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Amy L. Camenisch
University of Kentucky, amy.camenisch@gmail.com

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Amy L. Camenisch, Student

Dr. Sandra Bastin, Major Professor

Dr. Kelly Webber, Director of Graduate Studies

ENTREPRENEURSHIP ON THE FARM:
KENTUCKY GROWERS' PERCEPTIONS
OF BENEFITS AND BARRIERS

THESIS

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science in the
College of Agriculture
at the University of Kentucky

By

Amy Lorraine Camenisch

Lexington, Kentucky

Director: Dr. Sandra Bastin

Department of Dietetics and Human Nutrition

Lexington, KY

2013

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ABSTRACT OF THESIS

ENTREPRENEURSHIP ON THE FARM: KENTUCKY GROWERS' PERCEPTIONS OF BENEFITS AND BARRIERS

This study analyzed the perceptions of Kentucky Homebased Processors and Microprocessors of the benefits of and barriers to developing and selling value-added products. The final sample consisted of 141 participants, 60.5% (n=72) of which were from Central KY, 26.9% (n=32) were from Western KY, and 12.6% (n=15) were from Eastern KY. Overall, participants seemed to feel that their value-added products were successful in many different benefit categories. The primary barriers to developing value-added products were lack of time, lack of funding, and lack of legal knowledge. The primary barriers to utilizing program resources for farmers were not having enough time, being unaware of the services offered, and programs being too far away. The information found by this study can be used to determine the addressable needs in different regions of Kentucky and assist programs in making their services more available and applicable to Kentucky farm entrepreneurs.

KEYWORDS: Value-added Products, Homebased Processor and Microprocessor, Kentucky, Local Food, Farmer Perceptions

Amy Camenisch

12/13/13

ENTREPRENEURSHIP ON THE FARM:
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By

Amy Lorraine Camenisch

Sandra Bastin, PhD, RD, LD

(Director of Thesis)

Kelly Webber, PhD, RD, LD

(Director of Graduate Studies)

December 13, 2013

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Chapter One

Despite the growing numbers of farmers markets (FMs) in America, economic benefits may not be equitably reaching small farmers. The Kentucky Department of Agriculture reports the number of FMs to have steadily increased, numbering 147 in 2012. While the National Agricultural Statistics Service reports that the average Kentucky farm size increased between 1979 and 2008, the number of Kentucky farms has actually decreased. This movement toward increased farm size indicates that smaller operations are dwindling in numbers. Some of the more recent agricultural shifts can be traced back to the Tobacco Transition Payment Program that began in 2005 as a result of the Fair and Equitable Tobacco Reform Act of 2004. Commonly referred to as the “Tobacco Buyout,” this program provided farmers with subsidies that enabled them to slowly transition to the free market after having relied on the federal marketing quota and price support loan programs since the Great Depression. With the final payment occurring in 2014, many farmers are searching for additional sources of income.

One alternative source of income is the development and marketing of value-added products. Value-added products are defined in Public Law 107-171, Subtitle E, Section 6401 (2002), as follows:

The term ‘value-added agricultural product’ means any agricultural commodity or product that has undergone a change in physical state...and as a result...the customer base for the agricultural commodity or product has been expanded; and a greater portion of the revenue derived from the marketing, processing, or physical segregation of the agricultural commodity or product is available to the producer of the commodity or product. (pp. 424-5)

The development of value-added products can be very advantageous to small farmers who are struggling in the midst of agricultural upheaval. Consumer interest in FMs and local foods has persisted long past the point of being labeled a fad. This culture change has created the perfect climate for farmers to venture into new areas of agribusiness. Adding value to homegrown foods makes use of excess or unseemly produce that might have otherwise been thrown out. The farmer can also choose to sell the products at a local farmers' market to take advantage of creating relationships with local consumers. Alternatively, the farmer can sell quantities of the product to more permanent establishments, such as rural stores or specialty foods stores; however, elimination of middlemen is usually preferable so farmers can maximize profits.

While many farmers may be reluctant to incorporate new enterprises in their farming business, homegrown value-added products offer many potential benefits to the individual grower as well as the local economy. Policy-makers have recognized this by attempting to lift the barriers farmers face when incorporating value-added products as part of their income. This is apparent in the rural development title (Title VI) in the aforementioned 2002 farm bill Public Law 107-171, as well as House Bill 391. Public Law 107-171 offers Value-Added Producer Grants to boost farmers into expanding their business enterprises into the field of value-added products. The University of Kentucky Cooperative Extension Service, Kentucky Department of Agriculture and Kentucky Cabinet for Health Services partnered under House Bill 391 in 2003 by formulating workshops that result in the attendee being certified as a Homebased Processor (HBP) or Homebased Microprocessor (HBMP). The three goals of this effort were as follows: 1) "To showcase a number of genuine home grown, value-added food products at select

locations,” 2) “To allow farmers to provide safe, quality value-added products to their communities while capturing more of the retail food dollar and strengthening the local economy,” and 3) “To provide research-based methods and recommendations for farmers to produce safe, wholesome, value-added foods” (Bastin, 2007, p. 94-5).

A farmer classified as an HBP or HBMP may add value to produce they grow in Kentucky and then market it to consumers (“Homebased processing and microprocessing,” 2012). The product must primarily contain a Kentucky-grown ingredient that was grown, harvested, and processed by a Kentucky farmer. For the purpose of this program, a Kentucky farmer is defined as a resident who owns or leases the farmland that produces the primary ingredients for their value-added products (“Farmers’ Markets and KY’s Home-Based Processor Program,” n.d.). The difference between the two classifications is that an HBMP may work with foods that have a higher safety risk, such as canned green beans, whereas an HBP may manufacture low-risk foods, such as jams and jellies (“Homebased processing and microprocessing,” 2012). HBMPs must also complete a workshop, develop standardized recipes that must then be reviewed by a processing authority, provide proof of an approved water source, and manufacture labels that follow certain criteria. These certifications allow farmers to sell their products at FMs, directly from their farm, and at roadside stands approved by the Kentucky Farm Bureau. The certification for HBMPs costs \$50, plus a small fee for each recipe submitted for approval. The HBP registration is free (“Farmers’ Markets and KY’s Home-Based Processor Program,” n.d.). By 2007, the number of participants in this program had grown by 335% (Bastin, 2007). This program is a direct result of the

recognition of policy-makers of the rise in popularity of purchasing local foods and their subsequent effort to help farmers take advantage of it.

Problem Statement

Changes in the Kentucky agricultural economy, including the decrease in farm number and increase in farm size, have caused many small farmers to search for alternative agricultural business opportunities, such as producing value-added products. However, many farmers may be facing barriers that are preventing an entrepreneurial expansion and they may be unaware of the resources available to help them in their endeavor.

Purpose Statement

The purpose of this study is to assess the perceptions of Kentucky farmers of the benefits and barriers involved with home-based processing of agricultural value-added products. This study will also determine the factors that affect their ability to expand their farming business into this area.

Objectives

Some information gaps remain in the research that has already been done concerning local food and value-added products. In order to fill these gaps, this study intended to achieve the following objectives:

1. To determine farmers' perceived success of their value-added food products
2. To identify which programs farmers are aware of or use
3. To discover the primary perceived barriers to developing value-added food products

4. To ascertain what factors influence the development of a value-added food product business

This study achieved these objectives by surveying a sample of farmers in Kentucky who are involved in home-based processing.

Research Questions

This study aimed to answer the following research questions:

- What issues face a farmer when they want to start processing their raw produce?
- What would make it easier for more farmers to start developing value-added food products?
- Which programs are helpful and which are still unknown by farmers?
- Are there differences in the answers to these questions by region in the state of Kentucky?

Justification

Though some research has already been exploring the various aspects of the rise in consumer interest in local value-added products, little data has been collected about farmers' perceptions about the value-added product development process. For example, increased awareness of the availability of support programs may encourage farmers to enter the marketplace. Alonso (2011) surveyed farmers in Alabama to discover their involvement in adding value to produce leftovers, such as using bruised peaches to make marmalade. Not only does this technique add to the farmer's income by turning otherwise useless produce into a highly valued product, but it is also less wasteful and more sustainable. It seems that a substantial percentage of farmers are willing to consider

the change, though the investment of time, energy, and finances required may be daunting. Only one-third of farmers surveyed were maximizing their returns with this method, and a quarter of the farmers displayed interest in starting to add value to produce leftovers. The most significant barrier Alonso (2011) identified was the lack of a commercial kitchen in which to prepare the products. This study will attempt to find similar useful information that is specific to Kentucky. Programs that appear to be relatively unknown can then increase their marketing techniques, information gaps held by farmers will be discovered, and identified barriers can be addressed.

Assumptions and Limitations

The purpose of this study rests on certain assumptions and is bounded by certain limitations. This study assumed that Kentucky farmers would be willing to take a survey and would answer truthfully. It was also assumed that farmers' perceptions of benefits and barriers would be measurable and that the sample size would be sufficient to make generalizations. Lastly, it was assumed that the survey was valid and reliable. A limitation of the study is that perceptions of benefits and barriers are difficult variables to define and different subjects taking the survey may interpret the questions in different ways. Time and resources also limited the study, decreasing the sample size. This also reduced the level of confidence at which the results of the study can be generalized.

Chapter Two

Literature Review

The increase in the amount of research that analyzes local food systems has paralleled the surge in consumer interest in purchasing locally grown or produced foods. Market demand presents many potential opportunities for small-scale growers. However, before well-formulated suggestions can be given to growers, the market demand needs to be analyzed and the interest of farmers in taking the extra effort to take advantage of the suggestions. Past research on how farmers can maximize their profits, especially by using value-added products, will be presented. Research articles were included based on their content falling within one of the following broad categories: local food, FMs, farmer-hospitality relationships, and value-added products.

Local Food

Despite the increased globalization of food systems, many consumers understand the value of supporting their local food system and make an effort to support the local farmer. The food system can be defined as all activities involving food, including production, transport, processing, and consumption (University of Oxford, n.d.). However, the food system can be divided into levels, such as local and global. Many prefer buying local to buying global. This increased use of local food has its own advantages and disadvantages to the community involved. The advantages can be classified in one of the following categories: social, economic, or environmental. Jones, Comfort, and Hillier (2004) noted that many of the benefits are tied to the promotion of sustainability. Since many consumers who are interested in local food are equally interested in sustainability, farmers marketing to them adopt environmentally friendly

methods of farming. Jones et al. (2004) emphasized that purchasing food locally results in new jobs, increased potential for small businesses, bolstering of community culture, money kept within the community, increased access to fresh foods within the community, and reduction of food miles and thus energy use. However, local food production comes at a higher cost to the consumer because the small business cannot be as efficient as a larger factory. Also, though new jobs are created, local unemployed people may not have the skills to perform them (Jones et al., 2004).

Definition. Local food is not easily defined. In the literal sense, food grown within a certain mile radius from the consumer is considered local. The National Association of Farmers Markets (NAFM) states that local may simply be defined as when the farmer and consumer are within one county or another type of boundary. Jones, Comfort, and Hillier (2004) conducted a case study of the increased consumer interest in local foods in the United Kingdom to determine how local food is defined. Jones et al. emphasized the importance of recognizing that local food and locality food are different. Local food is both grown and consumed within a certain area. Locality food is known for being from a certain geographic region, but is sold all over the world. One could also define local food differently depending on the consumer. One consumer may think a food is local when it is simply produced within the state, whereas another may consider food to be local only when it is produced in his or her county. Another way in which local food could be defined is that it is food that is produced with the benefit of the region and local food system in mind (Jones et al., 2004; Pearson & Bailey, 2012). Whatever the definition used in the region being studied, most researchers would agree that a definition should be determined when specifically analyzing it as a variable within a research study.

No matter what the official definition of “local” is, what matters is the consumers’ definition. Consumers seem to feel more comfortable if they have a more precise idea of where their food originated. Clonan, Holdsworth, Swift, and Wilson (2010) found that consumers in the United Kingdom are more likely to develop a pattern of purchasing products considered local for a price premium than fair trade or organic products. The researchers state, “The clear pattern that emerges indicates that local produce is of very substantial importance [to consumers]” (Clonan et al., 2010, p. 5).

Pearson et al. (2011) conducted another study analyzing the definition of local food according to consumers. They distributed a survey to all customers entering a small food cooperative during one week chosen to be indicative of an average week. They discovered a vagueness surrounding the definition of local food held by consumers. In fact, some customers actually stated that the degree of localness they preferred depended on the product in question. In general, they preferred fresh produce to be more local, meaning that it had been grown closer to the market where it was sold. Some customers suggested that food miles be a component of the label since everyone judges each product’s localness differently.

Routes to market. Local food can be brought to the consumer in many different ways. You-Pick farms, FMs, roadside stands, rural stores, caterers, the internet, Community Supported Agriculture (CSA), and seasonal shares are all different ways the consumer can access locally grown food and interact with the producer. In fact, most local food producers utilize two or three of these routes to sustain their business (Guthrie, Guthrie, Lawson, & Cameron, 2006). Small food processing plants and restaurants may also purchase local food and give a guarantee to their customers about the level of

localness their products or menu items contain. Farmers may also engage in cooperatives with each other to market their products. A few larger supermarket chains have considered selling local produce; however, local food production is simply not yet at a scale where feasibility is consistent. Jones et al. (2004) concluded that while there is a definite interest among consumers and farmers to increase consumption of local food, the methods for selling local produce at supermarkets are obviously still developing.

Market potential. Now that an attempt has been made to define the word “local” and to determine the means by which local food can be found by the consumer, it remains to be explored what exactly the market potential is for local food. Many consumers are extremely conscious of how sustainably their food was grown, how well the animals were treated, and how healthy and chemical-free their food is (Pearson & Bailey, 2012). Purchasing food directly from the farmer allows a certain level of transparency between consumers and their food that is not possible when shopping in a supermarket. In fact, it has been found that many consumers actually assume that because the food is grown on a small scale and sold locally that it was produced in an environmentally friendly manner (Pearson & Bailey, 2012).

Other consumers are drawn to local food markets simply because it goes against the industrial grain and cultivates bonds between them, other local consumers, and the farmers present. The consumer also gains a sense of the seasonality of foods and the artisanal products that are popular among small farmers and food processors within their region when shopping locally (Pearson & Bailey, 2012). In addition, interacting directly with someone who grew the food or was involved in the process opens up opportunities for conversation and the possibility of gaining suggestions for preparing the food sold at

the stand. However, while this laidback method of shopping seems appealing and motivating for consumers, it is simultaneously one of the main reasons a certain sector of consumers avoid purchasing locally. It may be inconvenient and take too much time, resulting in the event becoming irregular (Pearson & Bailey, 2012).

Pearson and Bailey (2012) identified seven primary reasons for purchasing locally that are considered to include the motivations of most consumers. These concerns include the following: quality assurance, supporting the community, confidence in the food's source, freshness and health, environmental sustainability, increased options for food shopping, and enjoyment (Pearson & Bailey, 2012). Though supermarkets are likely to keep their hold on the food market, the previously listed consumer motivations indicate a healthy market for local food. Pearson and Bailey suggest that more research be done in the areas of clearly defining what local food is and developing an assurance system for consumers to recognize when foods fit under this predetermined definition of local.

Consumer interest. Literature supports a definite interest in local foods among consumers. Loureiro and Hine (2002) assessed the demand for local, organic, and GMO-free potatoes among consumers to determine which niche is most desirable. Findings from a study of this nature help farmers choose which farming method and labeling technique to use. In total, 437 questionnaires were administered to randomly selected consumers in convenient locations within grocery stores. They were given the definitions of GMO-free food, organic food, and local food, which in this case was defined as Colorado-grown. They then took the survey that asked them questions including which type of food for which they would be willing to pay more of a price premium (Loureiro & Hine, 2002). The study found that consumers were more willing to pay about a 10%

premium for Colorado-grown potatoes than for GMO-free or organic potatoes. This willingness was tied to the fact that these consumers projected a higher nutritional quality onto the locally grown potatoes (Loureiro & Hine, 2002).

