

# Persimmon information kit

Reprint – information current in 2005



## REPRINT INFORMATION – PLEASE READ!

For updated information please call 13 25 23 or visit the website [www.deedi.qld.gov.au](http://www.deedi.qld.gov.au)

This publication has been reprinted as a digital book without any changes to the content published in 2005. We advise readers to take particular note of the areas most likely to be out-of-date and so requiring further research: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](http://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- Financial information—costs and returns listed in this publication are out of date.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](http://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 2005. 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 persimmon 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 sweet persimmons. 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.

### General

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#### How big is the sweet persimmon industry?

There are approximately 350 000 trees in Australia with an estimated current production of 450 000 trays. An average orchard size is 400 trees. The gross value of the industry is estimated to be about \$8 million. Australia produces less than 1% of the world production.

### Money

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#### What prices can I expect to get for my sweet persimmons?

Prices are extremely variable and are dependent on the supply and demand of sweet persimmon on the market and the size and quality of the fruit. The price received for sweet persimmons is also influenced by time of harvest (early varieties receive higher prices) and timing of import of sweet persimmons from New Zealand. Good quality fruit can be sold for \$10 to \$16 (wholesale) per 4 kg tray during the peak season, but, in contrast, poor quality fruit may sell for as little as \$3 per tray.

Yield, fruit quality, market price, cost of production and management ability of individual growers vary widely and returns are difficult to predict. Yields range from 15 to 35 t/ha for mature trees. If the average price is \$12 per tray, and a yield of 20 t/ha (5000 trays) is achieved, the gross income will be \$60 000 per hectare.

## What you need to grow sweet persimmons

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### I'm thinking about growing sweet persimmons. Will they grow on my farm?

Sweet persimmons are fairly adaptable and can be grown in many areas of Queensland. However, production of high quality fruit is best suited to the following conditions:

- an absence of late frosts at flowering time, which is normally in mid-October
- at least 1400 hours of sunshine during the growing season from October to April
- mean daytime temperatures of between 15°C and 22°C during fruit ripening from March to May
- an absence of high daytime temperatures, particularly above 35°C, during fruit ripening
- a minimum winter chilling of at least 100 chill units, but preferably 350 to 550 chill units. Sweet persimmons can be grown in areas that receive up to 1000 chill units, as long as temperatures during the period of fruit ripening (maturity) allow loss of astringency
- minimal rainfall during fruit development and ripening from February to May
- protection from strong winds
- well-drained sandy loam or loam soils without high levels of manganese
- adequate supply of high quality irrigation water
- netting to protect fruit from birds, fruit bats and possibly insect damage, and trellising to reduce fruit blemish (as persimmons are very susceptible to bird damage, netting of the crop area is essential).

Based on these requirements, ideal growing areas in Queensland are subcoastal areas such as Toowoomba and the South Burnett. However, sweet persimmons are grown successfully along the coast, and inland from Cairns through the eastern and southern states to Perth in Western Australia.

## Selecting land

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### Is my land suitable for growing sweet persimmons?

Sweet persimmons grows on a wide range of soil types, but best production requires well-drained soil at least 500 mm deep and a north to north-east aspect providing protection from cold and/or strong winds. While persimmons can be grown in areas that receive frosts (but no late frosts), best production occurs on frost-free sites. Slopes of 15% or less are preferred, as it is easier to design and lay out the plantation, and machinery can be operated more safely.

### Are there any restrictions for clearing land for sweet persimmons?

In New South Wales and Queensland, approval for clearing land is usually required under various state and local government regulations. In New South Wales, land with slopes greater than 30% is protected and requires special approval for clearing. Contact the Department of Natural Resources and Mines (Queensland) or the Department of Infrastructure, Planning and Natural Resources (NSW) to establish what restrictions apply to your situation.

### What is the cost of netting?

The cost of netting depends on whether the netting structure is to be permanent or temporary, and the type of net to be erected. Permanent structures with fine mesh cost up to \$50 000 per hectare, while other systems cost considerably less. Netting costs are related to the topography, location of the block being netted, the type of net used and whether farmers erect the netting themselves.

### How many trees should I plan to grow?

Commercial orchards vary in size from 200 to 3000 trees. Orchards with fewer than 200 trees are considered too small to be commercially viable and labour requirements for 1000 trees could be more than one family could handle on any of the three busiest occasions each year—pruning, thinning and harvesting. However, labour can be hired during these times. The choice of orchard and the number of trees depends on personal situation (goals, age, experience, capital etc.) and limitations of physical resources (land, water, labour). All these factors need to be taken into account when planting or purchasing an orchard.

## Establishing an orchard

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### What varieties should I grow?

