NSW DEPARTMENT OF
PRIMARY INDUSTRIES

Growing lemons in Australia- a production manual - Readers' Note

This document is part of a larger publication. The remaining parts and full version of the publication can be found at:

http://www.dpi.nsw.gov.au/agriculture/horticulture/citrus/lemon-manual

Updated versions of this document can also be found at the above web address.

13. Other Disorders

Sunburnt fruit

CHIMERA

- ☑ A natural mutation

Sometimes a genetic mutation or chimera occurs in part of a tree that will cause fruit or leaves to be abnormally shaped, variegated or totally lacking in chlorophyll (green pigment).

Photo by April Winchel
Chimera

Chimera in Fino lemon

WIND INJURY

- ☑ Plant windbreaks
- ☑ Fruit are most susceptible to damage in the first 12 weeks after petal fall
- ☑ Wind blemish scars are dark-ened by copper sprays

Wind damage is one of the most important factors that reduces fruit quality. A fruit quality survey (in the Gosford district on the Central Coast of NSW in 1992/3) which examined 3,400 orange fruits found more than 60% of fruit showed wind damage. Lemon fruit would be expected to have a similar to higher amount of damage especially Eureka and Meyer which tends to produce fruit on the outsides of trees.

Not only does wind damage fruit, but it can also retard tree growth and reduce yield. The provision of effective wind breaks is very important. Young fruitlets and foliage are particularly delicate, and can easily be injured in strong winds. About 95% of all wind blemish to fruit occurs within 12 weeks of petal fall. After this time the rind tissue is hard enough to withstand abrasion.

Windrub scarring on mature fruit

Ridges caused by wind damage at fruit set.

Damage results when the wind lashes young fruitlets against thorns, dead twigs, branches, and even mature leaves. Fruitlets injured in this way develop raised areas in the form of ridges and bumps on the surface. Within a few days of injury, corky tissue develops and acts as a protective layer. Although initially raised and coarse in texture the scar smooths out over time. As the fruit colours the wind scar becomes buff coloured. The final colour varies from buff to almost black depending on the amount of copper fungicides used (which tend to darken the scar). Lemons are more likely to retain some thickening and ridging of the rind as they mature.

For more information on windbreaks refer to the Orchard Establishment section of this manual.

WINTER YELLOWS

Symptoms

Yellowing of the youngest foliage in late March and April with the onset of cool temperatures. The yellowing is normally restricted to the late summer/autumn leaf flush but in young trees can include all leaves. In severe cases leaves fall.

Photo by Greg Moulds
Winter yellows

The incidence of winter yellows is sporadic and can occur in any region in Australia. It is more common in years when good growing conditions continue late into autumn. Trees 2-5 years old carrying no crop and which have made vigorous growth in late summer/ early autumn are most often affected.

During winter, the root systems of affected trees become depleted of stored starch and can die. As temperatures become warmer in spring, trees gradually recover and the foliage re-greens. Some young trees may not recover if root death has been substantial.

- ☑ The youngest leaf flush goes yellow in late autumn with the onset of cooler temperatures
- ☑ Common in years when good growing conditions extend late into the season
- ☑ Trees 2-5 years most susceptible
- ☑ Leave some fruit on young trees to reduce the effects
- ☑ Apply fertilisers in late winter to help trees recover.

Key References

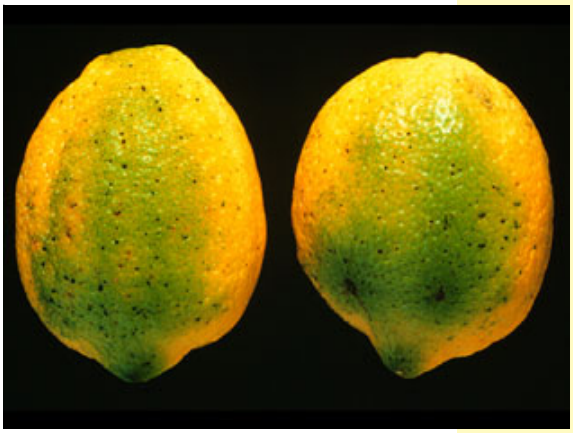
Broadbent, P. and Fraser L. R. **Winter Yellows of Citrus**. Agricultural Gazette of NSW. Vol. 90, No. 5 pp 41.

Other Examples of Damage to Lemons

Photo by Greg Moulds
Mechanical damage

Frost damage on foliage

2-4D damage



Copper damage

Hail damage on fruit