



GUAM ENABLED GARDENING: ADAPTIVE GARDENING SERIES *Soil Preparation*

Phoebe Wall, University of Guam, College of Natural & Applied Sciences, Cooperative Extension & Outreach
Lianna Santos, Undergraduate Student, University of Guam, BUILD EXITO Scholar

In the U.S. today, gardening is considered a favorite outdoor activity, right alongside golfing and jogging. Approximately 75% of U.S. households, whether novice or experienced, participate in some type of gardening activity.

However, gardening is not only a recreational hobby. It can also help one's physical and mental well-being, regardless of age. For instance, people affected by health conditions that limit mobility can benefit from increased physical activity. Furthermore, through the activity of nurturing plants to bear vegetables, fruits or flowers, one can experience the product of the effort. Also, decreased stress and an increased sense of well-being are reported as other benefits of gardening activities.

Nevertheless, there are barriers for those who experience physical and mental limitations. For example, people who experience arthritis may be challenged due to joint pain from bending or stooping to tend to the garden. An enabled garden allows an individual with specific challenges to participate. This series of fact sheets explain gardening methods, technique adaptations, and how to create enabled gardens specific to Guam.*

Raised bed and container gardens are recommended for enabled gardens. A garden with well-drained, permeable, and fertile soil is needed to grow vegetables and fruits with healthy plants and greater yields. It may be necessary for gardeners with limitations to get assistance when filling raised beds and containers.

- **Raised Bed Garden (including elevated bed)**
 - A lightweight potting mix should be used for elevated raised beds. (Figure 1)



Fig. 1 - Lightweight potting soil*

- To reduce costs of raised beds, topsoil can be used, if amended, however, be aware that topsoil may contain weed seeds, insects, and organisms that cause plant diseases. Add one-third (by volume of soil) of organic materials (e.g., manure, peat moss, mulch, or compost) to improve drainage and root penetration. (Figure 2)



Fig. 2 - Manure*

* The references used for the Introduction of each fact sheet in the Guam Enabled Gardening: Adaptive Gardening Series is listed in the Bibliography of Site Selection.

- Potting mixes create air spaces that provide oxygen needed for vegetable and fruit plants to grow, to take up plant nutrients, and absorb water.



Fig. 3 - Potting mixes*

- If peat moss or other high-carbon materials are used, nitrogen should be added to the bed. Then wait 1-2 weeks before planting to allow materials to decompose. Nitrogen sources include fertilizer, green waste, manure, etc.
- Soil or soil mix should not be stepped on to prevent soil compaction.
- **Container Garden**
 - Use a fairly lightweight potting mix.
 - Heavier mixes should be used for larger containers to help prevent pots from falling over when it is windy.
 - Clay soils should be avoided because they are heavy, often retain too much water, and do not drain well. They may also contain pests, such as insects and soil-borne plant diseases.
 - Make sure plants are kept moist, not wet, and not allowed to dry out completely.

Bibliography:

Crouse, D. (2018). *Chapter 1: Soils and Plant Nutrients*. In K.A. Moore, and L.K. Bradley (eds), North Carolina Extension Gardener Handbook. NC State Extension, AG-831. https://content.ces.ncsu.edu/extension-gardener-handbook/1-soils-and-plant-nutrients#section_heading_7238.

Mays, D., Richter, K., Bradley, L., Sherk, J., Kistler, M., & Neal, J. (2018). *Chapter 18: Plants Grown in Containers*. In K.A. Moore, and L.K. Bradley (eds), North Carolina Extension Gardener Handbook. NC State Extension, AG-831. <https://content.ces.ncsu.edu/extension-gardener-handbook/18-plants-grown-in-containers>.

Relf, D. (2015). *Vegetable Gardening in Containers*. Virginia Tech Extension, 426-336. https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/426/426-336/426-336_pdf.pdf.

DISCLAIMER:

*UOG Cooperative Extension & Outreach does not endorse any of the products reflected in examples shown in this fact sheet.