How to construct a Container Wicking Bed Garden

Wicking beds are a unique and increasingly popular way to grow vegetables. Here we deal with a simple Container Wicking Bed, however there are many variations in the types, sizes and complexity of Wicking Beds you can build. For further information do some web searching yourself there is lots of information out there.

What is a Wicking Bed and how does it Work

Wicking beds are self-contained garden beds with built-in reservoirs that supply water from the bottom up - changing how, and how much you water your beds. The water moves from a reservoir at the bottom of the garden bed through the soil to the top, watering the roots of the plants from below. The water moves by “capillary action” - just like fuel moving up the wick of a kerosene lamp.

Advantages of Wicking Beds

• They are water efficient. Watering from the bottom up prevents evaporation of surface water (which occurs when you water beds from the top). They use 40-50% less water than a conventional garden.
• Less time needs to be spent watering because they water themselves - plants have less risk of over or under watering
• Harder for weeds to establish
• Ideal for gardens with trees with invasive roots
• They can be made cheaply from recycled materials (although more complex expensive options exist)
• They are raised so easier for elderly or people with an injury or disability

What you will need?

• A Container - a heavy duty plastic box, a broccoli box, an old bath anything that can contain water - use your imagination
• Plastic pots, agricultural pipe, lightweight rocks, or gravel
• Weed Matting/Geotech Fabric or Shade Cloth
• PVC Pipe, 25mm diameter for over flow and 100mm for diameter for inlet pipe (lengths will vary depending on size of container)
• Organic Soil Mix/Compost
• Water
• Organic Mulch
• Seedlings or plants
How to Construct your Wicking Bed?

1) Select your container, make sure it holds water and is tall enough to allow for approximately 300mm of soil/organic matter plus the water reservoir. Approximately 600mm is ideal for growing vegetables.

2) Create the medium filled water reservoir by placing old plant pots base upwards in the base, you could also use agricultural pipe, light weight pebbles etc. This layer should be no more than approximately 300mm high (it can be less) as capillary action struggles to lift the water higher than that.

3) Place PVC 100mm pipe upright from the base of container up the side to the top of the container this acts as the inlet pipe for the reservoir.

4) Drill an over flow hole at the same level as the reservoir medium and slide in a short length of 25mm PVC pipe, cover the inside of the pipe with flyscreen or shade cloth to prevent mosquito problems. This overflow pipe ensures the bed does not become water logged in times of excessive rainfall.

5) Place geotech fabric or shade cloth on top of the material to act as a barrier between the soil and prevent clogging the reservoir

6) Fill container with soil high in organic matter to a maximum depth of around 300mm. It is generally accepted that the water can only be effectively drawn up from the reservoir at the bottom of the wicking bed to a height of around 300mm (although soil depth of up to 500mm+ can be used for trees & shrubs which have greater root depth - this is ideal for growing small trees in a vegetable patch as they prevent the roots from competing directly with nearby vegetables.) Cover inlet pipe with shade cloth or non-see through container.

7) Cover with mulch and plant seedlings

8) Keep the water levels topped up using a hose in the inlet pipe until water starts to flow out the overflow pipe on the side, this means the reservoir is full. To remove excess salts, every 6 months or so you will need to flush the reservoir. Growing mineral accumulators such as borage, comfrey and weeds such as dandelions in your wicking bed will also help.

9) Add a dark upturned container with a lid to act as a worm farm, add kitchen scraps and let the worms improve the garden bed soil.