COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF ALASKA FAIRBANKS

Raised Bed Gardening In Alaska

HGA-00132

Alaska's climate and geographical diversity create many challenges for the home gardener. Cold soils, excessive or inadequate rainfall, and poor soil conditions are among the more challenging aspects of gardening in many areas. Raised bed gardening can help overcome the problems of wet, cold and poorly drained soils. Gardeners who do not have a garden spot located in a south sloping, well-drained, sunny area can use raised beds with productive results.

Benefits of raised beds are:

- Plant growth is enhanced through soil warming, which results from an increased drainage capability and an increase in the exposure of the soil surface to the direct rays of the sun.

- Productive growing areas can be developed in locations where conventional gardening techniques are not possible. Raised beds reduce the effort and back bending involved in planting, weeding and harvesting.

- Many raised beds are intensively managed and therefore have high production rates per square foot.

Before you build raised beds, either mounded or framed, have the soil tested to determine what fertilizer and liming additives are needed. The soil test will help you determine the amount of lime required to raise the soil pH and the type and amount of fertilizer needed for sustained plant growth.

Materials are usually added to increase the soil fertility or air exchange and water drainage characteristics of the soil. Some materials used are sand, compost, manure, peat moss and perlite. Use a rototiller or spade to mix the lime, fertilizers and other materials into the soil.

A raised bed garden can be as simple as a mound of soil that is higher than the surrounding soil level. Or, you can mound the soil in a framework of lumber — like a bottomless box.

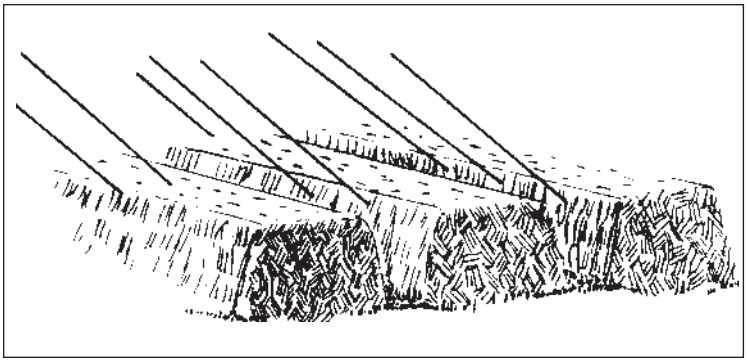

Figure 1. Built up rows.

The simpler form of raised bed is constructed by mounding soil into a ridge approximately 12 inches high with sloping sides and top surface 18 to 24 inches wide (see figure 1). This ridging method provides the benefits of a raised bed and requires less energy and expense. The disadvantage is that it erodes easily and the sloping sides may have to be rebuilt after heavy rain or wind.

Some of the advantages of the ridging technique can be achieved by digging parallel walkways into the existing garden plot and placing the soil from the walkways onto the plant growing area. The sides of the walkways (ditches) should be sloped to prevent soil collapse.

A framed raised bed offers all the advantages of a mounded raised bed without the problems of erosion or soil movement. It also provides an elevated working platform for planting and weeding. The framework for the bed should be built so the soil does not bend or dislodge the frame.

Build the frame of 2 x 12s securely fastened at the corners. At 2- to 4-foot intervals either drive stakes into the ground or use cross-members on the bottom of the frame to prevent bowing from the pressure of the soil (see figure 2).

The wood can be treated with a wood preservative to prevent rot. (Note: Do not use creosote and pentachlorophenol because these chemicals may damage plants upon contact.) A frame liner of polyethylene can be used to keep the soil from direct contact with the wood.

The dimensions of the container depend upon a number of factors: room available, anticipated production, materials available, and the size of the garden. The width should be such that the gardener can comfortably reach to the middle from either side. In wet climates this should not exceed 48 inches to provide good drainage. A width of 36 inches is better yet.

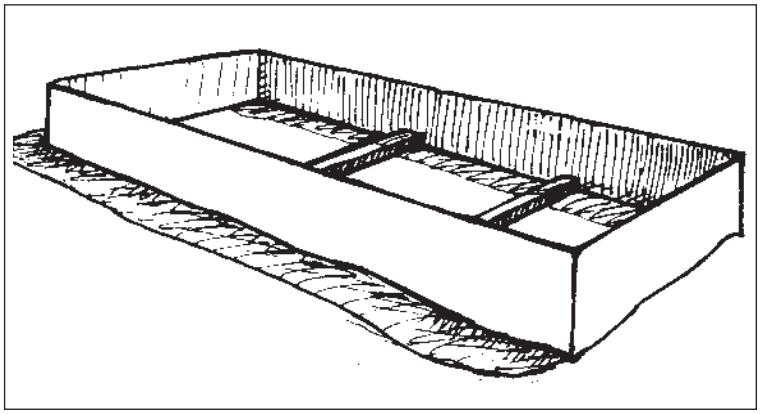

Figure 2. Framework for raised gardens.

