

Low chill stonefruit information kit— update

Reprint – information current in 1999



REPRINT INFORMATION – PLEASE READ!

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This publication has been reprinted as a digital book without any changes to the content published in 1999. We advise readers to take particular note of the areas most likely to be out-of-date and so requiring further research: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- Financial information—costs and returns listed in this publication are out of date.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 1999. 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 low chill stonefruit 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.

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Queensland Government

Low Chill Stonefruit Information Kit Annual Update 1999

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Low Chill Stonefruit Information Kit Annual Update 1999

From the Agrilink Series, first published 1997
ISSN 1328-0457

Supplement to Low Chill Stonefruit Information Kit, first published 1998
ISBN 0 7242 6682 8
QAL 9705
Agdex 214/10

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Introduction

Welcome to the 1999 edition of the *Agrilink Low Chill Stonefruit Information Kit Annual Update*. This is a special service provided to registered purchasers of the *Agrilink Low Chill Stonefruit Information Kit* published in 1998.

This 1999 update provides you with any significant changes to the content of the Agrilink information kit since it was published. It does this by giving you a broad overview of the changes in each section, and then providing the specific changes page by page.

Thank you for being an Agrilink customer. We look forward to continuing to serve you with quality information products.

We have changed the format of our update booklets as a result of a survey of how buyers use the update information. The update is now designed so you can place the relevant pages in the front of each section of the Agrilink information kit so that they are available for reference whenever you use the kit.

Contents

Before you start

Overview of the 1998–99 season	5
Specific updates	5

Common questions

Overview	7
----------------	---

Growing the crop

Overview	9
----------------	---

Key issues

Overview	13
----------------	----

Problem solver

Specific updates	21
------------------------	----

Contacts and references

Specific updates	23
------------------------	----

Crop production handy guide

Specific updates	37
------------------------	----

Problem solver handy guide

Specific updates	37
------------------------	----



Before you **START**

Overview of the 1998–99 season

The 1998–99 season was notable for problems with bat, bird and hail damage to much of the low chill stonefruit crop. Losses ranged from minor to almost total destruction. Market volume throughput from all regions for early season fruit was down 12% on the previous season (378 000 trays and half boxes of low chill stonefruit to 20 November 1998) and was 19% below the average of the past three years. The main reason for the reduction in volume was flying fox damage in orchards in Queensland and New South Wales. It is estimated that fruit volumes could have been at least 30% higher without this damage.

The 1998–99 season started well in Queensland, with early fruit from coastal regions well accepted in the market. As the season progressed, the threat of flying fox damage to crops caused growers in the Sunshine Coast and Moreton regions to pick some early stonefruit immature, which created an adverse reaction in the market.

As a result of the problems in the 1998–99 season, a statewide Flying Fox Consultative Committee was convened to address damage to fruit crops. The committee has been examining and assessing known methods of protection and investigating what tools need to be available for growers to make an accurate assessment of the risks associated with the different systems on offer.

The chemical endosulfan has been deregistered for use on stonefruit for the 1999–2000 season and a stonefruit industry development officer was appointed for the Queensland and northern New South Wales areas.

Specific updates

Prices (page 4)

The graphs give an indication of the Brisbane market throughput and prices for peaches and nectarines for the 1998 season. For comparison, the four-year average for 1994 to 1997 is also shown. (Data to compile the figures is courtesy of Market Information Services, Brisbane—contact details on page 30 of this update.)

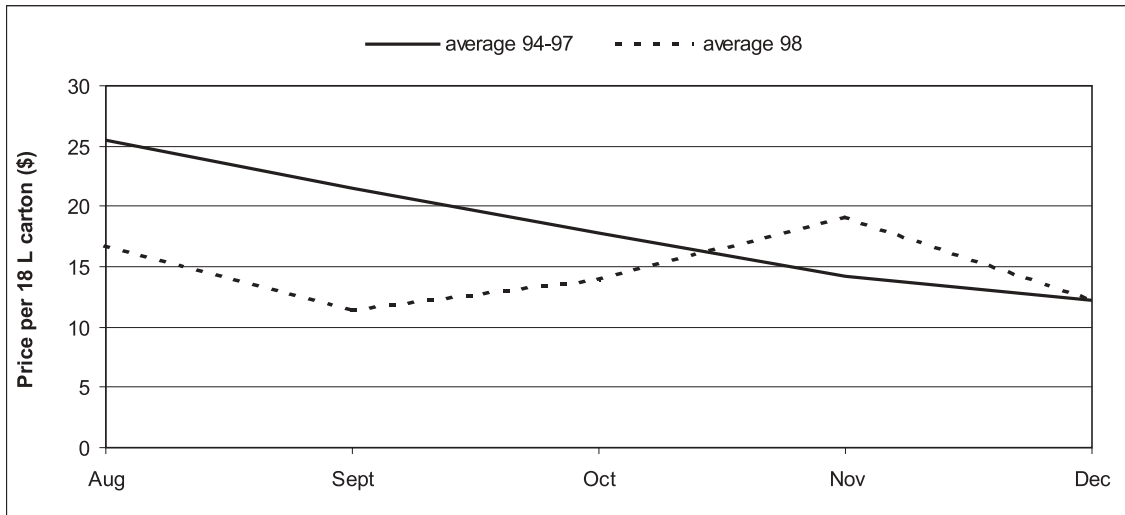


Figure 1. Average monthly price for all peaches at the Brisbane market for the 1998 season and the four-year average 1994 to 1997

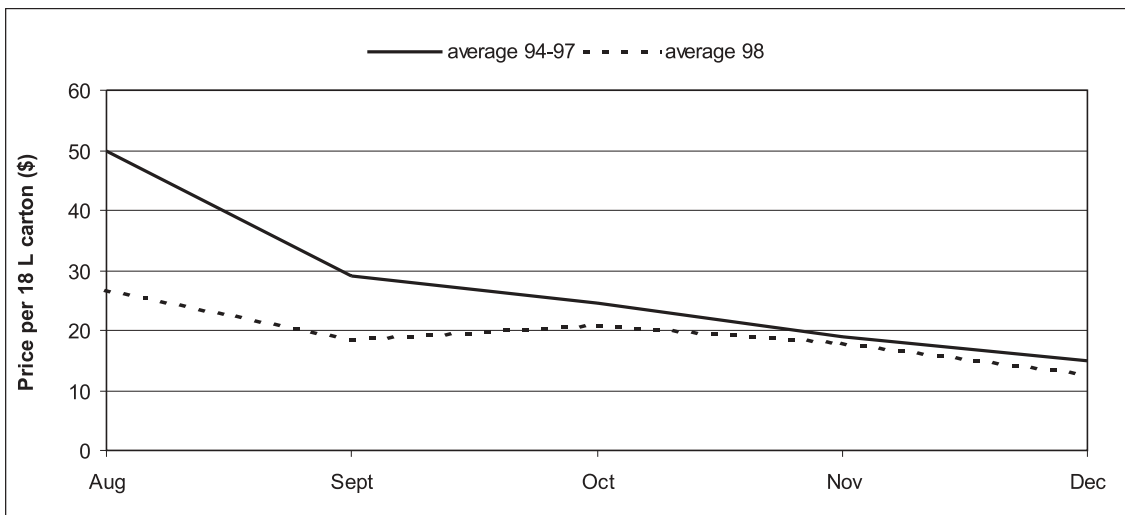


Figure 2. Average monthly price for yellow flesh nectarines at the Brisbane market for the 1998 season and the four-year average 1994 to 1997

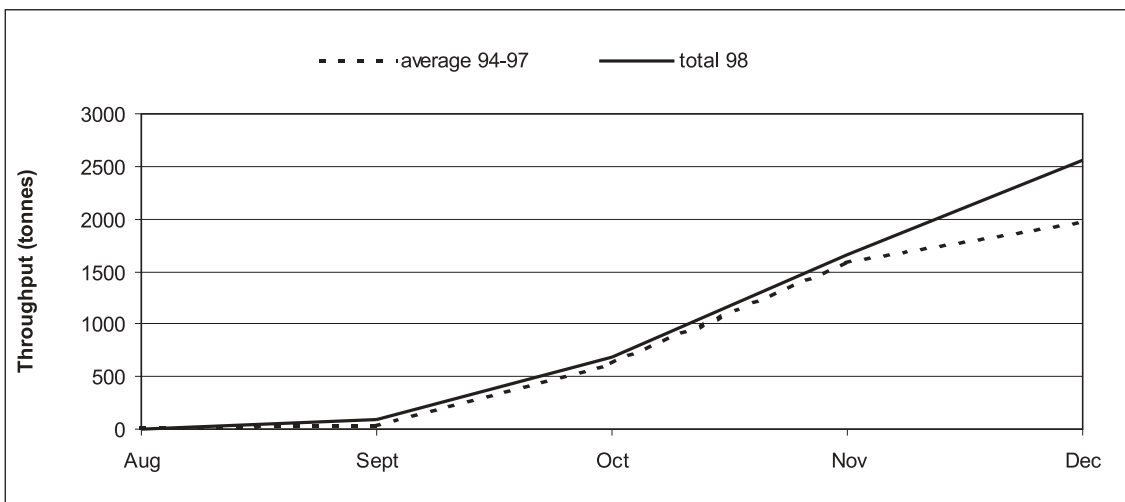


Figure 3. Monthly throughput of all peaches and nectarines at the Brisbane market for the 1998 season and the four-year average 1994 to 1997



Common QUESTIONS

Overview

Some additional questions, particularly related to chemical use and quality standards, have been raised since the *Agrilink Low Chill Stonefruit Information Kit* was first published. The questions and their answers follow.

