

Wicking Beds

Wicking Bed Basics

- Water can travel upwards despite gravity thanks to capillary action (wicking).
- Use this to our advantage with a "wicking bed", a garden bed that has soil and a reservoir of water *underneath* the soil.

Wicking Beds as a solution

- large reservoir of water reduces need for frequent watering
- soil remains moist all the time - even during the hottest times of the year
- evaporation reduced with thick mulching
- improve soil life/quality with consistent soil moisture, cooler conditions, and cycling of nutrients that would otherwise be leached away.
- can be made cheaply from variety of materials

Wicking Bed Design

- flat base, (use a level)
 - depth no greater than 600mm total, 300mm soil and 300mm for the water reservoir
- width and length of bed to suit available space and practical purposes.
- water proof liner for reservoir: black plastic or pond liner,
 - fill pipe: access for filling, and running length of bed for good water distribution (speed of filling). Use slotted 'ag' pipe or PVC pipe with holes etc...
 - fill reservoir with material that allows for easy water distribution such as vermiculite and perlite. Mulch or other organic materials like coco peat will break down over time and could possibly result in a stinky water reservoir (you will have to pull the entire bed apart to clean it out if that happens).
 - reservoir to soil interface: use shade cloth, geotextile, carpet, old sheets etc... this will prevent soil migrating down into reservoir.
 - Soil should be good quality organic soil that's a bit coarse as the water will encourage a bit of compaction. Vermiculite can be mixed in with the soil to aid wicking process.
 - Drainage. Drains should be protected with a bit of shade cloth to prevent soil escaping or blocking drain pipe.
 - Can be built in-ground, above ground, or half 'n' half; can be square, rectangular or round. Use tin, wood, rocks, straw bales, anything that will support and hold the black plastic in place. If in-ground then consider the drain - if it's also underground that will work in sandy soils but not in heavy/clay soils.

Other Points:

- wicking beds appropriate for most annual veggies
- not good for larger root veggies like daikon radish but great for potatoes and sweet potatoes
- allow reservoir to completely dry out every now and then
- heavy rain not a problem thanks to drain - no worse than normal ground or raised bed (i.e. excess drains away). Probably better because nutrients aren't all leached out, they end up in the reservoir.

Variations:

- incorporate worm farm
- bathtubs

To make your own wicking bed you will need:-

A plastic liner or pond liner to line the inside of the raised garden bed

50/50 mix of vermiculite and perlite to fill water reservoir to a depth not greater than 300mm

Shadecloth - enough to cover the vermiculite/perlite layer in the reservoir

90mm pvc 'ag' pipe (with pre-cut slits along sides) to fit the length of the proposed bed

1 short length of 90 mm pvc pipe - without slits - to be joined to long 'ag' pipe via an elbow bend to create an inlet to fill the tank

2 threaded pieces of pvc and 2 end caps

2 short lengths of conduit for use as overflow pipes

Weed mat

Sand

Good quality soil to fill wicking bed to a depth of not more than 300mm