

## NOTES ON AVOCADO VARIETIES FOR COMMERCIAL ORCHARDS

**Chas. D. Adams**

*Upland, Cal.*

To the increasing number who want to make a start toward planting commercial orchards of avocados there is no more important and puzzling question of which to find an answer than what to plant to produce an orchard that will prove permanently profitable.

One may frequently hear the current opinion expressed that we must wait ten years longer before we shall know what are to be our standard varieties. Possibly we may have to wait that long to get that knowledge, but we do not intend to wait that long to do our planting and from what we already know about it and what we already have in trees and fruit we can be reasonably sure we can produce orchards that will be permanently profitable even though no trees in them should ever find a place in the final standard class.

The discovery during the past season of the late ripening period of two imported budded varieties and one of California! origin has given us three first-class winter maturing kinds, so that we now have avocados of superior merit to market during every month in the year and that without needing to use very many varieties, so few that even three or four can be made to cover the whole season.

Since we can now cover the whole year with varieties that are as good as any that we have, there is no need to be unreasonably timid about planting an orchard if we use few enough kinds, selected with sufficient study and good judgment.

The main puzzle that remains to solve pertaining to the effect of future planting on what we may plant now, is whether the superiority which we may find in the best new kinds from Guatemala will prove very marked as compared with our present best kinds. Among the hundreds of thousands of trees amid which the United States government expert is now seeking the best, and among the selected imported Guatemalan buds soon to fruit here, there are almost certain to be some for which we shall want to reserve a space in our orchards.

Not too many kinds, is a well proven element of success in orchard planting. Buyers are most interested and pay best prices where they can find large and continuous supplies of a definite article and growers find such marketing simplest and most economical. The California orange has been brought down to one standard variety for one half the year and one for the other half. The greater variation in taste, shape, size, color and period of maturity in the avocado compared with all other fruits will not permit of quite so few, but the nearer we can approximate to it with the very best for each period the better.

We are not here considering a few trees each of many kinds for our own testing or pleasure. That is quite a different matter.

Probably the main ripening season for the greatest number of our thick-skin varieties is the summer, some of them beginning earlier and some continuing later. Then we have those maturing most of their crop in the spring, some of which would begin in the winter, and finally we have those maturing most of their crop in the winter, some of which would come earlier and some later.

We find a general agreement to eliminate from consideration those sorts, however good otherwise, that have been found weak and sickly in their growth, such as the Colorado, Dickey, Royal, Murrieta and Presidente.

For the spring including some years the latter part of the winter and earlier part of the summer, we have most prominent the Challenge, Blakeman and Dickey A, also Lyon and Spinks.

We must bear in mind that all varieties are later this year than usual, many growers state 30 to 60 days later.

The objections brought against the Challenge are its large seed, very low oil content, and only fair flavor with some stringiness, but its beauty places it in the highest grade as to external appearance and the attention it will attract in any market. It averages a full pound or more in weight, it is round in shape, at maturity turns to an attractive deep maroon color, and it comes from a hardy, vigorous, immense in size and enormously producing tree. Budded trees of the variety come into bearing early and produce heavy crops.

The Dickey A needs an introduction to a great many of us, not being as well known as the others, perhaps for want of a better name. Neither the original tree nor any of the buds have displayed the weak symptoms of the original Dickey. The quality of the Dickey A is very superior, the seed one of the smallest in proportion to flesh of any variety we have, the shape pyriform, and the color red as it matures and then maroon.

In the past the fruit on the parent tree has averaged a pound or more, but this year, owing perhaps to the very large crop it has carried, it does not average over three-quarters of a pound.

It and the Challenge are the varieties that have been most prominently and continuously on sale during April and May in Los Angeles grocery stores.

The original Dickey being discarded, it would be a gracious act on our part toward Mr. Dickey, who is one of the members of our Association and who would naturally rather have a good thing associated with his name than a tree failure, if we would agree to drop out the original Dickey variety entirely and transfer the name Dickey to the Dickey A.

The Blakeman is showing itself to be an exceptionally hardy, vigorous, and precocious tree. The growth is spreading. To obtain the best form, the young growth in its early state should be pinched back or headed in to promote compactness. A grower who has many varieties, writes about it as follows:

"As to frost the Blakeman made a particularly good showing this winter; a little tree in my orchard, 4 or 5 feet high, went through without turning a leaf, Taft and Dickinson in the same neighborhood being badly hit."

Snow fell in an orchard in another locality, melting nearly as fast as it fell, though remaining as much as two inches thick on the ground and trees for a time. It caused the leaves of the citrus trees to curl up and look for days as they would after a decided freeze, and it browned the leaf edges of some other avocados, but not the Blakeman leaves, which came through bright and shining, showing no sign of anything wrong. This is one of the fruits of high quality, of a green color turning to a yellow shade of green as it matures, form broadly oblique and average weight previous seasons 1 to 1 1/4 pounds, but this year only a scant 1 pound, owing perhaps to the heavy crop. Budded trees two years from the nursery indicate a good setting of fruit and the five years' bearing record of the parent tree indicates a continuous bearer without off-years. The record is, first year a few, then 25, 50, 250, 500.

