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Environment, Gardening & Land Use

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Raised Bed Gardening

Submitted by: John Farfaglia

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 power-cultivation.

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 as 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.

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.

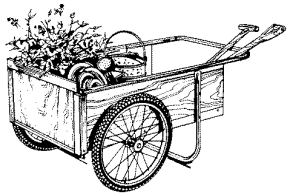
Construction Tips

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 redwood, cedar, 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 lease 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.



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Source: Pete Lane, Ohio State University Extension Fact Sheet, Horticulture and Crop Science, HYG-1641-92

Retail Farm Market Web Site to be available in May

Submitted by: Paul E. Lehman

Although slow in coming, a new website listing farm markets and agri-tourism locations is expected to be available by **May 16th**. Found at **niagarafarmmarkets.org** this quality site will be hosted and revised by Cornell Cooperative Extension, Niagara County. Some 80 local growers and marketers will be listed on the site along with a map and links to other agriculturally useful sites. Recipes of the month and a link to the American Farmland Trust gourmet cooking may be found.

Funded by a New York State Department of Agriculture and Markets Farmland Viability Grant the grant funded outreach projects including 40,000 farm market and agritourism maps plus television promotion scheduled for this summer, the website will be kept current as new businesses ask to be listed.

Get to know the Face, the Place and the Taste of Niagara County agriculture by asking for a map or checking us out once the web-site is up. Buying locally produced products benefits our county's economy again and again. Questions? Get in touch with Paul Lehman at 433-8839 x 241.

Pesticide Use – A Good Tool but Don't Abuse It!

Submitted by: Paul E. Lehman

As the growing season arrives give some thought to how you use pesticides. In mid-April my neighbor announced to me that spring was coming so he needed to get his insecticides on his lawn. When asked what for, he was rather vague. It seems he uses some of these materials more out of habit than need. But, my neighbor doesn't use much material so why make a big deal of this?

- **In 1997, 16.7 million pounds and 2.4 million gallons of pesticides were applied by commercial applicators or sold to farmers for use on their crops in New York State.**
- **Downstate urban and suburban counties report more pesticide use than rural and other upstate counties.** The date reveals a striking pattern that shows substantially more pesticide use in downstate urban and suburban areas than in rural and other upstate counties. New York (Manhattan), Kings (Brooklyn), Nassau, Suffolk, and Westchester counties dominate the overall county rankings. The use of such large amounts of toxic pesticides in the densely populated and geographically small downstate areas can pose significant public health risks. This kind of intimate exposure has the potential to affect people, particularly vulnerable populations such as infants, children, and elderly, on a round-the-clock basis.
- **Statewide, agricultural use is lower than non-agricultural use.** Many people believe that pesticides are only a hazard in farming communities. But the data clearly shows that this assumption is not true in New York State. Non-agricultural pesticide use is greater than agricultural use statewide, although in certain areas of the State, such as the western and Hudson River Valley farming areas, agricultural pesticide use is dominant. Because agricultural use entails certain unique risks, including residues on food and water contamination, reducing agricultural pesticide use must be a State priority. But it is clear from the patterns revealed by these data that non-agricultural exposures – in homes, offices, schools, parks, and roadsides – must command new attention.
- **New York State relies heavily on toxic pesticides, even though non-toxic alternatives and least-toxic strategies are readily available for most pest problems.** Over a third of the total pesticide products used statewide contain active ingredients classified as known, probable, likely, or possible carcinogens by the United States Environmental Protection Agency, and nearly 40% of the

pesticides used belong to one of the two main neurotoxic insecticide families.

- **Water monitoring studies show pesticide contamination is a major problem in New York State, particularly for vulnerable areas, such as Long Island.** Water contamination by pesticides parallels pesticide use patterns, and water monitoring studies across the State and particularly on Long Island show widespread contamination, sometimes rendering well water unfit to drink.

Whether you are a backyard gardener or a farmer, you can ask your self when the pesticide option is nice (or just convenient) and when is necessary. I used to dismiss organic farming as unrealistic. In recent years I have heard from two large cash crop growers who not only found organic approaches to work, they have certified to sell organically in a growing market for premium product. I am not suggesting that for everyone, but I think there are many combination of practices that can reduce pesticide use both at home and in the field.

Rosemary

Submitted by: John Farfaglia

Rosemary is a magnificent plan with a long history; in fact, it is one of the oldest recorded herbs in history. References to rosemary were found written in cuneiform on stone tablets dating from the 5th millennium B.C. Dioscorides, the 1st century Greek physician, recommended it for its "warming faculty"; ancient Greek students wore garlands of rosemary to improve their memory. The Latin name "Rosmarinus, "means "dew of the sea"; it was so called because it grew around the Mediterranean and became associated in ancient Rome with Venus, the goddess of love who was supported to have sprung from the sea foam. Because of that legend, it became the symbol of fidelity in love and was used at weddings and funerals.

Christians called rosemary the "Holy Herb" and associated it with Mary, who, according to Spanish legend, draped her cloak over a rosemary bush on the Holy Family's flight to Egypt, turning the color of the blossoms from white to blue. Rosemary – along with juniper and thyme – was burned in medieval hospitals as an antiseptic. It was widely grown in kitchen gardens in England at that time; an old folk saying was that "Where rosemary flourishes, the woman rules." Down through the ages, it acquired a reputation of aiding memory. In Shakespeare's Hamlet, Ophelia says, "There's rosemary, that's for remembrance…"

Rosemary was brought to America by the early colonists and was highly prized in the first settlements because the plants had to be carefully stored inside during the cold New England winters.

Today, we think of rosemary primarily as a kitchen herb. It is outstanding with lamb or chicken, great with baked potato spears, and makes a refreshing summer drink. Rosemary has other uses as well – as a Christmas decoration, potpourri or moth repellent ingredient, or in aromatherapy (its scent is thought to be stimulating).

There are many varieties of rosemary from which to choose, but let's first look at two basic types. *Rosmarinis officinalis* commonly refers to the upright varieties of rosemary. These usually grow 18-24 inches high. While they may get bushy, their main direction of growth is vertical. *R. officinalis prostrates* refers to prostrate or creeping rosemary which, as its name suggests, tends to grow close to the ground. It is a useful plant for rock gardens and hanging baskets. Both varieties are great for cooking.

Most rosemary is hardy to 15-20 degrees. In regions of the country where temperatures permit, rosemary makes a superb landscape plant. A few varieties – Arp, Hill's hardy, and Fourneaux hardy – are hardy to minus 10 degrees. They benefit from being planted in a protected location next to a wall or fence, or from

being wrapped or mulched for the winter. originated in southern Europe where it survives well in well-drained sandy and rocky soils. If your soil is heavy clay, mix in a shovel full or two of sand before you plant your rosemary to improve drainage. In March, these plants should be trimmed back by about one third and shaped. Give them a little balanced fertilizer and watch them grow!

Good drainage is also important. Rosemary Less hardy varieties can be over wintered indoors. However, it can sometimes be difficult. Bring those plants inside and thin them out to let light into the center and to allow good air circulation. (Most plants indoors benefit from moving air. If you can, place a small fan near them.) Rosemary wants all the light it can get, so be sure to put it in a south window. Do not over water! Put these Rosemary's back outside in early spring.

Source: Madeline Wajda, Willow Ponds Farm