

## SOME TROUBLES OF AVOCADO FRUIT

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High temperature, wind and causes of unknown origin occasionally create troubles in avocado fruit. While not usually common or widespread, they can be of concern to a grower, particularly if the cause is not readily apparent.

Several of these troubles which have been observed in the field are illustrated and discussed here.

**A. CRICK-SIDE.** This was first described by Dr. J. Eliot Coit as "kink-neck" and later by Horne (1931) as "kink-side." Finally the name of "crick-side" (Horne, 1934) was adopted. It is characterized by a definite depression on one side between the stem end and the larger portion of the fruit causing a distortion. In some cases the area of depression turns black and the fruit drops. In other cases the fruit grows and matures but the distortion remains.

Crick-side is usually found on trees carrying a heavy load of fruit. It has been suggested that high temperatures or temporary water-stress may be connected with the occurrence of crick-side but no definite determination as to its cause has been made. Illustrated (1) are young immature 'Hass' fruit.

**B. CARAPACE SPOT.** First described by Horne (1929), the name "carapace spot" was chosen because of the resemblance to a turtle's back. This external blemish is corky and usually cracked into somewhat regular, angular divisions. The flesh under carapace spot is undamaged but exterior appearance is such that the fruit is reduced in grade.

Slight rubbing or bruising of tender young fruit on leaves or stems appears to cause this corky growth to start. Fruit on trees exposed to strong winds are more apt to develop the trouble. Windbreaks should reduce the injury in windy areas.

Illustrated (2) are nearly mature fruit of a thin-skinned Mexican variety.

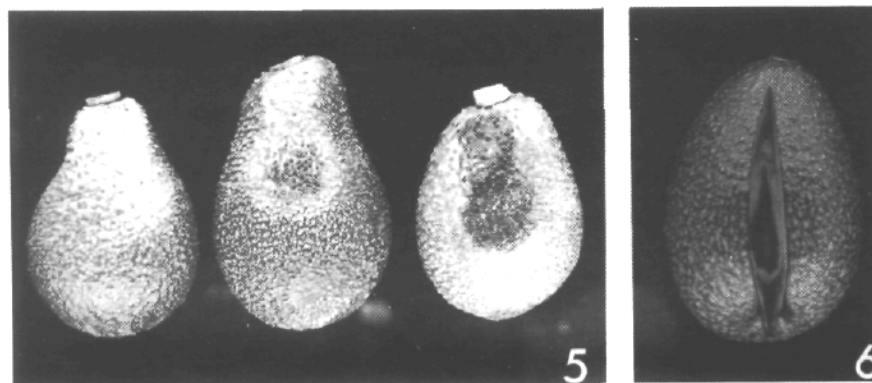
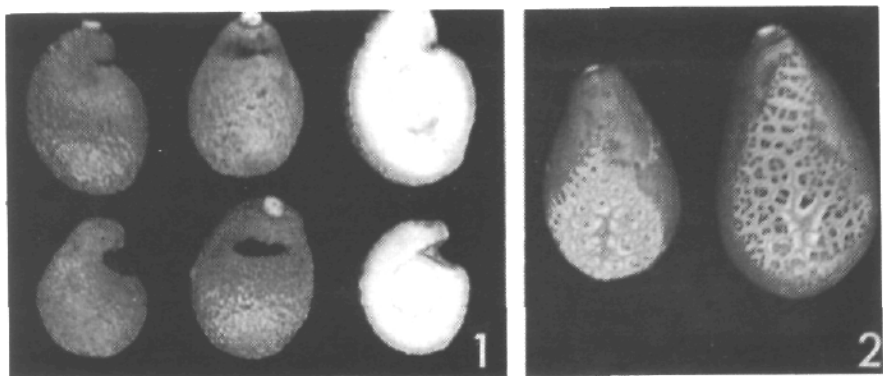
**C. HEAT DAMAGE.** This trouble has been observed on the 'Susan' variety in San Joaquín Valley. It is apparently caused by sudden high temperatures, and perhaps temporary water deficit, while the fruit is small. Some fruit drop following injury but those not so severely affected continue to develop and mature normally in all but an area surrounding the stem. The sunken area adjacent to the stem does not soften properly.

Illustrated (3) are mature 'Susan' fruit. Top: normal; bottom: heat damage.

**D. WARTY FRUIT.** Occasionally, very young fruit with a few to numerous small wart-like protuberances are observed. As the fruit grows the protuberances become less conspicuous and at maturity are normally no longer evident. The exact cause or causes

have not been determined. A possible cause is insect or mite injury.

Illustrated (4) are young 'Rincon' fruit showing the small wart-like protuberances.



**E. SUNBURN.** Fruit exposed to full sun may be injured by sunburn. This occurs when trees defoliate, or partially defoliate, from any of several causes, leaving the fruit exposed. It is normally most severe on fruit on the south and southwest portion of the tree (in northern latitudes).

Sunburn shows as a pale yellowish area on the exposed side of the fruit. Often, the center of this area turns brown to black and may wither (Hodgson, 1947).

Illustrated (5) are sunburned 'MacArthur' fruit. Left to right: increasing severity of sunburn.

**F. SPLIT FRUIT.** Splits are relatively common in citrus fruit but are seldom seen in avocados. One exception was observed on 'Zutano' fruit in which the split apparently started at the stylar or blossom end and extended nearly to the stem end of the fruit. Only a fruit or two per tree were so affected. The cause is unknown.

Illustrated (6) are split 'Zutano' fruit about two months from maturity.

#### **LITERATURE CITED**

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