

Marketing New Crops

from University of Kentucky Agricultural Economics Extension

Green Edible Soybeans

FRESH MARKET

Green edible soybeans are traditional Asian vegetables especially popular in the “edamame” varieties in Japan. They may be produced for both the fresh and processed 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 the edamame with other varieties to produce larger pods that are easier to harvest. There has also been some success generating a market for green edible soybeans.

The Kentucky Department of Agriculture and the Kentucky Soybean Board funded a project to investigate the potential for green and dry edible soybean production in Kentucky in 2000. The project yielded valuable information on the production and marketing of edamame in Kentucky. This publication is intended to highlight key considerations for producers considering green edible soybeans as an alternative crop in Kentucky.

Profit Potential

There is significant potential for substantial profits from green edible soybean production. However, there is also significant risk associated with the production of any new crop.

Initial budgeting for green edible soybean production by the UK Department of Agricultural Economics indicates potential returns of **\$350-\$1,125** per acre for fresh market beans. The level of returns has the potential to increase—or decrease—significantly

depending on harvesting technique and market development.

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

Resource Requirements

Green edible soybeans 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.

Harvest and post-harvest handling are the areas of green edible soybean production requiring the most additional resources. For small-scale production, hand harvest is the most viable harvest technique. However, if green edible soybean production increases, or if growers have access to specialized vegetable harvesting equipment, mechanical harvest may be a viable option. Producers not used to high harvest labor requirements should be aware of the high harvest time demanded by a specialty crop like green edible soybeans.

Immediate post-harvest cooling of green edible soybeans is essential to preserve the crop for market. According to a Washington State University publication, edible soybeans must be cooled to 32-37°F to maintain product freshness. This may be accomplished using air, vacuum, or ice water cooling.

Edamame and other green edible soybeans 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 not have success with green edible soybean production.

Producers must also have a market channel in mind before beginning production. Currently, the market for edible soybeans 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 edible soybeans.

Information Needs

Edible soybean production is in its fledgling stage in the United States, especially east of the Mississippi River. For this reason, there is a variety of information producers will need before beginning production.

Early variety trials have been conducted for green edible soybeans. Information on how varieties performed in Western Kentucky is available from the Kentucky Soybean Board. There is considerable variation among varieties for taste, handling, and yield.

Currently, there are few to no herbicides cleared for fresh edamame production. Special clearances can probably be obtained, but producers will have to keep this existing restriction in mind. Early producers in Kentucky have used mechanical or even hand cultivation to address this problem.

There is a very short harvest window for edible soybeans. Maturity is dependent upon color and pod-fill. Like other legumes and pulse crops intended for fresh consumption, green edible 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.

Budget Snapshot: 1 Acre Green Edible Soybeans

Production Budget Ranges

| | |
|---|-----------------|
| Gross Returns | \$3,000-\$5,500 |
| Preharvest Variable Costs (seed, fertilize, cultivate) | \$125-\$500 |
| Harvesting and Handling (boxes, picking, cooling) | \$1,500-\$3,500 |
| Total Costs (including fixed costs) | \$2,000-\$4,375 |

Net Returns **\$350-\$1,125**

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 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 a bushel 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 46 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 a stalk edamame product. 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.

Other producers who are interested in marketing will find the challenge of developing a market for a new product exciting. At the same time, there is considerable risk involved with pioneering a new crop.

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. Because edamame is a new crop, seed may be very difficult to find in the U.S. Adjustments in planting may be required from traditional soybeans. Furthermore, there is a lack of approval for herbicides used on edamame for fresh market. This results in required mechanical cultivation.

There is substantial risk involved in marketing the edamame product. Producers will be required to creatively investigate market channels that may be different than channels they are used to. In addition, proper post-harvest cooling and handling of the edamame product is crucial to presenting a quality product for market.

Resources

Production and Marketing

Sara McNulty
Wildwood Acres
P.O. Box 746
Owensboro, KY 42302
270-926-0591
SJMFIRST@aol.com

Marketing and Budgeting

Dr. Tim Woods
UK Department of Ag Economics
400 Agricultural Engineering Bldg.
Lexington, KY 40546-0276
859-257-7270
twoods@ca.uky.edu

*Prepared by Matthew Ernst,
Extension Associate, University of
Kentucky Department of
Agricultural Economics
mernst@ca.uky.edu
859-257-7272 ext. 283
and Sara McNulty, Consultant to
Kentucky Soybean Growers.*

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.*