

Commercial Rockmelon Production in the Top End

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Rockmelons are well suited to our dry season conditions in the Northern Territory. This Agnote outlines the techniques of growing, harvesting and handling this fruit.

VARIETIES

As new varieties are continuously being tested, growers should contact the Department Extension Officer for up to date information in varieties.

SOIL PREPARATION

Plough in the cover crop (such as Sudax, Millet, etc.) at least 4 weeks before planting, then disc or rotary hoe to bring the soil to a suitable seed-bed condition. It is necessary to add dolomite or lime, do this before ploughing the cover crop in.



FIELD LAYOUT

Rows should be approximately 1.5 m apart (tractor wheel width). Each section should be 6-8 rows, depending on the length of your spray boom, with a 2-2.5 m roadway between sections for access during spraying and harvest. Plant spacings in rows should be approximately 40-50 cm. Note that if spacing is too wide oversized melons develop.

SEED BED PREPARATION

The following sequence should be followed in seed-bed preparation:

- (a) Hill (ridge) up the row.
- (b) Spread fertiliser along the row.
- (c) Shape the beds up, remembering that they must be smooth and even shaped.
- (d) Lay out the bi-wall/drip irrigation tube.
- (e) Lay your plastic down during the hottest part of the day. The plastic should have been out in full sun to heat up before laying, as this makes it fit tight over the bed and prevents seedling damage due to the plastic flapping in the wind.

FERTILISERS

- (a) **Preplant** - Using a high analysis, complete fertiliser eg. 14N - 14P - 14K, apply 700 kg/ha on virgin soils, plus 500 kg/ha of single superphosphate. On old lands with residual fertiliser only apply 500 kg/ha of the mixed fertiliser. This should be applied to the rows before bed shaping.
- (b) **Side Dressing** - Is split into two phases, the first is from week 2 after planting to week 6. During this phase 52 kg of nitrogen, 20 kg of phosphorus and 35 kg of potassium is applied to each hectare of the crop. This is split into equal amounts and injected into the irrigations system. It should be applied at least twice a week, but if you have an automatic system and could apply it daily this would be ideal. The second phase is from week 6 to week 9. During this phase 13 kg of nitrogen and 38 kg of potassium is applied through the irrigation system. These rates are meant as a guide only and may vary depending on temperature, soil type and variety.

A soil analysis in advance of soil preparation is desirable to verify lime and fertiliser rates. Contact your local Department of Primary Industry and Fisheries horticulture officer as to how to take the soil sample.

NB - Producers intending to grow rockmelons should have soil tests done by the DBIRD to determine accurate fertiliser rates.

PLANTING

- (a) **Time** - Plant as early in the season as possible, ie March/April. The time to first picking is approximately 12 weeks for Darwin and 15 weeks for Katherine. The cut off period for picking should be September/October at both Darwin and Katherine. After this period interstate melons come on the market and local weather conditions become too hot, resulting in poor quality melons.

- (b) **Method** - An attachment can be rigged behind the mulch layer to cut holes in the plastic, or it can be done by hand using a tin can with a sharpened cutting edge attached to a pole. Alternatively a 'plug mix' planter can be used. This can be either by using a plug mix, or putting seeds/seedlings in the cups by hand. If you are using seeds, 3 should be planted at each site, to be later thinned to 2 plants if necessary.

To reduce loss by fungal infection, dry seed can be dusted with 7 g benlate per 2.5 kg of seed prior to sowing.

The recommended sowing rate is 1-2 kg/ha, depending on seed quality (germination).

Earlier production can be achieved by raising seedlings in jiffy pots or seedling trays, so that they are ready for planting as soon as the land is prepared.

IRRIGATION

- (a) **Method** - Drip irrigation is highly recommended. A good filter such as a sand filter, with a final screen filter (e.g. a mesh of 125) is essential for a drip irrigation system, to prevent blockages in the drippers.

- (b) **Amount** - How much water should be supplied varies with the soil and climatic conditions. Frequent light watering, 2-3 hours every day are usually necessary in our Top End soils, especially when the crop is mature. With mature crops it is vital to prevent water stress i.e. wilting. This requires irrigation when the crop is at its peak demand, between 12-3 p.m. The objective is to keep the soil moist in the top 100-150 mm where the feeder roots are found. Soils in the Top End have poor water holding capacity and with mature crops it is often necessary to irrigate twice per day - early morning and again at midday.

