

# Potato information kit

Reprint – information current in 1997



## REPRINT INFORMATION – PLEASE READ!

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

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 We advise readers to take particular note of the areas most likely to be out-of-date and so requiring further research:

- Chemical recommendations—check with an agronomist or Infopest [www.infopest.qld.gov.au](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- Financial information—costs and returns listed in this publication are out of date.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 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 potato production. This information is not to be used or relied upon by users for any purpose which may expose the user or any other person to loss or damage. Users should conduct their own inquiries and rely on their own independent professional advice.

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



Queensland Government



# Common **QUESTIONS**

*This section contains the most commonly asked questions about growing potatoes. The answers are as brief as possible. Where this is difficult and more detail is required, reference is made to other sections of the kit. Symbols on the left of the page will help you make these links.*

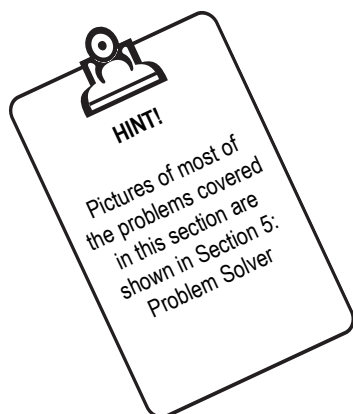
## Contents

In the field .....	2
Pests and diseases .....	3
Seed .....	4
Varieties .....	6
Planting .....	6
Fertilising, irrigation and weed control .....	7
Harvesting and marketing .....	8
General .....	8

## In the field

### What caused this leaf roll?

There are several causes of leaf roll. It can be difficult to decide whether it is a physical leaf roll or a virus leaf roll. Physical leaf roll can result from a number of causes including nutrient, water and wind stress. For positive identification of virus leaf roll, plant samples must be tested in a laboratory.



### If it's virus leaf roll, did it come in the seed?

If certified seed was used, it is highly unlikely that the virus came in the seed. However if symptoms appeared shortly after emergence, it may possibly have come in the seed. If virus leaf roll occurs in the later stages of the crop, aphids probably carried the virus in and then transmitted it from plant to plant. Very late infection may not produce visible symptoms until the tubers from this crop are used for seed.

### Why are these plants wilting?

It may be moisture stress or the result of disease such as bacterial wilt reducing the movement of sap through the plant system. Wilting could also be caused by root damage from insects such as whitefringed weevil.

### Why has this potato crop died off so suddenly?

The crop most likely died off because of disease—either leaf disease, soil-borne disease or early seedpiece breakdown. Inspect the plant residue for any signs of leaf and soil diseases. The other probable cause is waterlogging.

### Do you think this crop is a bit short of water?

It may lack water, but we need to check the plant below ground level as well as observing the top. Check the moisture around the roots regularly during growth and know how much water crops of different sizes use. Tensiometers are a good guide to water requirements.

### What sort of yield do you think this crop will produce?

There is no hard or fast answer. It will depend on the variety and age of the crop and a number of other factors.

### How many more weeks do you think this crop will last?

The crop should be checked regularly from 12 to 14 weeks after planting to determine optimum harvest time. The time to harvest depends on the variety, the level of disease and the crop management practices adopted. Markets also have an influence,

more info



Irrigation  
recommendations  
Section 3 Page 15, 22

as premiums or penalties may result from different grade sizes. Time of planting also has an effect on the length of the growing season.

## Pests and diseases

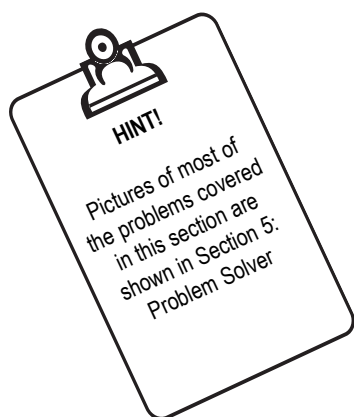
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### Is this purple top wilt?

It probably is if it has purpling of the top leaves and small tubers growing in the leaf axils (aerial tubers).

### Why have I got an aphid problem even though the crop is regularly sprayed?

Either your application methods need to improve to give better coverage or the chemical you applied is ineffective.



### Which is the best chemical to use?

If used properly, all of the registered chemicals are effective and it is difficult to nominate one as being the best. If chemicals are applied as directed on the label, it is unusual for pests or weeds to persist. If chemicals are not working, they are probably not being used correctly.

### How do I control potato tuber moth?

Tuber moth is not a serious pest of the growing plant but can be damaging at harvest time. It invades the tuber through cracks in the ground, so growers should reduce tuber moth populations before harvest. Reducing the number of cracks in the soil by using irrigation will lessen the exposure of the tubers to potato tuber moth.

High numbers of tuber moth at harvest time are very difficult to control. Do not store potatoes in the ground or delay harvesting if there are high numbers of tuber moth as sprays are ineffective at this stage.

Potato tuber moth can sometimes be found in seed potatoes from other states. Although the infestation may be within the level specified for certified seed, growers may prefer to ask their seed grower to treat the seed before shipment. If the seed was not treated and there is any evidence of tuber moth on arrival, tip the seed out as soon as it arrives and treat it with a seed dust selected from the *Problem Solver Handy Guide*. Follow label directions.

