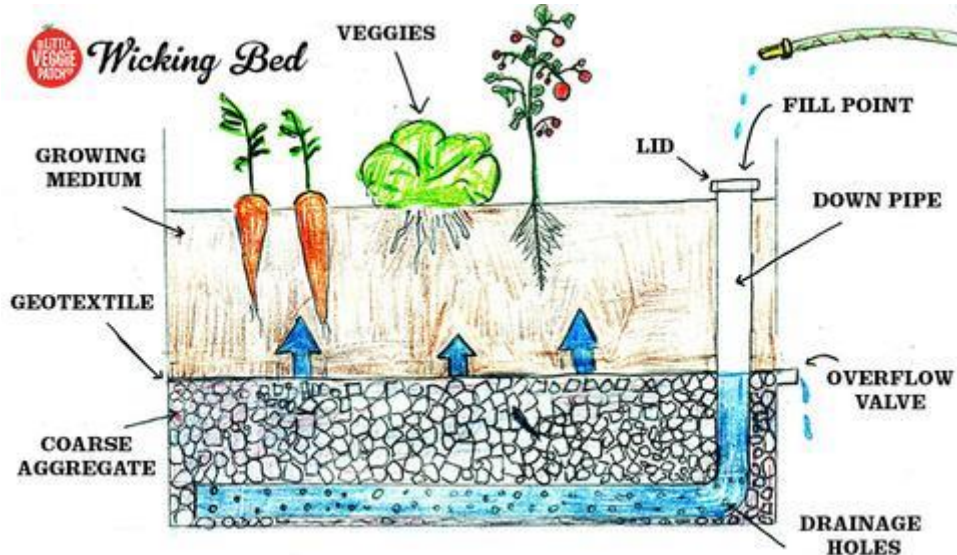


# HOW TO BUILD A WICKING BED

Written By Little Veggie Patch Co - April 26 2017



Plants are made up of around 80-90% water. It's a statistic that always reminds us that, while we may forget to do any number of things in the garden, the one thing we mustn't forget is to water

There is no such thing as a bad gardener, only a forgetful waterer. We often don't have enough time to water our plants so we need to find more foolproof methods of getting moisture to the garden. This is the strength of a wicking bed.

Remember the year 3 science experiment where a tissue was dipped into a glass of water and the moisture 'wicked' up through the fabric, defying gravity. This is the process of capillary action and fundamental to the function of a wicking bed. Otherwise known as a '*self-watering garden*' wicking beds pull water into the soil from a reservoir below. The plants can then decide how much to use and when.



A wicking bed has a number of advantages over traditional irrigation systems, with this ability to 'self-water' without the aid of an expensive control timer. And unlike those systems that need to be programmed, a wicking bed feeds water directly to a plants' roots when they require it. There is little wastage of water through evaporation, which is further minimised through good mulching practices.

Most experts set the maximum depth of soil for a wicking bed at 25cm - this being the maximum distance water is able to be pulled up through the soil. Most vegetables and herbs need about the same soil depth for their root growth. We also allow 25cm of depth to hold the water reservoir below. A large body of water to draw from will make it more effective over a longer period of time, such as over the Christmas holidays. So when building one, a vessel that is approximately 50cm deep is ideal.



When creating a wicking bed the first step will involve lining the base (what will become the reservoir) with a non-porous, rigid liner that will hold the water. Make sure it is pushed snugly up against the walls and into any corners, so there is less pressure on the material once filled with scoria and water. Any small punctures or splits will leak water and be difficult to fix so be careful when handling. If you're looking to do this part on a budget, you can use a thick builder's plastic but you should play it safe by double layering. Otherwise, a pond liner will be more foolproof, albeit it more expensive.



Next come the components that feed water in and out of the wicking bed. An inflow channel, that will be used to fill up and then top up the reservoir, should lead to the bottom of the wicking bed and sit on an inch or two of scoria. To create this leader channel we use 50mm PVC piping which is fitted to a length of slotted agri-drain to allow the even flow of water in. Stagnant water sitting in the reservoir may attract mosquito and their larvae, therefore the inflow channel

should be capped when not in use. Next, and most importantly, secure an overflow valve to the side of your vessel. This dictates the depth of the reservoir and, as mentioned earlier, should be no more than 25cm from the top of your wicking bed. When you fill up or top up your reservoir, water overflowing from this valve indicates your wicking bed is full.

Now fill up the reservoir with a fine grade scoria, which is a porous volcanic rock available from all landscape supply yards. This not only makes the reservoir a solid platform onto which you can then add soil, but helps aerate the water and makes for more effective capillary action. The finer the grade of scoria, the better it does these jobs and the less potential there is for punctures in your reservoir liner.

As you fill up with scoria, we like to put 'wicks' - like those on a candle - that will pull water from the lower parts of the reservoir to mid points of your soil. For this we use strips of a fabric called geotextile, which is very much like felt, because it is made up of small, dense fibres that wick incredibly well. Although the soil will do this job fine by itself, these will make the system work better when the reservoir is at low levels, the system may not need a top up for three weeks rather than two.



Finally it is time to add a growing medium for our plants. Wicking bed systems tend to favour soils that have high levels of organic matter and compost so it is worthwhile investing in good quality compost and potting mix. We have also found the benefit in adding 1 part per litre to 10 parts soil, which helps in reducing compaction over time. To keep the soil out of the reservoir we also use the geotextile fabric. Lay a sheet on top of the scoria and attach it up the sides of the wall using a staple gun. Of course don't staple it in the reservoir section unless you want to put holes in the liner!

This enclosed style of growing means that there is very little wastage of water as it is constantly recycled through the system until it is used. Such is also the case for the nutrients, which can be fed in liquid form directly to the reservoir. It does however mean that the water can become a little *funky* - algae can build up and make it toxic to plants - so you should flush the water through the system every 12 months.

Although they are commonly referred to as *self-watering gardens* they are not silver bullets. All young plants will need surface watering to begin. If you're worried about over doing it at this stage - don't - any extra water will come out of the overflow and by using a good quality soil mix it won't become saturated. Once the plants are about a month old, the self-watering affect begins to kick in.