The soil should be kept at near field capacity, as once plants begin to show signs of wilting crop damage will have already taken place. A number of tensiometers placed in selected positions in each planting bay will help to determine the correct watering program. When fruit is maturing watering should be reduced. Careful judgement is required here to prevent water stress and premature fruit slip.

PEST AND DISEASE CONTROL

A regular spray with mancozeb (Dithane M45[®]), proppineb (Antracol[®]) or zieb every 7 days should prevent downy mildew. As these sprays are not systemic they are used as preventatives.

If downy mildew infects the crop, 2 or more sprays with Ridomil Plus[®], Fruvit[®] or Galben[®] may be necessary. These are systemic and are used as a curative measure.

POWDERY MILDEW

In dry cool weather powdery mildew can often become a problem. At the first symptoms if the plant has not started to run use nonsystemics eg. Morestan[®] at 7 to 10 day intervals. If plants have started flowering use systemic fungicides and alternate between two of the following three groups per crop to avoid building up resistance:-

| | |
|---------|--|
| Group 1 | Rubigan [®] withholding period 3 days Bayfidan [®] withholding period 1 day |
| Group 2 | Milcurb [®] withholding period 1 day |
| Group 3 | Calixin [®] withholding period 2 days |

Should pumpkin or other leaf eating beetles become a problem carbaryl can be sprayed provided the plants have not begun flowering. After flowering endosulfan (Thiodan[®]) should be used.

If caterpillars appear then one of the above insecticides, trichlorfon (Dipterex[®]) or diazinon should be included in the regular spray program.

It is more economical to apply an insecticide together with a fungicide, care must be taken however to check that the two chemicals are compatible.

Check for nematode infestations which may require treatment prior to planting.

HARVESTING

- (a) **State** - When melons are mature they develop a crack where the stalk is attached to the fruit (the 'button'). If the stalk detaches readily when the fruit is twisted or lifted, the melon is fully mature - this is the 'full slip' stage. It will ripen satisfactorily if picked at this stage but not if it has to be pulled or twisted hard or cut from the vine.
- (b) **Time** - Fruit should be harvested in the early morning before they have time to heat up. High fruit temperatures speed up ripening and shorten shelf life.
- (c) **Frequency** - Daily harvest ensures a uniformly mature product that will always attract the top price.
- (d) **Handling** - Fruit bruise and crack easily. Consequently they should never be thrown, but rather carried out of the rows and placed in the bin or trailer.

POST HARVEST HANDLING

Fruit should be removed from the field as soon as possible and placed in a shady spot out of the direct sun.

- (a) **Post Harvest Treatment** - This is carried out to control a number of rots which attack melons. This should be carried out immediately after harvest and will protect fruit for up to 7 days.

As Panocline 400[®] (a Shell product) and Benlate are incompatible, except in the presence of a specific wetting agent (Shell Nonidet WK[®], or Agral 60[®]), the following mixing directions and order of mixings are most important.

1. Add 100 g Benlate to 100 L water in dip tank.
 2. Add 10 mL water Nonidet WK[®], or Agral 60[®].
 3. Stir well.
 4. Add 125 mL Panocline 400[®], or in very hot weather 250 mL Panocline 400[®].
 5. Mix thoroughly and dip fruit for 1 minute, remove and allow to dry before grading and packing. A spray dip of these chemicals can also be used if the fruit remain under the spray for 1 minute.
- (b) **Grading** - Discard immature, overripe, damaged and diseased fruit as once break down occurs it will also affect the other fruit in a pack. Melons should be graded according to maturity, size, and appearance.
- (c) **Packing** - Melons should be pattern packed. The size and shape of the fruit and dimensions of the container will determine the pattern. Fruit should be packed stem up and fit tightly in the container to reduce the risk of damage to transit due to movement. Larger fruit (over 1 kg ie count 11 and lower) should be packed into 15 kg single layer trays. Smaller fruit should be packed into cartons weighing 20-25 kg.
- (d) **Marking** -The end of each container must be clearly marked with the following information.
- The growers name and address
 - Destination - Agent/Agent's code
 - Rockmelons - must be in capital letters
 - Product of Australia - if going for export
- (e) **Storage** - Cartons should be designed for forced air cooling to facilitate rapid cooling after packing. The pulp temperature should be reduced to 7-10°C for storage.

YIELD

This is variable, but 25 tonne per hectare should be obtainable. Of this 60% should be trays and 40% cartons. Good crops can average over 30 tonne per hectare.

Note: All pesticides are subject to registration in the Northern Territory. It is the responsibility of the user to use only pesticides which are registered for the purpose in hand

READ THE LABEL CAREFULLY

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