

PLANTING AND GROWING INDIGENOUS TREES

The following article is based upon the experience gained over the past twenty-five years whilst propagating, planting and growing indigenous trees in the Southern Cape.

OLD CHINESE PROVERB – *“HE WHO PLANTS A TREE BELIEVES IN THE FUTURE”*

A. A FEW MISCONCEPTIONS REGARDING INDIGENOUS TREES.

1. Indigenous trees are slow growing - Wrong.
Correct choice of species, planting methods and aftercare enable indigenous trees to attain surprisingly rapid growth rates. (1m to 1,5m per year).
2. Indigenous trees are robust and may be planted anywhere, in any location one wishes - Wrong.
As robust as indigenous trees are, individual species can be pretty fussy about their choice of habitat and may either languish on for many years or soon wither and die if planted in an unsuitable position.
3. Indigenous trees may be planted without any soil preparation and left to fend for themselves - Wrong.
Indigenous trees respond positively to the correct soil preparation and reward the initial investment with rapid and vigorous growth if treated well thereafter.
4. Indigenous trees do not require watering after planting - Wrong.
They require regular watering during their settling down phase over the first year or two - thereafter far less. During times of drought even established trees, if they are not adequately mulched, require watering.
5. As long as its indigenous its OK - Wrong.
The operative term should be “locally indigenous” – Thorn trees from the Karoo are indigenous but do not belong on this side of the mountain and can become invasive under certain conditions.
6. The lush green growth of our natural forests indicates that our local soils are rich in nutrients - Wrong.
Most of the nutrients contained within our indigenous forests are tied up in the trees themselves and in the compost layer on the forest floor. Our Southern Cape soils are shallow and generally poor in structure, nutrients and trace elements. For good growth results our soils need nutrient and trace element supplementation - preferably of organic origin

B. BACKGROUND TO PLANTING.

It is important to select the correct species of tree for a particular planting location in the garden so that it may adequately perform the future function required of it.

Tree clients often approach me with a pretty picture in a glossy tree book showing a mature specimen of just the right size and shape that meets their needs.

This is a difficult, if not impossible, requirement to meet as there are many variables which come into play during the growing life of the tree which will determine the final outcome of its shape and size.

I have observed trees growing in the Karoo mountains which barely resemble their counterparts near the coast. Unfortunately trees do not come with a technical specification with which they comply.

The problem that many a gardener is faced with is that they normally wish for their tree to grow as rapidly as possible to a certain size and shape and then stop – unfortunately this is not possible, nature just doesn't work like that.

With the exception of the pioneer “Keurboom”, the general rule of thumb to apply would be - “The faster they grow, the bigger they get”.

After planting, indigenous trees tend to direct their energies more towards lateral growth in order to stake their claim on as much of the available light gathering area as possible. They take kindly to pruning.

From the form and layout of our natural forests it can be gathered that indigenous trees are gregarious and like to keep diverse company.

The strength of the natural forest lies in its species diversity and the mutually beneficial relationship which each different species gains from its neighbour and the slightly different contribution that each individual is able to make towards the “whole” – the forest.

Only a few species may be judged to be content to grow in isolation and these tend to be the hardier ones.

It is recommended that consideration be given to planting indigenous trees in groups, close together (1,5m to 2,5m apart), with the hardier species planted on the Northern and Western sides of the group.

This provides for a quicker impact in the garden and enables the trees to establish their own micro ecosystem whereby they provide some degree of shelter and protection to each other.

Study your local environment and research which species occur there naturally – i.e. those that are “locally indigenous”. Surely we have a responsibility towards the environment, which is threatened by most of our activities, to do what we can to preserve and honour the integrity of its specie’s distribution.

Examine the characteristics of your soil to determine whether it is rocky, sandy, loamy, saline, has a high clay content, is pure clay or whether it is well or poorly drained.

A number of different strategies may be applied to cater for these different conditions.

When in doubt take a soil sample and have it analyzed.

The soil pH plays a major role in controlling the uptake of nutrients by plants and a pH of approx 5,5 is recommended.

Do not be tempted to radically alter the soil conditions at the tree’s planting locality in order to attempt to suit it. Sooner or later the tree will outgrow the confines of the planting hole and then be forced to cope with the soil conditions around it.

Carefully examine the tree before buying. Lush crowns may well be the result of excessive Nitrogen based chemical fertilizer feeding without any thought having been given to the health of the tree’s root system.

Keep in mind that the tree’s foundation lies in its root system which may be more than twice the size of that which is visible above ground.

Take note if the tree seems to be excessively tied to a stake.

Undo the ties and check whether the tree is able to stand upright on its own.

The chemical growth stimulants used by some commercial growers are directed towards pushing the tree to a saleable height in as short a time as possible. Such trees often turn out to be rather “slap” and are sweet and juicy in sap and soft and weak in structure. They are adversely effected by strong winds and when newly planted out in your garden are particularly vulnerable to a variety of unwelcome plant pests and other such suckers of sap.

