HAWAII COOPERATIVE EXTENSION SERVICE
College of Tropical Agriculture and Human Resources
University of Hawaii
GENERAL HOME GARDEN SERIES No. 29

SITE SELECTION FOR THE HOME GARDEN

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Proper selection and preparation of the home garden site is an important key to successful production. To obtain high yields of good quality produce, plants require an adequate supply of plant nutrients, light, air, moisture, support, protection from pests and competitors, and deep fertile soils. Proper site selection should take these factors into consideration. The following presentation will discuss these points:

Light

The home garden site should be exposed to full, or near-full, sunlight, six hours or more each day. The garden should be located away from trees, buildings, fences, and other structures that will shade the plot. If the garden is located near an electrical power source, artificial lights, when feasible, may be used. Many plants, such as onions and poinsetta, are sensitive to day-length and lighting is necessary for optimum growth.

Soil

The soil is the source of moisture, plant nutrients, support, and some air. It contains many microorganisms, such as bacteria, fungi, actinomycetes, nematodes, insects, and weed seed. These have a great influence upon soil management.

The "ideal" soil provides the most favorable air-water relationship. Such soils are ½ solid particles and ½ pore space. The pore space contains the air and water for plant use. The best ratio is 1:1 for optimum plant growth. If pore space is too small, as in heavy clay soil, more water is retained and water movement is very slow. When pore space is too large, as in sandy soils, drainage is excessive.

If the soil does not possess "ideal" conditions, it may be amended by the addition of organic matter, sand, and/or good top soil. The most ideal combination is a 1:1:1 ratio of each. These should be mixed uniformly for best results. After mixing these materials, sufficient time should be allowed for the organic matter to decompose partially before planting seeds or transplanting plants. Avoid compacting the soils as this reduces pore space, causing poor drainage, aeration, and plant growth.

Plant roots grow and extend through the soil, thus providing support and obtaining water and nutrients for plant growth. Conditions for good root development are the same as the proper air-water relationship in the soil. Good root growth results in more efficient use of water and plant nutrients. Adequate soil depth is required for proper root development; for garden plants this is ten to twelve inches or more.

Soil acidity, or alkalinity (pH), is important for optimum plant growth. A pH level that is too high or too low may result in poor plant growth, development, or undesired plant pathogens, accumulation of organic matter, and/or soluble salts, and unfavorable physical condition of the soil.

If the soils are poorly drained, water remains in the soil too long. Artificial drains, such as tile, ditches, etc., may be needed to remove excess water by conducting it to other areas. This allows proper aeration of the soil for plant needs.

If the garden is planted on sloping areas, water runoff must be controlled. This may be done by running rows across the slope on gentle slopes (5 percent–8 percent), on the contour on moderate slopes (8 percent–12 percent) and on terraces on steeper slopes (12 percent–20 percent). This allows the water to percolate into the soil for plant needs and prevents erosion that results in soils, water, and plant nutrient loss.

Plant Protection

Plants need protection from wind, insect pests, disease pathogens, and competition from weeds or other plants.

In some areas of Hawaii, the wind may blow for 250 days or more at velocities of 10 to 18 mph or more with gusts exceeding 25 mph. This may cause mechanical damage, loss of leaves and flowers, and rubbing or scarring of fruit. This reduces yield and quality of produce. Wind increases water loss from plants and may also reduce temperature to critical levels. Wind protection may be provided by planted materials, or by artificial or constructed windbreaks. Windbreaks should be placed between the garden and the prevailing wind direction.

Insect pests may be found in the soil or on plants nearby. They may fly in from other areas. These pests feed on various parts of the plant, reducing yield and quality. The soil may be treated with heat or chemicals to remove the soil-borne insects before crops are planted. Plants may be sprayed or protected in other ways against insects.

Plant diseases are caused by pathogens. These may be found in the soil, brought in by insects, or transmitted through the air. Soil treatment, insect control, or use of proper sprays and dusts will assist in control of these pathogens. Maintaining favorable environmental conditions, such as low humidity, may also help control pathogens.

Weeds compete with plants for space, sunlight, water, and nutrients. Weeds are often hosts for diseases and insects. Weeds may be controlled by pulling by hand, use of a hoe or cultivator, and use of chemicals. The use of chemicals or herbicides, generally, is not practical for the home garden plot.

The garden site should be located away from areas that may serve as sources of infection by pathogens or infestation by insects or weeds.

Other Considerations

The garden site should be located near a source of water. It should be conveniently located for easy maintenance and security.

In small areas, garden plants may be grown as borders for flower beds and hedges, or interplanted with flowers. They may be planted in pots, tubs, cans, or other containers. Also, they may be planted in these containers and grown on lanais, near windows, or wherever the light and space is available.

For further information, please contact your County Agricultural Agent.

March 1981 (3M)