

# About wicking beds and pots

A wicking pot or bed is a plant container that utilises the principle of wicking to keep the soil moist for longer than a conventional plant pot.

- *Wicking is when water moves upwards through a medium – forces in the water can pull water upwards about 30cm through soil*
- *If water can be stored at the bottom of a pot then wicking up through the soil can occur*
- *If water is fed directly to the bottom of the pot, then watering is most efficient, as there's much less evaporation*

## Conventional pot (left) vs simple wicking pot (right)



**Q: Doesn't a wicking bed need gravel, geotextile, lots of pipes and other complicated things?**

**Not necessarily:** As the pictures above show, all you need is a pot with an outlet hole a little way up the side. The soil at the bottom of the pot can be the reservoir and wick at the same time, though it can compact after a year or two.

The important consideration is the type of soil you use. It must be **free draining** – **never use pure clay or clay-rich soil**. Any compost used should be well finished as pH changes during decomposition can affect nutrient uptake.

### Good mediums to use:

Composted horse manure (lots of sawdust – check pH)

Your own compost – well rotted

Coconut fibre (rot it down first)

Mushroom compost (check pH)

Good potting mix

Coarse sand (add to improve drainage, structure and wicking)

Worms (great for aerating the soil)



Winter veg growing in buckets made into wicking pots – an inexpensive way to get your container garden going



A large bed enables vegetables to be grown next to a gum tree

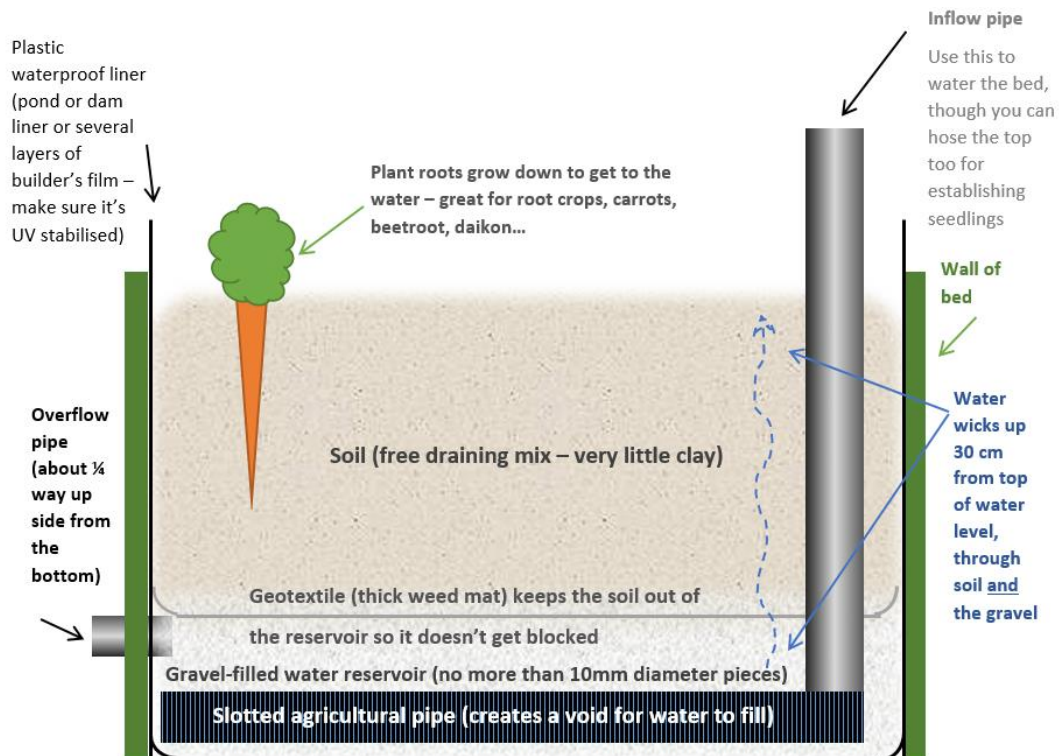


Wicking pots enable better yields. Carrots grow down towards the reservoir

## More elaborate design for big pots or beds

If you want a durable large bed, or to connect a series of big beds together, then using a gravel reservoir is a good idea. Gravel ensures the soil doesn't sink down over time and any connector pipes between beds don't get blocked.

