



# NovaCane®

## Laboratory Production Process



# What is NovaCane®?



- ❖ NovaCane® is a tissue culture propagation technique resulting in disease-free, true-to-type plants
- ❖ Drs Stuart Rutherford and Sandy Snyman – name over coffee (“nova” means new, Novocaine - dental pain med = NovaCane® as “pain free seedcane”)
- ❖ SASA trademark (2005)
- ❖ Supporting the large-scale production of NovaCane® plants to meet Plant Breeding Programme needs (2016 - NovaCane® building complete)

# NovaCane® Tissue Culture Facility



- ❖ Bulk-up new N varieties
- ❖ Provide disease free and true-to type material
- ❖ Supply commercial labs with source material for their production of commercial varieties (Du Roi, Dube AgriLab, Plant Protection Hub)
- ❖ Supply Quarantine facility to meet increasing export / import requests (Variety Agreements)
- ❖ Store and preserve N varieties and imported varieties (Quarantine)
- ❖ Key for the multiplication of GM varieties when the time comes

# Stalk Preparation



# Single Budded Setts Treatment





Sealing



Germination

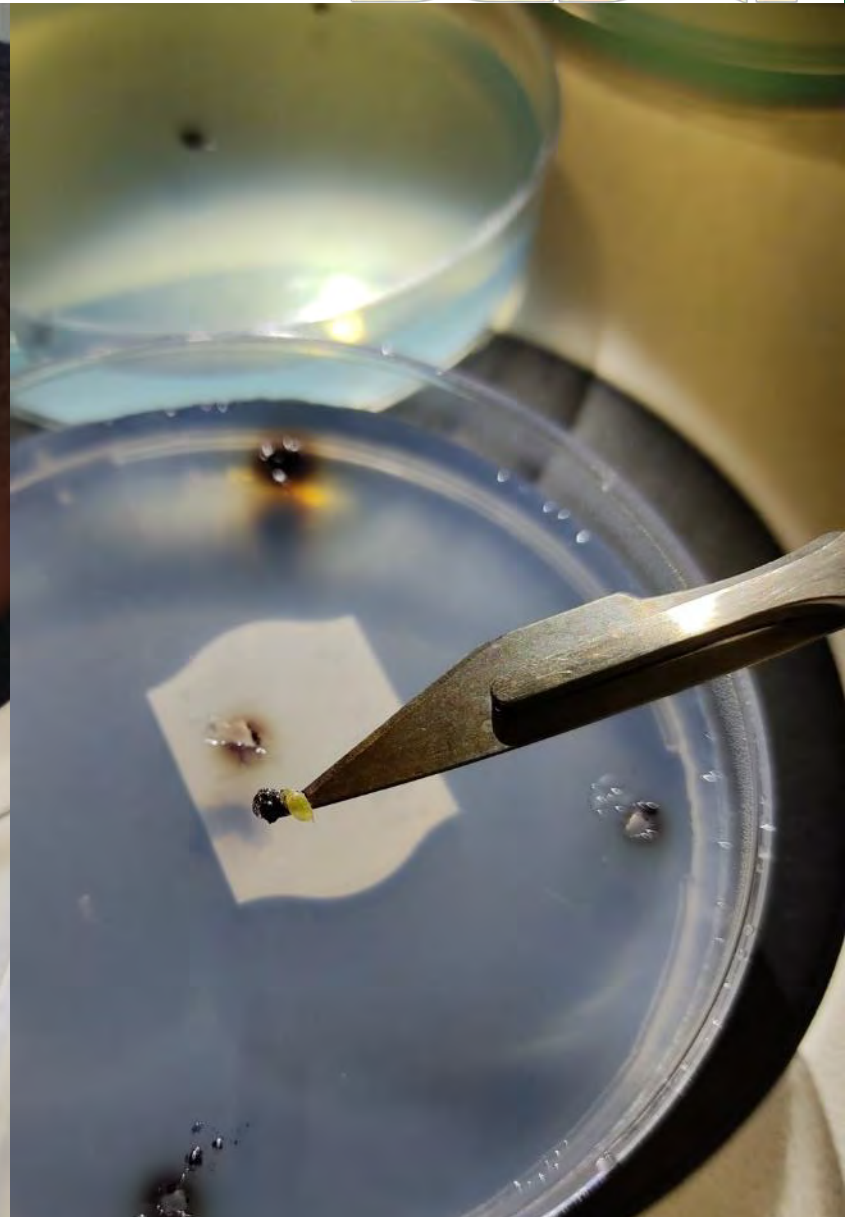
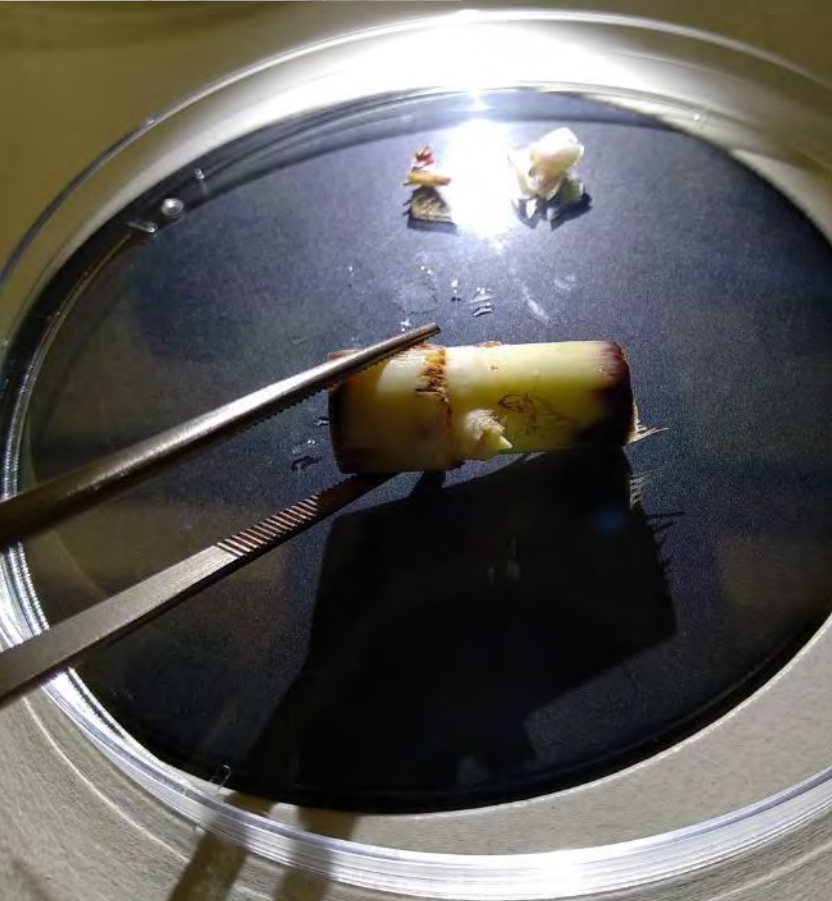


