Interest on investment @ 7% | 52.72 | | 52.72 | | 54.19 | | 54.19 | |
| Interest on accumulated cost @ 7% | | | 27.07 | | 38.64 | | 45.04 | |
| Total cost | \$386.66 | | \$165.29 | | \$280.54 | | \$330.98 | |
| Credit for fruit @ \$315 per ton | --- | | --- | | 189.00 | | 315.00 | |
| Net cost | | | | | 91.54 | | 15.98 | |
| Accumulated Cost | \$386.66 | | \$551.95 | | \$643.49 | | \$659.47 | 1/ |

1/ Adding to this figure a value of \$600 for leveled land, \$150 for irrigation facilities and \$198 for equipment gives a total investment of \$1607 per acre.

FIRST YEAR
SAMPLE COSTS TO ESTABLISH OLIVES
GLENN COUNTY
November 1970

Labor: Skilled - \$2.50/hr.
Unskilled - \$2.25/hr.

Production data: Based on 111 trees per acre at 14' x 28' spacing

| Operation | Hours Per Acre | Labor | Cash and labor cost per acre | | Total | Your Cost |
|---|-----------------|-------------------|------------------------------|---|---------------------|-----------------|
| | | | Fuel and Repairs | Materials Kind and Quantity Cost | | |
| Cultural Costs | | | | | | |
| Disk | .3 | \$.75 | \$.66 (\$1.40 + .80) | | \$ 1.41 | |
| Chisel | .3 | .75 | .56 (\$1.40 + .45) | | 1.31 | |
| Disk | .3 | .75 | .66 | | 1.41 | |
| Landplane 3 X | 1.0 | 2.50 | 1.40 (\$1.40) | Landplane rent \$ 1.00 | 4.90 | |
| Total | | \$ 4.75 | \$ 3.28 | \$ 1.00 | \$ 9.03 | |
| Layout & Plant (contract) | | | | | | |
| Trees | | | | 30¢ per tree 111 trees @ \$1.75 per tree \$194.25 | \$33.30 \$194.25 | |
| Disk 6 X | 1.8 | \$ 4.50 | \$ 3.96 (\$1.40 + .80) | | 8.46 | |
| Furrow to irrigate 3 X | .6 | 1.50 | .90 (\$1.40 + .10) | | 2.40 | |
| Irrigate 7 X | .5 | 1.13 | | Power to pump one acre @ \$2.40 2.40 | 3.53 | |
| Fertilize by hand | .5 | 1.13 | | 13 lbs. N @ 10¢ 1.30 | 2.43 | |
| Stake and tie | 4.0 | \$ 9.00 | \$ 1.00 (\$2.00) | | \$ 10.00 | |
| Harvest Costs | | | | | | |
| Misc. suckering, weeds, rodents, irrig. repairs, etc. | | | | 7.00 | 7.00 | |
| Misc. materials, bait, disinfectants | | | | 3.00 | 3.00 | |
| TOTAL CULTURAL COSTS | | \$22.01 | \$9.14 | \$242.25 | \$273.40 | |
| Cash Overhead | | | | | | |
| Misc., office, etc. | | 6% of above costs | | | 16.40 | |
| Taxes | | | | | 11.04 | |
| TOTAL CASH OVERHEAD | | | | | \$ 27.44 | |
| TOTAL CASH COST | | | | | \$300.84 | |
| Management Per Acre | | | | | | |
| | | | | | \$ 10.00 | |
| INVESTMENT | | | | | | |
| | <u>Per Acre</u> | | <u>Annual Cost</u> | <u>7%</u> | | |
| Land | \$600 | | ----- | \$42.00 | | |
| Trees | | | | | | |
| Irrigation system | 150 | | \$ 7.50 | \$ 5.25 | | |
| Buildings | | | | | | |
| Equipment | 156 | | \$ 15.60 | \$ 5.47 | | |
| Total | \$906 | | \$ 23.10 | \$52.72 | \$ 75.82 | |
| TOTAL COST PER ACRE | | | | | | \$386.66 |

