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Raised Bed Gardening

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Gardening in raised beds, a common practice before colonial times, is enjoying a resurgence of popularity among home vegetable growers. In parts of the world with greater population densities or less tillable land, gardening in beds is still the norm.

What are "raised beds"?

The "raised" part means that the soil level in the bed is higher than the surrounding soil, and "bed" implies a size small enough to work without actually stepping onto the bed. A bed should be no wider than 4 feet, but length can be whatever suits the site or gardener's needs. Wider beds can be subdivided into sections accessible from planks or stepping stones. The bed does not have to be enclosed or framed, but if unframed, the use of power tillers is feasible. Framing offers several other opportunities, however; and a properly maintained bed will not need powercultivation.

Higher Yields

There are many reasons for the raised bed revival, but probably the most important is more production per square foot of garden. In a traditional home garden, good management may yield about .6 pounds of vegetables per square foot. Records of production over three years in a raised bed at Dawes Arboretum near Newark, Ohio, indicate an average of 1.24 pounds per square foot, more than double the conventional yield. Raised beds do not require the usual space between rows because no walking is done in the bed to cultivate or harvest. Hence, vegetables are planted in beds at higher densities - ideally spaced just far enough apart to avoid crowding but close enough to shade weeds.

Improved Soil Conditions

Another reason for greater production in a given space is the improvement of soil conditions. Soil compaction can reduce crop yields up to 50 percent. Water, air and roots all have difficulty moving through soil compressed by tractors, tillers or human feet. Plows, tillers or spades have been the usual answer to this problem, but gardeners can avoid the problem completely by creating beds narrow enough to work from the sides. Soil organic matter content can be increased greatly without getting bogged down.

Raised beds also help in situations where compaction is not the only culprit. Homeowners may have low spots unsuited for conventional gardens because of ponding or excessive erosion from runoff. Raised beds rise above these, with frames as a foundation. Gravity becomes an ally, not only in avoiding soggy soils but in reducing a problem common to western Ohio - alkaline soils. Saturated soils get a dose of lime every spring via percolation. In a raised bed, gravity reduces percolation to a trickle from capillary action. Soil acidity can be maintained in the 5.8 to 6.8 pH range that vegetables prefer.

Ease of Working

The gardener shares some benefits from raised beds as well. The first, and most important, is the increased ease of timely planting and harvesting. Most people avoid working traditional gardens in rainy weather to avoid compaction and muddy feet. Because raised beds are designed for walking around, not in, there is no reason for mud to delay operation. Spaces between beds may be left in sod, mulched or even paved with stone or brick.

Ease of Pest Control

Pest control becomes less difficult in raised beds. If burrowing rodents are abundant, the bottom of the bed can be lined with poultry wire or hardware cloth. Rabbits and groundhogs can be discouraged by placing their favorite foods in a framed bed with a low fence. The narrow dimensions of beds even make bird netting suspended on flexible conduit frames practical. Weed control with plastic mulch can be achieved economically, as the width of the bed can be spanned by one roll.

Water Conservation

The narrow dimensions of beds are advantageous for water conservation. There are several watering systems that ensure the water gets only where it is needed. Canvas soaker hoses, perforated plastic sprinkle hoses and drip-type irrigation disperse water in a long, narrow pattern well-suited to beds. They also reduce disease by directing water to the soil instead of wetting leaf surfaces as with overhead irrigation.

For those who are producing for more than just family or friends, raised beds may not be the answer. Certain vegetables, such as squash, melons and sweet corn might do as well on ground level due to the extensive space they shade.

Construction Tips

There are only a few guidelines to remember in raised bed construction: Keep the beds narrow and match their length to the site and the watering system. A north-south orientation is best for low-growing crops, allowing direct sunlight to both sides of the bed. Beds that will contain taller crops such as pole beans, trellised peas or caged tomatoes might do better on an east-west axis. Thus, lower-growing crops could be planted on the south side of the bed and still get full sun.

Avoid the use of creosote or pentachlorophenol-treated lumber for bed frames. These chemicals can leach out and injure plants. Use pressure-treated lumber, redwood, cement block or brick, and be aware that the cement in block will raise soil pH over time.

Even if the soil is heavy clay, at least one-third of the volume of the bed's root zone should consist of existing soil. There are a lot of good minerals in clay and by loosening it up with one-third compost or peat and one-third coarse sand, it will make a good growing medium. Add a little garden fertilizer and test the soil after the first crop year.

Raised bed possibilities are endless. Beds elevated 2 feet or more offer the promise of gardening without bending and can have benches built on the sides for even more convenience. Because a bed warms up quicker than the ground, it can easily double as a cold frame by covering it with a lightweight clear plastic cover. Imagine being able to start plants early in beds with covers and never having to transplant them! Supports for poles, cages and trellises can be mounted to the frame for longer life and ease of installation and removal.

Many of the same principles used in raised beds are being adopted on a larger scale in field crops. Ridge tillage, solid seeding and controlled traffic are all new techniques designed to deal with drainage, weed or compaction problems and to increase productivity. Traditional gardens with orderly rows on wide intervals have mimicked their larger farm counterparts for years. Maybe it is time for them to change their role model to the new farm, or the ancient garden.

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