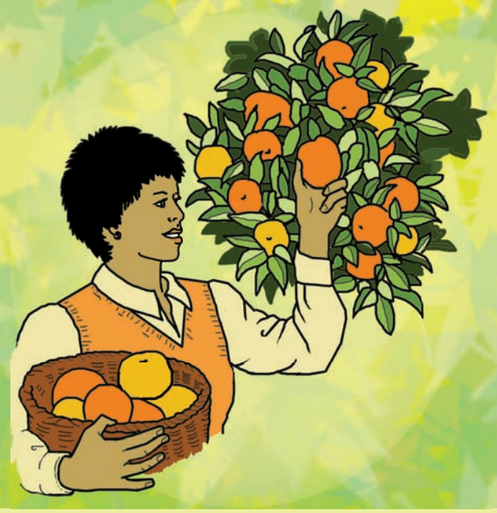

PRUNING FRUIT TREES

One needs to prune fruit trees annually, as from the first years of a trees' life. Pruning is practiced for the following reasons:

- To allow light penetration. Light penetration is essential for flower bud development and optimal fruit set. When the fruit ripens, it utilizes light fully, so it is important to remove excessive shoots.
- To remove dead, diseased or damaged branches, thereby preventing the spread of disease.
- To shape-up the tree. By removing excessive growth the shape of the tree will be maintained.
- To control size and vigour of the tree. Trees that are not pruned usually have upright branches, resulting in serious limb breakage under a heavy fruit load.

WHEN TO PRUNE:

Pruning can be done during transplanting of trees (initial pruning and training), in winter and summer.

Initial pruning and training:

If young trees are branched when they come from the nursery or garden remove nearly all the branches, leaving only the trunk a few feet high, immediately after transplanting. This will allow the gardener to train the tree to grow in a desired way.

Winter pruning:

Pruning should mostly be done during winter, or dormant season. This is when the leaves have fallen and the structure is more easily identifiable. However, trees should not be pruned until all danger of frost has passed. Pruning in winter maintains the shape of the tree and adjusts the balance between the root system and the aerial part of the tree.

Summer pruning:

Summer pruning is advisable, especially for removing water-sprouts, and root-suckers. Summer pruning can also be practiced during the first three years of training the tree to produce the desired shape. Undesired growth should be removed in early summer or after harvesting. If the trees are heavily pruned, reduce the amount of fertilizer applied in relation to the severity of pruning. Heavily pruned trees may not need fertilizer for a year or two.

PRUNING SYSTEMS:

The two most common fruit tree pruning systems are the Central Leader and Open Center. The shape that will work best depends on the type of tree grown.

Central Leader:

Central or Christmas Leader shape is characterized by one main upright trunk. The Leader should be twice as long as the longest lateral side. Branching begins on the Leader above soil surface to allow movement under the tree. The 3 – 4 branches called scaffold whorl are selected, they should be uniformly spaced around the trunk. Above the first scaffold, leave an area of about 45 – 50 cm branchless, to allow for light penetration into the centre of the tree.

Open Centre:

With this system the Leader is removed leaving an Open Centre. Instead of having a Central Leader the tree has 3-5 major limbs called scaffolds, extending from the trunk. The Open Centre system allows adequate light penetration which minimizes the shading problem. Remove branches that are too low. Remaining branches not selected as scaffold as well as upright growth, should be removed because it will shade the primary scaffold.

PRUNING TOOLS

- Hand pruning shears, to cut small twigs
- Looping shears have larger blades and long handles for cutting larger branches.
- Pruning saws, also for cutting larger branches

THINGS TO CONSIDER WHEN PRUNING:

- Remove all hanging shoots, rootstock suckers, and water sprouts in the lower feet of the tree.
- Remove all shoots above the fruiting shoots
- Remove all shoots which grow towards the inside of the tree.
- Remove all old gray wood in the fruit production zone
- To prevent disease spreading, sterilize pruning tools between cuts by dipping blades in a solution prepared from one part household bleach and nine parts water

