TRAINING GUIDE

EUREPGAP OPTION 2

FOR MD2 PINEAPPLE

FORCING AND DEGREENING

1ST Edition 2007

CREDITS

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Reference material:

"Pineapple Agricultural Practices" by COLEACP

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INTRODUCTION

CONTEXT

This training guide is intended to provide practical reference material for the training of pineapple farmer groups on the production of MD2 pineapple for export under EurepGAP Option 2 certification

DESCRIPTION

This guide covers the steps of MD2 pineapple cultivation from forcing and degreening. This illustrated guide is structured for easy comprehension and to complement hands-on training.

This guide does not replace the direct advice of trained extension field agronomists.

NOTE

The training guide series for MD2 pineapple production for EurepGAP Option 2 consists of the following 4 modules. Please refer to the other guides for coverage of the full production cycle.

1. Site Preparation and Planting
2. IPM and Pesticide Handling,
3. Forcing and Degreening
4. General Hygiene.

As of 6th of September 2007, EurepGAP has changed its name to GlobalGAP. In this Facilitator's Guide, the name EurepGAP is used to maintain the consistency with the other guides already published.

The mention of chemicals in this guide is not aimed at promoting a particular brand. These are some of the recommended chemicals in use at the time of preparing this guide. Always refer to the Ghana Environmental Protection Agency's list of approved chemicals for application.

Recommended practices in the guides, except for the dosage of fertilizers and pesticides which are MD2-specific, are also applicable for the other varieties of pineapple.

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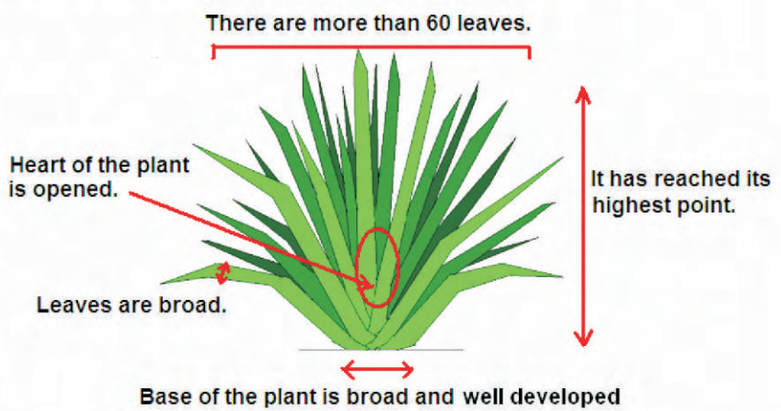
Timing of forcing*

"How do I know it's time to force?"

* **Forcing**: Application to make all plants flower at the same time

1. Characteristics to check

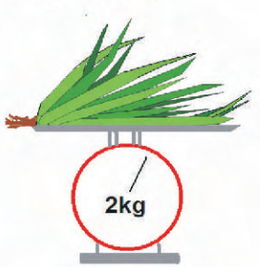


2. Number of days

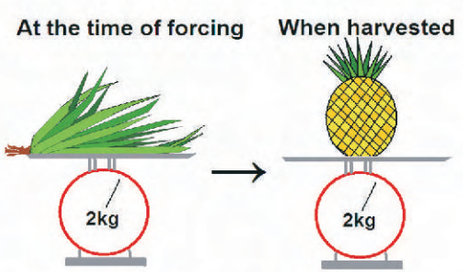
More than 7 months have passed since planting.

3. Sampling

- Pull out some plants.
- If the weight > 2kg, it is ready to force.



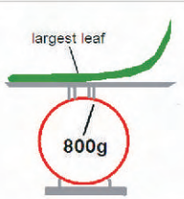
- The weight of plant at the time of forcing determines the fruit size.



- If you want big fruits, leave the plants to grow big before forcing.

4. D-leaf checking

- Pull out the longest leaf.
- If the weight > 800g, it is ready to force.



5. Stop fertilizer application

- When you see the ***characteristics*** described in the previous page, stop fertilizer application.
- Wait for 1 month
- By not giving fertilizer, the plants go through stress.
  →Stressed plants respond better to forcing.

6. Market contact

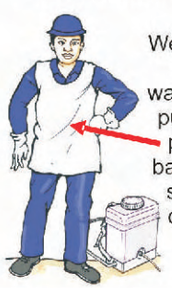
Make sure you have a market to sell by the time you force. Once you force, you have to sell your fruits 4 months later!

Forcing

"Make all the plants respond!"

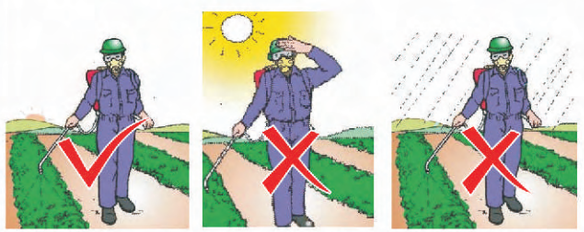
1. Wear PPE*

*Personal Protective Equipment



Wear overalls that are waterproof, or put on a big polythene bag. Carbide solution is corrosive!

2. Choose the right time



Early in the morning or late in the evening

Do not force during the day or when raining

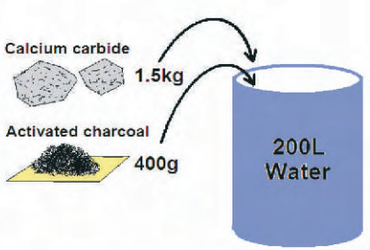
3. Prepare the solution

- Calcium carbide (1.5kg/ 200L water)
- Activated charcoal (400g/ 200L water)

Note 1: Activated charcoal traps the gas from calcium carbide. It is not mandatory to add it, but it can improve the effect of forcing.

Note 2: If you are the only operator, mix half a drum at a time. If you leave the solution for too long, the gas will be lost.

Note 3: Calcium carbide is explosive! Make sure there is no fire, smoke or lamp nearby.



4. Spray immediately

- Remove the nozzle
- Apply at the heart
- 50ml per plant
- Use low pressure

5. Repeat the same after 3 days

6. Be careful of *Phytophthora* rot!

- Calcium carbide brings up the pH.
  →*Phytophthora* develops more easily at high pH.

- If your land is waterlogged,
- If it is rainy season,
- If your land has a history of *Phytophthora* attack…

- You can apply fungicides, such as Aliette and Agri-fos, to prevent *Phytophthora* rot.

When? → 3 weeks before forcing
→ 2 weeks after forcing

Checking the response

"Did the forcing work?"

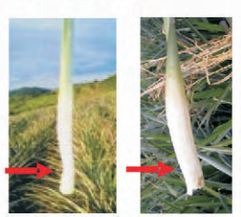
1. When to check

→ 4-5 weeks after forcing

2. Characteristics to check

- Heart of the plant is opened
- Reddish color at the heart

- Edge of the center leaf is bent.



- Flowers are starting to come out

If none of these characteristics are seen after 5 weeks, spray again those plants that are not responding.

Controlling sunburn

"Protect your fruits from the sun!"

- After fruits start to develop, you have to be careful of sunburn.
- When the fruit is lodged, it is more likely to get burned.

- Put thick dry straw or palm fronds over the fruits.
- Do not use thin wet straw as they would get stuck in the crown.

Timing of degreening

"Is it time for degreening?"

1. When to check

→ 125 days (4 months) after forcing

→ After 125 days, continue checking every 5 days

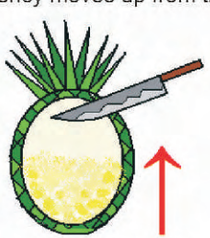
2. Sampling

- Sample 5-10 fruits per acre at a time.
- Choose big fruits, because they mature faster.
- Cut the fruits into half and check translucency.

3. Translucency

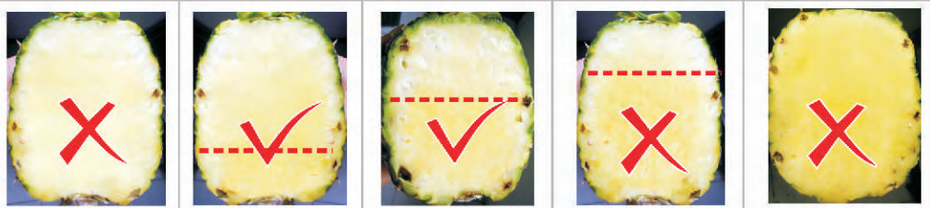
- Translucency is the indicator of maturity for MD2.
- You have to degreen when translucency is 25 ~ 50%.
- When translucency exceeds 50%, the fruits will over-mature when exported.
- When translucency is close to 50%, Brix should be at an acceptable level.

- Translucency moves up from the bottom



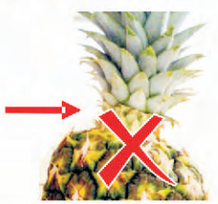
- It moves up very fast during rainy season. You have to be very careful!

How to check translucency

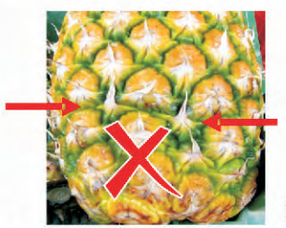


Not ready ⟵ Ready ⟶ ⟵ Overmature ⟶

- Fruits with bottle neck or missing eyes tend to have translucency either too high or too low. They are not exportable.



Bottle neck

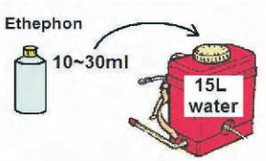


Missing eyes

Degreening

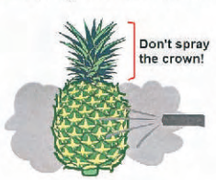
1. Prepare the solution

- Ethephon (10~30ml/ 15L water)
- One knapsack can spray 750 fruits



2. Spray the fruits

- Spray the whole fruits uniformly.



- Make sure that you don't spray the crown.

- If you miss spraying some part, that part remains green.

- Do not overspray, as it can burn the fruits and makes them brown

1. Harvest after 7 days

- If you harvest before 7 days, your fruits may have residue.
- If you harvest after 7 days, your fruits may over-mature.