

## Ripening Avocado Fruit

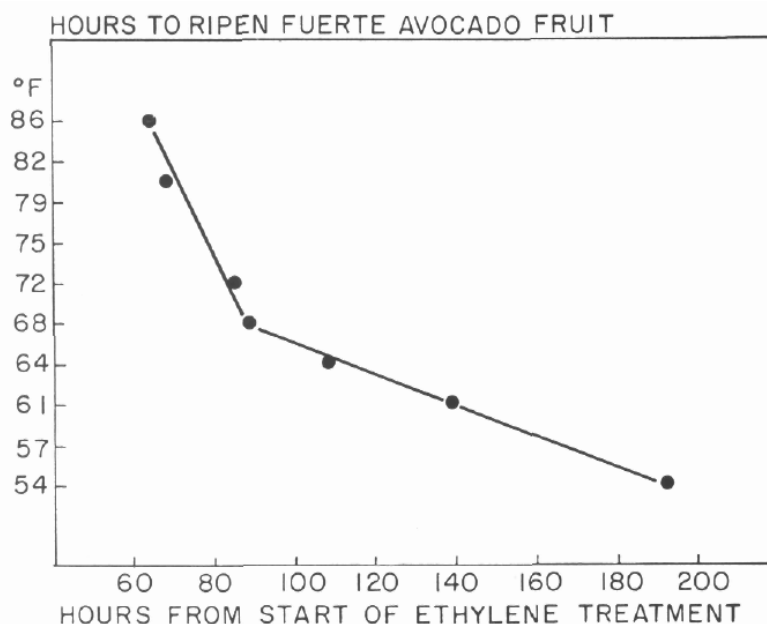
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Virtually all avocado fruit are marketed in the hard, unripe state and ripening is left to the consumer. When left to ripen at room temperature, several fruit picked from the same tree at the same time may differ in their ripening times by as much as ten days. The consumer cannot plan on using the fruit at a particular time.

The consumer could be spared this inconvenience. If avocados are exposed to very small amounts of ethylene gas in air, they will all ripen at the same time. For any given temperature the time of ripening can be predicted. Exposure to ethylene is not to be considered as treatment with a foreign chemical, as most fruit actually produce small amounts of ethylene during the final stages of ripening. Treatment with ethylene only speeds up the normal process and makes the time of ripening of all of the fruit in one lot more uniform.

Most wholesale market warehouses are already equipped with ethylene treatment rooms, as virtually all banana fruit must be treated with ethylene to ripen satisfactorily. Mature, recently picked avocado fruit can be exposed to 10 parts per million of ethylene in air at 64° F for 36 to 48 hours and all fruit will be ripe 3 to 4 days after removal from the treatment. Figure 1 shows the approximate time required to ripen Fuerte fruit at various temperatures. The ethylene treatment must be carried out at temperatures above 54° F. and is best between 60° and 68° F.



The ripe avocados need not be used as soon as they soften. Kosiyachinda and Young (1) have shown that fully ripe fruit can be kept in excellent condition for at least 2 weeks if stored between 36° and 43° F at high humidity. Most markets do have refrigerated space at 41° to 45° F and most household refrigerators operate within the same range. Storage in polyethylene bags punched with 12 holes 3/8" in diameter, keeps the fruit in good condition at 41° F.

Consumers may also utilize ethylene stimulated ripening without the use of expensive equipment. Ripe apples, bananas, or avocados all produce ethylene. One of these ripe fruit along with up to 6 unripe avocados can be placed in a 10" x 20" polyethylene bag in which 12 holes about 3/8" in diameter have been punched and the bag closed with a rubber band. This arrangement of 12 holes in a bag will cause enough ethylene to accumulate from that produced from the ripe fruit to stimulate ripening of the avocados while not causing excessive amounts of carbon dioxide to accumulate. Once the fruit are soft, they can be stored in the same polyethylene bag in the refrigerator at 36° to 45° F. Storage in the bag prevents the fruit from losing excessive moisture.

It is very important that the proportions of number of ripe fruit, to unripe, to number of holes in the bag, not be changed. We have only tested this system using 1 to 6 unripe avocados with one ripe fruit in a bag with 12 holes. Any attempt to use a larger number of fruit is likely to cause the accumulation of too much carbon dioxide, in which case the fruit will not ripen in spite of the presence of ethylene.

*(1) Young, Roy E. and Suraphong Kosiyachinda. 1976. Low Temperature of ripe avocado fruit. California Avocado Society Yearbook 60: 73-76.*