Surface Sterilization

# Media Preparation



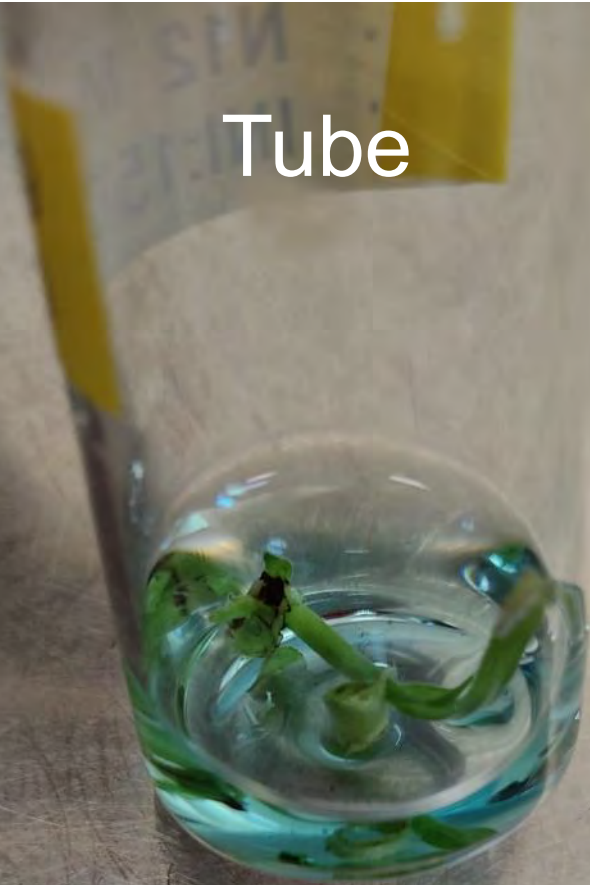
# Initiation





# Culture Vessels

Tube



Jar



Magenta



# Subculturing



## Rooting



## Slow Growth 18°C medium term storage



# Growth Rooms



# Packing and distributing



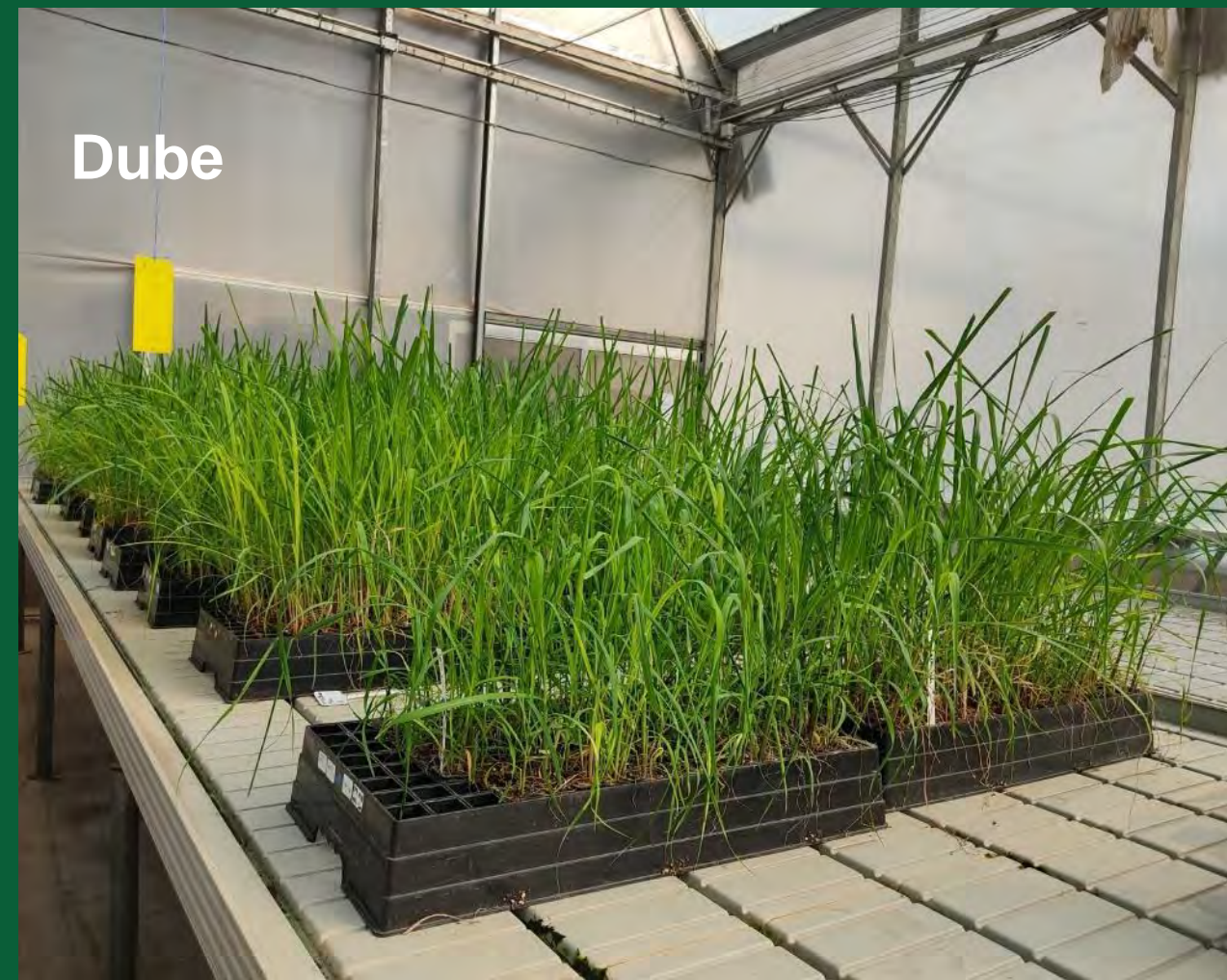
# Packing and distributing



# Hardening-off Facilities



# Acclimatized Plants





# Fingerprinting samples





## Information Sheet

### 1.4 NovaCane® planting guide

NovaCane® plants are disease-free sugarcane plants that have been reproduced by means of tissue culture techniques in a laboratory. Once leaving the laboratory the plants are grown in speedling trays for a period of months and the leaves are trimmed monthly. As they are similar to transplants grown from single-budded seedlings they require careful handling during planting.

NovaCane® plants satisfy the requirements to be classified as Certified Seedcane and can be harvested to produce the 1st ratoon crop (plant and 1st ratoon crops) as Certified Seedcane, provided the cane remains pest and disease free.

Occasionally NovaCane® plantlets can develop into thin reedy plants that tiller profusely. Although they are true-to-type this growth habit can affect the final yield of seedcane.

#### Planning

- Order NovaCane® plants 12 months before the planting date.
- Ideal planting times are September, October and March. Avoid planting mosaic susceptible varieties from end of September through to the end of February to reduce the risk of mosaic infection.
- The number of NovaCane® plants planted per hectare differ depending on the row spacing in the field (see table). Within the row, space plants 40 cm apart. The closer spacing enables a quicker canopy and better weed control, and a smaller gap if plants die or have to be removed for any reason