SECOND YEAR
SAMPLE COSTS TO ESTABLISH OLIVES
November 1970

Production data: Yield .3 ton per acre

| Operation | Hours Per Acre | Labor | Cash and labor cost per acre | | Total | Your Cost | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|----------------|----------------|------------------------------|-------------------------------------|-----------------|-----------|------------|----------|----------------|--|--|--------------|----------|------|-------|--|---------|--|-------|--|--|--|--|-------------------|-------|---------|---------|--|-----------|--|--|--|--|-----------|-------|---------|---------|--|--------------|--------------|----------------|----------------|----------------|
| | | | Fuel and repairs | Materials Kind and Quantity Cost | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cultural Costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Disk | .3 | \$.75 | \$.66 | | \$ 1.41 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ridge to tree row | .1 | .25 | .15 (1.40 + .10) | | .40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Plane between rows 2 X | .3 | .75 | .42 (1.40) | Rent of Plane \$1.00 | 2.17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ridge to irrigate | .2 | .50 | .28 (1.40) | | .78 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Irrigate 7 X | .5 | 1.13 | | Power to pump one acre ft. @ \$2.40 | 3.53 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fertilize by hand | .5 | 1.13 | | 28 lbs. N @ .10 \$2.80 | 3.93 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prune | 2.0 | 4.50 | | | 4.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Plant 6 replacement trees | | 1.80 | | 6 trees @ \$1.75 \$10.50 | 12.30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Misc. Labor | | | | 7.00 | 7.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Misc. Materials | | | | 3.00 | 3.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL CULTURAL COSTS | | \$10.81 | \$ 1.51 | \$26.70 | \$39.02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Harvest Costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL HARVEST COSTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cash Overhead | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Misc., office, etc. | | | 6% of above costs | | \$ 2.34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Taxes | | | | | 11.04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL CASH OVERHEAD | | | | | \$13.38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL CASH COST | | | | | \$52.40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Management Per acre | | | | | \$10.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">INVESTMENT</th> <th rowspan="2">Per Acre</th> <th colspan="2">Annual Cost 7%</th> <th rowspan="2"></th> </tr> <tr> <th>Depreciation</th> <th>Interest</th> </tr> </thead> <tbody> <tr> <td>Land</td> <td>\$600</td> <td></td> <td>\$42.00</td> <td></td> </tr> <tr> <td>Trees</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Irrigation system</td> <td>\$150</td> <td>\$ 7.50</td> <td>\$ 5.25</td> <td></td> </tr> <tr> <td>Buildings</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Equipment</td> <td>\$156</td> <td>\$15.60</td> <td>\$ 5.47</td> <td></td> </tr> <tr> <td>Total</td> <td>\$906</td> <td>\$23.10</td> <td>\$52.72</td> <td>\$75.82</td> </tr> </tbody> </table> | | | | | | | INVESTMENT | Per Acre | Annual Cost 7% | | | Depreciation | Interest | Land | \$600 | | \$42.00 | | Trees | | | | | Irrigation system | \$150 | \$ 7.50 | \$ 5.25 | | Buildings | | | | | Equipment | \$156 | \$15.60 | \$ 5.47 | | Total | \$906 | \$23.10 | \$52.72 | \$75.82 |
| INVESTMENT | Per Acre | Annual Cost 7% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Depreciation | Interest | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Land | \$600 | | \$42.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trees | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Irrigation system | \$150 | \$ 7.50 | \$ 5.25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Buildings | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Equipment | \$156 | \$15.60 | \$ 5.47 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | \$906 | \$23.10 | \$52.72 | \$75.82 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL COST PER ACRE | | | | | \$138.22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

