

Strawberry information kit

Reprint – information current in 1997



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 1997. We advise readers to take particular note of the areas most likely to be out-of-date and so requiring further research: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- Financial information—costs and returns listed in this publication are out of date.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 1997. 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 the strawberry 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 strawberries. The answers are as brief as possible. Where this is difficult and more detail is required, reference is made to other sections of the kit. Symbols on the left of the page will help you make these links.

Contents

Runners	2
Money	3
Hydroponic and organic growing	3
Things that go wrong	4
Varieties and planting	6
Land preparation	7
Fertiliser	7
Harvesting and marketing	8

Runners

Where do I get strawberry runners?

We recommend that you buy runners from one of the ‘certified’ runner suppliers listed in Table 1. These runners are grown on runner farms where special efforts are made to keep the plants free from diseases and nematodes. If you can't get runners from these suppliers, check the Queensland Fruit and Vegetable News classified section or your local newspaper around March for advertisements from other suppliers. Only varieties which do not have Plant Breeder Rights (PBR) can be obtained from other suppliers.

Table 1. ‘Certified’ runner suppliers

Certified runner grower	Varieties available
Queensland	
The Summit Strawberry Runner Growers Pty Ltd PO Box 36 THE SUMMIT 4377 Ph: (076) 853 338; Fax (076) 85 3330	Redlands Joy, Kabarla, Redlands Hope, Redlands Star, Coogee, Mindarie, Seascape
New South Wales	
Speets Strawberries 645 Old Pitt Town Road OAKVILLE 2765 Ph: (02) 9838 1552	Torrey, Tioga, Red Gauntlet, Seleka
Victoria	
Toolangi Certified Strawberry Runner Growers Cooperative Ltd 469 Kinglake Road TOOLANGI 3777 Ph: (03) 5962 9220 Fax: (03) 5962 9416	Chandler, Pajaro, Parker, Selva, Fern, Oso Grande, Seascape, Capitola, Mindarie, Coogee, Red Gauntlet, Tioga
Tasmania	
Tasmanian Highland Strawberry Runners c/- P Bignell Patrick Street BOTHWELL 7030 Ph: (03) 6259 5663 Fax: (03) 6259 5663	Coogee, Mindarie, Seascape, Tristar, Red Gauntlet, Tioga
Loyetea Strawberry Nursery c/- J Cox 1033 Upper Natone Road NATONE 7321 Ph: (03) 6436 2106 Fax: (03) 6436 2208	Red Gauntlet, Cambridge Rival, Tioga, Aiberry, Hokowase, Kunowase

Can I obtain runners of Californian varieties from the Queensland runner grower?

Only one Californian variety, Seascape, is currently available from the Queensland runner grower. All of the other Californian varieties must be obtained from the Toolangi Strawberry Runner Growers Cooperative in Victoria, which has sole Australian rights for the propagation of these varieties.

How do I grow my own runners?

We don't recommend that you grow your own runners because it is difficult to produce disease free runners on a fruit producing farm. Instead, buy your runners from the certified runner suppliers listed above. It is also illegal to produce runners from PBR varieties even if these runners are for your own use.

Money

How much fruit should I get from a plant and what price can I expect?

From most varieties, you should get two to three punnets (500 to 750g) of marketable fruit per plant per season (May to October). This assumes an average planting density of about 40 000 to 45 000 plants per hectare. Under high levels of management with some varieties, yields of four to six punnets per plant have been achieved. New growers should aim at the lower figure to start with. Where higher plant densities are used, yield per plant will be proportionally less.

Prices start at approximately \$2.50 to \$3 a punnet in May when fruit is scarce and hard to produce, and generally declines to 50c to \$1.20 a punnet at the peak of the season in August/September. Higher prices are always paid for large fruit of premium quality. Small or medium size fruit is always at the lower end of the range and may be difficult or impossible to sell when the market is well supplied. Fruit of low quality is difficult to sell at all times.



Price trends
Section 1 Page 3



Detailed economics of
strawberry production
Section 4 Page 9

How much money can I make from strawberries?

If you get two punnets of fruit per plant and an average price over the season of \$1.25 per punnet, you should expect to make about 50c per plant after production costs. This assumes that casual labour is used for all harvesting and packing with the owner supervising the whole operation. On smaller farms, the owner would also do a fair portion of the picking and packing, thereby increasing the per plant return. The cost of the owner's labour is not included in the calculation of the above figure.

Hydroponic and organic growing

I'm thinking about growing strawberries using hydroponics. Where do I start?

Hydroponic growing is complex and much less forgiving than growing plants in the ground. For these reasons, it is recommended that you do a lot of reading and research on the subject before you start. We also recommend that you engage a hydroponic consultant to guide you through the early stages.