Other factors that affected willingness-to-pay in the 2002 study conducted by Loureiro and Hine included age, class, and number of children in the household. The older the participant was, the less willing they were to pay more for GMO-free potatoes. Participants in an upper class, or as defined by the study, with graduate degrees and salaries over \$50,000, were willing to pay more for GMO-free or organic potatoes than lower classes. Lastly, the more children in the house, the less likely the shopper was to be willing to pay more for any type of value added to the potato. In conclusion, the study found that it would be most worthwhile for a farmer to market and attach a price premium to his or her potatoes as Colorado-grown, rather than GMO-free or organic. Future research suggested by the study included copying the study's design and methods in other regions or with other foods (Loureiro & Hine, 2002).

Another study focused on consumer demand for locally produced value-added foods in Kentucky and Ohio. The consumer survey used by Hu, Batte, Woods, and Ernst (2011) discovered a willingness-to-pay that is encouraging to all HBPs. The study found that consumers were especially eager to support small family farms by purchasing products with that indication on the label. This emphasizes the importance of including an origin that is both local and recognizable to consumers on value-added products. Obtaining and placing *State Proud* labels on the products was found to be highly effective as well, raising the value of the jar by about 15 US cents in the minds of consumers. A label that indicated the product was from certain specific regions raised the

value of the jar by about 31 US cents in the eyes of the consumers. Thus, it seems that farmers must not merely learn to make value-added products, but also to label and market them (Hu et al. 2011).

A case study on Colorado Homestead Ranches and their value-added agricultural enterprises (VAAE) conducted by McFadden, Umberger, and Wilson (2004) analyzed what qualities of beef production consumers most value. They found that more consumers consider it “important” that the beef is locally produced and traceable from farm to consumer. More consumers also consider it “very important” that the product is labeled with its county of origin. Once again, labeling and communication with the consumer seems to be inextricably tied to the value consumers attach to locally produced foods.

While the previous study analyzed a very specific product market, Pearson et al. (2011) studied consumers at a small food cooperative to glean their motivation for purchasing local food in general. Pearson et al. (2011) reviewed other research for background material, finding the primary reasons for purchasing local food included that they know where it came from and that they assume that it was fresher, tastier, more authentic, and of a better quality. They also wish to support the local food system and believe they are benefiting the environment by promoting small farms and decreasing food miles (Pearson et al., 2011).

The survey that Pearson et al. (2011) gave to customers of the small cooperative revealed that about half of the customers wished that the cooperative would sell more local products. The customers stated that although they could readily find local fresh produce, they wanted more access to locally produced cheeses and baked goods. Pearson

et al. (2011) concluded that while the demand for local food is strong, “wide scale adoption of local food webs would require massive structural changes in the supply chain” (p. 897). The transition to local foods is a slow one, but one that is driven by the powerful effects of consumer interest, policy changes, and the enthusiasm of farmers (Pearson et al., 2011).

Farmers Markets

The increased interest in local foods resulted in marketplaces where enthused consumers could easily locate a variety of local produce in one location. These places were called FMs. Guthrie, J., Guthrie, A., Lawson, and Cameron (2006) explored the cause of the recent increase in FMs and local foods. They recognized that today’s customers are more knowledgeable and demand a higher quality of food. This has created a movement that Guthrie et al. (2006) classified as another industrial revolution, stating, “The first industrial revolution was about resource extraction and money, whereas the second industrial revolution is about resource conservation and values” (p. 560). This revolution sparked the development of FMs.

Development. FMs are the spearhead for the “real food” revolution, creating a place where concerned customers can shop for the authentic artisanal products that are more widely valued today (Guthrie et al., 2006). Logically, this is opening up more opportunities for small entrepreneurial farmers and increasing their chance of survival. For the purpose of a study conducted by Guthrie et al. (2006), FMs were defined as a market that met at a certain location and featured vendors who sold products they had grown or made themselves. In their review, Guthrie et al. (2006) found that FMs seem to be successful due to their pleasant atmosphere, the diversity of products offered, and the

provision of the ability to talk directly with the producers of the food, which increased customer trust of the products. FMs set in cities also provide an escape from urban life. Generally, FMs seem to attract advocates of sustaining the rural community, environmentalists who support the organic movement, consumers who are disgusted by the uniform and globalized food system, and tourists who are attracted to activities that feature a location's uniqueness.

After Guthrie et al. (2006) surveyed vendors, customers, and managers in the FM business, they found that many are run by non-profit community organizations, but the funding source widely varies from market to market. Vendors are primarily attracted to FMs as one of their distribution outlets because of the drastic increase in profit margin that is possible (Guthrie et al., 2006). Becoming one's own distributor, rather than selling produce to an outside distributor, can potentially double one's profit margin. Selling at FMs also provides vendors with immediate cash flow. Those who are developing value-added products utilize FMs as a means to gauge consumer interest in new products. Other producers who previously sold primary products and were put out of business by supermarkets can seek refuge in "the resurrected, 'new generation' farmers markets" (Guthrie et al., 2006, p. 571).

Economic impact. It is easily assumed that FMs would stimulate the local economy and benefit the community. Hughes, Brown, Miller, and McConnell (2008) tested this theory in West Virginia, taking into account the transfer of business from supermarkets and grocery stores to the local food system. They purposed to combine vendor survey results with an input-output model to estimate how much FMs financially contribute to the economy and how much income is lost to supermarkets due to FMs.

They hypothesized that FMs would have a net positive effect on the economy even after opportunity cost was considered (Hughes et al., 2008).

Hughes et al. (2008) discovered that, in West Virginia, FMs contribute about 119 jobs or 69 full-time equivalents (FTEs) and \$2.39 million in output with \$1.48 million in gross state product (GSP). After taking the opportunity cost into account, the FMs still contributed about 82 jobs or 43 FTEs and \$1.075 million in output with \$0.653 million in GSP. Their data supported their hypothesis. This model of evaluation could be replicated in other states. Though it is not a favorable outcome that FMs would detract from an economy in any way, taking opportunity cost into account provides realistic and more defensible results.

Hughes et al. (2008) noted their research did not take into account that an unknown portion of FM customers may be shopping there as a recreational activity, rather than as a substitute for their weekly grocery store visit. An influx of customers to a certain area of town may also result in “spill-over spending” for nearby businesses (Hughes et al., 2008, p. 264). The positive effects of the increased entrepreneurship that is fostered at FMs may not yet be economically measurable.

Farmer-Hospitality Relationships

The “farm to fork” or “farm to table” movement has caused a push for more farmer-hospitality relationships. This movement was sparked by the increased consumer interest in local foods. Consumers desire to access local foods not only in marketplaces, but also in restaurants and schools (Boyce, 2013). Contracts with hospitality enterprises grant farmers a twofold benefit. First, it provides farmers with a steady and dependable avenue of income. Second, their produce and products are advertised to the enterprise’s

customers when their farm name appears on the menu. Alonso and O'Neill (2010) realized the challenge farmers face when they attempt to sell their products on their farm. It would be beneficial for farmers to find a more reliable and lucrative means of living and only use on-site sales as supplemental income.

Business perspective. Alonso and O'Neill (2010) sought to analyze how hospitality enterprises in the southern United States view making relationships with farmers to determine how likely it is for new relations to be knit between the two groups. They interviewed 21 restaurateurs about their interest in local products, current relationships with farmers, and how any collaboration with farmers had affected their bottom line. They chose to study small hospitality operations, with the largest employing 48 people. They found that, while more respondents agreed than disagreed that it is important to promote local foods, a full three-quarters of them did not purchase, or only rarely purchased, local products for their operation. Reasons given for this lack of involvement were that local foods are more expensive and inconveniently obtained or that their restaurants are not 'fancy' enough (Alonso & O'Neill, 2010, p. 1181). Some respondents stated that they were not involved because no farmers had contacted them. Many respondents also noted that they might be more willing to develop relationships with farmers if the farmers would deliver the produce to the restaurant.

Of the quarter of respondents Alonso and O'Neill (2010) interviewed who regularly used local products, about a third of them did not acknowledge this on their menus. The main reasons they gave for being involved were that their chefs preferred the fresher ingredients and that the food was simply of a better quality. Overall, Alonso and O'Neill (2010) concluded that the three main reasons that hospitality enterprises do not

buy directly from farmers were the convenience of delivery from distributors, price, and simple lack of knowledge about any farmers nearby. However, it seems that Alonso and O'Neill (2010) did not consider these to be sufficient cause for an operation to forgo local foods. Though they did not interview him personally, Alonso and O'Neill (2010) referenced Chris Arnold, the Director of Media Relations for the Chipotle Mexican Restaurant, who stated that better taste was the main reason for the chain's use of as many local items as possible. This is a wonderful example of a successful relationship between a large chain restaurant and the local food system.

Farmer perspective. While hospitality enterprises have their reasons when avoiding or promoting local products, farmers also have an opinion on this issue. Alonso (2010) surveyed Alabama farmers to determine if they have any current business relationships with restaurants and what factors affect the development of these relationships. He found that 80% of the farmers he surveyed had no relationship with hospitality operations. Most vendors at FMs owned You-Pick farms or sold on-site. Reasons included not enough time, insufficient acreage, distrust of operation owners, or the inability to provide a type of produce year-round for a solid menu. Overall, the primary reasons parallel those given by the hospitality enterprises in the study conducted by Alonso and O'Neill (2010). The farmers either said no restaurants had contacted them about it, exhibited worry about getting the right price for their produce, or were simply content with the convenience of selling on-site or at FMs. For those farmers who do sell to restaurants, Alonso (2010) discovered that the main contact and motivation for the relationship is usually the head chef.

Despite the difficulties in forming these farmer-hospitality relationships, it seems farmers are interested. One farmer interviewed by Alonso (2010) stated, “I definitely do see a potential; it is going to take a united effort with more growers forming some cooperative type of situation...I think there is a lot of interest in doing this....The farmer’s markets can only take so much” (p. 1171). It seems that, while these relationships make sense and seem beneficial in an ideal world, there are many challenges involved and farmers still require innovative thinking to keep their businesses afloat.

Value-added Products

Value-added products offer an alternative source of income to farmers. A value-added product is raw produce that the farmer has processed or changed in some way. The development of value-added products can be very advantageous to the small farmer who is struggling to maintain an income.

Development. Stræte (2008) explored exactly what it is that can give farmers and small producers an edge over big industry. He discussed how certain qualities, once added to specialty products, differentiated them from conventional products, making them more attractive to consumers. He agreed with O’Reilly and Haines (2004) that alternative or specialty food can be defined as “a food product differentiated from industrial or mass-products by one or more of the following factors: raw material, process, know-how, availability and consumer perception” (Stræte, 2008, p.63). Using the model of modes of designed qualities, Stræte proposed that the categories of spatial dimension (placeless vs. localized food), production method (conventional vs. organic), and producer-consumer relations affect the potential added value of a product.

Stræte (2008) reviewed the qualities added to specialty milk in Norway and Wales. Milk products were considered as indicative of other food products in the market due to its potential for many different modes of quality, as defined by the model described above. The dairy producers that Stræte studied sold liquid milk as well as products based on local recipes, such as *Tjukkmjøl*, a certain type of thick soured milk. Stræte found that the specialness of non-industrial food does not lie solely in localized production. In a way, industrial food can be considered locally produced if one lives near a production plant. Instead, specialty food must also exhibit differences in either the method of production, distribution, or marketing.

Wolfe and Barefield (2007) conducted various case studies in the southeastern states of Tennessee and Georgia to unearth individual feasibility stories of agribusiness entrepreneurs. The first case study featured the Central Georgia Livestock Cooperative that found a demand for goat products in local ethnic markets. Although the Cooperative did calculate a definite interest among these markets, it could not convince Georgia goat producers to invest in a small processing plant (Wolfe and Barefield, 2007). The second case study followed a single entrepreneur who had developed a unique condiment. The barriers he faced included laws that prohibited the resale of foods produced in the home, the scarcity of co-packers to work with to produce the condiment on a mass scale, and the development of unique packaging that was attractive to the average consumer, food-service establishment, and grocery stores. This was also unsuccessful due to the complexity of the challenges the entrepreneur faced, his lack of capital, and his development of a business plan late in the process.

Overall, Wolfe and Barefield (2007) concluded that those who would venture into agribusiness would benefit from a basic level of skill and knowledge at the start. While value-added agribusiness does present a set of enticing opportunities, it also exposes new obstacles. Wolfe and Barefield identified financial plans and marketing plans as the primary knowledge gaps found, as well as the most important factors for success.

Farmer perspective. As mentioned earlier, Alonso (2011) surveyed farmers in Alabama to discover their involvement in producing value-added products. About a third of the farmers who were surveyed maximized their returns with the value-added method, turning otherwise unmarketable fresh produce into attractive products. About a quarter of the farmers who were not currently producing value-added products were willing to consider it, though the investment of time, energy, and finances it requires dampened their enthusiasm considerably. However, the most significant barrier Alonso (2011) identified was the lack of a commercial kitchen in which to prepare the products.

Alonso and O'Neill (2011) examined another farming community in Alabama to determine the decision-making process that farmers go through when developing value-added products and how interested they may be in forming a cooperative with other local farmers to make the process more feasible. They assumed that farmers would be interested due to reasons found by other researchers, such as to use excess produce, to utilize creative talent, and to supplement income (Alonso and O'Neill, 2011). They used the Alabama Cooperative Extension System for feedback on the survey used and for assistance in reaching the local farmers. Although only 33 questionnaires were completed and returned, Alonso and O'Neill (2011) still considered the responses to be valuable.

The farmers surveyed by Alonso and O'Neill (2011) grew a variety of produce, including peaches, watermelon, plums, strawberries, squash, tomatoes, peas, nectarines, apricots, and blueberries. When questioned about their blemished and unmarketable produce, about 60% of farmers were interested in mobilizing it by selling it at simply any price. When questioned about their willingness to involve an outside party, about 55% were interested in letting someone else process their produce, about 50% were interested in letting someone else package their produce, and about 35% were interested in allowing someone to label the produce with their name.

One group in Alonso's and O'Neill's (2011) study, just over 40% of respondents, was intrigued by the idea of forming a cooperative to supply produce and develop value-added products that would be marketed under a certain label. About a quarter of the farmers also expressed a desire to have access to a commercial kitchen in order to make jams, jelly, pickled foods, sauces, salsas, preserves, soups, and canned vegetables. Overall, the results of the study conducted by Alonso and O'Neill (2011) indicate that many farmers have extra produce they wish to use and are interested in learning about developing value-added products.

Consumer interest. Farmer interest in developing value-added products has now been ascertained. However, consumer interest is an equally important factor when considering this issue. Hu, Woods, and Bastin (2009) analyzed consumer preferences and willingness to pay for certain blueberry products, including pure blueberry jam, blueberry-lime jam, blueberry yogurt, blueberry fruit rollups, blueberry dry muffin mix, and blueberry raisinettes. The attributes of concern were organic, Kentucky-grown, and sugar-free.

Hu et al. (2009) obtained 557 usable completed surveys. For every product, customers were strongly in favor of purchasing it if it was produced locally. Customers generally chose the organic and/or sugar-free claims, though not for every product. These claims seem to be more specific to individual products. The data was then analyzed taking demographic information into account. It was found that, for example, younger to middle-aged consumers valued the Kentucky-grown claim most and younger and more educated consumers were more likely to pay more for organic products. However, across all products and consumer types, the Kentucky-grown attribute was most valued (Hu et al., 2009). This information is valuable to agribusiness entrepreneurs and those wishing to assist them.

As mentioned earlier, Hu, Batte, Woods, and Ernst (2011) surveyed consumers in Kentucky and Ohio to determine consumers' reactions to labels. Their findings paralleled those found by Hu et al. (2009). Consumers were especially eager to support small family farms by purchasing products with that indication on the label. Obtaining and placing *State Proud* labels on the products was found to be highly effective as well. Thus, it seems that farmers must not merely learn to make value-added products, but also to label and market them.

Economic performance. While there is not a wealth of research on the market potential of value-added products, the research that is available can provide estimates for other locations and products than those specifically studied. Akaichi, Gil, and Nayga (2012) analyzed the potential market success of a white bean product in Spain. The uniqueness of this study lay in the fact that they utilized actual cash and products in the experiment so that the participants would not be disloyal to their normal preferences.

They also researched what effect additional information, such as reference prices, tasting, and pamphlets, had on consumer choices.

