

# Storage and Market Diseases of Fruit. XI

By

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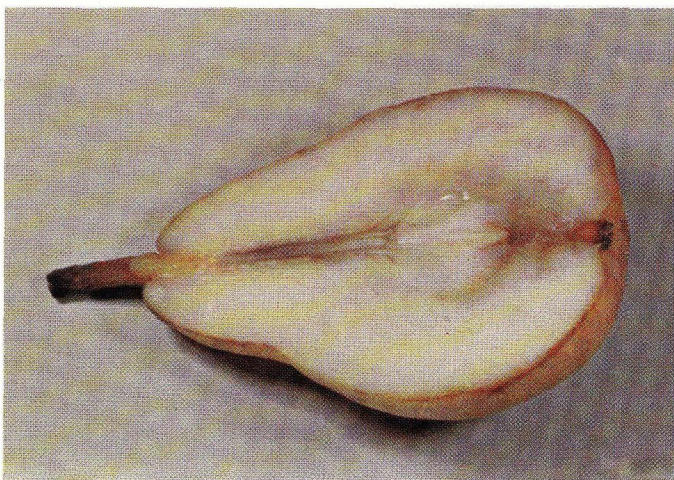
## VASCULAR BROWNING OF PEARS

A common sign of approaching over-storage and end of storage life in pears is browning of the vascular tissue from the stem to the core during ripening. The first clearly discernible vascular browning should be taken as a sign of the approaching end of commercial storage life and any remaining fruit of the line should be marketed without delay. Vascular browning is often associated with core breakdown (Fig. 37, Suppl. No. X, 1971) and the first signs of both, indicating incipient over-storage, may appear at about the same time. Pears with such

discoloured central vascular tissue, while they may be edible, are usually of rather poor eating quality. In over-stored fruit, which has lost its capacity to ripen normally, the central vasculars may be severely discoloured and almost black.

While the variety *Beurre Bosc* is most prone to this disorder, other varieties may also be affected.

Control is by avoiding over-storage and the factors associated with short storage life, such as over-maturity at harvest, delayed storage, slow cooling, and storage temperatures that are too high.



Vascular browning of *Beurre Bosc* pears due to over-storage.

## SUPERFICIAL SCALD OF PEARS

This is a grey to brown, often speckled, discoloration of the skin of the *Packham's Triumph* and *Beurre d'Anjou* varieties of pears in cool storage. Unlike over-storage scald (pear scald), which it resembles, it does not occur on other varieties; it may occur relatively early in storage, long before the fruit has lost its ability to ripen normally, and the skin does not slough off.

As with superficial scald of apples the disorder on pears is worse in fruit picked prematurely and develops considerably after removal from cool storage. Like superficial scald of apples it can be controlled by using oiled wraps, or by dipping or spraying the fruit with either diphenylamine or ethoxyquin, or by using wraps impregnated with one of these scald-inhibiting chemicals. Ethoxyquin is the more effective on pears though it tends to result in shortened storage life and faster yellowing, but this is only significant for fruit cool-stored for a long time.

**Warning:** While use of these chemicals is permitted in Australia, they should not be used on export fruit unless specifically permitted by the importing country.

### Further reading

Hall, E. G., Scott, K. J., and Riley, T. J. (1962). —Control of superficial scald on *Packham's Triumph* pears. *CSIRO Fd Preserv. Q.* **22**, 15–18. (Also in *Agric. Gaz. N.S.W.* **73**, 73–4 (1962).)



Superficial scald of *Packham's Triumph* pears.



### OVER-STORAGE SCALD OF PEARS

Many varieties of pears, particularly Williams (Bartlett), when kept in storage too long, develop a brown discoloration of the skin, often first evident as a fine spotting of the lenticels. The scald later becomes continuous but with indistinct edges, often shiny and darker brown, and, unlike superficial scald, the affected skin later readily sloughs off.

Affected fruit shows other symptoms of over-storage—yellowing of the skin while still in cool storage, failure to soften and to ripen after removal to ripening temperatures, and the development of an unpleasant, fermented taste, as well as rapid development of core breakdown and of rots.

Early development of over-storage disorders may be due to over-maturity at picking, delay before storage, slow cooling, or high storage temperatures. To avoid over-storage, pears should be removed from the cool store while still hard and green to light green. Over-storage scald is not controlled by wrapping the fruit in oiled wraps or by treating it with diphenylamine or ethoxyquin.

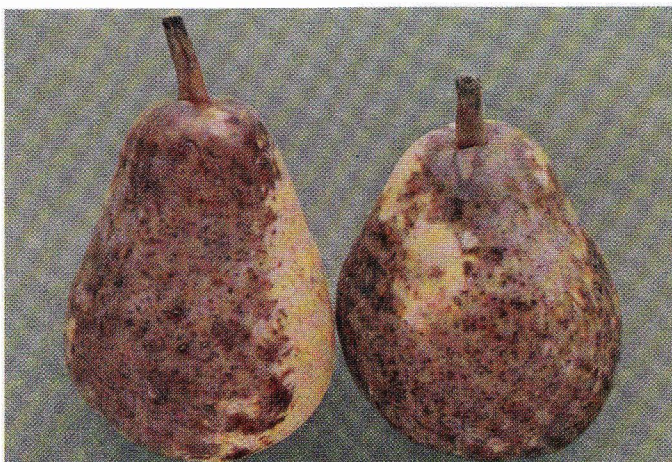
#### Further reading

Hall, E. G., and Scott, K. J. (1964).—Cool storage of pears. N.S.W. Dep. Agric. Bull. No. H148. (Also in *Agric. Gaz. N.S.W.* 75, 1216-21 (1964).)

### STORAGE SCALD OF OHANEZ GRAPES

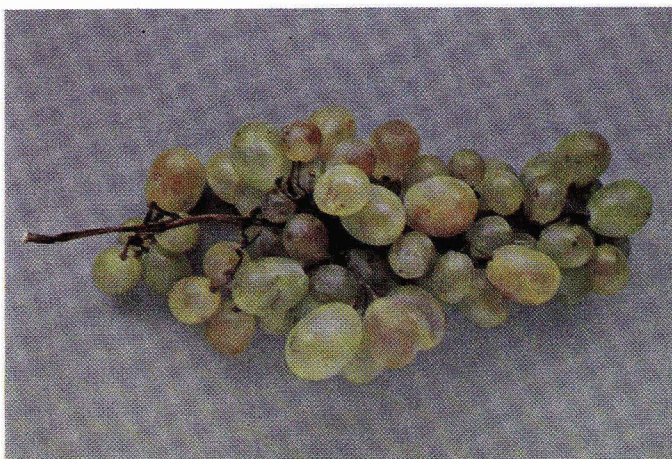
The Ohanez (Almeria) is a late white grape with a tough skin and keeps well. However, it develops a scald-like discoloration of the skin in storage which ranges from a general dull appearance to a distinct brown discoloration that may involve the whole surface of individual berries. Discoloration is confined to the skin and subepidermal tissue. Flavour of the affected berries remains normal.

Little is known of the cause of the disorder and there is no satisfactory control. Nevertheless it has been found that fruit from strong vines and fruit picked in the middle of the normal picking period discolour less, and also that the greener, less mature berries are more prone to scald.



Over-storage scald of Williams Bon Chrétien pears.

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Storage scald of Ohanez grapes

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