Onion information kit—update
Reprint – information current in 1998–99

REPRINT INFORMATION – PLEASE READ!

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

This publication has been reprinted as a digital book without any changes to the content published in 1998–99. We advise readers to take particular note of the areas most likely to be out-of-date and so requiring further research:

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• Financial information—costs and returns listed in this publication are out of date.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

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

This publication was last revised in 1998–99. 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 onion 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.
Onion
Information Kit
Annual Update
1999

Technical content

Alan Duff

Compilation

Jerry Lovatt

Queensland Horticulture Institute
Department of Primary Industries, Queensland
Introduction

Welcome to the 1999 edition of the Agrilink Onion Information Kit Annual Update. This is a special service provided to registered purchasers of the Agrilink Onion Information Kit published in August 1997.

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.
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Overview of the 1998–99 season

1998 season

Ideal growing conditions early in the season resulted in some good quality Early Lockyer Whites and Golden Brown onions. The early season planting was less than in previous years but this shortfall was supplemented by an increase in later plantings. The estimated total area planted for 1998 was 700 ha, 15% more than the 1997 crop.

The Lockyer Valley crop was down by about 5% on the 1997 crop but the area under onions on the Darling Downs increased by about 10%. The area planted to red salad onions has increased by about 5%. A small number of growers on the Atherton Tableland and in and around Emerald account for about 10% of the Queensland crop.

About 20% of the 1998 crop was planted early to Golden Brown and Early Lockyer White with a small proportion of Early Lockyer Brown. The mid season crop (50%) consisted predominantly of Wallon Brown, with a good-sized area planted to the new Yates varieties Cavalier and Predator. The remaining 30% of the crop planted is still dominated by Gladiator with some Gladalans being planted.

A large percentage of the early season onions harvested were of variable quality. Weather conditions in the last few weeks of September 1998 resulted in an increase in the incidence of downy mildew with a corresponding reduction in yield. Unseasonable wet weather resulted in a shortage of large onions and a corresponding increase in the number of medium sized onions.

About 600 to 700 tonnes of mild onions were exported to Japan. Small quantities of more pungent onions were also exported to Singapore and Taiwan.

1999 season

The Lockyer Valley has seen a shift to predominantly mid-late season plantings. Growers have moved away from early plantings of brown onions due to the poor prices received for Golden Brown onions. In general, the total area planted stayed much the same as 1998 with some good yields recorded for mid-late season onions. The season was difficult for growers in the Lockyer due to a mild winter resulting in a higher than usual incidence of bolting and severe outbreaks of downy mildew and onion white rot.

The area planted to onions in the Darling Downs has also increased, again to predominantly mid-late season varieties. The season was good, with some excellent quality onions harvested. Yields were also good.

There has been renewed interest in onions, particularly sweet onions for export from the Atherton Tableland. The export market is small but has some potential if agronomic problems can be solved. Onions produced on the Tablelands are now absorbed by the local domestic market.
Prices have fluctuated a great deal throughout the season. Early white onions commanded a good price of $15 to $20 per bag but dropped dramatically as quantities increased and eventually regained a price of $10 to $15 per bag. Early browns were reasonably priced, up to $14 per bag for large and $10 for mediums. This was reversed later in the season as the demand for medium sized brown onions increased. The quality of early red onions was poor but they still commanded a good price of $10 per 10 kg bag. This levelled out at about $6 to $8 per 10 kg bag.

**Onion Downy Mildew Forecasting Service**

The Onion Downy Mildew Forecasting Service (Downcast model) was implemented in the 1998 season as unreplicated trial plots of about 20 m x 20 m on growers’ early planted onions only. The trial plots were sprayed on the recommendations of the forecasting system and compared with the growers’ spray program. The use of the forecasting system in 1998 reduced spray numbers by about four to five depending on the growers’ practice. Importantly, the forecasting system can more accurately target sprays to coincide with critical stages in disease development.

The Downcast model confirmed that there were no early season infection periods (from March to middle April) as the average daily temperature was too high. When the average temperature dropped within the critical range, conditions were suitable for sporulation but often not for infection. The leaf wetness conditions on the days following the predicted sporulation were generally not adequate to promote the disease.

In 1999 four weather stations were established in major districts in the Lockyer Valley to monitor weather differences and make regional forecasts for onion downy mildew outbreaks.

The forecasting service is available to onion growers in the Lockyer Valley. The forecast information is distributed in two ways:

- Growers can obtain the forecast for the cost of a local call by dialling a telephone number that has a recorded message giving the current downy mildew status at the four weather stations. This message is updated every Monday, Wednesday and Friday.
- The forecast information is e-mailed to local chemical resellers in the Lockyer Valley and made available to local growers.

**Specific updates**

**Prices and throughputs** (page 3)

Prices and throughputs for the 1998 season in the Brisbane and Sydney markets are shown in Figures 1 to 3. For comparison, the three-year average for 1995 to 1997 is also graphed. (Data courtesy Market Information Services, Brisbane. See page 17 of this update.)
Before you start

Figure 1. Average price, 1995 to 1997 and 1998 average price on the Brisbane market for brown and white onions

Figure 2. Average price, 1995 to 1997 and 1998 average price on the Sydney market for brown and white onions
Figure 3. Throughput for 1996 to 1998 on the Brisbane and Sydney markets for brown and white onions

Production costs (page 5)

The cost of growing a 40 t/ha crop is now about $2150. Harvesting costs, including drying, bagging and freight, add a further $4840.
Common 
QUESTIONS

Overview
Some additional questions, particularly related to chemicals available, have been raised since the Agrilink Onion Information Kit was first published. Following are some questions that the DPI’s extension officers have been asked recently and their answers.