Akaichi et al. (2012) discovered that reference prices of other specialty products similar to the one in question raised the amount that participants were willing to spend on the product. However, providing information about the sensory, nutritional, and gastronomical aspects of the product did not affect willingness to pay. Equal amounts of the participants were negatively or positively affected by a tasting opportunity. Overall, participants were willing to pay more for the product than its conventional counterpart. Also, if the participants had prior experience with the product or already knew about it they were more likely to purchase it (Akaichi et al., 2012).

While experimental research is useful, it may not be representative of the real world. Lewis (2002) found a healthy amount of evidence that farmers and extension agents in West Virginia view value-added products favorably and consider their use successful. Lewis surveyed extension agents and interviewed farmers to gather her data. She found an average of about 9 value-added producers per county in West Virginia. Of the agents surveyed, 96% stated that on average about 10% of farmers in their counties were interested in value-added product development. The same amount of agents stated that they were willing to help farmers in this endeavor.

Of the farmers interviewed in Lewis' (2002) study, every single one revealed at least some degree of success with value-added processing. Lewis stated the following:

All [farmers] were either content with their current operations or planned to expand in the future. It is clear that there is money to be made in the value-added

sector, provided that producers are well informed about markets, marketing strategies, and intended finished products. (Lewis, 2002, p. 29)

According to these findings, sufficient reason is now evident for persons such as university faculty and community educators to develop means of assistance to growers wishing to embark on value-added processing (Lewis, 2002).

Conclusion

In summary, this literature review explores the past research on local food, FMs, farmer-hospitality relationships, and value-added products. According to the literature, the definition of local food is fluid, with much dependence on consumer perception. Despite this lack of clarity, research suggests that there is definite market potential for local foods. FMs have been shown to be a profitable location at which farmers can sell their produce and value-added products. While they do come at an opportunity cost, the markets seem to benefit the local economy overall.

When seeking additional sources of income for farmers, relationships with restaurants may seem like a profitable option. However, research has revealed many challenges for both farmers and foodservice establishments when the formation of a relationship is attempted. Value-added products may provide a source of income that is potentially more interesting to farmers. The Cooperative Extension System is an organization already in place that assists those farmers who wish to develop their own value-added products. Research has shown that farmers and consumers are interested in the idea and that there is a solid market potential for the products.

This literature review shows that research regarding local foods and value-added products, in particular, is becoming more popular. The current study proposes to continue

the assessment of the reasons that farmers engage in home-based processing of agricultural products and the methods by which they do so. However, past research is lacking in detail pertaining to Kentucky farmers. It also fails to determine which specific and realistic aids would increase farmers' ability to venture into and expand within the realm of value-added processing. This study intends to fill these gaps in the literature by first collecting and analyzing data on current Kentucky farmer involvement in value-added processing. Secondly, the study will ascertain Kentucky farmer opinions of specific and realistic ways in which they could be aided in their value-added endeavors.

Chapter Three

Methodology

New insight on the needs of local farmers is valuable information for those who wish to help boost Kentucky's economy. The purpose of this study is to assess Kentucky farmer involvement in home-based processing of agricultural products and to determine the factors that would increase their ability to expand their farming business in this area.

Research Design

This study follows a mixed methods research design. Nothing in the situation was manipulated to observe the effects of a change, classifying the study as non-experimental. In addition, much of the data were analyzed quantitatively. However, this study also included some aspects of the qualitative research paradigm because it is exploratory in nature, with variables that are difficult to define. For data collection, this study utilized the descriptive survey research method. The sample of the population received questionnaires that contain some questions that can be measured quantitatively and some that must be interpreted qualitatively.

Subjects

The population consisted of all farmers in Kentucky who grow fruits, vegetables, nuts, or herbs or keep bees and wish to or already sell them in the form of value-added food products. The initial sample consisted of all Kentucky farmers who were certified to sell value-added food products through the HBP and HBMP programs. At the time the study was conducted, 766 individuals were registered as HBPs and/or HBMPs. Family members who lived at the same address, such as spouses, were counted as one person.

Instrument of Measurement

A questionnaire was used as the instrument of measurement. One of its purposes was to collect quantitative data about the population at hand, such as the primary barrier that challenged the highest percentage of farmers. Its second purpose was to collect qualitative data, such as the reasons that farmers are planning to decrease or increase the breadth of their business in the next three years.

The survey was developed using Qualtrics, a survey building website. This allowed for skip logic in order to ask participants only questions that pertained to them. For example, simply because a participant was registered as a HBP or HBMP did not mean that they actually used their license to process and sell value-added food products. A participant in this situation would have no valid information with which to answer questions about the success of their products. Therefore, when they provided this information at the beginning of the survey, it automatically skipped to the few questions that pertained to them. Questions were included that would gather information pertaining to each of this study's research objectives or collect helpful background details.

Procedure

Contact information for the HBPs and HBMPs was obtained with permission from the Kentucky Food Safety Branch. All participants with phone numbers listed were called to alert them to the upcoming survey. The number of participants called was not counted, but was estimated to be about 650 individuals. If no one answered, a message was left. When calling individuals with an email address listed, they were told they could access the survey through a link in an email that they would be receiving within the next

week. When calling individuals with no email address listed, they were told they could access the survey by typing in a url found in a letter they would receive in the next week. Emails were sent through to Qualtrics site to those with email addresses listed. The email contained a clickable link to the survey. The number of individuals with email addresses was not counted, but was estimated to be about 300. Letters were sent to the remainder of the participants, which was estimated to be about 450. The letters contained a URL that, when typed into a web browser, would take the participant to the survey. This URL was designed using the website www.tinyurl.com to shorten the length of the original URL for the survey. The contents of the email and the letter can be found in Appendix A. If no phone number, valid email address, or valid street address was listed, those individuals were excluded from the study. There was no incentive offered to those who completed the surveys nor was there any deception involved in the presentation of the survey. Initially, it was decided that the participants would have two weeks to complete the survey. However, due to a low response rate at that time, an email was sent to those with email addresses to inform them of a one-week deadline extension.

Data Analysis

The raw data collected by the survey were downloaded from Qualtrics and uploaded into SPSS (Version 21) for statistical analysis. Qualtrics did not allow for the elimination of incomplete responses. Therefore, 20 of the responses included in the statistical analysis were started, but not finished. In order to avoid as much error as possible, each question was analyzed separately using the number of participants who answered that question specifically. For the purpose of providing a more specific context with which to interpret the results, Kentucky's 120 counties were divided into three

regions, Western, Central, and Eastern, according to the Cooperative Extension Service's Programming Regions Map (see Appendices B and C).

The question asking participants about the produce they grew and the value-added products they made was not interpreted as planned. It asked participants to list the produce they grow in a column of text boxes on the left and the product they made from it in a column of text boxes on the right. The columns were ten rows long, allowing for up to ten products to be listed. It was expected that all the data from the ten rows could be combined and analyzed. However, the complexity of the question caused the data collected from it to be gathered by individual rows. Under the advisement of a statistician, these individual sets of data were not combined, but were analyzed separately. The first three rows were included in the study, assuming that participants would list their primary produce and value-added products first. These rows are hereafter referred to as "first mention," "second mention," and "third mention."

Most of the data collected were run with descriptive analysis techniques, namely frequencies and cross-tabulations. Variables compared to each other using cross tabulations were statistically analyzed with Fisher's Exact Test to determine at which level of significance the results could be generalized to the population under examination. This method was chosen due to the small final sample size and the large number of variables. A p-value of 0.05 or less was considered significant.

Chapter Four

Results

The final sample consisted of 141 participants, resulting in a response rate of 18.4%. Because some of the questions in the survey could have been perceived as asking for highly personal information, participants were not required to answer every question in order to submit the survey. Therefore, all percentages listed in this section reflect the percentage of the participants who chose to answer that particular question.

Demographics

Of the final sample, 60.5% (n=72) were from Central KY, 26.9% (n=32) were from Western KY, and 12.6% (n=15) were from Eastern KY. Participants were primarily over the age of 50, with 5.3% (n=7) between the ages of 20 and 29, 5.3% (n=7) between the ages of 30 and 39, 18.2% (n=24) between the ages of 40 and 49, 43.9% (n=58) between the ages of 50 and 59, 24.2% (n=32) between the ages of 60 and 69, and 3.0% (n=4) at the age of 70 or older.

Sixteen percent (n=21) had only completed high school or less education, 35.1% (n=46) had completed some college or an associate's degree, 29.8% (n=39) had completed a bachelor's degree, and 19.1% (n=25) had completed a graduate degree. When education level was compared to region, the results were not statistically significant ($p=0.4$). Eastern KY had the highest percentage of participants who had only completed high school or less (26.7%, n=4), Western KY had the highest percentage of participants who had only completed some college or an associate's degree (40.6%, n=13), Central KY had the highest percentage of participants who had only completed a

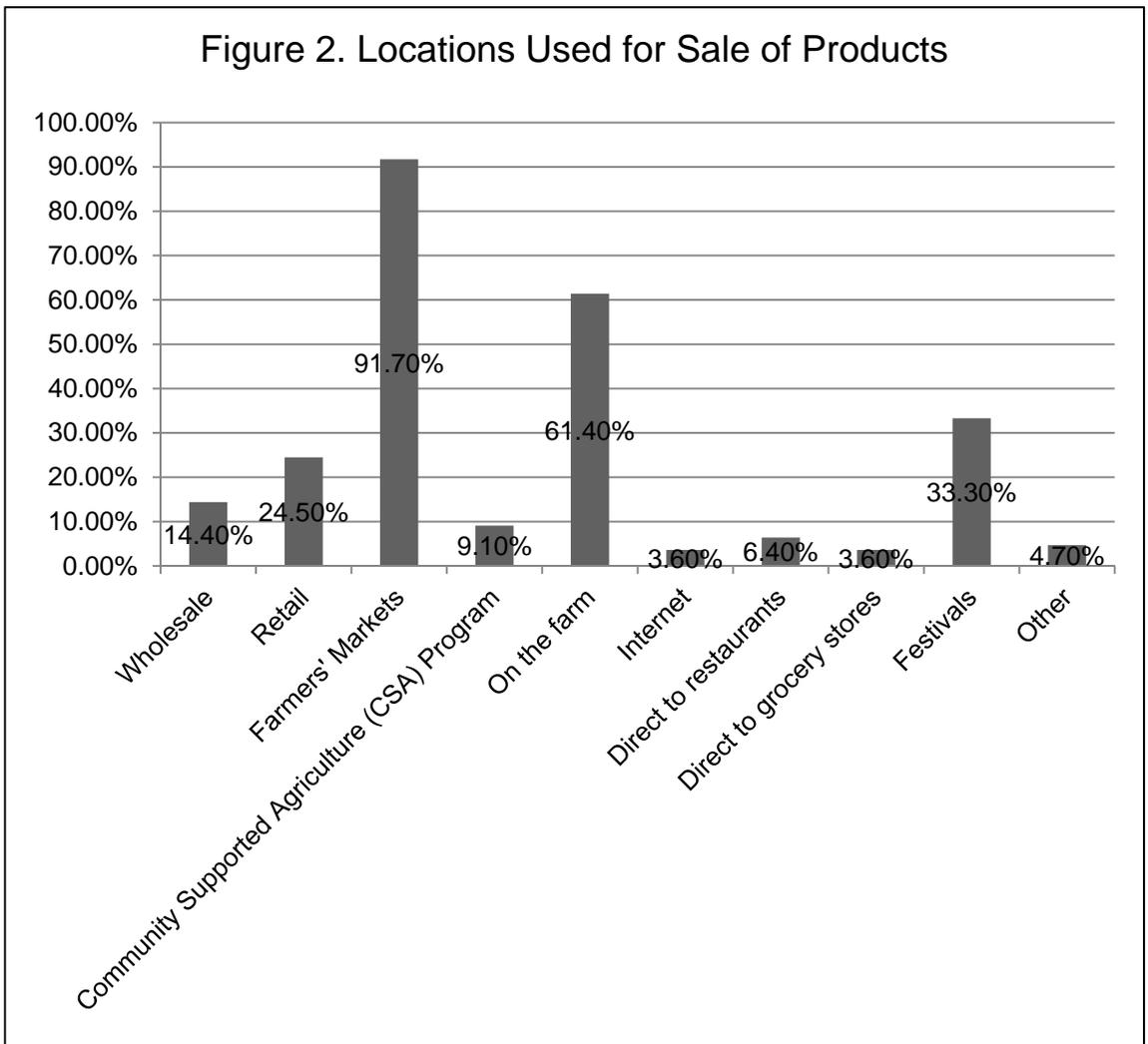
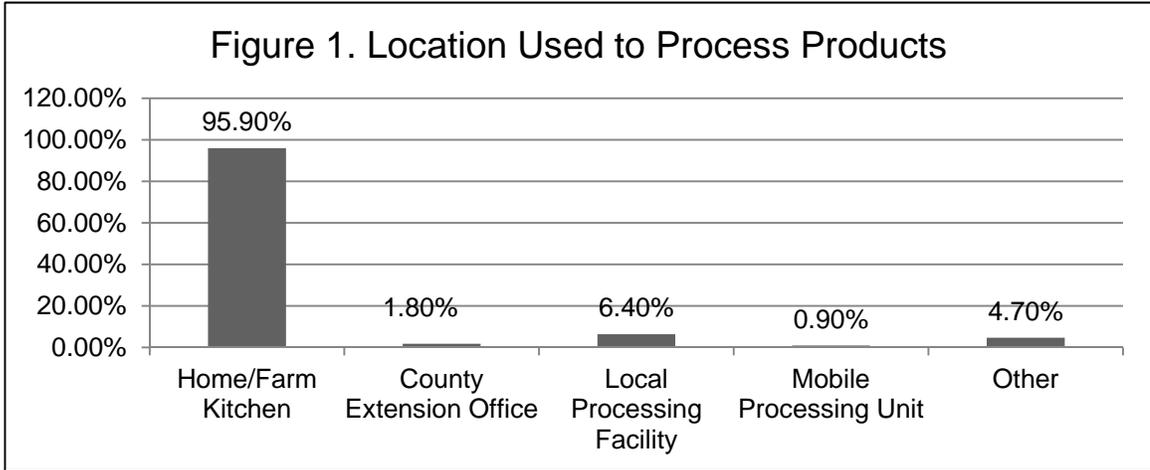
bachelor's degree (34.7%, n=25), and Western KY had the highest percentage of participants who had completed a graduate degree (21.9%, n=7).

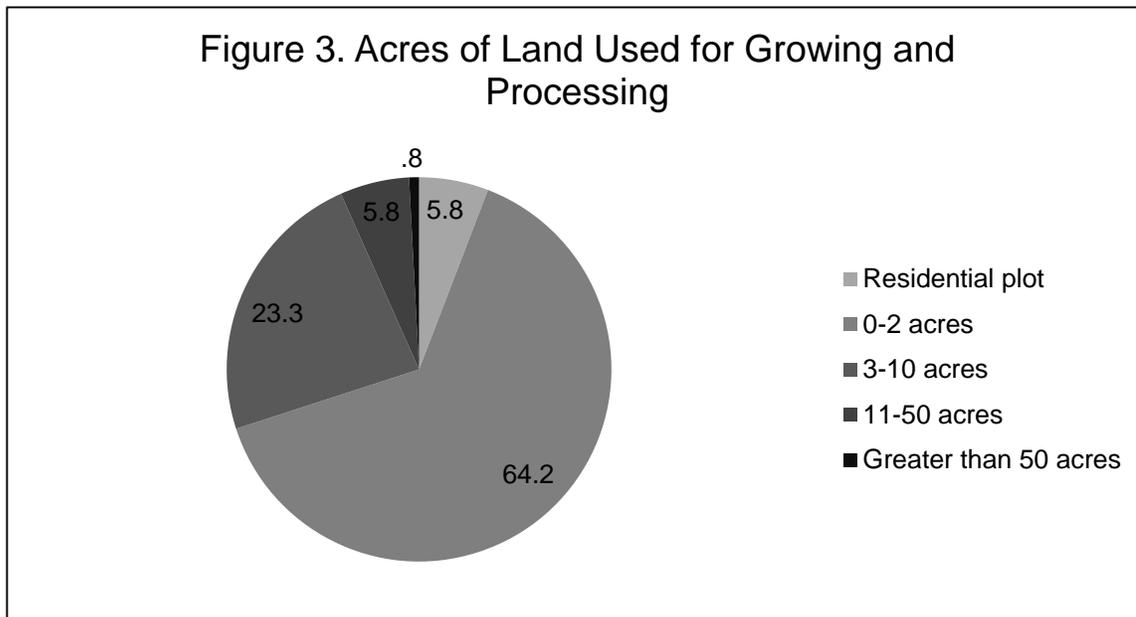
Concerning average annual income, 8.9% (n=11) earned \$10,000 or less, 35.5% (n=44) earned \$10,001-\$30,000, 19.4% (n=24) earned \$30,001-\$50,000, 21.0% (n=26) earned \$50,001-\$80,000, 6.5% (n=8) earned \$80,001-\$100,000, and 8.9% (n=11) earned \$100,001 or more. When average annual income was compared to region, the result was not statistically significant ($p=0.184$). Western KY had the highest percentage of participants who earned \$10,000 or less (10.7%, n=3). Eastern KY had the highest percentage of participants who earned \$10,001-\$30,000 (40.0%, n=6), of those who earned \$30,001-\$50,000 (26.7%, n=4), and of those who earned \$50,001-80,000 (20.0%, n=3). Western KY had the highest percentage of those who earned \$80,001-\$100,000 (21.4%, n=6) and Central KY had the highest percentage of those who earned \$100,001 or more (11.3%, n=8).

