

PROPAGATION

Comparison of growth and yield of bananas derived from tissue culture and conventional planting material.

Growth and yield of tissue cultured banana cv. Williams (Lowe) was compared with that of plants derived from suckers planted in north Queensland in October 1986.

Tissue culture plants produced 50% offtypes - mainly dwarfs. Even at much lower offtype percentages this remains as a serious problem for the establishment of field plantings from tissue culture.

In my study bunch emergence of true to type tissue culture plants was about 3 weeks later than sucker material. Tissue culture plants were about 30cm taller and had bunches about 7% heavier than plants grown from suckers. The greater bunch weight was a function of more fingers per bunch.

However, it should be recognized that different planting times, locations and varieties are likely to affect the responses obtained especially in regard to time to bunch emergence for tissue culture versus conventional planting material. Environmental conditions during the establishment phase would be the major controlling factor.

In the first ratoon uprooting problems have been experienced with tissue culture plants. This has been caused by planting too shallow compared to depths at which suckers and bits are planted. I also believe that suckering behaviour of tissue culture plants is a contributing factor. Tissue culture plants produce many more suckers than from conventional material and are usually quite uniform in size. These sucker characteristics would be related to the greater number of leaves and associated buds that tissue culture plants have. Examination of corms of tissue culture plants near flowering reveals they have many suckers coming from well underneath the bulkier part of the corm. When such plants are desuckered it appears that this leads to an undermining of the corms' stability.

Table Effect of type of planting material on plant crop characteristics

Planting material	% Offtype	Date 50% bunch emergence	Pseudostem height (cm)	Bunch weight (kg)	Finger no/bunch
Tissue culture*	50	15 May	277	34.7	182
Suckers	0 **	24 April **	246 **	32.3 **	162 **

* True to type plants only

** F test significant at 1% level

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