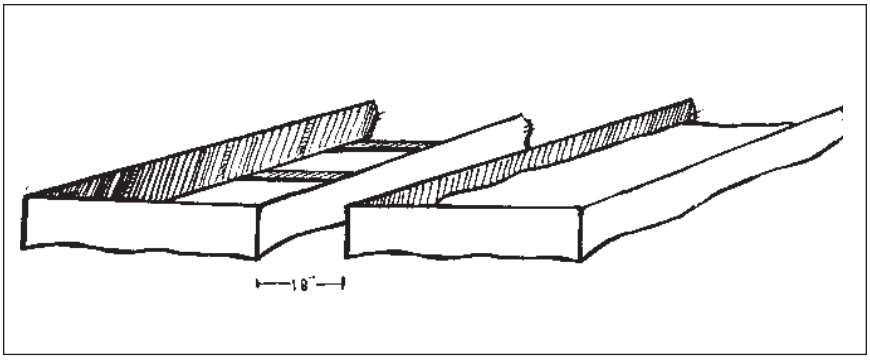

Figure 3. Placement of frames.

Prepare the soil and fill the frame to about 12 inches deep. The amount of soil required can be determined by the container dimensions — length x width x height. A container 20 feet long, 3 feet wide, and 1 foot deep will require 2.2 cubic yards: 20 feet x 3 feet x 1 feet = 60 cubic feet ÷ 27 feet (1 cubic yard) = 2.2 cubic yards.

Place the constructed frames in a location with a suitable growing environment and adequate drainage. Multiple beds should be placed 18 to 24 inches apart to provide a walkway. A board placed across this space gives the gardener a comfortable place to sit or kneel while working. A gravel walkway will provide a cleaner, drier walkway throughout the season (see figure 3).

Although it is not necessary with well drained soil, with poorly drained soil, use a base of 8 inches washed gravel. Cover the gravel with perforated visqueen. Place the boxes on the gravel and fill with prepared soil.

An addition which can increase the efficiency of raised beds is a simple technique that produces a greenhouse effect. You hood the bed with a clear polyethylene film row cover supported by a framework of hoops of 12 gauge wire, or PVC pipe at least ¾ inch attached to the sides of the wooden frame.

This technique increases soil and air temperature, reduces the amount of rain on the bed in areas of excessive rainfall, and reduces moisture evaporation in areas of insufficient rainfall.

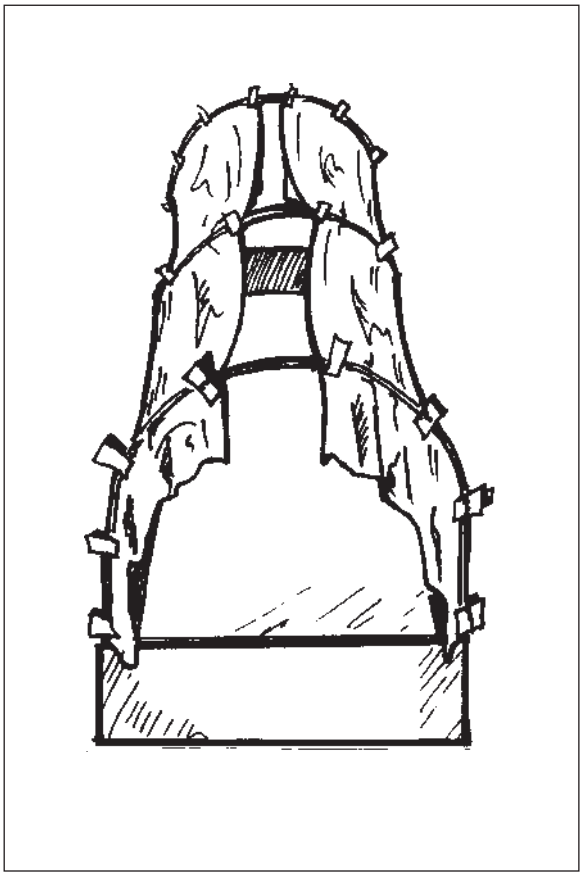

Figure 4. Temperature and moisture control.

Temperature control extends the growing season. A 4-mil polyethylene or fiberglass-reinforced polyethylene should be used to avoid wind damage. The sheeting can be attached to the bed by lath or by grommets placed along the bottom edge of the sheeting and secured over nails along the bed (see figure 4).

Place the beds so the plants can take fullest advantage of available sunlight. Arrange plants so one plant does not shade another as it grows. The air and soil temperature under the cover can increase dramatically during a sunny day and get so hot the plants can be damaged or killed. Ventilation slits and open ends in the polyethylene sheeting help avoid excessive heat buildup which could damage the plants. Complete removal of the sheeting may sometimes be necessary.

When the growing season is over, the polyethylene sheeting can be removed and stored for the next season. Tilling or turning the soil will help reduce future populations of slugs and root maggots by bringing the eggs and pupae to the surface where they are exposed to changing weather conditions and potential predators. Covering the soil surface with spruce boughs can reduce soil puddling and compacting resulting from fall and spring rains.

Many garden crops thrive in raised beds. These include lettuce, radishes, Swiss chard, carrots, cabbage, Brussels sprouts, cauliflower, beets, turnips, zucchini, peas, potatoes and in the warmer areas, tomatoes, cucumbers and beans. Using raised beds can provide the gardener with increased production and decreased maintenance.

For more information, contact your local Cooperative Extension Service office or Bob Gorman, Extension Faculty, Natural Resources and Community Development, at ffrfg@uaf.edu or 907-747-9413.

This publication was originally developed in 1990 by Jim Douglas, former Extension Resource Development and Youth Agent, and Ken Mitchell, Master Gardener. Technical review by Bob Gorman in 2001; revised by Gorman in 2008.

Visit the Cooperative Extension Service website at www.uaf.edu/ces or call 1-877-520-5211

1-90/JD/1000 Reprinted March 2010