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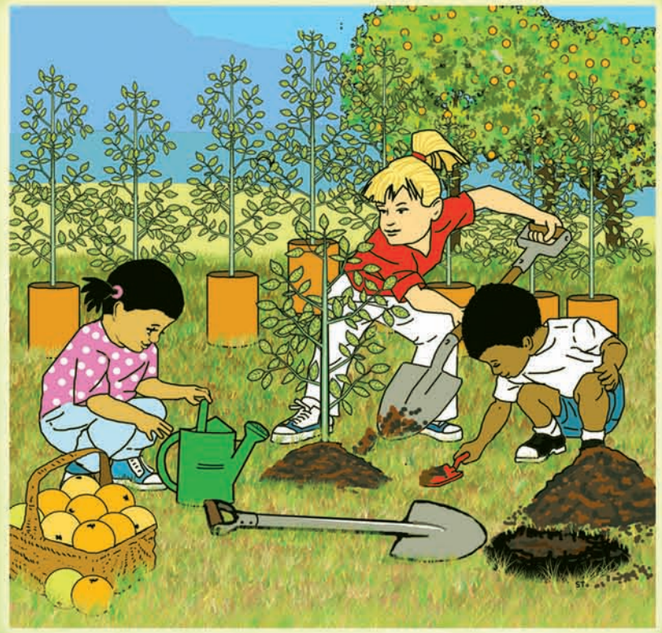
Million Trees Programme



PLANT TREES SAVE OUR PLANET

water & forestry
Department:
Water Affairs and Forestry
REPUBLIC OF SOUTH AFRICA

TOTAL

PLANTING TREES

Cultivated trees come in one of three different forms: bare-rooted (deciduous plants only), balled and bur-lapped (B&B), container-grown, or containerized. Plant bare-rooted trees in the late autumn, winter, or early spring when they are dormant. Do not buy or plant a bare-rooted tree showing more than 2 or 3 cm of new growth. However, container plants or balled- and bur-lapped plants may be planted any time, only not when the ground is frozen, or in very hot weather.

If possible, plant the tree as soon as it arrives at home; otherwise it may dry out and be harmed. If the plant cannot be planted immediately, place it in a shady or sheltered spot. Cover the roots of bare-rooted plants with moist soil, sand, or peat moss. Keep the soil of balled- and bur-lapped or container plants moist until ready for planting.

Planting:

Since wet soils can reduce plant growth and survival, one should plant it in well-drained soil. To test for soil drainage, dig a hole and fill it with water. If the water does not drain within 24 hours, plant elsewhere.

To plant the tree, dig a hole at least three to five times as wide as the diameter of the plant's root-spread or root-ball. Do not dig too deep; once the plant is placed in the hole, the top of the roots or root-ball should be level or slightly above level with the surface of the ground. Remove all tags, wires, or ropes from the stems or trunk. These can strangle and kill the plant as it grows.

For container-growth plants, ease the pot off without disturbing the root-ball and save it for recycling. Cut any circling roots, and then place the root-ball in the hole. For balled- and bur-lapped trees, place the plant in the hole before removing the burlap covering. Then, to ensure root growth and access to nutrients and water, pull the burlap down off the root-bal and leave it in the bottom of the hole.

Do not attempt to pull the burlap from under the plant – this could damage the root-ball. If a balled- and bur-lapped root-ball is enclosed in a wire basket, and there is no other covering, the basket can be left in place. Cut the wires off below the soil surface so that they do not interfere with raking or cultivation.

Before planting bare-rooted trees, remove damaged or diseased roots with a clean pair of sharp pruning shears. Untangle and spread the roots into a natural position. Then place the plant in the hole. Do not prune branches from a bare-rooted tree, as this may reduce the growth of new roots.

When replacing the soil in the hole, do not add organic matter. Instead, if the original soil or backfill contains too much rock or construction debris, replace it with local topsoil. When the hole is about three-fourths refilled, straighten and level the tree, tamp the soil down carefully, and water heavily. Then, fill the hole with backfill to its original level. Use excess soil to build a berm (a dam like) structure or ring 6 to 10 cm from the outside edge of the hole. Water heavily again to fill air pockets in the soil.

Watering:

Watering during dry periods of the first growing season is crucial, especially with container-grown plants. Container and balled- and bur-lapped tree roots dry out faster than the soil around them, so it is particularly important to monitor their soil moisture. In the nursery, the roots of container and balled- and bur-lapped trees become concentrated in a small root-ball which is watered daily. After planting, the roots of these trees will eventually spread into surrounding soil. However, until then, the trees continue to draw water mostly from their root ball. Consequently, if the soil near the trunk is dry, the trees need water.

Irrigate the trees heavily once a week during periods, use a garden hose to slowly soak the soil. Always allow the water to reach the top of the berm built around the plant. This will provide deep water penetration and encourage widespread root development. Always check the soil moisture before watering to avoid over-watering as this can kill the plant.

Staking:

Top heavy trees or those that are on an exposed site should be staked to anchor their root-balls so that the roots can develop rapidly into the surrounding sod. Drive three stakes into the firm soil around the tree. Connect the stakes to the trunk with flexible straps designed for this purpose. Allow for movement of the tree for strong growth. After one growing season the stakes and lines must be removed, or they will inhibit trunk development.

Mulching:

Place mulch (pine needles, straw, bark-chips, or slightly decomposed and shredded leaves) 2 or 3 cm deep around the plant. Mulch will prevent water loss and keep lawn mowers and string trimmers from getting too close to the plant. Avoid piling the mulch up against the stems or trunk; this promotes shallow roots, disease, and pest injury.

Spacing:

Anticipate the mature size of trees. For instance, never plant a tree where its height will interfere with future power lines. Avoid placing trees too close to buildings, driveways, and sidewalks, otherwise the roots of the fully grown plants may damage these structures, and the limbs and foliage may block windows and doors or interfere with foot traffic. Avoid planting trees too close to each other as they will become twisted and less vigorous.

Fertilizing:

Applying the correct fertilizer when planting helps to ensure healthy trees. Incorporate a slow-release fertilizer, preferably composed of 25 to 50 percent water-insoluble nitrogen (WIN), into the soil backfill at planting time.

If the plant's growth is slow or the leaves appear paler than normal, have the soil tested (contact the local Extension Officer for instructions and soil test forms) and follow the resultant recommendations. After the plant is established, the local Extension Office may once again be contacted for assistance in establishing a regular fertilizing program.

MAINTAINING FRUIT TREES

Fruit growing can be deliciously rewarding, but success depends on choosing a good site, as well as planting fruit varieties that are suitable for a specific location. This must be followed with proper maintenance of the trees which includes pruning, training, watering, weeding, fertilization, fruit thinning and pest disease control.

Pruning and training:

Pruning a young tree controls its shape by developing a strong, well-balanced framework of scaffold branches. Light pruning can be practiced any time of the year. However, perform major pruning during the dormant season only, or late in winter just before bud-break. It is better to delay pruning until after the coldest days of winter to avoid cold-injury to the trees.

Watering:

Water is essential for producing large fruit and maintaining healthy trees. Trees usually need water at least every three weeks. In the heat of summer provide a deep, soaking irrigation at least once a week to maintain healthy trees. However, over-watering can damage or drown the trees.

Weed control:

Eliminating weed infestation around young trees is critical for survival and rapid growth. Heavy weed or grass infestation can result in severe nitrogen deficiency (yellow foliage with red spots) the trees will then produce little or no growth and often may die. Ideally, the soil surface should be kept weed-free in an area at least as wide as the limb spread of the tree. The safest method is with a hoe. Chemicals are available, but are hazardous if used carelessly. Do not attempt chemical weed control unless all aspects of safety and sprayer calibration is well understood.

Fertilization:

Applying fertilizer routinely without knowing whether it is necessary can result in poor fruit quality and excessive tree growth. Excessive fertilization may also be a waste of money and contribute to environmental pollution. Soil test results will keep one informed about the nutrients in the soil and soil acidity. In addition to soil analyses, observing the growth of the vegetation will assist in determining whether fruit trees need fertilization or not.

Fruit thinning:

Fruit trees growth under favourable conditions set more fruit than can be pr operly developed. Removing excess fruit is necessary to ensure satisfactory development of the remaining fruit, prevent limb breakage and shortened tree life from over-cropping. Remove the fruit by hand, approximately 4 weeks after blooms appear. On a branch, space fruit by hand, approximately 20cm apart.

Pest and disease control:

The best quality fruit is produced when pests and disease are controlled. Taking action to prevent pests and disease is more effective than controlling them once they have taken hold. Grow strong, healthy plants that will have the ability to resist attack. It is also advisable to rely as much as possible on physical methods of pest and disease control so as to cut down the need for chemicals. Only use pesticides when all other effort to protect the fruit and tress has failed. Hygiene is essential, remove all diseased material when spotted and burn or compost it, especially the diseased fruits.