

PICKING AND HANDLING PERISHABLE FRUITS

All of us are more or less familiar with the fact that plants breathe in a similar manner to animals, but as to factors governing this action and the practical application, we are somewhat at sea. The fact that mature fruits continue breathing (respiration) after removal from the plant, until ultimate decay is extremely important in properly handling of fruit.

Fruits vary considerably after removal from tree, bush or vine. The length of life, all other factors being equal, is in direct proportion to the length of time required to grow from blossom to maturity. Compare the keeping qualities of an orange which requires a year of growth and the berries which take but a few weeks from blossom to ripening, and this law is at once apparent. Furthermore, the shorter the time of maturing the more delicate and perishable is the character of the ripened product. Thus, keeping quality is controlled by the speed of respiration.

The speed of respiration in fruits is governed more by temperature than by any other factor. At just above freezing, 32° F, respiratory activities are decreased to a minimum and the life or keeping quality of the fruit is extended to the limit. Increasing the temperature increases respiration as well, and correspondingly lessens the length of time the fruit will "stand up" or be in marketable condition. This follows a general rule that from freezing on with every 20° F. rise of temperature the respiration of the fruit increases from two to three times. To illustrate: berries stored just above freezing temperature may remain in good firm condition for 10 to 12 days. Increase the temperature to 50° F. and 4 to 6 days will be the limit and so on. This decreases proportionately with the length of time required to mature a fruit.

Since the life of the fruit after picking is controlled by the speed of respiration, it follows that if we can artificially slow up respiration we will prolong the life of the fruit. Another factor influencing speed of respiration and life, is that of mechanical injury. If the skin of fruit is punctured, cut or badly bruised, the respiration immediately increases tremendously even to two or three times normal. The life then is shortened by more than half. Hence, we cannot handle our fruits too carefully. The

more perishable the character of fruit we are handling, the harder it becomes to prevent mechanical injury, for the berries, peaches and other quickly maturing fruits have a thin, delicate skin and very tender flesh.

In this same line it has been found that at low temperature the flesh and skin of fruit offer a greater resistance to puncturing and bruising than at higher temperatures. We are reminded by this to handle the fruit when cool in order to secure the best results.

Ventilation will affect respiration to a marked degree, for when poorly ventilated, respiration increases and necessary elements for it are obtained from the tissues of the plant instead of the air. Then a double attack on the fruit's keeping quality is the result. Respiration in the fruit is accomplished by a release or development of a certain amount of heat. It was noted above that heat increases respiration, so this release of heat will further speed up respiration unless good ventilation of cool air is present to combat it. Therefore, it is well to remember not to place the fruit in too large containers where it will pack and prevent ventilation, and to have

plenty of ventilation between containers when in storage or enroute to market.

Conclusions

1. When possible pick in early morning or late evening while fruit is cool.
2. Keep in cool, shady place until ready to ship or haul to market.
3. Keep covered enroute to market. Covering of cut tree branches or any green vegetation over containers will help maintain uniform cool temperature.
4. Careful handling in picking and placing in container will eliminate much bruising of fruit.
5. Handle containers as few times as possible.
6. In hauling to market care to prevent bumping or jostling of crates or containers will prevent much bruising.
7. Use moderate size, well ventilated containers and prepare for adequate ventilation between containers in transit and in storage.

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