

UNITED PLANTATIONS BERHAD

OIL PALM CLONES

Elite Planting Materials Produced by Tissue Culture Technology

FEATURES

Tissue cultured plantlets produced by United Plantations Bhd. have the following characteristics:

- ✧ Broad and proven genetic base
- ✧ Produced under stringent quality control
- ✧ Very low somaclonal abnormalities (0% - 5%)
- ✧ Vigorous and uniform growth
- ✧ High precocity and high sustained yields
- ✧ High oil extraction rate
- ✧ Proven performance in large scale commercial plantings on coastal, inland and peat soils



UNITED PLANTATIONS BERHAD
(Incorporated In Malaysia)
Company No.240-A

Tissue Culture in the Laboratory



Transfer operators in the laboratory



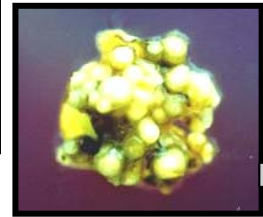
Shoot sampling of elite ortet



Sectioning of shoot for explants



Leaf explants



Leaf callus



Leaf embryoids



Polyembryoid culture



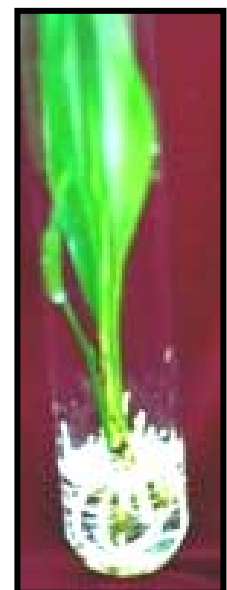
Culture room full of proliferating oil palm cultures



