

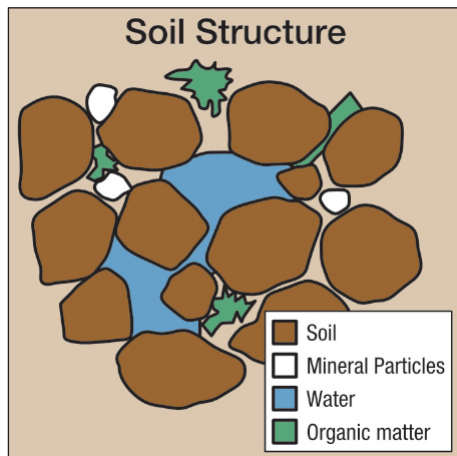


## WaterUps® Soil Considerations Guide

This guide is designed to provide you with essential information about the soil in your WaterUps® wicking bed.

### QUICK TIP

You will also find our WaterUps® Installation Guide very helpful during the installation of your wicking bed. You can download a copy of it from our website at [www.waterups.com.au](http://www.waterups.com.au)



### Soil structure

The soil structure is the arrangement of the solid parts of the soil and the pore spaces located between them. It is the shape that the soil takes based on its physical, chemical and biological properties. While soil structure is not the same as soil texture, there are similarities. Both affect the soil's drainage and aeration capabilities.

A well-structured soil has a crumbly, or friable texture. This means that there is plenty of pore space to allow water and air to move through the soil. This is particularly important for wicking beds.

### Potting mix



Choosing a potting mix with the best structure for wicking beds is very important. The action of wicking water requires the structure of the potting mix to be open, and friable to allow for free flow upwards from the water/air source below.

Wicking action provides the ideal moisture level, which is conducive to microbial activity in the soil for healthy plant growth. An open structured potting mix also allows for maximum root development in the root zone.



### Organic matter/compost

While potting mix provides the structure for the plants and in particular the root ball to grow, it does not contain all the nutrients and microbial populations needed to grow healthy plants. Compost needs to be added to the potting mix to provide organic matter for plants to feed on.



Compost consists of organic matter in the form of molecules of proteins, sugars, carbohydrates, amino acids, starches etc. These molecules are gradually broken down by the micro-organisms (bacteria and fungi) in the soil and absorbed by the plants.

### Humus

Eventually the nutrients in the organic matter are exhausted and the remaining molecules can't be used. This matter is called humus, which consists largely of carbon.

The structure of humus is such that it acts as a buffer against soils that may be too acidic or alkaline. Humus is highly nutritious and rich in minerals and microbes vital for healthy plant growth.



200mm vertically, then the surface of the soil would be 500mm above the base. Normally, we would not expect our Marigold companion plants with a root depth of only say 50mm to be able to grow as well without surface watering. However, while over time the roots will definitely grow deeper in search of the water below, you can add some additional humus in the top 100mm of soil to effectively lengthen the wicking depth in your bed.

Humus also is able to hold 80-90 per cent of its own weight in moisture. This moisture retention capability of humus can actually be used to improve the wickability of the soil.

This can be particularly useful when you are companion planting in a wicking bed. For example, you may plant a lemon tree in a large tub with the base of the root ball 300mm above the base of the reservoir. If the root ball measures



## What to get?

The best mix for your plants will depend on their preferred PH level. Organic matter can lower the PH of your soil over time, so check the PH periodically.

Use a premium quality organic potting mix. If you are getting a bulk delivery check the quality before the truck's load is emptied. It should be friable and contain plenty of organic matter.

Add a mix of both animal and plant based composts and some humus, which is available in granular and powdered form. Some bulk landscape suppliers may also provide a humus mix. Replenish each growing season.

Add worm or compost teas regularly. This can be watered into the soil and sprayed on the leaves in diluted form.

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