



Raised Bed Gardening

Raised bed gardening is not something new, it has been used for many years. It just means that you grow your plants above the level of the ground. This can be achieved by simply mounding soil up in the garden, or by building an inexpensive wooden frame, and filling it with soil. You can also use concrete blocks, bricks, plastic boards, metal frames, or many other materials to build frames for your raised beds.

For space efficiency and high yields, it's hard to beat a vegetable garden grown in raised beds. Raised beds can improve production as well as save space, time, and money. They are also the perfect way to deal with difficult soil conditions, such as rocks or clay. In addition, they can provide a way to utilize hard-to-use areas such as uneven ground, steep slopes, or paved yards and parking lots.

Raised beds are not only functional, they can also be attractive. Your garden will look beautiful, organized, and it will produce Bountifully.



Framework to cover with Frost Blanket or Bird Netting.



Raised bed gardening is not the same as container gardening.

Container gardening uses pots which have bottoms, to prevent the soil from falling out, and keeps the roots contained within the pot.



Raised beds, however, do not have bottoms; they are open to the ground, which offers the benefit of permitting plant roots to grow further into the ground. The roots are able to utilize more space, have a more consistent supply of water, and they can search for more available nutrients. Raised bed gardens are much easier to water, and to care for, than container gardens.

Raised beds are versatile, easy to use, simple to construct, and have many advantages over traditional gardening. A raised bed garden allows you to control your soil mixture, so that you always have the proper soil conditions for your plants. You can customize the soil mixture in your raised beds, and you can greatly improve soil drainage for your plants.



Many companies have kits available. 'Frame It All Company' and 'Easy Garden Company' are companies that has several very-easy-to-assemble kits available. There are many more companies that also have do-it-yourself grow box kits. Or, if you have time, you can even build your own grow boxes from scratch.

Once finished, You may wonder why you waited so long to make the switch.

Advantages

Many gardeners like raised beds for one reason; 'they eliminate drainage problems'. By raising your garden bed, even four to eight inches above the existing ground level, you can greatly improve drainage.



One of the most obvious benefits to gardening with raised beds, is their adjustable height. Raised beds also have numerous other benefits.



1. Raised beds can be designed so that you don't have to actually step into them for maintenance. Design them, before you build them; they are very difficult to move once you fill them with soil.

2. You can plant wide rows, instead of the traditional single rows. You can produce larger quantities of fruits and vegetables in the same amount of space that you would use in a traditional garden plot. Try using companion planting ideas, to increase your yield even more.

3. Raised bed's soil dries out quicker than conventional gardening soil, so the soil warms up earlier in the spring. The result is that you can plant earlier in the spring, so, you can harvest earlier in the summer. Then you can replant for a fall harvest, and extend the growing season into the winter. Results: A Longer Season Gardening.

4. Garden maintenance is easy with raised beds. You can quickly, and easily remove weeds in your raised beds. If you use black plastic mulch for weed control, you will use significantly less plastic for your raised beds, than in a traditional garden.

5. Insect and disease prevention is more efficient. Insecticides and fungicides are very easy to use, and apply.

6. Crop rotation is easier in raised beds. Rotating crops can help prevent problems with insects or diseases, which can build up in the soil over time, and reduce your yield.

7. Watering is easy and more efficient. You only need to irrigate where plants are growing, and not the walking spaces between your garden rows. Additionally, since you can grow your plants closer together, they shade the soil, which reduces evaporation.



8. You can make better use of your garden area by reducing the amount of walkways. Make isles between raised beds about 2' wide, a little wider if you want to use a wheelbarrow or a garden cart.

9. Raised bed gardens can be used as a solution for areas with poor and rocky soil, or in yards with sloped terrains.

10. You can utilize space that is otherwise not available. For example, a concrete driveway, or a paved parking lot, can be turned into a garden area very quickly, and fairly inexpensively.

What Kind of Soil Mix is Best for Raised Bed Gardening?

If you ask different experts about this topic, you will find that they don't all agree on one mix. However, they all do agree on one point: do not use just plain topsoil, right from the garden.



You are spending a lot of time and money building your raised gardens, so don't scrimp on the soil you put into it. In the long run, good, high quality soil, will save you a lot of time, money, and headaches.

Healthy soil is a critical component of any successful garden. Soil that is loose, rich with nutrients, and has plenty of organic matter, will allow the roots of your plants to grow freely, and ensure that they have access to the water, and nutrients they need, to sustain healthy growth.

