

**Mexico... A Report from a Director-at-Large
CICTAMEX, ITS ORIGIN AND PERSPECTIVES**

Ing. Salvador Sanchez Colin

Director-at-Large, California Avocado Society; and Director, CICTAMEX

Mexico is a country whose diversity in climates and natural resources and its geographical shape have caused it for some time to be considered a "cornucopia."

Avocado is one of the contributions of Mexico to the world. Its consumption goes back to the Pre-Hispanic Era. The Aztecs named the avocado tree "ahuacacahuitl," or "testicle tree," because of the peculiar form of the criollo avocados of the Mexican race.

Avocado culture on a commercial level in Mexico, using improved varieties, began in 1950 with the re-introduction of the 'Fuerte' variety. In 1960-70, the 'Hass' variety was introduced. Nowadays, Mexico is first in the world as a producer of avocado.

This fruit, so important as an economic resource and for its great food value, is habitually consumed as part of the nourishing diet of the Mexican people. Its importance led me to promote the establishment of the Centro de Investigaciones Cientificas y Tecnológicas del Aguacate en el Estado de Mexico—CICTAMEX, given the need to generate research tending to solve the problems Mexican fruit growers are facing. The most outstanding problems are:

1. Reduction of the cultivable surface, caused by the rapid demographic growth. It is also the consequence of the Agrarian Reform that sponsored the atomization of the land to such an extent that some common land peasants have only two hectares or less of cultivable land.
2. Steadily increasing production costs—a consequence of the economic crisis confronting the country that also substantially reduces the purchasing power of the large popular masses.
3. Uprooting of the peasants who emigrate to the big urban centers because they do not find in the province a remunerative task to satisfy their economic needs.
4. Malnutrition of a high percentage of the inhabitants of the Mexican Republic, affecting especially the children.

It is logical to think that the problems stated above are the consequence of economic, political, and social factors. Their solution implies the coordination of several activities, among them, scientific and technological research. CICTAMEX is performing this research, basically orienting the studies toward the search for dwarf variants that permit establishment of high density plantations with low cost production that will allow the peasants settled within the "Avocado Belt of the Mexican Republic" to establish roots by giving them a remunerative activity: the culture of avocado.

With increasing production of avocado from high density plantations, there will be a greater total supply of the product. This will help to solve the difficult problem of malnutrition as, in a great many instances, avocado is one of the few sources of protein available to those in the economically marginal levels.

Taking CICTAMEX's aim into consideration, we are aware of the huge work to be done and that a continuous effort will be required for many years—perhaps decades, since in work with genetic improvement in fruit trees the cycles are approximately eight to ten years.

Though it is true that much is to be done, much has already been done to develop resources, and especially in the search for and selection of vegetative material. This activity requires patient observation and practices, such as cross-breeding, grafting, etc.

If you take into consideration that what I have performed until now is one individual's activity in leadership and organization, you will appreciate how noble the ideal is that compelled me to perform the tasks summarized in the following paragraphs.

1953: START WORKING ON AVOCADO

After several activities in the agrarian sector as a professor, researcher, head of the Fruitgrowing Section, General Director of Agriculture, and also as Governor of the State of Mexico, in 1953 I became aware of the growing necessity to generate knowledge for the national development of fruit growing. In order to "learn by doing it," I established the orchard, "Las Animas," in El Salitre Ixtapan de la Sal, Mexico, planting there seven acres of avocado trees of the 'Fuerte' variety. Mr. Carl S. Crawford, a member of the California Avocado Society, and Sr. Enrique Gilly, of Atlixco, Puebla, assisted me in this acquisition.

This orchard, planted in thin, clayish soil with excessive salts and calcium, was established close to thermal water—bubbling, in the open air, with a volume of flow of one liter per second. Notwithstanding the poor soil, the trees produced fruit of excellent quality; and, for the first time in Mexico, avocado was packed in cardboard boxes.

1957: ORIGIN OF THE CV. COLIN V-33

In 1957, twelve trees of the "Fuerte" variety were added to the orchard, coming from Ajijic, Jalisco, that had some vegetative characteristics different from the "Fuertes" planted earlier. We selected and grafted twigs for a bigger lot, from which came the 'Colin V-33' variant. With the years, it has been improved.