We suggest Fuyu. This variety should make up at least 50% of your planting. To spread the risk and workload, we suggest supplementing Fuyu with early season or late season varieties, or both. Ichikikei Jiro is an early to mid-season variety and Suruga is probably the best late season variety. Most persimmon varieties need polliniser plants and we suggest Gailey as the polliniser. New patented varieties from Japan are under evaluation and these should be test-planted as they become available.

### Where can I get 'clean' healthy trees?

If possible, purchase trees from nurseries with experience in persimmons, as production of quality nursery stock requires skill and experience.

### Do I need pollinisers for persimmons?

Some varieties of persimmon such as Fuyu can set fruit and grow fruit to a good size without pollination, particularly in the drier southern states. However, research in Queensland indicates that pollinisers improve fruit set, size and shape and reduce the risk of fruit drop. In high rainfall areas with lower light levels, a ratio of one polliniser to eight trees is recommended. In other areas, a slightly lower frequency may be used. Alternatively, some growers now graft pollinisers onto one limb of every three to five trees. This appears to increase fruit set. Gailey and Dai Dai Maru are recommended pollinisers. However, Dai Dai Maru requires more regular, and harder, pruning.

### How do I go about fertilising persimmons?

Use leaf and soil analysis to accurately determine the requirements of your trees. This should be done each year from February to March, about one month prior to harvest. Care is required with nitrogen fertiliser as high levels produce excessive vegetative vigour and reduce the crop potential. Soil pH is also critical for persimmons and is best held at 6.5 to 7.0 (1:5 water test). Soil calcium should be greater than 8.0 meq/100 g to reduce manganese accumulation in the fruit which leads to the green blotch fruit disorder.

## Growing persimmons

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### How do I prune persimmons?

We recommend that persimmons be grown on a trellis and pruned to a palmette system (espalier, in which branches are trained to grow horizontally, is preferred to the 45° branch angle alternative) or open V-trellis (Tatura) system. This is seen as the most effective way to achieve good light penetration, good production of quality fruit, good framework for the production of fruiting wood, good strong tree structure, ease of harvesting and reduction of substantial wind rub blemish. As the actual pruning system is quite complex, detailed information is provided elsewhere in this book.

**Nurseries**  
Chapter 5 page 214.

**Pollinisers**  
Chapter 4 page 96.

**Tree training  
and trellising**  
Chapter 4 page 128.

## Things that can go wrong

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### My young fruit are falling off. What's wrong?

There are a few possible explanations:

- too much nitrogen fertiliser applied during the previous season. This produces excess vigour in the tree, causing most of the energy to go to the leaves, thereby starving the fruit
- very hard pruning. This induces overly vigorous shoots and consequently fruit drop in a similar way to fruit affected by excessive nitrogen application
- poor pollination, which can be caused by a lack of pollinisers, insufficient polliniser flowers, a lack of bees or low light levels from overcast weather
- low boron levels
- soil water stress. Seedless fruit and poorly pollinated fruit are more susceptible. This problem can be exacerbated by using an inadequate number of drippers per tree
- other stress factors.

However, remember that some natural thinning or drop of the fruit occurs where there is a heavy crop load.

### My tree has died. What could have caused this?

There are several possibilities:

- waterlogging of the roots after heavy rain in poorly drained soils
- incompatibility of the grafted scion with the rootstock
- constriction of the taproot as it grows, which can generally be attributed to poor nursery practice or poor planting technique
- verticillium wilt (caused by a fungus)
- phytophthora rootrot (caused by a fungus).

It is important to point out that none of these problems actually cause the sudden death of trees; often they cause a slow decline that eventually results in tree death.

### My fruit are colouring unevenly. What is the cause?

There are a number of possible explanations including:

- green blotch disorder. This is caused by manganese accumulation, generally from either soil pH being too low or naturally high levels of manganese in the soil. Get your soil pH checked and maintain or adjust it to 6.5 to 7.0 (1:5 water test)
- low soil calcium levels. Ensure soil calcium levels are kept higher than 8.0 meq/100 g
- excessive leaf density and shading, particularly on vase-shaped trees
- warm night temperatures in autumn.

This disorder is more prevalent in the wetter coastal regions.

### My fruit have black marks on them. What could be the cause?

There are a number of possibilities:

- Green blotch disorder may cause a black speckling over the green blotches.
- In high rainfall areas, high humidity can result in fine speckling. There is nothing you can do about this problem.
- Wind rub can cause irregular black line marks.
- Insects such as fruit fly, fruitspotting bug and fruitpiercing moth are all capable of producing round black marks.
- Spray damage may cause a wavy watermark. Persimmons are very sensitive to sprays, particularly emulsifiable concentrates. For this reason, it is best to monitor pests and apply sprays only when necessary.

