

## California Avocado Association 1935 Yearbook 20: 91-95

### The Priceless Dietetic Value of the Citrus, the Avocado, and the Papaya

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*Condensed excerpts from an address delivered at Orlando, Florida, before the Krome Memorial Institute.*

#### THE AVOCADO

Of all edible fruit, the avocado stands pre-eminent as a source of concentrated nutriment adapted to human use. With the exception of vitamin C, the avocado contains every element required for human sustenance, and vitamin C is present in super-abundance in the orange which flourishes beside it, providing the needed complementary vitamin, together with the sugar needed to balance the avocado's surplus fat. Half a good avocado and four or five good sized oranges supply adequate nourishment for a substantial meal and a royal feast.

The avocado contains more fat than any other fruit except the olive, and its fat is of the highest quality, wholly free from the unpleasant butyric acid with which many fats are contaminated, and containing a sufficient amount of vitamin A to maintain high resistance against bacterial infection, a quality possessed by few vegetable fats and lacking in olive oil. Some varieties of the fruit, especially those of Guatemalan origin, contain 25 to 30 per cent\* fat, so much, in fact, that they are often used by the natives of Guatemala like butter as a spread for bread. The Cuban varieties of avocados contain only about half as much fat as the rough skin fruits of Guatemalan origin.

The carbohydrate content of the avocado is an invert sugar such as is usually found in fruits and flowers and is gathered by bees to form honey. This sugar needs no digestion, being ready for utilization as soon as absorbed.

The protein of the avocado is the same as that of the potato and nearly double that of the banana, and is of the finest quality, much superior to the protein of bread and other cereal foods. Its composition is almost identical with that of milk. In fact, the pulp of the fruit is so free from fiber that it forms with water a fine emulsion which closely resembles milk in consistency and appearance and with the exception of an excess of fat and the lack of vitamin C may serve as a very satisfactory substitute for dairy milk. Prepared thus, the avocado may be given safely to young infants and to the feeblest invalid.

The gustatory and nutrient properties of the avocado entitle it to a large place in human dietaries. Instead of appearing only on rare occasions as at present and as an expensive luxury except in localities near where it is grown, the avocado should become a staple factor in the American bill of fare. In composition it more nearly resembles a nut than fruit proper, and like the nut may be properly regarded as a vegetable meat, not as a substitute for meat, but as one of the original and fat-rich products which made up the bill of fare of primitive man when, according to Professor Ami of Montreal, Professor

Elliott of Oxford and other paleontologists, not only man but all other land animals were exclusively plant eaters.

### **THE AVOCADO IS VEGETABLE MEAT**

Professor H. C. Sherman in his book, "Chemistry of Food and Nutrition," suggests that meat should be regarded as the substitute rather than these fine, original food products especially adapted by the low content and high quality of their protein to serve the nutritive needs of **Homo Sapiens** as well as his forest relatives, the anthropoids, who are held by instinct to the original bill of fare assigned to them and to other primates, but from which man, resenting the guidance of instinct, has incontinently wandered away. This is a matter of grave importance in relation to the avocado industry; for if this fruit is to occupy the major place in the American dietary to which its qualities entitle it, room must be made for it. That is, if Americans are to eat more avocados, they must eat less of something else, and the things to be omitted from the menu must naturally be those of similar composition. Meats and dairy products are the only classes of foods of which fats and protein are the chief constituents. It is not suggested that a drive should be made against any class of foods, but the people have a right to full information concerning the merits and the demerits of the various foodstuffs purveyed to them, and when this is brought to them in a campaign of education, they will make such use of it as well as create for the avocado a large and growing demand in all the markets of the land. Milk is, of course, needed for its lime content.

### **HIGH FOOD VALUE OF THE AVOCADO**

The high food value of the avocado is shown by its calorie content of 73 calories per ounce, nearly three times that of the banana, 50 per cent more than that of an equal weight of beefsteak or sweetbreads, three times that of fish, such as bass, trout, or pickerel, and five times that of oysters.

An ounce of avocado pulp has a calorie value of 73 of which 86% is fat of the finest quality. This is more than the same weight of egg, more than ten times the food value of an ounce of beef juice, 50% more than that of round steak, six times the value of clam chowder, more than twice that of chicken broilers, or boneless codfish, and nearly twice that of the famous fish, pompano.

In quality the avocado is infinitely superior because of its freedom from bacterial infection, while fresh and smoked meats of all sorts are always swarming with colon germs identical in character with those that are always found in the colon. All slaughtered animals are infected with colon germs during the slaughtering. Not infrequently, in long hung meats, the infection becomes so intense that there may be counted more colon germs in a bit of liver or hamburger steak than are found in the fresh droppings of animals. To this source of infection may be traced appendicitis, colitis, duodenitis, and other intestinal disorders. No germs at all are to be found in the avocado, and when eaten it resists to a marked degree, as do all vegetable proteins, the attacks of putrefactive and other disease producing bacteria.

## **AVOCADO EATERS WILL LIVE LONGER**

Dr. Arthure Hunter, actuary of the New York Life Insurance Company, in a work on blood pressure, shows that the Chinese who eat little or no meat, have a blood pressure ten points lower than the average in this country. He referred to the fact that several hundred young women students of Battle Creek College, where meat is not eaten, have blood pressure ten points lower than that of other young women college students, and expresses the opinion that the lower blood pressure will increase longevity.

