Banana

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- BANANA

Common Name:- Banana

Botanical Name:- *Musa peradiciaca*

Family:- Musaceae

Ch. No.:- X=11, 2n=22,33,44

Origin:- South East Asia

Type of fruit:- Berry

Edible Portion:- Meso & Endocarp

Composition & Uses:-

- Banana is cheapest, plentiful & most nourishing of all fruit.
- Banana is a good source of Carbohydrate-27%, Phosphoras-290ppm, Calcium-80ppm per 100gm of pulp (Arnon;1976)
- It has also fair amount of Vit.C & Niacin.

- Ripe fruit are delicious & are used for table purpose
- The plant part are also useful. The plant part of Banana are used as baby food, paperboard, tissue paper etc.
- Various by product Banana chips, Banana fig, soft drink, flour Powder, jam, confection, dehydration, cane slice etc. can be made from banana.

Species & Cultivar :-

- There are two genus Ensete & Musa
- It has about 50 spp.
- The genus is divided in to the following five section:-

1. Eumusa:- (x=11; 2n=22 in wild spp. & 22,33,44 in cultivar)
   - The largest section with 13-15 spp. Pesudostem usually exceed 3m in height; inflorescence is pendent or semi pendent; bract usually dull in colors; flower many in two series in each bract.

2.Rhodochlamys:- (x=11; 2n=20) 5-6 Spp.

From India to Indonesia.

- peudostem less than ;3m height; infloreseceae erect; flower few to a bract, usually in a single series; parthanocarpy absent.
- "*Musa odorata* & *Musa velutina* are some time grown as a ornamental plants"

3. Callimusa:- (X=10; 2n=20) 5-6 spp. In Indonesia, Malaya & Borneo
   - Plants are small stature; usually with erect inflorescence & purplish bract; Parthenocarpy is absent
   - Musa coccinea is grown as an ornamental plant

4. Australi Musa:- (X=10; 2n=20) 5-7 spp. From Queensland to Philippines
   - Inflorescence pendent, semi pendent or errect

   eg.:- *Musa textilis*

- The best known Banana of commerce all over the world belongs to the pure acuminated AAA group but the bulbisiana genomic associated with greater drought hardiness & resistant to disease.
- The AA & AAA Banana are cultivated mainly in area where rain fall is equally distributed through out the year.

Genomic classification & nomenclature of Banana:-

- The genomic classification of Banana is given by Simmond & Shafford
- Banana is also classified according to the its genomic constitution, it may be homozygous or heterozygous.
- Such as AA, AAA, AAAA, AB, AAB, ABB, ABBB etc.

Ploidy	Score	Constitution	Nomenclature
2X	16-23	AA	Musa (AA group) ‘Matti’
3X	15-21	AAA	Musa (AAA group) ‘Gross Michell’
			Musa (AAA group) ‘Robusta’
4X	15-20	AAAA	Musa (AAAA group) ‘Bodless Altafort’
2X	46-49	AB	Musa (AB group) ‘Nay Poovan’
3X	26-46	AAB	Musa (AAB group)Champa
	59-63	ABB	Musa(ABB group) Kanchakela
4x	63-69	ABBB	Musa(ABBB)’Klutperoad’

Cultivar:-

- Wild species:-
  1. Musa accuminata
  2. Musa bubisitina
  3. Musa leterita
  4. Musa ochrecea

AA group:-

1. Anaikomban
2. Matti
3. Kadali
4. Pisanlilin
5. Tonget

AB group:-

1. Gross Michal
2. Kunnan

AAA group:-

1. Gross Michel
2. Amrit Sagar
3. Dwarf Cavendish
4. Ginent Cavendish
5. Robusta
6. Chankadali

AAB group:-

1. Poovan
2. Rasthali
3. Panchandan
4. Rajapuri
5. Virupakshi
6. Nandran

ABB group:-

1. Nalla Bontha
2. Montha

AAA group:-

1. Bodless Altafort

ABBB group:-

1. Klu Teperod

Propagation:-

- Banana is propagated by suckers as whole bits of rhizomes of of parent plant.
- Sword suckers are most commercial plant propagating material for cultivation of banana.
- About 1.5-2.0kg sword suckers are use for planting material.
- Micro propagation plants can also be used as a planting material for banana.

Cultivation:-

- Planting:-

  Planting can be done in the month of June-July to Dec.- Feb. is most common planting season in India.

- System of Planting :-

  Planting is done at a spacing of about 1.2-2m according to native of banana crop.

  The plant symmetry may be square, rectangular or H.D.P.

Manure & Fertilizer:-

- Banana is a nutrient loving plant require large quantity for its growth & development.
- About 46-60tonns of yield per hac. remove nearly 250kg N, 25-40kg P, 800-1000kg K, 150-180kg Ca, 40-60kg Mg, & 14-20kg S per hac.

Irrigation:-

- Banana is moisture loving plant & it requires adequate soil moisture though out its life time.
- Depending up on water availability. Banana can be raised either as rain fed or irrigated or wet land crop. through out the year
- Banana needs irrigation through out the year. (except during heavy rains)
- Drip irrigation can be adopted so that early crop

Weeding:-

- Weed can be reduces by cultural practices like regular hand weeding, intercropping, mulching with polythene sheet, light tiller ploughing for turning the top soil & burning the weeds can be followed.
- Premergance (Diuron 2kg/hac.) & post emerging (Paraquat 0.4kg/hac.) & weeding are used to control weed

- **Intercropping:-**

Intercropping is done to check the weed growth improve the soil health & to ensure addition income to the farmer.

Some crop like chilli, okra, radish, culiflower, cabbage & spinach are grown.

- **Desuckering:-**

Removel of surplus & unwanted suckers from Banana plants is known as Desuckering.

➢ Propping:-

At the time of bunch emergence, psudostem, require support from props. Tall varieties & cultivar which produce heavy bunches need propping.

➢ Earthig up:-

Earthing up is an important which provide sapport to the base of the plant & also gives chance for the formation of better root system.

Earthing up should be done at rainy season avoid water logging condition.

➢ Mulching:-

Mulching helps to conserve soil moisture, supress weed growth & improve soil

- **Wrapping:-**

  Covering the bunches with gunny bags or clothes or polythene protects the fruit from sun burn, hot wind & dust.

- **Denaveling:-**

  Removal of male bud after completion of female phase is known as denavelling.

Roughing:-

Banana plantation should be kept cleen by removing the unwanted plant part like dried, diseased & decayed leaves & the pseudo stem

Flowering & fruiting:-

- The inflorescence of Banana is spedix.
- Inflorescence of Banana is initiated iin the heart of psudostem 3-6 month prior to shooting.
- Three type of flower – Female, Hermaphrodite, & Male are seen on the same inflorescence.
- Edible Banana are vegetative parthanocapic. The fruit is botanically berry.

Harvesting & Yield:-

- Duration of crop varies from 6-16 month depending upon the ploidy level, climate, & cultural practice.
- Yield :- Dwarf variety:- 40-60 t/hac

  Tall variety:- 20-30t/hac

  HDP :-100t/hac