Is Goal now available and if so what are its restrictions?
Goal is now available under a minor use permit. Copies of this permit are available from DPI’s Gatton Research Station and from Queensland Fruit and Vegetable Growers. A DPI Note ‘Guidelines for using oxyfluorfen herbicide (e.g. Goal) in Queensland onions’ is also available. Call the DPI Call Centre on 13 25 23 or visit our web site: www.dpi.qld.gov.au/dpinotes/Welcome.html
Overview

This section briefly updates changes to Growing the crop relating to varieties and weed control.

Specific updates

Several new onion varieties are now grown in the Lockyer Valley and on the Darling Downs.

Table 1. New onion varieties grown in the Lockyer Valley (page 5)

<table>
<thead>
<tr>
<th>Variety</th>
<th>Seed source</th>
<th>Plant</th>
<th>Harvest</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminator</td>
<td>Yates</td>
<td>Mid to late May</td>
<td>Mid to late October</td>
<td>Vigorous hybrid brown variety</td>
</tr>
<tr>
<td>Dove</td>
<td>Yates</td>
<td>Late May to early June</td>
<td>Mid October to November</td>
<td>Hybrid white</td>
</tr>
<tr>
<td>Devine</td>
<td>Yates</td>
<td>June</td>
<td>November</td>
<td>Hybrid white</td>
</tr>
<tr>
<td>Nautilus</td>
<td>Yates</td>
<td>Early to mid May</td>
<td>Late September to early October</td>
<td>Vigorous hybrid brown variety. Also suitable for central and north Queensland</td>
</tr>
<tr>
<td>Sombrero</td>
<td>Henderson</td>
<td>May</td>
<td>Late September</td>
<td>Low pungency onion ideally suited to the mild onion market</td>
</tr>
<tr>
<td>Rio Demon</td>
<td>South Pacific</td>
<td>Late May to June</td>
<td>October to mid November</td>
<td>Mid maturing red onion</td>
</tr>
<tr>
<td>Rio Pancho</td>
<td>South Pacific</td>
<td>Late April to late May</td>
<td>Mid September to mid October</td>
<td>Mild sweet Granex type</td>
</tr>
<tr>
<td>Rio Xena</td>
<td>South Pacific</td>
<td>Late May to June</td>
<td>Mid October to mid November</td>
<td>Mild brown onion suitable for the sweet onion market. Also suitable for north Queensland</td>
</tr>
</tbody>
</table>

Air-seeders must be calibrated before planting each variety to accommodate the range of varieties available and the variability in seed weight and size.

Control weeds (page 11)

Table 3. Pre-emergent herbicides to control weeds in onions

Delete: Glyphosate, Ranger, Ricochet, Round-up, Sanos

Control grass weeds (page 15)

Table 4. Herbicides to control emerged grasses in onions

Delete: Sertin 186 EC
**Herbicides—post-emergent** (page 17)

*Table 5. Post-emergent herbicides to control weeds in onions*

Delete: Afalon, Linurex Flowable

Include:

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<th>Active ingredient</th>
<th>Trade names</th>
<th>Controls</th>
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<td>linuron</td>
<td>Linuron WDG,</td>
<td>Some broadleaf weeds</td>
</tr>
<tr>
<td>Linurex WP</td>
<td>Linurex</td>
<td>Some broadleaf weeds</td>
</tr>
<tr>
<td>oxyfluorfen (NRA* permit)</td>
<td>Galigan, Goal, Spark</td>
<td>Some broadleaf weeds</td>
</tr>
</tbody>
</table>

Taken from the DPI's Infopest CD, V2.4. Consult the chemical label for rates.

*NRA: National Registration Authority*
Overview

The gross margin for south-east Queensland has been updated. Eight new onion varieties are available, causing a variation in seed costs. There has been increasing interest in the export of sweet onions to Japan.

Specific updates

Gross margin information for south-east Queensland (page 10)

The gross margin for onions grown in south-east Queensland has been re-worked for early (white/brown), late (white/brown) and red onions. The results are shown below.

Early (white/brown) onions

| Gross margin per hectare       | $9 644 |
| Break-even yield at $500 per tonne | 6.9 tonnes/ha |
| Break-even price at 40 t/ha     | $171.39 per tonne on-farm |
| Gross per megalitre of irrigation water | $2 411/ML |

Actual gross margin when price or yield changes

<table>
<thead>
<tr>
<th>Yield (t/ha)</th>
<th>Low $400</th>
<th>Medium $500</th>
<th>High $600</th>
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</thead>
<tbody>
<tr>
<td>Low</td>
<td>$4 512</td>
<td>$7 312</td>
<td>$10 112</td>
</tr>
<tr>
<td>Medium</td>
<td>$6 144</td>
<td>$9 644</td>
<td>$13 144</td>
</tr>
<tr>
<td>High</td>
<td>$7 776</td>
<td>$11 976</td>
<td>$16 176</td>
</tr>
</tbody>
</table>

Late (white/brown) onions

| Gross margin per hectare     | $9 486 |
| Break-even yield at $500 per tonne | 7.5 tonnes/ha |
| Break-even price at 40 t/ha   | $175.36 per tonne on-farm |
| Gross per megalitre of irrigation water | $2 371/ML |

