

# Subtropical banana information kit

Reprint – information current in 2004



## REPRINT INFORMATION – PLEASE READ!

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

This publication has been reprinted as a digital book without any changes to the content published in 2004. We advise readers to take particular note of the areas most likely to be out-of-date and so requiring further research:

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- Financial information—costs and returns listed in this publication are out of date.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

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

**This publication was last revised in 2004. 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 subtropical banana production. This information is not to be used or relied upon by users for any purpose which may expose the user or any other person to loss or damage. Users should conduct their own inquiries and rely on their own independent professional advice.

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



Queensland Government

# PICTURE GUIDE

## Subtropical banana grower's problem solver

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## Subtropical banana grower's problem solver

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Subtropical banana grower's handbook

Includes index

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## Acknowledgements

The authors wish to thank the following people who kindly provided technical information and photos for the *Subtropical banana grower's problem solver*.

The book includes the problem solver chapter from the Agrilink *Tropical Banana Kit* by Stewart Lindsay, Donna Campagnolo, Jeff Daniells, Darryl Evans, Roger Goebel, Martin Gunther, Craig Lemin, Tony Pattison, Ron Peterson, Bruno Pinese and Dave Wharton. The authors acknowledge use of this information. Many of the photos show

problems with pests, diseases or disorders common to both tropical and subtropical bananas.

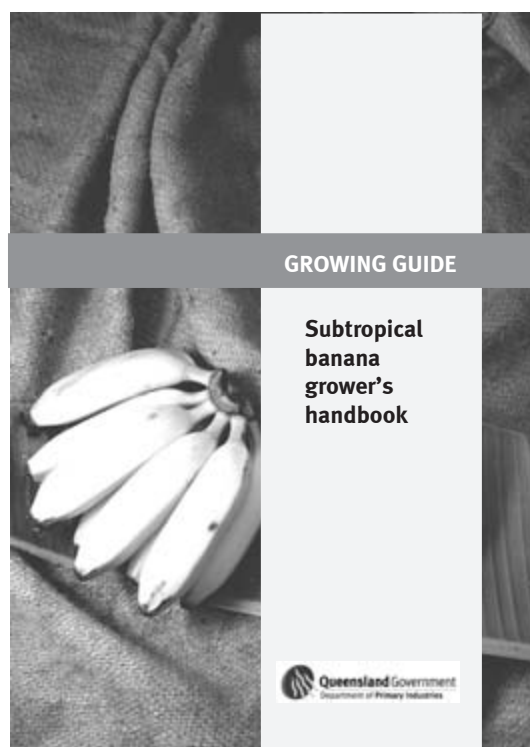
Additional photos for the appendix have been provided by Roger Broadley and Peter Rigden.

Loraine Chapman provided the publishing services for the guide including image scanning, graphics manipulation, coordination, layout and desktop publishing.

The companion book, ***GROWING GUIDE: Subtropical banana grower's handbook*** takes you step-by-step from planting to marketing subtropical bananas in southern Queensland and northern New South Wales.

For information on growing bananas in tropical areas of Queensland, refer to the ***Agrilink Tropical Banana Information Kit***.

Please consult local information before applying information included here to other





# *Problem* **SOLVER**

## Appendix for Subtropical bananas

*The key to dealing with problems is prompt identification and, where appropriate, prompt treatment. Common problems of subtropical bananas and Ladyfinger fruit disorders, pests and diseases are shown in this appendix; it is to be used in conjunction with the tropical banana problem solver. From the contents, find the symptom that best fits your problem, go to that page and there you will find photos of the causes and the solutions.*

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## Yellow streaks on leaves



### Zinc Deficiency

**Cause.** Insufficient zinc available to the plant. The unfurled leaf has alternating green and yellowish green bands. Affected plants are sometimes stunted.

**Solution.** First confirm the diagnosis with a leaf analysis test. Apply zinc fertiliser at the rate recommended in the analysis.



## Dead leaves



### Frost damage

**Cause.** Temperatures below 12°C affect banana plant tissues, and at 0°C, plant tissues turn black and die.

**Solution.** Do not plant bananas where frost is likely. Bananas are often grown on sloping sites in the subtropics, avoiding the bottom of slopes where cold air can collect at night. Use overhead irrigation, wind machines, or heating devices to minimise the effect of cold temperatures.



### Panama disease (Fusarium wilt)

**Cause.** The fungus *Fusarium oxysporum* f. sp. *cubense* which is a soil-borne organism. It is spread in water, soil and planting material. It enters the plant through the roots, and blocks the conducting tissue within the plant, resulting in wilting, yellowing of leaves and death of the plant. There are several races of the fungus and different banana varieties vary in their susceptibility to the races.

