

Online Training Course on Horticulture seed Propagation with Tissue Culture for African Countries

Acclimatization



AGENCY FOR AGRICULTURAL EXTENSION AND HUMAN RESOURCE DEVELOPMENT
MINISTRY OF AGRICULTURE

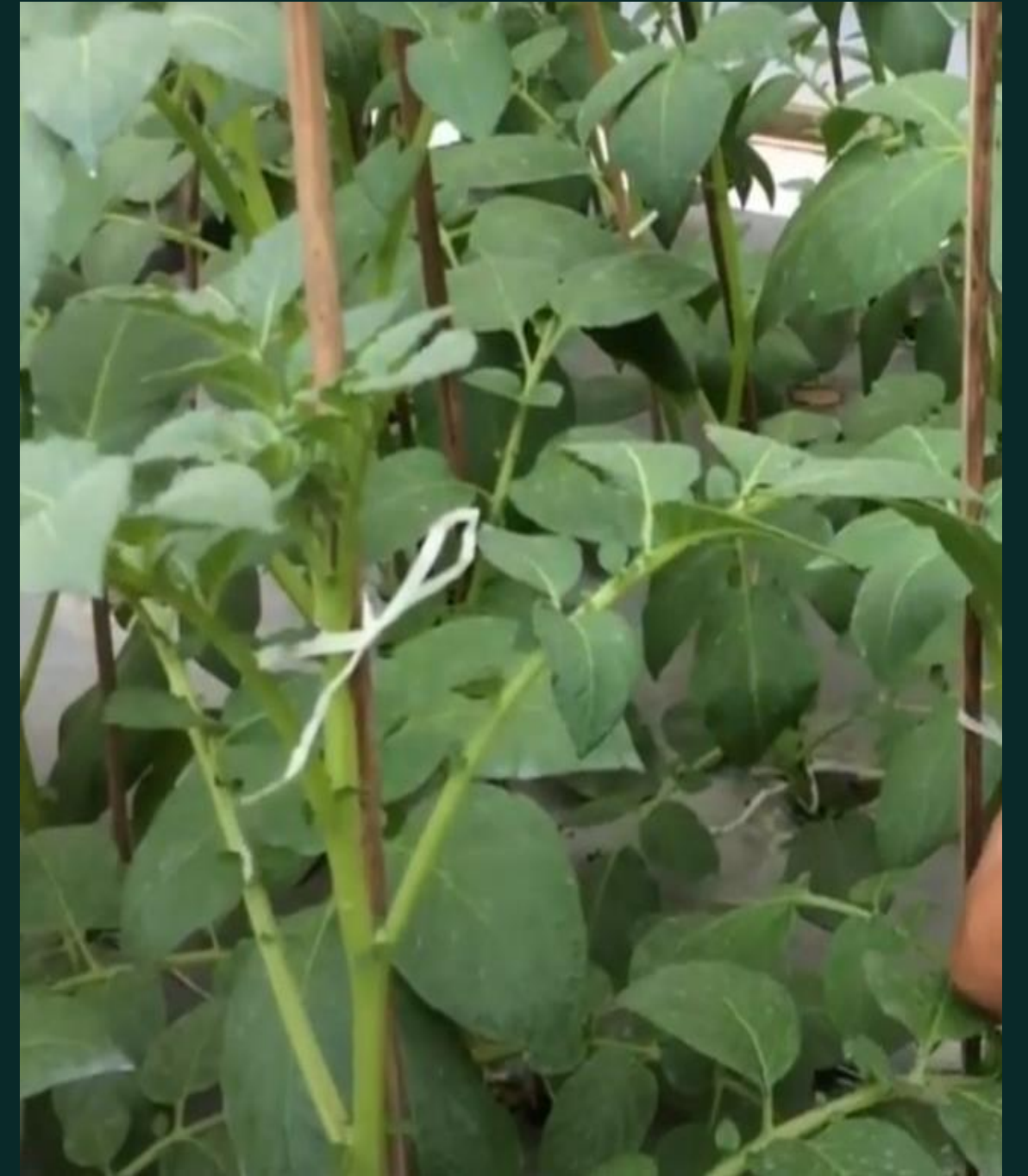
Objectives

After thi session :
Participants expected to
undertand about the
importance of acclimatization
in tissue culture





