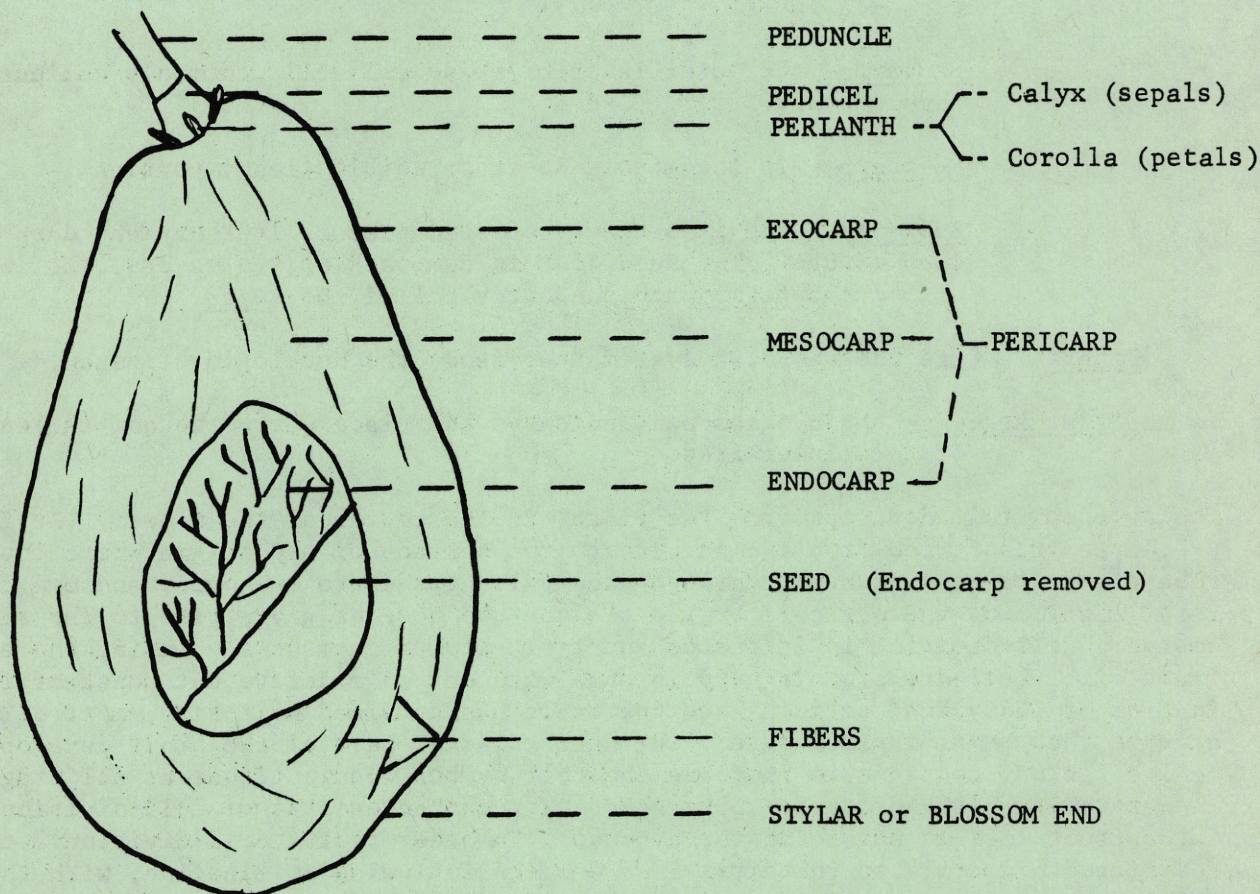


Avomation

BOTANY

THE AVOCADO FRUIT



AVOCADO FRUIT IN CROSS SECTION SHOWING MOROPHOLOGY

The fruit of the avocado has two important functions. It provides for reproduction through the seed and for food through the flesh.

Botanically speaking, the avocado is technically a berry having one ovary containing one seed.

In lengthwise cross section, the following parts can be identified:

Peduncle - is a second, third or fourth order branch of the flower "cluster" or panicle.

Pedicel - is the stem or flower stalk of an individual flower and fruit.

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CO-OPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, U.S. Department of Agriculture, University of California and Ventura County co-operating

Perianth - a collective term applied to the calyx and corolla.

Calyx is the first of the series of floral parts, composed of sepals that are three in number.

Corolla is the second of the series of floral parts, composed of petals that are three in number.

Pericarp - a collective term of the mature, ripened ovary wall. It is composed of three layers.

Exocarp - the outer layer of epidermal cells commonly called the rind or skin.

Mesocarp - is the middle layer or edible fleshy portion.

Endocarp - the inner layer or seed coat is leathery and dark brown when mature. The seed coat is composed of two layers, the inner called the tegmen and the outer called the testa.

Fibers - are the vascular system that feeds the developing tissues.

Stylar Region - the blossom end indicates the place where the now fallen style of the flower arose.

The avocado fruit develops from the pistil in the center of the flower. At full bloom, pollen is transferred from the anthers to the surface of the stigma where the pollen-tube starts to grow downward through the stylar tissue to the ovary and egg cell. Fertilization of the egg cell by the pollen-tube nucleus gives rise to the single embryo. Cell-division is initiated and fruit growth commences. During the early fruit life, cell-division is very intense with only a moderate but constant increase in size of individual cells. When the fruit has attained half size, most of the cells have reached their maximum size. During the latter half of the fruit development, cell-divisions continue to increase the cell number within tissue at all stages, even as horticultural maturity is approached. The characteristic of cell-division in later fruit life is unique in the avocado. In other fruits cell-division activity is restricted primarily to the first 3 or 4 weeks following pollination, with the latter part of their development resulting from enlargement of previously formed cells.

The fact that fruit size increase results primarily from cell-division in the avocado may explain in part why the fruit does not soften while still firmly attached to the tree. Only after physical separation of the fruit from the stem will nutrients and water be withheld from the fruit and the process of cell-division cease.

Another unusual characteristic of the avocado is the great quantity of oil which develops in the edible portion, a character comparable in few other fruits except the olive.

B. W. Lee
Farm Advisor

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