

Project Coordinator

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*This project is funded by a grant from the Western Sustainable Agriculture Research and Education.
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BANANA CULTIVATION GUIDE



Banana Cultivation: Useful Facts

Climatic Conditions

Though banana is strictly a tropical plant, it is successfully grown in areas of widely varying relative humidity from sub-tropical climates to the humid tropics. High humidity is thought to be required but they are grown successfully in arid areas also.

Soil Characteristics

Banana is grown successfully on a wide range of soils and the soil depth and drainage are the two soil factors important for successful banana cultivation. Since banana is more sensitive to water logging, rich loamy soil with good drainage and water table below one meter depth is the most ideal soil for the crop. A soil pH of 5.5 to 8.0 is found to be optimum for bananas and plantain.

Field Preparation

The choice of spacing depends upon the cultivar and further varies from region to region depending upon the cultural practices of the area. In recent years, there has been considerable emphasis on high density planting wherein the yield of an individual plant cannot be increased beyond certain limit. The total yield and net returns could be increased per unit area by adopting closer spacing. Besides, closer planting also reduces weed growth and provides protection against wind damage. However, the major limiting factor will be sunlight, which affects flowering and crop duration.

Preparation of the Planting Material

Banana being vegetatively propagated plant, many planting materials namely, suckers, peepers, and rhizomes are used for its cultivation. In general, banana is commonly propagated through 'sword suckers' having broad base (corm) and narrow leaves. Three month old suckers with well-developed rhizome are ideal for planting. In the recent years, the use of tissue cultured plants has become increasingly popular among the farmers, owing to the advantages of disease free planting material, uniformity in growth, earliness in flowering and fruit maturity as well as higher yields.

Advantages of micropropagated Banana

Micropropagation has become an indispensable technology for the multiplication of banana owing to its advantages such as rapid multiplication, requirement of limited mother plants, product uniformity, agronomic advantages, produc-

tion of virus free plant material, production of pathogenic free planting material, season independent production, and manipulation of production cycles.

Planting

After a thorough preparatory tillage, pits of 45 x 45 x 45 cm are dug and each pit is filled with 5-10 kg of well-decomposed farm-yard manure or compost before planting. After the quarantine treatment, the suckers should be kept in shade overnight and the planting should be taken up on the following day. While planting, the suckers should be placed erect in the centre of the pit and the soil be pressed firmly around the suckers. In case of tissue cultured plants, planting during hot period should be avoided. Irrigation is required immediately after planting and on the next day the soil around the plant may be pressed firmly to ensure early root emergence.

Irrigation

The total water requirement of banana plant is about 90-120 cm for its entire life cycle and this can be met both through natural precipitation (rainfall) as well as supplementary irrigation. Maintaining optimum moisture at all stages of growth is very critical and providing good drainage facility to drain out excess water from the root zone is equally important to promote better growth and enhance the productivity. In general, irrigation of the banana plantations every 3-4 days during hot period and at 7-8 days interval during cool weather is recommended.

Fertilizer Application

Easily and completely soluble nitrogen and potassium fertilizers feeding at the rate of 350 gm per plant per crop is sufficient to meet the N and K requirement of the crop.

Management of Suckers

No suckers should be allowed till the plant shoots out (flowers) and only a single healthy sucker is allowed at the time of flowering. At any time of the year, there should not be more than two plants per hill including the sucker. To arrest the growth of unwanted suckers, cut back and scoop out the growing point and then pour 1-2 ml of kerosene.

Removal of Dried Leaves

As the dried leaves hibernate the insects and act as host for some diseases, these should be removed as and when they appear. However, no green leaves should be cut from the plants meant for yielding fruits.

Weed Control

Maintenance of weed free condition up to 6 months after planting is very critical in banana cultivation other wise the weed growth will significantly affect both the plant growth as well as the fruit yield and quality. In order to avoid the competition for water, nutrients and sun light, it is essential to remove the weeds from time to time. Digging and harrowing once in 30 days is an im-

portant cultural operation for maintaining banana plantations in good hygienic condition. This operation is essential up to 4-5 months after planting as it facilitates better soil aeration, improves the water holding capacity of the soil and thereby favoring better rooting activity as well as to effectively control the weed growth.

Insect-Pests and Diseases

Most common are banana corm weevil (*Cosmopolites sordidus*), aphid (*Pentalonia nigronervosa* coq.), rust thrips (*Chaetanaphothrips signipennis*), nematodes, fungal diseases: fusarium wilt (*Fusarium oxysporum* f. sp. *cubense*), leaf spot diseases: sigatoka (yellow sigatoka, black sigatoka and septoria), banana viral diseases: bunchy top virus, streak disease, bract mosaic virus, mosaic or infectious chlorosis.

Harvesting

Depending on the varieties and the climatic conditions, it takes 100-130 days from bunch emergence to full maturity and harvesting of bunches. The maturity of fruits can be assessed by such as change of peel color from dark green to pale green, disappearance of angularity and fullness of fingers, ringing sound upon tapping of the fruits, and complete drying and dropping of the floral remnants from the tip of the fruits. The matured fruits should be harvested with a sharp knife leaving sufficient length of peduncle for easy handling and transportation. Avoid keeping the harvested fruits directly on the soil as it causes mechanical damage and results in spoilage of the fruits. Instead, the fruits should be kept on the banana leaves cue and spread on the soil.

(Reference: Association for the Improvement in Production and Utilization of Banana, India)