Actual gross margin when price or yield changes

<table>
<thead>
<tr>
<th>Yield (t/ha)</th>
<th>Low $400</th>
<th>Medium $500</th>
<th>High $600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>$4 354</td>
<td>$7 154</td>
<td>$9 954</td>
</tr>
<tr>
<td>Medium</td>
<td>$5 986</td>
<td>$9 486</td>
<td>$12 986</td>
</tr>
<tr>
<td>High</td>
<td>$7 618</td>
<td>$11 818</td>
<td>$16 018</td>
</tr>
</tbody>
</table>
Red onions

Gross margin per hectare $9,512 per hectare
Break-even yield at $650 per tonne 5.7 tonnes per hectare
Break-even price at 40 t/ha $226.68 per tonne on-farm
Gross per megalitre of irrigation water $2,128 per ML

Actual gross margin when price or yield changes

<table>
<thead>
<tr>
<th>Yield</th>
<th>Price per tonne</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Low</td>
<td>$520</td>
</tr>
<tr>
<td>Medium</td>
<td>$4,432</td>
</tr>
<tr>
<td>High</td>
<td>$6,100</td>
</tr>
<tr>
<td></td>
<td>$7,768</td>
</tr>
</tbody>
</table>

Varieties (page 11)

Eight new onion varieties have been released. See Table 1 page 11 of this update.

Forecasting for downy mildew (page 31)

The Downy Mildew Forecasting Service is covered in the overview of the 1998 and 1999 season on page 5 of this update.

Marketing (page 33)

Sweet onions for the export market

There has been increased interest in the export market, particularly to Japan. This is a sweet onion market that requires onions from September through to early November. Onions from Queensland are the only onions available to satisfy this market because sweet onions are not available this early from other Australian states. Growers must consider Japan as an additional market to their current markets, not a replacement for the domestic market. In most instances growers must also be prepared at times to show commitment to this export market and accept lower prices than are available on the domestic market.
Specific updates

There have been no changes to the Problem solver.
Specific updates

Seed suppliers (page 4)
Henderson Seeds has a new e-mail address: adamwinter@hendersonseed.com.au
S&G Seeds is now:
Novartis Seeds
c/- Andrew Maughan
PO Box 1599
TOOWOOMBA QLD 4350
Mobile: 0408 499 937; Fax: (07) 4639 4946
Head office Ph: (03) 9706 3033
Add to Yates Seeds
Contact: Michael Sippel,
Mobile: 0418 479 062

Lockyer Valley onion seed producers
(page 4)
Delete:
Edgar Schulz
GATTON QLD 4343
Add:
Greg Allen
Katts Road
ROPELY QLD 4343
Ph: (07) 5462 7320

Vermin control
For information on controlling native birds contact:
Environmental Protection Agency
Queensland Parks and Wildlife Service
Ph: (07) 3227 7111
To control other vermin contact your nearest office of the Department of Natural Resources.

Market price information (page 6)
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

Payment problems
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
Free call: 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
Free call: 1800 631 002
Web: www.brisbanemarket.com.au

Melbourne
Victorian Chamber of Fresh Produce Wholesalers Inc.
PO Box 113
542 Footscray Road
FOOTSCRAY VIC 3011
Ph: (03) 9689 3233; Fax: (03) 9689 9223

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

Horticultural consultants (page 6)
Add:
Trevor Stillman
MS 2215
Cummins Road
BUNDABERG QLD 4670
Ph: (07) 4155 1894; Fax: (07) 4155 1690

Pesticides and spraying
AVCARE Ltd
National Association for Crop Protection & Animal Health
Locked Bag 916
CANBERRA ACT 2601
Ph: (02) 6230 6399; Fax: (02) 6230 6355
E-mail: avcare@ozemail.com.au

National Registration Authority
PO Box E 240
KINGSTON ACT 2604
Ph: (02) 6271 6384
Web: www.affa.gov.au/nra

For training in pesticide application ChemSafe has been replaced by ChemSmart. Contact the address below to find nearest accredited trainer.

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

Queensland government services (page 7)

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 can put you in contact with your nearest land vegetation management officer, where available.
Land conservation extension officers

Land conservation extension officers are available in some districts to provide expert assistance in planning farm layouts and providing advice on land management. Your local office of the Department of Natural Resources can put you in contact with your nearest land conservation officer, where available.

Water extension advice

Department of Natural Resources officers (DNR) can provide advice on most aspects of water use on farms including dam construction and maintenance, stream licensing, bore development, irrigation selection, water quality and farm drainage problems. Your local DNR office can put you in contact with your nearest office where this advice is available.

Farm financial counselling service

In Queensland, DPI provides business advisory services to producers who are in difficulty from continuing environmental and economic pressures. Trained counsellors can help in the analysis of financial situations and the development of business plans. Your local DPI office or the DPI Call Centre, telephone 13 25 23, can put you in touch with your nearest financial counsellor.

Other information sources

DPI web site: www.dpi.qld.gov.au

DPI Call Centre. Queensland residents can ring the Call Centre on 13 25 23 (for the cost of a local call) from 8 a.m. to 8 p.m. Monday to Friday, excluding public holidays, to access DPI’s information services and products. Callers outside Queensland can ring (07) 3404 6999.

Farmfax

The new Farmfax telephone number is 1902 220 042 (charges apply, $2.50 or $5 depending on what is being faxed).

