



Marketing Challenges for Emerging Crops in Kentucky: Vegetable Soybeans

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Introduction

Transition away from traditional agricultural production in Kentucky has left many producers scrambling for alternative farm income sources. Specifically, the decline in demand for burley tobacco has resulted in a search to find other lower-acreage, higher-profitability crops. Individuals and small groups of agricultural entrepreneurs with enthusiastic interests in various crops have led this search. Notable among efforts to date is an endeavor to develop a niche for fresh-market, Kentucky-grown edamame (green vegetable soybeans).

Agricultural entrepreneurs pioneering new and emerging crops in Kentucky face many marketing challenges. This case categorizes several challenges in agricultural entrepreneurship by summarizing edamame market development efforts by producers near Owensboro, KY.

Case History

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 due to an increased preference for Asian American cuisine (Miles, 1997). Edamame has also benefited from the recent explosion in the market for soy foods (Ernst, 2000).

Edamame is one crop in early stages of consideration as an alternative for tobacco production by several Kentucky producers. Development of a niche market for edamame in Kentucky has been promoted extensively by soybean and commercial vegetable producers near Owensboro in Daviess County (Western Kentucky).

Test plots of two edamame varieties (ISTNL 2025 and ISTNL 2027) developed at Iowa State University were raised in the Owensboro area in 1998 and 1999 (McNulty, 2001). In 2000, the Kentucky Department of Agriculture and Kentucky Soybean Board sponsored several edamame test plots in western Kentucky. These beans were marketed through local farmer's markets and specialty produce stores. Several hundred pounds of edamame were also sold through a Cincinnati-based produce broker.

Two Owensboro-area producers, Sara McNulty and Sally Ellis, were awarded almost \$10,000 through a 2001 Southern Region Sustainable Agriculture Research and Education (SARE) Producer Grant. The grant

is to be used for promoting and marketing edamame soybeans in Kentucky (SARE, 2001). Their desire is to create a local niche for a fresh edamame product before widespread promotion of edamame as a tobacco alternative.

Edamame production in Kentucky is currently limited to small-scale, experimental production. However, specific attention to marketing in these early stages of edamame production in Kentucky has helped edamame enthusiasts identify and grapple with many of the challenges in marketing new crops. Continued efforts in developing niche markets for new and emerging crops in Kentucky, such as edamame, may ensure pockets of profitability for Kentucky producers willing to adapt to new crops and production systems.

Market Development

Several attributes that are common among successful agricultural entrepreneurs characterize efforts by the Owensboro producers to develop a market for fresh, locally produced edamame. These attributes include: comparative production budgeting, on-farm experimentation with harvest and post-harvest handling techniques, use of existing market channels, early product evaluation by consumers, and enthusiastic promotion.

Comparative Budgeting

One of the challenges agricultural entrepreneurs face is the lack of reliable, third party profitability estimates for new crops. University budget estimates are often unavailable for crops new to a given geographic region. Differences in harvest costs and technique can significantly impact profitability estimates for produce commodities. In addition, real market prices for new and emerging commodities are often difficult to estimate.

Table 1. Estimated Return Per Acre to Land and Management for Kentucky Crops, 2000

<i>Crop</i>	<i>Estimated Return</i>
Sweet Corn	\$135
Pumpkins	\$243
Edamame (wholesale fresh market)	\$259
Staked Tomatoes	\$715
Cantaloupe	\$1,113
Burley Tobacco	\$1,541

Source: University of Kentucky Department of Agricultural Economics. Assumes average yields and prices with no drought conditions. Assumes irrigation and hand harvest for edamame, blackberries, cantaloupe, pumpkins and tomatoes. Assumes irrigation and machine harvest for sweet corn. Tobacco return includes settlement income.

Using test plot production information and actual wholesale price data from 2000, the Owensboro producers were able to provide reliable information for pro forma budget development at the University of Kentucky (see Table 1). The estimated edamame budget places a breakeven price for fresh edamame at almost \$24.00 per box, or just over \$1.00 per pound.