Harvesting embryoids & plantlets



Small plantlets



Rooted plantlet

Tissue Culture Ramets in the Nursery



General view of prenursery



Acclimatisation in high humidity chamber



Ramets at 2 months in prenursery



Ramets at 4 months in prenursery



Ramets in main nursery

Tissue Culture Ramets in the Field



1.5 years after planting



6 years after planting



Young elite clonal palms



Clone UP - C1
Oil to Bunch 32.5%

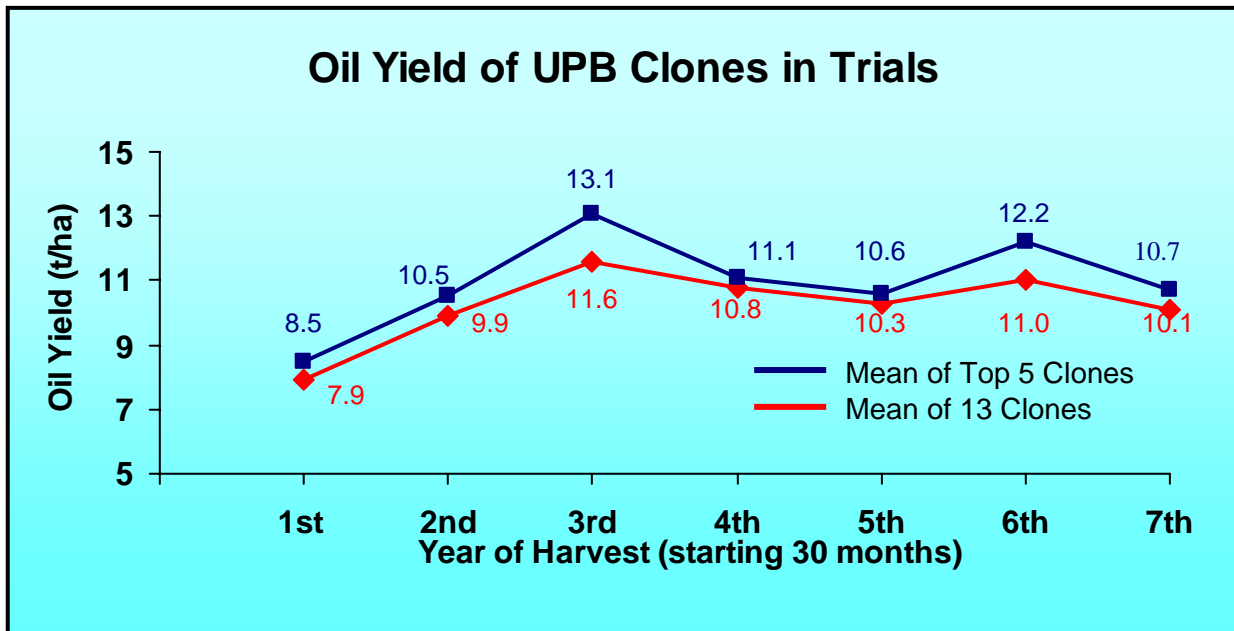
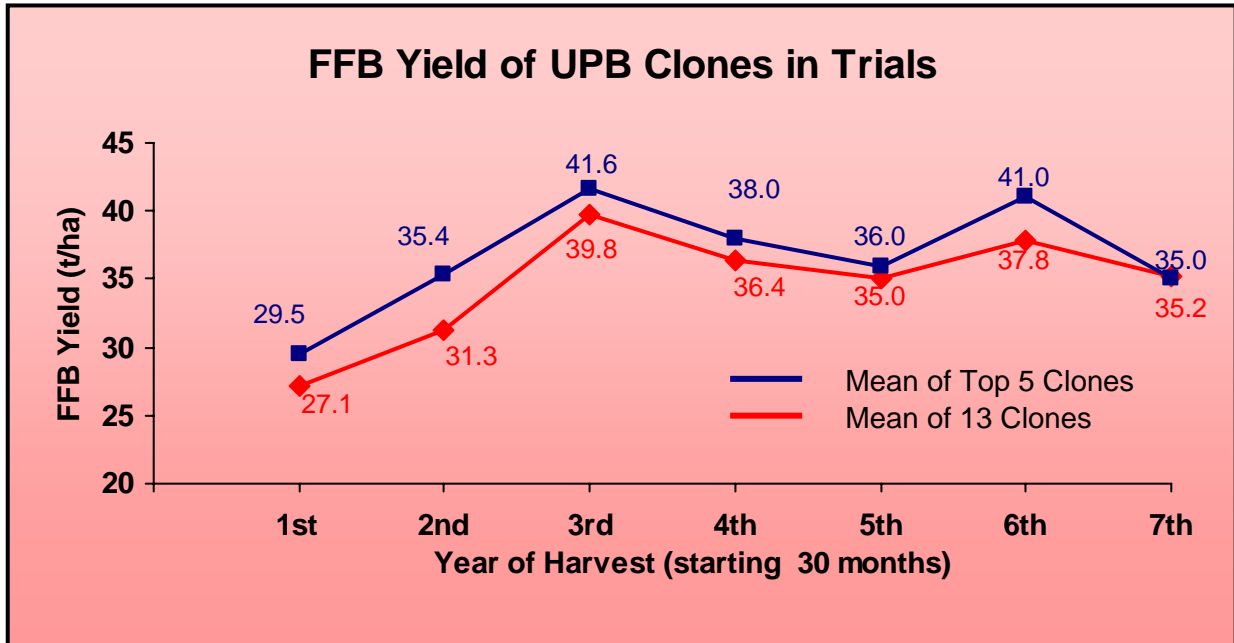


Clone UP - C24
Oil to Bunch 32.4%



Clone UP - B10
Oil to Bunch 30.2%

Clonal Oil Palm Performance



Commercial Oil Extraction Rate (OER) of UPB Clonal Plantings

Extraction Test	Age Profile		FFB Processed (Tonnes)	OER (%)
	Mean Age from Planting (Years)	Range (Years)		
Test No. 1	5.5	4.0 – 8.0	80.4	22.82
Test No. 2	6.5	4.5 – 8.5	172.9	24.08
Test No. 3	7.5	5.5 – 9.5	174.1	24.92

Our Company

United Plantations Berhad is one of the major Plantation Groups in Malaysia listed on the Main Board of the Bursa Malaysia Securities Berhad and the NASDAQ OMX Copenhagen A/S. The Company's core business is in the cultivation and processing of oil palms and coconuts. The group comprises of 12 estates located in and around the lower Perak District.



Our Research Department

United Plantations Berhad's Research Department (U.P.R.D.), located in Jendarata Estate, is an integral component of the group with a fully equipped commercial Tissue Culture laboratory. The Department's activities are applied research, advisory services and the production of quality planting materials of oil palms, coconuts and bananas.

Other Tissue Culture Activities in Our Laboratory



Bananas
(Berangan, Rastali,
Mas & Cavendish)



Pineapples



Melaleuca
alternifolia
(Tea tree)



Herbs
(Kaempferia, Eurycoma
etc)



Landscape &
agroforest trees



Roses



African Violet
& Gloxinia



Musa
coccinea



Syngonium



Canna

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