Hydroponic strawberry
growing
Section 4 Page 46

How much money can I make from hydroponic strawberries compared with strawberries grown in the ground?

Recent evidence suggests that you can make similar money out of the same number of strawberry plants in hydroponics as you can in conventional ground culture. Although the costs of setting up the hydroponic system are greater and the yields are lower, the savings in labour and other costs compensate so that you should come out about even.

I want to grow strawberries organically. How do I go about it?

We suggest you first read as much on the subject as you can and talk to growers who are using organic growing methods. Next work for an organic grower, or even a conventional strawberry grower, for a season or two to learn the ropes. Also, contact organic producer organisations for their information and details on the certification processes for organic growing systems. Remember, organic growing systems are not as well developed and you should expect lower yields and quality compared to conventional growing systems.



Organic strawberry growing
Section 4 Page 54

Things that go wrong

I've got purple spots on my leaves. What is it, and what do I do about it?

It is probably one of the leaf spots (eye spot, scorch or leaf blight) caused by fungus diseases. Spray weekly with an appropriate chemical from the *Problem Solver Handy Guide*. Follow label directions. Make sure the leaves are being properly covered by the spray. In future, start spraying a week or so after planting to protect the new leaves as they emerge.



My leaves are going purple. What's the problem?

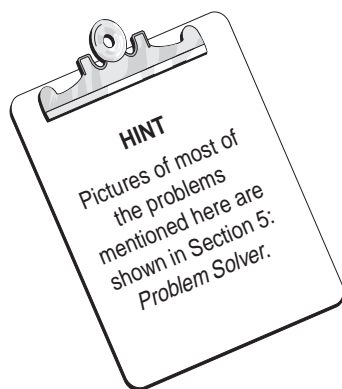
There are three likely causes of leaf purpling. The main one is spider mite damage. This can be confirmed by looking on the undersides of the leaves for the fine webbing and tiny mites. Lethal yellows disease results in an outer ring of purple leaves with small yellow leaves in the centre. Potassium and magnesium deficiencies produce a purpling of the outer edges of the leaves.

What is causing my fruit to split?

Rain damage is the most common cause but powdery mildew disease can also cause the problem.

My fruit are going soft and rotten. What's the problem?

There are three likely causes of the problem. A number of fungus diseases cause fruit rots, some producing white or grey mould on the surface. Queensland fruit fly may also cause soft spots on the fruit. Damage is mainly confined to spring and summer when the fly is more active. The other probable cause is rain damage.



My fruit are not colouring properly. They are pale pink or whitish, soft and taste awful. What's wrong?

The fruit are affected by a condition called albinism. This is generally associated with two things—overcast weather and high nitrogen levels. Get a leaf or sap analysis done immediately to confirm the problem. While waiting for the results, do not apply any more nitrogen fertiliser.

What causes bumbly fruit (tucked in end, distorted shape)?

The most common cause is poor pollination due to lack of bees or wet weather or both. Boron or calcium deficiencies, frost damage and Rutherglen bug may also cause the same symptoms.

What causes the large open 'frogmouth' at the end of the fruit?

Rapid changes in temperature are the main cause. The plant has trouble adapting to the changes and growth is uneven, resulting in splitting and a gaping hole at the end of the fruit. Parker is the variety most commonly affected.

How do I stop birds from eating my fruit?

In small backyard and hobby patches, you can try some form of bird netting over the plants. This must be a stiff net like shadecloth, to prevent birds from getting tangled in it. When you want to pick, you can peel back the net to get at your plants. For commercial patches, netting is generally not viable. Remember that birds may be beneficial by eating harmful insects. Also the damage may look worse than it really is. However, if you believe you have a problem that needs action, contact the Queensland National Parks and Wildlife Service for advice on what to do.

I am using Euparen but it doesn't seem to be working. Is there anything better?

No. If it's not working, it probably means that you are not applying it properly. You need to get very good coverage of leaves and fruit for it to work properly. Poor coverage could be due to worn nozzles on your sprayer, or the wrong sprayer setup. Get your sprayer calibrated. You can do this yourself or there are consultants you can hire to do this for you.

more info



Names of consultants
Section 6 Page 5

My newly planted strawberry runners are growing poorly and dying. What's wrong?

It sounds like what we call establishment stress syndrome. This results from new runners being immature when dug. It is more likely to occur in runners without leaves. Poor handling of runners before, during or just after planting accentuates the problem.

My established plants are wilting and dying. What's the problem?

If established plants start to die, it is most likely caused by one of the crown rot diseases. Crown rot can be identified by brown discoloration inside the crown. A less common cause is damage from white grubs chewing the roots.

