



Raised-Bed Gardening

Advantages of raised-bed gardening

Better drainage

Growing plants in raised beds is a logical choice for gardeners with heavy, poorly drained soils. Raised beds permit plant roots to develop in soil held above water-logged or compacted zones. This soil environment is much better for root growth. As beds are built up, compost or other forms of organic matter may be incorporated, further improving soil structure, drainage and nutrient-holding capacity.

Higher yields

Better root growth from improved soils leads to higher yields for food crops and lusher growth of ornamental plantings. Also, intensive planting in raised beds means more plants can be grown in a smaller area than with conventional row-cropping techniques. No space is wasted between rows.

Expanded growing season

Better drainage speeds soil warming and allows earlier spring planting. In wet seasons, soil dries faster, so planting can proceed between rains.

Easy maintenance

Because plants grow above the level of walkways, less stooping is required for weeding, watering and other chores. Intensively planted raised beds provide dense foliage cover, shading out much weed growth.

Using difficult sites

Raised beds make gardening possible on sites where growing plants would otherwise be impossible. Rooftop gardens and raised beds on top of solid rock are examples. Terraced raised beds turn hillsides into productive growing areas while reducing soil erosion potential.

Raised-bed design

Raised beds take many forms, depending on the gardener's goals. Taming a hillside with terraces may require different bed dimensions than those used for flat-land vegetable gardens. On hillsides, follow the contour of the land and adjust the depth of beds according to the slope of the hill.

Typically, raised beds are laid out in a rectangular pattern. Level the area first to make a flat base for starting the building project.

Four feet is a convenient width for beds. At this width, the center of the bed is easily accessible from either side. Lumber is readily available in 4-foot-length multiples, minimizing the amount of sawing needed and waste produced in building the bed. If the bed is accessible from only one side, limit the width to 3 feet. Most gardeners find it uncomfortable to reach farther than 3 feet to tend a bed.

The length of a raised bed is not critical. It is only limited by the dimensions of the yard. However, break up long distances into shorter beds. To prevent soil compaction, foot traffic and garden equipment such as wheelbarrows should not be permitted to go through the raised beds. So for example, instead of building one long bed, break a 50-foot length into two 24-foot-long beds with a 2-foot walkway between to save steps when tending the garden.

The depth of a raised bed is a matter of personal preference. Most plants need at least a 6- to 12-inch rooting zone, but deeper would be better. With deep tillage, some of the rooting depth may come from soil at or below the existing grade.

Stakes to hold raised-bed walls in place should be twice the height of the raised bed. Bury half the stake in firm ground. Leave half of the stake projecting above the ground as a support.

Hold landscape timbers and railroad ties in place with construction rebar, which is a steel reinforcing bar. Drill holes all the way through each layer every 4 feet, staying 6 to 8 inches in from the ends of timbers. Drive a length of

construction rebar through the holes and into the ground below. Tie individual layers together by driving spikes from one layer into the next.

Use decay-resistant wooden stakes to hold dimensional lumber such as 2-by-8s in place. If placed on the inside of the board, the stakes will not be visible once the bed is filled with soil.

For a unique-looking raised bed, cut landscape timbers or posts to uniform 1- to 3-foot lengths. Set the posts vertically in the ground, half buried and half above ground.

For raised beds less than 2 feet tall, stones or cement blocks may be stacked on top of one another without mortar or footings (Figure 6). Carefully place irregularly shaped stones to enhance the stability of the wall. Offset seams and gaps from one layer to the next to help tie the wall together. You may use mortar for greater strength.

Make pathways between raised beds wide enough for easy access to beds. For foot traffic only, 1-foot-wide paths are adequate. Keep in mind, however, that plants at the border of raised beds will hang over the edge, cutting into the available walking space. To allow room for a wheelbarrow or garden cart, plan on 2- to 3-foot-wide paths. A space-conserving option is to make most paths narrow, with an occasional wider path for access with garden equipment.

Several additional design features increase the convenience of raised beds. Seating can be made on the edges of wooden raised beds by capping the walls with a 2-by-6- or 2-by-8-inch board. If you regularly use a rototiller for tilling the beds, ramps into the raised beds save heavy lifting. Hollow pipes attached to the inside wall and spaced regularly along raised beds double as support posts for spring and fall season-extending cold frames or summer trellises for vine crops.

Soil mix

Good-quality existing topsoil may be used in raised beds. However, the addition of organic matter to any soil will improve its physical and chemical makeup, thus making it more productive. Peat moss, compost and decomposed manures are good sources of organic matter.

To take full advantage of the deep rooting potential with raised beds, work up the base soil by rototilling or hand-digging before bringing in additional soil.

Avoid hauling in new layers of soil without mixing them into existing soil. Distinct layers of soil create barriers through which water will not readily penetrate and roots will not easily grow.

Maintenance of raised beds

Soil in raised beds warms faster and dries out more quickly than soil at ground level. In spring and fall, these traits are desirable. They are less desirable during the heat of summer.

Use of organic mulches, such as straw or hay, in vegetable gardens, or wood chips placed on landscape fabric weed barriers around ornamental plantings helps combat both problems. Soil temperatures are lower under organic mulches, less water is lost through evaporation, and weed growth is suppressed. Use irrigation to supplement natural rainfall during dry periods. Soaker hoses or drip irrigation may be placed directly on the bed. Overhead sprinklers can also be used, but because they wet foliage they are more likely to spread diseases.

At the end of the growing season, plant residue in a vegetable garden can be tilled into the soil, adding organic matter. Additional compost may be added before the next planting. Over time, the soil may become improved enough so little additional tillage will be necessary.

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