Through cautious and conservative budgeting, these estimates provide a reliable basis for consideration by the additional edamame producers that will be required as demand for a local Kentucky product. However, these estimates are only starting points for answering key questions for additional research. These questions include estimating the elasticity of demand and how local market prices will respond as production volume expands.

Production Research: On-Farm Experimentation

A second attribute common to agricultural entrepreneurs is the willingness to experiment with new production practices. Agricultural entrepreneurs often “tweak” existing production systems to accommodate new crops. This is particularly relevant in the harvest stage, where the bulk of production expenses are often incurred for horticultural crops.

Owensboro producers have experimented with edamame planting times and techniques. They were able to use existing seeding equipment to plant edamame seed in the field in 2000. Plants for the 1-acre SARE plot in 2001 were started in the greenhouse and planted with a tobacco transplanter. Two different sizes of plants, planted three weeks apart in the greenhouse, were planted to determine optimum transplant size. Producers can then use plants maturing at different times to capture a potentially earlier and/or longer fresh market season.

To harvest edamame, producers utilized migrant labor to harvest the edamame on the stalk for the fresh retail market in 2000. (This labor is readily available due to existing tobacco and vegetable harvest operations). Beans were also picked by hand in 2000 and shipped to Cincinnati for the fresh wholesale market. In this process, one batch of beans became moldy due to improper cooling after harvest. It was unclear whether this was due to on-farm off-farm handling of the crop; however, the spoiled shipment reinforces the importance of communication on post-harvest handling techniques between the producers of a new crop and the purveyors of this crop. Successful marketing will have to involve the entire supply chain, from producer to retailer.

Utilizing Existing Market Channels

Rather than develop an entirely new market channel for a given product, agricultural entrepreneurs find it effective to utilize existing market channels already being used for similar products. Early edamame marketing in Kentucky has utilized many existing outlets including farmer’s markets, specialty produce retailers, farm stands, and produce brokers.

Experience in using each of these outlets has been positive. Contributing to this early success has been identifying individuals and firms who are themselves willing to experiment with a new food product. Castellini Produce, for example, is a produce wholesaler based in Cincinnati which handles a large volume of fresh produce. Existing relationships with this broker, coupled with third-party encouragement for the broker to handle the crop, made it much easier for a small amount of edamame to be tested on the wholesale market.

Consumer Evaluation

Publicity of a new, agriculturally based product can sometimes be difficult. Farm entrepreneurs exploring a new commodity, such as edamame, rarely have the capital to conduct serious market promotion and research in their area.

Estimating consumer demand and preferences for relatively unknown products is also a challenge. Kentucky producers exploring edamame will utilize facilities at the University of Kentucky available to conduct an objective consumer sensory evaluation of edamame. A producer-led initiative to obtain objective consumer input about a new product is key for the crop’s development. Working with university and consumer groups has been a good way for edamame enthusiasts to obtain consumer response for the product.

Enthusiastic Promotion

Producers have led the way for edamame promotion in Kentucky. A professionally designed marketing brochure entitled “Kentucky Edamame” was created in 2001 through a producer-led effort. Many

promotional cooking demonstrations and other educational events about edamame are also being conducted with great success in the Owensboro/Evansville area.

Such producer-driven promotional efforts make producers true marketers of a new crop. Enthusiastic, producer-driven marketing continues to be essential if producers of new crops such as edamame wish to capture increased profits for their entrepreneurial efforts.

Conclusions

Early experiences with edamame in Kentucky demonstrate the importance of attention to marketing from the beginning of the new crop development process. As of early July 2001, it appears that a niche for fresh market edamame is being carved out in the Owensboro, KY/Evansville, IN area.

There is by no means any one crop that will replace lost tobacco incomes in Kentucky. However, the lessons learned from the early success of fresh market edamame can help other efforts to add a cornucopia of new, higher value crops to the mix of fresh new efforts in Kentucky agricultural entrepreneurship.

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