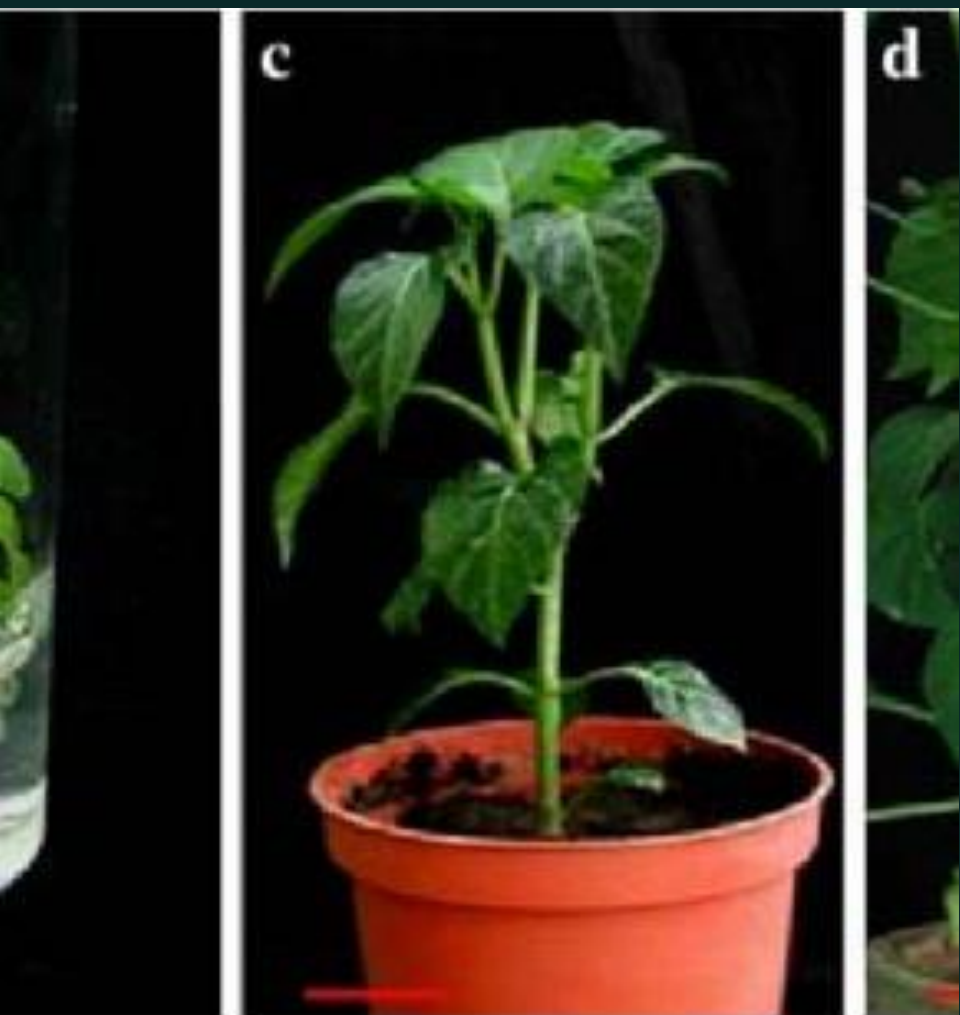
Acclimatization





Acclimatization

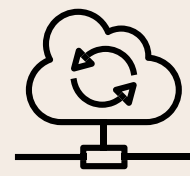
is a process of adaptation / transfer of plants from the internal environment to the outside environment (from a controlled environment to an uncontrolled environment)



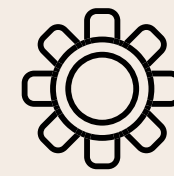
Why we need Acclimatization



Adjustment from
high air humidity to
low air humidity



Improved root
function to absorb
nutrients from non
agar media, such
as soil



Maximize the
photosynthesis
process



Adapt from a
sterile environment
to an environment
where
microorganisms
present



Plantlet ready to be acclimatized

Have :

