

Custard apple information kit

Reprint – information current in 1998



REPRINT INFORMATION – PLEASE READ!

For updated information please call 13 25 23 or visit the website www.deedi.qld.gov.au

This publication has been reprinted as a digital book without any changes to the content published in 1998. We advise readers to take particular note of the areas most likely to be out-of-date and so requiring further research:

- Chemical recommendations—check with an agronomist or Infopest www.infopest.qld.gov.au
- Financial information—costs and returns listed in this publication are out of date. Please contact an adviser or industry body to assist with identifying more current figures.
- Varieties—new varieties are likely to be available and some older varieties may no longer be recommended. Check with an agronomist, call the Business Information Centre on 13 25 23, visit our website www.deedi.qld.gov.au or contact the industry body.
- Contacts—many of the contact details may have changed and there could be several new contacts available. The industry organisation may be able to assist you to find the information or services you require.
- Organisation names—most government agencies referred to in this publication have had name changes. Contact the Business Information Centre on 13 25 23 or the industry organisation to find out the current name and contact details for these agencies.
- Additional information—many other sources of information are now available for each crop. Contact an agronomist, Business Information Centre on 13 25 23 or the industry organisation for other suggested reading.

Even with these limitations we believe this information kit provides important and valuable information for intending and existing growers.

This publication was last revised in 1998. The information is not current and the accuracy of the information cannot be guaranteed by the State of Queensland.

This information has been made available to assist users to identify issues involved in custard apple production. This information is not to be used or relied upon by users for any purpose which may expose the user or any other person to loss or damage. Users should conduct their own inquiries and rely on their own independent professional advice.

While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained in this publication.



Queensland Government



Common **QUESTIONS**

This section contains the most commonly asked questions about growing custard apples. The answers are as brief as possible. Where this is difficult and more detail is required, we refer you to other sections of the kit. Symbols on the left of the page will help you make these links.

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Varieties

What varieties should I plant?

African Pride is suitable for all custard apple growing areas except tropical coastal North Queensland. Hillary White and Pinks Mammoth are suitable for warm coastal subtropical areas such as Atherton, Bundaberg and the Sunshine Coast. A range of other varieties are suggested for trial. The varieties you plant will depend mainly on where your orchard is located.

African Pride has the advantage that it produces a good crop without hand pollination, though some North Queensland growers prefer to hand pollinate to ensure fruit for the higher priced early market. On the downside, it is more prone to skin blackening and other fruit quality problems.

Hillary White and Pinks Mammoth have highly consistent fruit quality, but require hand pollination to set good crops of quality fruit. These varieties also appear to be preferred in Asian export markets. We suggest prospective growers seek current advice from custard apple marketers before making a final decision.



Variety selection
Section 4 page 44

What is your opinion of Hillary White?

Hillary White is widely accepted as a good all-round variety and is one of three main varieties recommended for warm subtropical areas. Its main advantage is the ability to produce a crop earlier than African Pride or Pinks Mammoth. However, its major disadvantage, which it shares with Pinks Mammoth, is the need for hand pollination to set a good crop and to ensure good fruit shape. Like Pinks Mammoth, it is also very susceptible to damage from yellow peach moth.

Pruning and defoliation

What can I do to keep the height of my trees down?

When you plant your trees, plant them at a wide enough spacing (8 m x 8 m for African Pride and 10 m x 8 m for Pinks Mammoth and Hillary White). These spacings mean you can spread the tree canopy outwards and the tree will then be less inclined to grow upwards. To get the tree canopy to spread outwards, prune and train young trees into an open vase shape.

How do I prune custard apples?

It's important to start pruning and training custard apples from planting. Start pruning to an open vase shape and maintain that shape for the first four years. Then keep the canopy open, so that light can penetrate and achieve fruit distribution throughout the canopy.

I can't drive my tractor between the trees any more. What should I do?

If this is your problem, the trees have been planted too close. You need a tree spacing as near as possible to:

- 8 m between rows and 8 m between trees for African Pride;
- 10 m between rows and 8 m between trees for Pinks Mammoth and Hillary White.

Once trees have been planted too close, the only thing you can do is to prune them more heavily to allow machinery access.

When and how do I defoliate my trees?

Defoliate trees about one month before normal budbreak (about August/September in south-east Queensland). Leaves are removed so the buds will come away a lot more quickly, thereby producing an earlier crop. To defoliate trees, spray with a 25% urea solution.

My leaves and fruit are touching the ground. How should I prune them back?

When you are pruning each year, make sure that none of the branches can touch the ground. You can check this by bending down the soft limbs to see if they can touch the ground. If they do, the best thing is to shorten the limbs back to a point that will prevent this.

Pests and diseases

How do I control fruitspotting bug?

Fruitspotting bug is generally worst in those parts of the orchard adjacent to bushland. Monitor these parts of the orchard from about November/December, and when bugs or damage are detected, start spraying. Use an appropriate chemical from the *Problem solver handy guide*. Follow label directions. Spray every 14 days until monitoring indicates the risk has passed.

How do I control mealybug?

First spray the trunks of trees and the ground for about a half-metre around with an ant-controlling chemical to prevent ants farming the mealybugs. Spray two or three times a year in August, December and February. Also prune trees to prevent branches and leaves from touching the ground, so that ants can't crawl up into the tree.

