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Internal decline of lemons

O M. Goss

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LEMONS maturing on the trees during summer sometimes become affected with the condition known as internal decline.

Externally, affected fruits show few symptoms, apart from a premature yellowing of the stylar end (the end away from the stalk) or a slight one sided malformation, but, on cutting, the tissues appear collapsed and are sometimes stained pinkish brown to black (see Figs. 1 and 2).

Internal decline is a physiological disease which may occur in all lemon growing areas. However it is more prevalent in light rather than heavier soil types and is very common in home gardens in the Perth metropolitan area.

CAUSE

The main cause of internal decline is withdrawal of water from the fruit by the leaves during hot arid weather when the trees become stressed for moisture. Liability is increased by dry soil. Internal decline may however develop even if the soil is moist when climatic conditions are such that the rate of transpirational water loss from the foliage exceeds the rate of water absorption by the roots.
CONTROL MEASURES
As adverse climatic conditions are largely responsible, control is difficult, but the following measures will help to reduce the incidence.

(1) Avoid wide fluctuations in soil moisture by judicious irrigation, and by the incorporation of loam or humus-forming materials in sandy soil types.

(2) Mulch the soil surface with compost, lawn cuttings, sawdust or similar material to help retain the moisture.

(3) Do not use excessive amounts of nitrogen fertiliser which will promote sappy growth, but apply a balanced fertiliser, including phosphate and potash which will encourage root development.

(4) Where practicable use wind breaks to overcome some of the effects of hot drying winds.

PLANT-CAUSED FIBRE BALLS IN STOCK
A SURPRISING number of prickly, fibrous, hairy and woolly plants are eaten by sheep running on uncleared country. Although these species undoubtedly have some nutritive value, some of them may produce harmful effects.

Prickly leaves and sharp-pointed seeds, for instance, often cause mechanical injury in the mouth as well as irritation in other parts of the body. But the fibrous and hairy plants may produce a more insidious type of injury, which is hard to detect in the early stages. Plants of this type commonly cause the formation of fibre balls in the stomach of animals which have been grazing on them for long periods.

Plants such as Guildford grass are a common cause of fibre balls, particularly in cattle. When eaten by animals, the fibres of these plants, being resistant to the digestive juices, are not broken down as is the other plant material and are readily tangled and felted together by the action of the stomach walls. Gradually, more pieces of resistant material are added and an obstructing mass, or fibre ball, is formed.

The paddy melon is another species which is reputed to cause similar trouble. The stems are long and fibrous, although as most farmers know the plants are readily eaten by stock during the summer months. It is interesting to note that this plant has also been suspected of causing stock losses in New South Wales and South Africa, and has been incriminated as the cause of blindness in horses in New South Wales.

More obvious sources of fibres are plants which have a hairy or woolly covering on the leaves or stems. There is a great variety of these plants in the agricultural and pastoral districts and most of them appear to be palatable. The species that probably cause the most trouble are those which have a covering of soft curly or woolly hairs. These structures could be expected to felt together more readily than straight or rigid ones. Plants like the large woody Mullas Mullas or the species of Solanum which are sometimes known as bluebush because of their large blue flowers, are important in this group.

Another type of covering found on many native plants, particularly those in the Hibiscus and related families is composed of rigidly branched hairs. These may consist of a long central axis with horizontal branches, like a miniature Norfolk Island Pine, or they may have a short axis and radiating branches, the whole hair having a starlight appearance.

The structures produced on the seeding head of the many species of the daisy family probably also contribute to the trouble. These structures may be curled woolly hairs such as cover the seeds of the cape weed, or they may be feathery as in many of the native species. A number however, are rigid and unbranched, similar to those produced by stinkwort, and may possibly have similar effects.

The occurrence of fibre balls in sheep is fairly common, and since the plants which are largely responsible for them are widespread, their prevention is difficult where sheep are run under range conditions.

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