



TCF

Tissue Culture Facility

Tissue Culture Facility,
the future?

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August 2021

Who is Tissue Culture Facility : TCF ?





Bernheim, R45, Paarl

Where is TCF?





What is tissue culture?

- Tissue culture is a **global/growing trend**.
- Most rapidly growing area of **Biotechnology** with a wide range of applications.
- Tissue culture is a term used for collection of techniques used to **maintain or grow plant cells, tissues or organs** under **sterile conditions** on a **nutrient growth medium** of a known composition.
- It is used to **produce clones** of a plant in a method known as **micropropagation**.





Why micropropagation?

- **Cost effective** production.
- Production is not depending on **season** or weather conditions.
- Supply of **virus and disease-free** plant material.
- Plants are **uniform** and more **vigorous**.





Uniformity





Why does the fruit industry need a TC lab?

- **Rapid increase** of clonal rootstocks.
- **Supply** of clonal rootstocks to **commercial nurseries**.
- **Shortages** in rootstocks and cultivars can be **managed** better depending on circumstances.
- The cost of **imported *in vitro*** material is **expensive**.
- A **phyto-sanitary accredited facility** will create opportunity to export quarantine plant material to neighboring countries and at the same time a quarantine station for importing plant material.

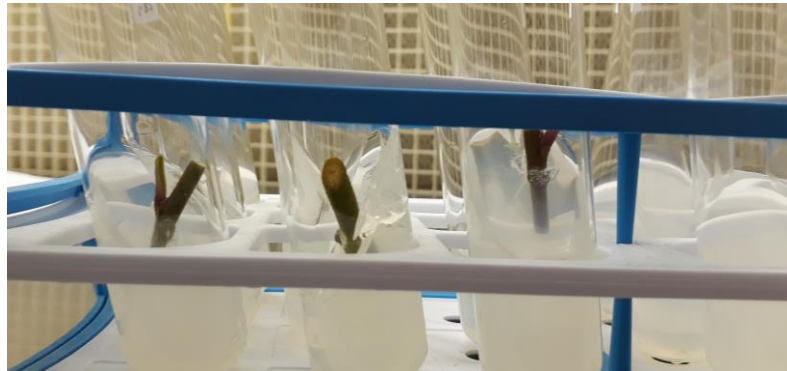
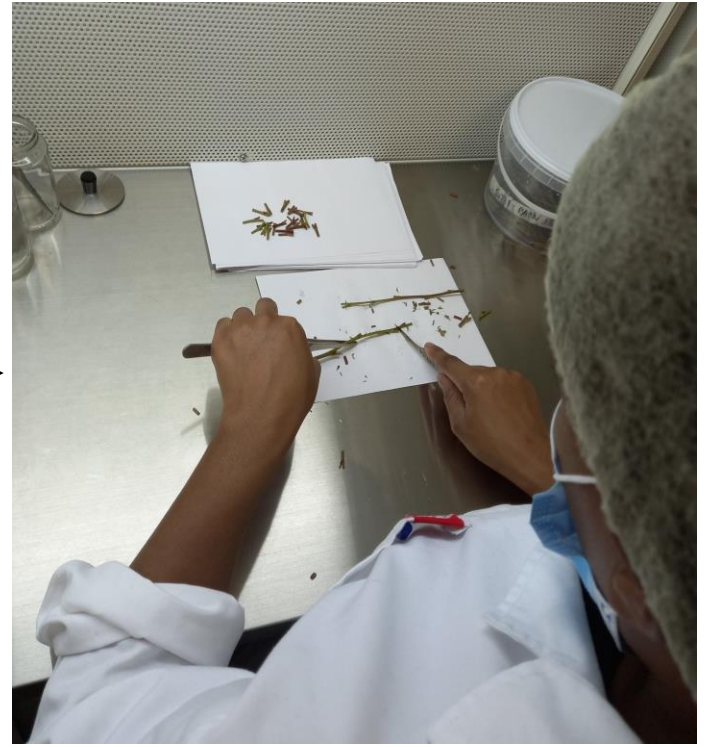
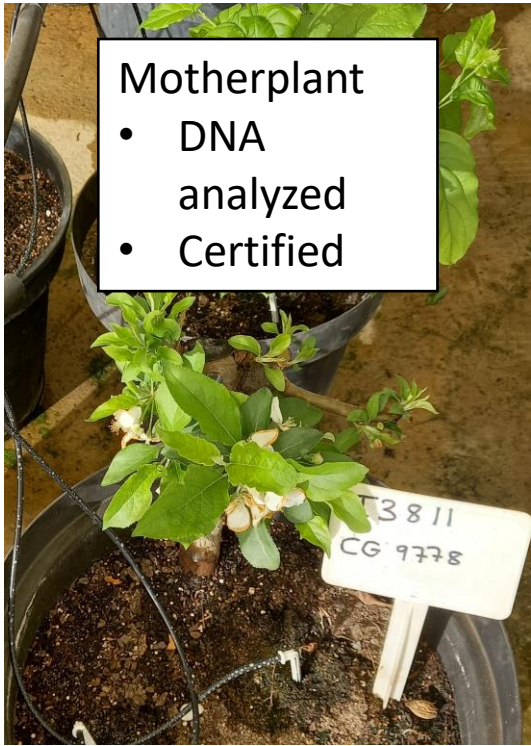


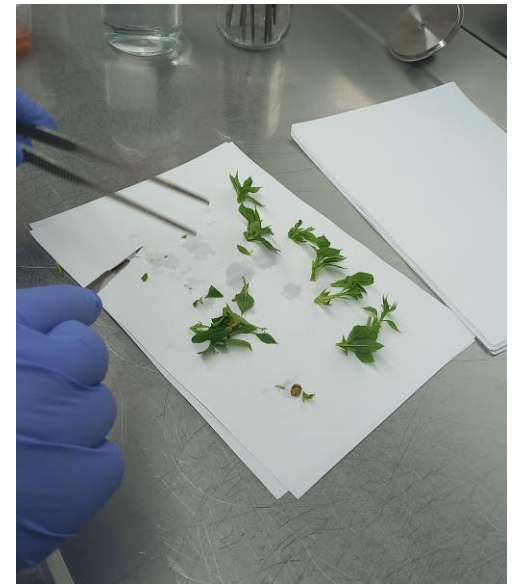


The micropropagation process...

- Need a sterile environment
- Healthy mother plant
- DNA analyses
- Initiation of material
- Optimized medium recipe/protocol
- Multiplication
 - Repeated multiplication of material and transfer to fresh medium
- Rooting
- Hardening off
 - Systematic process out of high humidity
- Outgrowth











Hardened off plantlet





Hardening off and Outgrowth



Some of the rootstock cultivars to be supplied ...

- **Apple**

CG202, CG210, CG213, CG214,
CG778, CG890, CG969

- **Stone fruit**

Atlas, Viking, Flordaguard, GF677,
Marianna

- **Cherries**

Maxima14

- **Grapevine**

143B, RS3, Paulsen, Ramsey





Operational

- **Phase 1 (July 2020 – July 2021):** Building of facility (tunnels & TC facility), R&D TC Protocols.
- **Phase 2 (2022 – 2026):** Next 3 growing tunnels, first commercial production.
- **JOBS created:** 2021 = 10 personnel with full project = $\pm$ 45 jobs.





May 2020





August 2020





February 2021





February 2021





April 2021





June 2021





Who let things
happen at TCF?

Tissue
Culture
Facility, the
future?

Yes



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Thank you!

For any more information or questions:

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