

# USDA Edamame Project

The USDA Edamame Project is a four-year, \$3.7 million project based at Virginia Tech that aims to develop edamame varieties for mechanized production and improved consumer acceptance to increase sustainability of the vegetable industry.

This project spans three universities (VT, U-Missouri, U-Ark) and combines expertise in Plant Breeding, Economics, Food Science, Extension, and Phenomics to increase competitiveness and consumption of domestically produced edamame products with improved sensory attributes.

The advisory board consists of experts from both public and private sectors to assist the team in achieving our goal in making the U.S. the main supplier in the global market for edamame.



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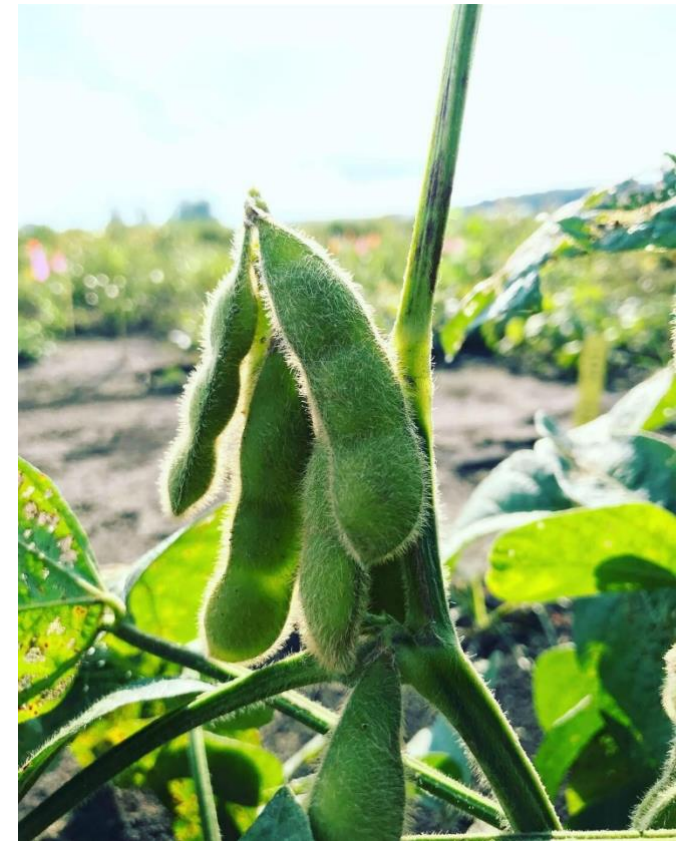


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# EDAMAME

Pronounced ("eh-duh-mah-may")

Lean, green, and full of protein!



## What is edamame?

'Edamame' is Japanese for "beans on branches" and are simply edible immature soybeans still in their pods. It has been widely consumed in Asian countries for centuries.

## What is the difference between edamame and soybean?

Edamame is a non-GMO specialty soybean typically producing larger seeds with higher sugar content than more traditional soybean varieties.



EDAMAME BEANS ARE TYPICALLY LARGER THAN TRADITIONAL MATURE SOYBEANS (LEFT).

## Growing edamame

Edamame is typically planted early spring and harvested late summer to early fall. Edamame is harvested as a vegetable when the seeds are immature but have expanded to fill 80 to 90% of the pod width while moisture levels remain at 65-70%. It can be harvested by hand or mechanically.



EDAMAME PLOTS AT THE EASTERN SHORE AREC (LEFT).  
EDAMAME PLOTS BEING HARVESTED MECHANICALLY USING A SNAP-BEAN HARVESTER (RIGHT).

## Demand

There is vigorous growth in demand for edamame over the past two decades, estimated at 12-15% annually. Edamame has quickly become the second largest soyfood consumed in the U.S. (25,000-30,000 tons annually) and is being sold in many grocery chains, farmer's markets, and restaurants such as McDonald's.



FRESH EDAMAME AT THE FARMER'S MARKET (LEFT), VIRGINIA TECH DINING HALL (MIDDLE), AND INTERNATIONAL SUPERMARKET IN BLACKSBURG, VA (RIGHT).

With a 32,000 ft<sup>2</sup> processing facility built in 2011 by Greenwave Foods, Inc., U.S. production of edamame in the Mid-South has increased to more than 2,000 acres. Despite these production increases, at least 70% of edamame consumed in the U.S. is still imported from China and Taiwan, where most of the crop is hand-harvested. There is great potential for increased production of this crop in the U.S.



SOME YOUNG EDAMAME FANS AT THE VIRGINIA TECH DAYCARE.

## Nutrition

Edamame, like other soybean-based food products, is loaded with healthful nutrients and delivers some of the highest-quality protein available from a plant-based food. Fresh edamame seed contains 10-14% protein, and is rich in essential amino acids, dietary fiber, minerals and vitamins. It is also a nutritional ally to vegetarian and vegan diets.

### Try it for yourself.

Here are two simple recipes you can make using frozen edamame from the grocery store!

#### Roasted Edamame Beans

2 tsp. olive oil  
1/2 tsp. chili powder  
1/4 tsp. each of onion salt, dried basil (crushed), and ground cumin  
1/8 tsp. each of paprika & pepper  
10 oz. shelled edamame beans (thaw for ~15-20 mins)

Preheat oven to 375°F. **Mix** olive oil and seasonings. **Drizzle** mixture over edamame beans and toss to **coat well**. **Arrange** seasoned edamame beans in a single layer on a shallow baking dish. **Roast** in oven, uncovered until beans begin to brown (12-15 mins). **Serve** as an appetizer, side dish, or on-the-go snack during the day!

#### Garlic Edamame Pods

3 cloves of garlic, crushed (not minced)  
Course sea salt  
2 tbsp. olive oil  
1 lb. frozen edamame pods

**Boil** frozen edamame for approx. 3-5 mins. **Drain**, pat dry, and set aside. **Heat** olive oil in skillet, then add crushed garlic cloves and dried edamame pods. **Toss** until edamame pods begin to brown. Consider adding edamame in two batches depending on size of skillet. **Season** with sea salt and **serve** hot alongside some low-sodium soy sauce.