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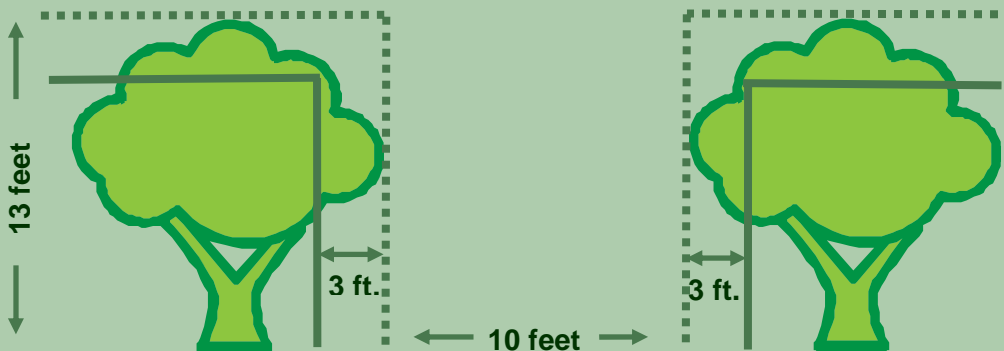
MANGO PRUNING: REJUVENATE TREES, SHAPE THE CANOPY AND DIRECT FLOWERING

Severe pruning: Done on older trees, which are too tall to harvest properly. If trees are not pruned, they can be harvested efficiently for around 20 years before growing too tall.

- Cut the tree to chest height (less than 2 meters tall). Leave as many scaffold branches as possible. Use a chainsaw.
- Tip prune new shoots 3 to 4 times a month to maximize the number of terminals and to quickly restore productivity (more on tip pruning later).
- You do not have to treat the cut stump after pruning but make sure you cut at an angle so water does not collect.

Formation pruning: Intermediate-sized branches (1-4 inches in diameter) are pruned to give the canopy the desired shape and to prevent shading and overcrowding. Shaded branches will not produce fruit. Prune the top of the tree as well as the sides.

- The branches should be cut 3 feet shorter than where you want the canopy edge to eventually reach. Use a chainsaw or a machete.
- There should be about 10 feet between tree canopies (to prevent shading).
- Tip prune the new shoots 3 to 4 times a month to maximize the number of terminals and to quickly restore productivity (see later information on tip pruning)



Tip pruning: This important management procedure produces a number of benefits.

- Promotes rapid plant development for faster fruiting
- Greatly increases the number of flowering stems, and therefore, fruit
- Slows vegetative growth in trees to keep them at a manageable height
- Synchronizes growth flushes for control of when the tree bears fruit

Mango growth

To understand how tip pruning works, you need to understand how mango trees grow. Trees grow by periodically producing new shoots. Growth is stimulated by rainfall, increased soil water from irrigation and by foliar sprays of nitrogen fertilizers. Trees can also be stimulated to

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CONTINUED FROM FRONT

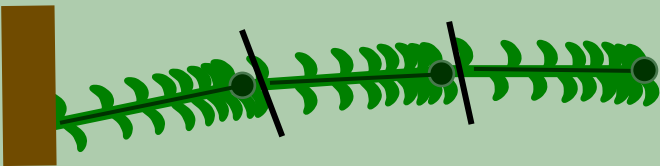
grow with chemical treatments or through the use of smoke. New shoots develop in two ways – vegetative growth or flowering. For it to develop into a flowering shoot, the previous stem, from which the new shoot grows, needs a resting time of about 5 to 6 months before new growth is stimulated. Therefore, if rainfall occurs or a nitrogen fertilizer spray is applied to a tree that has recently gone through a new flush (less than 5 months), the new shoots that emerge will produce leaves and not flowers. This happens in young trees, which tend to flush every 2 to 3 months (not giving the earlier growth enough time to rest for flowering).

Rainfall: In dry conditions, mango trees do not initiate new growth. The pause in growth often means that there is enough of a resting period so that during the next stimulation of growth the tree produces flowering shoots.

Nitrogen: If nitrogen levels in the leaves are too low, there will be no new growth. If nitrogen levels are too high, the plant is stimulated to produce frequent flushes, which create vegetative growth but no flowers (insufficient resting period before flushes). This is important for correct fertilizer management of the tree. Trees need fertilizers for new fruit growth. Fertilizers should be applied at flowering. If they are applied later, there will be residual nitrogen left over, which increases leaf nitrogen and causes vegetative growth.

Tip pruning

Cut branches back about a foot but do not cut branches thicker than a finger. This will initiate quick growth of new shoots. To stimulate the greatest number of new shoots, try and cut the branch just after the knuckle that separates one section of growth from another. This will produce 4-7 new shoots. More shoots means more fruit!



3 'growth sections' on a branch (note the shortening leaf distance on each cycle). The black bars show the optimal place to tip prune.

Rapid development of juvenile trees: Young trees normally take 3-4 years to start producing a decent crop. Tip prune every 3 months so that the canopy branches out. Trees will begin commercial fruit production after the 4th tip prune, which will be 2-3 years. The height of the 1st prune will determine the height of the lowest branches. Make sure that this prune is higher than the second growth cycle from the graft union.

Tip prune after severe and formation pruning: Tip prune 3-4 times in the first year to quickly restore productivity.

Synchronizing new growth and flowering management: Tip pruning the tree will stimulate the branches to produce new shoots. This will realign trees that have different sections flushing at different times. To begin flowering, try stimulating a small number of trees (e.g. by applying foliar nitrogen fertilizer) 5-6 months after the tip prune. If there is a flowering response, treat the rest of the trees in the same way. If there is not a flowering response, come back a month later and stimulate all the trees to grow. They will produce flowers. Four months after flowering, you will be picking fruit.