You can save a little expense by buying bagged, or bulk ingredients, and mixing them yourself. Otherwise, you can invest in pre-mixed soil, that already has the right ingredients mixed together, in the right proportions.

One of the most popular homemade mixes is:

One third organic matter, such as Bumper Crop, Peatmoss, Soil Pep, Ferti mulch, homemade compost, or manure. A mixture of several different types of these mulches is even better than just using one kind. **Do not use fresh sawdust, fresh manure, or fresh compost.**



One third loose, friable, sandy-loam, topsoil. Clay-loam topsoil can be used if additional organic, and inorganic amendments, are added.

One third inorganic matter, such as coarse Sand, Utelite, Perlite, or Vermiculite. Again, a combination of two or more of these ingredients is preferable to just using one.



'Soil-Less' Planting Mix

Some gardeners prefer a '**Soilless Mix**'. This mix usually consists of 1/2 organic matter and 1/2 inorganic matter: no topsoil.

Some of the most common soilless growing ingredients include peat moss, Fertimulch, Bumper Crop, Soil Pep, per-



lite, vermiculite, Utelite, well-aged compost, coconut coir, and sand.

Generally, these mediums should be mixed together, using several different items, rather than just using one or two, as each product provides its own function. Fertilizers should be added to the mix, to provide the important nutrients, and to help maintain the correct soil health.



Use several different types of organic matter, and several different types of inorganic matter, to get the best mix. Be sure to check the pH of your soil-less mix, to make sure it is not too acidic. Organic matter is often very acidic, so you may need to add garden lime to adjust the pH. If the soil pH is wrong, your plants will not grow as they should.

A good mixture of materials is necessary in order to provide a soil mix with good fertility, good drainage, and good moisture holding abilities, along with a suitable pH.

The 'Square Foot Gardening' method recommends a special soil mix - '**Mel's Mix**'. You can buy it pre-mixed in a bag, or you can mix your own. For more information go to <http://squarefootgardening.org/square-foot-gardening-method#>

Miller's Company has their own special soil mix, conveniently named '**Miller's Mix for Box Gardens**'. 'Miller's Mix' is a 'soilless mixture' which is fortified with many minerals and nutrients that will stimulate exceptional plant growth and development. This mix is available in a 1.5 cubic foot bag, and in a bulk, 1 cubic yard tote.

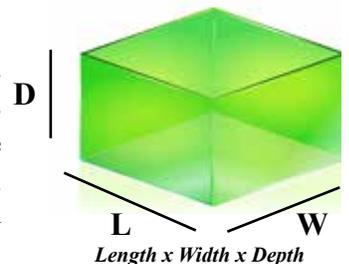


Most bagged potting soil mixtures are also considered 'soil-less'. They are excellent to add to your box garden mixture. However, they are not usually recommended to use exclusively. Potting soil is formulated for use in smaller containers; they drain too well, and they are sometimes a little more expensive than the box garden mixes.



How Much Soil?

Filling a raised bed requires a surprisingly large volume of material. To determine how much soil mix you need, you need to do some basic math '**Length x Width x Depth**'.



For example, a 4 foot by 8 foot bed, one foot deep, has a volume of 32 cubic feet. That is a truckload of soil, not just a few bags.

Please read our '**Bark, Mulch and Soil Coverage Chart**' for specific instructions about determining how much soil, and amendments, you need to purchase.

Bagged Or Bulk?

Most gardeners find they need to buy a lot of additional soil, or compost, or both, when they build a raised planting bed, or a planter box. It



takes a lot of soil mix just to fill a small grow box.

Both soil and compost are sold in bags, by the tractor scoop, and by the truckload.

One cubic yard is 3' by 3' by 3'; or 27 cubic feet. It takes 27 one cubic foot bags, or 13.5 two cubic foot bags, to equal one cubic yard

Accessibility, and cost, may determine whether you use bagged materials, or whether you purchase the materials in bulk.



Quality of Soil and Mulch

Buying top soil, and compost, to fill the raised bed, can have mixed results. Top soil is not regulated, so all kinds of soil can be sold as top soil. You can use any type of soil, because you can add all the necessary amendments, to correct any problems.



The best type of topsoil is a 'sandy-clay-loam soil'. A soil that has sand, silt and clay will be easy to work with. It will hold moisture in adequate amounts, but will also allow good drainage. Unfortunately, this type of soil is hard to find, so make sure you look at the soil, feel the soil, and check the soil, for any unwanted ingredients, or noxious weeds; before you buy it, and use it.