Do I need quality assurance (QA) and at what level?

Buyers are now demanding some level of quality assurance (QA) in fresh food marketing and all growers will need some form of QA. Different levels of QA are required depending on where you intend to market your fruit. Several QA systems are being promoted within the industry but the choice depends on what best suits your needs and your purchaser's requirements. For further information contact your local stonefruit industry development officer (page 23 of this update) or DPI's Queensland Horticulture Institute (page 43 of this update).

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 issued by Farmcare Australia trainers. In Queensland the certificate is known as ChemSmart or Chemsafe Training Queensland Certificate or Certificate of Agricultural Chemical Application issued by Queensland Agricultural Chemicals Accreditation Committee. In Victoria it is the Victorian Farm Chemical Users Course.

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 National Registration Authority (NRA). State-based Farmcare (ChemCert) committees are responsible for delivering training in each state. Contact details for Farmcare (ChemCert) can be found in *Contacts and references* on page 32 of this update.

Do I need training in the safe use of chemicals?

In some states you cannot buy chemicals unless you have a current spray accreditation or have suitable authorisation. An authorised person is one whose business is selling or supplying agricultural chemical products, or who is a state licensed spray contractor or is certified by Farmcare Australia. Currently, by law in Queensland, you only need training in safe use of chemicals if you are a contractor spraying on other people's land or you want to buy restricted chemicals.

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

How should I store my chemicals?

Chemicals need to be stored in accordance with the AS-2507 standard. This does not mean you will have to spend a fortune on elaborate storage facilities. You do, however, need to be aware of several environmental and food safety factors whenever you deal with chemicals. Further information on correct use of chemicals is covered in the chemical user course. Farmcare (ChemCert) accredited trainers also understand these requirements. Employees of farm chemical resellers with Farmcare (ChemCert) accreditations are also a useful source of information.

How do I calibrate my spray equipment?

Equipment needs to be calibrated to work efficiently and the results of this calibration should be documented. You will learn the correct calibration method at the spray accreditation course. Nozzles should be changed regularly to ensure correct spray droplet formation and delivery of volume.

Do I need to keep a diary of spraying records?

Yes. Records of chemical applications are now one of the most important pieces of documentation you will need to be able to prove what you have done with chemicals. All buyers of your produce for supply to the retail sector now expect you to keep spray records. You should record: what crop was sprayed and the area; what was applied; how much per 100 L and how much spray volume (L/area); what pest or disease was targeted; what application method was used and by whom; and when the application took place.



Growing THE CROP

Overview

This section briefly updates change to *Growing the crop* relating to pest and disease control, fertiliser programs and postharvest storage and handling.

Pest and disease control (page 21)

Pests

Carpophilus is a genus of small beetle that normally pollinates custard apple flowers. The beetles are becoming significant pests in some low chill stonefruit areas. They enter ripening fruit through cracks and wounds, feeding on the flesh and at the same time spreading diseases such as brown rot among fruit and trees. Control measures are being investigated and it is likely that at least two chemicals will soon be given off-label permits for control.

Fertilising (page 25)

New recommendations for the amounts and timing of fertiliser applications have been made (see table*). It is also recommended that Nitram be used instead of urea.

Table 9* (and Table 13 in *Key issues* page 42)

Fertiliser program for an orchard yielding 25 t/ha should now be as follows:

*This table assumes fruit mature in mid-November and the timing of fertiliser applications is a guide only. Adjust timing of applications depending on harvest dates. All amounts shown are in g/tree unless otherwise stated and the amounts are average estimates for a range of soil types. Higher rates may be needed on very sandy soils under conditions of high leaching, while lower rates may be needed for heavier soils prone to low leaching.

	July	October* (3 weeks preharvest)	November* (postharvest)	January	March	Total
Nitrogen (kg/ha)	30		12	9	9	60
Phosphorous (kg/ha)	5					5
Potassium (kg/ha)	35		14	10.5	10.5	70

Orchard on palmette—density of 1000 trees per hectare (spacing 4.0 m x 2.5 m)

	July	October* (3 weeks preharvest)	November* (postharvest)	January	March	Total
Either						
Mixed fertiliser 12:5:14 N:P:K	250		100	75	75	500
Or						
Straight fertilisers						
Nitram (urea)	70		28	21	21	140
Superphosphate	60					60
Muriate of potash	70	70				140

Orchard on open vase—density of 400 trees per hectare (spacing 5.0 m x 5.0 m)

	July	October* (3 weeks preharvest)	November* (postharvest)	January	March	Total
Either						
Mixed fertiliser 12:5:14 N:P:K	620		248	186	186	1240
Or						
Straight fertilisers						
Nitram (urea)	170		68	51	51	340
Superphosphate	150					150
Muriate of potash	175	175				350

Pest and disease control (page 29)

Table 11. *General insect pest and disease control program*

Add copper hydroxide as a preferred chemical optional spray for the control of bacterial spot and canker.

Remove copper as a preferred chemical essential spray for the control of leaf curl and shot hole on nectarines at early bud break. Copper sprays applied once bud swelling has started can cause burn damage.

Harvesting and marketing

Pre-cooling (page 36)

The ideal cool chain handling sequence of fruit is to harvest in the early morning and cool and pack the fruit at 10° to 15°C on the same day. There is a temperature 'danger zone' between 2° and 7°C that encourages a faster rate of internal breakdown and mealiness of fruit if it is kept in this range for too long. After picking and packing, it is then best to cool fruit through the 'danger zone' as quickly as possible (using forced-air cooling equipment) to an optimum temperature range of 0° to 2°C. However, ideal conditions are seldom achieved.

It is not always possible to maintain the cool chain from grower to transporter, market agents and retail outlets. Under these circumstances and where fruit is to be sold quickly after harvest and not stored for long periods, it is thought to be safer to maintain the whole chain around 8°C, or at least in the range 7° to 10°C. This procedure is more achievable than the 'ideal' conditions. Work is in progress to investigate storage times in this temperature range.

Refrigeration (page 40)

It is better to ensure that refrigeration temperatures remain constant rather than allowing fluctuations. Fruit must be chilled evenly and quickly to the target zone and the best method to achieve this is forced-air cooling. Much work is being done on cool chain handling and refrigeration. If you want further information contact:

Cool Handling Stonefruit Project

GPO Box 397

ADELAIDE SA 5001

Ph: (08) 8303 9400; Fax: (08) 8303 9424

Web: www.sardi.sa.gov.au/hort/coolchai/coolindx.htm



Key ISSUES

Overview

Several new low chill stonefruit varieties will soon be available for trial. Changes have been made to the number and timing of applications for nitrogen and other fertiliser applications. There is additional information on the use of Cultar® and the interaction of nitrogen and Cultar®. A further method for propagation and pruning has been added and some new information on marketing has been included.

Selecting varieties

New varieties for trial (page 32)

Table 7. *Varieties currently suggested for trial*

Nectarines

Sunmist is a white flesh nectarine not yellow flesh as stated.

Available by December 2001

The following varieties will be available for trial from ANFIC nurseries by December 2001. The information provided is based on conditions in Florida.

Peaches

UFGold

Chilling units: 225. Maturity period: early season (mid-late October). Fruit features: yellow flesh with non-melting, low acid, sweet flavour; round fruit with deep yellow ground colour skin, 60% bright red colour; medium size; very attractive.

92-23c

Chilling units: 250. Maturity period: mid-late November. Fruit features: yellow flesh, sweet, even ripening; good shape with orangey-yellow skin, 20% red blush; large size. Lacks colour by today's standards.

91-11

Chilling units: 225. Maturity period: mid-November. Fruit features: yellow, melting flesh with medium acid and sugar, even ripening; longish fruit shape with yellow ground colour skin, 70% dark red; medium to large size; attractive.

91-7w

Chilling units: 200. Maturity period: late October. Fruit features: white, melting flesh with moderate acid, good flavour; creamy white ground skin colour, 90% dark red; medium to large size; high % red skin even in lower fruit. Definite commercial potential as replacement for Flordaglo.

92-11c

Chilling units: 250. Maturity period: early November. Fruit features: yellow flesh with low acidity, moderately sweet; bright orangey-yellow skin colour, 30 to 40% red; medium size. Some suture bulge. Needs more colour.

Nectarines**90-5n**

Chilling units: 325. Maturity period: late October-early November. Fruit features: yellow, melting flesh, medium acid, good flavour; medium thick skin, yellow at stem cavity, 100% dull red; size 90 to 100 g; attractive fruit. Has some blind nodes.

Available by December 2002

The following varieties will be available for trial from ANFIC nurseries by December 2002. The information provided is based on conditions in Florida.

Peaches**UF 2000 (92-15c)**

Chilling units: 300. Maturity period: Mid-November. Fruit features: yellow, non-melting flesh, firm with good sweetness, semi clingstone; deep orange ground colour skin with 50 to 70% bright red; large, round fruit; attractive skin blush. Will require thinning. Flesh does not brown readily on cut surfaces. Pits are medium small and show little tendency to split on light crops.