### Leaves are falling off while fruit is still on the tree.

#### Is this normal?

No, this is not normal. It is important that the leaves be kept on the tree while fruit is present to avoid sunburn and possible reduced sugar levels in the fruit. The main causes of early leaf fall are:

- insufficient water during dry conditions
- salt in soil or irrigation water
- angular leaf spot, a fungus disease. Good nutrition, water management and fungicide sprays are the keys to keeping angular leaf spot under control. Angular leaf spot can also cause premature fruit softening and poor shelf life
- low nitrogen and potassium levels. These make leaves more susceptible to leaf disease
- early season frost.

### My trees flowered well but have not set much fruit.

#### What has happened?

The same things that cause young fruit to fall off—excess vigour, hard pruning, poor pollination, soil water stress, boron deficiency and other tree stress factors—are the likely causes.

### I have borers in my trees. What can I do about them?

If the borer is causing girdling or ringbarking at the base of the branches, it is most likely the borer of a clearwing moth. As yet, there is no chemical specifically registered for the control of this borer. It is recommended that, where possible, affected areas be scraped clean to physically remove and kill borers. Then seal the wounds with plastic paint or a tree-sealing compound to prevent fungal attack.

An expensive alternative is to use clearwing moth pheromones to disrupt mating by the moths. This costs about \$400 per hectare per application and two applications per season are usually required. It is important to ensure that nursery stock is clear of the pest so it is not introduced into the orchard in the first place. Early prevention is essential to prevent build-up in subsequent seasons.



Pest and disease  
management  
Chapter 4 page 193.



### How do I control Queensland fruit fly?

We recommend that you monitor fruit fly activity using traps starting November–December. The objective is to monitor fruit fly populations and reduce their number before the fruit starts to colour (which can be as early as late December), when the fruit is highly susceptible. Where fruit fly populations indicate low pressure, use bait sprays. In most cases, this will be sufficient. Where pressure is high, cover spraying will also be necessary. Another option is to use fine netting to exclude pests such as fruit fly.

### Propagation

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#### I'm thinking about producing my own persimmon nursery trees. Where can I get rootstocks or seed?

We don't recommend that you produce your own trees unless you have extensive nursery experience, as it is difficult to produce good quality persimmon nursery stock. In addition, nursery tree suppliers have generally gone to considerable lengths to arrange ongoing rootstock seed purchase from Japan. For these reasons, we recommend you buy your trees from a specialist persimmon nursery.

### Harvesting

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#### When do I harvest my fruit?

Harvest time should be determined by two factors:

- colour of the fruit
- sugar level measured by a hand refractometer.

The colour needs to be a full orange colour with no visible green. Colour charts have been developed in Japan and New Zealand as a guide to harvesting. The sugar level (measured by a refractometer) should be 14–15° Brix.

### Questions about spraying

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#### How do I get spray accreditation?

Spray accreditation can be obtained by attending a course provided by an accredited trainer. Accreditation is given to people with a valid National Farmcare Chemical User Certificate. Farmcare is changing its name to ChemCert Australia and the Farmcare qualification will soon be known as ChemCert Australia Farm Chemical User Accreditation. At present, no other certification is recognised by the Australian Pesticides and Veterinary Medicines Authority (APVMA). State-based Farmcare (ChemCert) committees are responsible for delivering training in each state.



ChemCert contacts  
Chapter 5 page 223.



### **Do I need training in the safe use of chemicals?**

In some states you cannot buy chemicals unless you have a current spray accreditation and in Australia, endosulfan can now only be supplied to, or used by, an authorised person. An authorised person is one who conducts the business of selling or supplying agricultural chemical products, or is a state-licensed spray contractor, or is Farmcare Australia certified. In current Queensland law, you only need training in safe use of chemicals if you are a contractor spraying on other people's land or if you want to buy restricted chemicals.

However, most customers now see it as highly desirable for their growers to be able to demonstrate a safe, responsible use of chemicals. One of the best ways to demonstrate this is to obtain a Farmcare (ChemCert) accreditation. Remember spray accreditation must be renewed every five years.

## **Organic growing**

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### **Can I grow persimmons organically?**

There are problems with pest, disease and weed control, and with maintenance of adequate fertility. In most cases, yield will be reduced and fruit appearance may not be as good. Therefore you need to receive a significant price premium to offset this reduction. There is a small but growing niche for organically grown sweet persimmons that some growers may find profitable. There is also the advantage of reducing chemical usage. One possibility is to use netting to exclude pests.

A thorough investigation of the market is essential before proceeding. Be aware that significant new plantings can cause market gluts. Organic growing in the drier climates is more likely to prove successful than growing in wetter environments.

There are legal requirements, for example the Plant Protection Act 1989 in Queensland, for producers to manage weeds, pests and diseases in such a way that they pose no risk to other properties. This applies equally to organic and non-organic growing systems.