Can I mix my various spray chemicals together?

Where possible, each chemical should be applied separately. Strawberry fruit and leaves are very susceptible to spray burn from chemicals mixed together. If you must mix chemicals together, follow the advice on the labels.

Varieties and planting

What varieties are best to plant?

If you are growing strawberries in coastal areas and intend to send your fruit to major metropolitan markets, we suggest you choose Redlands Joy and Kabarla for early season fruit and Chandler for later season fruit. Oso Grande is also suggested for trial as a later season variety. You should plant at least two of these varieties and possibly all four to spread your fruiting season. New varieties are released regularly and we recommend you trial these in small numbers as they become available. If you are sending your fruit to local markets only, suggested varieties are Redlands Joy, Redlands Star and Chandler because of their superior flavour. If you are growing for a 'pick-your-own' operation, try Redlands Joy and Kabarla.

In north Queensland, there is a need to trial the above varieties to ascertain their performance. In the colder inland areas of south Queensland, Selva and Chandler are the suggested varieties.

When should I plant strawberries?

A time between the second week of March and the first week of April is ideal for coastal areas of Queensland. For colder inland areas, mid to late April seems best.

a key issue



Selecting varieties
Section 4 Page 12

more info



Recommended
planting times
Section 3 Page 16

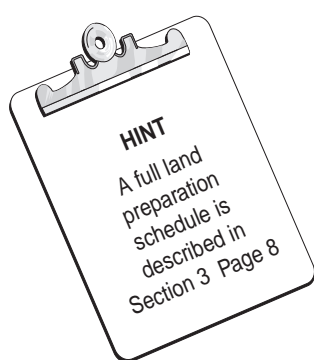
Land preparation

I want to grow strawberries. How should I get my land ready?

Start six months before planting by cultivating the soil and applying fertilisers and lime according to soil analysis results. Then follow the recommended schedule of green manure cropping, cultivation, soil analysis, fertilising for nutrient adjustment, cultivation and fumigation.

I want to grow strawberries, but haven't got enough time to plant green manure crops etc. What should I do?

Get a soil analysis done immediately. Then apply lime and fertiliser as recommended by the laboratory that analysed your sample. Use some pelleted poultry manure in conjunction with manufactured fertilisers. Remember that the lack of a green manure crop generally means that a lower plant performance can be expected.



Should I fumigate my soil before I plant?

We recommend fumigation if the soil has grown strawberries at any time in the last five years or if you are unsure of its crop history.

What fumigant is best?

A broad spectrum fumigant such as methyl bromide is the best as it kills nematodes, soil insects, diseases and weeds. Other similar fumigants are dazomet (Basamid) and metham sodium (Metham, Vapam), but these lack the overall performance of methyl bromide. Methyl bromide has a limited future life as it is gradually being phased out of use. Research is under way to find suitable alternatives. This will change our recommendations on fumigant use. In the meantime, if you are intending to fumigate with methyl bromide, hire an experienced contractor as the chemical is highly toxic and needs to be applied under plastic sheeting.



Alternatives to methyl bromide
Section 4 Page 37



Fertigation
Section 3 Page 26

Fertiliser

Can I put my fertiliser through the irrigation system?

Yes, as long as you use soluble fertilisers suitable for application through irrigation systems.

Is it all right to use foliar fertiliser on strawberries?

Yes, but don't rely on it as the only way of applying fertiliser to the plant. Some nutrients are not absorbed well through the leaves

and plants prefer to take up nutrients through their roots. Foliar fertilisers can be quite useful as a tonic, such as when a heavy flush of fruit is being produced. Use it for applying magnesium and boron, important nutrients for strawberry plants. The rates and timing of foliar fertilisers should be based on leaf or sap analysis results.

Harvesting and marketing

Who do I sell my fruit to?

There are a number of options. Most growers send fruit to a wholesale agent in one of the major metropolitan markets. The other options are selling direct to local retailers and restaurants, selling pre-packed fruit on the farm, selling direct to supermarkets and fruit barns and running a 'pick-your-own' operation. Joining a cooperative marketing group is recommended as it gives you greater strength in the marketplace.



Marketing
Section 4 Page 41

Where can I get pickers?

First contact the local employment office, who will be able to advise you of the availability of pickers. They also often run advertisements to attract experienced pickers to the area. Otherwise you need to advertise in the local paper.

I want to build a small cool room. How do I go about it?

Designing a cool room is a very specialised business, and we suggest that you get some expert advice. First contact your local electricity authority for technical advice. They will also be able to give you the names of local refrigeration designers and builders. If you are planning to build a small cool room, think carefully about the advantages of forced air systems to rapidly cool fruit. This may hold significant advantages for future quality management.