

Banana

Banana is one of the important commercial & staple fruit crops for millions of people, vital to food security, and ranks as one of the world's top fruit crops. It also provides a valuable source of income through local and international trade and contributes to the livelihood of many people through crop production, processing, and marketing. Its year-round availability, varietal range, and taste make it a popular fruit among all classes of people. Nitrogen and potassium are key elements in boosting leaf, sucker growth, maximizing flowering & fruit set. The Banana crop requires regular fertilizer scheduling & monitoring to maximize a grower's yield & profits. In India, Major Banana producing states are Andhra Pradesh, Gujarat, Maharashtra, Tamil Nadu, Uttar Pradesh, and Karnataka.



GROW WITH KNOWLEDGE



Climate and Soil: Banana is a tropical crop, that grows well in a temperature range of 15°C – 35°C with a relative humidity of 75-85 %. In India, this crop is being cultivated in a climate ranging from humid tropical to dry mild subtropics through a selection of appropriate varieties. Deep, rich loamy soil with pH between 6 - 7.5 is most preferred for banana cultivation and soil rich in organic material with high nitrogen content, adequate phosphorus level, and plenty of potash is good for banana cultivation.



Land Preparation & Farm Management: Before planting bananas, green manuring crops like daincha, cowpea, etc. are suggested to be grown. The land can be ploughed 2 - 4 times and leveled with Rotavator or harrow. During soil preparation, the basal dose of Farmyard Manure (about 20 tonnes/acre. before the last harrowing) should be added and thoroughly mixed into the soil. The use of wheat straw and banana straw as a mulch material (12.5 kg. /plant) in banana orchards is useful in increasing the bunch weight and conservation of soil moisture and applied at the beginning of summer (February). Removal of unwanted suckers is a critical operation in banana for reducing internal competition with the main plant and small suckers should be removed on a regular basis for up to 7-8 months.



Planting Season: Planting of tissue culture bananas can be done throughout the year as per the market demand except when the temperature is too low or too high. The planting time for long-duration cultivars is different from short-duration ones. The planting time may be adjusted to avoid high temperature and drought at the time of emergence of bunches (i.e., approx. 7-8 months after planting). Earthing up should be done at 3-4 months after planting, thereby raising the soil level around the base of the plant by 10-12". It is better to prepare a raised bed and keep the drip line on the bed 2-3" away from the plant. It also helps to protect plants from wind damage and production losses to some extent.

CROP SEASON:

STATE	MONTH
Maharashtra	June - July October - November
Tamil Nadu	February - April November - December
Kerala	April - May August - September

In rain fed areas, the sowing is dependent on the commencement of monsoon.

Propping & Bunch Cover: Due to the heavyweight of the bunch, the plant goes out of balance and the bearing plant may lodge and production and quality may get adversely affected. Therefore, they should be propped with the help of two bamboos forming a triangle by placing them against the stems on the leaning side. This also helps in the uniform development of a bunch. Covering the bunch using dried leaves of the plant is economical and prevents the bunch from direct exposure to sunlight and enhances the quality of fruit.

Irrigation: Banana is a succulent, evergreen, and shallow-rooted crop that requires a large quantity of water in the cropping cycle. The water requirement is estimated to be around 1,800 – 2,000 mm per annum.

Season	No. OF IRRIGATION
Winter	7 - 8
Summer	4 - 5
Rainy	Need Basis



Drip Irrigation: Application of irrigation through a drip system helps to maintain the proportion of soil air and soil water which results in early and vigorous growth of bunches. Raw bunch gets matured earlier by 30-45 days and yield is increased by 15-30 % and 58-60 % of water is saved on irrigation. Other advantages of adapting drip irrigation is reduction in weeds, saving of cost on intercultural operations and effective utilization of water-soluble fertilizers.

FERTILIZER SCHEDULE OF MOSAIC PRODUCTS



Planting/Seedling Stage

10 - 45 DAYS



Mosaic DAP –
75 kg/acre

Mosaic MOP –
50 kg/acre



Mosaic Liquid Zinc @
250 ml /acre

Mosaic Liquid Boron @
250 ml /acre



Early Growth
(Vegetative)

45 - 90 DAYS



Mosaic DAP–
75 kg/acre

Mosaic MOP–
100 kg/acre

Mosaic K-MAG–
50 kg/acre



Mosaic Liquid Zinc @
250 ml /acre

Mosaic Liquid Boron @
250 ml /acre



Grand Growth

120 - 130 DAYS



Flowering

170 - 180 DAYS



Mosaic MOP –
100 kg/acre

Mosaic K-MAG–
50 kg/acre



Bunch Development

240 - 280 DAYS



Mosaic MOP –
100 kg/acre



Maturity

280 - 320 DAYS



Mosaic MOP –
50 kg/acre

BENEFITS

Better root
development and
initial shoot growth

Helps to produce
healthy rhizome and
strong root system

Overall development
of the stem

Provide better
anchorage to the plant

Improves
chlorophyll content
and photosynthesis

Improves cell division,
vigorous shoot growth

Helps in earlier fruit
shooting and shortens
the time required for
fruit maturity







Uniform bunch size &
development

Good color fruits
proper shinning of
fruits

Sweetness of fruit.

Uniform maturity
of fruits

NUTRIENT DEFICIENCY

Nutrients	Deficiency Symptoms	Affected Area	Nutrition Required
Phosphorus	Complete cessation of elongation, at a height of about two feet resetting of leaves, blue or dark green coloration of leaves	Leaf production is reduced, Plants show stunted growth with poor root development	 <p>Apply a recommended dose of Mosaic DAP</p>
Potassium	Orange-yellow color of old leaves, scorching along the margins, reduction in total leaf area, curving of midribs, etc.	Choking of leaves delays flower initiation, Fruits are badly shaped, poorly filled, and unsuitable for marketing.	 <p>Apply a recommended dose of Mosaic MOP and K-Mag.</p>
Magnesium	The yellow discoloration is observed in the mid-blade and midrib portions; however, the margins of the leaf remain green. Purple mottling of the petioles, marginal necrosis	Plant height reduced, fruits do not ripen well and become tasteless.	 <p>Apply Mosaic K-MAG at 100 kg/acre each at the early vegetative stage & Flowering stage</p>
Sulphur	The yellow or white appearance of young leaves, necrotic patches on the leaf margins, thickening of veins, stunted growth	Reduced leaf size and plant growth.	 <p>Apply Mosaic K-MAG at 100 kg/acre each at the early vegetative stage & Flowering stage</p>
Zinc	Young leaves become smaller in size. The unfurled leaf has alternating chlorotic and green bands. Fruit is light green, twisted, short, and thin.	Reduced fruit yield and quality	 <p>Foliar spray of Mosaic Liquid Zinc at 45 and 60 days after planting.</p>
Boron	Newly emerging leaves are malformed. Chlorotic streaks appear perpendicular to the veins. Incomplete leaf formation and inhibition of fruit and flower.	A reduction in the weight and size of the bunch will affect the proper filling of the bunch.	 <p>Foliar spray of Mosaic Liquid Boron at 45-50 days after planting and 90-100 days after planting.</p>