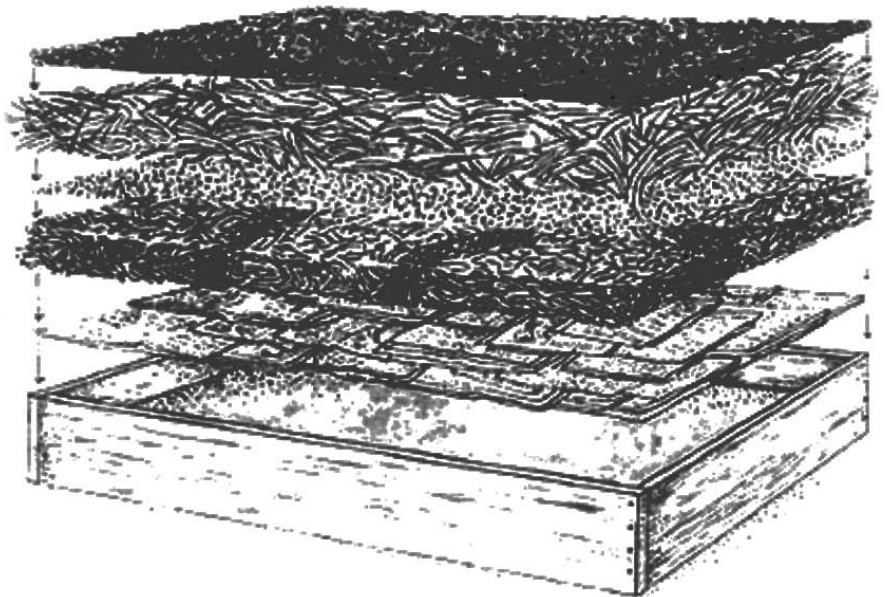


Build a No Dig Garden Bed

A Hands-On Workshop

Compost
Loose straw sprinkled
with fertiliser
Organic fertiliser
Lucerne hay
Newspaper
Box frame to retain
the garden



rochedale community garden
growing together

Introduction

These notes have been developed to support the Rochedale Community Garden's No Dig Garden Workshop program. They are based on the ebook written by Nick Robinson.

Safe garden material handling practices

All potting mixes, mulches, composts and soils can be harmful to your health if you do not take some simple precautions.

A group of organisms called Legionella is found in these materials and can cause a type of pneumonia in humans. It is a serious disease and is associated with a mortality rate of around 15%, but is a relatively simple infection to cure providing it is diagnosed and treated promptly.

Legionella infection usually develops 2 to 10 days after exposure and some or all of the following symptoms may be experienced:

- Fever and chills
- Coughing
- Aching muscles
- Headache
- Tiredness
- Loss of appetite
- Diarrhoea

Be aware that it is difficult to distinguish Legionella infection from other types of pneumonia by symptoms alone and specific medical tests are required to diagnose the disease. If you experience these symptoms after working with gardening materials, please get yourself checked by your local GP. Better safe than sick or even worse.

Avoiding Infection

Due to the widespread use of potting mixes, mulches, soils and other garden products, many people are potentially exposed to the organism. Studies in South Australia have shown that the most likely route of transmission of Legionella longbeachae is from hand to mouth. It is possible that Legionella infection may be contracted by breathing in fine particles of dust or water carrying the organism.

Note that Legionella infection cannot be caught from another person or from animals.

To help prevent infection:

- Always wear gloves
- Keep garden materials damp while in use
- Avoid inhaling gardening materials
- Wash your hands thoroughly after gardening.



Question

1. Why should we wear gloves and dust filters when handling garden materials?

No-Dig Gardening

Back in the 1970's a Sydney gardener called Esther Dean developed a system of gardening that she called "No Dig Gardening".

A no-dig garden is basically a garden above the natural ground made up of layers of organic matter that rot down into a nutrient-rich living soil. They can be made to any thickness just by adding one layer upon another.

The great thing about this system is that it is the perfect solution if all you have are tough or poor soils and can be created on any surface (as long as it is not contaminated in some way with toxins). Of course, it also is the ideal solution if you hate digging garden beds over all the time.

The important thing to remember is that no-dig gardening is like composting. You need a good mixture of two things: carbon materials in the form of straw, and nitrogen in the form of manures. And in the same way, water must be provided for the bed to function properly (let alone keep the plants alive in it).