Business Background and Description

About two-thirds of participants (67.4%, n=95) were Kentucky FM members, 5.0% (n=7) held a Commercial Food Manufacturing License, 67.4% (n=95) were HBPs, and 34.0% (n=48) were HBMPs. Participants were asked where they currently processed and sold their products. Processing at home far surpassed any of the other options (95.9%, n=117). Figure 1 displays where participants processed their value-added products. FMs were the most frequently selected location at which participants sold their products (91.7%, n=110). Figure 2 displays the other places where participants sold their goods. In addition, participants were asked to select how many acres they used to grow

and process their products. Most participants used less than 2 acres (70.0%, n=84). For additional information, see Figure 3.



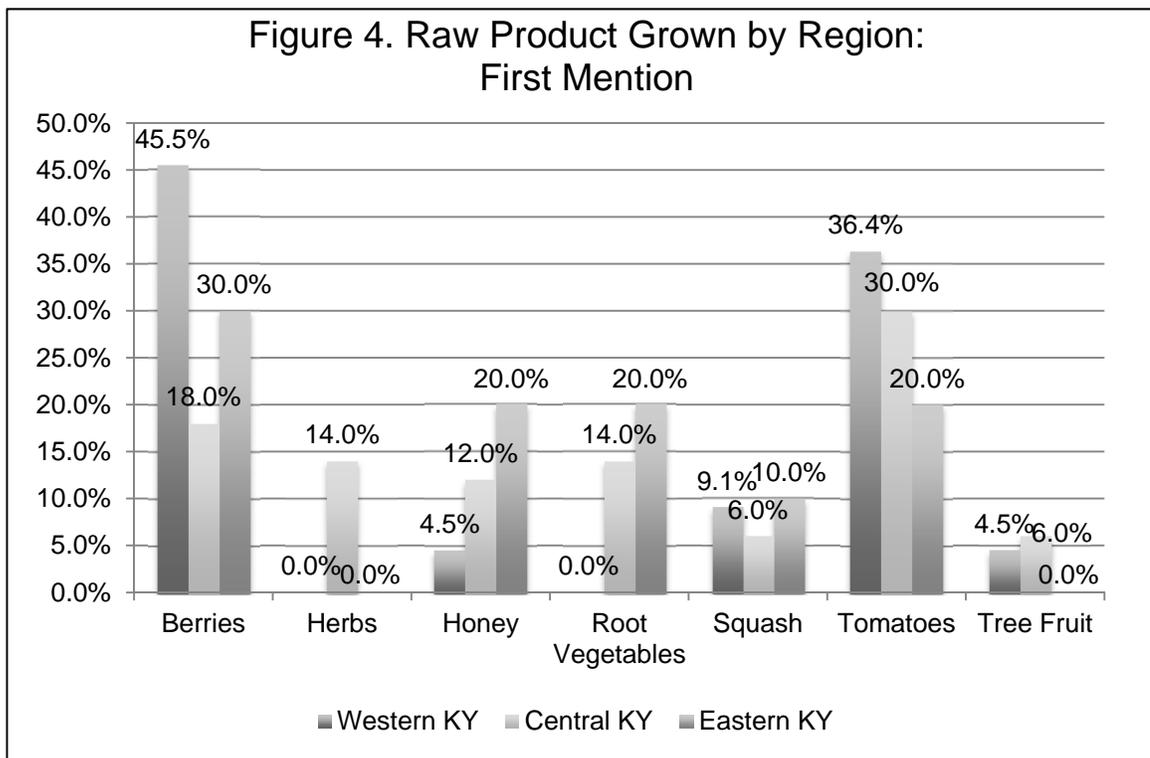


Participants who had been growing and selling raw produce for 4 years or less comprised 30.0% (n=39) of the sample, 36.2% (n=47) had grown and sold raw produce for 5 to 9 years, 23.8% (n=31) for 10 to 19 years, and 10.0% (n=13) for 20 or more years. When asked how long it was since they started growing produce before they began processing, 41.3% (n=43) indicated they began processing in less than 1 year, 20.2% (n=21) began in 1 to 2 years, 22.1% (n=23) began in 3 to 5 years, and 16.3% (n=17) began in greater than 5 years.

Participants were then asked to list the types of produce they grew and the value-added products they made with them. For the purpose of statistical analysis, the most commonly listed produce was categorized into one of the following: berries, herbs, honey, root vegetables, squash, tomatoes, tree fruit, peppers, corn, or beans. Foods were included in the berry category based on the common use of the word “berry,” since botanically avocados and tomatoes are berries. Berries listed included blackberries, strawberries, gooseberries, blueberries, Loganberries, huckleberries, elderberries, wild elderberries, and wild blackberries. The herb category included all herbs and spices

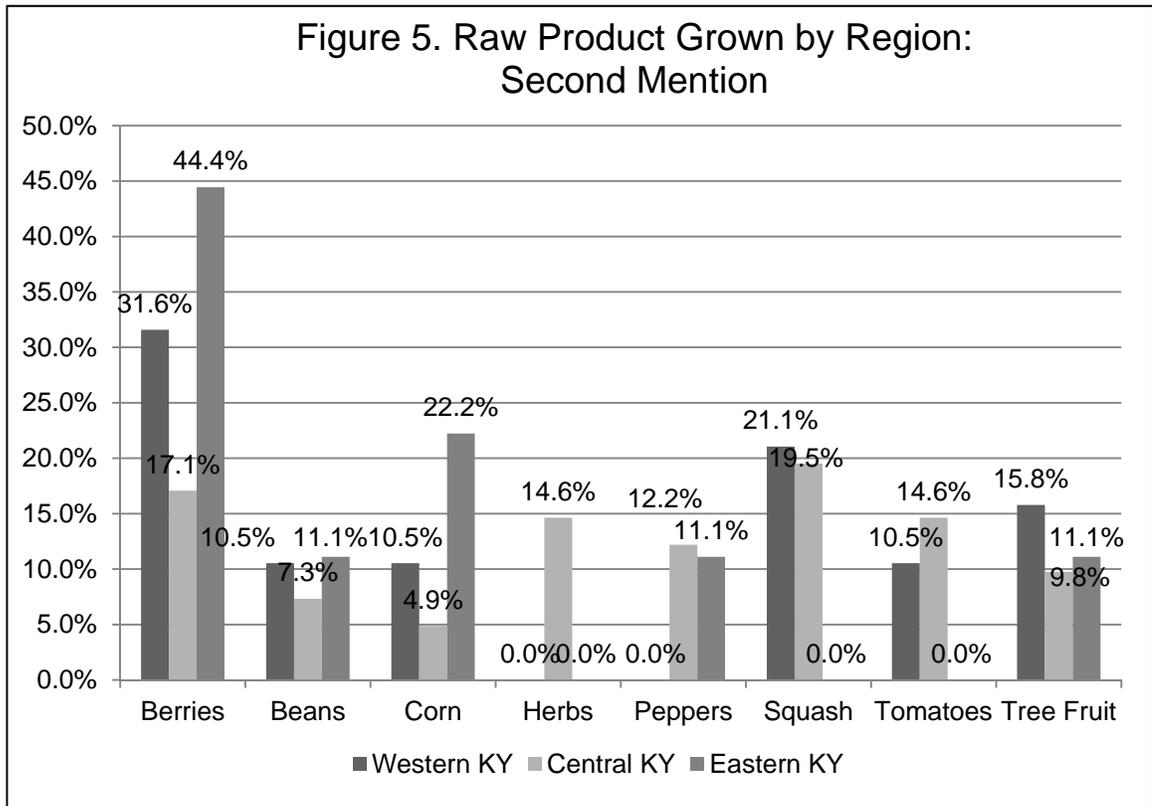
listed. The root vegetable category included potatoes, onions, and garlic. Tree fruit included fruits such as peaches and apples. The honey, squash, tomato, pepper, corn, and bean categories were single entities.

In the first mention, 31.8% (n=28) listed tomatoes, 27.3% (n=24) listed berries, 10.2% (n=9) listed honey, 10.2% (n=9) listed root vegetables, 8.0% (n=7) listed herbs, 6.8% listed squash (n=6), and 5.7% (n=5) listed tree fruit. When this was analyzed by region, the results were not statistically significant ($p=0.145$). As shown in Figure 4, Western KY grew the highest percentage of berries and tomatoes, Central KY was the only region that mentioned herbs first, Eastern KY led the state in honey and root vegetables, and Central KY listed the highest percentage of tree fruit.

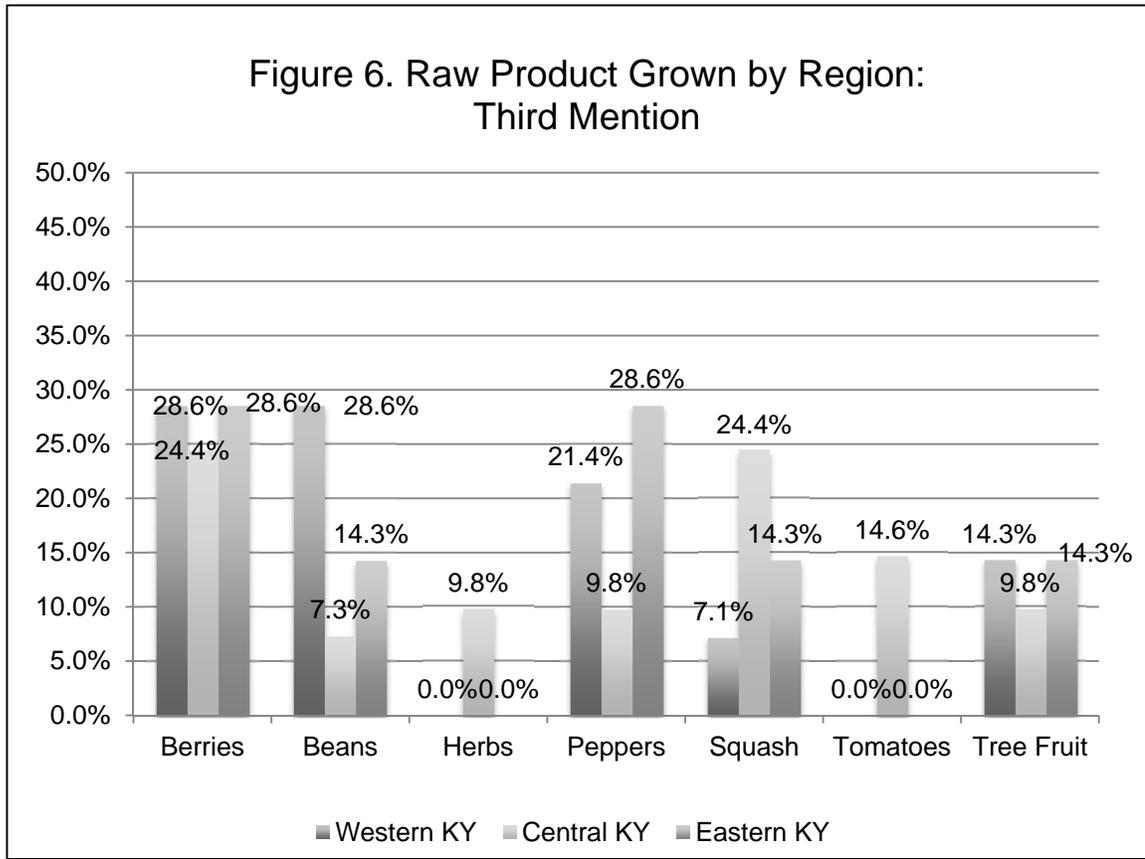


In the second mention, 24.7% (n=18) listed berries, 17.8% (n=13) listed squash, 12.3% (n=9) listed tomatoes, 11.0% (n=8) listed tree fruit, 9.6% (n=7) listed corn, 8.2% (n=6) listed beans, 8.2% (n=6) listed herbs, and 8.2% (n=6) listed peppers. When

analyzed by region, the results were not statistically significant ($p=0.285$). As shown in Figure 5, Eastern KY listed the highest percentage of berries, beans and corn, Central KY was the only region to list herbs and listed the highest percentage of peppers and tomatoes, and Western KY listed the highest percentage of squash and tree fruit.



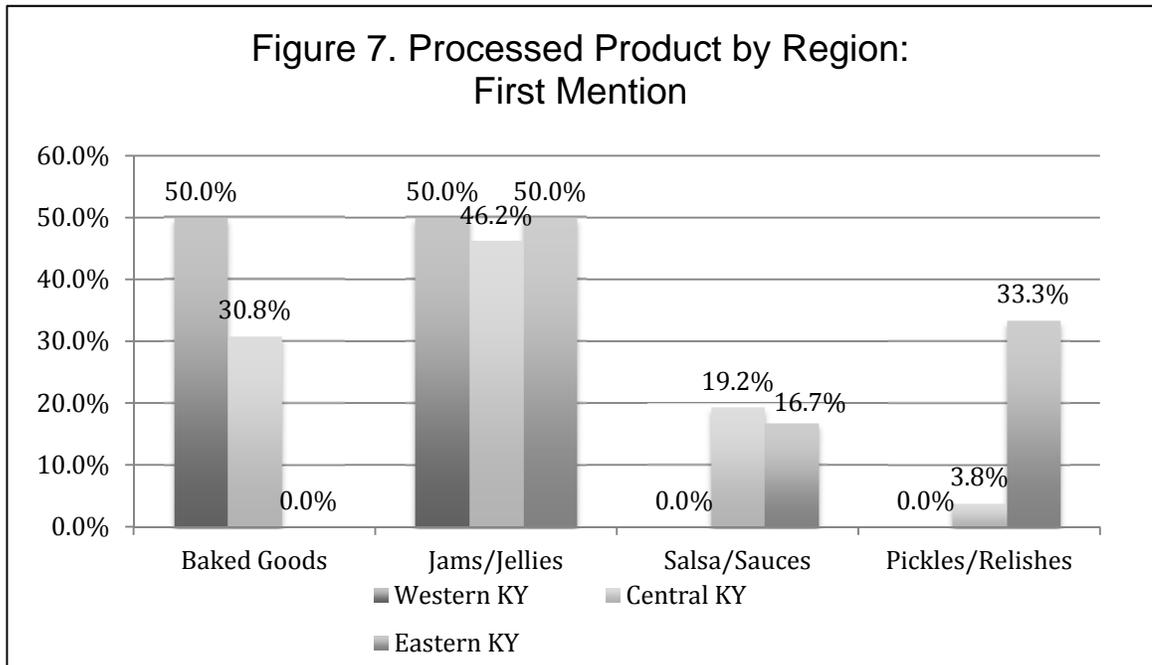
In the third mention, 23.9% ($n=16$) listed berries, 17.9% ($n=12$) listed squash, 16.4% ($n=11$) listed beans, 13.4% ($n=9$) listed peppers, 10.4% ($n=7$) listed tomatoes, 10.4% ($n=7$) listed tree fruit, and 7.5% ($n=5$) listed herbs. When analyzed by region, the results were not statistically significant ($p=0.381$). As shown in Figure 6, Western and Eastern KY listed the same percentage of berries and tree fruit, Western KY listed the highest percentage of beans, Central KY was the only region to list herbs and listed the highest percentage of squash and tomatoes, and Eastern KY listed the highest percentage of peppers.



