

# Soils for Terrestrial Orchids:

Terrestrial orchids absorb the amount of water required from the soil and with it the nutrient needed if these are water-soluble.

For terrestrial plants the soil is of paramount importance because:

- a) It gives them the opportunity to anchor themselves into the ground.
- b) It provides space for the roots to grow.
- c) It retains water that theoretically should contain water-soluble nutrients in it.
- d) It provides a medium for plant friendly fungi and bacteria to grow.

Soils are made up of various sizes of rock particles, deposited in situ from weathered igneous, metamorphic or sedimentary rocks. Soil formation, being part of a healthy dynamic system, is a continuous process.

General speaking, soils are classified according to size (coarse grained, fine grained, etc) or components (sandy, clay, loam), etc. We are well aware that some minerals absorb/retain water i.e., clay, and others minerals do not, i.e., quartz.

We know that particles of certain shapes, it does not matter how you put them together always leave free space between them. That space is important for water and air to flow through. Roots also move easier when there is some "free" space. When the water flows through, we talk about good drainage, when the air flows through we talk about good aeration; however, to grow good healthy plants we need soils with just the right drainage and aeration. Soils can be adjusted to suit the needs of certain species of certain genera, i.e. retain more moisture.

If the drainage and aeration are too good, water will flow through and with it all the nutrients. The watering and fertilizing costs will increase and the plants will never be really happy. Sandy soils offer excellent drainage and aeration but nothing else. On the other hand, if the soils are not permeable and the water stays, most of the air will be expelled from the capillary spaces and the roots will experience anaerobic conditions and their metabolism will suffer. If the soil is water logged the plant(s) soon or later will die. Clay soils offer no drainage or aeration.

What the plants need is the right balance.

A blend of minerals that retain moisture and nutrients and minerals that help with the drainage and aeration of the soil. Finally, a little organic matter for the continuous supply of nutrients for the plant and the friendly fungi and bacteria is a must.

By combining the two we get a soils called "Loam", "Sandy Loam", etc., these soils are combinations of sand and Clay. Sandy loams have the ability to "filter" everything that passes through and given time it accumulates a third component called "Humus". Humus forms a band of decomposed organic material on the top. These three components, quartz, clay and humus, also known as Top Soil, make sandy loams unquestionably the best soils for the majority of terrestrial orchid plants. When naturally deposited topsoil is not available the addition of "leaf mulch" is very important.

Off course, there is always room for improvements (fine tuning) like pH adjustments, addition of nutrients, bio char, lime/dolomite, etc.