Be wary of the perfect specimen with not a bug or insect damaged leaf in sight. These leaves are usually the result of a particular nursery employing a pre-emptive pesticide spraying programmes, which are often unavoidable due to the intensive growing conditions that commercial nursery plants are subjected to. Unfortunately such spraying programmes, besides protecting the tree from all the bad bugs, indiscriminately kill off all the good ones as well and results in the plant’s immune systems becoming weakened. Trees grown in this fashion are vulnerable to many pests and diseases once leaving the protective confines of the nursery, forcing the gardener to continue to apply pesticides.

When planted out, such trees can suffer a setback when being subjected to a belated “natural selection” process.

Nature does not cater for the weak and infirm, nor does the “natural selection” process stop at some point along the way.

C. CONSIDERATIONS PRIOR TO PLANTING

Ask yourself the question – Who is wiser as to the best manner in which to carry out planting - we intellectually driven humans, or intelligent Mother Nature?

My own philosophy, which has been successfully applied to growing thousands of indigenous trees, is based upon mimicking Mother Nature’s example as closely as possible.

I base this policy on my belief that she has learnt all the necessary lessons over these past few million years, whilst we humans are still at some recent point along the learning curve.

Have a good look at the local natural forests and imagine how their seeds germinate and how the resultant magnificent trees have grown.

No large holes were dug and filled with all sorts of growing mixtures and chemical concoctions.

Natural selection plays a major role in determining that only the strongest trees survive and thrive to grow on to reproduce.

For advice on how close together one may plant indigenous trees, again consult the natural forests, but not those where the larger trees have been selectively thinned out for controlled and sustainable timber harvesting.

It will become apparent from observation that indigenous trees choose to grow surprisingly close to one another.

If a large number of trees need to be planted and you decide to employ a professional to undertake the work, budget approximately 50% of the cost of the trees to cover the cost of the planting logistics.

Do not be discouraged by the time factor when contemplating planting your own “artificial” indigenous forest, no matter how small. Leaving a living legacy for future generations to enjoy may well be the most rewarding contribution you are able to make to Life during your brief stay on Mother Earth.

There is indeed a good example of a magnificent “artificial” indigenous forest in the Overberg Mountains, planted by a farmer who had the foresight 50 years ago to do just that.

I have had the privilege to walk with him in the shade of his mature, 20 meter tall forest.

Based on the above - here goes – let’s plant a tree.

D. TO PLANT A TREE

1. Dig a hole just big enough to take the nursery bag and your working hands.

This immediately raises the “round” or “square” debate. The square hole pundits maintain that a round hole causes the roots to keep on growing round in a circle so that the plant ends up becoming “root bound”.

I have not seen any objective evidence to support this theory but my logic leads me to the following ;-

The major function of a root, besides that of anchoring the tree, is to seek out water and nutrients in the surrounding soil. It is my belief that it would take an extraordinary set of circumstances for a root to deviate from this genetically programmed task in order to become preoccupied with the geometry of a hole.

2. Mix the extracted soil 50:50 with compost and three or four good handfuls of organic fertilizer - for a 20 kg, 1,5 meter tall tree.

Obtain good quality compost which has a pleasant earthy smell, stays together in a ball when a handful is compressed in your fist and at the same time does not drip water, consists of pure vegetable material and is not cheap.

Beware the “cheap” local compost imposters which are laced with sand and water to increase their bulk and mass, or consist purely of old Pine sawdust.

Mushroom compost is good but be aware that it has been sterilized and thus lacks beneficial micro-organisms, although these can easily be added after planting.

Note that chemical fertilizers may provide a short term boost to the tree but do nothing for the long term health of the soil.

3. Place a layer of the soil/compost mix, together with an extra handful of bone meal or organic fertilizer (use a balanced organic fertilizer not a ‘quick foliage boost’ chicken manure based product) mixed in at the bottom of the hole and insert the tree, still in the bag.

Ensure that the level of the tree in the hole matches the previous growing level in the bag.

4. Align the tree to ensure it is orientated with its previous growing direction.

This, often overlooked factor, is important as the leaves have orientated themselves in this way over time, with their topsides facing towards the sun (North). In this position they are more sun tolerant and efficient in absorbing the sun's energy.

The underside of the leaf (the side showing away from the sun) may be tender and can be scorched in the harsh African sun if planted facing in the wrong direction.

The tree is now able to get on with growing larger rather than having to expend unnecessary time and energy in reorientating itself and repairing sun damaged leaves.

Stand back, project into the future, and decide whether the tree is correctly placed in your garden. This may be your last chance to make positional changes without having to resort to a chain saw.

5. Remove from the hole and cut the nursery bag fully across the bottom and continuing the cut, partially up two sides. Place the tree back in the hole using the bag to lift the tree and to carry out the final positioning.

If satisfied, and with the tree still in the hole, complete the cuts up the sides of the bag and remove it. Take care not to disturb the roots.

6. Place more of the compost/soil mixture in the hole around the tree, fill the hole and firmly tamp down the loose earth.