88-22c

Chilling units: 225. Maturity period: Mid-November. Fruit features: yellow, non-melting flesh, good flavour; deep yellow to orange skin colour, 70% bright red; medium size; medium tip, very attractive.

92-22c

Chilling units: 250. Maturity period: late November. Fruit features: yellow, sweet flesh, even ripening; orangey-yellow skin colour, 30% red blush; large size; good shape. Lacks colour by today's standards.

Nectarines**94-28cn (UF Queen)**

Chilling units: 250. Maturity period: early November. Fruit features: yellow, non-melting flesh, low acid, sweet taste, excellent flavour; light orange ground colour, 100% bright red; size 100 to 120 g. Some fruit with small tip. Some off-flavour on overripe fruit after harvest.

94-30cn

Chilling units: 275. Maturity period: early November. Fruit features: yellow, non-melting flesh, low acid, sweet taste, excellent flavour; light orange ground colour skin, yellow in stem cavity, 100% bright red; size 100 to 115 g. Some fruit with small tip. Some off-flavour on overripe fruit after harvest.

Nutrition

Understanding the important nutrients

Nitrogen (page 34)

Nitrogen has the most impact on fruit size when it is applied at bud break. In addition, a beneficial interaction between nitrogen and Cultar® has been found when these are applied together. This interaction produces a significant increase in fruit size and yield. Changes to the number and timing of nitrogen applications have been made.

Nitrogen is now best applied in four applications:

- one at bud break to assist in fruit development;
- one immediately after harvest to grow a strong summer flush and build up the energy reserves for the next crop;
- another in late summer to help prevent leaf abscission;
- a fourth application in autumn to help retain leaves and to supplement the storage of energy reserves in the wood over winter.

Nitrogen applications should be topped up under high rainfall conditions.

Fertiliser rates using the nutrient replacement concept (page 40)

Table 11 and Table 12. The rates given in these tables are a guide only. They must be further adjusted according to leaf nutrient levels.

A fertiliser program (page 42)

Table 13. Most of this table is the same as Table 9 in *Growing the crop*—page 25 of the kit. This table has been changed in accordance with the new fertiliser program recommendations and can be found on page 9 of this update.

Irrigation and monitoring

Irrigation must No. 2—a monitoring system (page 46)

Gopher® soil moisture profiler

The Gopher® soil moisture profiler developed and manufactured by Soil Moisture Technology Pty Ltd uses the technique of measurement of the dielectric constant of the soil plus water to determine the moisture content of the soil.

As the water content of the soil increases the resultant measured dielectric constant increases. The measurement of the combined dielectric constant of the soil and water offers a sensitive determination of soil moisture content. Variations in electrical conductivity of the soil moisture due to dissolved salts do not affect the measurement if a very high measuring frequency is used.

Results are presented in millimetres of precipitation required to bring the soil water content up to field capacity and irrigation watering time is then easy to calculate. Data are displayed as readily available soil water, water deficit and total soil water over the nominated root zone depth. These figures are calculated in the field as the profile is recorded.

Capacitance probes (page 53)

A hand-held portable data logger, Diviner 2000®, has been developed which accesses the same tube and uses the same soil moisture sensing technology as the Enviroscan®.

Our rules for the use of Cultar® (page 66)

Cultar® should only be applied to trees that are healthy and vigorous. It should not be applied to trees that are diseased, stressed, salt-affected or that have root rot or low vigour.

Be careful when applying Cultar® to sandy soils. It is likely the example rates given for the use of Cultar® need to be severely reduced on sandy soils.

Nitrogen application rates do not have to be lowered to compensate for the reduced vegetative growth of trees as suggested in Section 4 on page 67 of the kit. There is a beneficial interaction between Cultar® and nitrogen, which results in increased fruit growth and decreased vegetative growth.

Pest and disease management program (page 75)

Add copper hydroxide as a preferred optional chemical spray for the control of bacterial spot and canker.

Remove copper as a preferred chemical essential spray for the control of leaf curl and shot hole on nectarines at early bud break.

Copper sprays applied once bud swelling has started can cause burn damage. Copper should be added at least three weeks before bud movement.

Disease forecasting service (NSW only) (page 78)

Delete. The forecasting service is no longer available.

Netting

Construction procedure (page 84)

A series of workshops on netting options will be conducted throughout Queensland and NSW in 2000. Contact Peter Rigden, DPI Queensland on (07) 5441 2211 for further information.

Fruit thinning

The background to thinning (page 87)

Delete Table 23. Figures in this table should be disregarded. Crop loading trials are being undertaken and an information manual is being produced.

Blossom thinning at budbreak (page 89)

Ralex®, a new chemical product for flower thinning, is likely to be registered for use soon. For further information, contact the National Registration Authority, your local stonefruit industry development officer (*Contacts and references*, page 23 of this update) or the suppliers of Ralex®:

Abbott Chemicals

Asia Pacific Office

113 Wicks Road

PO Box 304

NORTH RYDE NSW 2113

Free phone: 1800 060 671 or (02) 9805 0051; Fax: (02) 9805 0052

Local Abbott representatives:

Frank Galluccio

Ph: (03) 5037 6810; Mobile: 0418 502 466

John Haigh

Ph: (07) 4693 3300

Dormancy breaking chemicals (page 93)

Waiken®, a new chemical for artificially breaking dormancy, is likely to be registered for use soon. For further information, contact the National Registration Authority, your local stonefruit industry development officer (*Contacts and references* page 23 of this update) or the suppliers of Waiken®:

SST Australia

PO Box 3050

The Pines

DONCASTER EAST VIC 3109

Ph/fax: (03) 9844 1861; Mobile: 0418 844 861

E-mail: john@gullfag.com.au

Quality management systems (page 98)

What level of quality management do you need?

Information on the requirements for quality management has been further refined (see figure below). The quality management practices being requested by customers can be separated into three broad levels:

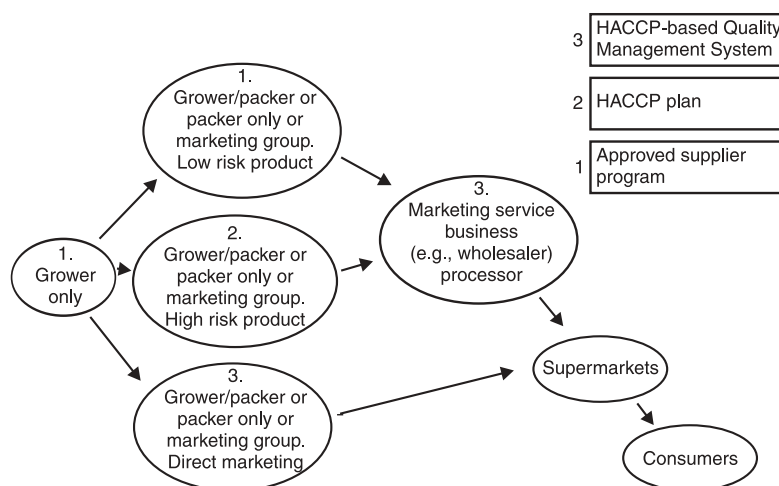
1. Approved Supplier Program
2. Hazard Analysis and Critical Control Point (HACCP) plan
3. HACCP-based quality management standard or code.

The level of quality management you need to implement will depend on your marketing arrangements and the potential risk of your product causing a food safety problem.

If your product is supplied either directly or indirectly to a supermarket, the figure below shows the minimum level of quality management needed by different businesses in your supply chain. Some food service businesses, such as fast food outlets, are requesting an HACCP plan or specific quality management practices under an Approved Supplier Program. Exporters will require some level of quality management depending on their customers.

There are no demands at this stage from non-supermarket retailers.

Minimum levels of quality management required for business to supply the supermarket sector



More detail on the three levels of quality management

1. Approved Supplier Program (ASP)

An Approved Supplier Program involves suppliers carrying out agreed practices that will provide assurance to customers that the product is safe to eat and of acceptable quality. Suppliers will need to keep sufficient records to demonstrate that the practices are a part of everyday operations. The customer or someone on behalf of the customer will periodically check that suppliers are carrying out the agreed practices.

Direct suppliers to supermarkets need to develop approved supplier arrangements with their own grower suppliers. This could include:

- wholesalers or processors who supply direct to a supermarket
- packers who supply direct to a supermarket
- marketing groups that supply direct to a supermarket. The marketing operation within the group would need to have an-HACCP based quality management standard code (level 3) and have approved supplier arrangements with their growers.

Further information about specific practices and documents that may be included in an Approved Supplier Program is in the publication *Developing an Approved Supplier Program for fresh produce—a guide for customers and suppliers*. Costs \$6. Ring the Horticulture Quality Management Group (07) 3896 9685 for this book.

A one-day training course, Approved Supplier Requirements, is also offered by Queensland Fruit & Vegetable Growers (QFVG) and Queensland Horticulture Institute. To register interest in the training course contact the Horticulture Quality Management Group, Queensland Horticulture Institute, DPI, 80 Meiers Road, Indooroopilly, Qld 4068. Ph: (07) 3896 9685; Fax: (07) 3896 9677.

