

Table: Plant morphology, bunch mass and yield in the first ratoon cycle according to cultivar and type of planting material

	Plant height (m)	Stem circumf. (m)	Bunch mass (kg)	Harv. (P) to harv. (R1) (months)	Bunch Yield/annum (t/ha)	Hands per bunch
Cultivar (AAA)						
Williams	3.52	0.94	44.2	13.8	86.1	11.9
Dwarf Cav.	2.57	0.93	41.3	13.6	81.1	11.3
Grand Nain	3.49	0.92	44.1	13.8	85.4	11.9
LSD (5%)	0.10	0.015	NS	NS	NS	0.3
Planting Material						
CON	2.98	0.90	39.9	14.2	75.0	11.2
200 mm TC	3.27	0.94	45.0	13.0	92.4	11.9
500 mm TC	3.33	0.95	44.7	14.0	85.3	12.0
LSD (5%)	0.11	0.011	2.5	0.5	5.4	0.3

Cultivar means are over all planting materials and vice versa
NS = Non-significant

Advantages of tissue cultured bananas in the plant crop, confirmed.

In a previous experiment a comparison between conventional suckers (CON) and tissue culture (TC) planting material was made for three cultivars. In the case of Dwarf Cavendish (AAA) yield/annum in the plant crop was 28.6% higher with TC planting material than with CON. This experiment referred to a January planting date. Such a pronounced yield increase in the plant crop needs to be confirmed for different planting dates before making general recommendations on the use of tissue culture in South Africa.

To date, three separate comparisons have been made with Dwarf Cavendish in which CON plants are compared with TC plants in the first crop cycle.

Results in the Table show clearly that TC plants outyielded CON plants in three separate experiments. The increase was 28.6, 26.3 and 19.5% for January 1988, December 1988 and November 1989 planting dates respectively. In the case of November planting date, overall yield was lower due to the "November dump" influence of winter flower initiation. However, in all cases, TC plants grew taller and thicker than CON plants, which in turn gave rise to a potential for carrying larger bunches.

Information to date from trials at Burgershall indicates that TC planting material produces larger plants and higher yields in the plant crop when compared with

conventional suckers. The extent of this yield increase seems to vary according to planting date and cultivar used. However, it must be emphasised strongly that the first three months after field establishment of TC plants are critical.

J.C. Robinson
T. Anderson
Citrus and Subtropical Fruit Research Institute
Private Bag X11208
Nelspruit 1200
SOUTH AFRICA

Table: Plant morphology and yield of Dwarf Cavendish bananas from three different planting dates, comparing conventional plants and TC planting material (plant crop)

Planting date	Plant height (m)	Stem circumference (m)	Bunch mass (kg)	Planting to harvest (months)	Yield/annum (t/ha)
Jan 88					
2 kg suckers	1.97	0.77	31.9	20.2	42.2
Large TC	2.30	0.83	37.7	18.6	54.2
Small TC	2.30	0.84	39.2	19.3	54.3
Dec 88					
2 kg suckers	2.04	0.72	31.3	17.4	41.1
Large TC	2.30	0.80	38.4	17.0	51.8
Small TC	2.24	0.75	35.7	15.7	52.0
Nov 89					
2 kg suckers	1.71	0.69	27.8	15.9	39.9
Large TC	1.93	0.76	32.5	14.9	49.9
Small TC	1.88	0.72	30.4	15.3	45.5