

Training and Pruning in Guava Crop

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From the Himalayas to Kanyakumari, Guava is a popular fruit among every Indian family. The scientific name of Guava is *Psidium guajava* belonging to the family of Myrtaceae. It is commonly known as "Poor man's Apple". It is rich source of Vitamin-C and Pectin. It also high in Mg, which helps in relief stress. High in fibre which helps in regulate sugar levels. It also helps in digestion. Guava is an anti-aging fruit; it improves the appearance of skin. Guava fruit has many nutritional values but its leaves also have many medicinal values like Guava leaves are used to treat several gastrointestinal and respiratory disorders as well as they help in boosting platelets in Dengue and Fever patient. Guava leaves have also found useful in Diarrhoea. Quercetin, the most abundant flavonoids and found in Guava leaves has very much medicinal values. Guava one of the most important fruit crops of tropical and sub-tropical region. Despite its hardy nature, the productivity and fruit quality of Guava are highly influenced by canopy management practices. As we see in many traditional orchards, Guava trees are left untrained and unpruned, leading to dense canopy and poor light penetration, which leads to smaller fruit size, increases the incidence of pest and diseases. Hence, adopting scientific training and pruning system is essential for good orchard management and increase yield as well as fruit quality. As we know Guava plant bears on a current season's shoot. Hence, pruning directly influences flowering, fruiting behaviour and yield. Training and pruning constitute vital components of canopy management ensuring a strong tree frame work, uniform light distribution and balance vegetative and reproductive growth. Training and Pruning practices are also essential for facilitating modern system like HDP and Meadow Planting.



Objective of Training and Pruning

The primary objectives of Training and Pruning in Guava are: -

- Development of a strong and balanced canopy for Mechanical stability.
- Balance vegetative and reproductive growth to enhance yield and fruit quality.
- Increases light penetration and air circulation which enhance photosynthesis and reduce pest incidence.

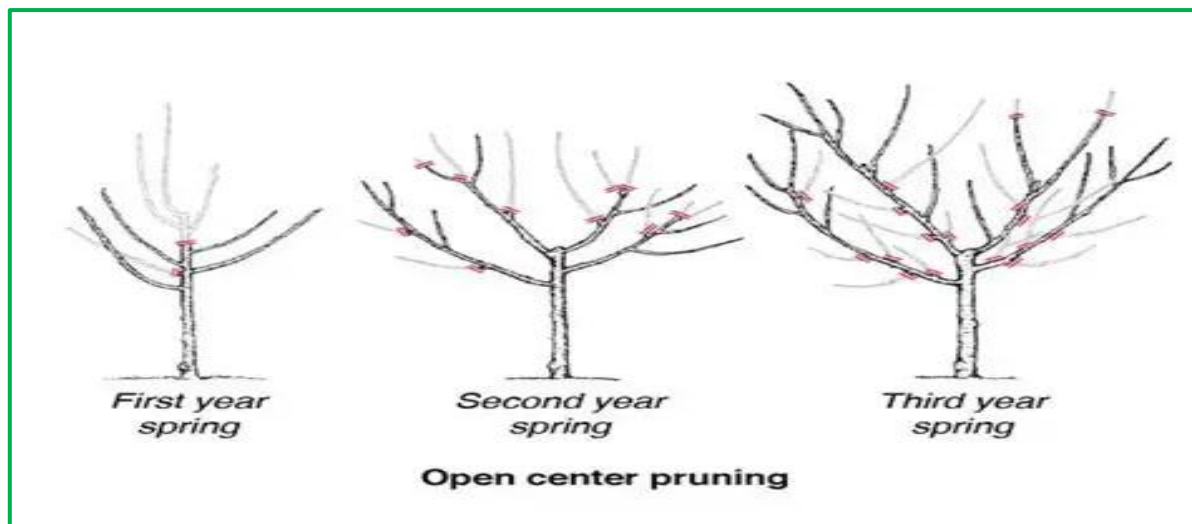
Training in Guava

Training is carried out in early stages of plant growth to develop the desirable and strong frame work. Most common and widely used training system in Guava is Open or Modified leader system.

In this training system plant is headed back and about 60-75 cm height from the ground level after 1-2 months of planting, as a result all new shoots emerge below the cut point. It encourages new growth of the scaffold branches at different positions.

About 3-4 well and equally spaced shoots are retained around the main stem to form the scaffold limbs of the tree. These shoots allow to grow until they attain 40-45 cm length. Selected shoots are further pruned to half of their length.

This training method allows maximum light penetration within the tree which results in maximizing photosynthesis and pest control.



Pruning techniques for Guava

Guava plant required pruning operations at different stages of their plant growth.

Initial Pruning (Young Guava tree)

Pruning in Guava at this stage mainly 1-2 years old plant is important to get desired and strong tree framework.

Thinning main stem: - As in early stages of the growth, there are many leaders growing out, it is important to select one leader which is strong and dominant, rest all the leaders should be removed.

Early Heading: - After planting the plant's main stem headed back at the height of 60-75cm to encourage side branches.

Pruning mature Guava Tree

Pruning in mature Guava tree (3-5 years) mainly focuses of the overall health of the tree. It includes removal of dead and diseased branches, removal of undercrossed and crowded branches within the tree.

Pruning during Fruit bearing stage

Pruning at this stage of the plant mainly focuses on increasing yield and improving fruit quality. Excess fruit spikes can be removed to improve size and quality of the remaining fruits. Remove those branches that has not gives fruit last year.

Influence of Pruning on Flowering, Fruiting and yield in Guava

Effect of pruning on flowering: - Pruning encourage emergence of new shoots from latent buds which later differentiate into floral buds. Pruning increases the C:N ratio in shoots favouring floral bud differentiation over vegetative growth.

Effect of pruning on fruiting: - By improving canopy aeration and light distribution, pruning enhances photosynthesis activity and pollen viability. Balanced pruning reduces crop load

and competition among fruits, resulting in larger, more uniform fruits with high TSS, better peel-pulp ratio.

Effect of Pruning on Yield: - In India Guava tree flowers on all three seasons, but excellent quality can not be obtained by all the seasons. So, pruning is effectively used for Bahar-Regulation. By pruning after harvest, flowering can be shifted to the desired season (eg. Avoid rainy season fruits, promoting winter season cropping with superior quality fruits.)

Research Findings

Several research studies show the effect of pruning on Guava tree: -

Singh et. al. (2001): - Reported that different time of pruning and severity of pruning significantly affected the flowering, fruit set and yield. Pruning of 30cm shoot length in mid-May was found to be the best among all the treatments for increasing yield of Guava cv. Allahabad Safeda.

Rai et. al. (2011): - Found that light pruning improved fruit yield and quality compared to unpruned trees.

Rathore and Singh (2015): - Concluded that 40% shoot pruning enhanced TSS, Vit-C content and marketable yield.

Conclusion

Proper Training and consistent pruning are fundamental practices for any successful Guava cultivation, regardless of scale. By creating a strong and open tree structure from an early stage, growers can ensure maximum light penetration and air circulation throughout the canopy. This strategic is key of preventing overcrowding, improving the overall health of the tree, and significantly boosting both fruit yield and quality. For farmers seeking to maximize their harvest, implementing these techniques correctly is a crucial investment that offers substantial returns in fruit size, colour, and flavour.

References

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