The national fruit and vegetable industry is developing a quality and food safety program called Freshcare, which will provide independent auditing of growers to the Approved Supplier Program level of quality management. For further information about Freshcare, contact Margie Milgate at QFVG, Ph: (07) 3213 2485.

2. HACCP plan

HACCP is an internationally recognised method to identify, evaluate and control hazards (things that can go wrong) to food products. HACCP was originally developed to provide assurance that food was safe to eat, but is now also being used to ensure that customer quality requirements are met.

HACCP is being requested of some growers who supply products that are perceived to have a high risk of causing food safety problems or where the next business in the supply chain demands it.

HACCP relies on prevention to control potential problems. Potential hazards are assessed for significance and control measures are established to eliminate, prevent or reduce the hazard to an acceptable level. Typical food safety hazards include excessive chemical residues, microbes causing sickness and physical contaminants such as glass, sticks and so on that may lodge in product.

Some independent auditing companies will certify HACCP plans according to the Codex Alimentarius Commission guidelines.

3. HACCP-based quality management standard or code

The quality management standards or codes incorporating HACCP that are relevant to the horticulture industry are:

- ISO 9002 plus HACCP
- SQF 2000^{CM} and SQF 1000^{CM}
- HACCP 9000
- Supermarket quality management standards. This level of quality management is required where growers or packhouses directly supply supermarket chains or where the next business in the supply chain demands this requirement. Check with each supermarket to see what standards or codes they will accept.

For SQF 2000^{CM}, SQF 1000^{CM}, ISO 9002 and HACCP 9000, an accredited independent company conducts audits to certify that the business meets the quality system standard.

For supermarket quality management standards the supermarket, or an independent company on their behalf, does the auditing.

ISO 9002

ISO 9000 is an international standard for quality management systems and the system on which most others are based. It was developed originally for manufacturing companies and is now used by many industries. It consists of 20 elements covering all aspects of producing products and servicing customers. Supermarkets are requiring their direct suppliers to include HACCP in their ISO 9002 systems.

SQF 2000^{CM} and SQF 1000^{CM} Quality Code

The SQF code was developed by AGWEST Trade and Development, specifically for small businesses in the food industry. It is recognised in Australia and some Asian countries. The code has six elements and each element contains specific requirements which must be addressed to achieve certification. The code includes HACCP, which provides assurance that the product is safe and meets customer and legislative requirements. To achieve certification, a registered and skilled HACCP practitioner must develop, validate and verify the HACCP plan.

HACCP 9000

HACCP 9000 is a quality management standard incorporating both ISO 9002 and HACCP.

Supermarket quality management standards

An example is Woolworths Australia, which has developed a quality management standard for their own direct suppliers aimed at food safety and quality requirements. It is an-HACCP based quality management standard.

Propagation (page 101)

Softwood cuttings

Low chill stonefruit can be propagated rapidly by softwood cuttings. The time between taking the cutting and field planting can be as short as six weeks. The major disadvantage of this method is that softwood cuttings are very soft and are extremely prone to wilting and bacterial soft rots.

Timing

Cuttings can be taken in late autumn and throughout summer except during periods of strong vegetative flushing.

On-tree preparation

Cuttings are initially prepared on the tree by selecting a shoot that is in an open sunny position. Hold the selected shoot tip and bend it down, then cut off the very soft terminal growth at the point

at which it bends. Leave two leaves, which are cut in half at the top of the attached shoot, then strip the next five to eight sets of leaves along the shoot (about 15 to 20 cm long). Remove the cutting from the tree before the buds from the stripped section of the shoot start to grow away (normally four to ten days after preparation). Avoid taking cuttings that may produce a large number of shoots.

Preparation after removal

The basal section of shoots is best cut under water to leave a 15 cm length. Before planting, dip the base of the cuttings in 0.4% IBA, 2 cm up the stem. Plant the shoots about 3 cm apart in the cutting bed or a 10 cm pot (tube) as deep as possible. Polystyrene boxes make suitable propagation beds or holding containers for the 10 cm pots (tubes) in which cuttings are placed. (Polystyrene boxes will inhibit the transfer of heat from the mist bed heating cables to the potting media.)

Media

A range of sterile media can be used. A mixture of equal parts perlite and vermiculite or peat:perlite:sand is ideal. The medium must be free of pest and disease organisms and may need steam treatment or methyl bromide pasteurisation. It must also be well drained, so the ratio of media components may need to be adjusted.

Environmental conditions

Mist irrigation is essential. Mist interval is critical as over wet cuttings will succumb to disease. A suggested schedule is 6 sec on/90 sec off on a hot day, 4 sec on/4 min off on a cool wet day. An indication of overwetting is the floor below the cutting bench remaining wet. At night, reduce misting perhaps to only four times.

Bottom heat is desirable. A temperature range of between 28° and 30°C at the base of the cutting appears to be best. Bury cuttings in the mix in the 10 cm pot (tube). It is also desirable to maintain air temperature at 25°C but higher temperatures are acceptable. If temperatures in the mist house rise above 35°C, ventilate the house. Cuttings must be exposed to near full sunlight as low light also reduces strike percentage.

Cuttings must be placed into the potting media by inserting a hole into the media with a pencil. Fertilise cuttings with a very dilute complete foliar mixture

Disease control

Various fungicides have been tested. Two systems have been found to effectively control disease. These are a daily drenching with 5 ppm chlorine solution (3 mL bleach in 20 L) followed with a fungicide such as thiram at weekly intervals, or treat with a mixture of 2 g/L Mancozeb®, 1 g/L Solubor® and 1 g/L Benlate®.

The water supply must be free of pathogens, i.e. use tank water.

Hardening off

Cuttings root within 16 to 24 days after planting in mist beds. After rooting, remove pots (tubes) from mist beds and leave them above the beds for one week before transferring to ambient temperature for two to three weeks. Sun-harden the cuttings before planting in the field six to eight weeks after taking. Use a foliar fertiliser once cuttings start to shoot.



Problem **SOLVER**

Specific updates

There have been no changes to the *Problem solver*.



Contacts & REFERENCES

Specific updates

Low chill stonefruit grower associations (page 3)

Queensland Fruit & Vegetable Growers has e-mail, a web site and a stonefruit industry development officer:

E-mail: qfvg@qfvg.org.au

Web: www.qfvg.org.au

Stonefruit industry development officer
David Weir

PO Box 19, Brisbane Market
Brisbane Road

ROCKLEA QLD 4106

Ph: (07) 3213 2424; Fax: (07) 3213 2480

Mobile: 0419 753 171

E-mail: dweir@qfvg.org.au

Organic grower associations (page 4)

National Association for Sustainable Agriculture Australia Ltd has a new e-mail address:
enquiries@nasaa.com.au

The Organic Food Chain Pty Ltd
PO Box 2390

TOOWOOMBA QLD 4350

Ph/Fax: (07) 4637 2600

Nursery tree suppliers (page 5)

ANFIC Nurseries

Tabarag Nursery
ORANGE NSW
Ph: (02) 6365 4219

Balhannah Nurseries
BALHANNAH SA
Ph: (08) 8388 4244

Birdwood Nursery
NAMBOUR QLD
Ph: (07) 5442 1611

CJ Goodman Pty Ltd
BAIRNSDALE VIC
Ph: (03) 5152 4060

JFT Nurseries
MONBULK VIC
Ph: (03) 97379633

Linmer Nursery
CANOWINDRA NSW
Ph: (02) 6344 1597

Kemps Murray Valley Nurseries
BARMERA SA
Ph: (08) 8588 2325

Mossmont Nurseries
GRIFFITH NSW
Ph: (02) 6963 6533

Neerim Hi Plains Growers
NEERIM JUNCTION VIC
Ph: (03) 5628 4216

Mount View Orchards
BATLOW NSW
Ph: (02) 6949 1765

Sunraysia Nurseries
GOL GOL NSW
Ph: (03) 5024 8502

Olea Nurseries
WEST MANJIMUP WA
Ph: (08) 9772 1207

W.A. Shepherd & Sons Pty Ltd
MERRICKS NTH VIC
Ph: (03) 5989 7347

Daley's Fruit Tree Nursery has a new e-mail address:

gdaley@nor.com.au

Hinrichsens Nursery
141 Koplick Road
PARK RIDGE QLD 4125
Ph: (07) 3297 0945

Mountain Views Nursery has e-mail:
mvn@spiderweb.com.au

Premier Nurseries
29A Hanbury Street
BUNDABERG QLD 4670
Ph: (07) 4153 1626

Turners Nursery
473 Miles Platting Road
ROCHEDALE QLD 4123
Ph: (07) 3341 5214; Fax: (07) 3841 0437

Tablelands Nursery & Orchard
225 Arthys Road
COORAN QLD 4569
Ph/Fax: (07) 5485 1522

Vallances Nursery
Vallances Road
MULLUMBIMBY NSW 2482
Ph: (02) 6684 2011; Fax: (02) 6684 3184

Widgee View Nursery
Reids Road
WIDGEE via GYMPIE QLD 4570
Ph: (07) 5484 0197; Fax: (07) 5484 0217

Whispering Pines Nursery
Blackgate Road
AMAMMOOR QLD 4570
Ph/Fax: (07) 5484 3536

Pest management consultants (page 6)