### What causes scabs on the potatoes?

There are two types of scab that can affect potatoes: powdery scab and common scab. Powdery scab is the most common in cool weather crops, whereas common scab is usually found in warmer conditions.

### What causes stem end rot?

The two main causes of stem end rot are the fungi *Fusarium* and *Phomopsis*. Other soil-borne diseases occasionally result in rotting of the stem end.

### How do I control crickets?

Mole crickets are a major cause of problems in potatoes because they burrow through the tubers. There is no chemical registered for the control of crickets in the soil. The only way to control this pest is by baiting, using the insecticide chlorpyrifos mixed with bran.

### How do I control whitefringed weevil?

There are no soil-incorporated insecticides available which effectively control whitefringed weevil. Numbers of damaging larvae can be significantly reduced over a period of time through crop rotation. This breaks the life cycle of the insect.

## Seed

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### Should I dip my seed?

Dipping is not recommended unless common scab, powdery scab or *Rhizoctonia* black scurf is detected. This is unlikely if certified seed is used.

### Should I plant straight after cutting or should I let the seed heal a bit?

It is best to let the cuts heal while you have control over the seed and its environment. However, planting seed into moist soil the day you cut it, or within 24 hours of cutting it, will give excellent results providing excessive rain does not fall before the plants emerge. The brochure, *Make more money by correct handling of potato seed tubers* is a very good reference on handling potato seed and is recommended reading.



Where to obtain  
seed brochure  
Section 6 Page 14

### Could I keep seed from this crop for planting in a couple of months' time?

In north Queensland, the majority of potatoes are grown in the winter months. Very few people keep seed from a crop grown from certified seed, (called 'once off' certified seed), because the risk of virus infection and/or poor vigour is too high. Usually this requires seed to be kept under cool room conditions for a number of months, so in north Queensland it should not be considered.

In the Lockyer Valley, most growers save the small potatoes from their winter crop grown from certified seed for planting in February. This seed is stored in a cold room and taken out three

to four weeks before the crop is to be planted. Like north Queensland, there are some problems with seed-borne virus diseases, particularly from early planted crops that are susceptible to aphid attack. This has traditionally been the only source of seed for crops planted in February.

### **I've got poor emergence due to seedpiece breakdown. Can you tell me what has happened?**

There are three possible reasons for this problem:

- The seed was planted immediately after cutting and soil conditions were either too dry or too wet to heal the cut, allowing secondary rots to attack the seed.
- Either too much irrigation or unexpected heavy rain has waterlogged the soil. The seed has then decayed through lack of oxygen.
- The seed has been damaged by fertiliser. This occurs if the seed is placed close to, or actually sitting on top of, the fertiliser band. This damages the cut seed surface and can allow secondary breakdown of the seedpiece.

### **Where do I purchase potato seed?**

Purchase certified seed if possible and only use 'once off' seed that has been produced under your control for autumn planting. Do not buy seed from other producers, particularly from other districts, unless it is certified.




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Names of certified  
seed producers  
Section 6 Page 4

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### **How much disease is allowable in certified seed?**

The certified seed scheme in each state specifies the amount of disease that is allowable. There is a NIL tolerance for the most important diseases, but some tolerance of other pests and diseases is allowed in some schemes.

### **Why does one seed source appear to yield better than another?**

This does not happen often and is generally inconsistent. It often depends on the season in which the seed was grown and the age of the seed when planted. This is not a genetic problem, as in most cases it is due to the age of the seed. Ensure all eyes are showing signs of sprouting (breaking dormancy). Regardless of its source, seed is derived from the same basic genetic material.

### **Is there any advantage in using round seed?**

Yes, there are a number of advantages and only one disadvantage. The advantages are:

- you should almost eliminate seedpiece breakdown when compared with cut seed



Selecting and storing seed  
Section 4 Page 13

- the seed is more evenly shot because of its even size
- mechanically cut seed sometimes has no eyes in the seedpiece and is more likely to breakdown in the soil after planting.

The disadvantage is that it is going to cost more to get round, size-graded seed.

In the future, certified seed growers will be producing more round seed.

## Varieties



Variety selection information  
Section 4 Page 18

### What variety should I plant?

For commercial production, the choice of variety depends on the market you are targeting. For the fresh potato market, Sebago is the main variety for the unwashed trade, while Red La Soda (red) and Snow Gem (white) are the main varieties for the washed trade. Atlantic is the main variety for the crisping potato market.

For the vegetable garden, try to get some seed of gourmet or exotic varieties such as Kiffler and Toolangi Delight. These have good appearance and flavour but are still being developed in commercial production systems. Seed may be difficult to obtain, but is sometimes available from certified seed suppliers.

### What causes pale skins in Pontiac?

The main cause is a genetic disorder but climate can also affect skin colour. For example, potatoes grown in cooler weather will be paler than those grown in warmer weather.