The preferred approach is then to monitor the developing fruit at regular intervals and apply treatments only when mealybug populations reach a predetermined action level. The preferred treatment then is to introduce commercially available parasites



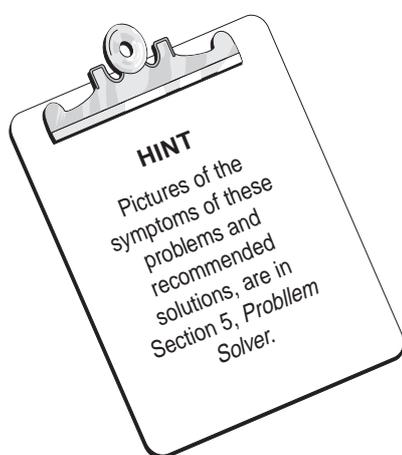
Use of parasites
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of the mealybug. A less preferred alternative is to spray. If spraying, use an appropriate chemical from the *Problem solver handy guide*. Follow label directions.

Problems

What are the black spots on my fruit?

There are many causes of black spots. If the spots are on the shoulders of the fruit, the most likely cause is fruitspotting bug. Otherwise, the problem is probably one of the fruit diseases such as Disease X, black canker, Diplodia fruit rot, purple blotch, *Cylindrocladium* spot, or *Pseudocercospora* fruit spot.



I've got black soot on my fruit. What is it?

This is sooty mould, a fungus that grows on the undigested sugary secretions (honeydew) from either scale insects or mealybugs. Control of the problem involves controlling the scales or mealybugs and, more importantly, the ants that carry them up into the trees and protect them from predators and parasites.

My custard apple tree has died. What might be the cause?

The most likely cause of tree death in custard apples is bacterial wilt. Unfortunately there is no treatment for affected trees. Other soil fungi may kill small numbers of trees over time, and these deaths are often incorrectly attributed to bacterial wilt. To prevent the problem, avoid planting in sites that are poorly drained and where tomatoes, capsicums, eggplant, potatoes and ginger may have been grown previously. Also, use cherimoya rootstocks, which are more resistant to the disease.

Why is my fruit going black?

If the fruit is going black on the tree, the most likely cause is Disease X, which is more common in African Pride and capable of causing high crop loss. Another common cause of fruit blackening is the disease purple blotch, which is a soil-borne fungus favoured by prolonged wet weather and spread by soil splash onto the fruit.

If the fruit is going black after harvest, there is a range of causes. Rainfall and high humidity at or near harvest is thought to cause extensive blackening of the skin.

Why are my leaves yellow?

The most likely causes are bacterial wilt or a nutrient deficiency (for example iron or nitrogen). If you suspect nutrient defi-

ciency, get a soil and leaf analysis done but remember that damaged roots may have difficulty in taking up nutrients.

Why won't my trees set fruit?

With Pinks Mammoth and Hillary White, the most likely cause of poor fruit set is lack of pollination. This can be exacerbated by cold conditions, wet weather, low humidity (less than 60% relative humidity), lack of nutrients and excessive vegetative growth. Also remember that even under good growing conditions, these two varieties can take up to five years to begin cropping. You will need to hand pollinate Pinks Mammoth and Hillary White in most seasons to get a good crop.

If small fruit falls off in these two varieties and in African Pride, check fallen fruit and fruit on the trees for signs of feeding by fruitspotting bug.

Tree management

a key issue



Hand pollination
Section 4 page 114

How do I hand pollinate custard apples?

Hand pollination is relatively simple and straightforward but you need to get it right. The complete process, with illustrations, is shown elsewhere in this kit.

more info



Organic organisations
Section 6 page 3

Can custard apples be grown organically?

Custard apples can be grown organically but it is more difficult than conventional production because only specific chemicals and fertilisers can be used. If you are considering organic production, first seek advice from organic growing organisations.

Can I grow custard apples with limited chemical use?

Custard apples have fewer serious pest and disease problems than most other tree crops (for example citrus and macadamias) and with good management most of these may be controlled reasonably well by non-chemical methods. However, to achieve the highest quality fruit, there will be some instances where chemicals are useful as part of an integrated pest management program (IPM).

Harvesting and marketing

How do I know when to pick my fruit?

Knowing when to pick Pinks Mammoth and Hillary White fruit is easier than for African Pride. Fruit is ready for harvest as soon as there is creaming of the grooves between the fruit carpels. Maturity in African Pride is much more difficult to determine and involves a three-step process.

1. Make sure it is close to the normal time of harvesting for African Pride in your district.
2. Check fruit carefully for these external changes:
 - change in skin colour from dark green to a lighter green (dulling of colour);
 - grooves between the carpels widening and lightening in colour (creaming of the grooves may sometimes be present on the shoulders of the fruit);
 - carpels become fuller and more rounded, particularly at the base of fruit. (The fruit may also appear rounder in shape and less pointed.)
3. Harvest a sample of fruit, hold at room temperature and check that it ripens to good eating quality within seven days.



Quarantine
information
Section 6 page 9

Do I have to dip fruit for Queensland fruit fly?

There is no need to dip fruit consigned to markets in Queensland and most of New South Wales. However, for other states there is a system of approved field control measures, inspection and dipping procedures. Full details are supplied in an Interstate Certification Assurance arrangement (ICA-18), which allows growers to become accredited and audited. Additionally, fruit may need to be individually inspected for other pests (for example melon thrips in Western Australia).

Organically grown fruit sold to all states is individually inspected at full cost to the grower.