- Root
- Stem
- Complete leaf





Materials:

- Growing media
- Planlets
- Fungicides
- bactericides
- Root Growth Hormone

Tools:

- Markers
- Tape
- Scissors
- Tray
- Clear Plastic
- Polybag



Autoclave and Gas Stove





Preparing the growing media

The composition of the acclimatization medium was sand and compost (3 : 4)

Mix the media and put in the
clear plastic



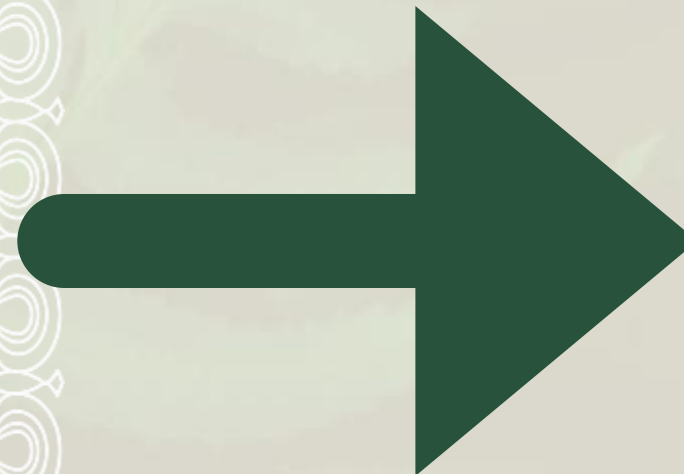


sterilized the media
for 1 hour using
Autoclave



The sterilized media is stored
in a plastic tray

Spray the sterile media with
fungicide and bactericide
(leave it for 1 night)





Acclimatization of Banana Plantlets

Prepare your planlet

The plantlet should be ready to acclimatized, has complete root, stem and leaves



Clean *your plantlet*

Clean the plantlet from the media
that is sticks under running water





Put clean plantlets
on *plastic tray*

The plantlets were soaked in bactericide and fungicide solution (2 g/l)





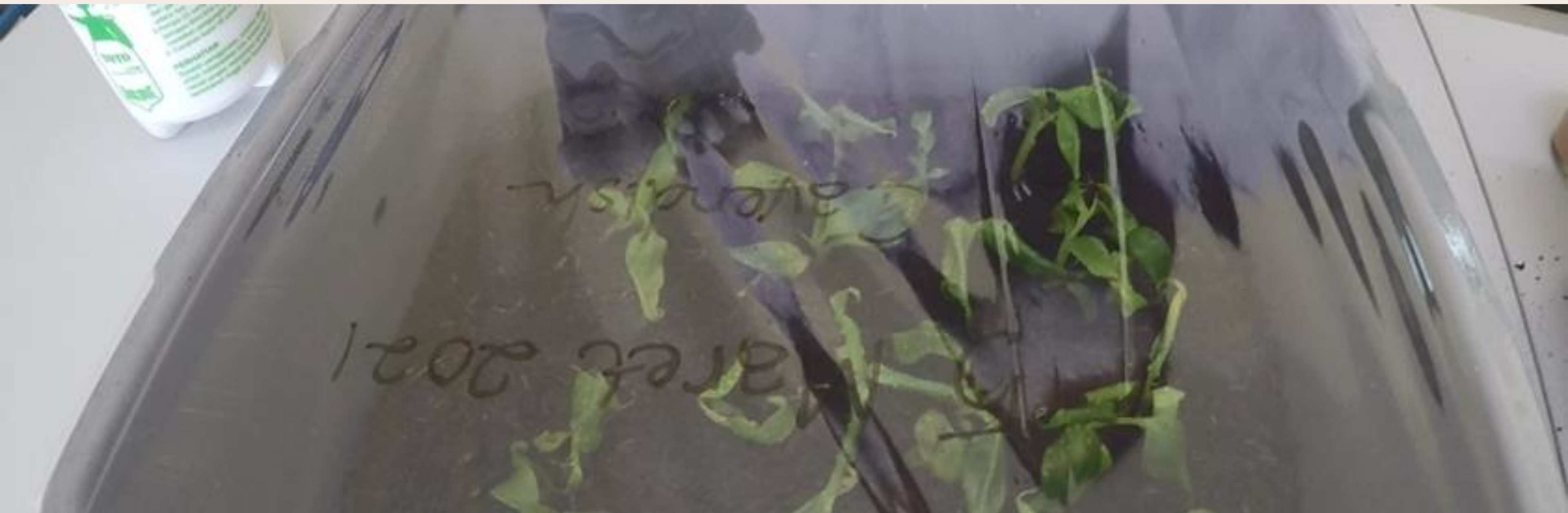
Soak the
plantlets for 15
minutes and let
them dry