In the Lyon we have a fine fruit and the tree, the most precocious known, blossoming and setting fruit so abundantly from the first year that it tends to dwarf and enfeeble the tree unless it be carefully and rigidly thinned.

The Spinks tree is remarkably hardy and vigorous. It does not sunburn as do many varieties. Observation of many kinds show it and the Fuerte to be among the most rapid growers of any of the thick-skin type. The year's growth of some Spinks buds placed in old stock surpasses anything of the kind known. The fruit has been too large but has redeemed itself this year by coming down to an average of a pound or over. The color when mature a purplish black, and the form obovate to pyriform. The fruit is handsome and has a long period of maturity.

The Taft and Dickinson are two main season fruits that are less hardy than some others, yet do well in many groves and with a little protection the first year or two, should do well wherever lemons will. Their fruit is so superior as to make them worthy of this care. The Taft is longer in beginning to bear than most varieties. The Dickinson is receiving more attention this year than ever before, displaying many good qualities.

A fruit we all admire for its size, color, high quality, beauty, and very small seed, is the Sharpless, and more than ever now since it has been found to have been picked and marketed too early in the main season and has been found to be really a fall and winter fruit. Its crop this year was 700; its shipping to market began in October and continued until March 15th, some fruit staying on the tree to the end of April, and one remained to be picked to exhibit at this meeting. The heaviest shipments were in October, November and December, after that the ripening was slower. Mr. Sharpless states that half the fruit would have been better had it been left on the tree one or two months longer and that there is no question about its being a winter-ripening fruit. Other years the fruit was simply picked immature. The analysis shows this. The chemist stated that the specimens sent in August and September were not ripe, while a fruit sent January 15th analyzed 20.54 per cent oil and specimens analyzed on April 4th showed 24.23 per cent of oil. This is a real brittle-skin or hard-shell fruit, the skin making an excellent protection in shipping and an ideal cup from which to eat it with a spoon. The fruit weighs from a pound to a pound and a half, averaging 20 ounces.

The budded trees on Mr. Sharpless' place are strong growing and he states have never had a trace of die-back or sickly appearance. The blossoming time is April and May and the fruit begins to mature in October of the following year, similar to the Valencia

orange, making the fruits from sixteen to twenty-two months at picking.

The other two winter bearing kinds are the Puebla and Fuerte. They are both hardy and satisfactory as trees in every way.

A Puebla tree, which was under my observation, at two years from the nursery set 15 fruits, which were of a very handsome appearance at maturity by reason of their smooth, glossy skin of a purple color. The first one was picked December 17th, and the last January 28th and could only have been held a day or two longer. The analysis shows 25 to 26 per cent fat. There is some fibre but not enough to be objectionable. The size was a disappointment. Last year's report of an average weight of three-quarters of a pound was not confirmed. One or two out of the fifteen reached three-quarters, but others only 6 ounces and the average did: not exceed 8 to 10 ounces. The tree is very hardy, very precocious, and very prolific.

The same is true of the Fuerte tree and the Fuerte fruit reaches a more satisfactory size, averaging, as stated, from 10 1/2 to 12 1/2 ounces. It ranged in a five dozen shipment from an 8% ounce average, to an 18 ounce fruit, the largest of the season. A specimen under my observation, picked February 9, weighed 17 ounces and its seed 2 1/2 ounces. Shipments of the Fuerte were made regularly from January 1st to March 15th and a few until April 17th.

A striking variation in shape and size of fruit on the same tree has been found in this variety, even round fruit together with the usual obovate form, but it is desired to have it clearly understood that no such finding of round fruit is general, it having occurred only on three trees.

The fruit is green in color, with a very high oil content, one analysis shows 25.32 per cent of oil and another is still higher.

A wide range of planting distances has been proposed, at which to start an avocado orchard, ranging from 16 1/2 to 60 feet, together with various plans for interplanting and subsequent removal of interset trees.

Let me call your attention to a simple method, which is not an untried theory—but which I have already put into practice in an olive grove and found satisfactory. It saves any need of interplanting and thereby mixing in the same row trees that may gain by being treated differently.

Start the orchard by planting the trees 20 feet square, having at least two rows of the same kind so as never to lose the variety when thinning out trees to wider distances. When they crowd at 20 feet, take ' out every alternate diagonal row, which will leave the trees in squares, forty feet apart, with one in the center of each square, which equals as many trees to the acre as if they were planted 28 feet square.

Whenever they crowd again, if they do, take the center tree out of each square, the remaining trees will then stand 40 feet apart each way, which ought to be ample if we aim to keep our trees under control. If one wishes the final distance apart of the trees in a grove to be greater, simply increase the starting distance of the planting in proportion and have the final distances whatever may be desired.