

Trial on Production of seed materials through Bud chip method in large scale conducted at HRC nagicherra (Block-1)

A Major Handicap in banana commercial production technology is the lack of availability of suitable planting material production technology with less investment. This is because propagation technique for banana in a large scale manner depends on T.C method which may commercially viable for G-9 or other Cavendish group but for the variety SABRI it is doubt full whether it can support the commercial investment.

Further, since banana is a clonally propagated crop, spread of diseases becomes rather easy. Another serious problem is the poor multiplication ratio in the var. SABRI unlike G-9. This low multiplication ratio (through T.C) is mainly responsible for the undue delay for the pure SABRI planting materials to reach the farmers. The bud chip method of propagation developed at HRC which is simple, farmer's friendly and very effective viable technology for production of quality planting materials.

Technology for Planting material production is given below:-

By adopting bud chip technique it is possible to utilize the capability of every bud to sprout and grow as a new plant and thus enhance the multiplication ratio. It is based on the concept that once the bud sprouts the roots developed would start drawing nutrients from the soil and no more from the mother plating materials and therefore size of the planting material does not matter as per as sprouting is concerned.

Preparation of Bud chip:-

1. Selection of disease free healthy mother plant (Preferably T.C plants)
2. Collection of corm 1-1.5 kg / 3 to 4 months aged sword sucker or spent plant (those which have already flower)
3. Select sucker from plants at flowering stage to ascertain yield potential.
4. Cleaning the field extracted corm by scrapping the outer layer of the corm and damaged roots etc to ensure freeness from all nematodes and other root borne pathogen. In case of suckers detoping the pseudo stem at juncture of corm and the aerial shoot. The remains of the pseudo stem and roots are removed by using a sharp knife.
5. The separation of identified buds with small portion of corm can be done by using sharp knife.
6. Remaining portion of the corm pieces with latent bud can be utilized for propagation purpose.
7. Dip the clean corm Pieces in 0.1% carbendazim or any systemic fungicide.
8. Shade dry for half an hour.
9. When Cutting are taken from the corm sufficient care should be taken so that no damage is caused to the bud. It is advisable to place the corm pieces in water so as to prevent dehydration.
10. 4 to 5 pieces from One corm can be selected.
Pieces from the base portion should not be selected.

Shade-Net House:-

The shade net should be ideally located on a flat field and the soil should be well drained devoid of stones or pebbles, it should be near a water source. Since the bud chips ought to be free of any diseases, insect attack, it is essential to raise them in a protected environment. A shade net house of 24x5 meter dimension would be ideal. The structural frame comprises of GI pipe iron structure with a slanting roof on both sides. The side of the shade is covered with 50% shade net and roof is covered with UV fill. Provision for 1 or 2 doors should be given. The height of the shade house should be 3.5 meter.

Preparation of the Nursery bed:-

The Nursery bed should be located within the shade net house. A nursery area of 40sqm is required for producing plantlets for an area of 1 Kani (SABRI). Make raised bed (20cm height) with river sand and drenching beds with fungicides and insecticides.

Furrows are made across the width of the bed with a Khurpi about 5cm deep. Bud chips are placed in the furrow end to end horizontally with the bud facing upward. A spacing of 10cm can be provided between two rows. Bud chip planted in the furrow is then covered with fine layer of sand. Irrigate the bed lightly to avoid drying.

Nursery Management:-

Light irrigation is given soon after plating and then another light irrigation could be given after every alternate day, depend upon climatic condition. It should be ensured that bed must be moist. Excess watering will lead to rooting of bud chip and in case of scanty water supply sprouting of buds will not be at desired level. The bud chip would start sprouting within 25 to 30 days after planting. No chemicals or manure is required for this purpose. It is advisable to spray GROMORE 19:19:19 a liquid fertilizer when there are 2 to 3 opened leaves are present. As a prophylactic measure (CHLOROPYRIPHOS @ 2.5ml per lt) or other systemic insecticides and systemic fungicides (CARBENDAZIM @ 1 gm per lt) can be used for spraying at fort nightly interval. Routine examination of bud chip nursery is essential to detect virus attack or any other variegated plants. Therefore if an infected plant or abnormal plant is noticed in the nursery area it should be immediately pulled out and destroyed. Abnormalities will appear in leaves, stunted stature, leaf orientation etc.

Transplanting plantlets to main field:-

The plantlets will be ready for field transfer within 3 months. “3 – 4 fully open leaves” stage is the optimum time for transplanting. Uprooting plantlets from sand beds could be done with the help of Khurpi to take maximum care not to break the roots. Prior to uprooting, pit should be prepared with proper layout in the main field. Availability of moisture in the field must be ensured till the transplanted plantlets are established.

Management of transplanted plantlets:-

Same as improved cultivation of banana.

Flowering/Fruiting

Depend on management practice and variety used. Flowering may vary from 9-11 months. Bunch wt varies from 6-22 kg depend upon the variety.

Variety wise germination percentage of bud chips

Sl no	Variety	No. of bud chips placed for sprouting	No. of buds sprouted	Days taken for sprouting	Field transfer of plantlet	Remarks	Field performance
1.	SABRI	1130	904	25 to 45 days during April to August	3 months from sprouting.	80% germination.	Excellent
				60 days during mid Dec to Feb.	5 months from Sprouting.		
2.	KANCH KALA	700	183	34 days during June.	3 months from sprouting.	26% Germination.	Excellent
				60 days mid March to April.	5 months from Sprouting.		
3.	UDHAYAM	290	47	42 days during June, July.	5 months from Sprouting.	16 % Germination.	Yet to be observed.
4.	G-9	150	12	42 days during June, July.	3 months from sprouting.	8 % Germination.	Excellent veg. Growth. Data for reproductive phase to be recorded.

Observation:-

Variety SABRI is showing better performance in regards to sprouting of buds. But in case of field performance trial variety SABRI & KANCH KALA is showing better performance in regards to yield, bunch weight & finger filling.