Before planting, the plantlets are immersed
in root hormone

Wrap the tray using clear plastic and write/put a label on it



Plastic trays are
stored in plastic
lid covered with
55% - 75%
paranet/ shade
net for 3 - 4
weeks





GROWING BANANA SEEDLINGS

Transplanting is the process of moving the acclimatized banana seedlings into polybag



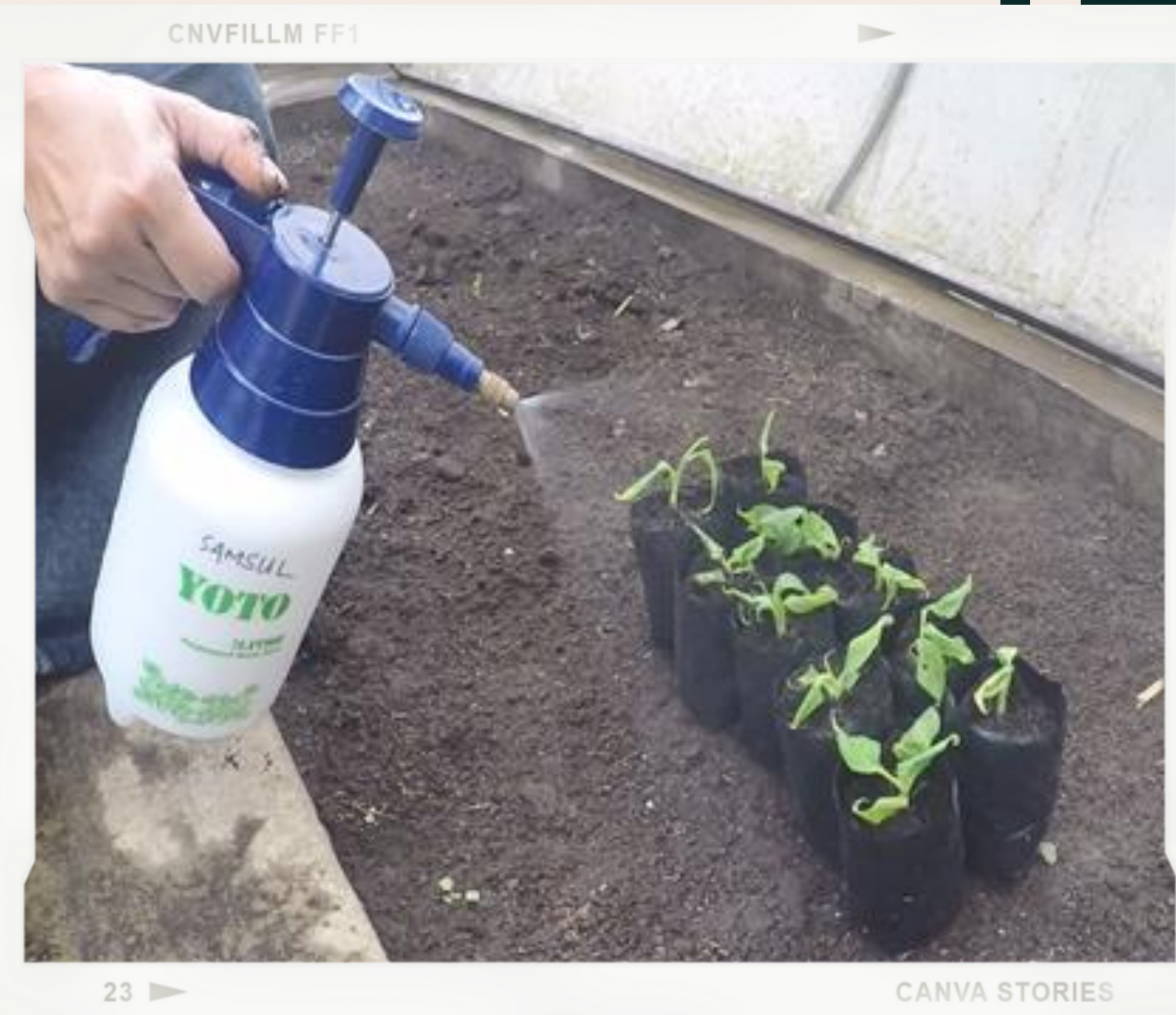
The composition of the polybag media is soil
and husk charcoal (4 : 1)