**Solution.** There is no cure for affected plants. Use only tissue cultured planting material and do not plant in previously infested areas. Panama is a notifiable disease and outbreaks must be reported to DPI plant health inspectors.

## Green lines at the bottom of the bell



### Banana bunchy top virus

**Cause.** The banana bunchy top virus (BBTV) which is spread in infected planting material and by the banana aphid, *Pentalonia nigronervosa*. BBTV is not present in some banana production areas, and movement of planting material is controlled by legislation.

**Solution.** There is no cure for this disease and all infected plants and aphids on the plants must be eradicated. It is mandatory for outbreaks to be reported immediately to DPI plant health inspectors. More information can be found in Chapter 4, Key Issues in the book, *Growing Guide: Subtropical banana grower's handbook*.

## Distorted or abnormal bunches



### Bract retention

Note that the dark flower bracts have not fallen off. If left in the bunch they can rot, creating problems with fruit quality.

**Cause.** Bract retention is a genetic trait and is usually associated with dwarfness. It is most commonly noticed in dwarf offtypes in tissue-cultured plantings.

**Solution.** Remove bracts by hand at bagging. Cull dwarf offtypes and set additional following suckers on nearby plants.

## Distorted or abnormal bunches



### Soldier fly

**Cause.** Soldier fly, *Syndipnomyia auricincta*, is currently only a problem in Northern New South Wales, perhaps due to an increasing move to early bunch covering to avoid bird and flying fox damage. Cool wet conditions, especially in late winter seem to encourage its incidence. The adult fly is similar in appearance to a wasp and lays its eggs between the fingers of the fruit. The emerging maggots feed on the skin leaving shallow scars. This damage can look very similar to sugar cane bud moth damage but the marks have a series of cracks in them.

**Solution.** No specific chemical control is available, stapling together of bunch cover openings to exclude adult flies and prevent egg laying on developing fruit may help reduce the problem.

## Overall skin discolouration



### Cold damage: grey or dull fruit and underpeel discolouration

**Cause.** Damage occurs when temperatures drop below 13°C. Fruit lose their bright green or yellow gloss. Chilling causes latex in the peel to coagulate and the polyphenols in the latex are oxidised to a reddish brown colour causing dullness of the skin. Pulp and eating quality are not usually affected.

**Solution.** Very little can be done as all current banana production areas experience low temperatures at some time. Plant only sheltered sites north east facing slopes that shed cool night air and are less prone to low temperatures. Bunch covers can offer a moderate buffer to low temperatures, air trapped in the cover can be 2°C or more higher than ambient air temperatures. Fruit close to harvest is more affected than thinner fruit.





## Fruit distortion/poor filling



### Calcium and boron deficiency

**Cause.** Deformed fruit is caused by a variety of factors including water, nutritional, and environmental stress. These factors often interact with each other. Calcium and boron nutrition is thought to be involved in producing deformed fruit, and with the hard pulp symptom. Some varieties are more prone, genetically, to produce deformed fruit.

**Solution.** Take leaf and soil samples to monitor calcium and boron levels and make corrective fertiliser applications.



### Doubles or Triples

**Cause.** It is common for two or more fruit to be fused together. The problem has a genetic basis and some varieties are more prone to it than others, it may be associated with calcium and boron nutrition.

**Solution.** Discard these fruit when packing.

## Rot and fruit discolouration after harvest



### Ceratocystis fruit rot

An uneven black rot extending from the crown, A white to grey fungal growth forms on affected areas and a sweet smell is present. Fingers readily drop from the hands.

**Cause.** The fungus *Ceratocystis paradox*. The disease is a postharvest problem, infection occurring through cuts where the hands are removed from the bunch. The main sources of infection are old bunch stalks and discarded fruit in and around the packing shed.

**Solution.** Remove banana refuse regularly from the packing shed.

## Ladyfinger fruit damage

*The following section contains photographs of blemishes on Ladyfinger fruit damaged by pests, diseases and nutritional and environmental disorders. Details of cause and solution are given in the previous section of this book.*

Flower  
thrips



Corky scab  
(Pacific scab in NSW)



Rust thrips



Birds, flying foxes, bats



Maturity bronzing



Deightonella (speckle)



**Sooty mould****Sunburn****Bell injection damage****Sugarcane  
bud moth**

Mokillo



November dumps



Crown rot



Cold weather / frost damage



