

MASTERING

No-Dig Gardens

The most tedious part of traditional gardening is the digging - it can be back breaking! Imagine if you only needed to dig that garden bed once and then no more digging! The good news is it's possible! That is IF you plan ahead and IF you put a bit of effort into creating the basic bed! It's simply called **No-Dig Gardening**.



No-Dig gardening was originally championed in the 1970's by Sydney gardener Esther Dean. It is sometimes called Lasagna Gardening due to the technique of layering different materials within the bed. Most gardeners using this system do so in raised garden beds to allow for the development of a wonderfully productive growing medium. This also makes it possible to grow plants where the site is generally not suited to gardening such as on compacted soils, in courtyards, on balconies and even on rooftops.

No-Dig gardens are adaptable and can be built to any size, shape or height. Build one directly on a disused lawn, a neglected nature strip or in a community garden setting. The only limit is your imagination.



What is a No-Dig Garden?

A No-Dig garden is like a high rise – you build up and not down. It is essential to have a suitable frame around the bed to prevent it from collapsing. Knee-high beds are generally built to grow vegetables and other fruit producing plants like tomatoes. But you can also build a low rise No-Dig garden with perhaps a wire mesh or sleeper edging. If you are putting your No-Dig garden bed on a soil base, it is a good idea to dig or fork over the area first to improve drainage. But it's what you put inside the frame of your garden bed that really matters.

How does it work?

A No-Dig bed is made from multiple layers of organic materials topped with a final compost/soil layer. Initially, the materials in the lower layers of the No-Dig bed simply provide bulk. But as these materials are organic they start to break down (compost) and eventually become a nutrient rich growing environment. These composting organic materials are moisture retentive providing a reservoir of water for the garden bed, even in hot dry conditions.

As the organic materials in the lower levels are slowly decomposing they also produce heat that accelerates plant growth within the bed. The surface level of the bed will naturally sink over time as these organic layers breakdown. To restore the height of the bed, garden compost, aged manures and straw mulches can be added at the end of each growing season. These can be lightly forked into the loose top layer.

Why No-Dig Gardening?

No-Dig beds can be adapted to any outdoor area, even on soil-less balconies and in courtyards. However to grow vegetables the site should get at least 5 hours sun per day. This sunny environment together with the nutrient rich growing environment is perfect for plant growth. The medium can be so rich that you don't need to add any supplementary fertilisers and they generally require less watering.

If the bed is placed on soil, over time you will find that worms and micro-organisms migrate up into the bed and excess nutrients will leach down. This will improve both the quality of the bed and the soil beneath.

Raised No-Dig beds bring the garden up to a workable height for people of limited mobility. They can also be portable making them a suitable investment for renters.

Suggested Materials for a No-Dig Garden Bed

(H = Height, W = Width, L = Length, D = Depth)



Low Bed

H < 400mm W - Any L - Any

Edging Materials e.g. metal landscape edging, recycled plastic garden edging, sustainably harvested timbers*, straw bales, powder coated wire edging etc



Raised Bed

H > 400mm W - Any L - Any

Framing Materials e.g. recycled plastic planks, sustainably harvested timbers*, prefabricated corrugated galvanised beds, recycled apple crates etc.



Bottom Layer

D - 50mm

Weed Barrier Materials e.g. un-waxed corrugated cardboard or multiple layers of newspapers. Dampen well before adding organic materials.



Bulk Layers

(Area of high biological activity, not for planting in) D - Any

Apply the following in alternating layers and dampen well between each layer.

Green Materials e.g. finely chopped garden waste, non-invasive garden weeds, comfrey and borage leaves, spent annuals, finished green manure crops etc.

Brown Materials e.g. autumn leaves, dead plant material (disease free), pea straws, lucerne, shredded newspapers etc.

Manures and Composts e.g. aged animal manures and garden compost



Planting Layer

D - 300mm

Growing medium e.g. finished compost mixed with garden soil or a vegie garden mix.



Mulch Layer

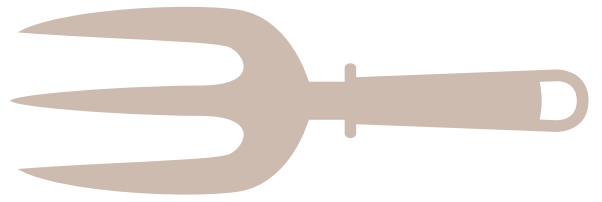
Straws are best. If growing from seed, do not apply mulch until seedlings have emerged.



