



Marketing New Crops

from University of Kentucky Agricultural Economics Extension

Edamame

Edamame (green vegetable soybean) is a name often applied generally to several specialty varieties of soybean (*Glycine max*). Edamame is a popular vegetable in Asia, where it is harvested and eaten in its green stage. The popularity of edamame in America has grown with popularity of Asian American cuisine and with recently reported health benefits of soy foods.

Development of a niche market for edamame in KY has been promoted extensively by soybean and commercial vegetable producers near Owensboro in Daviess County (Western KY). There are also producers in central KY that are successfully marketing fresh edamame in Louisville and Lexington farmers' markets.

Edamame is the same species as grain soybeans, but has a sweet, nutty flavor and a larger seed. (Miles et al. 2000). In the United States, there has been success crossing Asian edamame with U.S. varieties to produce larger pods that are easier to harvest.

This publication is intended to highlight key considerations for producers considering edamame as an alternative crop in KY.

Profit Potential

There is potential for substantial profits from edamame production. Further details concerning the outstanding potential in the edamame market are reported in the 2001-2002 Edamame Marketing Fact Sheet, available through the UK Department of Agricultural Economics.

Conservative, initial budget estimates for edamame production indicates potential returns of **\$400-\$2,500** per acre for wholesale fresh market beans (see below).

Edamame returns have great potential to increase to higher levels depending on harvesting technique and local fresh market development.

The most significant costs involved in edamame production involve harvesting (especially when hand labor is used) and post-harvest handling.

Resource Requirements

Edamame requires a similar culture to traditional grain soybeans. Because of the larger seed size, green edible soybeans may require variation in planter plate size or planting technique. Kentucky producers have successfully started edamame in greenhouses and transplanted the plants into the fields.

Harvest and post-harvest handling are the highest cost areas of edamame production. For small-scale production, hand harvest is the most viable harvest technique. However, machine harvest is definitely more economical; some estimates indicate machine harvest and can cut edamame production costs by up to 25%. Some KY producers are investigating mechanical harvesting in KY.

Producers not used to high harvest labor requirements should be very aware of the high harvest time demanded by a specialty crop like green edible soybeans.

Immediate post-harvest cooling of edamame is essential to preserve the crop for market.

According to a Washington State University publication, edamame must be cooled to 32-37°F to maintain product freshness. This may be accomplished using air, vacuum, or ice water cooling.

Fresh edamame will retain flavor and appearance for up to two weeks when it is properly stored (Miles 2000). Producers without access to cooling systems or capital available for cooling system installation will simply not have success with edamame production.

Producers must also have a market channel in mind before beginning production. The market for edamame in Kentucky begins with specialty produce and high-end farmers markets. Produce brokers have also cooperated with early production efforts, and indicate they are willing to handle uniformly packaged, quality edamame.



Budget Snapshot: 1 Acre Green Edible Soybeans

Yield	6,000-10,000 pounds
Wholesale Price	\$1.50/pound
Preharvest Variable Costs (seed, fertilize, cultivate)	\$500-\$1,000
Harvesting and Handling (boxes, picking, cooling)	\$5,500-\$9,500
Total Costs (including fixed costs)	\$6,750-\$11,250

Projected Net Return \$400-\$2,500

Information Needs

Edamame is in its fledgling stage in the United States, especially east of the Mississippi River. For this reason, KY producers will need to acquire basic information about varieties, production practices, and harvest technique.

Early edamame variety trials have been conducted in KY. Information on how varieties performed in Western Kentucky is available from the Kentucky Soybean Board.

It is unclear what herbicides are available for post-emergent, fresh edamame production. Because edamame is harvested as a vegetable crop, herbicides for traditional grain soybeans may not be eligible. Early producers in Kentucky have used mechanical and hand cultivation for weed control.

There is a very short harvest window for edamame. Maturity is dependent upon color and pod-fill. Like other legumes and pulse crops intended for fresh consumption, vegetable soybeans have a harvest window of only a few days. Potential producers will have to acquire information on proper harvest maturity.

Producers will also have to identify a market for their product. There are several avenues available for marketing green edible soybeans. These avenues have different requirements that will affect packaging and harvest technique.

Marketing

Fresh edamame are best marketed in two ways: in the pod or bunched on the stalk. Both methods demand the same post-harvest cooling and handling, but are specific to slightly different market channels. Proper cooling after harvest is absolutely essential for edamame marketing success.

Marketing In-Pod

Beans should usually be picked in the cool of the morning. Whether using a mechanical or hand harvest method, it is essential to keep the beans as free from dirt and other foreign matter as possible.

Early production in Kentucky has found that careful hand picking, grading, and field packing results in an effective harvest method. An unskilled, supervised worker should be able to harvest, grade, pack, and transport at least one box (25 pounds) of edamame per hour.

Marketing by the Bunch

It is common for edamame to be purchased on the stalk, especially in the ethnic Asian market. Pod quality remains higher when they are left on the stem, because this better preserves flavor and quality.

Stalks are bunched together in groups of 4-6 plants or by pound. Leaves are removed from the top to display the pods.

Early marketing efforts in an upscale Louisville area produce market showed that customers there were not very interested in edamame on the stalk. Farmers' market customers, on the other hand, did not seem bothered by purchasing a product "on-stalk."

Enthusiasm

Due to the early stages of edamame market development in Kentucky, there are many variables which can help maintain producer interest in the product. Experimenting with different varieties and participating in yield and quality studies may be of interest to some producers.

Risk

While there are substantial payoffs for early producers of edamame in Kentucky, there are also significant risks involved. This section will summarize those risks.

Production inputs may be different from what producers are used to or difficult to acquire. Seed will have to be acquired from research universities in the Midwest or catalog sources. Adjustments in planting may be required from traditional soybeans. Mechanical rather than chemical post-emergent weed control may be required.

There is substantial risk involved in marketing the edamame product. Producers will be required to creatively

investigate market channels that may be different than market channels for traditional row crops. In addition, proper post-harvest cooling and handling of the edamame product is crucial to presenting a quality product for market.

Resources

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Highlighted Resource

The following publication is available from the Washington State University Extension Service (<http://caheinfo.wsu.edu>)

Edamame

Carol A. Miles, Thomas A. Lumpkin, and Leslie Zenz.

Washington State University Extension "Farming West of the Cascades" Series.
Publication PNW0525, 2000.

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