



Home Garden Edible-Podded Pea

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Edible-podded pea (*Pisum sativum* var. *macrocarpon*) is also called snow pea, sugar pea, and Chinese pea in Hawaii. The parchment has been bred out of the pod, so the young pods are tender when flat, and they are often used in stir-fry. The pods also can be allowed to mature and then shelled for the peas.

Snap-type peas have a thicker pod wall than snow pea and are eaten near maturity, like snap beans. Pea plants generally produce better in the cooler conditions found at higher elevations in Hawaii, but they may be grown at low elevation sites if an adapted variety is used and the plants are kept free from pests and diseases. Warm weather tends to hasten plant maturity and shorten the productive life of pea plants. Most pea varieties adapted for growth in temperate climates are not resistant to the diseases that may occur in warm climates.

Varieties

The variety 'Manoa Sugar', developed by CTAHR, is adapted to Hawaii's growing conditions and is resistant to powdery mildew. Other varieties said to do well in Hawaii include 'Oregon Sugar', 'Oregon Giant', and 'Dwarf Grey Sugar'.

Preparing the soil: amendments and fertilizer

Pea plants grow best in well drained, moderately acidic to neutral soil (pH 6.0 to 6.8 is optimum) with a good level of soil organic matter. Have the soil analyzed to determine the soil pH and whether any soil amendments (including lime, dolomite, and phosphate) are needed. A soil analysis is particularly recommended for new garden sites. A "standard" soil analysis, which measures soil pH and available soil phosphorus, potassium, calcium, and magnesium, is relatively inexpensive and can be done by the CTAHR Agricultural Diagnostic Service Center** or a commercial laboratory (preferably one having experience with Hawaii's soils).

Soil with pH below 5.5 requires application of agricultural lime to increase the pH to a level more favorable for plant growth. Soil in high-rainfall areas often requires lime to increase the calcium supply.

Low levels of available soil phosphorus limit plant growth in many of Hawaii's soils. Both lime and phosphate fertilizer must be mixed thoroughly into the surface 6–8 inches of the soil before planting.

Home garden productivity can usually be increased by amending the soil with organic matter, such as compost or well rotted animal manure (see the CTAHR publications *Backyard composting—recycling a natural product* and *Composted animal manures—precautions and processing*). If a suitable material is available, make an annual application to the garden of 1–3 inches spread over the soil and mixed into the surface 6–8 inches. If the material is in short supply, its application can be limited to the area within 6–10 inches from the planting row or spot.

To ensure adequate levels of the major plant nutrients, include a general fertilizer when preparing the garden before planting. Commonly available rapid-release fertilizer formulations suggested for vegetables are 16-16-16 ("triple-16") and 10-20-20 (these numbers refer to the percentages of nitrogen, phosphate, and potash in the fertilizer). Commercial growers often figure on applying a total of 150 pounds of N per acre to a pea crop. On a 100 square-foot (sq ft) basis, this is equivalent to two applications (one preplanting, the second to the bearing crop) of 1³/₄ pounds of 10-20-20 or 1 pound of 16-

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**For information on sampling soil and arranging for its analysis by CTAHR-ADSC, see the CTAHR publication *Testing your soil—why and how to take a soil-test sample*, available at www.ctahr.hawaii.edu/freepubs under "Soil and Crop Management," or from UH-CTAHR Cooperative Extension Service offices statewide.

16-16 per application. Gardeners who prefer to use slow-release formulations will apply all of the nutrients before planting. Preplanting fertilizers should be mixed well with the garden soil.

Soil phosphorus can increase to an undesirably high level after long-term application of high-phosphate fertilizers, such as 10-30-10. If this is part of the garden's history, a soil analysis should be done to check the phosphorus level. If it is in excess, a zero-P formulation can be created by mixing equal amounts of urea and muriate of potash to produce a formulation that is about 23-0-30. For the 100 sq ft basis fertilizer schedule mentioned above, about $\frac{3}{4}$ pound of this fertilizer would be applied in each of two applications.

Fertilizer application to the bearing crop

When the plants begin to flower, apply the second dose of general fertilizer. Divide the amount of fertilizer being applied into small doses according to the number of plants in a 100 sq ft garden area. Apply each dose 6–8 inches from the base of each plant. Some gardeners spread the fertilizer on the soil surface, but others believe it is best to use a trowel to incorporate it 2–4 inches into the soil in one or two spots, using care to minimize damage to the plant root system. Irrigate after the application.

Instead of a single postplanting application, some gardeners divide the amount into two applications, the second made two to three weeks after the first. Others will apply smaller amounts of fertilizer every two weeks after bearing begins. Water-soluble fertilizers with micro-nutrients may also be used for postplanting applications.

Planting

Plant the seeds 1–1½ inches deep, spaced 4 inches apart in single rows about 30 inches apart or double rows 12–15 inches apart separated by 36–40-inch alleys. Provide support for the vines with poles or a trellis 4–5 feet high. Vining usually begins about two weeks after planting. Bush varieties grow to about 2 feet tall and usually do not need support.

Irrigation

Irrigate as necessary to maintain available soil moisture, but avoid soil waterlogging. Any setback early in their growth may result in smaller, weaker plants with reduced yields. To minimize leaf disease, avoid wetting the plant when applying water. If possible, irrigate only the soil

using furrows, drip lines, or soaker hoses. If using overhead (sprinkler) irrigation, do it in the morning so the plants dry quickly as the day warms.

Pest management

Occasional insect pests of peas include cutworms, aphids, whiteflies, leafminers, and mites. Damage is usually incidental, and the use of pesticides is seldom necessary. The soft-bodied insects can be controlled with insecticidal soap. When using pesticides, read the label to ensure that the intended use is included on it, and follow all label directions. Birds also can be a problem.

Disease management

The most common diseases of pea are pythium and rhizoctonia root rots, root-knot nematode, ascochyta blight, and powdery mildew. If the soilborne root rots are a problem, plant in clean soil or mix compost into the soil. The microorganisms in the compost compete with pathogens in the soil. Soil sterilization with solar energy may reduce soilborne pathogens. Ascochyta blight can infect the roots, stems, leaves, and pods. Use clean seeds free of fungal spores and irrigate the soil without wetting the foliage. Improve soil drainage with compost and shape the soil surface to reduce puddling of water at the base of the plant. Powdery mildew can be avoided by using resistant varieties such as 'Manoa Sugar'.

Harvest

Pick the pods when they have reached their maximum length but before the seeds start to swell; this is generally about 5–7 days after flowering. The pods develop rapidly and usually can be harvested every day. Snap pea pods are also edible but are harvested when the pods are rounded, plump, and snap like a green bean. For shelled peas, allow the pods to develop until the peas are the desired size and harvest before the pods begin to turn pale.

Seed availability

'Manoa Sugar' seeds are available from the CTAHR Agricultural Diagnostic Service Center Seed Lab on the UH Manoa campus and from some garden stores. Other varieties can be found in garden stores and seed company catalogs. CTAHR Seed Lab order forms can be obtained online at <www.ctahr.hawaii.edu/seed> or from Cooperative Extension Service offices statewide.