Integrated Pest Management
also trading as Bugs for Bugs has e-mail and a web site:

E-mail: dan@bugsforbugs.com.au

Web: www.bugsforbugs.com.au

Agrotek Consultancy has a new phone/fax number: (07) 5479 4101

Cropwatch Information Services
Paul Edwards
Henderson Drive
PO Box 109
WANGAN QLD 4871
Ph: (07) 4064 4203; Fax: (07) 4064 4206

Fitzgerald Horticultural Consultancy
Shane Fitzgerald
PO Box 375
TULLY QLD 4854
Ph: (07) 4066 7744; Fax: (07) 4066 7664
Mobile: 0419 656 251
E-mail: fitz@znet.net.au

Henry Drew has e-mail:
hjdrew@ozemail.com.au

Horticultural Crop Monitoring
Paul Jones has new contacts:
PO Box 3725 CBC
CALOUNDRA QLD 4551
Mobile: 0412 714 905
E-mail: pjones@hotmail.net.au
Malcolm Durham
Ph/Fax: (07) 5443 7073
Mobile: 0416 114 905
E-mail: zeki@bigpond.com

Ironside Agricultural Pest Management Pty Ltd
David Ironside
7 Lingard Street
PALMWOODS QLD 4555
Ph: (07) 5478 9008; Fax: (07) 5478 9386

Story Horticultural Services
PO Box 7667, MAIL CENTRE
TOOWOOMBA QLD 4352
Ph: (07) 4635 6845; Fax: (07) 4635 9422
Mobile: 0408 457 212

Ted Winston
PO Box 203
MISSION BEACH QLD 4852
Ph/Fax: (07) 4068 8796

Valley Crop Monitoring Service
Julian Winch
20 Smith Street
GATTON QLD 4343
Ph/Fax: (07) 5462 2096; Mobile: 015 640 450

Special contract and consulting services (page 6)

A.S.A.P. Quality Assurance & Management Service (Quality management guidance services)

Wally Collins

Unit 29, 367 Algester Road

ALGESTER QLD 4114

A/H: 3272 2246

Dynamic Field Services (Agronomist)

Paul Moorhouse

27 Gentle Street

PO Box 222

TOOWOOMBA QLD 4350

Ph: (07) 4632 4600; Fax: (07) 4632 4633

Mobile: 0412 555 367

Horticultural Crop Monitoring (IPM and nutrition consultants)

Paul Jones has new contacts:

PO Box 3725 CBC

CALOUNDRA QLD 4551

Mobile: 0412 714 905;

E-mail: pjones@hotmail.net.au

Malcolm Durham

Ph/Fax: (07) 5443 7073;

Mobile: 0416 114 905

E-mail: zeki@bigpond.com

Ross Fitzell Plant Health Services (Consultant and supplier of other specialised services—general)

PO Box 619

Cnr Bugden & South Roads

ALSTONVILLE NSW 2477

Ph/Fax: (02) 6628 1122

Armstrong Rural Services (Horticultural consultants)

PO Box 1438

TOOWOOMBA QLD 4350

Ph/Fax: (07) 4630 3667

Graeme Thomas (Horticultural consultants)

Keys Road

HAMPTON QLD 4352

Ph: (07) 4697 9170

Hortech Services Pty Ltd (Plant nutrition consultants) has a web site:
www.ats.com.au/~hortech

Irri-Scan North (Horticultural consultants)

Peter Broomhall

Ph/Fax: (07) 3886 0389;

Mobile: 0418 878 484

E-mail: hortech@ats.com.au

David Harper

Mobile: 0418 771 925

E-mail: irriscannorth@internetnorth.com.au

Valley Crop Monitoring Service

Julian Winch (Horticultural consultants)

20 Smith Street

GATTON QLD 4343

Ph: (07) 5462 2096

Sauers IAMA (Sap testing consultants or laboratories)

124 Howard Street

NAMBOUR QLD 4560

Ph: (07) 5441 6088; Fax: (07) 5441 6020

Mobile: 0418 878 896

Servag BFS Pty Ltd (Consultant)

Keith Lewis

PO Box 1169

ATHERTON QLD 4883

Ph: (04) 4091 5755; Mobile: 0419 761 872

Sunshine Horticultural Management (Horticultural consultants)

Andy Calman

31–39 Jackson Road

WOOMBYE QLD 4559

Ph: (07) 5442 1716; Fax: (07) 5442 1686

E-mail: sacalman@ozemail.com.au

Irrigation consultants (page7)

Integrated Pest Management (Irrigation consultants)

also trading as Bugs for Bugs has e-mail and a web site:

E-mail: dan@bugsforbugs.com.au

Web: www.bugsforbugs.com.au

Hortech Services Pty Ltd (Irrigation consultants) has a web site:

www.ats.com.au/~hortech

Irri-Scan North (Irrigation consultants)

Peter Broomhall

Ph/Fax: (07) 3886 0389;

Mobile: 0418 878 484

E-mail: hortech@ats.com.au

David Harper
Mobile: 0418 771 925
E-mail: irriscannorth@internetnorth.com.au

Horticultural Crop Monitoring (Irrigation consultants)

Paul Jones has new contacts:
PO Box 3725 CBC
CALOUNDRA QLD 4551
Mobile: 0412 714 905
E-mail: pjones@hotmail.net.au
Malcolm Durham
Ph/Fax: (07) 5443 7073;
Mobile: 0416 114 905
E-mail: zeki@bigpond.com

Dataflow Systems Pty Ltd (GOPHER soil moisture profiler) also trading as
Soil Moisture Technology Pty Ltd
13 Jarrah Street
PO Box 93
COOROY QLD 4563
Ph: (07) 5442 5833; Fax: (07) 5442 6913
Fax (A/Hrs): (07) 5442 8787
E-mail: gopher@m140.aone.net.au

Irrigation suppliers (page 7)

Amiad Irrigation
Unit 3/21 Jijaws Street
SUMNER PARK QLD 4074
Ph: (07) 3279 4700; Fax: (07) 3279 4030

James Hardie Irrigation Pty Ltd
PO Box 1115
TOOMBUL QLD 4012
Ph: (07) 3268 1385; Fax: (07) 3268 6877

Vinidex Tubemakers
PO Box 379
SUNNYBANK QLD 4109
224 Musgrave Road
COOPERS PLAINS QLD 4108
Ph: (07) 3277 2822; Fax: (07) 3277 3696

Beneficial insect suppliers (page 8)

Integrated Pest Management
also trading as Bugs for Bugs has e-mail and a web site:
E-mail: dan@bugsforbugs.com.au
Web: www.bugsforbugs.com.au

Bees

Queensland Beekeepers Association (bees for pollination)

Bob D. Johnson, Secretary
PO Box 49
MAPLETON QLD 4560
Ph: (07) 5445 7512; Mobile: 0428 712 697

Bees (referrals only)
DPI
Locked Bag 17
WARWICK QLD 4370
Peter Warhurst
Ph: (07) 4661 6600; Fax: (07) 4661 5329
E-mail: warhup@dpi.qld.gov.au
Diane Werner
Ph: (07) 4661 6600; Fax: (07) 4661 5329
E-mail: wernerd@dpi.qld.gov.au

Suppliers of other specialised services (page 8)

David Peasley Horticultural Services
(General)
PO Box 542
MURWILLUMBAH NSW 2482
Ph/Fax: (02) 6677 7174

Agritech Laboratory Services (Laboratories—plant, soil and water testing)
PO Box 549
214 McDougall Street
TOOWOOMBA QLD 4350
Ph: (07) 4633 0599; Fax: (07) 4633 0711

Incitec Ltd (Laboratories—plant, soil and water testing)
PO Box 140
MORNINGSIDE QLD 4170
Ph: (07) 3867 9300; Fax: (07) 3867 9310

Pivot Limited (soil and leaf tissue testing)
Head Office
160 Queens Street
MELBOURNE VIC 3000
Ph: (03) 9605 0400; Fax: (03) 9605 0419
Web: www.pivot.com.au

Brisbane
Prescription Farming Centre
Savage Street
PINKENBA QLD 4008
Ph: (07) 3260 2866; Fax: (07) 3260 2679

Toll free: 1800 800 554
 Sydney
 Ph: (02) 9756 4544; Fax: (02) 9756 4544
 Perth
 Ph: (08) 9350 5575; Fax: (08) 9350 5585
 Adelaide
 Ph: (08) 8475 0222; Fax: (08) 8824 0309

Machinery & equipment manufacturers

AgMac Manufacturing Co.
 Industrial Estate
 GATTON QLD 4343
 Ph: (07) 5462 3433; Fax: (07) 5462 2336

Aratula Engineering
 Cunningham Highway
 ARATULA QLD 4309
 Ph/Fax: (07) 5463 8151

Arboits Farm & Machinery Supplies
 Beach Road
 AYR QLD 4807
 Ph: (07) 4783 2792; Fax: (07) 4783 2994

Bret Tech Pty Ltd
 Cnr Industrial Avenue and Enterprise Street
 KUNDA PARK QLD 4556
 Ph: (07) 5476 8300; Fax: (07) 5476 9030
 Mobile: 0418 730 448

