



## Important Cultural Practices in Banana

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Banana is one of the ancient fruits of the world and known as “Apple of Paradise”. Banana (*Musa paradisiaca* L.) belongs to family Musaceae. It is a premier fruit having great socio-economic significance in India. In India, banana ranks first position in production and productivity among all fruits. Banana is grown in all over India and is available round the year. However, Tamil Nadu, Maharashtra, Gujarat, Andhra Pradesh and Karnataka have ideal conditions for its growth and production. Fruits are also high in minerals such as magnesium, sodium, potassium and phosphorus, as well as calcium and iron. Banana is a source of food, fodder, fibers, beverages, fermentable sugars, medicines, flavorings, cooked foods, silage, fragrance, rope, cordage, garlands, shelter, clothing, smoking material, wrapping/parcelization, making house roofs and wall linings and has numerous religious as well as industrial uses like in making resin/gum/glue/latex, dye and tanning. Owing to these multifaceted uses, it is referred as “Kalpatharu” (A plant of virtues).

Important cultural practices involved in increasing banana production and productivity are as follows:

**1. Desuckering:** Removal of surplus and unwanted suckers from banana plant is known as desuckering. A single clump of banana produces many suckers. The sucker starts emerging after about three months of planting. Number of suckers which are produced from the rhizome varies depending on the variety, soil fertility status and climatic conditions. As banana produces number of suckers, if allowed, they compete for moisture nutrition with mother plant; one or two healthy sword suckers may be allowed to grow for ratoon crop. When it is nearing flowering stage, one sucker is allowed to grow. One clump, one sucker is common practice. In areas where land is fertile, two suckers are allowed for the first ratoon and one another sucker for the next ratoon.

Desuckering done by cutting the sucker at ground level or by destroying the heart of suckers without detaching the sucker from the plant. The sucker regrows many times and needs cutting several times. Hence, it is common practice to cut the sucker down, make a small cavity in the center of cut surface and pour in 2 ml of kerosene. The kerosene moves downward, kills the meristem and prevents suckers growth. Application of 3-5 drops of 2, 4-D (60 g/l water) solution on cut surface helps in killing undesirable suckers. In South India, crow bar with a chisel-like end is used for damaging the sucker.

**2. Removal of unwanted plant parts:** Banana plantation should be kept clean by removing the unwanted plant parts like dried, diseased and decayed leaves and the pseudostem after harvest this could reduce the disease and facilitate better light, temperature and air. The floral remnants and withered style are also removed from the bunch.

**Leaf removal:** However, if leaves are pruned before bunch initiation, flowering is delayed and cycle time increased. Preferably there should be minimum of 12 healthy leaves at flowering and nine at a harvest to have maximum bunch filling.

Removal of old leaves in banana serves three basic purposes:

- Leaves showing leaf spots for more than 50 % area are excised to check further spread of disease.
- Old leaves with collapsed petiole approaching senescence which hang down around a pseudostem are no longer useful to the plant. If left to hang around, they check light falling to the sucker, also over the ground and reduce pseudostem temperature which restrict plant growth especially in cool areas.
- Healthy leaves which are rubbing and scarring fingers on the bunch may be removed to improve fruit quality.

**3. Earthing up:** Soil is mounded around the pseudostem during rainy season is called earthing up. Earthing up is important which provides support to the base of the plant and also gives chances for the formation of a better root system. Earthing up should be done at the rainy season for avoiding water logged condition and prevent uprooting of plant by wind. It will also provide proper drainage facilities to the plant.

**4. Mulching:** Mulching helps to conserve soil moisture, suppress weed growth and improve soil health. Organic mulches like paddy straw and dried leaves can be used as mulch.

**5. Propping:** Providing support to the plant when it is at bunching stage is known as propping. This is done to prevent falling of banana pseudostem which support banana bunch. The lodging of banana bunch is caused by poor anchorage, rhizomes above ground level, selecting weak and shallow suckers, exceptionally large bunches, thin pseudostem, strong winds, use of tall cultivars, damage due to *Erwinia* rhizome rot or the burrowing nematode. If dwarf variety and closed spacing no propping is required but for all tall varieties, it is required propping by using bamboo or casuarina poles which have effective life of 3-4 years. Coir or polythene wire can also be used for propping.

There are three methods to provide support to the bunches:

- (1) In case of dwarf variety, single wooden poles are used. One end of pole is sharpened and embedded in the ground. The other blunt end of the pole is wedged and it is fixed under the curvature of the peduncle to offer support.
- (2) In case of taller plants, two poles/plant are used. These poles are longer and are tied together at the top leaving a gap. The pole supports the peduncle.
- (3) Mutual support can be arranged by tying adjacent plants together. It is applicable when planting is made in double row system. The bunches should be at the same stage of development and leaning in exactly opposite directions.

**6. Bunch covering:** Bagging of bunch with perforated polythene cover or dried leaves to protect against cold, sun scorching, attack of thrips and other scarring insects during bunch maturity stage the bags may be coated with pesticides.

This practice regarded as useful in improving yield and quality of banana in subtropical areas. In such areas here winter is cold and the chances for strong wind rest, bunch covers provide better physiological condition by improving microclimate and also physical condition by preventing damage by scarring from dust and leaves. In the tropics or over summer in subtropics, the microclimate change (increased temperature and humidity) brought about by cover, is not required. It may damage the bunch due to overheating, premature ripening and rotting.

Polythene cover with a width of about 700 mm of about 1-1.5 m length is used to cover the bunch. While covering, it should hang 15 cm below the distal hand and is attached securely to the bunch stalk above the proximal hand, covering is applied after the bracts

(covering the hands) have fallen. The fingers when curl upward and the floral remnants are hardened, covering is applied.

**7. Denavelling:** Removal of male bud after completion of female phase is known as denavelling. It increases the bunch weight/fruit weight and quality of fruits also. Denavelling checks the movement of photosynthates into the unwanted sink and promotes fruit development. The removed male bud can be used as a vegetable.

**8. Bunch feeding:** In bunch feeding technique the nutrients are directly feed to the denavelled end of stalk by packing them in the bags which improve bunch size and fruit quality of banana.

The farmers of middle Gujarat agro climatic zone growing banana (cv. Grand Nain) are recommended for bunch feeding after denavelling with 500 g Cow dung slurry + 7.5 g Urea + 7.5 g Sulphate of Potash or 500 g Cow dung slurry + 15 g Ammonium Sulphate + 7.5 g Sulphate of Potash to get higher yield with quality and net return.

Method of application:

**9. Mattocking:** It is the process of cutting the pseudostem after harvesting of bunches. After harvesting the pseudostem should be cut leaving a stump of about 2 m height, the left over stump with its stored food material continues to nourish the daughter sucker (follower) till it withers and dries up.

## Conclusion

Good banana cultural practices hold great significance for Indian farmers. Implementing proper cultural practices ensures optimal growth conditions, higher yield and improved fruit quality for banana plants. Desuckering and removal of unwanted plant parts techniques maintain the ideal plant structure, maximizing sunlight exposure and air circulation. Important cultural practices have been proved as a powerful tool to meet this demand by influencing fruit production directly or indirectly. By adopting these practices, Indian farmers can enhance their productivity, elevate their economic prospects and contribute to the sustainable growth of the banana industry in the country.



Removal of unwanted plant parts



Desuckering



Earthing up



Mulching



**Propping**



**Bunch covering**



**Denavelling**



**Bunch feeding**



**Mattocking**