

# Raised Bed Gardening

From Cornell Cooperative Extension, Chemung County

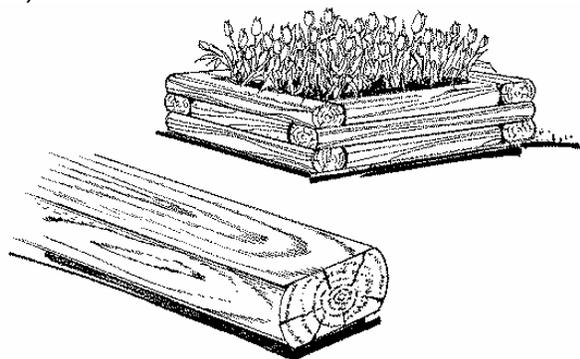
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Raised beds aren't new. They have been used in various forms for many years. Their real value is utilitarian, especially for gardeners with poorly drained soil. But their advantages make them a good choice in many gardening situations.

Anyone who has investigated drainage procedures quickly finds that the amount of effort, time, and expense is substantial. Even you are willing to undertake the task, the most effective drainage path is not always feasible or convenient. Raised beds are often a lower-cost option to provide plants with well-drained soil.

To test a site's drainage, dig a hole 18 inches deep and fill it with water. An hour later there should be little or no water remaining in the test hole. If the water doesn't drain, you have three options: lay drain tile, ameliorate the soil through a process called double-digging, or build raised beds.

Installing drain tile is expensive, time consuming, and not always possible in towns and suburbs. Double-digging is also time-consuming, and digging into heavy soils often results in the "bath tub effect," where water collects in the bed area in even greater amounts than before the digging operation. This can be useful for plants with high moisture requirements (marsh or bog dwellers, for example). But loss of air in the root-zone



caused by excess water harmful to most common garden plants. Building beds that raise the level of soil above the surrounding

## Advantages of Raised Beds

- Improved soil drainage
- Less soil compaction
- Easier weed control
- Warmer soil temperature in spring
- Ease of access
- Reduced soil erosion
- Beauty

ground helps solve drainage problems.

Gardeners constructing their first raised bed may question any labor-saving claims for this type of gardening. A small, 3-foot by 6-foot raised bed requires a surprising amount of work.

The first step is to decide where the bed will be located. Mark the outer dimensions of the bed with stakes and twine. If you are constructing more than one raised bed, paths between the beds should be large enough to move a wheelbarrow through. Cover bed sites with black plastic or a thick layer of organic mulch for at least a month to smother existing vegetation. If you are in a hurry, you can remove sod by hand or kill it with a herbicide. After killing or removing the vegetation, till or spade soil to a depth of 6 inches.

Raised beds work best when framed. Raised beds without frames tend to require more watering and may erode during periods of heavy rainfall. Framing may be built of stone, brick, rot resistant wood, such as redwood. Do not use wood containing

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creosote or compounds containing pentachlorophenol, which are toxic to plants or humans. 2"x6" or 2"x8" lumber works well, nailed and staked at the corners. Landscape timbers are another good choice.

Frames should be at least 6" high and no wider than 4 feet so you can reach the center of the bed from either side. Beds constructed 2 to 3 feet tall can be worked without bending over or while sitting. If the bed is longer than 6 feet, the sides should be staked or fastened together with cable every 4 to 6 feet. Use galvanized nails to prevent rusting.

Once constructed, the frame needs to be filled with soil. Avoid using ordinary garden or topsoil alone as these tend to crust over, settle, and shrink away from the frames. Heavy rainfall may also cause them to compact.

Instead, mix 1 part organic matter (peat moss, compost, etc.) to 1 part sand or perlite to 2 parts soil. Perlite and sand facilitate excess water drainage while organic matter helps keep an even moisture level. Maintaining high levels of organic matter is particularly important in raised beds because they tend to dry out quickly.

As with normal garden soil, raised beds require regular fertilizer and lime application. Conduct a soil test to determine soil needs. Overhead irrigation does not work well on raised beds due to their limited size. For small beds, hand watering works well. Drip irrigation systems work well in larger beds. Mulching raised beds with organic or other mulches helps reduce water loss from the soil.

Give some thought to the paths between beds. A few inches of wood chips can make a luxurious path. However, in a surprisingly short time these paths break down into a wonderful growing media for weeds. While weeds are easily pulled from the loose soil of raised beds, this is usually not the case in compacted pathways. Laying a durable covering on the pathways, such as landscape fabric or even old carpeting, helps control weed growth.

Any plant that is normally planted in the ground can be planted in a raised bed. In addition, raised beds can be used to contain plants that spread aggressively by underground stolons, such as mints. The adaptability of raised beds in terms of size, soil, and location makes them useful for growing a wide array of plants of various cultural needs. It is not advisable to build raised beds around existing trees and shrubs.

If you are willing to invest the time initially required to construct raised beds, the result will be increased control over several important factors essential to good plant growth. These factors include: better drainage, and moisture retention, a loose, open soil which enhances root development, and an area in which to experiment with intensive planting techniques or plants with special requirements. The geometry of grouped raised beds can produce a pleasing, semi-formal effect in the home landscape.

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## References

- Anonymous. Raised Beds. Cornell Cooperative Extension of Chemung County fact sheet.
- Clark, Larry. Raised-Bed Gardening. Cornell Cooperative Extension of Columbia County fact sheet. 1993.
- McAuliffe, T. ed. Growing Crops in Raised Beds. Cornell Cooperative Extension of Albany County fact sheet. 1994.
- Pemberton, Frank R. ed. Raised Bed Gardening. Cornell Cooperative Extension of Washington County fact sheet.