

# Rockmelon and honeydew 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 We advise readers to take particular note of the areas most likely to be out-of-date and so requiring further research: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- Financial information—costs and returns listed in this publication are out of date.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 the production of rockmelon and honeydew. 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

## Stunted plants



### 21. Nematodes

Note lumpy galls on roots.

**Cause.** The rootknot nematode *Meloidogyne* species.

**Solution.** Apply a nematicide before planting the next crop.



### 22. Molybdenum deficiency

**Cause.** Not enough molybdenum available to the plant.

**Solution.** Spray at the four leaf stage and again at the early runner stage with 60 to 100 g of sodium molybdate plus 500 g of urea per 100 L of water, or use another source of molybdenum at the recommended rate.



### 23. Herbicide damage

**Cause.** Either a residue of herbicide from a previous crop or a drift or over spray of a herbicide. Cucurbits are highly susceptible to herbicide damage.

**Solution.** Check the herbicide history of the block. Take extreme care when applying herbicides near cucurbits. Do not use spraying equipment that has been used for herbicide application.

## Plants collapse



### 24. Gummy stem blight

Note the gum oozing from an infected stem.

**Cause.** The fungus *Didymella bryoniae*. This fungus can be seed and soil-borne. It is spread by wind and splashing water and is worse in warm wet weather. It is more common with the use of plastic mulch which creates a high humidity around the plant stem.

**Solution.** Spray with an appropriate chemical from the *Problem solver handy guide*.



## Plants collapse



### 25. Sudden wilt

Upper: crop showing sudden wilt. Lower: infected roots and lower stem.

**Cause.** Sudden wilt results from a combination of several fungi, mostly species of *Pythium* and *Fusarium*, and the relationship between the soil, plant and water. Varieties with a vigorous root system seem to be less susceptible.

It is worse in soil with poor aeration, for example clay soils or soils that have been compacted. Sudden wilt on sandy soils is usually associated with poor water management.

**Solution.** Plant less susceptible varieties. Use an irrigation scheduling device, for example tensiometers, to avoid waterlogging. Use cover crops to improve soil structure. Deep rip soil before planting.



### 26. Wilt

There are three common causes of wilt—fusarium, nematodes and waterlogging. Upper: wilted plant. Lower: orange-brown discolouration of the water conducting tissue caused by Fusarium wilt.

#### *Fusarium wilt*

**Cause.** The fungus *Fusarium oxysporum* f. sp. *melonis*. This fungus is worse in warm to hot weather, and survives in the soil for many years. It can be carried on seed and in soil on equipment, vehicles and humans.

**Solution.** Plant resistant varieties if available. Use a long rotation between cucurbit crops.

#### *Nematodes*

**Cause.** The rootknot nematode *Meloidogyne* species.

**Solution.** Apply a nematicide before planting the next crop.

#### *Waterlogging*

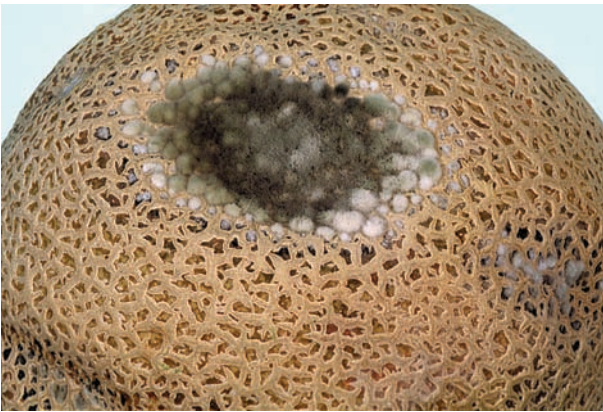
**Cause.** Poor drainage through the soil profile. This can be a problem in low parts of the field or at the ends of rows, if water is unable to drain away.

**Solution.** Plant on hills. Ensure water is not ponded in the field and can escape from the ends of rows. Laser level the area before planting.





## Spots on fruit



### 27. Alternaria fruit rot

**Cause.** Species of the *Alternaria* fungus. This fungus can be seed-borne and can carry over on crop residue in the soil. It is spread by wind and is worse in warm wet weather. Skin damaged by sunburn is more susceptible to alternaria fruit rot.