THIRD YEAR
 SAMPLE COSTS TO ESTABLISH OLIVES
 November 1970

Production data: Yield .6 tons per acre

| Operation | Hours Per Acre | Labor | Cash and labor cost per acre Fuel and repairs | Materials Kind and Quantity Cost | Total | Your Cost |
|-----------------------------|-----------------|----------------|--|---|-----------------|-----------|
| Cultural Costs | | | | | | |
| Rework Ridge | .2 | \$.50 | \$.28 | | \$.78 | |
| Shredding 5 X | 2.5 | 6.25 | 4.05 (1.40 + .40) | | 10.30 | |
| Spray Weeds | .3 | .75 | .54 | Sterilent 3 lbs. @ \$2.40 \$ 7.20 | 8.49 | |
| Spot Spray Weeds | .1 | .25 | .18 | 10 gal. weed oil @ 17¢ \$ 1.70 | 2.13 | |
| Irrigate 7 X | .5 | 1.13 | | Power to pump 1 acre ft. @ \$2.40 3.60 | 4.73 | |
| Fertilize | | | | 56 lbs. N applied @ 10¢ 5.60 | 5.60 | |
| Prune @ \$2.25/hr. | 3.0 | 6.75 | | | 6.75 | |
| Spray (Fall copper) | .5 | 1.25 | 1.60 | Bordeaux Spray 13.70 | 16.55 | |
| Plant replacement trees | | .90 | | 3 trees @ \$1.75 5.25 | 6.15 | |
| Misc. Labor | | | | 7.00 | 7.00 | |
| Misc. Materials | | | | 3.00 | 3.00 | |
| TOTAL CULTURAL COSTS | | \$17.78 | \$ 6.65 | \$47.05 | \$71.48 | |
| Harvest Costs | | | | | | |
| Pick & Haul @ \$100/ton | | | | \$60.00 | \$60.00 | |
| TOTAL HARVEST COSTS | | | | | \$60.00 | |
| Cash Overhead | | | | | | |
| Misc., office, etc. | | | 6% of above costs | | \$ 7.89 | |
| Taxes | | | | | 11.04 | |
| TOTAL CASH OVERHEAD | | | | | \$18.93 | |
| TOTAL CASH COST | | | | | \$150.41 | |
| Management Per Acre | | | | | \$ 10.00 | |
| INVESTMENT. | | | | | | |
| | <u>Per Acre</u> | | <u>Annual Cost 7%</u> | | | |
| | | | <u>Depreciation</u> | <u>Interest</u> | | |
| Land | \$600 | | ---- | \$42.00 | | |
| Trees | ----- | | | | | |
| Irrigation system | \$150 | | \$ 7.50 | \$ 5.25 | | |
| Buildings | ----- | | | | | |
| Equipment | \$198 | | 19.80 | \$ 6.94 | | |
| | ----- | | | | | |
| Total | \$948 | | \$27.30 | \$54.19 | \$ 81.49 | |
| TOTAL COST PER ACRE | | | | | \$241.90 | |