Downy Mildew Forecasting Service

Growers can receive spray advice regarding downy mildew outbreaks from the Downy Mildew Forecasting Service from 1 June to 1 October by ringing (07) 5466 2207.
References

DPI information products

Books (page 11)


Other products (page 12)

DPINotes are available on: www.dpi.qld.gov.au/DPINotes/Welcome.html

Other books (page 12)

The 1998 edition of the Australian Vegetable Growing Handbook edited by J. Salvestrin is now available. Phone (02) 6960 1550 or fax (02) 6969 1600 for details.

Annual publications (page 13)

Brisbane Markets Business Directory
Available from:
Brisbane Market Authority
PO Box 8
BRISBANE MARKETS QLD 4106
Ph: (07) 3379 1062; Fax: (07) 3379 4903
Web: www.brisbanemarket.com.au

Prices and Throughput for the Brisbane Market 1998
Available from:
Market Information Services
PO Box 229
BRISBANE MARKET QLD 4106
Ph: (07) 3379 4576; Fax: (07) 3379 4103
Mobile: 041 771 2427

Melbourne Markets Business Directory
Available from:
Melbourne Market Authority
PO Box 1
542 Footscray Road
FOOTSCRAY VIC 3011
Ph: (03) 9258 6100; Fax: (03) 9687 7714
E-mail: info@mma.vic.gov.au

Sydney Markets Users Guide
Available from:
Sydney Market 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

Articles

The following articles have been published in Onions Australia.


Osaka, Japan—sweet onion breeding and agronomy, Jackson, K.J. (1999), Onions Australia, Vol 16: 10–11.


**Conference proceedings**

The following papers are published in the proceedings from the 2nd International Edible Alliums Conference, held in Adelaide in 1997.


**Useful internet sites**

The following Internet sites are additional to those mentioned elsewhere in this update.

**Australian Farmers Guide to the Internet**
www.farmwide.com.au/farmersguide

**Australian Quarantine & Inspection Service (AQIS)**
www.aqis.gov.au

Agriculture, Fisheries & Forestry Australia (Commonwealth Department of Agriculture, Fisheries & Forestry)
www.affa.gov.au

**Department of Primary Industries, Queensland**
www.dpi.qld.gov.au

Energy and Water Efficiency in Vegetable Production
http://edis.ifas.ufl.edu/scripts/htmlgen.exe?DOCUMENT_EH208

**Horticulture Australia**—web site for Horticultural Research & Development Corporation (HRDC) and Australian Horticultural Corporation (AHC);
www.horticulture.com.au

**National Registration Authority**
www.affa.gov.au/nra

**Oregon State University: Vegetable Production Guide**
www.orst.edu/Dept/NWREC/vegindex.html

**Produce and Postharvest Related Sites**
http://postharvest.ucdavis.edu/Links/index.html

**Texas A&M University: Plant Answers**
http://aggie-horticulture.tamu.edu/PLANTanswers/web.html

**United States Department of Agriculture**
www.usda.gov

**University of California IPM Online**
www.ipm.ucdavis.edu
University of Florida, Institute of Food & Agricultural Sciences
http://edis.ifas.ufl.edu
University of Georgia, The Onion Project
http://www.vga.edu/onion/
Note these changes for control of pests and diseases of onions. This information is taken from the DPI's Infopest CD, V2.4.

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<tr>
<th>Chemical</th>
<th>Controls</th>
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<tr>
<td>carbaryl</td>
<td>cutworms, green vegetable bug,</td>
<td>Bugmaster Flowable</td>
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<td>Rutherglen bug, wingless grasshoppers</td>
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<td>downy mildew</td>
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<td>copper oxychloride</td>
<td>downy mildew</td>
<td>Coperoxy</td>
<td>1</td>
</tr>
<tr>
<td>dicofol</td>
<td>twospotted mites</td>
<td>Kethane, Mitofol</td>
<td>7</td>
</tr>
<tr>
<td>mancozeb + metalaxy</td>
<td>downy mildew, purple blotch</td>
<td>Axiom, Optica</td>
<td>0</td>
</tr>
<tr>
<td>phorate</td>
<td>onion maggot, thrips</td>
<td>Zeemet</td>
<td>70</td>
</tr>
<tr>
<td>sulphur</td>
<td>mites</td>
<td>Sulphur Spray</td>
<td>0</td>
</tr>
<tr>
<td><strong>DELETE TRADE NAMES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>copper</td>
<td></td>
<td>Blue Mantel</td>
<td></td>
</tr>
<tr>
<td>mancozeb</td>
<td></td>
<td>Dek</td>
<td></td>
</tr>
<tr>
<td>mancozeb + sulphur</td>
<td></td>
<td>Mancozeb Plus</td>
<td></td>
</tr>
<tr>
<td>zincb</td>
<td></td>
<td>Cyneb</td>
<td></td>
</tr>
</tbody>
</table>

* WHP: Withholding period (days)

These are all the changed items that we are aware of. If there are any additional changes, please contact our Customer Service officer on 1800 677 640 or send fax details to (07) 5444 9694.

0001.150
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Proudly produced by the Agrilink Project Team of Noel Vock, John James, Jerry Lovatt, Irene Kernot, Loraine Chapman, Glenis Ayling, Roy Verge, Lourelle Heintjes, Sue Longin and Peter Rigden.

Disclaimer: This information booklet is distributed by the Department of Primary Industries as an information source only. The information and other material incorporated by reference is provided solely on the basis that the reader will be responsible for making his/her own assessment of the content and seek professional advice.
Introduction

Welcome to the 1998 edition of the *Agrilink Onion Information Kit Annual Update*. This is a special service provided to registered purchasers of the *Agrilink Onion Information Kit* published in August 1997.

This booklet is designed to update you with significant changes to the content of the kit since it was published. It does this by providing the specific changes page by page.

The booklet is designed to fit into the front pocket of your kit so that it is available for reference whenever you use the kit.

Thank you for being an Agrilink customer. We look forward to continuing to serve you with quality information products.
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Overview of the 1997/98 season

Near perfect growing conditions were recorded for the 1997 onion crops apart from the late planting which was harvested under very hot conditions. The predicted planting was about 600 ha.

The early onion crops for 1998 were planted under very hot conditions in February and March and in some instances these conditions dramatically reduced crop establishment. As a result of the extreme early season temperatures, some plantings had minor Heliothis damage. From about May onwards, growing conditions were near ideal. Early season onions have realised very good prices of $15 to $20 per bag.

About 30% of this year’s crop were Early Lockyer white and brown onions planted from March to mid April (early season). An estimated 50% were Golden Brown, Wallon Brown and Wallon White, planted late April to early May (mid-season). A further 20% were planted late May to June (late season onions). Wallon Brown is receiving greater recognition as a mid-season onion and plantings of this variety have increased. Gladiator is superseding Gladalan as the dominant late onion variety due to its superior yield and quality aspects. Other high yielding mid-season varieties are now available; check with your local seed supplier, seed company or the Department of Primary Industries (DPI) for the variety most suitable for your needs.

The DPI’s work on establishing an onion downy mildew forecasting service for Lockyer Valley farmers has started. Queensland Fruit & Vegetables Growers (QFVG) and the Horticultural Research & Development Corporation (HRDC) jointly fund this project.
Onion downy mildew forecasting system

Onion downy mildew is perhaps the single biggest constraint to onion production in Queensland and in severe cases it can result in total crop loss. The disease becomes most prevalent under conditions of high relative humidity, low temperature and extended periods of dewy or wet conditions. Disease outbreaks are strongly dependent on these conditions and in some seasons the disease is far more prevalent than in others. However, since onions are a high value crop many growers are faced with no option other than to adopt a calendar spray program irrespective of whether the conditions are favourable for disease development.

In the Lockyer Valley, where 80% of Queensland's onions are grown, there are four major growing regions—Tenthill, Gatton, Laidley and Lowood—and each of these has different microclimates. Weather stations have been established in each region and weather data will be collected and used as a basis for forecasting when spraying is required to control downy mildew. Under a forecasting system where fewer fungicide applications may be required, improved coverage will be critical. The project has also started investigations on pesticide application parameters for onion spraying.

The forecasting model has highlighted that there was relatively low disease pressure during the 1998 season. By using the forecasting model growers were able to dramatically reduce the number of fungicide applications, particularly on the first onion planting. It is anticipated that the service will be fully operational next season.

Specific updates

Prices and throughputs (page 3)

Prices and throughputs for the 1997 season in the Brisbane and Sydney markets are shown in Figures 1 to 3. For comparison, the three-year average for 1994 to 1996 is also graphed.
Figure 1. Average price, 1994 to 1996 and 1997 average price on the Brisbane market for brown and white onions

Figure 2. Average price, 1994 to 1996 and 1997 average price on the Sydney market for brown and white onions
Before you start

Onion Annual Update 1998

Figure 3. Throughput for 1995 to 1997 on the Brisbane and Sydney markets for brown and white onions

Production costs (page 5)

The cost of growing a 40 t/ha crop is now about $1860. Harvesting costs, including drying, bagging and freight, add a further $5540.
Overview

Some additional questions, particularly related to chemical use and quality standards have been raised since the Agrilink Onion Information Kit was first published. Following are some questions that the DPI’s extension officers have been asked recently and their answers.

How do I get spray accreditation?
Spray accreditations can be obtained by attending a course provided by an accredited Chemsafe Training Queensland trainer. Contacts and references on page 23 gives a contact to help you find your nearest trainer.

Do I need training in the safe use of chemicals?
In some states you cannot buy chemicals unless you have a current spray accreditation. 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 Chemsafe 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 AS2507 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 safety, environmental and food safety factors whenever you deal with chemicals. Further information on correct use of chemicals is covered in the chemical user
course. Agsafe or Chemsafe accredited trainers also understand these requirements and employees of farm chemical resellers with Agsafe accreditations are also a useful source of information.

**How do I calibrate my spray equipment?**
To work efficiently equipment needs to be calibrated and results of this calibration should be documented. You will learn the correct method of calibration at the spray accreditation course.

**Do I need to keep a diary of spraying records?**
Yes you do! Records of chemical application 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 the onion merchants and agents supplying the retail sector now expect you to keep spray records showing at least what was applied, how much, by whom, and when the application took place.

**What level of quality assurance (QA) do I need?**
You will need different levels of quality assurance (QA) depending on to whom you supply your onions. If you supply direct to a retailer in some instances you may need a full quality management system which is accredited by a third party. If you supply to a processor you will need to meet their requirements. There is more information on QA under Key issues on page 16.
Growing the Crop

Overview

This section briefly updates changes to Growing the crop relating to varieties, planting, trace elements, labelling and interstate quarantine. More information on some of these areas appears in Key issues on page 15.

Specific updates

Two new onion varieties are now grown in the Lockyer Valley.

Table 1. Onion varieties grown in the Lockyer Valley (page 5)

<table>
<thead>
<tr>
<th>Variety</th>
<th>Seed source</th>
<th>Plant</th>
<th>Harvest</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cavalier</td>
<td>Commercial</td>
<td>Late April</td>
<td>Mid to late</td>
<td>Vigorous hybrid variety, mild</td>
</tr>
<tr>
<td></td>
<td></td>
<td>early May</td>
<td>September</td>
<td></td>
</tr>
<tr>
<td>Predator</td>
<td>Commercial</td>
<td>Mid to late</td>
<td>Mid to late</td>
<td>Vigorous hybrid variety, harder and more pungent than earlier varieties</td>
</tr>
<tr>
<td></td>
<td></td>
<td>May</td>
<td>October</td>
<td></td>
</tr>
</tbody>
</table>

Plant the seed (page 10)

When air-seeders are used for planting, growers need to ensure that only very high germination seed is planted. Low germination seed will result in a thin planting and greater unevenness in the harvested onion.
Control weeds (page 11)

Table 3. Pre-emergent herbicides to control weeds in onions

Include:

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Products</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>glyphosate — ipa</td>
<td>Glyphosate, Nomix, Ranger, Ricochet, Round-up, Sanos, Squadron</td>
<td>Controls grasses and some broadleaf weeds</td>
</tr>
</tbody>
</table>

Taken from the DPI’s Infopest CD, V2. Consult the chemical label for rates.

Control grass weeds (page 15)

Table 4. Herbicides to control emerged grasses in onions

Include:

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Products</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clethodim</td>
<td>Select</td>
<td>Controls grasses</td>
</tr>
</tbody>
</table>

Taken from the DPI’s Infopest CD, V2. Consult the chemical label for rates.

Herbicides—post-emergent (page 17)

Table 5. Post-emergent herbicides to control weeds

Delete: Unyonox.

Include:

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Products</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>methabenzthiazuron</td>
<td>Tribunil, Trump</td>
<td>Controls broadleaf weeds and grasses</td>
</tr>
</tbody>
</table>

Taken from the DPI’s Infopest CD, V2. Consult the chemical label for rates.

Trace elements (page 20)

Applications of boron may be required where soil levels are below 2.0 mg/kg (in CaCl₂). This should be confirmed by tissue testing at the three to four leaf stage. Boron deficiency may be corrected by three foliar applications of Solubor or other boron fertiliser as per label directions.
Labelling (page 26)

A key food safety requirement is traceability. All onions need to be identified and documentation maintained to support a trace-back system. Traceability is important as a means of finding the cause of a problem when it occurs, so those growers know how their produce has been handled once it has left the farm.

Traceability is helpful for:

- tracing the source of a possible contamination
- pinpointing areas of poor stock rotation in the marketing chain
- allowing isolation of only a small amount of the farm if there is a problem.

Apart from grower details such as name and address, a ‘traceability’ code, for example a ‘packed on’ date, harvest code or batch number needs to be incorporated so that the date of harvesting/grading and block they were grown in can be established for any size package sold. The sample label includes a ‘packed on’ date, but any code that will allow you to trace the onions in that bag back to the block they were grown in will do.

Figure 7. A sample label including a traceability code

Interstate quarantine requirements (page 28)

These requirements change frequently, so we have included the contact details for each state on page 24 of this update. Inspection for garlic rust is required for movement into South Australia.
Overview

The gross margin for south-east Queensland has been updated, two new varieties have been added and some new information on marketing included.

Specific updates

Gross margin information for south-east Queensland
(page 10)

The gross margin for onions grown in south-east Queensland has been re-worked at a price of $350 per tonne for a 40 t/ha crop. The results are shown below.

Gross margin per hectare $4 047.69
Break-even yield at $350 per tonne 21 tonnes per hectare
Break-even price at 40 t/ha $185.06 per tonne
Gross per megalitre of irrigation water $1 012 /ML

Actual gross margin when price or yield changes

<table>
<thead>
<tr>
<th>Yield</th>
<th>Price per tonne</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$200</td>
<td>$250</td>
<td>$300</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>$1 532</td>
<td>$657</td>
<td>$218</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$1 367</td>
<td>$55</td>
<td>$1 258</td>
</tr>
<tr>
<td>Medium</td>
<td></td>
<td>$1 202</td>
<td>$548</td>
<td>$2 298</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$1 037</td>
<td>$1 150</td>
<td>$3 338</td>
</tr>
<tr>
<td>High</td>
<td></td>
<td>$872</td>
<td>$1 753</td>
<td>$4 378</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$707</td>
<td>$2 355</td>
<td>$5 418</td>
</tr>
</tbody>
</table>
Varieties (page 11)

Two new onion varieties, Cavalier and Predator, are now grown in the Lockyer Valley. See Table 1 page 12.

Fungicides (page 30)

There is a new chemical for control of onion white rot*. For other new fungicides, refer to the Problem solver handy guide updates at the end of this booklet.

<table>
<thead>
<tr>
<th>Chemical (days)</th>
<th>Trade name</th>
<th>Controls</th>
<th>WHP</th>
</tr>
</thead>
<tbody>
<tr>
<td>tebuconazole</td>
<td>Folicur</td>
<td>White rot</td>
<td>NA</td>
</tr>
</tbody>
</table>

*From the DPI's Infopest CD, V2. WHP: Withholding period; NA: Not applicable.