Glenore Grove Engineering & Hardware
 FOREST HILL QLD 4342
 Ph: (07) 5466 5304; Fax: (07) 5466 5405

G.P. Graders
 8 Gilby Road
 MT WAVERLEY VIC 3149
 Ph: (03) 9544 4442; Fax: (03) 9543 8997

Granite Engineering
 13 Reynolds Street
 MAREEBA QLD 4880
 Ph: (07) 4092 2195; Fax: (07) 4092 4118

KW Engineering Pty Ltd
 Old Bowling Green Road
 PO Box 121
 PALMWOODS QLD 4555
 Ph: (07) 5445 9549 and (07) 5445 0577
 Fax: (07) 5445 0499

Maltby Engineering
 26 Don Street
 BOWEN QLD 4805
 Ph: (07) 4786 2611; Fax: (07) 4786 2800

P & H Rural
 49 Hanbury Street
 PO Box 917
 BUNDABERG QLD 4670
 Ph: (07) 4152 9555; Fax: (07) 4153 1530

PSF Equipment
 Corner Rison Ave & Holt Street
 EAGLE FARM BRISBANE QLD 4007
 Ph: (07) 3268 4650; Fax: (07) 3268 6394

RTM Engineering
 Collinsville Road
 BOWEN QLD 4805
 Ph: (07) 4785 2218; Fax: (07) 4785 2411

Stark Engineering & Hardware
 FOREST HILL QLD 4342
 Ph: (07) 5465 4195; Fax: (07) 5465 4190

Cooling and ripening rooms

Cardiff's Refrigeration
 LAKE CLARENDON QLD 4343
 MS 437
 GATTON QLD 4343
 Ph: (07) 5466 5155; Fax: (07) 5466 5417

Cold room hire

Daryl Toye
 PO Box 486
 ARCHERFIELD QLD 4108
 Ph: (07) 3875 1800; Fax: (07) 3277 1639

Bins

Hoods Sawmill
 Beavan Street
 GATTON QLD 4343
 Ph: (07) 5462 1011; Fax: (07) 5462 3617

I.E. & M.A. Turnbull
 19 Steptoe Street
 BUNDABERG QLD 4670
 Ph/Fax: (07) 4153 2109

Hedging and topping

Metes Hedge Trimmers
 PO Box 889
 MAREEBA QLD 4880
 Ph/Fax: (07) 4093 3186; Ph: (07) 4092 4735

Ypinazar & Co.
107 Old Clare Road
AYR QLD 4807
Ph: (07) 4783 1446; Fax: (07) 4783 6032

Weighing equipment

Wedderburn Scales
Freecall: 1800 636 080
E-mail: roberth@wedderburn.com.au
Chris Krieger
Ph: (07) 4153 1902; Mobile: 0418 905 065

Wide Bay Scales & Registers
Peter Gray
PO Box 2909
BUNDABERG QLD 4670
Ph: (07) 4159 8544; Fax: (07) 4159 8794
Mobile: 018 563 956

Netting suppliers and contractors (page 9)

Netting suppliers

Oblomov Trading Co.
Arthur King
Box 207
ROZELLE NSW 2039
Ph: (02) 9660 6845; Fax: (02) 9518 8372
E-mail: oblomov@healey.com.au
Web: www.healey.com.au/~oblomov

Gale Australia
Chris Knight
PO Box 892
BRAESIDE VIC 3195
Ph: (03) 9518 3333
Fax: (03) 9518 3398 or (03) 9518 3305

Donaghy Sarlon Pty Ltd has a new central
referral phone system
Ph: (02) 9796 2222; Fax: (02) 9970 2011

Enviroknitters
also trading as Envirocanopy
John Hall
Ph: (07) 3325 0500; Fax: (07) 3325 0313

Netting contractors

Deane & Dawn Willocks have a new mobile
number: 0407 969 331

NetPro Pty Ltd has a free phone number,
e-mail address and web site
Free phone: 1800 501 337
E-mail: netpro@flexi.net.au
Web: www.flexi.net.au/~netpro/

Scottnet
Gary & Lyn Scott
Ph: (07) 5446 8579; Fax: (07) 5472 7272
Mobile: 0407 113 460

Peter Smith Contractors
Ph: (02) 6947 4477; Fax: (02) 6947 4479
Mobile: 0417 240 818

Trellis post suppliers

CSR Perma-log
13 Henzell Road
CABOOLTURE QLD 4510
Freecall: 1800 072 332; Fax: (07) 5495 8181

Koppers Timber Preservation Pty Ltd
PO Box 162
PIALBA QLD 4655
Ph: (07) 4128 7227; Fax: (07) 4128 7211

Logform Industries Pty Ltd
Woolmar Street
KILCOY QLD 4515
Ph: (07) 5497 1655; Fax: (07) 5479 1304
Mobile: 0419 705 010

Sunshine Pine
Pinewood Avenue
PO Box 38
GYMPIE QLD 4570
Contact: Geoff Pickering
Ph: (07) 5482 1888; Fax: (07) 5482 6986

Trellising materials

BHP Wire Products
Blackwall Point Road
CHISWICK NSW 2046
Ph: 13 10 80; Fax: (02) 9713 8057

J.W. Cranston & Co. Ltd
815 Port Road
PO Box 85
WOODVILLE SA 5011
Ph: Freecall 008 888 232 or (08) 8243 0922
Fax: (08) 8243 2922

DM Plastics
14/555 Churchill Road
KILBURN 5084
PO Box 4
ENFIELD SA 5085
Ph: (08) 8349 7654; Fax: (08) 8349 5431
Mobile: 0418 823 783

John Kellett Sales Pty Ltd
PO Box 65
BRIGHTON SA 5048
Ph: (08) 8362 2337; Fax: (08) 8352 2349

Kriesl & Co Pty Ltd
27 Princes Highway
WARRAGUL VIC 3820
Ph: (03) 5623 1201; Fax: (03) 5623 4483

Prudent Trellising Systems
PO Box 4
ENFIELD SA 5085
Ph: (08) 8349 7654; Fax: (08) 8349 5431

Sap testing equipment suppliers

Aghitec Pty Ltd
1 Ridge Road
WOODSIDE SA 5244
Ph/Fax: (08) 8389 7379

Laboratory Supply Australia Pty Ltd
44 Proprietary Street
TINGALPA QLD 4173
Ph: 1800 011 015; Fax: (07) 3390 6911

Selby Biolab
Private Bag 24
MULGRAVE NORTH VIC 3170
Ph: 132 991; Fax: 1800 067 639

Packers—drying and grading

Qualipack Produce
Warrego Highway
Gatton QLD 4343
Ph: (07) 5466 5441

Packaging suppliers—cartons

Amcor Fibre Packaging Australia
47 Tingira Street
PORTSMITH QLD 4870
Ph: (07) 4035 1183; Mobile: 0418 333 344
ROCKHAMPTON QLD 4700

Ph: (07) 4936 1125; Fax: (07) 4936 1935
806 Ingham Road
BOHLE QLD 4818
Ph: (07) 4774 9444

Fibre Containers Queensland Pty Ltd
Duncan Street
WEST END BRISBANE QLD 4101
Ph Freecall: 1800 177371;
Fax: (07) 3361 6240

Visyboard
Doors Road
GRANTHAM QLD 4347
Ph: (07) 5466 1812
Bruce Highway
TULLY QLD 4854
Ph: (07) 4068 1788
Bruce Highway
GOONDI QLD 4860
Ph: (07) 4063 3871
Fitzalan Street
BOWEN QLD 4865
Ph: (07) 4786 3133

Packaging supplies—pricing guns

Barry Wood
PO Box 14
GOSFORD NSW 2250
Ph: (02) 4324 7000; Fax: (02) 4348 7175

Packaging suppliers—labels

Bundaberg Labels & Tags
4 Bond Street
BUNDABERG QLD 4670
Ph Freecall: 1800 651 863

Spicer Labels
Factory 14 Traders Lane
McCormack Street
CAIRNS QLD 4870
Ph: (07) 4053 1322; Fax: (07) 4032 1150
Outside Cairns, Fax: 1800 688 076
E-mail: neil@spicerlabels.com.au
Web: www.spicerlabels.com.au

Market reporting, fruit brokering, quality advice

Lockett Marketing Australia Pty Ltd
PO Box 644

ARCHERFIELD QLD 4108
Ph: (07) 3274 3355; Fax: (07) 3275 2100

Quality management training and information

Queensland Horticulture Institute (Quality management training)
DPI Call Centre 13 25 23

Centre for Food Technology (Quality management training (HACCP))
Horticulture Quality Management Group
Queensland Horticulture Institute
DPI
80 Meiers Rd
INDOOROOPILLY QLD 4068
Ph: (07) 3896 9685; Fax: (07) 3896 9677

Inspections for interstate produce shipments (page 10)

Inspections for interstate movement
Contact your nearest horticulture DPI office to get contacts for inspectors.

To find your nearest horticulture DPI office, ring the DPI Call Centre 13 25 23 from 8 a.m. to p.m. Monday to Friday, excluding public holidays, for the cost of a local call in Queensland. Callers outside Queensland can ring (07) 3404 6999.

Information on interstate movement provisions

Requirements for interstate movement change rapidly. To allow you to get the latest information we have included the contacts for each state.

