SOUTH CAROLINA FAMILY AND COMMUNITY LEADERS
Affiliated with National Volunteer Outreach Network, Country Women's Council, U.S.A., Associated Country Women of the World and in partnership with Clemson University Cooperative Extension Service
SCFCL website: http://www.scfcl.com

Leader Training Guide

The Basics of Raised Bed Gardening

Objectives:

The participants will be able to:

1. Properly design and construct a raised bed garden.
2. Choose what vegetables to grow and how much to plant of each crop.
3. Discuss the importance of soil testing, crop rotation, mulching, and planting cover crops.

Lesson Overview/Introduction:

Raised bed construction offers many advantages over traditional in-ground vegetable gardens. They can be constructed in areas where gardening space is limited, can produce high quality vegetables, and are a good choice for individuals with physical limitations.

Lesson:

Construction of Raised Beds

The first step is to determine the location of the raised vegetable garden bed. Vegetables require full sun, preferably 6 to 8 hours per day. Good drainage is another important consideration. The raised bed should be located in an area that is protected from the wind and is close to a convenient water source.

Raised beds may be constructed from a wide variety of suitable materials, including concrete blocks, landscape timbers, or similar rot-resistant material. If constructing a bed using wood, choose an insect-and decay-resistant wood, such as cypress, redwood, or cedar. The American Wood Protection Association (AWPA) recommends treated lumber that is labeled UC4A or higher for horticultural uses. Creosote soaked railroad ties, rubber tires, or old wooden boards treated with chromated copper arsenate should never be used due to

the possible leaching of toxic material into the soil. Wood treated with chromated copper arsenate was banned by the Environmental Protection Agency in 2003 due to the risk of arsenic poisoning; therefore, do not use wood products that were processed prior to 2003.

The bed width should be 3 to 4 feet wide, so that it can be easily worked from either side without having to step into the bed. The length of the bed can vary, depending on the site location and bed size desired. If more than one bed is constructed, design paths between beds that are 2 to 4 feet wide, or as wide as necessary, to allow space for wheelbarrows or garden carts to maneuver the paths. Mulch the walkways to minimize the need for mowing and trimming weeds around raised beds.

Construct or purchase raised beds that are at least 12 to 18 inches deep. It is not necessary to make the beds deeper, as most vegetable roots only grow within the 12 to 18 inch soil depth. Building deeper beds initially costs more, as additional building materials are required and more soil is needed to fill the beds. The raised garden requires less irrigation, and the vegetable plants are generally more productive with less water stress than in a conventional in-ground garden.

Soil Mixtures

When filling the raised bed, a mixture of good topsoil and compost provides a foundation for proper plant health. The amount of compost added should be in the range of 10 to 20% of the total volume (length x width x height) of soil mixture added to the bed. Too little organic matter, as well as too much composted organic material can cause future problems. Raised beds are essentially large containers; therefore, a soilless growing media may be used. The soilless mixes may be purchased in bags or in bulk. Common blends found on the market contain ground pine bark, sand or vermiculite, limestone, slow release fertilizer, and compost. Weeds, diseases, fertility, and drainage issues are drastically reduced using soil-free media. Avoid using peat-based potting soil that can dry out easily, and do not use low cost compost or bagged top soil. Plants may thrive for one or two seasons in straight compost, but nutrients are lost quickly and will not provide long-term support for a healthy garden**.**

Soil Testing

Before planting, it is recommended to have the soil tested. The soil test determines the amount of essential nutrients that are in the soil sample and indicates what nutrients are needed for best plant growth. In addition to nutrient content in the soil, the report determines the soil pH (how acidic or basic the soil is). Recommendations are given for the amount and type of fertilizer and/or lime that need to be added to the soil for optimum plant growth.

Plant Selection

Plant vegetables and herbs in blocks instead of rows, while alternating crops that mature at different times. Planting the same crop at successive intervals during the growing season creates multiple harvests that are spaced over a longer period. Fertilize and water as needed. Raised beds may dry out more quickly than in ground beds and may require more irrigation during dry periods. Crop rotation is also important; therefore, it is helpful to keep a diagram of what was planted in each area the previous year. For example, tomatoes should be on a three year rotation to aid in diseases prevention. Additionally, do not plant tomatoes in the same area where peppers, eggplants, or potatoes were previously planted as all of these crops are in the same family and may get the same diseases.

Mulching and Cover Crops

Cover the raised bed soils with 2 inches of pine straw, leaves, compost, or with cover crop when vegetables are not planted. Turn under the cover crop at the appropriate time for a spring or fall garden. Cover cropping helps supply the garden space with nutrients and organic matter for soil conditioning. It further helps in retaining soil moisture and suppressing weeds until the garden is replanted.

Suggested Materials:

HGIC 1257 *Raised Beds*
https://hgic.clemson.edu/factsheet/raised-beds/

HGIC January 2019 Hot Topic
https://hgic.clemson.edu/hot-topic/starting-a-school-garden-raised-bed-basics/

HGIC 1732 *Treated Wood in the Landscape*
https://hgic.clemson.edu/factsheet/treated-wood-in-the-landscape/

HGIC 1256 *Planning a Garden*
https://hgic.clemson.edu/factsheet/planning-a-garden/

HGIC 1311 *Herbs*
https://hgic.clemson.edu/factsheet/herbs/

HGIC 1652 *Soil Testing*
https://hgic.clemson.edu/factsheet/soil-testing/

HGIC 1600 *Composting*
https://hgic.clemson.edu/factsheet/composting/

HGIC 1604 *Mulch*
https://hgic.clemson.edu/factsheet/mulch/

HGIC 1252 *Cover Crops*
https://hgic.clemson.edu/factsheet/cover-crops/

Suggested Activities:

- Do a site analysis to determine the best place to locate a raised bed garden where there is adequate sunlight and good drainage.
- Design a raised bed on paper and discuss the materials for bed construction.
- Plan which vegetable crops and/or herbs are to be planted in the raised bed for spring, summer, and fall plantings.
- Demonstrate the proper way to do a soil test.
- Discuss the advantages of using mulches and cover crops.
- Emphasize the importance of personally raising healthy food crops and in knowing where the food comes from, along with reducing the grocery store bill.
- Prepare a meal with different vegetable harvests.

Lesson Summary:

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