Raised Bed and Container Gardening

by Earl Hockin

There are many advantages to gardening in raised beds. You can build them in locations where the soil conditions are not favorable for gardening. By terracing them, you can garden on hillsides. You can grow more in the space than you can in traditional gardening by "square foot" gardening. Use material like polyester row cover to protect plants from insects and frost to garden about two weeks before the last frost in spring and two weeks beyond the first frost in autumn. Raised beds can be built using corrugated tin, brick, plastic, stone, concrete blocks, galvanized stock tanks, composite materials, cedar or other rot-resistant woods, and pressure treated wood made after 2003 when arsenic was replaced with copper salts to treat the wood. Old railroad ties can also release toxic chemicals and therefore should be avoided.

If concerned about copper salts in treated wood, you can line the insides of the boards with heavy duty plastic. Do not put plastic on the bottom of the bed as it would prevent drainage. Information about chemicals leaching from treated wood can be found at: https://extension.oregonstate.edu/ask-expert/featured/raised-bed-lumber-pressure-treated-safe.

Vegetables with deep roots, such as tomatoes, okra, sweet potatoes, or root crops like carrots and beets, require a raised bed at least 12" tall and ideally 16" tall. Shallow rooted vegetables like lettuce, broccoli, and spinach need only a 6" high raised bed.

You can build the bed directly on top of low-quality soil or even on top of grass using layers of materials. The first/bottom layer is two thicknesses of cardboard or several layers of newspaper. Then, cover with straw, twigs, leaves, grass clippings or other organic material. Over this, place the growing medium. A great option is a mix of 2 parts topsoil with 1 part compost. If using soil from your garden, be sure it is weed free and mix it with 4 to 6 inches of compost. Two good soilless mixes you can make are equal volumes (not weight) of peat moss or coir, compost, and vermiculite, or equal volumes of garden soil, peat moss or compost, and vermiculite or perlite. Plant material such as chopped leaves or manures can be used. However, be cautious about using composted manures as animals may have been fed hay that was treated with herbicides. Several of these herbicides can remain at least 3 years in the manures. Composted chicken and rabbit manure are safe, though chicken manure should be fully composted. For more about manures, see: https://extension.psu.edu/wise-use-of-manure-in-home-vegetable-gardens and https://extension.unr.edu/publication.aspx?PubID=3028.

One advantage to having several raised beds is being able to rotate the crops each year. Each family of plants use differing amounts and kinds of nutrients. If you grow the same vegetables in the same locations each year, they will deplete some of the micronutrients and leave various fungal and bacterial disease organisms in the soil. One suggestion is to do a 4-year rotation. The four families of plants are: tomato family which includes eggplant, peppers, carrots and beets; cabbage family including broccoli, cauliflower, radish turnip; bean family which includes peas, and all varieties of beans; and lastly onion family which includes garlic, leaks, corn and squashes.

Container gardening is another great option if you want to grow more vegetables in your current garden or if you lack a garden. Virtually all vegetables, berries and many fruits can be grown in containers. In fact, container growing has become so popular that many seed companies sell varieties that are particularly suitable for container growing, including dwarf varieties. Containers can be plastic, metal, pottery, or fabric. It is essential that the containers have drainage. One advantage to the fabric containers is that they drain well, and air can get in from the sides so the roots will be air pruned and not grow into a twisted mess within.

Your containers should be a minimum of 8 inches deep for beans, beets, cucumbers, eggplants, peppers, rosemary, and summer squash, 6 inches deep for lettuce, cabbage, cilantro, garlic, onions, and oregano, and a

minimum of 12 inches deep for tomatoes, okra, winter squash, and sweet potatoes. The number of plants you can put in the pot depends on the surface area of the container. Read the label on the seed package to see how far apart you should grow the plant to determine how many can fit in your container.

When planning to grow tomatoes one very good resource to learn about varieties, soil management, pest and disease management is from University of Tennessee horticulture extension is at https://extension.tennessee.edu/publications/Documents/W346-H.pdf.

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