Forecasting for downy mildew (page 31)

The introduction of the downy mildew forecasting system is covered in the overview of the 1997/98 season on page 6 of this update.

Marketing (page 33)

There has been a move towards buyers demanding some level of QA in vegetable marketing. Some possible levels of QA designed to meet the requirements of different customers are detailed below:

1. Approved supplier to certified packing shed/merchant/marketing group
   This level will require several measures to be documented, some of which may already be in place. These may include:
   - property map
   - crop history (spray diary)
   - calibration and records
   - chemical user training
   - correct storage of chemicals
   - pest control
   - packing record
   - product specification
   - completed food safety check-list.
2. **Supply via a certified merchant**
A merchant may have a quality management/food safety system and you will need to be an approved supplier to this system. If you have a large packing/washing operation you may also need a Hazard Analysis and Critical Control Point (HACCP) plan in place for the shed to cover food safety.

3. **Direct supply**
If you supply someone like a retailer who requires a full Quality/Food Safety Management System (Q/FSMS) such as SQF 2000, ISO 9002, HACCP or Woolworths Vendor Quality Management Scheme (WVQMS), you will need to implement one of these systems and be certified by a third party organisation. Likewise, if you intend to do this in the future, you will need to meet your particular customers’ supply requirements.
Specific updates

There have been no changes to Problem solver.
Contacts and references

Contacts

Australia now has 10-digit telephone and fax numbers, including the STD code. To find the changed numbers for many of the contacts listed in the Agrilink Onion Information Kit, consult the latest telephone directory.

Specific updates

Grower associations (page 2)

Queensland Fruit & Vegetable Growers has an e-mail address and Web site
E-mail: qfvg@qfvg.org.au
www.qfvg.org.au

The new address for Bio Dynamics Association of Australia is:

Biodynamic Agricultural Association of Australia
c/- Post Office
POWELLTOWN VIC 3793
Ph: (03) 5966 7333; Fax: (03) 5966 7433

Biological Farmers of Australia has an e-mail address:
E-mail: bfa@icr.com.au

National Association for Sustainable Agriculture Australia Ltd has an e-mail address: e-mail: nasaa@dove.mpt.net.au
Seed suppliers (page 4)

Henderson Seeds
Adam Winter
PO Box 7586
TOOWOOMBA MC QLD 4352
Ph: (07) 4697 8115; Fax: (07) 4697 8244; Mobile: 0417 077 857
e-mail: awin@ozemail.com.au
Head office: Ph: 1800 80 2295; Fax: (03) 9850 6794

Yates Vegetable Seeds Ltd
c/- TAS Seeds
PO Box 66
COOPERS PLAINS QLD 4108
Ph: (07) 3277 5611; Fax: (07) 3277 0829

Lockyer Valley onion seed producers (page 4)

Delete:
Des Reisenleiter
GATTON QLD 4343

Manufacturers of harvesting or grading machinery (page 5)

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

Stark Engineering & Hardware
FOREST HILL QLD 4342
Fax: (07) 5465 4190; Mobile: 018 889 148

Postharvest handling and packaging (page 5)

Cardiff’s Refrigeration
LAKE CLARENDON QLD 4343
Fax: (07) 5466 5417
Bins (page 5)

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

Market price information (page 6)

Market Contact Network

Brisbane: Trevor Brewer
Ph: (07) 3379 4576; Fax: (07) 3379 4103; Mobile: 018 068 141;
e-mail: Ausmarket@bigpond.com

Sydney: Chris Cope
Mobile: 015 108 639; Fax: (02) 9907 1140
At markets: Ph: (02) 9746 3437; Fax: (02) 9746 1075
e-mail: cqs@accsoft.com.au

Melbourne: John Popiliess
Mobile: 0411 117 578; Fax: (03) 9645 9908
At markets: Ph: (03) 9689 3444
e-mail: info@datafresh.com.au

For information on market prices, contact:

Ausmarket Consultants
D Block Brisbane Market
PO Box 229
BRISBANE MARKETS QLD 4106
Ph: (07) 3379 4576; Fax: (07) 3379 4103
www.users.bigpond.com/ausmarket

DataFresh Melbourne Market Reporting Service
Box 170 Melbourne Markets
FOOTSCRAY VIC 3011
Ph: (03) 9689 3444; Fax: (03) 9689 3411
e-mail: jp@datafresh.com.au
Contacts and references

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); 75 cents per minute
Dial-a-fax: 1900 123 039 ($2 per fax)

Market Information Services
D Block Brisbane Market
PO Box 229
BRISBANE MARKETS QLD 4106
Ph: (07) 3379 4576; Fax: (07) 3379 4103; Mobile: 0417 710 950
Infocall: 1902 262 580 ($1.50 per minute, covers Brisbane, Sydney and Melbourne)

Horticultural consultants (page 6)

Graeme Thomas
HAMPTON QLD 4352
Mobile: 0419 977 267

Delete: Plant Pro.