Some people like to leave the whole bed until it has broken down, but it is not always necessary. Initially it is better to grow established seedlings in a new nodig garden rather than direct sowing. The best plants to use are potatoes and the shallow rooted plants like lettuces.

Once the garden is mature (typically this takes a full year) it is much easier to establish the deeper-rooted crops like corn, capsicums and tomatoes when the soil has broken down. At this time you can direct sow the beds of desired.

Worms are an essential part of the no-dig garden, and will invade the area naturally and are necessary to aerate the layers. If you have a worm farm, add worm castings that are full of worm eggs to help with infestation. Why dig a garden the conventional way when there are millions of worms willing to do the work for you?

The bed will break down into a nutrient-rich soil, so it will need to be kept topped up with fresh layers of organic matter.

No-dig beds must never be walked upon because it compacts the soil. Raised beds are best, they give a longer growing season because they heat up earlier in the growing season and remain warm longer and are less susceptible to frost.

Also drainage is improved which is good in heavy clay soils. The deep loose soil in raised beds can accommodate vegetable plants at least 2/3 of the normal row spacing. They are more efficient because fertility is concentrated in a small area.



Review

1. What three things work together to create a no-dig garden?
2. What animal should be added to no-dig gardens to improve their performance?
3. When a no-dig garden bed has just been made, what type of plants should you not plant?
4. When can you direct seed a no-dig garden?
5. What should you avoid doing to a no-dig garden and why?

Materials Required

It is not difficult to create a no-dig garden, however before you start you will need to gather some materials.

Edging

Your no-dig garden will look much more attractive with some kind of edging to retain the mix. You can use bricks or any material that will contain the soil when it is built.

Be careful of using materials that are “treated” (such as CCA Pine) as these can leech into your garden bed and produce poisoned produce. Products made from stone, clay or non-PVC based plastics are best. Limestone can make your garden bed acidic, so be aware of this if you decide to use it as your edging (if you just love limestone, you can use plastic sheeting to isolate the soil). I have even seen people use old car tires successfully, although I personally would be concerned about the possible effects of additives to modern car tires leeching into the garden bed.

Newspaper

Newspaper is placed at the very bottom of the bed and acts both as a weed barrier and a moisture store. It will break down quite rapidly as the earthworms move in. Do not use glossy paper (from magazines for example) as this will not work well, let alone the risks of dioxin getting into your produce from the print.

Lucerne Hay or Pea Straw

A bale of hay will do a garden about 2m by 1.5m and cost about \$10 a bale. Lucerne hay can be difficult to get, so you will need to ring around, but is higher in nitrogen. Pea straw is

much easier to get and I have found seems to work just as well. If neither is around, just straw will be fine (not hay, hay contains oat seeds and your lovely garden bed will soon be full of oats if you use this).

Nitrogen Rich Fertiliser

Chicken / rooster manure is a very strong source of nitrogen as a fertiliser. Unfortunately most commercial chicken manure comes from battery hen farms and is laden with residual antibiotics. Ensure you source chicken manure from organic chicken farms or even better have your own chickens and harvest your own. If you add fresh lawn clippings in with the chooks, you will get a lovely mix to add to your no-dig gardens.

Chemically produced fertilisers (that includes non-organic chicken pellets) contain heavy metals and superphosphate. Superphosphate is lethal to worms and does nasty things to soil fauna and flora. Heavy metals are carcinogenic.

Some manufacturers are "trying it on" by peddling their chicken pellets etc with a label that says "contains organic manure". If the product doesn't have a certified organic sticker, it's not 100% organic, and can contain any amounts of heavy metals and superphosphate. Beware.

Soil Mix

No-dig gardens still require soil / compost as the top layer for you to bed your seedlings into. Some suggestions for your soil mix are:

- Make your own soil mix using home-made compost and soil
- "Garden mix" soil from a landscape materials provider. Check to make sure they use organic additives.
- Potting mix (very expensive, plus it can contain nasties in the way of nonorganic fertilisers and wetting agents)

The soil you use here is not super important as your garden bed will break down over time and produce perfect growing conditions for your seedlings / plants. Just ensure that it is not too high in clay and will let water through.