The avocado possesses merit of an extraordinary character. For purity, wholesomeness, ease of digestibility and adaptation to human needs, it has few rivals and none that can fill its place. I fully believe that in the not remote future it will play as important a part in feeding the American people as does the orange at the present time. It is safe to predict that when this happy era arrives, there will be reported by the Census Bureau a notable lowering of the death rate, an increase of centenarians and a considerable lessening of the mortality from heart disease, which now claims annually more than 300,000 victims and perhaps also a lessening of the mortality from cancer and diabetes. All three of these grave maladies are now claiming annually scores of thousands of victims and the rate of increase is accelerating. The avocado may prove to be a potent factor in solving national health problems which for years have baffled the ablest medical experts.

As dietary foods, citrus fruits with the avocado and the papaya fill a most important place and meet certain important dietetic indications more satisfactorily than do any other products. I will mention briefly some of these and in so doing I am glad to be able to speak from practical experience of many years I have wished for an opportunity to make use in a large clinical way of the special therapeutic advantages offered by the genial climate of this region as well as of its delicious tropical fruits.

Four years ago the opportunity materialized in the establishment of the Miami-Battle Creek Sanitarium, where I and my colleagues have had a good chance to test the virtues of Citrus fruits, papayas, and avocados in the treatment of a large variety of acute and chronic conditions, chiefly of the latter sort.

In acute digestive disorders I find the avocado a most excellent remedy. Its blandness is comforting to the hypersensitive surfaces of the stomach and duodenum and its abundant vitamins reanimate the inflamed and crippled cells. As liquid nourishment the avocado is superior to milk in that it does not form curds, and also because it is absolutely sterile, while milk at the best contains hundreds, often many thousands, of putrefactive and other obnoxious germs.

The orange, the papaya, and the avocado are efficient aids in changing the intestinal flora to combat autointoxication, colitis and biliousness. They are far superior to any mouth lotion or remedies for "halitosis," by inducing the disappearance of intestinal putrefactions, the real cause of a coated tongue and a bad breath. In cases of hyperacidity with sour stomach, use well ripened with the avocado as a staple diet, avoiding meats and condiments of all kinds and greatly restricting the use of salt. In cases of Duodenitis, gall bladder disease, and duodenal ulcer, the papaya and the avocado are most appropriate foods because they are bland and soothing to the sensitive membrane and pass quickly into the intestine. The avocado, especially the

Guatemalan varieties, is a highly appropriate food for cases of diabetes because of its large fat and small carbohydrate content. In case of Bright's disease, orange juice, the papaya, and the avocado are all useful, the avocado especially as a staple food because of its small protein content with none of the poisonous extractives always present in flesh foods as shown by Newburgh and others.

In Graves' disease or exophthalmic goiter, there is always need for changing the intestinal flora to suppress intestinal putrefactions and hence the value of orange juice, the papaya and the avocado, each of which contributes usefully to this end.

The avocado, the papaya and the orange are all valuable sources of iron of the highest quality and may render service whenever a blood building diet is indicated. Their rich store of vitamins promotes digestion and assimilation, while the predigested nutriment which they supply is a tissue builder of first quality.

### **Editor's Note**

For many years Calavo Growers has been gradually accumulating nutritional, dietetic and clinical data on Calavos, with the thought that in the future this material could be successfully compiled into a readily-available form for distribution to physicians and dietitians. Further, this information, after receiving the approval of proper authorities could be put in the form of a "health story" for general distribution. Before this can be accomplished, there is much as yet to be done in the way of checking the data already accumulated and studying how further required facts can best be secured. Calavo Growers has refrained from advertising based on health as the keynote, until such time as the authenticity and approval of its claims is professionally verified. This entails considerable time and cost. Being a comparatively young industry, there has not yet been built up the well-rounded background of research and clinical experience so necessary for the preparation of an authentic "healthy story."

The calavo-type fruit has been developed in Southern California during the past two decades. Although many of the calavo types of California avocados have a maximum oil content that exceeds 25% when fully mature at the peak of their respective seasons these extremely high oil contents are the exception and not the rule. Extensive tests conducted by the United States Department of Agriculture ("Some Changes in the Composition of California Avocados During Growth," Chase & Church, U.S.D.A. Bulletin No. 1073) show that the average oil content of the calavo-type fruit is closer to 18-20% than to 25% or above.

The avocado family is classified in three races, the West Indian, the Guatemalan, and the Mexican. A fourth group includes "hybrids" which originated as the result of cross-pollination of a variety of one race with one of another. The hybrids and the Mexican-race have the highest oil content. These are followed by the Guatemalan and West Indians in the order named. A chart showing the comparative food value of the four groups is herewith presented. Characteristic varieties of each race are used as examples.

**COMPARATIVE COMPOSITION OF TYPICAL RACES OF AVOCADOS**

RACE	VARIETY	MONTH PICKED	% AVERAGE WEIGHT	% EDIBLE PORTION	% SKIN	% SEED	EDIBLE PORTION— PER CENT				SEASON
							MOIST-URE	ASH	PRO-TEIN	OIL	
HYBRID	Fuerte	Nov.	10.2	76.4	6.4	16.7	70.93	1.24	1.88	20.57	Nov. to June
		April	13.1	82.6	7.5	9.7	62.07	1.42	2.10	29.93	
MEXICAN CALAVO TYPE (2)	Puebla	Dec.	6.6	71.4	5.5	22.8	70.01	1.60	2.02	19.99	Oct. to March
		March	8.3	74.0	6.2	19.4	64.89	1.77	2.27	25.33	
GUATE- MALAN	Taft	May	15.3	71.6	10.8	17.4	73.75	1.45	1.31	18.89	May to Sept.
W. INDIAN (1)	Trapp	* Oct.	10.4	68.26	11.72	20.2	85.0	0.62	0.73	7.37	Sept. to Jan.
		Nov.	19.1	71.03	7.15	21.82	77.86	0.70	0.78	9.7	