

## WHAT ABOUT THE AVOCADO?

**C. E. Utt**

*Orange, Cal.*

The title of this paper would indicate inquiry. Can the avocado be grown successfully in California? Will its cultivation assume considerable proportions? Will the growing of avocados prove remunerative? Will it prove a disappointment and a loss? Will we over-supply the market? Can the market be extended?

These and many other questions come to mind when we discuss the avocado. In fact, this is much the same set of questions that has confronted practically all the other fruit industries that have been introduced in California; and often it has taken a long time and many expensive and disastrous experiments before we have been able thoroughly to establish some of these industries.

I believe it likely that the avocado will be quite extensively cultivated, and that where the business is intelligently conducted it will prove remunerative. I think it will prove a loss and a disappointment to many. Without doubt the market will at times be over-supplied, but that the consumption may be extended to great proportions is a reasonable supposition.

It took us about thirty years to find out that we should only attempt to grow two varieties of oranges. It is quite likely that we shall find use for more than two varieties of avocados, but it is a safe guess that we shall eliminate and forget the greater part of the 139 varieties that are being boosted by fond owners and enthusiastic nurserymen. I shall return to the question of varieties later.

We also have the question of proper location for our orchards,— soil, climate, water supply, winds, etc. Undoubtedly we shall find some localities better adapted to the economical and profitable cultivation of this fruit than others, just as there are best places to grow oranges and olives and raisins and prunes and apples and walnuts.

Some twenty odd years ago the olive boom swept over California. This boom was largely caused by the nurserymen, who by the skillful advertising and exploitation of the enormous profits to be had by any one who would plant olives anywhere, created a sale for their nursery stock. We were told that the olive would thrive in the moist lowlands and in the arid sterile hillsides. In fact, olives would do well anywhere, everywhere. Just plant them out and neglect them; they would thrive on neglect. All we had to do was to plant an olive orchard, and retire to the city and spend the great profits. In fact, most of our fruit industries have been cursed by ignorance, the bombast of promoters, and the "great expectations" of enthusiasts, and the avocado is proving no exception.

**Location:**—My experience and observation have led me to the conclusion that the locality best suited to the successful and profitable growing of avocados is the one with

the least wind and the least frost, the best soil and the best water supply. The avocado will suffer much more from the wind than the orange or lemon. In fact, I do not think it advisable to grow this fruit at all in windy localities without thorough protection by artificial windbreaks. Many avocados have been, and are being, planted on very poor soil. I do not think this advisable, as the tree from which we expect from 300 to 1000 pounds of the richest, most nutritious fruit known, must have an opportunity to feed, or fail to give fruit in paying quantities. I think it is perfectly safe to say that half the trees which have been, and are being set out, will not produce enough fruit to prove profitable. This is, of course, not the exception in the fruit growing industry, but the rule.

**Soil:**—I have formed no conclusions as to the soil best suited to the avocado, only that it should be good rich soil. I think it should have good drainage. We see old trees growing well in rather heavy adobe, and also in sandy loam. Perhaps the best growth is to be found on rich, heavy sediment soils. I do not think clay and hard-pan soils worth considering, not that it is not possible to grow avocados on such soils, but I do not think they can stand the competition of groves on better soil.

**Frost and Water:**—A frostless location is desirable, for while some of the thin-skinned Mexican varieties will stand a very low temperature, even lower than oranges, the hard-shelled varieties now growing in Southern California will not, and the big freeze of January 7, 1913, cut one year out of the production of most of the old bearing trees in Southern California, and in some instances practically destroyed the trees. An abundant water supply is necessary for the best development of the trees. They will grow with the same or less irrigation than that given citrus trees, but my experience and observation is that they will do best with considerably more water than is usually given citrus orchards.

**Propagation:**—My personal experience with the avocado is meager, but our president informed me that he desired personal experiences in order that we might begin to get some conclusions. About six or seven years since, we planted a number of seedlings, partly for experiment and partly for ornament. Later we attempted to work them over to desirable varieties by top-grafting, with very indifferent success, in fact if it were my neighbor's case, I would call it a failure. My first venture in growing an avocado nursery was about five years ago. We began by planting a thousand or so small seedlings in nursery rows. These trees had been sprouted and grown in pots, a method to be avoided, as the small space afforded by the pot often causes congestion of the root system harmful to the future prosperity of the tree. Avocado seeds should be sprouted in flats from which they may easily be removed to the nursery row, where they should be irrigated by a small stream of water immediately after planting. We have not found any best season of the year to bud, the best results seeming to come when the stock and the weather have been most suitable, stock sap flowing well, and the climate warm and moist, rather than hot and dry. With some varieties we have experienced much more difficulty in successful budding than with others.

**Varieties:**—I have set out a number of Northrops and Ganters and a Harman or two for the thin-skinned varieties. They each begin to bear at two years from setting. The Canter has proven the most prolific of these varieties, one tree giving one hundred fruits at two years from setting, although I should judge that the trees were two-year-old buds when set.

It has always been a question of doubt in my mind as to whether the thin-skinned varieties will ever have any considerable commercial future, so I have only set a few dozen, more for ornament and variety than for profit. Of the commercial sorts I have planted more heavily to Taft than any other variety, not because I think it the only variety worth cultivating, but because it was the first good, well-proven hard-shelled tree that came to my attention. I have also planted three or four acres to Challenge, Monroe, Royal, Walker, and Sharpless, with one or two each of a dozen or more unproven varieties which are of good promise,—according to the nurseryman. The Taft trees have set fruit at three years from setting in the orchard, the buds being one year old at the time of transplanting. The Walker has set fruit which matured at nineteen months from budding. The Challenge has borne at two years from setting. The Royal has not yet borne although the trees blossomed very freely the past spring. The Sharpless have not yet borne at two years from budding. The Monroe has borne at two years from the bud.

I do not care to discuss the relative value of various varieties, and I am unacquainted with many of them, but I think it must be apparent that we want different varieties maturing their fruit at different seasons of the year. We already have proven hard-shell varieties which cover every month but December and January, with new varieties which it is claimed will fill these months. The most of our proven fruits ripen during the spring and summer, with the thin-skinned varieties covering the fall. We have always supposed the Sharpless to be a summer fruit, probably because an insistent demand on a limited supply caused the harvest to be carried on earlier than necessary. This year the tree is now full of fruit, much of which apparently could be carried until December. If this should prove to be the habit of this tree, the Sharpless, already classed among the best of our fruits, will be a doubly valuable variety, as the fall and winter varieties are those on which we are shortest. In fact, an inferior hard-shell which would mature its fruit in the fall and winter months would at this stage of the game be most valuable, as that is the season when the market is most bare. Of well proven fruit trees, we now have the Challenge and the Royal for February, March and April; the Monroe, the Lyon and a number of others for the spring months; the Taft, the Walker, the Bartley, and others for summer; and if, as I hope, the Sharpless proves to be a fall fruit, we have left only a couple of months when we are not maturing fruit. An ideal avocado farm is one where the harvester is at work every day in the year.

In conclusion, avocado orchards should be set on good, well-drained soil, protected from wind storms, with little or no frost. They should be given an abundance of water, and the trees for setting should never be propagated in pots, but should be from trees well proven in Southern California.