Review

1. What is the role of the newspaper?

2. Can you use any type of straw for the carbon source in your garden bed?

3. What is the best fertiliser to use? What do you need to watch out for?

Creating a No-Dig Garden

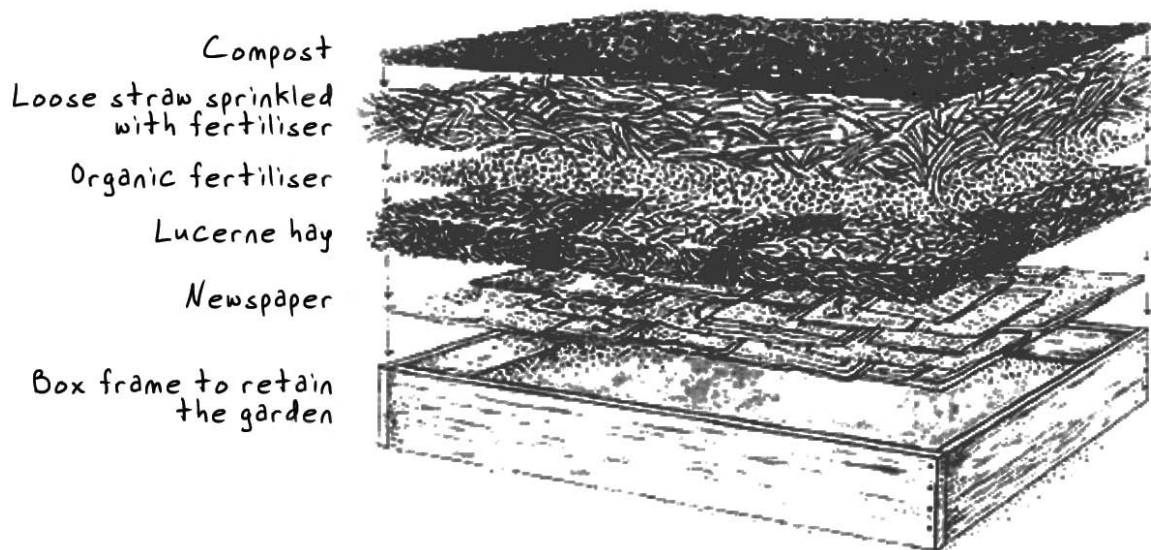
First thing of course, is to choose the site for building a garden. Make sure the site is level and gets at least 5 hours of sun a day.

If it's not level, fill the gaps with whatever organic material is at hand (leaves, twigs, washed seaweed) until it is level. Or if necessary, build a terraced vegetable garden.

If you are planting a vegetable garden over lawn or weeds, you can mow the area to ground level and build the garden on top, or you can leave the vegetation to decay underneath in time, as long as you cut out light.

If you are planting your vegetable garden on a hard surface, put down some cushioning organic material first (as above).

In a nutshell, the process looks like this diagram.



Step 1

Mark out the area and edge it with bricks or any material that will contain the soil when it is built. Size does not matter. An area 1m x 4m is ideal as later you can add rows when needed. Making the bed 1m wide means that it will be easy to get in there and remove any pesky weeds / bugs.

Step 2

Cover the entire area with wads of newspaper a good half centimetre thick to smother any weeds. Overlap the pages so there are no gaps for weeds to grow through. Water the area newspaper well so that it starts breaking down immediately.

Step 3

Cover the area with pads of lucerne hay or pea hay as they come off the bale (you will find that bales of hay will readily break into pads, it is part of the manufacturing process). Water the straw lightly.

Step 4

Next apply a layer of organic fertiliser a centimetre or so thick. Put in a goodly amount, do not skimp.

Step 5

Add a 20-centimetre layer of *loose* straw. Note the emphasis. The straw here needs to be loose so that young seedling and seed roots can get through. It also helps it rot down into the good stuff.

Step 6

Add a light sprinkle of manure and again water lightly.

Step 7

Finally, add some good compost / soil to plant the seeds and seedlings into. If there is enough available, the whole surface area of the garden could be covered with compost to about 10 cm. Alternatively pockets of compost can be created for planting so that it can support a new plant while the new garden is breaking down.

Maintenance and Suggestions

Keep topping up your gardens with more straw, fertiliser and soil / compost as they bed down. Add mulch if you like as this will keep down weeds, retain moisture and promote fast, healthy growth.

Rotate your crops between garden beds to help avoid pests and diseases from becoming established.

If you have a reasonable growing season, get one no-dig garden underway and start the second later.

You can enhance your gardens health and performance by the use of companion planting. Although not covered here, there are numerous excellent reference charts available for purchase. If you are handy with a divination rod, this is also an excellent tool for working out what plants will work best where.