Australian Capital Territory
Quarantine & Inspection Officer
Environment ACT
PO Box 1038
TUGGERANONG ACT 2901
Ph: (02) 6207 2265 or (02) 6207 2268

New South Wales
Regulatory Operations Coordinator (Plants)
Locked Bag 21
ORANGE NSW 2800
Ph: (02) 6391 3583; Fax: (02) 6361 9976

Northern Territory
Senior Adviser, Plants
NT Quarantine & Inspection Branch
GPO Box 2268
DARWIN NT 0801
Ph: (08) 8981 8733; Fax: (08) 8941 0223

Queensland
Senior Operational Support Officer
Department of Primary Industries
GPO Box 46
BRISBANE QLD 4001
Ph: (07) 3239 3330; Fax: (07) 3211 3293

South Australia
Program Leader—State Quarantine Inspection Service
46 Prospect Road
PROSPECT SA 50582
Ph: (08) 8269 4500; Fax: (08) 8344 6033

Tasmania
Quarantine Officer
Quarantine Centre
PO Box 347
NORTH HOBART TAS 7022
Ph: (03) 6233 3036; Fax: (03) 6234 6785

Victoria
Supervisor Plant Standards
Plant Standards Centre
Box 126
FOOTSCRAY VIC 3011
Ph: (03) 9687 5627; Fax: (03) 9687 6746

Western Australia
Senior Inspector
Western Australian Quarantine & Inspection Service
280 Bannister Road
CANNING VALE WA 6155
Ph: (08) 9311 5333; Fax: (08) 9455 3052

Market information (page 10)

Ausmarket Consultants
The Ausmarket Consultants group offers historic and current fruit and vegetable market price information, market intelligence, outturn reporting and product assessment. Participants in the network operate separate businesses within Australia's major markets. The Ausmarket Consultants name covers activities where two or more of the group

members combine resources to provide services that extend beyond their individual areas of operation. Contact details can be found on their web site:

www.users.bigpond.com/Ausmarket

Individual members of the network are:

Adelaide

Adelaide Market Services

Bill Bishop

PO Box 6014, Halifax Street

ADELAIDE SA 5000

Ph: (08) 8232 5555; Fax: (08) 8232 1311

Mobile: 0419 868 265

Brisbane

Market Information Services

Trevor Brewer

D Block Brisbane Market

PO Box 229

BRISBANE MARKETS QLD 4106

Ph: (07) 3379 4576; Fax: (07) 3379 4103

Mobile: 0417 712 427

Infocall: 1902 262 580 (\$2.50 per minute, covers Adelaide, Brisbane, Sydney and Melbourne)

E-mail: Ausmarket@bigpond.com

Melbourne

DataFresh Melbourne Market Reporting Service

John Popilieff

Box 170 Melbourne Markets

FOOTSCRAY VIC 3011

Ph: (03) 9689 3444; Fax: (03) 9689 3411

Mobile: 0411 117 578

E-mail: info@datafresh.com.au

Sydney

Control Quality Services

Chris Cope

PO Box 350

FRENCHS FOREST NSW 2086

Ph: (02) 9746 3437; Fax: (02) 9746 1075

Mobile: 0416 108 639

E-mail: cqs@accsoft.com.au

Other market price information sources

Perth

Perth Market Reporting Service

Perth Market Authority

Mail Point 1

280 Bannister Road

CANNING VALE WA 6155

Ph: (08) 9455 2900; Fax: (08) 9455 2902

Market reports: 1900 983 304 (recording);

75c per minute

E-mail: market@tpgi.com.au

Sydney

Flemington Market Reporting Services

Northern B Block Warehouse

PO Box 1

FLEMINGTON MARKETS NSW 2129

Ph: (02) 9764 3516; Fax: (02) 9763 1773

Market reports: 1900 123 038 (recording);

75c per minute

Dial-a-fax: 1900 123 039 (\$2 per fax)

Payment problem contacts

If you have a disagreement over payment for produce or want a list of registered farm produce commercial sellers, the following contacts should be helpful.

Adelaide

South Australian Chamber of Fruit & Vegetables

c/- Adelaide Produce Markets Ltd

Ph: (08) 8349 4528; Fax: (08) 8349 5922

Brisbane

Farm Produce Commercial Sellers

Deputy Registrar

Ph: (07) 3239 3233; Fax: (07) 3239 3379

E-mail: janetzn@dpi.qld.gov.au

Sydney

Prompt Pay

Freecall; 1800 247 787; Fax: (02) 9764 2776

Melbourne

Farmpay

Freecall: 1800 060 321

Info Fax: 1800 678 062

Perth

Chamber of Fruit & Vegetable Industries

Robert Naudi

Ph: (08) 9455 2742; Fax: (08) 9455 4923

Wholesaler information

Contact the appropriate number below for information about farm produce commercial wholesalers in the markets.

Adelaide

Adelaide Produce Markets Ltd
Diagonal Road
POORAKA SA 5095
Ph: (08) 8349 4493; Fax: (08) 8349 6574

Brisbane

Market Line
Freecall: 1800 631 002
Web: www.brisbanemarket.com.au

Melbourne

Victorian Chamber of Fresh Produce Wholesale-
sellers Inc.
PO Box 113
542 Footscray Road
FOOTSCRAY VIC 3011
Ph: (03) 9258 6100; Fax: (07) 9687 7714

Perth

Perth Market Authority
Mail Point 1
280 Bannister Road
CANNING VALE WA 6155
Ph: (08) 9455 2900; Fax: (08) 9455 2902

Sydney

Sydney Markets Ltd
PO Box 2
SYDNEY MARKETS NSW 2129
Ph: (02) 9325 6200; Fax: (02) 9325 6288
E-mail: sydma@sydneymarkets.com.au
Web: www.sydneymarkets.com.au

Market agents

Adelaide Produce Market Ltd
Diagonal Road
POORAKA SA 5095
Ph: (08) 8349 4493; Fax: (08) 8359 6574

Brisbane Market Authority
PO Box 8
BRISBANE MARKET QLD 4106
Ph: (07) 3379 1062; Fax: (07) 3379 4903

Melbourne Markets
Market Box 1
542 Footscray Road
FOOTSCRAY VIC 3011
Ph: (03) 9258 6100; Fax: (07) 9687 7714

Sydney Market Authority
PO Box 2

FLEMINGTON MARKETS NSW 2129
Ph: (02) 9325 6200; Fax: (02) 9325 6288

Sunshine Coast Fruit Marketing Co-operative
Association Ltd (Citrus, mango and low chill
stonefruit marketing groups)
Trading as Nature's Reserve Fruit Company
Windsor Road
PO Box 5242 SCMC
NAMBOUR QLD 4560
Ph: (07) 5441 3699; Fax: (07) 5441 3688
Mobile: 0417 621 579
E-mail: natures@babe.net.au

**Chemical and spraying information
(page 11)**

Infopest—pest management system on CD-
ROM

This DPI product is available from:

Infopest Marketing Manager
DPI Animal & Plant Health Services
GPO Box 46
BRISBANE QLD 4001

Ph: (07) 3239 3967; Fax: (07) 3211 3293
E-mail: infopest@dpi.qld.gov.au
Web: www.dpi.qld.gov.au/aphs/infopest

AVCARE Ltd has a new address, phone and
fax numbers:

National Association for Crop Protection &
Animal Health
Locked Bag 916
NORTH SYDNEY NSW 2601
Ph: (02) 6230 6399; Fax: (02) 6230 6355
E-mail: avcare@ozemail.com.au

Farmcare (ChemCert)
ChemSmart Training Queensland
PO Box 17
GRANGE QLD 4051
Ph: (07) 3352 5033; Fax: (07) 3352 5042
E-mail: chemsmart@powerup.com.au

New South Wales

Ph: (02) 9251 1700; Fax: (02) 9231 5249

Northern Territory

Ph: (08) 8946 6328; Fax: (08) 8946 6690

South Australia

Ph: (08) 8226 1842; Fax: (08) 8226 1844

Tasmania

Ph: (03) 6331 2131; Fax: (03) 6331 4344

Victoria

Ph: (03) 5622 2055; Fax: (03) 5622 2199

Western Australia

Ph/Fax: (08) 9341 5325

Department of Primary Industries

Chemical Services Officers

21–23 Redden Street

Portsmith

PO Box 652

CAIRNS QLD 4870

Ph: (07) 40441600; Fax: (07) 40355474

Or

Abbott St, Oonoonba

PO Box 1085

TOWNSVILLE QLD 4810

Ph: (07) 4722 2688; Fax: (07) 4778 2970

National Registration Authority

1st Floor, 10 National Court

PO Box E240

BARTON ACT 2600

KINGSTON ACT 2604

Ph: (02) 6272 5158; Fax: (02) 6272 4753

Web: www.affa.gov.au/nra/

Government technical services

Low chill stonefruit technical enquiries

(commercial growers only)

Queensland Jodie Campbell has been replaced by:

Peter Rigden

Department of Primary Industries

Maroochy Research Station

PO Box 5083 SCMC

NAMBOUR QLD 4560

Ph: (07) 5441 2211; Fax: (07) 5441 2235

E-mail: rigdenp@dpi.qld.gov.au

Crop management alerts (northern NSW only) (page 12)

Delete: This service is no longer available

Land vegetation management officers
Land vegetation management officers are available for expert assistance with vegetation and tree management; including the retention and management of remnant vegetation, vegetation management planning, tree use on farms including windbreak design and species selection, clearing, non-industrial farm forestry and forest

enrichment. Your local office of the Department of Natural Resources (DNR) can put you in contact with your nearest land vegetation management officer, where available.

