

- Treat all cannery fruit maturing during the hot months with a reflective, clay-based sunscreen.
- Sunscreens are rarely used on fruit for the fresh market because the residue does not appeal to customers.
- Using 'paper wool', 'wood wool', or paper bags is considered more suitable for fresh market pineapples.

Frost injury

See plates 84 to 87.

Occurrence

Frost injury usually occurs when cold air accumulates in low-lying areas, or where airflow off higher ground is impeded by trees or other obstructions. It occurs more frequently in southern Queensland, especially Dayboro, the Maroochy and Mary Valleys.

Symptoms and damage

Pineapple plants and fruit are very susceptible to frost damage.

Plant damage In mild cases the upper surface of horizontal leaves develops a red and white, flecked, scorched appearance.

More severe injury freezes the leaf tissue, causing it to turn yellow and brown, and the whole leaf may die. The dead leaves become papery. Young fields affected by frost during the vegetative phase often recover to produce an acceptable crop. Crops injured near flower initiation will have reduced yields.

Very severe frosts can kill the growing point causing suckering.

Fruit symptoms Frost during fruit development can cause heavy losses. The fruit skin is damaged and inter-fruitlet cracks subsequently develop. As damaged fruit matures it is very susceptible to disease entry (refer to yeasty rot, page 15), so harvest at early maturity.

Crown symptoms Crown damage can vary from mild leaf burn to death of the growing point or the whole crown.

Management

- Plant crops in sites free of frost.
- In frost-susceptible areas, ensure that there are no restrictions to cold air flow on the downhill side of the crop. Keep gullies within or bordering pineapple fields free of grass growth and slash the area next to the pineapples. Be prepared to lose crops in low areas in frosty years.
- If you do plant in areas subject to frost, avoid cycles which will have fruit developing during the winter period.
- Where fruit is maturing in an area susceptible to frost, cover the fruit with a brown paper bag to reduce skin damage.

Fruit and fruit stem splitting

See plate 88.

Occurrence

Fruit and fruit stem splitting or cracking is rarely seen in pineapple plantations but affected fields can be very badly damaged.

Rapid changes in fruit growth rates near harvest may cause fruit to split. Fruit which develops during relatively dry, cool conditions and then is subjected to abundant rainfall during the final fruit filling stages will crack, mainly between the basal eyes of the fruit. Similar injury has been linked to very heavy mite or mealybug infestations, boron deficiency or frost. Care is required in diagnosing the exact cause of fruit splitting.

Fruit stem splitting usually occurs in spring on crops due for harvest in late summer. Little is known of the conditions leading to this. It seems to occur mainly on fruit induced in early spring with sodium ANA (it is less severe with ethephon) when the young, developing fruit emerges from the heart of the plant during hot, humid weather. It appears to be the result of a change from slow to rapid fruit stalk elongation. No pest seems to be associated with fruit stem splitting, but there may be nutritional and/or water status factors involved since the problem appears more common in the sandy, coastal regions than the heavier soils of interior areas.

Symptoms and damage

Fruit splitting often occurs as deep horizontal splits between eyes at the base of the fruit. During humid weather the fruit breaks down rapidly. Under drier conditions, the cracked fruit tends to partially seal itself. These fruit have no market value.

Fruit stem splitting usually occurs about 1 to 5 cm under the fruit. The cracks appear horizontally across the stem, usually on one side only. Often the same side is affected over the whole field. The crack may heal, but strong wind or other disturbance will cause the fruit to crack off completely. Lopsided fruit can sometimes develop if the crack heals early.

Management

- Little can be done to predict the incidence or lessen the impact of splitting. If access to irrigation is available, supplementary applications at dry times may help.
- The introduced hybrid 53/116 has little water storage tissue in the leaf. It is more susceptible to drought and hence fruit splitting at maturity. Take this into account when evaluating the variety.

Prickly eye

See plate 89.

Occurrence

Fruit harvested in southern and central Queensland from mid-November to mid-January often show symptoms of prickly eye.

The symptoms occur when the early stages of fruit development and flowering take place during cold weather. The fruit is otherwise healthy.

Symptoms and damage

Prickly eye fruit has very pronounced eyes. Instead of being flat, as is the case with normal Smooth Cayenne fruit, each eye is quite conical. Fruit affected are reported to be more susceptible to blemish. Internally, the flesh is drier than normal and prominent cavities appear in the fruitlets. Because the fruit do not

fill out properly, fruit mass and therefore yields are seriously reduced.

The fruit is unattractive and does not sell well on the fresh market. Fruit harvested from north Queensland rarely shows this problem and commands a fresh market price premium at this time. The north Queensland crop harvest schedule takes advantage of this.

When prickly eye fruit are processed at the cannery, the normal grading results in cylinders covered with unremoved skin. The heavy trimming needed greatly reduces recovery.

Apart from the unattractive appearance and lowered recovery, prickly eye fruit are excellent eating, generally having high sugars and low acidity.

Management

- Growers in southern Queensland should avoid inducing fruit in late summer (March–April).
- Fruit induced in this period should be covered with paper bags as soon as flowers appear (before petalling begins). This will help reduce prickly eye but will not eliminate it.

Urea spray burn and rot

See plates 90 to 93.

Occurrence

During hot spring–summer periods, a rot similar to phytophthora heart rot can occur. This rot occurs when dirty water is used in applying urea fertiliser. Bacteria in the water break down the urea, releasing ammonia. The soft tissue in the pineapple heart is quickly damaged by ammonia, and the bacteria and other rot organisms quickly colonise the damaged tissue.

Symptoms and damage

The centre leaves of affected plants become discoloured and develop a soft, wet rot and a foul odour. The growing point of the plant dies and suckers develop.

During humid weather, the plant may exude a clear gum. In milder cases, blisters filled