### Here's what you need:



Connecting several beds together (connect the overflow so it becomes the inflow for the next bed) makes watering simple – one inflow pipe serves all beds. Put the hose in, and when the water flows out of the overflow pipe in the last bed, you know they've been well watered. Don't water again until the reservoir is almost empty.

Note that the gravel filled reservoir should not be more than  $\frac{1}{4}$  the height of the bed (e.g. 10cm in a 40cm deep bed). For wicking to occur through the gravel, make sure the gravel pieces are less than 10 mm in size. You can also use scoria, crushed bricks or sand, or a combination.



Freshly planted wicking beds connected together, watered from a single pipe

**\*\* Mulch your beds well, to maximise their water efficiency! \*\***

### Q: What can I make my wicking pot/bed from?

- Buckets
- Old polystyrene veg boxes (check for leaks and only last one season)
- Storage boxes and bins
- Wooden boxes/DIY garden beds (with waterproof liner)
- Metal DIY garden beds (with waterproof liner)
- Old baths, basins, troughs, eskys, IBCs
- Strong plastic bags (short term)
- Self-watering plant pots (remove plastic insert)
- Seal off the holes in regular plant pots and put a new hole in the side

### More information on materials:

- **Raised garden bed structure:** can be 'colorbond' steel, wood, even stone; beds can also be made from old bathtubs, polystyrene vegetable boxes, storage containers, plastic drums, IBCs, and even buckets! (A few wicking buckets at \$1 each is a very cost effective way to grow herbs on a deck or balcony – make sure you buy the black coloured buckets as they are more UV stable and you could get a couple of years of use. Use scissors or a Stanley knife to make a small hole about ¼ way up the side. Fill the whole thing with potting mix and it's ready to go – you don't really need to worry about gravel or such a small container, especially as it won't last long enough to get too compacted).
- **Liner** (not needed if container is already water tight): pond liner (expensive and made of either pvc or epdm rubber), potable water-safe polypropylene or polyethylene dam liner (cheaper than pond liner and safe, but needs to be ordered online from select suppliers), or even builders' film which is the cheapest option, although this is very thin. Builders film is inert polyethylene, can be bought in most hardware stores, but please note that it may leak within a few years. If you do want to use this, then choose the 200 micron thick heavy duty polyethylene, and make sure it's the black one as it has more UV stability. You will still need to use at least 2 layers as it's just too thin otherwise and very easy to tear.
- **Piping:** the inlet can be PVC pipes (if made in Australia as no heavy metals used in manufacture here) or polyethylene irrigation pipes. Smaller pots and buckets are fine without an inlet pipe – they can be watered from above just like a regular plant pot. Slotted agricultural pipe is made of recycled polyethylene and a few metres length can be wound along the bottom for extra water storage. You don't need too much, maybe about 2 – 3 lineal metres for every square metre of wicking bed. It's available in hardware stores.
- **Outlet:** use a bulkhead fitting (with washers) for the outflow if you want to ensure no unsightly leakage around the outflow down the side of the bed. This is often just called a tank fitting in shops. For corrugated beds, you can buy corrugated rubber washers to add to the fittings from specialist irrigation stores.
- **Gravel:** use scoria, blue metal gravel (road base), crushed brick, fine river stones, clay balls, coarse sand, anything smaller than about 10mm in diameter will wick moisture upwards as the level of the reservoir drops. Even woodchips can be used but these will eventually break down so are not as permanent as stone.
- **Geotextile/thick weed mat barrier:** use a felt-style fabric – woven mat frays too easily and lets things through. You can buy white drainage fabric in hardware stores – please note that it has no UV stability so needs to be completely covered with soil when in place or it will photodegrade into micro-pieces of plastic in a couple of months.
- **Growing medium:** well-rotted down compost and sand; potting mix. I have had pH problems with commercial mixes like 'vegie mix' and 'black gold' which were super alkaline, so test it before you buy. You can get a pH test kit from hardware stores.