

Compost Mediums & Mixes

AKADAMA CLAY

Good water absorbency
Provides good drainage (Granular structure but can breakdown in time, particularly if small particles are used.)
Dries very quickly (Good indicator of moisture content, turns from dark brown when wet to light brown when dry.)
Relatively Expensive
No nutritional properties
Provides an attractive top dressing when exhibiting

Peat

Good water retention
Good water absorbency (needs to be slightly damp when adding more water)
Inexpensive
Breaks down and can clog the root system
Acidic
No nutritional properties

Grit

Provides good drainage
No nutritional properties
Encourages good ramification of the root system
No water retention
Inexpensive
Use as a base layer in deep pots to provide circulation of air to roots (.25 to .5 inch)

PUMICE

Good water absorbency
Provides good drainage (does not breakdown easily)
No nutritional properties
Less expensive than Akadama

PERLITE

Has very similar properties to pumice, but is lighter in weight
More readily available than pumice
Inexpensive

SHARP SAND

Provides good drainage
No nutritional properties
Encourages good ramification of the root system
Inexpensive

Molar (formerly BIOSORB)

Good water absorbency
Provides good drainage (does not breakdown easily)
No nutritional properties
Good indicator of moisture content (turns from bright orange when wet to very pale orange when dry)
Less expensive than Akadama

LOAM

Fair water absorbency
Contains nutrients through it's humus content
Can harbour disease and pests if not effectively sterilized
Inexpensive

COMPOSTED BARK

Fair water absorbency
Contains nutrients through it's humus content
Can harbour disease and pests if not effectively sterilized
More expensive than loam
Can contain beneficial Mycelium (a white fungal growth) creating the symbiotic association with roots known as Mycorrhiza.

Further reading: Bonsai magazine issue no, 18 Summer 1993

None of the materials listed make an ideal potting compost in themselves; each presents it's own particular problems when used in isolation :-

Peat, Composted Bark and Loam can cause root rot by retaining too much water over long periods thus starving the roots of oxygen.

Grit and Sand do not retain fertilisers and other soil nutrients, and can dry out fairly quickly.

Pumice and Perlite result in stringy root systems because of the lack of humus.

Akadama dries out fairly rapidly

Compost Requirements:

- a. Must be free draining
- b. As the compost dries the structure should be open enough to allow the moisture to be replaced by air.
- c. Should be able to retain it's physical structure between repotting periods.
- d. Should be able to support the tree physically and nutritionally
- e. The pH value must be suitable for the species of tree i.e. azaleas prefer an acid soil

When repotting do not change the composition of the compost mix too dramatically. A gradual change is advisable on successive re-pottings, This is particularly true of raw stock bought from garden centres which tend to be planted in composts with a high peat or humus content.

Compost Mixes:

1. Two parts by volume of peat + two parts coarse grit + one part garden loam(preferably clay based), The peat serves as a buffer for the moisture retention. The grit maintains the compost in an open friable state enabling good drainage, supplying minute air spaces for the supply of oxygen. The loam serves as a second buffer and an initial source of nutrients which must be eventually supplemented by fertiliser. The particle sizes should be 5 to 10 m.m, which can be done by sieving. This soil is more suitable for deciduous trees.
2. One part by volume of coarse grit + one part pumice. This mix contains no nutrients and therefore requires more frequent additions of fertiliser. This mix is probably more suitable to pines and junipers which thrive in free draining soils and can stand a fairly dry soil condition. Pines should not be over watered or fed if a small needle size is required.
3. Seven parts by volume of loam + three parts clay + one part composted bark. This mix is suitable for deciduous trees in early development, which require vigorous growth.

In addition to the above mixes there are many other permutations. Experiment with variations on the above formulas to obtain the one that gives you best results. Determining factors will be climate. siting of the tree, land elevation and so on.

Soil Supplements:

These materials are not to be confused with fertilisers in that they have no direct nutritional value; rather they assist the tree to extract the optimum quantities of nutrients / fertiliser from the soil. They can therefore be termed as growth stimulants in that they act as catalysts on the nutrients and micro-organisms present in the growth media.

Further reading: Bonsai magazine issue no. 25 Spring 1995

Examples of these supplements are Maxicrop and Humate Products:

Maxicrop International Ltd.
Weldon Rd. Corby
Northants
NN17 5US

Humate Products John McLuachlan Horticulture
50a Market Place
Thirsk
N. Yorkshire YO 7 1LH