

Compost Mediums & Mixes

Akadama

Good water absorbency

Provides good drainage (granular structure but can break down 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

Kiryu

Similar in properties and appearance to Akadama, but harder.

No nutritional properties

Relatively expensive

Kanuma

Good water absorbency

No nutritional properties

Relatively expensive

Used primarily for Satsuki Azaleas but also other lime-hating plants.

Can be used neat or mixed 50/50 with peat for young plants.

Very soft texture, which breaks down fairly quickly.

Ideal for fine rooted trees such as Azaleas, but not for pines or other species that require infrequent re-potting, i.e. > 2years.

Kyodama

A mixture of fired clay and other brick like granules.

Has good water absorbency and retention.

Does not break down therefore can be re-used when cleaned.

No nutritional properties

Relatively Expensive

Lava Rock

Good moisture retention

High AFP (air filled porosity)

Promotes strong dense rooting

High mineral content including iron, magnesium and other minerals

Easily re-used when cleaned

Neutral PH

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 (0.25 to 0.5 inch) and weight.

PUMICE

Good water absorbency

Provides good drainage (does not break down 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 break down 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 its humus content

Can harbour disease and pests if not effectively sterilised

Inexpensive

COMPOSTED BARK

Fair water absorbency

Contains nutrients through its 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.

An alternative is Orchid compost which consists mainly of bark.

Further reading: Bonsai magazine issue no, 18 Summer 1993

None of the materials listed make an ideal potting compost in themselves; each presents its 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.

Akadama , Kiryu, Kanuma, Kyodama, Pearlite, Pumice, Lava rock , Molar, Sand, dry 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 its 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. In most cases avoid complete bare rooting, particularly pines which may have mycelium growing around the root system. This is essential

for the health of pines. Any mycelium removed in the repotting process can be added back into the new soil mix. 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 mm, 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 very free draining, 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. Check moisture content frequently.

3. 50:50 mix of Akadama and Kiryu. This mix is best for pines. The same considerations should be applied as those listed in mix 2. More expensive, but has superior horticultural properties to mix 2.

4. 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 tree species, 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. Examples are seaweed extracts and FRIT.

Examples of these supplements are FRIT, Maxicrop and Humate Products:

FRIT

Frit contains trace elements and minerals that are essential to the health of your bonsai. This slow acting granular compound will gently release all the major and minor trace elements over a 12 month period. 30% of the compounds are soluble in the first hour. The remaining nutrients become available with the natural breakdown in the soil over the course of a year. Not readily available in this country.

Click here for : [FRIT Product](#)

Maxicrop
SBM Life Science Ltd
Unit 2 Techno Park
Newmarket Road
Cambridge CB5 8PB

Click here for : [Maxicrop Products](#)

Humate Products
Viresco (UK) Ltd
50A Market Place
Thirsk
North Yorkshire
YO7 1LH
UK

Telephone: 44 (0)1845 525585.

Fax: 44 (0)1845 523133

Email: sales@viresco-uk.com

Click here for: [Humate Products](#)

Further reading: Bonsai magazine issue no. 25 Spring 1995

In recent years mycorrhizal products have come onto the market. They are added in the re-potting process and their purpose is to promote mycelium growth around the root system. The link below is one of many now on the market.

Click here for : [Mycorrhizal Products](#)