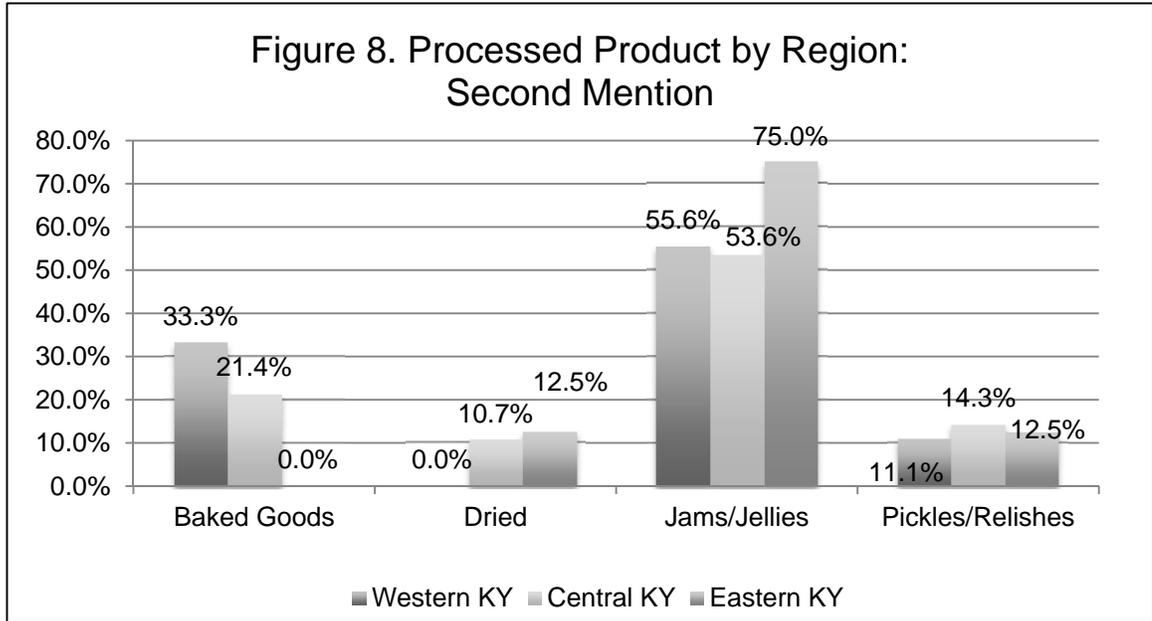
For the purpose of statistical analysis, the most commonly listed value-added products were categorized in the following: baked goods, jams and jellies, salsa and sauces, pickles and relishes, and dried products. The baked goods category included products such as breads and pies. The jams/jellies category also included preserves and marmalades. The dried product category included items such as dried herbs and peppers. The salsa/sauces category included products that were blended into any type of salsa or sauce, such as tomato salsa and barbeque sauce. The pickles/relishes category included products that were pickled, such products as pickled cucumber and squash relish.

In the first mention, 47.9% (n=23) listed jams and jellies, 29.2% (n=14) listed baked goods, 12.5% (n=6) listed salsa and sauces, and 10.4% (n=5) listed pickles and relishes. When analyzed by region, the results were not statistically significant ($p=0.103$).

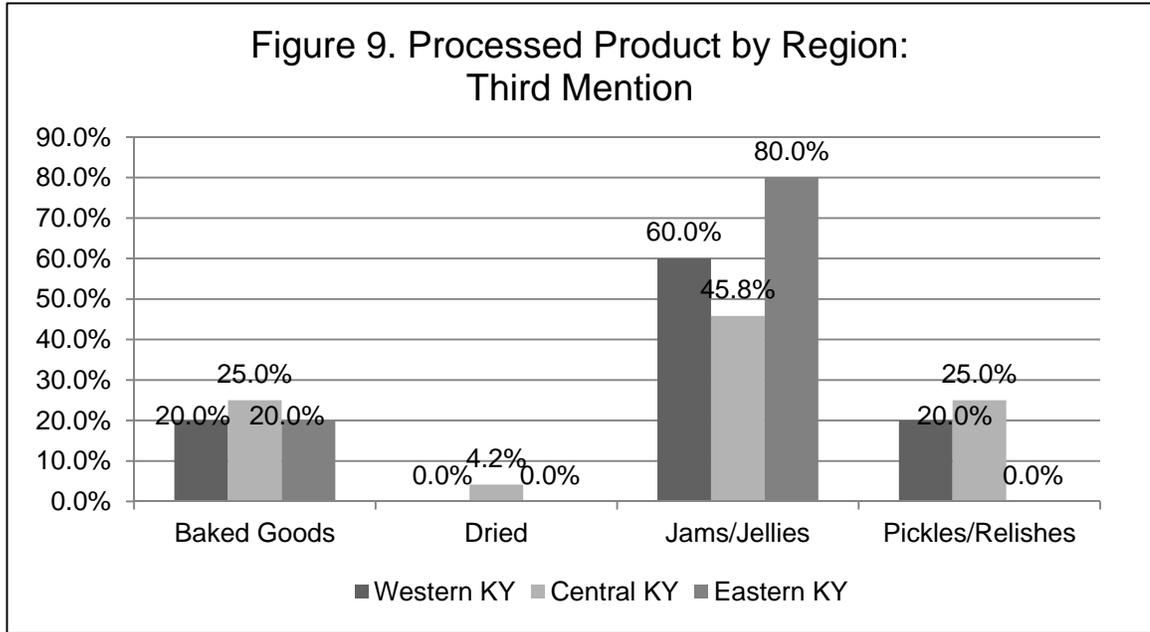
As shown in Figure 7, Western KY listed the highest percentage of baked goods, Western KY and Eastern KY both listed the highest percentage of jams and jellies, Central KY listed the highest percentage of salsa and sauces, and Eastern KY listed the highest percentage of pickles and relishes.



In the second mention, 18.8% (n=9) listed baked goods, 10.4% (n=5) listed dried products, 56.3% (n=27) listed jams and jellies, and 14.6% (n=7) listed pickles and relishes. When analyzed by region, the results were not statistically significant ($p=0.729$). As shown in Figure 8, Western KY listed the highest percentage of baked goods, Eastern KY listed the highest percentage of dried products and jams and jellies, and Central KY listed the highest percentage of pickles and relishes.

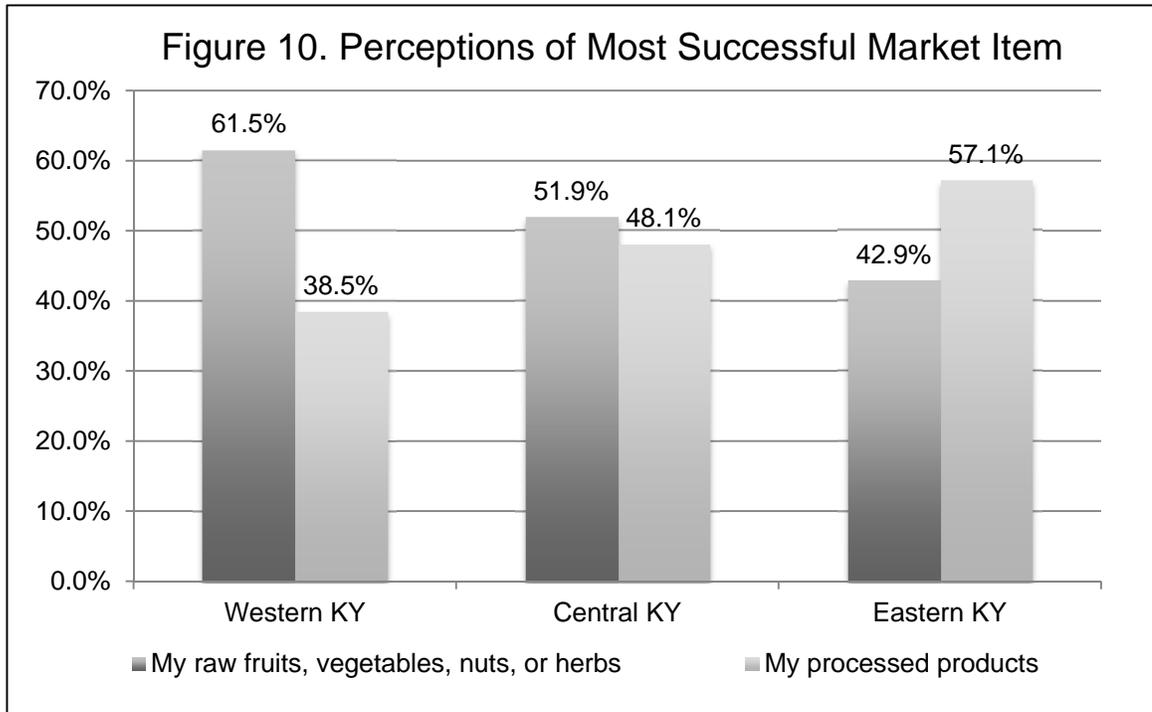


In the third mention, 22.0% (n=9) listed baked goods, 4.9% (n=4.9) listed dried products, 51.2% (n=21) listed jams and jellies, and 22.0% (n=9) listed pickles and relishes. When analyzed by region, the results were not statistically significant ($p=0.920$). As shown in Figure 9, Central KY listed the highest percentage of baked goods, dried products, and pickles and relishes. Eastern KY listed the highest percentage of jams and jellies.



Objective 1: Perceived Success

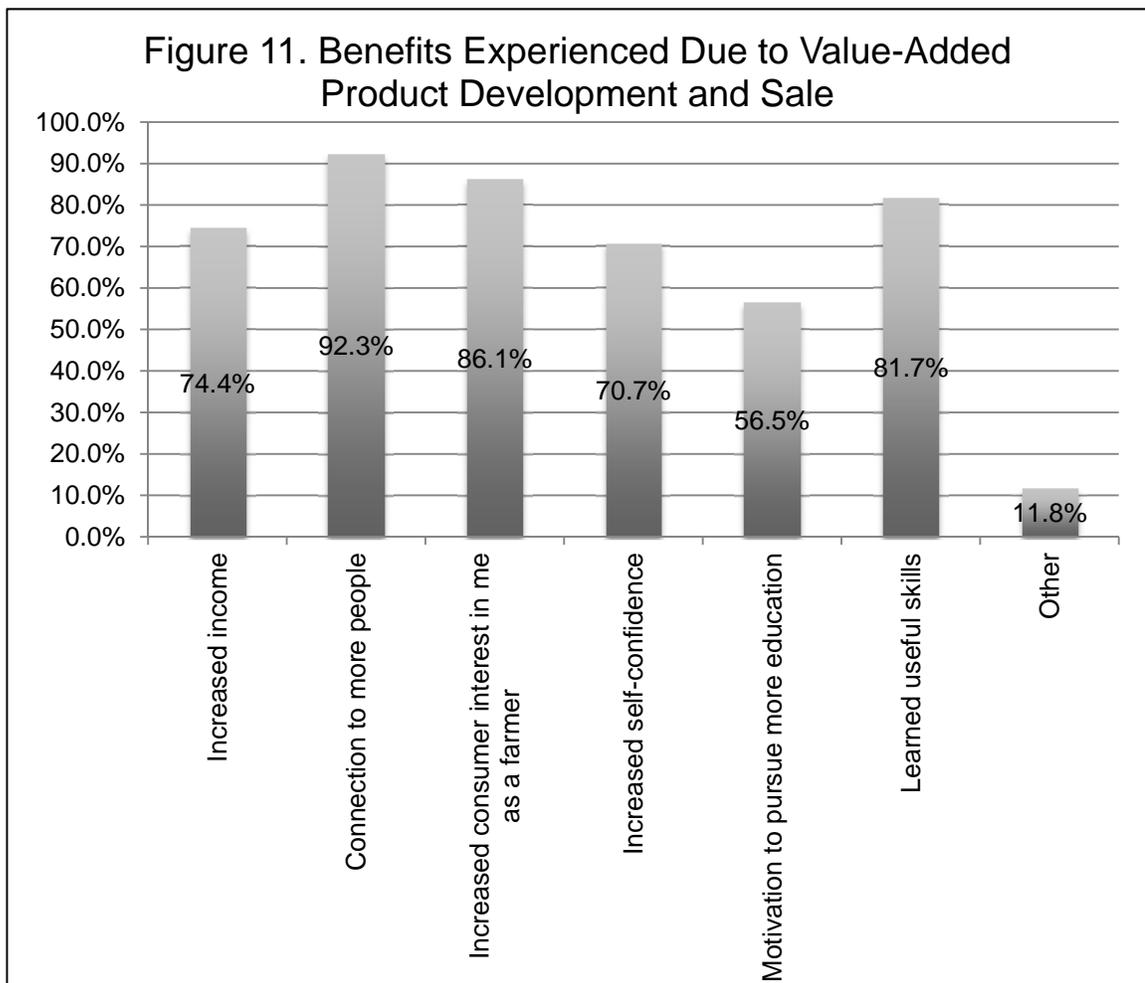
The first objective of this study was to determine the perceived success of farmers’ value-added food products. Participants were asked whether they considered their raw produce or their processed products more successful. This question was not asked in the financial sense, but allowed for individual interpretation of the word “success.” This is because the goal of this study was to gather perceptions of business. Of all participants who answered the question, 53.6% (n=52) considered their raw products more successful than their processed products and 46.4% (n=45) considered their processed products more successful than their raw products. When analyzed by region, the results were not statistically significant ($p=0.519$). Figure 10 depicts the results to this question by region. Western and Central KY had a higher percentage of participants who considered their raw products more successful than their processed products. However, Eastern KY had a higher percentage of participants who considered their processed products more successful.



Participants were then asked how the sale of their processed products had affected their profit. Of participants in all regions, 69.2% (n=81) indicated that their profit had increased due to the sale of the processed products they had developed. Furthermore, most of the remaining participants (29.1%, n=34) indicated that their profit had not changed. Only 1.7% (n=2) indicated that their profit had declined as a result of developing and selling processed products.

Because success can be measure in a variety of ways, participants were asked to indicate which benefits they had experienced as a result of the development and sale of their own value-added products. A list of possible benefits was provided for them to choose as many as applied to them, as well as a blank for them to list any other benefits they had experienced. The primary benefit that individuals indicated they had experienced was “Connection to more people” (92.3%, n=108). “Increased consumer interest in me as a farmer” was a close second (86.1%, n=99). Interestingly, with the

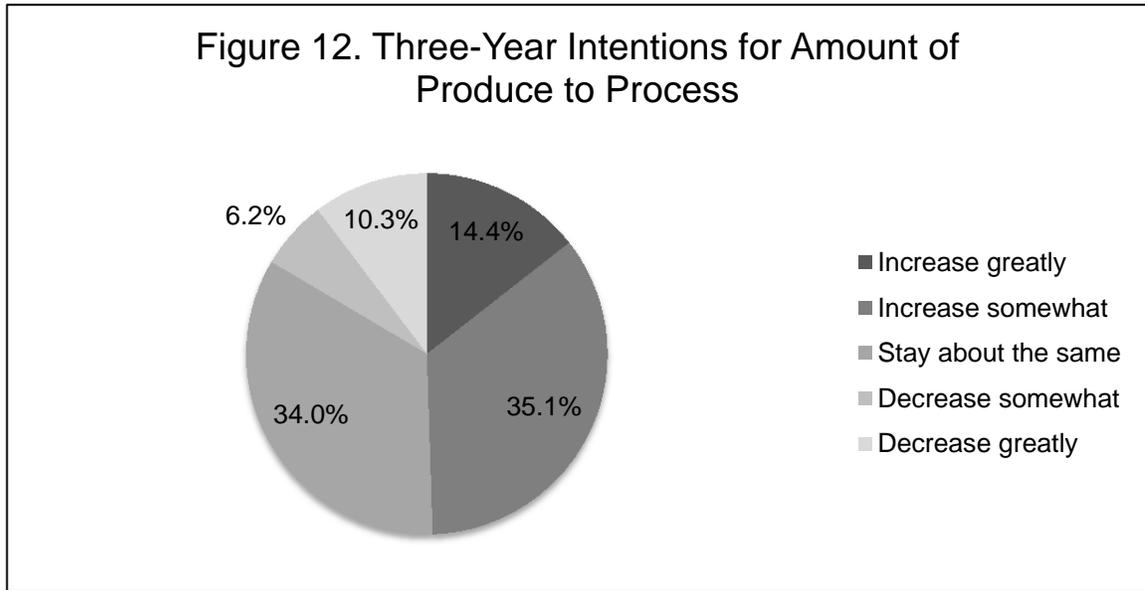
exception of the “Other” category, the majority of participants indicated that they had experienced all six of the benefits listed. Figure 11 displays the data collected by this question. Participants used the “Other” category text box to type in more specific answers. One participant listed the benefit of “enhanced conjugal relations as my wife is pleased I’m working in my retirement.” Another participant indicated that they “had a whale of a good time. [I have] very much enjoyed meeting and interacting with fellow [farmers] and customers.” Similarly, one participant stated he or she had “become an educator to my customers” while yet another individual expressed the fact that “success of processed products has encouraged me to expand the fruits and vegetables on the farm.”