The plantlets are
transplant from the
previous
acclimatization into
polybags



Put the seedling under the plastic lid cover, then spray them with water



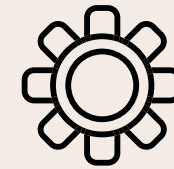
Maintenace



Seedlings in polybags that have been covered for 2 weeks are left under 55% shade net for 1-2 weeks



Seedlings that have grown new leaves are transferred to mounds (beds) in open land without shade nets



Every two weeks the seeds were provided with nitrogen fertilizer, half a teaspoon per polybag of banana seeds



If attacked by caterpillars or insects, spray the seeds with 2 ml/liter of pesticides



Potato Acclimatization





Tools

- DFT Installation
- EC/TDS meter
- pH meter
- Tray
- Tweezers
- Handsprayer
- Bucket

MATERIALS

- Potato plantlet
- AB Mix nutrition
- Husk charcoal
- 70% alcohol
- Insecticide
- Detergent
- Clorox
- Water



Preparation

For potato acclimatization in green house



Sterilized the screen house and DFT instalation



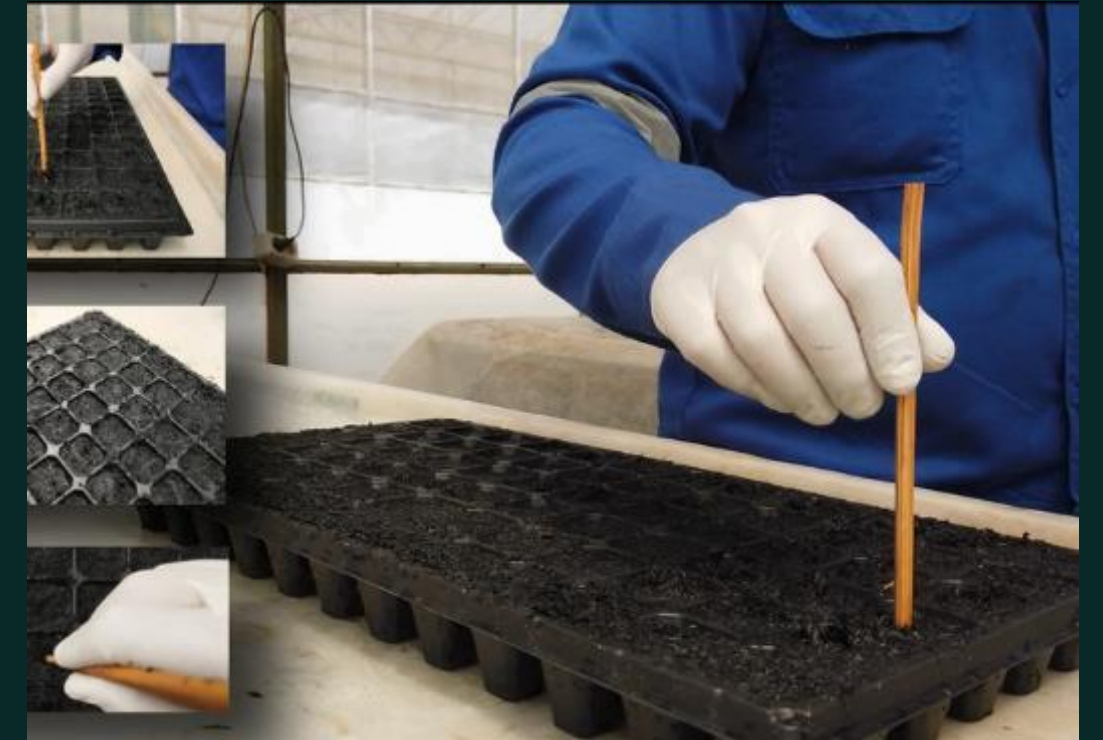
Screen house



DFT Instalation



Prepare the growing media, put in tray





Open the bottle and remove planlet



Clean the planlet



Cut the planlet



Plant it into the growing media