Include:

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

Plant, soil and water testing laboratories

Agritech Laboratory Services
PO Box 549
214 McDougall Street
TOOWOOMBA QLD 4350
Ph: (07) 4633 0599; Fax: (07) 4633 0711
The document contains a section titled "Contacts and references" with information about various contacts. Here is the text converted into a plain text representation:

**Crop Tech Research**  
MS 305  
Langbeckers Road  
BUNDABERG QLD 4670  
Ph: (07) 4155 6344; Fax: (07) 4155 6656  
e-mail: CROPTECH@b130.aone.net.au

**Dr W. Holloway**  
14 Enterprise Street  
BUNDABERG QLD 4670  
Ph: (07) 4153 1440; Fax: (07) 4153 5247

**Incitec Ltd**  
PO Box 140  
MORNINGSIDE QLD 4170  
Ph: (07) 3867 9300; Fax: (07) 3867 9310

**Disease and nematode testing laboratories**

**Biological Crop Protection**  
Dr G. Stirling  
3601 Moggill Road  
MOGGILL QLD 4070  
Ph: (07) 3202 7419; Fax: (07) 3202 8033; Mobile: 0412 083 489  
e-mail: biolcrop@powerup.com.au

**Pesticides and spraying**

For training in pesticide application contact Chemsafe Training Queensland to find the nearest accredited trainer.

**AVCARE Ltd**  
National Association for Crop Protection and Animal Health  
Locked Bag 916  
NORTH SYDNEY NSW 2050  
Ph: (02) 9922 2199; Fax: (02) 9954 0544  
e-mail: avcare@ozemail.com.au
Centre for Pesticide Application and Safety  
University of Queensland, Gatton College  
LAWES GATTON QLD 4343  
Ph: (07) 5460 1281; Fax: (07) 5460 1283

Chemsafe Training Queensland  
PO Box 3128  
SOUTH BRISBANE QLD 4101  
Ph: (07) 3844 7261; Fax: (07) 3844 7307  
e-mail: chemsafe@powerup.com.au

Export associations (page 7)

Changes of address:  
Australian Horticultural Exporters Association  
Institute of Horticultural Development  
Private Bag 15  
SOUTH EASTERN MAIL CENTRE VIC 3176  
Ph: (03) 9210 9380; Fax: (03) 9210 9381; Mobile: 0419 999 889  
e-mail: ahea@ozdocs.net.au  
www.ozdocs.net.au/~ahea

Queensland Horticultural Exporters Association  
PO Box 857  
HAMILTON CENTRAL QLD 4007  
Ph: (07) 3868 1888; Fax: (07) 3868 4722

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 below.

The DPI Call Centre (13 25 23) will be able to give you the contact details for your closest DPI plant health inspector.
Contacts and references

Queensland

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

New South Wales

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

Australian Capital Territory

Quarantine & Inspection Officer
Environment ACT
PO Box 1038
TUGGERANONG ACT 2901
Ph: (02) 6207 2265; (02) 6207 2268

Victoria

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

Tasmania

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

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

Western Australia

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

Northern Territory

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

Certified health inspectors for interstate produce

Mr Arnold Greasley
MS 546
FOREST HILL QLD 4342
Ph: (07) 5465 4412

Mr John Fullerton
Main Road
GRANTHAM QLD 4347
Ph: (07) 5466 1203
Queensland government services (page 7)

Change of address for onion inquiries:

DPI, Gatton
Queensland Horticulture Institute
Gatton Research Station
Locked Mail Bag 7, MS 437
GATTON QLD 4343
Ph: (07) 5466 2222; Fax: (07) 5462 3223

Consumer Affairs Queensland

Consumer Affairs officers manage the Trade Measurement Act 1990 and can provide current information on marking packages and the requirements for 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.

Other information sources

DPI Call Centre. To help you access DPI's information services and products, ring the DPI Call Centre 13 25 23 from 8 a.m. to 8 p.m. Monday to Friday, excluding public holidays, for the cost of a local phone call.

DPI web site: www.dpi.qld.gov.au

Agricultural booksellers (page 9)

Agmedia no longer exists. The NRE Information Centre sells many of their titles. Additional booksellers are listed below.

Granny Smith’s Bookshop
PO Box 27
SUBIACO WA 6008
Ph: (08) 9388 1853; Fax: (08) 9388 1852
e-mail: granny@aoi.com.au
Landlinks Press  
PO Box 1139  
COLLINGWOOD VIC 3066  
Freecall: 1800 645 051; Ph: (03) 9662 7666; Fax: (03) 9662 7555  
e-mail: sales@publish.csiro.au

NRE Information Centre  
PO Box 500  
EAST MELBOURNE VIC 3002  
Ph: (03) 9637 8080; Fax (03) 9637 8150

NSW Agriculture  
Publications Sales Unit  
Locked Bag 21  
ORANGE NSW 2800  
Orders: Freecall: 1800 028 374; Ph: (02) 6391 3433; Fax: 1800 642 065

A wide range of agricultural books and Agfacts is available through NSW Agriculture.

References

Other books (page 12)

A new edition of the Australian vegetable growing handbook edited by J. Salvestrin and published by Scope Publishing, will be available soon. Ph: (02) 6960 1550; Fax: (02) 6960 1600 for details.

Field guide to cream gold onion disorders and their control, Dennis, J., Ransom, L., Kemp, S. & Hill, L. (1997), Department of Primary Industries & Fisheries, Tasmania.
Note these changes for pest and disease control in onions*:

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* Taken from the DPI’s *Infopest* CD, V2.
WHP: Withholding period (days); NA: Not applicable; NFC: Not for consumption.

These are all the changed items that we are aware of. If there are any additional changes, please contact our Customer Service officer on 1800 677 640 or send fax details to (07) 5444 9694. You can also e-mail us on: agrilink@dpi.qld.gov.au