In addition to asking participants about their perceptions of the success of their value-added products and the benefits they had experienced because of them, the survey probed them about how success and benefits may have affected the amount of food products processed. Since they began to process their produce, only 6.2% (n=6) indicated they had decreased the amount they processed, while 47.4% (n=46) indicated they had increased the amount processed, and 46.4% (n=45) indicated the amount had stayed about the same. Participants had the ability to express why the amount they processed had decreased. Reasons included the expected, such as “As I get older, I no longer want to process as much.” However, one participant exclaimed that it was due to the “lack of a large processing facility!”

Participants were also asked about their plans for the next 3 years. Figure 12 illustrates that almost half of the participants were planning to increase the amount of produce they process. If participants indicated that they were planning to increase or decrease, a question was triggered to ask them the reason for their plans. Reasons given for plans to decrease production included “I can’t do all the work that is required” and “I have a full time job now.” Reasons given for plans to increase production included making money, increasing profits, “preservation of unsold fresh produce,” and the fact that “demand for processed product has greatly increased.” One individual stated, “As I experience success and confidence in my processing, and learn more about the advantages to being in control of my own consumable products, I plan to increase how much I provide for my family.” One participant expecting success wrote, “When I get all my certifications, I am going to be making a lot more processed foods...I plan to eventually have a business from my farm and have a small shop/eatery with my

products...very busy, but very excited.” Yet another participant who had already experienced success wrote, “There is a great deal of interest for processor-produced value-added foods. I am looking forward to making my farm...income my sole income.”



Objective 2: Awareness and Utilization of Programs

The second objective of this study was to identify which programs farmers are aware of and utilize as well as which are still unknown to them. Participants were asked to view a list of programs and associations available to Kentucky farmers to indicate which programs they had heard of and which they had utilized. Table 1 summarizes this information.

Program	Known		Used	
	N	% ^a	N	% ^b
Kentucky Food Safety Branch	99	86.1	75	67.6
Kentucky Market Maker	55	47.8	23	21.9
Hazard Analysis and Critical Control Point (HACCP) Training and Certification	37	31.6	12	12.4
Cooperative Extension Service	112	97.4	115	97.5
Food Systems Innovation Center at UK	23	19.7	10	9.8
Kentucky Proud Program	115	100.0	106	89.8
MarketReady	60	52.2	23	22.5
Better Process Control School	14	12.4	6	6.3
Good Agricultural Practices (GAP)	100	89.3	96	82.3
Central Kentucky Growers Association ^c	40	35.4	5	9.1
Kentucky Vegetable Growers Association	63	53.8	20	19.2
Sustainable Mountain Agriculture Center, Inc.	23	20.0	3	3.0

^aThis column indicates the percentage of participants who had heard of the program.

^bThis column indicates the percentage of participants who had utilized the program.

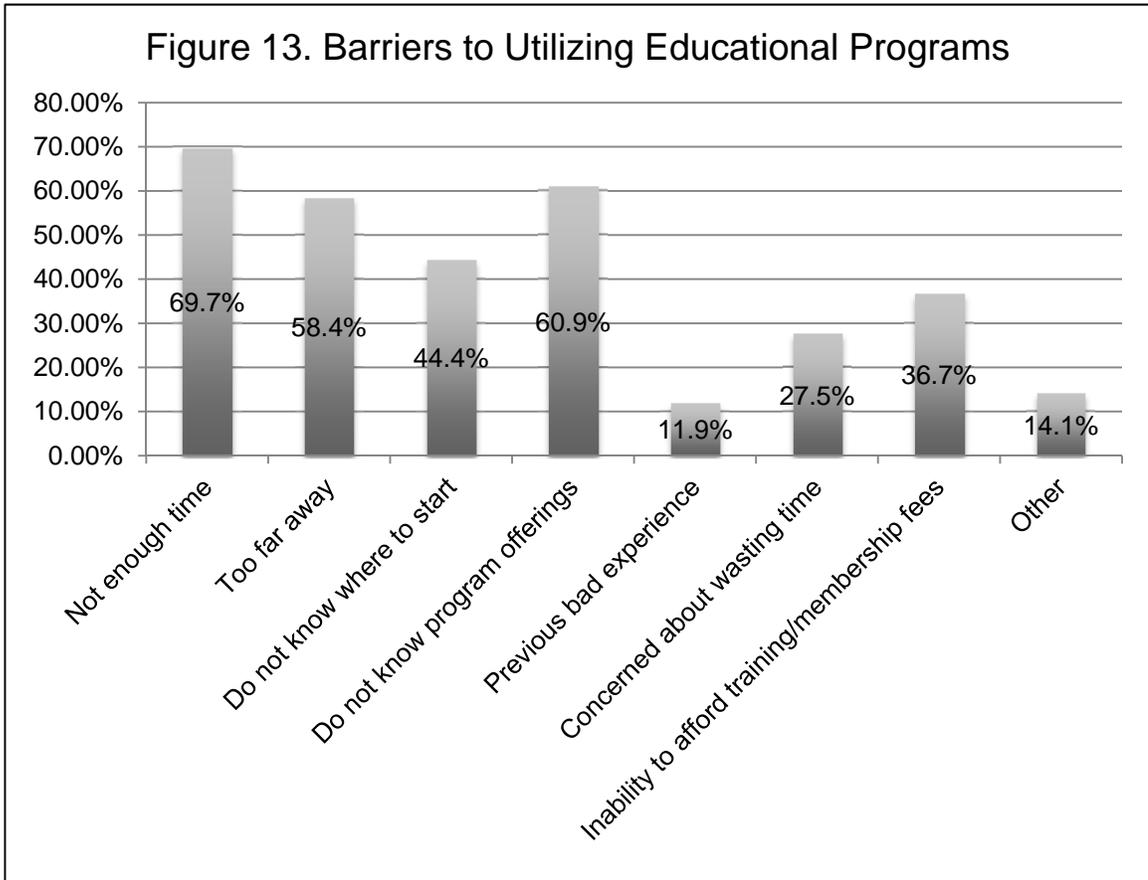
^cOnly participants residing in Central KY were used when analyzing this program.

In order to gain additional perspective, participants were also asked about their opinion of these programs overall. A quarter (25.0%, n=31) thought these programs were “Extremely helpful” and 45.2% (n=56) thought they were “Somewhat helpful.” Of the remaining participants, most (26.6%, n=33) had “No opinion” and only 3.2% (n=4) thought they were “Somewhat unhelpful.” No participants indicated that the programs were “Extremely unhelpful.”

Objective 3: Perceived Barriers

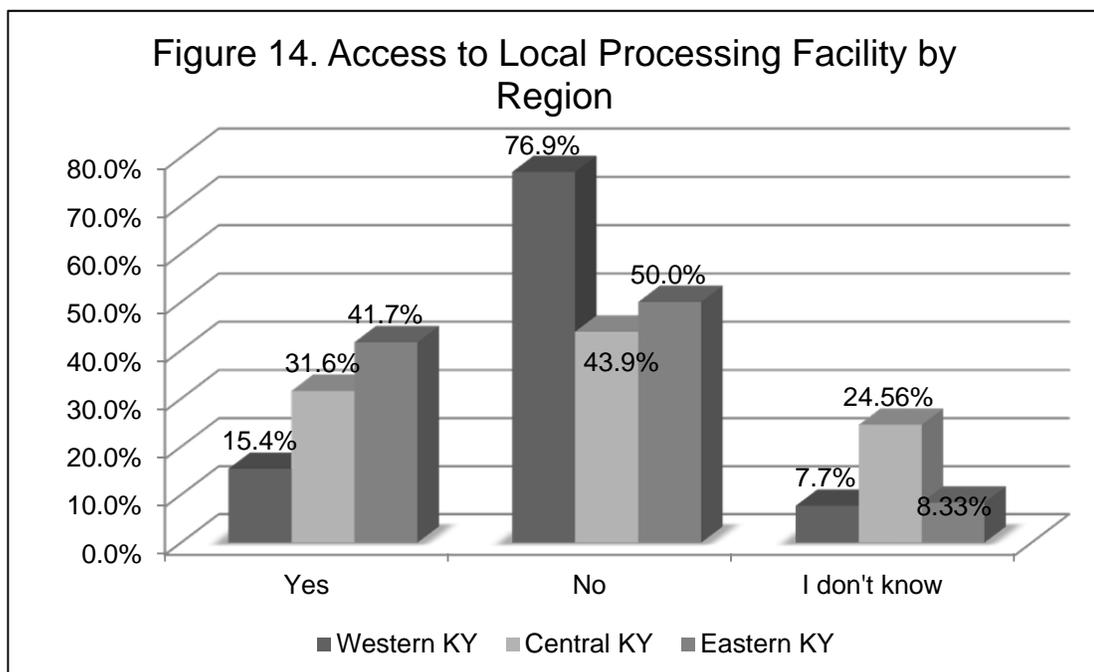
The third objective of this study was to discover the primary perceived barriers to developing value-added food products. In this section of the survey, participants were first asked about barriers that prevented them from taking advantage of the programs reviewed in Objective 2. Figure 13 displays the fact that the primary barrier to utilizing educational programs was that the participants did not have enough time (69.7%, n=83). The second most indicated barrier was that the participants did not know what the

programs offered (60.9%, n=67), and therefore could not assess how helpful they would be.



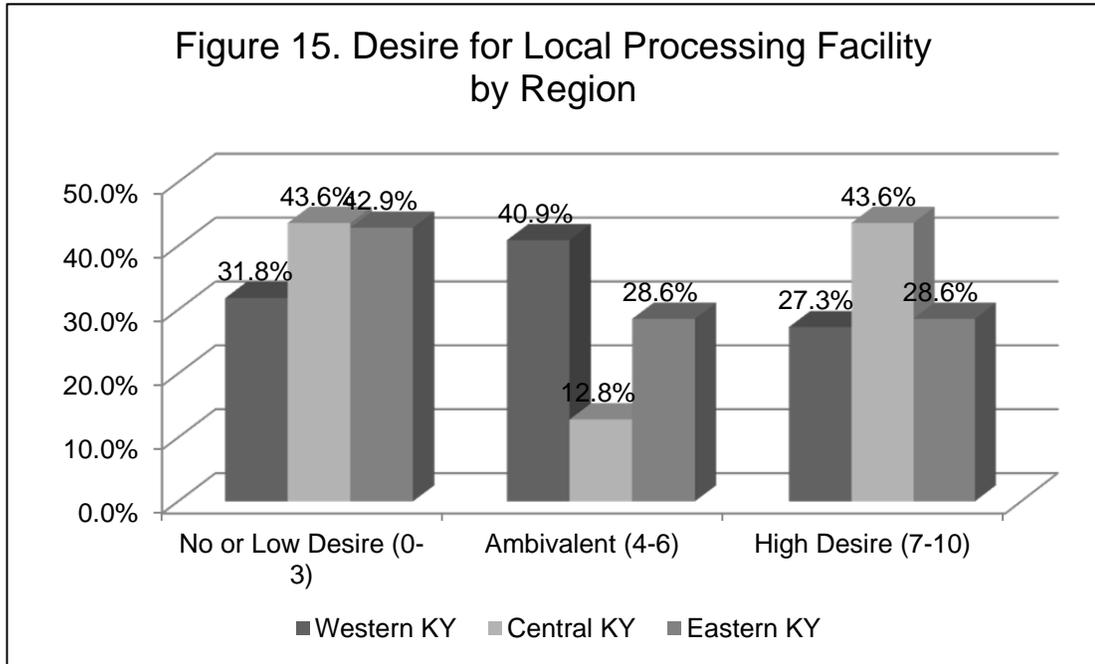
The participants who indicated they had experienced another barrier besides those listed used the text box to type in their answer. These participants held a variety of opinions. Some had typical barriers, such as “age and health” and the fact that “farm business makes it difficult to be away—especially if it will involve being away overnight.” However, a few participant answers revealed frustration. One participant passionately stated that “many of these programs I feel are a complete waste of time and money” while another complained, “The [X] program has not gotten back in touch with me—it’s been over a month.” Yet another participant felt that “there are not enough programs focused on people who are strictly processors.”

Participants were then asked whether or not they had access to a local processing facility, because this seemed to be a primary barrier discovered by other studies performed on this topic. Over half (55.3%, n=57) stated they did not have access, while 26.2% (n=27) had access and 18.4% (n=19) did not know whether they had access. When analyzed by region, these results were statistically significant ($p=0.049$). Figure 14 summarizes this information by region. Western KY had the highest percentage of those who had no access, while Eastern KY had the highest percentage of those that did have access. Central KY had the highest percentage of those who did not know whether or not they had access.



To follow up to this first question, participants who indicated they did not have access to a local processing facility or did not know whether or not they had access were asked how much they desired to have this access. This information was gathered using a 10-point scale. Answers given from 0 through 3 were categorized as “No or Low Desire,” answers from 4 through 6 were categorized as “Ambivalent,” and answers from 7 through

10 were categorized as “High Desire.” Similar amounts of participants had “No or Low Desire” and “High Desire,” 39.5% (n=30) and 35.5% (n=27), respectively. The remaining 25.0% (n=19) were “Ambivalent.” To better interpret this information, it was analyzed by region. As shown in Figure 15, Central KY led the state in desire for a local processing facility, while Western KY exhibited the highest amount of ambivalence.



In order to assess which issues challenged participants when they began processing their produce, they were asked which barriers initially prevented them from developing value-added products. About a fifth of them (21.6%, n=24) indicated that they had a “Lack of knowledge in processing food products.” A full 55.3% (n=63) indicated that “Lack of time” initially stood in their way, 40.5% (n=45) were challenged by “Lack of funding,” 23.4% (n=26) experienced “Lack of confidence or fear of failure,” 33.3% (n=37) had a “Lack of information from reliable sources,” 30.6% (n=34) had a “Lack of entrepreneurial skills,” 54.8% (n=63) had a “Lack of legal knowledge,” 27.7% (n=31) had a “Lack of a location to process foods,” and 8.2% (n=8) indicated they had

experienced a barrier of another sort. In the “Other” category text box, one individual expressed the feeling that the problem was with the big picture, stating the following:

[There are] too many rules & regulations for small farmers, too many fees/certifications from organizations that don't know what the hell they're talking about in the first place when it comes to agricultural food production...too many government people involved in [the] process...[it is] very difficult for a small farmer to start a business like this.

