



HAWAII COOPERATIVE EXTENSION SERVICE

College of Tropical Agriculture and Human Resources

University of Hawaii

GENERAL HOME GARDEN SERIES No. 1

PREPARING THE HOME VEGETABLE GARDEN

by Wade W. McCall and Yukio Nakagawa*

Gardening in Hawaii is a year-round activity, but it requires careful planning, preparation, and management to grow a good garden.

Soil Requirements

The best soil for vegetables is well-drained and fertile, with a good moisture-holding capacity. Root crops will do best in soil that is loose, deep, and free from clods, stones, and trash in addition to the above-mentioned characteristics. The soil should have ample organic matter, proper pH (acidity or alkalinity), a high exchange capacity, and an adequate supply of plant nutrients.

If nematodes are present, the soil should be treated with a nematicide before planting the crop. If the soil is infested with nutgrass, it should be treated with an effective herbicide to kill the "grass" before planting. If herbicides are used, exercise care that no residue remains at the time of planting.

Apply 45 to 50 pounds manure, sewage sludge, compost, or similar material per 100 square feet garden space (one-half this rate if it is chicken manure) and mix with the top 6 or 8 inches of soil. If the material is straw, grass clippings or similar carbonaceous material, apply about one-half pound of ammonium sulfate or its equivalent per bushel of the material mixed with the soil.

A pH of 5.5 to 6.5 is best for most vegetables; if the soil is too acid, add ground coral—not coral chips—or hydrated lime at the approximate rate of 5 to 6 pounds per 100 square feet garden space for each pH unit increase desired. This rate varies with the type of soil and the climate. For most accurate results, the soil should be tested and liming material applied according to soil test recommendations. If the pH is too high, elemental sulfur may be used to reduce it at the approximate rate of 3 pounds wettable sulfur or 10 mesh soil grade sulfur per 100 square feet garden space. Lime or sulfur will require 6 to 8 weeks or longer before it affects the soil pH.

Fertilization

Plants require certain nutrients for best growth. The application of 3 to 3.5 pounds 10-30-10, 13-34-10, 10-20-20, or similar analysis, fertilizer per 100 square feet garden space is adequate for most vegetable crops. One-half this amount should be applied at planting and one-half when the plants are 3 to 4 weeks old.

Better results are obtained with some crops when they are fertilized every 2 weeks, especially in rainy areas. Vegetables grown for leaves should receive $\frac{3}{4}$ to 1 pound ammonium sulfate or similar nitrogen material per 100 square feet garden space when the plants are 2 weeks old. Tomatoes, cucumbers, melons, and so forth should receive $\frac{3}{4}$ to 1 pound calcium nitrate or similar nitrogen material per 100 square feet garden space after the first fruit set and again after the first harvest. This application should be repeated every 2 weeks as long as the harvest continues. Corn should receive $\frac{3}{4}$ to 1 pound ammonium sulfate or its equivalent per 100 square feet garden space when it is 6 to 7 weeks old.

How to Apply Fertilizer

Fertilizer may be applied by scattering it (broadcasting) and working it into the soil at the time of preparation. For row crops, apply the fertilizer in a band 2 to 3 inches below and 2 to 3 inches to the side of the seed. For plants grown in hills, place the fertilizer in a circle 2 to 3 inches below and 3 to 4 inches around the hill at planting. When applying fertilizer at 3 to 4 weeks, apply it in a shallow band 3 to 4 inches from the plant and cover lightly with soil. The nitrogen side dressing should be placed 2 to 4 inches from the plant. Covering the nitrogen carrier is necessary. Plant when the soil is moist, but wait 24 to 36 hours after a heavy rain or irrigation. Planting depth depends upon the size of the seed. Select varieties that are adapted to Hawaiian conditions, and plant during the season or seasons when best growth can be expected.

Issued in furtherance of Cooperative Extension Work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Noel P. Kefford, Director of the Institute and Dean of the College, Cooperative Extension Service, College of Tropical Agriculture and Human Resources, University of Hawaii at Manoa, Honolulu, HI 96822. An Equal Opportunity Employer providing programs and services to the citizens of Hawaii without regard to race, color, national origin, or sex.

Use of Mulch

Mulch can reduce both drought damage and the need for irrigation of the home garden. Any type of organic material can be used as a mulch, and the soil should be free from weeds and moist before applying it. Spread the material in an even layer so that it is deep enough to stay in place, prevent weed growth, and conserve moisture, but not so it will prevent light rains from reaching the soil. Coarse material should be 4 to 6 inches thick at the time of application because it will settle to about one-half the original thickness after application. Sawdust, 2 inches thick, may also be used, but it should have one-half pound ammonium sulfate or its equivalent per bushel (10 to 15 pounds) mixed in at the same time. Plastic mulches may also be used; however, all the fertilizer should be applied to the soil before the plastic is placed in position. A thin layer of organic mulch over the plastic will keep the plants cleaner and the soil cooler during the hot summer months.

Irrigation

A good quality water should be used for irrigation. The plants should have a steady supply of water, but do not overirrigate. The best time to irrigate is early morning so that the plants will dry off rapidly and thus the spread of plant diseases will be prevented. After a prolonged dry period many root and fruit crops will crack when they receive irrigation or rain. Alternate wet and dry periods will also cause uneven plant growth.

Pest Control

Control weeds, diseases, and insects for best yields of high quality crops by using chemical or biological control. Few chemical control methods will cause poor quality vegetables or leave harmful residues if you follow the recommendations on the labels of the products. All chemicals, including fertilizers, should be kept out of the reach of children because they may be toxic.

Harvesting

Harvest when the crop is at its highest quality for the part of the plant to be used for food. Prepare, cook, and serve the vegetables as soon as possible to conserve food value and retain the best flavor; do not overcook. Properly store those crops that cannot be eaten right away; protect stored foods from diseases, insects, rodents, and high temperatures to maintain high quality.

*Extension Specialist in Soil Management and Specialist in Horticulture, respectively.

NOTE: The use of trade names is for the convenience of readers only and does not constitute an endorsement of these products by the University of Hawaii, the College of Tropical Agriculture and Human Resources, the Hawaii Cooperative Extension Service, and their employees.

Reprinted June, 1980—2M

This publication was assumed to be correct at the date of its issue, but it may no longer represent the most up-to-date information on its subject. In particular, if this publication contains information about pesticide uses, the products mentioned may not currently be licensed for sale in Hawai'i or labeled for the uses described.