

# Costs of Almond Production

## in California analyzed in recently completed study

R. L. Adams and A. D. Reed

THE VALUE OF THE ALMOND CROP, and the basis of returns to growers—averaged for 1943, 1944, and 1945—place the almond seventh, on the list of all California deciduous tree fruits and nuts.

Almond acreage in California is exceeded only by oranges, peaches, prunes, and walnuts.

An important factor in the costs of almond production is the increase in yields, up to a 1946 production, estimated at 35,100 tons—on the in-shell basis.

Mature orchards vary in yield from year to year because of variation in weather, which affects the set.

Average production for the state from year to year covers a great variation in yields between producing districts and even between orchards.

### Items of Cost

The larger part of the total cost of producing almonds consists of outlays for the following activities and items:

#### 1. Care of orchard and harvesting:

Including wages of workers, use of motive power, use of hand tools, implements, and machinery, pruning and suckering, removing brush, green-manuring or covercropping, frost protection, spraying, irrigating, cultivating, hoeing around trees, fertilizing, preparing for harvesting, harvesting, hauling from field, hulling and sacking, drying, hauling to receiving shed.

#### 2. Supplies and materials:

Covercrop seed, heater fuel, spray materials and dusts, irrigation water, fertilizer.

#### 3. Miscellaneous:

Sacks, taxes, charge for management, tree depreciation, interest for use of capital—money represented by current worth of orchard and on operating funds—compensation insurance, and office expense.

To figure the costs of an individual orchard, of the average for a locality, or of the general average for the industry as a whole, the items listed above, in addition to yield per acre, must be known.

Few orchardists keep complete records of all costs, especially overhead charges.

In this study it was necessary to determine certain basic charges. These included use of equipment, depreciation, management, and orchard values—as a basis for calculating an interest charge for use of capital.

These determinations apply to conditions during the early fall of the 1946 crop year. They reflect actual expenses at the time the information was collected, supplemented with estimates for expenditures yet to be made during the remainder of the crop year.

### Variation in Items of Cost

Cultural practices and harvesting operations follow a somewhat common pattern. Kinds and sizes of equipment, use of fertilizers, spraying programs, and methods of frost protection do vary with different localities.

Some areas practice irrigation; others are not equipped to irrigate. Since practices vary, an individual determination is needed for a given farm or area.

### Costs for 1946

The cost of producing almonds in California is steadily increasing. Data collected for orchards producing 1,000 pounds of almonds per acre are as follows:

Years	Cost per lb. in-shell
1935-1940 .....	\$0.14
1943 .....	0.19
1946 .....	0.20

The increased cost in 1946 is largely the result of a marked rise in the cost of labor—\$1.00 an hour for most of the state—sprays, fertilizers, sacks, and green-manure seed. A higher value on orchards than during any previous study resulted in higher taxes and interest charge on capital. Offsetting these increased costs is the factor of markedly higher yields for 1946. This has been brought about by a favorable season and better cultural practices, improved frost protection, greater use of fertilizers, more and better spraying and pest control, more use of green-manure crops, more attention to pruning, and more and better use of irrigation water.

### Improved Practices

During the past two decades, in most of the producing areas, there has been a marked migration of almond orchards to the better type soils.

Trees in the early orchards were set 25 feet apart, but in many of the present

orchards they are being set at 30-foot distances.

Almonds require less pruning than other fruit trees but annual pruning of bearing trees is necessary to maintain production.

The increased use of fertilizer has produced larger yields, better quality nuts, better resistance to red spider, and better tree health generally.

Plowing has generally been replaced by disking, which is becoming shallower. Summer cultivation is now merely keeping the weeds from competing with the trees.

More of the almond acreage is being put under irrigation every year, although the amount of water applied per acre has remained relatively steady.

In areas where most of the crop must be dried, mechanical driers are being used increasingly.

Orchardists have seriously tried to reduce the amount of labor necessary to produce a crop. Growers are using "boats" to haul almonds to the huller. Mechanical hoists and mechanical or gravity feeding into the huller reduce labor. Sacking is done during slack periods.

Almond orchards are now given care comparable with that given to other deciduous fruits. To a greater extent than ever before, almonds now share the good lands of California.

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*A detailed report on this subject is in the recently published Agricultural Experiment Station Circular 375, "Costs of Almond Production in California," which includes an extensive cost chart, and is available without charge at the local office of the Farm Advisor or by addressing the College of Agriculture, Berkeley 4, California.*

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