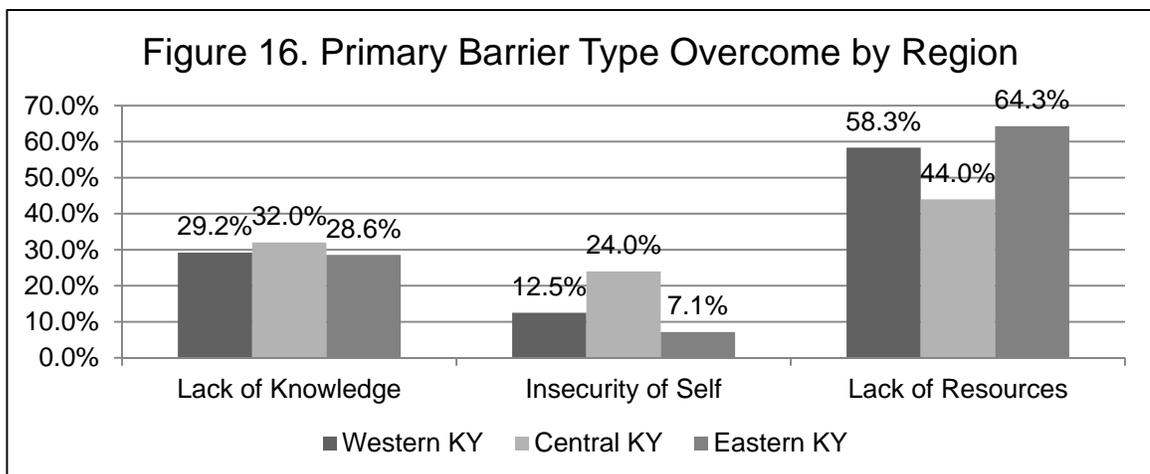
Other comments that participants listed under the “Other” category included barriers such as the “expense of [a] commercial kitchen,” “lack of knowledge of requirements,” and a “source of affordable packaging.”

In order to better pinpoint which barriers challenged farmers, the participants were next requested to select which of the barriers in the previous question was the primary barrier they overcame when starting their business. Nine barriers were listed from which participants could choose, along with an “Other” selection with a text box. The results were analyzed individually, as well as in the following categories: (1) lack of knowledge, which included “lack of knowledge in producing processed foods,” “lack of information from reliable sources,” and “lack of legal knowledge,” (2) insecurity of self, which included “lack of experience in producing processed foods,” “lack of confidence or fear or failure,” and “lack of entrepreneurial skills,” and (3) lack of resources, which included “lack of time,” “lack of funding,” and “lack of a location to process foods.” It should be noted that when the categories were analyzed, the “Other” responses were not included. The results are summarized in Table 2. The barrier most frequently selected was “Lack of time” (21.1%, n=24). The category of barrier most frequently selected was “Lack of

resources” (52.6%, n=50). When analyzed by region, these results were not statistically significant ($p=0.531$). Figure 16 displays the results to this question categorized and by region. Eastern KY led the state in “Lack of resources” (64.3%, n=9), while Central KY led in “Lack of knowledge” and “Insecurity of self,” 32.0% (n=16) and 24.0% (n=12), respectively.

Table 2. Primary Barrier Overcome by Farmers	Categorized	Individual
Category 1: Lack of knowledge	30.5%	25.4%
Lack of knowledge in producing processed foods	-	3.5%
Lack of information from reliable sources	-	7.9%
<i>Lack of legal knowledge^a</i>	-	14.0%
Category 2: Lack of resources	52.6%	43.9%
<i>Lack of funding</i>	-	17.5%
<i>Lack of time</i>	-	21.1%
Lack of a location to process foods	-	5.3%
Category 3: Insecurity of Self	16.8%	14.0%
Lack of experience in producing processed foods	-	7.0%
Lack of entrepreneurial skills	-	4.4%
Lack of confidence or fear of failure	-	2.6%
Other	Not included	16.7%

^aItalics indicate the three most frequently selected answers.



Participants who selected “Other” provided further specification of exactly what barrier they faced, such as “being able to process at home,” but this was “solved when the bill passed.” One individual wrote that “dealing with health dept. officials, training certifications, [laws] and regulations about things I already know and am fully capable of doing on my own” was their primary barrier. Another participant stated, “Labels are a source of problem. Ordinary printer ink runs when it gets wet from rain, condensation or lots of handling.” One more listed their primary barrier as “lack of local support/buying.”

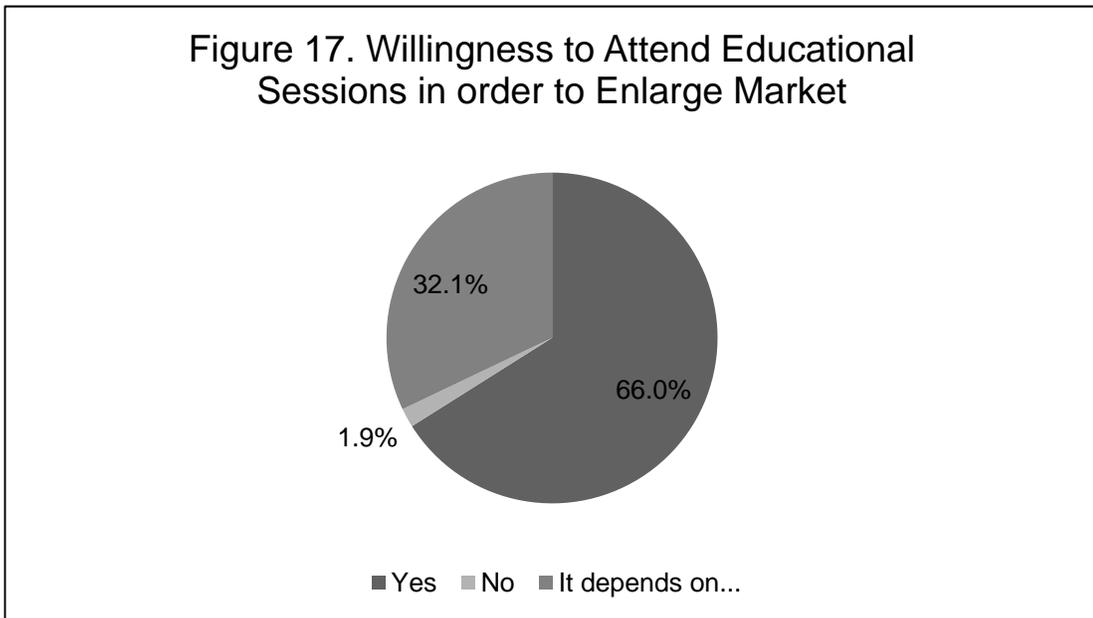
The last type of barrier inquired about related to participants’ ability to expand their business by producing higher quantities or different types of food. The barriers that participants could choose from were the same as those provided for the previous question. The barrier most frequently selected was “Lack of time” (64.8%, n=70) and the barrier second most frequently selected was “Lack of funding” (47.1%, n=48). “Lack of legal knowledge” and “Lack of a location to process the foods” almost tied for third, with 35.0% (n=36) and 33.0% (n=33), respectively. In the “Other” text box, participants listed “age and health,” “available space to process food,” “lack of local support,” and “need more outlets for selling processed foods” as barriers to broadening their business.

Objective 4: Factors Affecting Value-Added Product Development

The fourth and final objective of this study was to ascertain what factors actually affect the development of value-added food products. The first question in this section inquired as to whether or not participants had pursued education regarding the development of processed products before starting their value-added endeavor. About two-thirds (66.4%, n=77) stated they had indeed pursued education prior to processing. Next participants were asked whether they were interested in selling their products at

locations other than FMs and, if so, whether they would be willing to attend educational sessions in order to do so. This was done in order to determine how educational programs might affect value-added product business. Once those who indicated they already sold their products at locations other than FMs were eliminated from the analysis, over half (58.7%, n=54) indicated they were interested in selling their products elsewhere.

Figure 17 depicts how participants answered when asked if they were willing to attend educational sessions in order to enlarge their market. They were allowed to indicate that they were on the fence regarding the issue and then were asked to state on what reason their answer depended. All freehanded answers fell into the categories of cost, distance to travel, time commitment, and educational content. Essentially, this means that 98.1% of participants are open to the idea of taking advantage of educational programs in order to expand their business.



One of the most obvious ways for a farmer to broaden their business is to transition to commercial status, because farmers who hold the HBP and HBMP certifications are only allowed to sell their products at FMs registered with the Kentucky

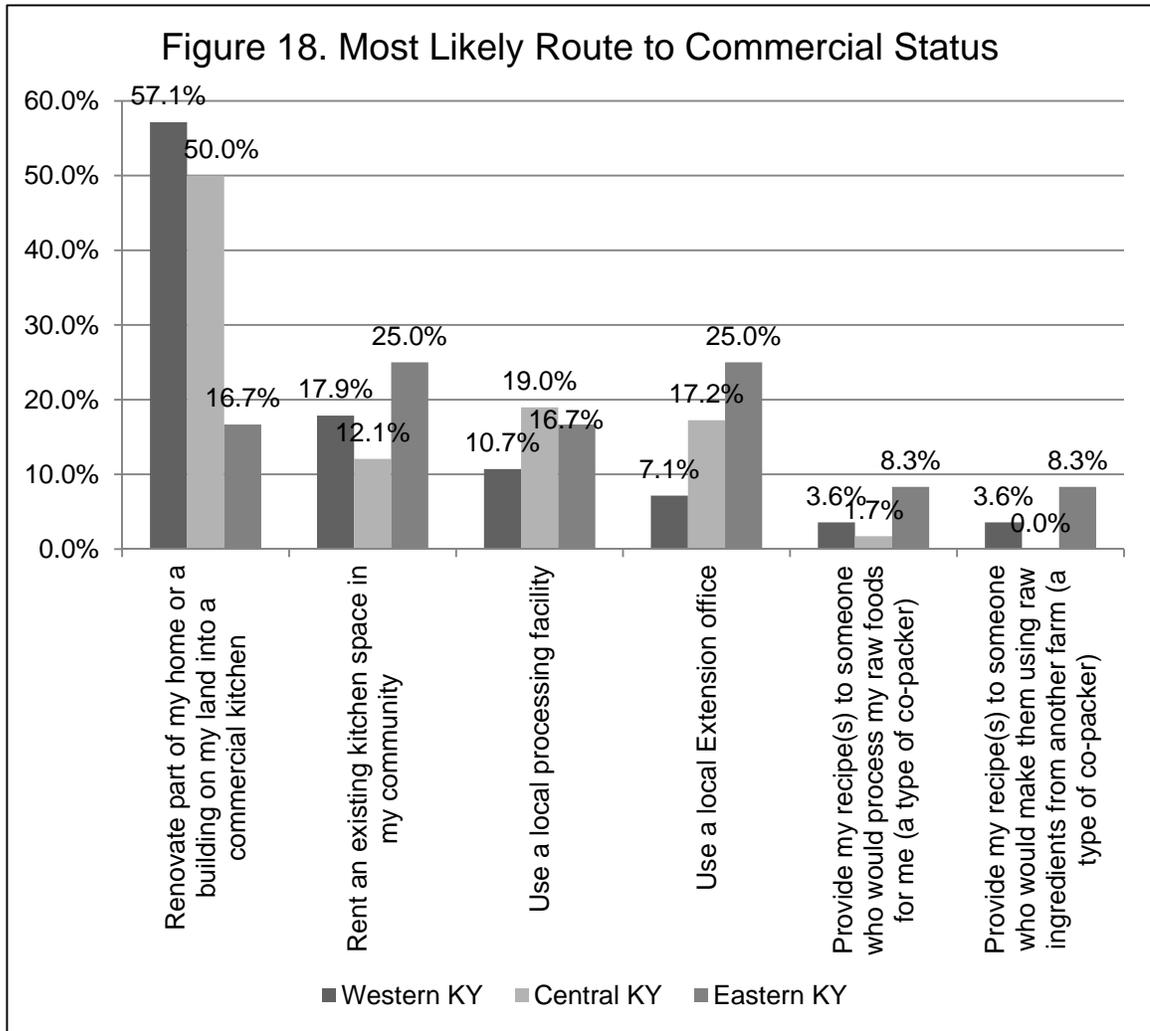
Department of Agriculture, from their own farm, or from roadside stands certified by the Kentucky Farm Bureau. Participants were asked about which changes in their situation would make them more likely to obtain a commercial permit. Ranked in order of most to least frequently selected, the changes desired were “More funds” (73.1%, n=79), “More time” (67.3%, n=72), “Access to a local processing facility/commercial kitchen” (62.9%, n=66), “Access to a consultant” (60.6%, n=63), “Connection to other farmers” (51.0%, n=53), “More educational opportunities” (48.1%, n=50), “More success with my products” (46.6%, n=48), and “More confidence” (31.1%, n=32). Eight individuals (7.7%) indicated that they were already at commercial status.

Participants were then asked to prioritize their needs by selecting the one change that would make them most likely to move to commercial status. The choices were categorized into “More knowledge,” “More resources,” and “More confidence.” The selections that were grouped into each category as well as the results of this question can be viewed in Table 3. The need for more resources was the most frequently indicated, with 75.0% (n=72) of participants selecting needs in this category.

Table 3. Primary Change Needed to Go Commercial	Categorized	Individual
Category 1: More knowledge	14.6%	13.5%
More education opportunities	-	4.8%
Access to a consultant	-	5.8%
Connection to other fathers who are doing the same thing	-	2.9%
Category 2: More resources	75.0%	69.2%
<i>More funds^a</i>	-	25.0%
<i>More time</i>	-	20.2%
<i>Access to a local processing facility/commercial kitchen</i>	-	24.0%
Category 3: More confidence	10.4%	9.7%
More success with my products	-	8.7%
More confidence	-	1.0%
Already Commercial	Not included	7.7%

^aItalics indicate the three most frequently selected answers.

The last question regarding the transition to commercial status asked which route participants would be most likely to take if they took the plunge. Figure 18 illustrates the results. Western and Central KY both far preferred the route of renovating their home or building a commercial kitchen, while Eastern KY rated renting an existing commercial kitchen or using an Extension office as the equally most preferred routes.



General Comments

Participants were provided with a text box at the end of the survey in order to convey any final thoughts or opinions. A few of these comments include the following:

- “As a farmer we need more help with marketing our products.”
- “Consultants would help also. Sometimes, as a farmer, you feel isolated from other farmers, ignorant of regional or national market trends and not realizing the value of what you produce. Any and all help is appreciated! Thanks for your interest in helping us. Sincerely!!”
- “Education, access and money – if I had those...DREAM!”
- “I am not interested in becoming a commercial status. I enjoy selling to neighbors and friends only.”
- “I believe that more funds and education provided to a small vendor like me would be beneficial. [E]verything seems to be for the larger farmer.”
- “...The lack of facility [for] commercial processing at this time is my greatest barrier. Henry County has a small kitchen, which has never been finished and is

of no value to the community whatsoever in [its] current condition. It makes me sad that there has been such a large waste [of] money for something that could be extremely beneficial to the community and local processors.”

“I don’t think that there is enough focus [from] Ag Dept or Ext Offices on those that process.”

“...The home based processor permit is free, which makes it easier for smaller farms to participate. I haven’t pursued the microprocessor permit primarily because of the cost [and] process to get recipes approved.”

“I feel there needs to be a central place with a step by step process on what to do next. The information is very vague and confusing. I am in the process of moving to the commercial status now by hiring a co-packer and this process is even more difficul[t] and expensive. There is too much duplication in the commercial process that I already completed in the homebased microprocessing. I also have concerns since I have sold in the FMs in the 3 counties in my area that there is not enough monito[r]ing of products being sold at the FMs for safe consumption to the consumer.”

“I have noticed that there were a lot of questions about a local facility for processing. I believe it would be a great asset to any community that has a Farmer's Market, as most of the vendors do not have the financing to create a commercial acceptable fa[c]ility at our own homes...A community facility would offer so many of us a whole new wind[o]w of opportunities. I look forward to where an option for this could lead.”

“I just recently became a commercial processor, but feel I still need educational opportunities and funding. Thanks to the home based processor and micro processor programs I was able to transition confidently to the commercial processor "status".”

“I know the money is there to be made, but funding is my whole problem. If funding were not the problem, I would jump in with both feet and never look back.”

“The experience gained from the Farmers Market will help my customer service skills the rest of my life. The most important factor I have found f[o]r success in the market is keeping an open mind and listening to others. There is a great deal to be learned from others if we do not judge their ideas prematurely. The customer will return if they know you are making a concerted effort to address quality control and attempt to supply what they want (no great marketing secret there).”

“I’m very happy with my products and what I do. I would love to expand my business, but need more education before doing so.”

“I’ve been in the Home Based Processor/Microprocessor system nearly since the beginning. I’ve enjoyed the people and learning opportunities I’ve encountered since starting. It has greatly helped me to be more successful at my local market as well as in a[n]other county and to sell off my farm. It is a very fulfilling and fun activity! I do hope to expand in the future.”

