Chapter 29

KEYS TO GOOD RATOONS

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The key to growing a strong ratoon crop is to have a strong and healthy mother plant. The quality of the ratoon crop is determined to a large extent by the quality of the root system of the mother plant at the time of plant crop harvest.

Having a strong and healthy plant crop

For a successful ratoon crop, the plant crop should have been relatively free of pest, disease, weed, nutrient and water stress. This is important for a number of reasons:

- The initial growth and development of the sucker for the ratoon crop depends on the carbohydrates and nutrients stored in the mother plant.
- The ratoon crop inherits the root system of the mother plant so growth of the ratoon crop requires it to be healthy and extensive.

Much of the focus of securing initial strong ratoon growth depends on providing conditions that are conducive to strong sucker growth. Sucker growth will depend on the starch reserves available for allocation to it. Since the plant crop fruit will receive first priority for available starch reserves, if starch reserves are low in the mother plant (as a result of any form of stress on the plant) then sucker development will suffer. Anything that reduces photosynthesis in the plant crop will have an adverse effect on sucker growth before it affects fruit development.

So, what produces a strong mother plant?

All the recommended management practices described in this manual apply. *Refer to other chapters for details.* Some of particular relevance are summarised below.

Good quality planting material

Poor material leads to weak and uneven mother plants.

Grade planting material to promote greater crop uniformity before planting.

Don't use infected material (e.g. red mite, scale, butt rot).

Where possible use relatively fresh material that has been "cured" first to prevent entry of rots.

Planting density

Trial work has shown that optimum spacing results in a reduced incidence of natural initiation, especially where the orchard-style planting pattern was used.

Optimum plant density also reduces sucker number per plant; optimum sucker number is regarded as about 1.3 per plant.

Good soil conditions

Soil must be prepared well to permit effective fumigation, fast establishment and good root structure.

Appropriate soil tilth is achieved to enable good contact between planting material and soil at planting. It can be assisted by rolling and/or irrigating-in ("setting") at planting.

Good soil tilth also assists the effectiveness of other soil applied pesticides.

Pest, disease and weed control

The problems are correctly identified and managed in a timely manner, spray equipment is properly calibrated.

Appropriate, sufficient and balanced nutrition

Soil and leaf analysis are used to tailor the nutrition program and solid fertiliser is applied pre-plant.

A correct potassium to magnesium balance is maintained.

A suitable soil pH is maintained to balance the needs of nutrient availability and *Phytophthora* control.

Optimal soil moisture

Good drainage is provided.

If available and needed, irrigation is applied at critical times. These critical times are at planting, induction, and fruit expansion (last 3 months before harvest). It may also be needed during extended dry spells.

Recommended practices for a successful ratoon crop

1. Aim for a good plant crop by optimisation of drainage, soil pH, nutritional balance, tilth, pest, disease and weed control, and good quality, pest-free and graded planting material.

2. Choose a planting density for your environment that is most likely to result in less natural flowering, less slips and the optimum number of suckers.

3. Ensure that the mother plant has reached physiological maturity at initiation of the plant crop in order to produce a strong sucker. If plants are too young at flower induction sucker development will be erratic and non-uniform.

4. If present, remove slips at or soon after plant crop harvest so that they don't compete with the suckers. *Refer to the paragraph on pulling slips in the chapter on planting material.*

5. Apply standard nutrient dressings soon after completion of the plant crop harvest in order to promote the emergence and growth of strong suckers for the ratoon crop.

6. Three months after the plant crop harvest, sample leaves from suckers for nutrient analysis in order to tailor the balance of the ratoon crop fertiliser program.

7. Maintain a vigorous healthy root system by monitoring for pests, diseases and weeds and applying appropriate treatments in a timely manner when required.

8. If possible irrigate when required at critical times.

References and further reading

Bartholomew, D. P., Malezieux, E., Sanewski, G. M., and Sinclair, E. (2004). Inflorescence and Fruit Development and Yield. 'In The Pineapple. Botany, Production and Uses'. Ed D. P. Bartholomew, R. E. Paull and K. R. Rohrbach. CABI Publishing. 301 p.