U CAN GROW AFRICA
Moving Communities from Poverty to Prosperity

Peppadew - Introduction

When planning your Peppadew crop, take care to plan for the following factors:

Sweet piquanté peppers are a cultivar of chilli pepper (Capsicum baccatam).

- Exposure of fields to wind:
    - The more and the stronger the wind is that the plants is exposed to the more difficult it is for the plant to grow optimally. If you have no choice but to plant in windy areas, establish windbreaks to protect your crop.
- Exposure of fields to sunlight:
    - The extent to which the crops are exposed to sunlight determines the amount of light exposure, as well as the temperature to which plants will be exposed. The temperatures and sun exposure will influence the growth of the crops. The amount of light and the length of day (number of hours of light) could also be important in determining crop development and should be considered when choosing a crop. High temperatures and arid, dry soil may cause root shock as the roots are taken out of a moist, cool environment and exposed directly to harsh conditions. To avoid root shock one must plant crops during the coolest time of day and water them properly. Make sure soil is moist before planting.
- Humidity:
    - The more humid an area the higher the potential for more fungal growth. This is not desirable for many crop types, especially those susceptible to fungal infection. The changes in humidity during the course of the season must also be taken into account.
- Air:
    - Plants need a balanced amount of oxygen and carbon dioxide in order to grow optimally. If they are in an area where the air is polluted they will not be able to photosynthesized effectively, which will lead to reduced growth.

Testing the learning:

- Are windbreaks important to safeguard the crop? Yes/No
- Humid conditions may cause the crop to get fungal infections. True/False

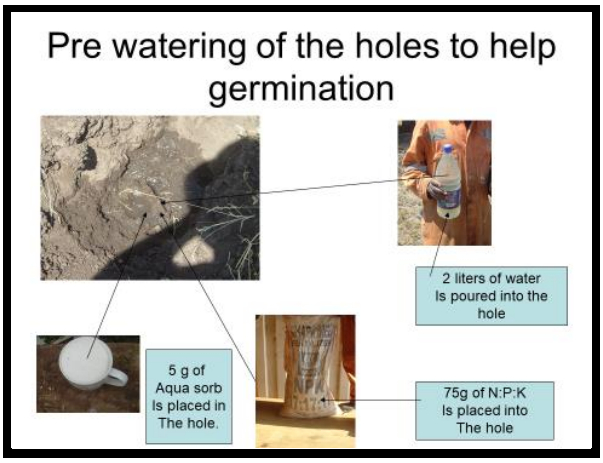
Micro Jobbing:

- Register to grow peppadews.
- Tell us about your growing conditions.
    - What is the prevailing wind?
    - What are the normal temperatures during your growing program?
    - How many hours of daylight will you have during your growing period?
    - Is there pollution in the area?

Peppadew – Land preparation and planting

Basic steps to prepare the ground you will plant your peppadews into:

- Mark out the growing area
- Clear the bush and trees from this area
- Plough in the grasses, turning over the soil down to 500mm
- Take a soil test and water tests to your local store to plan the fertilisers, for disease and nutrition you will need
- Topography:
    - Refers to the Slope and Angle of the fields.
    - Consider the angle at which sun shines on the crop and height above sea level.
    - Consider also the situation of the land in relation to mountains or water bodies.
    - These factors will influence weather factors such as frost, snow, the frequency of rainfall.
- Start with quality seedlings.



- 17 000 per hectare which costs about R8000
- Spacing 2m x 30 cm
- Plant on ridges
- Compost with organic matter
- For warm areas plant from August to December
- Harvest from June to July
- Total period of 8 months on the land
- Do not let the crop stay as a perineal, plough it in as second year fruit is inferior.

Testing the learning:

- Which months can you harvest peppadews?
- Which tests do farmers have to do before planting?

Micro Jobbing:

- After preparing the lands, plant your peppadew seedlings.
- Take a photograph of the planted seedlings.
- How many hours of daylight do you have now?
- How much rain have you had in the last week?

Peppadew – Water management

Watering your crop is very important. Too little or too much water can both have a negative effect on the crop. Plan your watering program with your agent, taking into consideration:

- Water must be tested to determine quality of water.
- Irrigation will be necessary in the weeks where there is no rainfall. The availability and quality of this water used for irrigating the crop is important.
- Having an abundance of poor quality water is of no use to a crop producer.
- It may be required to put the water through a cleaning or filtering process before use.
- Water must be tested to determine quality of water and disease free is important.
- The availability and quality of the water used for irrigating the crop is important.
- Having an abundance of poor quality water is of no use to a crop producer.
- It may be required to put the water through a cleaning or filtering process before use.
- Drip irrigation is the best and good to place it on top of raised beds.

Testing the learning:

- Is water quality important? Yes/No
- Having a lot of poor quality of water to irrigate crop is good. True/False

Micro Jobbing:

- Tell us about your growing conditions.
    - How much rain do you expect to have during the growing period?
- Do you have access to other water?
- Show us how you will get the water to your crops.
    - Take a picture.

Peppadew – Irrigation

It helps to cultivate superior crops with the water supply as per need of the crops. Ultimately it helps in economic development. Irrigation water improves water conditions in the soil, increases the water content of plant fibres, dissolves nutrients, and makes them available to plants.

- Irrigation carries important nutrients from the soil.
- Triggers germination.
- Process of photosynthesis.
- Without water, plants simply won't grow.
- Irrigation systems provide water.
- Surface irrigation such as border irrigation, furrow irrigation, and other forms of irrigation that use flooding.
- 6 000 cubic meters of water a season per hectare

- Water required - per 17 000 plants
    - In month one – 0,5lt per plant is needed
    - Month two - 1lt per plant
    - Month three – 2,5lt per plant
    - Month four to eight - 3lt per plant

Testing the learning:

- Does irrigation carry nutrient? Yes/No
- Will plants grow without water? Yes/No
- Do you have a water logging?

Micro Jobbing:

- If you have irrigation, take a picture.
- How will the water come into your irrigation pipes?
- Work out the amount of water your crop requires to the amount you have and make sure you will have enough.

Peppadew – Plant Development

Plant development:

Week 1:	Plant seedlings of 4-6 weeks old
Week 2 -3:	Plant establishes and sets roots
Week 4-5:	Plant puts on top growth
Week 6-8:	Plants starts to flower profusely
Week 9:	Fruit sets and develops
Week 12:	Fruit starts to ripen
Week 14:	Start to pick till the end

Peppadew are continual flowering and fruit development.

Pick for 3 months.

Testing the learning:

- Peppadews start to ripen in week 12? True / False
- In which week do you establishes and sets roots?

Peppadew – Pests

Record keeping of all agronomical activities to be recorded on app, such as fertilizer applications, foliar sprays, disease, pest control, and fungal infections.

Note: Beneficial insects fall into a variety of categories, two of which are predators and parasites.

- Predators hunt and feed on pests
- Parasites hatch inside or on a pest, and then they eat the pest as they grow.

Managing the pest program

- You need to be able to recognize the difference between pests and beneficial insects.
- Then try to minimize insecticide applications, because many insecticides will kill the good and the bad the pests.
- Only use selective insecticides that target a particular pest and use spot-treatment if possible.
- Maintain the habitat of beneficial insects by leaving crop residue on the ground and preserving woodlots, windbreaks, fencerows, and un-mowed grassy ditch banks and waterways.
- Provide pollen, nectar sources, or artificial food for the good pests. This is especially important for the bees.
- Harmful insects will attack or damage plants or eat the crop.
- Harmful insects can also spread disease.
- Harmful insects can be controlled by introducing or maintaining beneficial insects in the fields or orchards.
- Main pests - Nematodes, thrips, bollworm, false codling moth, fruit flies and mites.
- Please note that all sprays used must comply with EU standards.

Testing the learning:

- Beneficial insect fall into two categories, name them?
- Can insect spread diseases? Yes/No

Micro Jobbing:

- Have you grown peppadews before?
- What insects do you see when you grow peppadews?
- Take a picture if you can and show it to your agent.
- With your growing plan agree with your agent which pesticide to use if you see the insects.
  - Wherever possible, only put the pesticide on the bug and not all over the plant.

Peppadews – Chemical

All chemicals are poisonous and dangerous, therefore should be handled with great care. Always read the label for proper usage (dosage), handling, and pre-harvesting intervals.

As before, the use of chemicals must be planned for with your agent. Ideally no chemicals will be needed, but if they are needed, here are some of the ones you may need to get your agent to assist you with.

Chemicals
Dalgin active
Cuprafix (Kocide)
Dithane *2
Thiovit WP (wettable sulphur) *3
Ridomil *4
Folicur *5
Codafol K 35
Bellis
Lepistop
Karate (synthetic pyrethroid) *9
Altacor
Confidor

Testing the learning:

- Chemical are not dangerous? True / False

Micro Jobbing:

- Now that we know what peppadews you are growing, what to feed them and how to water them, we need to plan for some of the more common problems and diseases that may affect the peppadews.
- Relook at the plan with your agent and plan for chemicals.
    - This plan must include which of the chemical you will use and when.

This stage of planning and growing may not be necessary if you are using natural growing program. If you are not going to use chemicals, please tell us.

Using chemicals – yes or no

Peppadew – Diseases

Soils need to be well drained and free from soil Bourne disease that affects the Solanaceae family. Practice crop rotation extensively.

The control of plants diseases rests on five basic principles:

1. Exclusion:
    a. Exclusion of a disease is based on excluding a disease from an area where the disease in not yet present.
    b. Total exclusion is not practical but it can be achieved to some extent through using pathogen free propagation material.
    c. For this to be implemented fully a well-managed certification scheme is required
2. Eradication:
    a. Eradication of a pathogen is targeted at the method of survival of the pathogen
    b. Also, aimed at eliminating the pathogen form an area.
3. Protection:
    a. Focuses on the protection of the plant against the pathogen.
    b. Protection places a barrier between the crop plant and the pathogen.
    c. An example of protection against diseases is the implementation of a chemical spray programme for a crop.
4. Resistance breeding:
    a. Refers to the process where the genetic composition of the crop is manipulated so that the crop is resistant to attack from a pathogen?
5. Certification.
    a. Includes introducing quarantine measures.
    b. Certifying propagation materials as disease free.
    c. Limiting the transport of potentially infected material from a high risk to a low risk area is also included in the certification system.
    d. The success of a certification system relies on good management and the introduction of an inspection system.

Main diseases - Pytopthora root rot, fruit spot and internal mould, powderty mildew.

Again check with EU standards

Testing the learning:

- Can I plant any seeds or seedlings? Yes/No
- Why must I log all my actions when farming?

Micro Jobbing:

- What did you grow in the soil last season?
- Take a photo of where you got your seed, seedlings and growing products from.
- If you are growing any one of the following crops close by, take a photograph:
    - Tomatoes
    - Paprika
    - Chillies

Peppadew – Cost

Production costs roughly

- Cost to establish to delivery to factory - R80 000 per hectare
- Average production is 20 tons, good is 25 and excellent is 35 tons per ha.
- The income is estimated at R15 000 per ton, subject to grading
- Gross profit - R220 000 per hectare
- Fruit will be graded on quality and therefore it is most important.

Testing the learning:

- Gross profit per hectare is?
- What is the cost of delivery to the factory?

Micro Jobbing:

- Prepare your budget and get it signed off by the agent.

Peppadew – Important daily tasks

Growing any crop, and especially peppadews, means that you need to do the following steps:

- Inspect your crop every day for diseases and bugs.
    - Report on these via the job card below.
- Make sure your crop gets water.
    - Log how much water the crop got that day.
- Remove the weeds around the plants.

Testing the learning:

- How important is it to inspect your crop every day?
    - Not important
    - Very important
- How often should I take a picture of my crop?
    - Every day
    - Every week
    - When things change
    - Every week and when things change

Micro Jobbing:

- Take a photo of your crop every Tuesday.
- Complete the job sheet every week.

Date	Task	Proof of task
Day 1	Prepare lands	
Day 2	Plant seed or seedlings	
Week 1	How much water did the crop get this week?	
	Did you add fertiliser? If yes, how much.	
	Were there lots of weeds to take out?	
	Did you need to spray for pests? If yes, how much.	
	Did you need to spray for diseases? If yes, how much.	

The above needs to pop up every Tuesday for the full growing cycle of 20 weeks

Peppadew – Harvesting

The peppers are ready for harvesting once fully coloured; at this stage, each weighs between 6g and 15g. The fruit is handpicked more or less weekly, as it matures between mid-January and the end of May, and twice a week during peak harvesting season.


At this stage the task is highly labour-intensive, requiring eight labourers per hectare.

NB! Check colour, dust, fungus, and foreign objects. Grading to be done at the farm.

Micro Jobbing:

- Take a photograph of your crop before you start to harvest.
- Take a photograph half way through the harvest.
- Take a photograph of your crop once you have harvested.
- How many lug boxes have you picked?
- What time of the day did you harvest your crop?

Peppadew – Storage and Transport

Harvested fruit should be removed timeously from the lands and stored in a cool condition with protection from the elements.


The lug boxes are crucial to the whole process and can be cleaned and reused constantly. Note the quality is getting better.


Once peppadews have been cleaned, they are sorted to check quality.

Testing the learning:

- What containers are you going to transport your goods in?

Micro Jobbing:

- Complete the job sheet every day during harvesting and drying.

Date	Task	Proof of task
Day 0	Prepare packing area and set up the tables.	
Day 1	How many peppadews did you harvest today?	
	How much did they weigh?	
	How much did the peppadews you send to the buyer weigh?	
	What is the batch name for the goods sent off the farm today.	

The above needs to pop up every day for the full harvesting and drying cycle of 5 weeks

Peppadew – Grading

Classification of acceptable fruit:

Grading standards are revised annually and remain valid for the entire contract period.

a. Choice grade: Accepted fruit individually weighing 6 grams or more;
b. Standard grade: Accepted fruit individually weighing 4 – 6 grams.

Categories for the rejection of fruit:

a. Rotten fruit:
    i. If more than 3% bacterial soft rot is detected in any consignment, then the whole consignment will be rejected.
    ii. Any other rot will be regarded as normal rejected fruit with the same limitation as other rejected fruit.
b. Green fruit:
    i. Fruit picked at less than 50% red coloration.
c. Insect damage:
    i. Fruit fly - any consignment of fruit containing fruit fly. If fruit fly is suspected in a consignment of fruit, peppadew reserves the right to hold that consignment for two days before it is released in order to establish whether it contains fruit fly.
    ii. Insect damage – e.g. worm / larvae infestation or insect stings.
e. Shriveled fruit.
f. Soft fruit.
g. Blemished fruit.
    i. Fruit with symptoms of disease.
    ii. Sunburn
    iii. Wind scaring
h. Hail damaged fruit:
    i. Up to 10% of hail damage will be regarded as normal rejected fruit with the rest of the consignment graded as per the contract standards. Above 10% hail damaged fruit will result in the consignment being rejected.
i. Malformation.
j. External and internal defects e.g. black spot and/or mould.
k. Fruit with internal or external discolouration. Any consignment of fruit with more than 5% visible internal discolouration will be rejected.
l. Fruit smaller than 4 grams.
m. Chemically ripened fruit.
n. Shriveled fruit.
o. Fruit with visible viral, fungal, bacterial and physiological damage.
p. If more than 50% of a consignment of PRODUCT delivered to PEPPADEW is rejected in accordance with grounds, as stated above, then the whole consignment will be rejected and destroyed.

Testing the learning:

- Grade A - Accepted fruit individually weighing 6 grams or more. True / False
- Insect damage – e.g. worm / larvae infestation or insect stings. True / False

Micro Jobbing:

- Take a photo of the harvested crop.
- Describe the crop as you see it, by comparing to the grading requirements above.

Peppadew – Grow dashboard

The following measures are required to be included in a Grow Dashboard

- Number of growers;
- Number of hectares being grown;
- Map of where the growers are;
- Number of growers growing from seed;
- Number of growers growing from seedlings;
- The logs now included above need to be consolidated:
    - Volume of peppadews harvested;
    - Volume of peppadews sent to the buyer