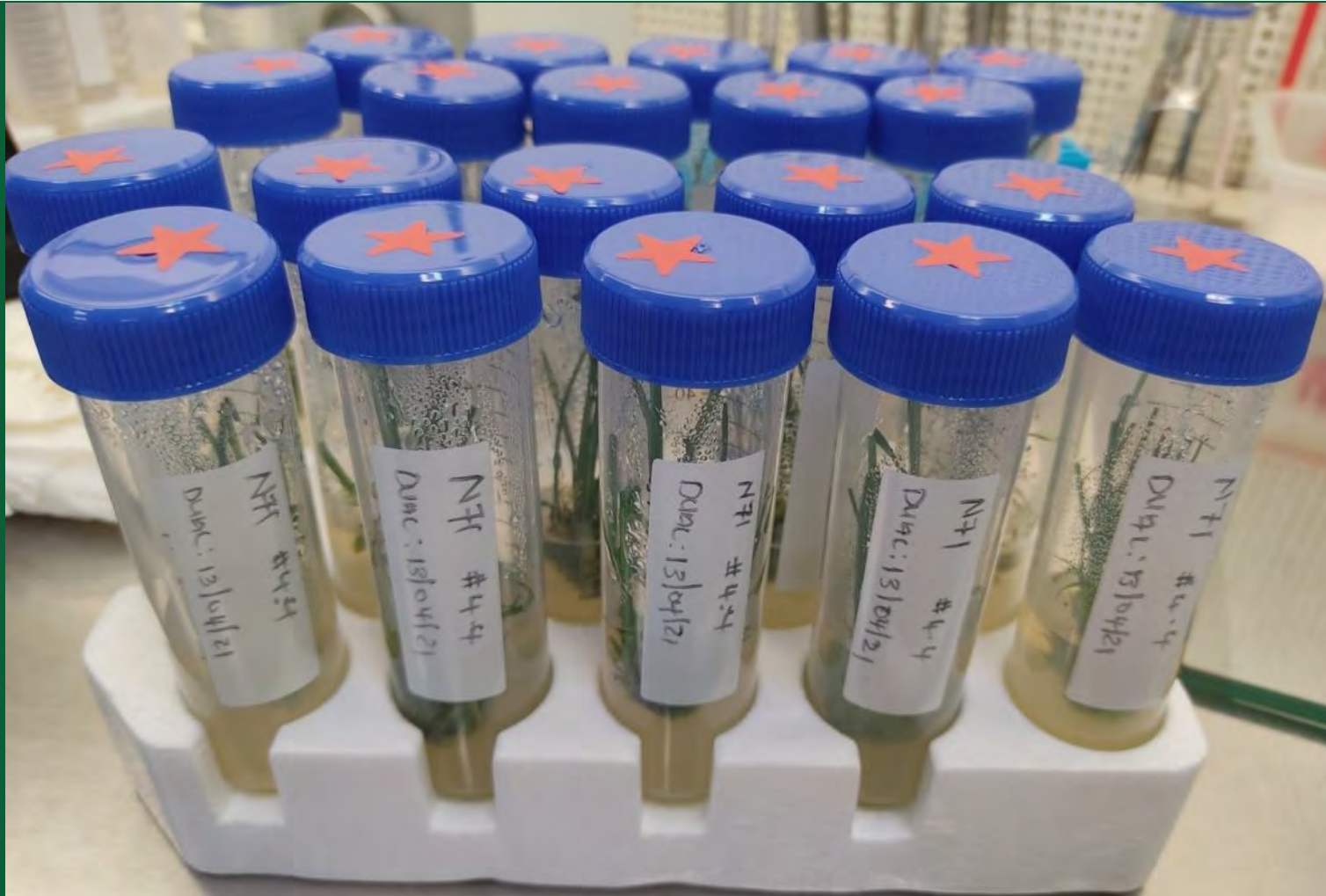
Row spacing (m)	Number of plants per hectare at 40 cm between plants
0.9	27 777
1.0	25 000
1.2	20 830
1.4	17 860
1.5	16 660

#### Tramline row-spacing:

Note that it will be necessary to calculate the numbers of plantlets required depending on the tramline row spacing chosen. For example, for a spacing 0.6m + 1.2m (two cane rows spaced 0.6 m a



# Quarantine Tissue Culture



Export



Import

# Production summary



Variety	No. plants	Year
N63	80 000	2017
N64	80 000	2017
N66	65 000	2018
N67	90 000	2018
N68	80 000	2018
N69	65 000	2019
N70	73 000	2019
N72	85 000	2019
N73	45 000	2020
N74	65 000	2020
N75	65 000	2020
N12 Zapyr	50 000	2021
N76	90 000	2021
N77	90 000	2021
N78	90 000	2022
N79	90 000	2023
N80	45 000	2024
N81	90 000	2024

Total Plants: 2017 – 2023  
**1 203 000**



Thank you 😊



Contact: Linda Mkhize  
NovaCane® Supervisor  
[Linda.Mkhize@sugar.org.za](mailto:Linda.Mkhize@sugar.org.za)  
031 508 7418