### What has happened to Sebago?

Some feel that Sebago is not performing as well these days as it has in the past. This variety may have genetically deteriorated due to continual selection from a limited amount of genetic stock. Sebago is also one of the most susceptible varieties to blackleg, leaf roll virus and seedpiece breakdown. As well as searching for alternative varieties, plant breeders are trying to improve the strain of Sebago as it is the variety preferred by merchants for the general table trade.

## Planting

### Which is better: hilling at planting or building the hill later on?

Both methods are successful. By building a hill at planting, it is more difficult to mechanically control weeds without breaking down the hill. This means you have to rely more on herbicides.

The problem is that some varieties are more susceptible to damage from registered herbicides than others.

With building hills later on, the main problem is compaction of the soil from running machinery up and down the rows. Poor weather could also delay or prevent completion of hilling.

### How far apart should I plant the seed?

Seed spacing depends on the demands of your market. If growing potatoes for crisps, or red potatoes for pre-packing, you may need to plant closer than if you are growing a Sebago potato for the fresh market. Other considerations are the size of the seedpiece and variety and age of the seed.



Spacing  
recommendations  
Section 3 Page 6

## Fertilising, irrigation and weed control

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### Should I give my potatoes some more nitrogen?

If the crop is in the last month before harvest, the answer is no. A potato crop does not benefit from additional nitrogen at this stage. From flowering onwards, base your nitrogen fertiliser on the results of leaf analysis at flowering.

In the early stages of the crop, some nitrogen fertiliser is generally applied shortly after emergence. The only other situation where additional nitrogen fertiliser may be required is to generate new growth after significant damage from frost, hail or wind.



Fertiliser  
recommendations  
Section 3 Page 19, 23

### Should I put some foliar fertiliser on my potatoes?

Only apply foliar fertiliser if leaf analysis at flowering indicates a need. This should not be necessary where pre-plant soil analysis was used and recommendations implemented.

Some benefit from foliar fertilisers may also be gained where crops have been severely damaged by frost, hail or wind.

### Should I try some of these organic fertiliser blends?

Potatoes like a lot of organic matter, but the only way to apply it is either as a rotation crop, or as large quantities of farmyard manure. The latter option should be avoided if common scab is known to occur. To date, organic fertiliser blends have not significantly increased yield.

The purpose of organic matter is to improve the soil structure, which in turn improves drainage and the moisture-holding capacity of the soil. Unless extremely high rates of organic fertiliser are used, there will be little or no benefit to soil structure.



### Is my water too salty for potatoes?

Get your water tested. If the conductivity level (salt content) of the water exceeds 1800  $\mu\text{S}/\text{cm}$  (microSiemens per cm), expect lower yields.

### What can I do to get rid of late weeds?

Nothing! Although weeds may cause some problems at harvest, they are unlikely to reduce your yields. In the Lockyer Valley, late weeds are not normally a problem. In fact, some weeds are quite desirable, particularly in the autumn crop which is often left in the ground for quite a few weeks after full maturity. In this case, weeds use excess soil moisture and reduce harvest delays.

## Harvesting and marketing

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### When is the crop mature?

A common method of determining maturity is when the skins are firmly set on the tubers. This is when the skin is not easily rubbed off with the thumb.

### What are the grade standards for potatoes?

There are no longer any legal grade standards in force. As some buyers set their own standards, check the requirements of your proposed market. If none exist, use the legal grade standards that previously existed as a guide for packing.




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Previous standards  
Section 3 Page 29

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Labelling regulations  
Section 3 Page 30

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Interstate quarantine  
regulations  
Section 3 Page 31

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### How do I label the bags?

There are specific requirements for labelling and marking potatoes for sale. This can be done as either a separate label attached to the bag or a marking on the bag itself.

### Can I sell potatoes interstate and overseas?

Restrictions exist on the movement of potatoes into some states and into many overseas countries. Before consigning potatoes, check the quarantine requirements of your proposed market.

## General

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### What is the price of potatoes going to be this season?

There are two things you should not predict—the weather and the future price of potatoes. It is impossible to accurately predict prices as there are so many influencing factors.

**Are green potatoes safe to eat?**

No, the green section may contain naturally occurring poisons called alkaloids. Potato varieties are not released in Australia if they exceed the maximum level set for alkaloids. This rule minimises the chances of severe poisoning where green potatoes are accidentally eaten.

**What causes yellow flesh in potatoes?**

Some potato varieties have naturally yellow flesh which is a desirable characteristic in many parts of the world. Yellow-fleshed potatoes have been recently introduced into the Australian industry and should not be mistaken as a problem.

**What causes brown fleck in potatoes?**

Flecking generally occurs from a deficiency of boron or calcium, or high soil temperatures during bulking up.

**What causes hollow heart?**

Hollow heart occurs when tubers grow unevenly.

**What causes chips to go black on cooking?**

Chips blacken from chemical changes in the tuber. Soil conditions also have an effect.

**What causes misshapen potatoes?**

Misshapen tubers generally result from uneven watering and high temperatures producing unsuitable growing conditions. Where a large number of misshapen tubers occur, the variety is probably not suited to that environment.

**What is genetic engineering in potatoes?**

Genetic engineering is a plant breeding technique in which a gene from another organism is introduced into the potato plant to enhance its growth or its resistance to disease.