**Solution.** Do not plant into soil containing residue of a previous cucurbit crop. Spray with an appropriate chemical from the *Problem solver handy guide*.



### 28. Angular leaf spot

**Cause.** The bacterium *Pseudomonas syringae* pv. *lachrymans*. This bacterium can be seed-borne and can carry over on crop residue in the soil. It is spread in wind-blown water droplets and is worse in warm, wet, windy weather.

**Solution.** Do not plant into soil containing residue of a previous cucurbit crop. Spray with an appropriate chemical from the *Problem solver handy guide*.



### 29. Bacterial spot

**Cause.** The bacterium *Xanthomonas campestris* pv. *cucurbitae*. This bacteria is commonly seed-borne and can carry over on crop residue in the soil. It is spread in wind-blown water droplets and is worse in cool wet weather. It is worse on honeydews.

**Solution.** Do not plant into soil containing residue of a previous cucurbit crop. Spray with an appropriate chemical from the *Problem solver handy guide*.



### 30. Gummy stem blight

**Cause.** The fungus *Didymella bryoniae*. This fungus can be seed and soil-borne. It is spread by wind and splashing water and is worse in warm wet weather. It is more common with the use of plastic mulch, which creates a high humidity around the plant stem.

**Solution.** Spray with an appropriate chemical from the *Problem solver handy guide*.

## Spots on fruit



### 31. Measles

**Cause.** Measles are burn spots caused by a high concentration of salts in fluid exuded from the fruit under some environmental conditions. This process of moisture loss is called guttation. It only affects honeydews.

**Solution.** Reduce irrigation as fruit near maturity. Ensure sufficient calcium is available to the plant.



### 32. Pimples

**Cause.** Under conditions of high humidity, surface cells on the fruit swell and rupture. The small areas of scar tissue that result resemble pimples.

**Solution.** Avoid plantings that will be harvested during periods of high humidity. Do not over water if using sprinkler irrigation.

## Cracks on stem end of fruit



### 33. Excess water

**Cause.** Too much water, either irrigation or rain.

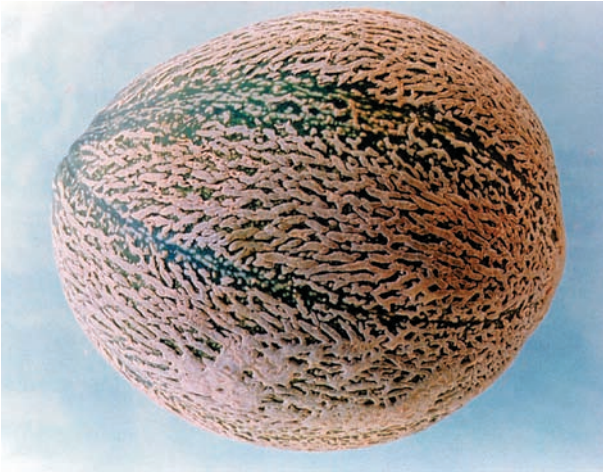
**Solution.** Do not over water, particularly when fruit are near maturity.

### 34. Cold weather

**Solution.** Do not plant highly susceptible varieties, to mature in cold weather.



## Misshapen fruit



### 35. Poor pollination

**Cause.** Not enough bees in the crop at flowering. If the flower is not fully pollinated the fruit will develop unevenly. Pollination can be affected by extreme low or high temperatures, and rain and wind at flowering.

**Solution.** Check that there are enough bees in the crop during flowering. If there are not, bring in at least two and a half hives per hectare when 10% of the crop is flowering.

## Discoloured veins (sutures) on fruit



### 36. Vein tract (suture) browning

Left: affected rockmelon. Right: cut fruit showing that there is no internal damage.

**Cause.** This is believed to be caused by high levels of ultra violet light. It is less obvious on varieties with a full net covering. Other factors may also be involved.

**Solution.** Grow only fully netted varieties.

## Poor netting



### 37. Virus infection

Note poor netting on top fruit from a virus infected vine and the well netted fruit from an unaffected fruit.

**Cause.** Fruit from virus infected plants are often poorly netted.

**Solution.** Reduce virus infection by using super reflective plastic mulch to deter aphids from landing in the crop.



### 38. Premature ripening

Note hail damage on fruit.