Plants

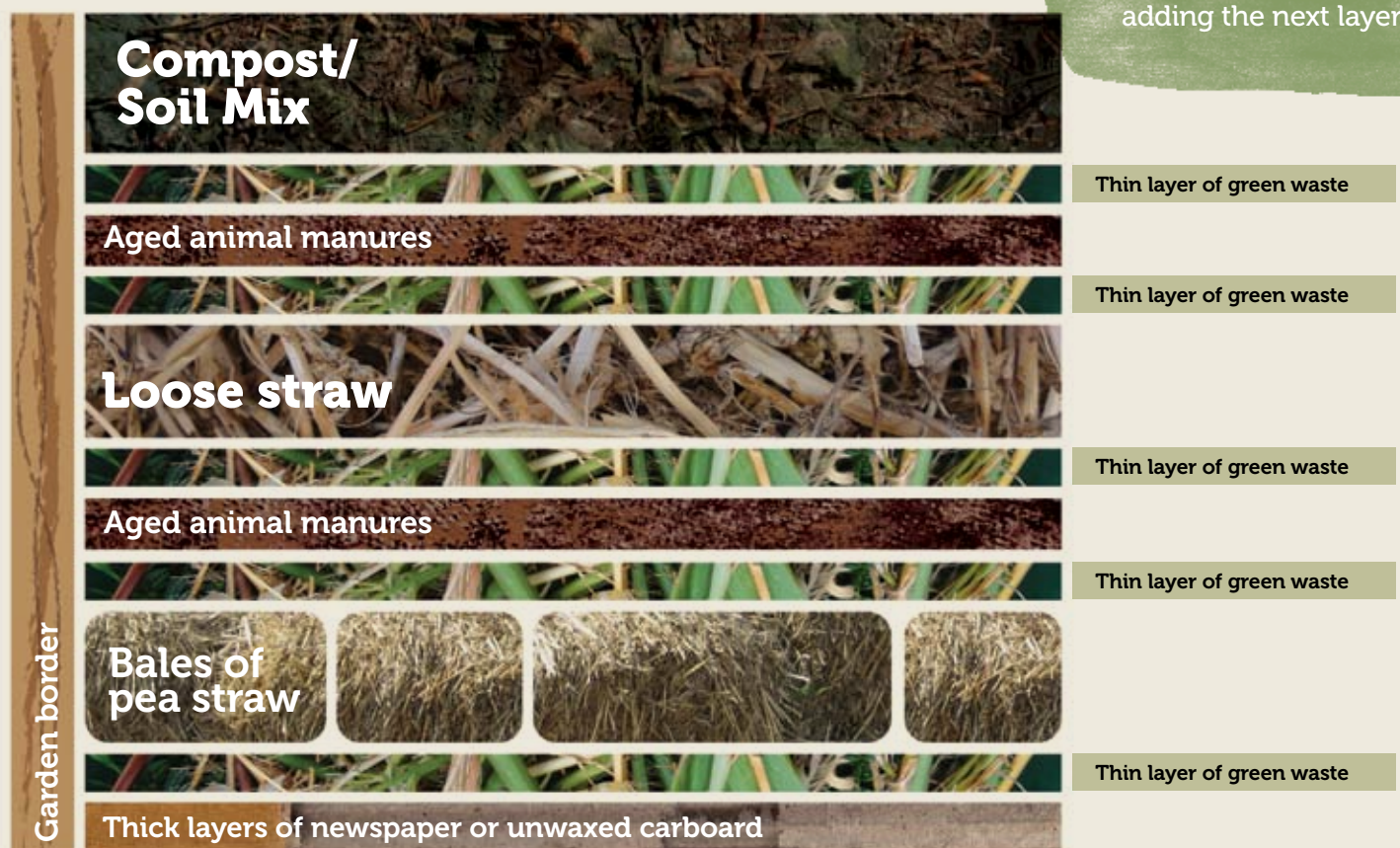
Seeds, seedlings, herbs, perennials, dwarf fruit trees etc