1969: TRANSFER OF AVOCADO SELECTIONS TO COATEPEC HARINAS

In 1969, we observed on the avocado trees in "Las Animas" a marked effect of the excesses of calcium, clay, and saltpeter in the soil. We looked for another appropriate place, regarding climate and soil, in order to continue our research. We found it in the Rancho "La Cruz," in Coatepec Harinas, Mexico. The transfer of vegetative material of the best specimens that had been selected at "Las Animas" took place. These specimens were enriched with the best criollo types of Coatepec Harinas and produced the basis for the formation of a valuable bank of germplasm. Nowadays, CICTAMEX researches on this bank.

In the avocado orchards of Coatepec Harinas, the experimental work can properly be said to have been started. As a result of some variations presented by the 'Fuerte' variety, there appeared, among others, interesting selections named 'Negro Colin', 'Colin-mex', 'Colmillo', and 'Colin V-33'.

We must mention that in 1969 a factory to produce avocado oil was established, with a grinding capacity of a ton per day, producing 200 kgs. of pressed oil. This factory operated only four years, due to commercialization problems of this product and also as a consequence of decreased production of criollo avocados (the raw material). The criollo avocado was replaced by the 'Hass' and 'Fuerte' varieties that enjoyed the best market prices. Hence, the avocado oil was competitively out of the market.

1970: A COMMERCIAL ORCHARD OF COLIN V-33 IS ESTABLISHED

In 1970, we further worked in the 'Colin V-33', establishing a commercial orchard where the more representative and productive trees were identified in order to develop the characteristics of this variant.

In 1978, the first seed-plantings of 'Colin V-33' and the 'Hass' varieties were made in order to obtain segregants.

CICTAMEX IS CREATED

In 1982, and due to the huge work of selection and improvement that surpassed my personal capacity to perform, I promoted the creation of CICTAMEX—the Centro de Investigaciones Científicas y Tecnológicas del Aguacate en el Estado de Mexico. At the beginning of this institution— and in spite of its complete justification by the need of Mexico to generate research that promotes the development of fruit growing as well as by the need to take advantage of the valuable germ plasm bank, it was not properly supported by the agrarian authorities of the State of Mexico due to lack of understanding attributable to the non-prevalence of fruit growing in the agrarian sector at that time.

CICTAMEX surges out of experimental orchards and infrastructure provided by individual fruit growers. The government paid for the wages and salaries of the personnel.

With time, and in the light of the results obtained, the official sector has given more support to CICTAMEX, to the point that Lie. Mario Ramon Beteta, who heads the present state administration, has given his steady support to this research center.

Nowadays, our center is organized in four research areas: edaphology, phytotecny, parasitology, and agroindustrial.

There exists, also, a program of training and publishing that every month publishes articles of practical interest to fruit growers, gives technical assistance, and promotes courses and conventions.

The personnel of CICTAMEX is basically formed by five young agronomists whose competence in research is being developed in the field. These young men absorb the experience of a group of advisors, among whom are Dr. Facundo Barrientes P. and Dr. Leopoldo Fucikovsky Zak. Lic. Francisco Moreno Bernal coordinates the administrative area, and eighteen workers perform the field work.

The experimental area of CICTAMEX is comprised of several plots with a total of 36 hectares, contributed by fruit growers as mentioned. There is an inventory of 6,000 trees and 3,765 segregants. Up to now, 21 outstanding selections have been obtained.

CICTAMEX PERSPECTIVES

In the Centro de Investigaciones Cientificas y Tecnológicas del Aguacate en el Estado de Mexico, CICTAMEX, we consider that research must be performed in cooperation with other countries, because—in spite of the language, climate, politics, and economic and social differences, we all pursue the same end: the improvement of avocado culture and production.

If we want to go further in this purpose, it would be desirable that, in the Second World Avocado Congress to take place in California in 1991, one or some countries make the proposal that some topics of general interest be investigated in some aspects of research and experimentation. Also, it would be most helpful if one country would entrust to another the research on specific subjects in behalf of universal knowledge.