

Fact sheet

New Crops for the Home Garden Series

Edamame: The Vegetable Soybean

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A nutritious food crop named Edamame is gaining popularity as a fresh vegetable throughout the United States. Edamame (pronounced *eh-dah-MAH-may*) is translated as “beans on a branch” in its native country of Japan. Vegetable soybeans are the same species (*Glycine max*) as field soybeans but for over 2,000 years have been specially bred to produce larger seeds, sweeter flavor, creamier texture, and easier digestibility (Figure 1). Asians consume fresh or salted edamame much as Americans consume peas and peanuts. In Rutgers variety trials, this vegetable soybean has shown prolific growth, and nutritional qualities that make it a wonderful addition to the home garden.

Garden Preparation and Planting

Edamame soybeans are easy to grow if the following procedures are followed:

- Test soil and adjust pH to 6.0–6.5 if necessary.
- Incorporate recommended fertilizer amounts of nitrogen, phosphorus, and potassium.
- Inoculate seed with beneficial bacterium (*Bradyrhizobium japonica*) for soybeans sold in seed catalogs.
- Insure good soil drainage or seed will not germinate well.
- Plant in an area receiving 10 hours of direct sunlight.
- Place seeds 6 inches apart in the single row.

- Plant several rows side-by-side, 1 foot apart, that are staggered to maximize space and suppress weeds. Alternatively, space rows 2 feet apart for easy cultivation, or use plastic mulch.
- Planting depth should be about 1 inch.
- Soil temperature at a 2 inch depth should be around 65°F at planting.
- Water requirements are 1 inch a week. Depending on rainfall, a deep soaking once a week into the soil is recommended.
- Crop emergence is expected in 10–14 days.
- Side-dress with a nitrogen fertilizer six weeks after planting.



Figure 1. Large seeds with a sweet, nutty flavor.

Varietal Selection

Aside from excellent culinary qualities, Edamame has been selected for having 2–3 large seeds in numerous large pods (Figure 3). Pod color is medium to dark green with a few light-colored hairs.

Soybeans fall into different maturity groups, which suit differing planting regions. These varieties begin flowering at a certain day length and then stop flowering when days become longer than 14 hours. This determinant characteristic makes harvest time more concentrated. Therefore, stagger plantings to extend harvest.

Length of your growing season is another important factor to consider in varietal selection. Some varieties have a short maturity time of 75 days while others may have a long maturation of 125 days. Most varieties are of a bush-type growth habit, which ranges from 1–2 feet tall. A few other varieties are more of a vine nature that would require trellising. Table 1 compares some of these horticultural traits.

Table 1: Varietal Comparison

Variety	Days to Maturity	Yield
Early Hukucho	75	Medium
Beer Friend	75	Medium
Lucky Lion	80	High
Green Legend	80	High
Envy	80	High
Gion	80	High
White Lion	90	High
BeSweet	90	Very High
Taiwame	90	Very High
Butterbean	100	Very High
Shironomai	100	Medium
Shirofumi	100	High

Planting Plan

In New Jersey, soils often warm sufficiently for planting by late May. Plant both a short 75–80 day variety and a medium 100-day variety at the same time. Wait about ten days and do this again. Such

successive plantings can be made until 90 days before the first expected frost in your area. Expect one pound of pods for 3–4 feet of row.

Pest Problems

In three years of trials in New Jersey, 16 varieties of Edamame have shown to be fairly resistant to plant diseases. All varieties are very attractive to deer, rabbits, and insects. Moderate foliage feeding by beetles, stinkbugs, aphids, grasshoppers, and leafhoppers do not affect bean yields very much. If pest populations become excessive, there are several insecticides available to the home gardener for pest management.



Figure 2. Plastic mulch with staggered rows.

Harvest

The best time to harvest is when most of the beans are green, tender, and plump, well before pods begin to turn yellow. Bush-type beans can be selectively hand-picked as needed or harvested completely by cutting the base of the stem. Bring the entire bush to a cool place indoors and pick off the best pods. A few pods will be too immature and some will be too old but the majority should be just right. Compost the remaining vegetation to build a better soil.

Food Preparation

Edamame pods should be quickly refrigerated to preserve freshness. Eat the beans directly from the whole pod (pods are not edible) as a snack, or remove beans from pods and serve as you would peas. Try shelled edamame in salads, soups, stews,

stir-fries, succotash, or casseroles. To serve fresh, add washed pods to boiling water (add salt if desired) and cook for 3–5 minutes. Pods can also be microwaved or steamed for 4–5 minutes. The beans easily pop out of the pod after cooking. Edamame store very well in the freezer for winter-time use. To prepare for freezing, wash pods and immerse in boiling water for 2 minutes. Next, dip pods into cold water, quickly drain, pat dry, and pack for storage. When using frozen edamame, cook for 5 minutes in boiling water or microwave for 3 minutes.

Nutrition and Health

Edamame is not only easy to grow and good to eat, but quite healthful as well. This soybean is cholesterol free and has no saturated fats. The nutritional content of this vegetable is possibly the highest of any food crop in the world. Protein content is generally over 40%, which includes all of the vital amino acids necessary for human life—something that no other food crop can claim. One cup of edamame beans contains about 22 grams of protein. High amounts of Vitamin A, Vitamin B, iron, and dietary fiber are available. A high amount of plant-based calcium provides for stronger bones and teeth, and may help ward off osteoporosis. Edamame are loaded with phytoestrogens. These plant-based estrogens mimic human estrogen, which may help lower cholesterol, reduce the risk of heart disease, and aid in relieving post-menopausal symptoms.



Figure 3. “Beans on a branch”

Seed Sources

Edamame is essentially self-fertile like most other soybean types. For this reason, the gardener can save seeds from the backyard year after year. Fresh seeds germinate best and large amounts can be inexpensively obtained from your own best garden plants every season. For seed harvest, let the bush get fairly mature and the seed pods start to turn brown until just before the first freeze. Then bring the harvested plant indoors to dry completely. Hardened seed can easily be removed within a few weeks. Store in a paper bag in a cool, dry, and pest free area. Initial seed supply can be obtained from the following sources (see Table 2):

Table 2: Seed Supply Companies

Seed Company	Telephone	Web Site
Evergreen Seeds	714-637-5769	www.evergreenseeds.com
Fedco Seeds	207-873-7333	www.fedcoseeds.com
Garden Guides	800-274-0824	www.gardenguides.com
Johnny’s Seeds	207-861-3900	www.johnnyseeds.com
Rupp Seeds	419-337-1841	www.ruppseeds.com
Territorial Seeds	541-942-9547	www.territorialseed.com
Wannamaker Seeds	803-874-3011	www.edamameseed.com

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