Tips for Building a No-Dig Garden



- Framing materials can be expensive so purchase your materials to suit your bed size. E.g. to make a bed 600mm (w) x 1200mm (l), purchase 2400mm lengths of materials. For beds 900mm (w) x 1800mm (l), purchase 2700mm lengths.
- Self assembly kits and prefabricated galvanised beds are good options if you lack carpentry skills.
- Straw bales are an easy and cheap edging option with no construction needed. They also double up as garden seats. However they will break down over a year or two and need to be replaced.
- If using straw bales as framing materials, you can also plant into the bales by removing straw plugs, filling with compost and planting directly into these. This is perfect for growing companion plants e.g. herbs and flowers.
- When building on concrete, place a 7–10cm layer of coarse screenings, scoria, small branches or broken bricks in the bottom of the bed to improve drainage. You can also put a layer of fly wire mesh on top of the screening layer. This will prevent any organic materials from the top layer clogging up the drainage layer.
- If the bed is on compacted soil or concrete you may need to install a small drainage channel for run-off from the garden bed.
- To save money on materials for a large raised bed, fill the bottom half of the bed (the bulk layer) with thick parcels or bales of straw. Continue to fill the remainder of the bulk layer with alternating organic materials (see table below) on top of this straw layer.
- Thoroughly dampen each layer of organic materials before adding the next layer.
- Finish the bulk layers with some aged animal manure before adding the final layer.
- Shallow beds need more compact layering than deeper beds but all layering should stop about 300mm from the top to allow for the planting layer.
- The top layer should be a compost/soil mix suitable for vegie gardens. Actively decomposing organic materials can burn plant roots.
- If possible, allow the bed to 'rest' for a couple of weeks before planting out so the mix can stabilise. Top up with more compost/soil mix after this if necessary.
- Prepare and plant out as you would a normal garden bed depending on what you wish to grow.
- Mulch once seedlings emerge.

Example of a No-Dig garden bed



Growing in your No-Dig bed



No-Dig garden beds will naturally shrink after a couple of months and need to be topped up. Wait until your annual crops are harvested and the stubble cleared or forked in, then top up with more layers of organic matter. There is no need to 'turn over' the No-Dig beds but new layers should be forked in lightly before planting. Add a little Dolomite of Lime to vegetable beds to prevent any calcium deficiencies next season.

If the beds sink substantially, permanent plants such as fruit trees will also drop lower in the bed. Do not build soil up over the trunks of these plants as it may result in collar rot or other infections. If possible, lift permanent plants in their dormant season, raise the level of the bed and replant.

As with all vegetable gardening, practice crop rotation techniques to prevent many common diseases and plant disorders from becoming established in your beds.

Watering and Mulches

Plan ahead and install the delivery lines for your irrigation system inside the frame BEFORE filling the bed. No-Dig beds are perfect for drip watering systems which direct water to the plant roots. As the growing medium is naturally moisture retentive, check beneath the soil surface so you do not overwater.

In summer, mulch with an appropriate straw mulch. If growing from seed, do not mulch until the seedlings are at least 50mm tall. Young seedlings are vulnerable to attack from snail and other pests so protect as appropriate.

Untreated greywater should not be used in raised garden beds particularly when growing vegetables.



Straw Bale Edged Bed



Recycled Plastic Bed

“There is no need to ‘turn over’ the No-Dig beds but new layers should be forked in lightly before planting.”



A Sustainable No-Dig Bed

Do **NOT** Use

- Old tyres as they can leach chemicals and heavy metals into your soil which in turn can be taken up by your vegies.
- Plastic as the base for your No-Dig bed as it will cut off air and moisture to the soil beneath. Plastic can also cause water logging and other drainage problems within your bed.
- Timber or sleepers from Australian or overseas old growth rainforests. Use plantation grown or recycled timber.
- CCA (copper chrome arsenate) treated timber due to the arsenic content of the wood.

Do **Use**

- Local products as they require less transport and have a smaller carbon footprint than materials that have come a large distance. This includes construction materials as well as the soils, plants and mulches used.
- Raised No-Dig Beds when your own garden soil is contaminated, perhaps from a previous activity at your garden site.

Funded by the Helen Macpherson
Smith Bushfires Grants Fund



www.hmstrust.org.au



Sustainable Gardening Australia (SGA)

6 Manningham Road West,
Bulleen, Vic 3105
Telephone: (03) 8850 3050
Fax: (03) 9852 1097
Email: info@sgaonline.org.au
Website: www.sgaonline.org.au

Why Grow your Own in a **No-Dig Bed**?

Growing produce organically in your backyard ensures you have fresh, healthy fruit and vegetables for your family. Good for you and the environment. No-Dig beds are so adaptable you can grow fresh produce almost anywhere.