FOURTH YEAR
 SAMPLE COSTS TO ESTABLISH OLIVES
 November 1970

Production data: Yield 1.0 tons/acre

| Operation | Hours Per Acre | Labor | Fuel and repairs | Cash and labor cost per acre Materials Kind and Quantity Cost | Total | Your Cost |
|------------------------------------|-----------------|---------------------|------------------|---|-----------------|-----------|
| Cultural Costs | | | | | | |
| Move Ridge to Tree row | .2 | \$.50 | \$.28 | | \$.78 | |
| Plane Middles | .2 | .50 | .42 | Rent Plane \$1.00 | 1.92 | |
| Shredding 4 X (.5) | 2.5 | 6.25 | 4.05 | | 10.30 | |
| Spray Weeds | .3 | .75 | .54 | Sterilent 3 lbs. @ \$2.40 \$ 7.20 | 8.49 | |
| Spot Spray Weeds | .1 | .25 | .18 | 10 gal. weed oil @ 17¢ 1.70 | 2.13 | |
| Irrigate 7 X | .5 | 1.13 | | Power to pump 2 acre ft. @\$2.40 4.80 | 5.93 | |
| Fertilize | 3.5 | | | 83 lbs. N @ 10¢ applied 8.30 | 8.30 | |
| Prune @ \$2.25/hr. | | 7.89 | | | 7.89 | |
| Spray (Fall Copper) | .5 | 1.25 | 1.60 | Bordeaux Spray 16.44 | 19.29 | |
| Misc. Labor | | | | 6.00 | 6.00 | |
| Misc. Materials | | | | 2.00 | 2.00 | |
| TOTAL CULTURAL COSTS | | \$18.52 | \$ 7.07 | \$47.44 | \$73.03 | |
| Harvest Costs | | | | | | |
| Pick & Haul @ \$100/ton | | | | \$100.00 | \$100.00 | |
| TOTAL HARVEST COSTS | | | | | \$100.00 | |
| Cash Overhead | | | | | | |
| Misc., office, etc. | | 6% of above costs | | | \$ 10.38 | |
| Taxes | | | | | \$ 11.04 | |
| TOTAL CASH OVERHEAD | | | | | \$ 21.42 | |
| TOTAL CASH COST | | | | | \$194.45 | |
| Management Per Acre | | | | | \$ 10.00 | |
| Investment and Annual Costs | | | | | | |
| <u>INVESTMENT</u> | <u>Per Acre</u> | <u>Annual Cost</u> | <u>7%</u> | | | |
| | | <u>Depreciation</u> | <u>Interest</u> | | | |
| Land | \$600 | ---- | \$42.00 | | | |
| Trees | | | | | | |
| Irrigation system | \$150 | \$ 7.50 | 5.25 | | | |
| Buildings | | | | | | |
| Equipment | \$198 | 19.80 | 6.94 | | | |
| <u>Total</u> | <u>\$948</u> | <u>\$27.30</u> | <u>\$54.19</u> | | <u>\$ 81.49</u> | |
| TOTAL COST PER ACRE | | | | | \$285.94 | |

EQUIPMENT INVESTMENT FOR ESTABLISHING OLIVES

County Glenn Date Nov. 1970 Based on 50 of olives on a 100 farm.
 (acres) (name of crop) (acre)

| Item | Original Cost | Annual use (acres) | Cost per acre | Life (yrs.) | Depreciation | 7% Interest | Cash costs per hour | | | Hours per acre |
|-------------------------------|---------------|--------------------|---------------|-------------|--------------|-------------|---------------------|---------|--------|----------------|
| | | | | | | | Fuel | Repairs | Total | |
| W.D. Tractor 50 HP & tool bar | \$9,000 | 100 | \$ 90 | 10 | \$ 9.00 | \$3.15 | \$.55 | \$.85 | \$1.40 | -- |
| Disk 9' | 1,200 | 100 | .12 | 10 | 1.20 | .42 | -- | .80 | .80 | .3 |
| Chisel 6' | 700 | 100 | .7 | 10 | .70 | .25 | -- | .45 | .45 | .3 |
| Shredder (flail) 8' | 700 | 100 | .7 | 10 | .70 | .25 | -- | .40 | .40 | .5 |
| Weed Sprayer 200 gal. | 1,000 | 100 | .12 | 10 | 1.20 | .42 | -- | .40 | .40 | .3 |
| Pickup Truck | 2,800 | 100 | .28 | 10 | 2.80 | .98 | -- | -- | 2.00 | -- |
| TOTAL | \$15,400 | | \$156 | | \$15.60 | \$5.47 | | | | |
| Speed Sprayer 400 gal. P.T.O. | \$ 4,200 | 100 | \$.42 | 10 | \$ 4.20 | \$1.47 | -- | -\$1.80 | \$1.80 | .5 |
| Total 3rd year | | | \$198 | | \$ 19.80 | \$6.94 | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |