

# Citrus information kit

Reprint – information current in 1997



## REPRINT INFORMATION – PLEASE READ!

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

This publication has been reprinted as a digital book without any changes to the content published in 1997. We advise readers to take particular note of the areas most likely to be out-of-date and so requiring further research:

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- Financial information—costs and returns listed in this publication are out of date.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

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

**This publication was last revised in 1997. The information is not current and the accuracy of the information cannot be guaranteed by the State of Queensland.**

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

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



Queensland Government

# Citrus Information Kit

**Coordinating author**

---

*Noel Vock*

**Contributing authors**

---

*John Owen-Turner*

*Dan Smith*

*Peter Mayers*

**AgriLink**  
your growing guide  
to better farming

**S E R I E S**

**QAL 9703**

## **Citrus Information Kit**

From the Agrilink series: your growing guide to better farming  
First published 1997

ISSN 1328-0457

Agdex 220/10

Agrilink concept devised by Noel Vock and Brian Cull.

Agrilink products are proudly produced by the Agrilink Project Team:

Information coordinators — Noel Vock, John James, Jerry Lovatt, Irene Kernot

Publishing production — Loraine Chapman

Editing — Glenis Ayling

Multimedia production — Roy Verge

Customer service — Lourelle Heintjes

---

### **National Library of Australia Cataloguing-in-Publication data:**

Vock, N.T.

Citrus information kit.

Includes index.

ISBN 0 7242 6664 X

1. Citrus fruits — Queensland. 2. Citrus fruits — Queensland — Marketing. I. Owen-Turner, J.C. II. Queensland. Dept. of Primary Industries. III. Title. (Series: Agrilink your growing guide to better farming).

634.3

---

© The State of Queensland, Department of Primary Industries 1997

Copyright protects this publication. Except for purposes permitted by the Copyright Act, reproduction by whatever means is prohibited without the prior written permission of the Department of Primary Industries.

Enquiries should be addressed to:

Agrilink Manager

Queensland Horticulture Institute

Centre for Subtropical Fruit — Maroochy Research Station

PO Box 5269 SCMC

Nambour Q 4560 Australia

Phone: (07) 5444 9690 Facsimile: (07) 5444 9694 Int Code: + 61 7

### **Disclaimer**

Information contained in this publication is provided as general advice only. For application to specific circumstances, professional advice should be sought.

The Department of Primary Industries, Queensland has taken all reasonable steps to ensure the information contained in this publication is accurate at the time of publication. Readers should ensure that they make appropriate enquiries to determine whether new information is available on the particular subject matter.

# Foreword

The Queensland Horticulture Institute is a business unit of the Department of Primary Industries with staff located at 16 centres across the State. It is the service delivery arm of the Queensland Government's support for the fruit, vegetable and amenity horticulture industries.

The core business of the Queensland Horticulture Institute is information. Our team of researchers, extension officers and other skilled professionals generate, format and distribute information to advance the horticultural sector.

Agrilink is a new concept in developing and packaging the information regularly sought by producers of horticultural commodities.

Each Agrilink kit has been designed to be both comprehensive and practical. As they are arranged to answer questions of increasing complexity, they are useful references for both new and experienced producers of specific crops. Agrilink integrates the technology of horticultural production with the management of horticultural enterprises.

Agrilink is a team effort. Each kit has been conceived and written by a team of extension and research staff with specialist knowledge of the crop and commodity. Most of the kits have also been field-tested by producers and other users. Agrilink products are being produced to high quality standards so that you can obtain maximum benefit from your investment in information.

Technology and crop management information are changing rapidly. Agrilink has been designed so that each kit can be regularly updated and kept relevant as a practical aid for horticultural producers.

The Queensland Horticulture Institute aims to be the key provider of innovative research services and support for the development of horticulture in Queensland. We seek to find solutions through science. Agrilink is a means of bringing that information to you.

Geoff Behncken

Convenor, Steering Committee  
Queensland Horticulture Institute

# Acknowledgements

The authors are particularly grateful for information and advice provided by John Chapman, Peter Hardman, Andrew Hinton, Gary Dwyer, David Gillespie, Slade Lee, Bob Shaw, Maurice Downing, Rod Glass, Cameron Tree and Peter Broomhall.

The authors are also indebted to past DPI citrus researchers and extension officers for providing much of the foundation of technical knowledge for citrus in Queensland. The authors also acknowledge the support of interstate citrus plant physiologists, plant pathologists and post harvest scientists.

Photographs for the *Problem Solver* were kindly provided by Dan Smith, John Owen-Turner, Peter Mayers, John Bagshaw, Ken Pegg, Noel Vock, and authors and editors of the following publications:

*Diseases of fruit crops*, Denis Persley (ed), Department of Primary Industries, Queensland.

*Insect pests of fruit and vegetables*, G.A. Swaine, D.A. Ironside and R.J. Corcoran (eds), Department of Primary Industries, Queensland.

*Plant nutrient disorders 1: Temperate and subtropical fruit and nut crops*, R.G. Weir and G.C. Cresswell, NSW Agriculture and Inkata Press.

Special thanks are also extended to the ten Burnett citrus growers who kindly provided valuable feedback on the original Agrilink citrus prototype.

Thanks are also due to Ethna Brown for digitising the images.

# Preface

To be viable and competitive, horticultural growers face many challenges. These require significant economic and social restructuring and the adoption of new, complex and high risk technologies. The main prerequisite for these decisions is the availability of high quality, timely and relevant information.

Producing this information was the challenge that triggered the Agrilink information concept in 1992. Agrilink evolved from research that showed our existing information at that time lacked completeness, quality, easy access and regular updating. Over the last four years, Agrilink has developed and trialled a new information system to address these deficiencies. This has culminated in this new series of information kits.

Agrilink is built around several important principles. Its products focus on the core information that is most needed and regularly sought by growers. The information is presented in line with how it has been sought from us over the last 15 years. The contents are packaged into integrated information kits that make access and information retrieval easy. For the first time, we are providing a commitment to updating the information on an annual basis. The whole system is being operated under quality management to guarantee product quality and integrity.

The development of Agrilink has been a team effort. I thank all of the DPI staff, consultants and growers who have cooperated in our information gathering workshops. I also thank the artists, printing consultants and editors who have helped to turn the raw information into information kits. This new stage of Agrilink is possible through the funding support of DPI's New Initiatives Program, for which I am particularly grateful. This support has enabled a specialist project team to be developed to carry on the work. I thank this team for the wonderful effort they have put in to getting this new stage off the ground.

Four people deserve special mention. Brian Cull helped to develop the Agrilink concept and has vigorously encouraged its development since. Geoff Behncken provided the initial funding and was instrumental in helping secure the special funding for this new stage. Loraine Chapman has provided a range of specialist design and desktop publishing skills, a contribution which has been outstanding. Cheryl Hutchings helped to develop the Agrilink logo and has provided valuable commercial advice throughout.

I believe that Agrilink has made considerable progress in the challenge to provide high quality, timely and relevant information to Queensland's horticultural industries. The Agrilink project team looks forward to continuing the work into the new millennium.

Noel Vock  
Agrilink Project Leader

# About the authors

## **Noel Vock**

Noel is a Senior Information Extension Officer at DPI's Maroochy Horticultural Research Station at Nambour. He has 25 years of experience in developing information systems in agriculture, initially as an Extension Plant Pathologist and for the last 17 years as an Extension Horticulturist. Since 1993, Noel has led the Agrilink information project.

## **John Owen-Turner**

John is a citrus consultant based at Burrum Heads. He spent 25 years as a Senior Adviser in Horticulture, 18 of those serving the citrus industry at the Gayndah office. During this period, he was involved in all aspects of citrus production and marketing, particularly in the fields of plant propagation, nutrition, fruit thinning and crop management. John is secretary of the Queensland Citrus Improvement Committee and since developing his consulting business in 1995, has been CITTgroup Coordinator for Queensland.

## **Dan Smith**

Dan is a Senior Principal Entomologist at DPI's Maroochy Horticultural Research Station at Nambour. He has worked in citrus entomology for 28 years, achieving the successful introduction of over a dozen biocontrol agents, and making a major contribution to the implementation of integrated pest management (IPM) in Queensland citrus.

## **Peter Mayers**

Peter is a Senior Plant Pathologist at DPI's Maroochy Horticultural Research Station at Nambour. He has 24 years experience in plant disease research, initially in field crops, and since 1980, in citrus. Peter has made a significant contribution to the understanding and management of citrus black spot, in the areas of field control and export monitoring. He has also developed systems for the management of *Alternaria* brown spot and *Phytophthora* root and collar rot.



# CONTENTS

## Section

### Before you start

*A checklist of things you need to know before you start growing the crop*

1

### Common questions

*The twenty or so most commonly asked questions about the crop*

2

### Growing the crop

*Our guide for selecting varieties, and establishing, producing and marketing the crop*

3

### Key issues

*More detailed information on the key issues and important decisions affecting the crop*

4

### Problem solver

*A picture series of the common problems with notes on what you can do about them*

5

### Contacts and references

*A list of industry organisations, product suppliers, information sources and further reading*

6

### Index

*An A to Z index to help you find information quickly*

7

### Your info

*A place to store information that you have collected*

8