**Cause.** Fruit often ripen prematurely when plants lose a lot of leaf. This can be caused by disease infection, root rot, hail damage, or any other leaf damage caused near harvest.

**Solution.** Control diseases such as mildews. Harvest carefully to avoid plant damage. Maintain healthy plants.

## Chewed netting



### 39. Cucumber moth

Upper: chewed netting on fruit.

Centre: larvae on a leaf (25 mm).

Lower: adult moth (25 mm across outspread wings).

**Cause.** Larvae of the moth *Phakellura indica*. The larvae feed on the netting of rockmelons.

**Solution.** Spray with an appropriate chemical from the *Problem solver handy guide*.



## Small white eggs in stem scar



### 40. Atherigona

Note eggs (1 mm) in the stem scar.

**Cause.** The fly *Atherigona orientalis*. It is a secondary pest and is common in rotting fruit and vegetables. It lays its eggs around the stem scar of the fruit and in cracks in the skin. New Zealand considers it a quarantine pest and will not allow infested fruit into New Zealand.

**Solution.** Remove decaying fruit from the field and from around the packing shed.



## Bleached skin



### 41. Sunburnt fruit

**Cause.** Poor leaf cover exposing fruit, or harvested fruit left in the sun.

**Solution.** Control diseases, for example powdery and downy mildew. Harvest carefully to prevent foliage damage and exposure of fruit to the sun.

## Fruit rots



### 42. Gummy stem blight

Note internal rot. External symptoms can be difficult to see.

**Cause.** The fungus *Didymella bryoniae*. It is spread by wind and splashing water and is worse in warm wet weather.

**Solution.** Maintain field sprays with an appropriate chemical from the *Problem solver handy guide*.



### 43. Geotrichum soft rot (sour rot)

**Cause.** The fungus *Geotrichum candidum*. During wet weather the fungus infects fruit from the soil through cracks in the stem end of the fruit. After harvest it spreads to other fruit, often through contaminated wash water. It may also be spread by vinegar flies (*Drosophila spp*).

**Solution.** Do not harvest in wet weather if possible. Handle fruit carefully. Cool fruit to remove field heat as soon as possible. Apply a postharvest dip treatment.



### 44. Alternaria fruit rot

**Cause.** Species of the *Alternaria* fungus. This fungus can be seed-borne and can carry over on crop residue in the soil. It is spread by wind and is worse in warm wet weather. Fruit with skin damaged by sunburn or stored for too long, or at too low a temperature, are more susceptible to alternaria fruit rot.

**Solution.** Do not harvest in wet weather if possible. Handle fruit carefully. Cool fruit to remove field heat as soon as possible. Apply a postharvest dip treatment.



## Fruit rots



### 45. *Fusarium* fruit rot

**Note.** Usually occurs on stem end. Mould can be white or pink.

**Cause.** Species of the *Fusarium* fungus. The fungus is soil-borne and infects the fruit where they touch the ground. It can also be splashed onto fruit by rain or overhead irrigation, but only infects fruit through a wound. Fruit can break down rapidly, particularly if weather is hot and wet at harvest.

**Solution.** Do not harvest in wet weather if possible. Handle fruit carefully. Cool fruit to remove field heat as soon as possible. Apply a postharvest dip treatment. Spray to control fruit pests, for example cucumber moth.



### 46. *Rhizopus* soft rot

**Note** the whiskery appearance of this mould.

**Cause.** The fungus *Rhizopus stolonifer*. The spores survive on plant residue in the soil and are spread by wind. Fruit are often affected in wet weather when dying flowers are infected, and the infection then spreads to the fruit. Infection also occurs through injuries.

**Solution.** Do not harvest in wet weather if possible. Handle fruit carefully. Cool fruit to remove field heat as soon as possible. Remove diseased fruit from near the shed. Strict shed hygiene is essential. Apply a postharvest dip treatment.



### 47. Pink mould rot

**Cause.** The fungus *Trichothecium roseum*. This fungus is soil-borne and spores are spread by air movement, irrigation water and insects. Infection occurs through soil contact and injuries. It is worse in warm weather.

**Solution.** Handle carefully to avoid injuries to fruit. Apply a postharvest dip treatment and cool and refrigerate quickly after harvest.