7. Make a good sized saucer, with walls larger than you may expect to do the job of holding sufficient water, as these need to contain a good layer of mulch and will soon be eroded down to a smaller size.

The diameter of the saucer should at least match the diameter of the tree's crown.

8. Cover the surface of the soil inside the saucer with a thin (25mm) layer of well decomposed compost and add a thick (75mm) layer of mulch or rough compost on top, leaving the base of the tree clear from the mulch. Mix a few handfuls of broad spectrum organic fertilizer into the mulch.

9. Give the tree a good soak with good quality water.

Avoid municipal water that smells in any way of chlorine - the residual chlorine will kill the beneficial micro-organisms in your soil.

10. Apply a broad spectrum organic trace element/nutrient feed and water well once more.

Our local (Southern Cape) soils are generally lacking in nutrients and trace elements and these need to be added for best results.

11. A most important last addition to your tree should be a good dose of GEM (Growth Enhancing Microorganisms).

The foundation of life, as we know it on earth, is not "the birds and the bees and the Sycamore trees", nor "the big five".

This foundation is based upon the microscopic organisms living within the biosphere in general and the soil in particular.

A major reason why indigenous trees grow lush and vigorous in the natural forests is not due to the addition of fertilizers but to their undisturbed soils hosting healthy populations of beneficial micro-organisms.

Soils outside of the forests have been subjected to poor farming practices, injudicious and excessive use of pesticides, herbicides and chemical fertilizers, all of which have contributed to the demise of the beneficial micro-organisms within them.

These micro-organisms live symbiotically with the tree's roots and break down and make available the nutritional elements in the compost and soil for the trees to use.

Trees which are treated in this manner are superior in health and vigor as compared to those that are not.

In the interests of the health of our soils in general it is recommended that consideration be given to treating all our garden soils in this manner in order to restore the natural balance of beneficial micro-organisms living within them.

Growth enhancing micro-organism (GEM) cultures have only recently become available in the Southern Cape for agricultural and general garden use.

Once you start using fertilizers you become locked into the cycle (an oil based product of price fixing and proven monopoly) of providing yearly doses of chemicals to keep the plant looking good.

12. Staking.

In areas that experience strong winds (most), stake your tree to a untreated pole.

Sharpen the end of the stake going into the ground to lessen damage to the roots. Loosely secure the ties (at least two) to enable freedom of movement in the wind in order to stimulate lateral growth to strengthen the trunk.

Use broad ties to lessen damage to the bark.

D. AFTERCARE

Give your tree lots of TLC.

Touch it, love it and talk to it from your heart.

Keep the roots moist during dry and windy periods.

Feed twice a year, during Spring and Autumn, with an organic fertilizer mixed into the mulch layer (this feeds the Nitrogen feeding microbes which break the mulch down into compost and the compost into plant nutrients – look after the micro-organisms and they will look after your soil).

At the same time dose with GEM.

Keep the surface mulch/compost layer replenished at all times, but especially during summer and periods of drought.

Feed from the top using good quality water to transport dissolved nutrients down to the roots and beyond, in order to encourage the roots to spread beyond the confines of the planting hole.

Be careful not to overfeed with “quick fix”, Nitrogen based growth boosters. This is equivalent to giving your body an energy drink, which is great for boosting short term energy, but does absolutely nothing for long term health.

Use ecofriendly pest and disease control methods.

Keep in mind that pests direct their intentions towards plants that have weakened immune systems and which are not healthy.

A tree's health is governed largely by the condition of the soil and the health of the soil largely by the micro-organisms living within it.

If pests do arrive, crush them gently with your fingers and rub their body fluids over the rest of the leaves whilst making your intentions clear by silently cursing them and aggressively directing them to feed elsewhere in the nearby bush.

No creature likes the smell of its own death and the pests soon move off.

Consider your own health, together with that of the surrounding environment, before deciding, as a last resort, to introduce pesticides (read poisons) into the equation.

Introducing toxic substances to your garden is a serious business which requires serious consideration. Avoid the “willy nilly” approach - “a dash of this and a splash of that” - when applying pesticides. The fact that these agents are freely available off the supermarket shelf and do not come with a stringent warning does not mean that they are safe to use.

Don't fool yourself into believing that the pesticide you wish to apply will be contained within the pest it is directed at.

Unfortunately, the average gardener does not appreciate that they would also be introducing a toxin into the local food chain. One cannot hope to fully understand the “domino” effect that is initiated down the line as the surrounding ecosystem in general and the natural biological control agents in particular are detrimentally effected by the toxins.

Find out what the active ingredient contained within a pesticide is and research the side effects – you will more than likely be unpleasantly surprised as to what you find.

Consider another rule of thumb - If a substance can kill a bug it can't be much good for you.

The above is a general guide to the planting of indigenous trees and should be sufficient to get you started in the right direction.

May you experience the joy of watching your trees grow from strength to strength and then, sometime in the not too distant future, sit in the cool comfort of their shade on a hot summer's day.

Enjoy your trees.

Written by: Trevor Blamire, Forest Trees of Knysna – Wilderness (November 2009)