Not all mulches and compost are the same. Composts originate from a variety of sources including yard trimmings, garden remnants, table scraps, and animal manures (animal manure varies greatly, depending on the type of animal). Because the raw materials that go into compost varies, the quality of the resulting compost can be very different. Always look for well-aged manure, or a good compost.



Fresh manure, or new compost, are not very desirable for raised bed gardening. They can cause many unwanted problems, and you may have not-so-good results. However, as a top dressing, fresh mulch, or compost can be beneficial. It will help to prevent weeds, help cool the soil, reduce moisture loss, and it will be perfect to mix back into the soil in the fall.

1. Fresh organic products often rob nitrogen from the soil, causing a nutrient deficiency.
2. Fresh products can create excess heat, which can burn the plant's roots.
3. Fresh products may contain unwanted chemicals, such as salt.
4. Fresh compost may contain harmful pathogens, or insects.
5. Fresh manure may have a wide variety of viable weed seeds, depending where the animals were fed.

Read our '*Garden Soil - Basic Information*', '*Soil Texture Test*' and '*Healthy Garden Soil*' handouts for more information about what to look for in a good topsoil.

Recharge an Existing Raisedbed

1. Pull any weeds that may have overwintered.

2. Use a hoe to loosen and fluff the soil, because winter snow and rain can compact it. Remove any roots that may not have been removed the previous fall.



'Frame It All' Boxes

3. If the soil has settled, top it off with an inch or two of fresh, well-aged compost, and mix it all the way to the bottom of the existing soil. Compost naturally decomposes, and provides food to both the plants, and to the soil micro-organisms. It is helpful to replenish the compost regularly.

4. If you got the right mix to start with, you do not need to add inorganic materials every year. They do not decompose, so they remain in the soil for many years. You may want to add a little Utelite, Perlite, or Vermiculite every three or four years, to help loosen and lighten the compost.

5. Replenish the nutrients, and re-energize the soil. Not only do your plants need the major fertilizer ingredients (Nitrogen, Phosphorus, Potassium), they also need some of the minor ingredients (Iron, Magnesium, Sulfur, Boron and many more).

Most fertilizer blends contain the major ingredients, but do not contain the minor ones. **Millers A to Z Mix** furnishes the minor fertilizer nutrients, that benefit the plants immensely. Recharge the soil each spring by adding 1lb of the A to Z mix per 10 square feet. It does not take the place of Nitrogen, it is supplying the nutrients most bags of fertilizers do not have.

6. In addition to nutrients, plants benefit greatly from many soil micro-organisms. Organic fertilizers, such as **Dr. Earth All Purpose fertilizer**, provides many micro-organisms. It also helps feed the soil microbes that are already in the soil.



You can stimulate micro organisms, already in your soil, by adding Humate (humic acid), to the soil, once or twice a year. Humate is not a fertilizer, it is an organic product that will make it look like you just fertilized your garden, but you are actually re-invigorating the soil.

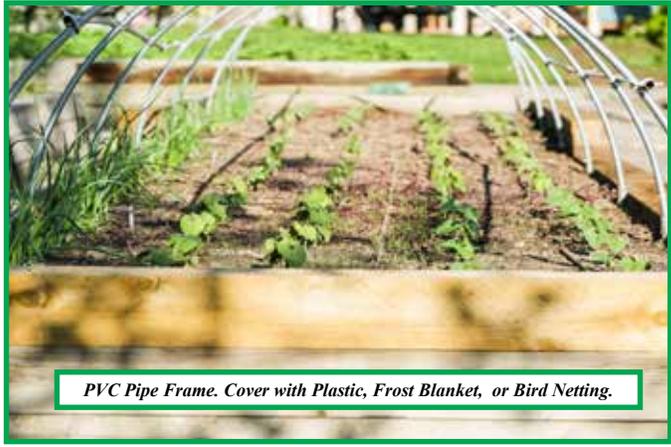
Please read our **Healthy Garden Soil** and our **Dr. Earth Fertilizer** handouts for more information about feeding your soil, not just your plants.

More Resources

- <http://extension.missouri.edu/publications/DisplayPub.aspx?P=G6985>
- <http://www.hort.purdue.edu/ext/ho-200.pdf>
- <http://www.composting101.com/troubleshooting.html>
- http://extension.usu.edu/files/publications/factsheet/HG_Compost_02.pdf
- <http://www.aces.edu/pubs/docs/A/ANR-1345/ANR-1345.pdf>
- <http://squarefootgardening.org/square-foot-gardening-method>



'Easy Garden' Box Gardens



PVC Pipe Frame. Cover with Plastic, Frost Blanket, or Bird Netting.