Other information sources (page 13)

Farmfax has a new phone number: The Farmfax telephone number is 1902 220 042 (charges apply, \$2.50 or \$5, depending on that is being faxed).

AgrInfonet Project Leader has a new phone and fax number:

Ph: (07) 3239 3307; Fax: (07) 3221 3896

DPI Call Centre: 13 25 23

Callers outside Queensland can ring (07) 3404 6999.

DPI's web site provides round-the-clock access to DPI's information on the World Wide Web. It provides access to relevant information services and products within DPI and on other relevant web sites. The address is: www.dpi.qld.gov.au

DPI/QHI offices/NSW Agriculture

Alstonville

Contact: John Dirou

NSW Agriculture

Tropical Fruit Research Station

PO Box 72

ALSTONVILLE NSW 2477

Ph: (02) 6626 2435; Fax: (02) 6628 5209

E-mail: dirouj@agric.nsw.gov.au

Or

Phillip Wilk

Ph: (02) 6626 2450; Fax: (02) 6628 5209

Mobile: 0411 139 567

E-mail: phillip.wilk@agric.nsw.gov.au

Bundaberg Research Station

Ashfield Road, Kalkie

BUNDABERG

Ph: (07) 4155 6244; Fax: (07) 4155 6129

Gatton Research Station

Locked Bag 7

MS 437

GATTON QLD 4343

Ph: (07) 5466 2222; Fax: (07) 5462 3223

Gayndah
GAYNDAH QLD 4625
Ph: (07) 4161 1116; Fax: (07) (41 61 1397

Mareeba
28 Peters Street
PO Box 1054
MAREEBA
Ph: (07) 4092 8555; Fax: (07) 4092 3593

Nambour
Maroochy Research Station
PO Box 5083 SCMC
NAMBOUR
Ph: (07) 5444 9600; Fax: (07) 5441 2235

Rockhampton
Corner Bruce Highway & Yeppoon Road,
Parkhurst
ROCKHAMPTON
Ph: (07) 4936 0211; Fax: (07) 4836 1484

Stanthorpe/Applethorpe
Applethorpe Research Station (was Granite
Belt)
New England Highway
APPLETHORPE QLD 4378
PO Box 501
STANTHORPE QLD 4380
Ph: (07) 4681 1255; Fax: (07) 4681 1769

Consumer Affairs Queensland

Consumer Affairs officers manage the Trade Measurement Act 1990 and can provide current information on marking packages and the requirements of ensuring correct weight in all packages. You can locate your nearest office or obtain information by contacting them on: Ph: (07) 3836 0411; Fax: (07) 3836 0424.

Office of Fair Trading

Packers can avoid fines under the Trade Measurement Act 1990 by ensuring correct weight and labelling whenever packing fruit and vegetables for sale. Ring the trade measurement section on (07) 3836 0411 for guidelines for the packing of fruit and vegetables.

Special technical information sources

Australian Horticultural Corporation (AHC)
Level 11
51 Druitt Street
SYDNEY NSW 2000
Ph: (02) 9264 9966; Fax: (02) 8267 4199
E-mail: ahc@hort-corp.au

Horticultural Research & Development
Corporation (HRDC)
Level 6
7 Merriwa Street
GORDON NSW 2072
Ph: (02) 9418 2200; Fax: (02) 9418 1352
E-mail: hrdc@hrdc.gov.au

Business planning advice

Department of Tourism, Small Business &
Industry
PO Box 3036
TOOWOOMBA QLD 4350
Ph: (07) 4639 3600; Fax: (07) 4638 2139
Department of Economic Development &
Trade
Investment Office
100 George Street
BRISBANE QLD 4000
Ph: (07) 3224 4224; Fax: (07) 3229 7348

Agricultural booksellers (page 14)

D & A Books and Journals are now trading as
D & A Information Services with a web site:
www.dadirect.com.au

DPI Publications
GPO Box 46
BRISBANE QLD 4001
Ph: 1800 816 541; Fax: (07) 3239 6509
E-mail: books@dpi.qld.gov.au
Web: www.dpi.qld.gov.au/catalogue

Granny Smith's Bookshop
208 Nicholson Road
PO Box 27
SUBIACO WA 6008
Ph: (08) 9388 1965; Fax: (08) 9388 1852
E-mail: granny@aoi.com.au
Web: www.aoi.com.au/granny

Johima Books has e-mail and a web site:

E-mail: nat@johima.com.au

Web: www.johima.com.au

Landlinks Press

PO Box 1139

COLLINGWOOD VIC 3066

Ph Freecall: 1800 645 051 or (03) 9662 7666

Fax: (03) 9662 7555

E-mail: sales@publish.csiro.au

Web: www.publish.csiro.au

NSW Agriculture

Publications Sales Unit

Locked Bag 21

ORANGE NSW 2800

Ph: (02) 6391 3433

Orders: Freecall 1800 028 374

Fax: 1800 642 065

Useful web sites

Fresh Chain

www.freshchain.com.au

Australian Government

Agriculture, Fisheries and Forestry Australia:

www.dpie.gov.au.

This site includes links to Government agencies: Australian National Registration Authority for Agricultural and Veterinary Chemicals.

Australian Quarantine & Inspection Service

www.aqis.gov.au

Carnarvon, WA, horticultural area

www.carnarvonhorticulture.org.au/stonefruit.htm

Agriculture Western Australia

www.agric.wa.gov.au

Department of Conservation & Environment, Victoria

www.dce.vic.gov.au/trade/food/stonefrt/stonefrt.htm

Department of Primary Industries, Queensland

www.dpi.qld.gov.au/dpinotes/

New South Wales Agriculture

www.agric.nsw.gov.au/Hort/Decid_pub/

USA

University of California

<http://postharvest.ucdavis.edu>

<http://www.uckac.edu>

North Dakota State University

<http://www.ext.nodak.edu/extpubs/plantsci/hortcrop/pp689w.htm>

References

References (page 22)

Australian Fresh Stonefruit Quarterly is a new publication jointly funded through the Horticultural Research & Development Corporation, the Australian Horticultural Corporation and the Commonwealth Government.

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University of Western Sydney Hawkesbury

RICHMOND NSW 2753

Stonefruit Flyer is a quarterly newsletter with local and national industry information produced by the stonefruit industry development officer for Queensland and northern NSW.

Stonefruit Industry Development Officer

David Weir

Brisbane Road

ROCKLEA QLD 4106

PO Box 19

BRISBANE MARKET QLD 4106

Ph: (07) 3213 2424; Fax: (07) 32132480

Mobile: 0419 753 171

E-mail: dweir@qfvg.org.au

HRDC reports (to November 1999)

Industry development officer: fresh stonefruit and almonds, August 1998 (FR95037)

Australian fresh stonefruit industry crop forecasting—feasibility study (SF98013)

Stonefruit cultivar database (FR 95012)

Orchard variety research report (SF98017)

Dimethoate residue management in peaches (SF97016)



Crop production HANDY GUIDES

Crop production handy guide

Specific updates

Fertilising

Changes to some of the current fertiliser applications are recommended:

July: Apply 50% of annual N (nitrogen) and K (potassium) fertiliser. November: Apply 20% of annual N and K fertiliser. January and March: Apply 15% of annual N and K fertiliser.

Problem solver handy guide

Specific updates

- Endosulfan has been deregistered for use on stonefruit for the 1999–2000 season.
- Some new trade names for pest control products can be added. Where the active ingredient is recommended for pest control in the guide, it may be possible to use some of the new products listed here.

Active ingredient	Trade names
Petroleum oil	Stifle Dormant Spray Oil; Throttle; Minder Spray Oil Universal; Summer Oil; Spray Oil Universal; Citrole; Sunspray Ultra-fine; Tregspray
Carbendazim	Carbendazim 500
Chlorpyrifos	Pest One; Chlorpyrimax 500; Low Odour Chlorpyrifos; Optem; Protector 500; Bar 500; Pyrinex
Sulphur	Sulfur Fungicide and Miticide; Microthiol Dispers.; Flosul-SC; Flowable Sulphur; Top Wettable Sulphur; Sulfolac; Sulphur Suspension Conc.; Wettasul; D-C Tron Plus
Sulphur-wettable	Cosavet; Sulphur
Mancozeb	Mancozeb WDG; Winner Mancozeb WP
Dimethoate	Fyfanon
Dodecenyl acetate	Isomate OFM Rosso
Dodecenyl acetate + Dodecenol	Isomate OFM Rosso
Metalaxyl	Axiom
Mancozeb	Bryzeb
Copper hydroxide	Champion
Copper oxychloride	Brycop
Chlorothalonil	Check-Out; Echo; Rover 500
Trichlorfon	DanMak

- New products for the control of spider mite

Active ingredient	Trade name
Chlorfenapyr	Secure 360
Oxythioquinox	Morestan