Placed the tray in DFT



used the AB mix



check the solution EC



in 14 - 21 days its ready for
cuttings



1st Cuttings

- Sterilized the screen house, DFT and tray
- Cut the the seedling from planlet
- Dip into root hormone
- Plant into seedling tray contain media
- Maintain the first cutting as in the acclimatization



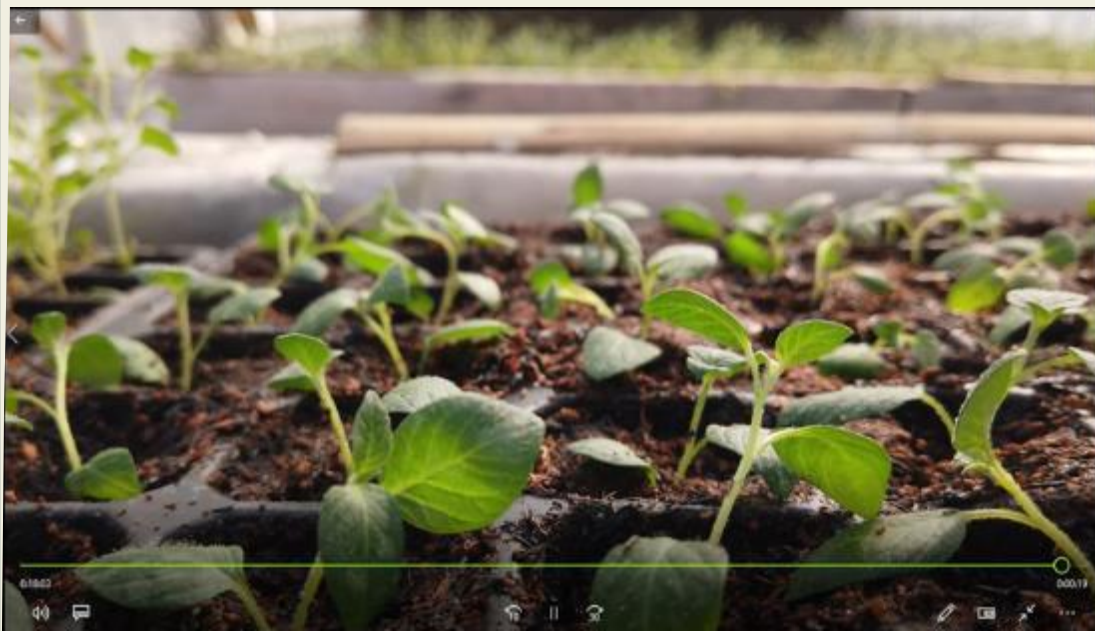
2 nd Cuttings

- Sterilized the screen house, DFT and tray
- Cut the the seedling from planlet
- Dip into root hormone
- Plant into seedling tray contain media
- Maintain the second cutting as in the acclimatization



3 rd Cuttings

- Sterilized the screen house, DFT and tray
- Cut the the seedling from planlet
- Dip into root hormone
- Plant into seedling tray contain media
- Maintain the third cutting as in the acclimatization
- After the plant age is 21 dap. or it already have 5-7 leaves. The plant was able to move into aeroponics container





⌂ Remove the plant from tray and it was cleaned



⌂ Dip into fungicides



⌂ Put into Styrofoam, using rockwool or foam

Plant into the aerophonic container





Harvesting was done after 3 month

Thank you

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