“If you really want to make a difference and make value-added or processed foods more popular, there needs to be some revisions to current laws & regulations regarding food safety and health dept. requirements. There is a

HUGE difference in a small farm and a commercial processing facility, but not according to the laws, they hold them to the same requirements. Quite simply, it makes it extremely difficult for anyone small to startup such a business. The requirements are ridiculous, and the folks enforcing them even more so. We don't need more groups, classes, organizations or officials involved, just use some common sense. Needs to be a cutoff in the requirements with regards to size of operation or gross sales, so that smaller farmers are exempt from [s]ome of the standards that big companies are held to. It just makes no sense, a small farmer is simply not going to have the same impact or reach with their product that a large company would, the volume of product is just not there. The whole process is extremely frustrating, and the only reason I've filled out this survey is in the hopes that this will be noted somewhere.”

“It would be great if our Local Extension Office had a commercial kitchen for Farmer Market Members to use at no cost. Paying \$100 for the Micro Processor's Certification and \$5 per recipe is way too much money for the benefit.”

“Lack of an available commercial kitchen is a BIG stumbling block for those selling at Farmer's Markets. Small retail outlets have asked (and not understood) why someone with a home-based or microprocessor license cannot sell to them for resale.”

“Many of us are not interested in commercial production. It would be more helpful to us to make getting a recipe approved from UK a quicker process. Also making the required class for microprocessing more available for more folks. Also letting us sell at f[e]stivals would help. When I go to seminars they are always about going commercial. We have issues at our level that need attention.”

“I am interested in access to more opportunities to sell my homebased microprocessor/processor products, but not really wanting all the complication involved in transitioning to commercial level producer. Can we who are homebased be allowed more venues than direct from home and farmers market? That is a limiting factor.”

“I have explored the possibility of putting a commercial kitchen in our home and found the regulations governing the plumbing to be horrendous - It is really hard to believe you need a completely different septic system to can jellies and pickles or bake food items. I would like to see some kind of additional avenue to sell my products, ie, better accessibil[i]ty to Farmer's Market stores that could feature home-based or microprocessor produced items. I have been very happy with the support from the local extension office and have taken advantage of several free seminars through UKY Ag schools for growers. Overall, I have found KY supportive of the small farmer.”

“Web-based training would be helpful.”

“Would especially like an experienced marketing advisor to help with direction to follow to go commercial. Would also like to see some type funding or matching funds for business.”

The main themes in these comments include the desire for the available education to be applicable to small farmers who do not wish to become commercial as well as the

need for more locations from which to sell their products if they are only at the HBP or HBMP status.

Chapter Five

Discussion

This study was designed to gather new and valuable information from Kentucky farmers who produce value-added products. Specifically, this study aimed to assess the perceived success of farmers' products, to determine which programs are underused or unknown, to uncover the primary barriers that farmers felt they had faced when developing their products, and to gain a better perspective of the factors affecting the development of value-added food products. The objectives of this study were met. While the results of this study did not exhibit much statistical significance, the information gathered was indeed informative and insightful for the state of Kentucky.

Demographics and Business Background

The context in which the results must be interpreted includes the background details obtained, such as age, experience, income, and education. As expected, the majority of the farmers surveyed were over the age of 50. Additionally, over two-thirds of participants had been growing and selling their produce for over 5 years, with most starting to process within the first 2 years. As such, it can be expected that these individuals may have had well-established habits and mindsets regarding the development of value-added products. Eastern KY had the highest percentage of participants who earned \$10,001-\$30,000 and about two-thirds of all participants earned less than \$50,000. This result correlates with the fact that most participants used less than two acres for the purpose of growing and processing their products. Therefore, most of them were likely not large-scale growers.

Almost half of participants had completed at least a bachelor's degree and over 80% had at least completed some college courses. This indicates that this portion of the

participants value education and may be more open to educational outreaches. They may also be better accustomed to the learning process and may extract more from an educational session. About two-thirds of participants were HBPs and two-thirds were FM members. About a third of the surveyed farmers were HBMPs and only a few were at commercial status. These percentages will be reflected in the following discussion.

Almost all participants were processing their food in their home or farm kitchen. In addition, almost all were selling their products at FMs. However, more than half also sold their products straight from their farm. Because most participants were not commercial status and therefore had limited locations from which to sell their products, this was to be expected. The next two routes most used to sell products were at festivals and retail. The fact that a third of participants indicate selling their products at festivals is remarkable. Programs whose mission is to assist these farmers could advertise their services at these festivals by distributing flyers or posting information.

Berries, tomatoes, and squash were the top most frequently grown produce categories. In fact, the berry category was one of the top two in all three mentions. Western and Eastern KY appeared to dominate the berry growing. It is interesting to note that Central KY was the only region to list herbs in the first three mentions. It appears that Central KY was the most diversified region, since participants from this region grew produce from every category for all three mentions.

As for value-added products, jams and jellies was the top category for all three mentions. Baked goods were the second top category, tying with pickles and relishes in the third mention. The fact that jams and jellies and baked goods were the most frequently indicated types of products is no surprise since berries was one of the top

grown categories of produce and the majority of participants were HBPs. As such, they are only allowed to produce low-risk foods, such as jams, jellies, and baked goods. Thus, it is logical to assume that the majority of farmers in Kentucky who are producing value-added products are growing berries and making jams, jellies, or baked goods.

Unfortunately, a limitation to this inference is the fact that it is only an assumption that farmers listed their largest product first. Originally, the goal was to sum the data entered by the farmers into the survey question corresponding to this result. However, a glitch with the data analysis prevented this and so the first, second, and third of ten rows of data were analyzed separately, or by mention. If the analysis had worked as planned, the results might have been a little different. However, it is not far-fetched to assume that the first item to come into a participant's head when filling out the survey would be their primary product.

Perceived Success

Success was measured in terms of the farmer opinions of the income generated by the products, the material and psychological benefits experienced, and the growth and plans for growth of their businesses. When asked to compare the success of their processed products to that of their raw produce, a little more than half felt that their raw produce was more successful in general. However, when this data was analyzed by region it was revealed that Eastern KY actually felt that their processed products were more successful and Central KY was almost half and half, whereas Western KY was the region that most strongly felt that their raw produce was more successful.

Despite the fact that farmers overall felt that their value-added products were not as successful as their raw produce, almost all of them indicated that their profit had not

decreased as a result of developing these products. In fact, 69.2% stated that their overall profit had increased as a result of the sale of their processed products and only 1.7% stated that their profit had actually decreased. However, to this group, money did not seem to be everything. When asked to indicate which benefits they had experienced as a result of the development and sale of their value-added products, the two most frequently chosen answers were “Connection to more people” and “Increased consumer interest in me as a farmer.” In fact, the majority of participants indicated they had experienced all of the benefits listed. Only one of these benefits concerned income. The fact that the farmers recognized all of these as benefits, and prioritized those that were not financial, hints that money may not be their primary motivation.

In order for a business to grow over time, it requires a certain level of success. The results indicate that many of the participants experienced this level of success and almost all have at least maintained the size of their business since its establishment. In addition, almost half of the farmers surveyed were planning to broaden their business by way of increasing the amount of produce processed in the next 3 years. Very few planned to decrease. Reasons given for plans to decrease did not include the fact that their processed products were not profitable; rather, they included reasons such as age, health, and lack of time. As such, it can be inferred that most of these farmers consider the production and sale of value-added products a viable and successful business.

Awareness and Utilization of Programs

This study was also designed to examine the utility of farming and value-added processing programs and associations to farmers. Determining which programs are not known very well is useful because it provides feedback to the programs that they are not

advertising themselves well enough. Determining which programs are known, but not used, is useful because this lets those programs realize that their offerings may not be considered helpful or accessible enough. Lastly, revealing those programs that are well-known and well-used showcases the program models that have been successful.

The top three programs that participants knew about were the Kentucky Proud Program, Cooperative Extension Service, and Good Agricultural Practices (GAP) Program. In fact, 100% indicated they had at least heard of the Kentucky Proud Program. The reason that all participants did not indicate they had heard of the Cooperative Extension Service may be that they did not recognize it under that name, because it is very likely that all participants have indeed heard of and used it. Those programs that were least known were the Better Process Control School, Food Systems Innovation Center at UK, and Sustainable Mountain Agriculture Center, Inc. The Better Process Control School provides very valuable information about the proper way to preserve acidic foods. However, as seen in the results, most participants make jams and jellies, which are not defined as acidified foods by the US Food and Drug Administration. Therefore it is possible that either these individuals had heard of the Better Process Control School, but did not remember it because it did not pertain to them, or those advertising the program did not target them because they were not producing acidified foods. A potential reason for the low profile apparently held by the Food Systems Innovation Center at UK and the Sustainable Mountain Agriculture Center, Inc., may be that they are both based in only one small area. The Food Systems Innovation Center is based at the University of Kentucky and the Sustainable Mountain Agriculture Center, Inc., is based in Berea, KY.

The top three programs that participants used were the Cooperative Extension Service, Kentucky Proud Program, and the Good Agricultural Practices Program. This is no surprise because these were also the three with which participants were most familiar. The three that were least used included the Sustainable Mountain Agriculture Center, Inc., Better Process Control School, and the Central Kentucky Growers Association. Of the three, the first two program listed were also in the least known of the programs. The analysis for the Central Kentucky Growers Association only included the input from farmers in Central Kentucky, so the underuse is not overstated by the inclusion of participants from Western and Eastern KY.

Interestingly, all or almost all of the participants who knew about the Cooperative Extension Service and the Good Agricultural Practices Program also utilized them. However, the second program with the least difference between those who knew about it and used it was the Better Process Control School. The programs that had the biggest difference between those who knew about them and those who used them were the Kentucky Vegetable Growers Association, MarketReady, and Kentucky Market Maker. These programs may want to reassess the aid that they offer and its accessibility to farmers throughout the state. Their goals should not necessarily be to make themselves known to more individuals, but to encourage more people to take advantage of their services.

Participants overwhelmingly considered programs such as those discussed above to be helpful. Only 3.2% actually indicated that the programs were unhelpful, while the rest of the participants either indicated the programs were helpful or they had no opinion. Those who had no opinion could very likely have been those who indicated they did not

know about or had not used many programs. Therefore, farmers who are producing value-added products desire assistance and consider these programs a useful way to obtain it.

Perceived Barriers

Participants were surveyed about the following five types of barriers: barriers to utilizing programs, access to a local processing facility, barriers to the initiation of developing value-added products, the primary barrier overcome when starting their business, and barriers to expanding their business. Lack of time was the primary barrier that prevented farmers from utilizing the programs discussed in the previous section. However, it was also found that the fact that farmers do not know what the programs offer is also a substantial factor in determining whether they utilize them or not. If programs across the state focused on making it very clear which services they provide to farmers, they may see a higher participation rate.

Participants were asked about their access to a local processing facility for the purpose of comparing with the results from previous studies. More than half indicated they had no access to such a facility. The lack of a local processing facility could potentially be a barrier to new farmers wishing to develop value-added products. The follow-up to this question was the assessment of desire for a local processing facility. Interestingly, though Central KY had the highest percentage in the state of those who desired a facility, it had an equal percentage of those who had no or low desire for a facility. Thus, it seems that the provision of local processing facilities may be best appreciated in Central KY; however, more detailed research would need to be conducted in order to specify exactly where the greatest need is.

It was found that farmers mostly encountered the lack of time and legal knowledge when they were starting their business of selling value-added products. The scarcity of time is common among all individuals and is to be expected. However, lack of legal knowledge could be addressed in order to remove this as a barrier to others who may wish to become HBPs or HBMPs.

The study also found evidence that lack of resources was the primary barrier that farmers had to overcome in order to start their business of making and selling value-added products. Eastern KY especially struggled with this issue, which correlates with the fact that this region also had the highest percentage of participants who earned only \$10,001-\$30,000. However, the resources category also included the specific barriers of time and a location to process foods. Eastern KY had the highest percentage of participants who indicated they had no desire or a low desire for a local processing facility, so a location to process foods may not have contributed much to Eastern KY dealing with lack of resources more than other regions. Since time was a barrier experienced by all, it can be assumed that Eastern KY did indeed bear the issue of funding most heavily. This enforces the need to help farmers with the process of establishing a profitable business.

Lastly, the primary barriers to farmers expanding their business by processing higher quantities or more types of food were lack of time and funding. Since these are difficult issues for programs to address, they could focus on the next most frequently listed barriers, which were lack of legal knowledge and lack of a location to process the foods.

Influencing Factors

Participants were also asked questions that sought to uncover what other factors influenced the initiation and expansion of farmers' businesses besides those that were naturally included in the other objectives. It was found that about two-thirds of participants had pursued education prior to starting their business of making value-added products. This is an important discovery because it indicates that the majority of farmers wishing to start this type of business will likely wish to attend classes. Since this may be the first time an individual is using a program's services, it is important that these introductory classes provide a good image for the program as a whole so that, in the future, the individual will be more likely to utilize its other services.

Before asking farmers what would influence their decision to expand their business, they were asked if they were even interested in this idea. A little over half of the participants indicated that they were indeed interested in selling their products at more locations than FMs. This group was then asked whether they were willing to attend educational sessions if this would enable them to expand in this way. About two-thirds of them responded positively, while most of the other third were open to the idea if the sessions were nearby, cheap, short, and applicable to their interests. An avenue of research for another study would be to determine where the greatest need for educational sessions is and what exact content is desired.

Farmers indicated that if they were to expand their business by obtaining a commercial permit, then their primary need would be funds and their secondary need would be time. After these, their next greatest need was access to a commercial kitchen. Some ways to address the primary need could be a class or booklet specifically about

how to handle the financial issues that surround the transition to commercial status. In addition, a sample timeline listing the step-by-step process of obtaining a commercial permit may at least give farmers a strategy for how to use their time efficiently. A way to alleviate the third greatest need would be for local Extension offices to host workshops about the different ways to gain access to a commercial kitchen.

When actually entertaining the idea of becoming a commercial farmer, participants from Western and Central KY both felt that they would most likely renovate their home or a building on their farm into a commercial kitchen. However, residents of Eastern KY were equally split between renting an existing commercial kitchen and using an Extension office. This is expected, since the average annual income indicated by Eastern KY was lower than the other regions.

As noted in the general comments, however, many farmers do not wish to progress to commercial status. They feel tired of hearing advice about how to transition when it does not line up with their interests for their business. Programs should ensure that they have just as many or more resources for those wishing to stay at a small-scale than those they have available for farmers wishing to obtain a commercial permit. The farmers surveyed do not seem to view enlarging their business as their definition of success. Assistance programs should not try to push this perception upon or make them feel as if this is their only next step if they wish to be successful. Enlisting actual farmers who have already been through the process to teach as many of the workshops as possible may be the best way to communicate information, since they may better understand the needs and desires of small-scale farmers.

Biases, Limitations, and Opportunities for Future Research

This study was distributed under the label of the University of Kentucky and with the inclusion of the name of the researcher's adviser. Because both of these identities are strongly connected to the HBP and Microprocessor certifications, it is possible that some participants answered in ways that they felt would be best received, rather than with true answers.

Unfortunately, this study was constrained by many limitations. First, the final sample size includes only about a fifth of those chosen to be in the original sample. Thus, the results cannot be generalized with a high degree of confidence. In addition, this study was working with variables that were extremely difficult to define and therefore required somewhat complicated survey questions. This caused much of the statistical analysis to result in large p-values. Also, since the majority of participants were over the age of 50, it is also likely that many of them found it difficult to take the survey online. These participants, and any others who were not experienced with computers, may have found it tricky to figure out how to answer certain questions.

In addition to the other ideas for research listed earlier, future studies could focus on which exact value-added product farmers feel is their most successful. According to this study, it appears that farmers may feel that jams and jellies are the most successful. However, the fact that most farmers make them could be due to many other reasons. In this study, most farmers did not indicate that value-added products are their most profitable items nor did they list increased income as their primary benefit from the business. Therefore, another interesting area to research would be the primary motivation to develop and sell value-added products by the farmer.

Conclusion

Farmers now more than ever are faced with the issue of increasing their sources of income. Economic difficulties coupled with the end of the Tobacco Transition Payment Program looming just ahead had made it essential for farmers to branch out if they want to keep their farm business alive. Simultaneously, consumer interest in locally grown and produced foods is at a peak. Artisanal foods are very well received and the public respects the farmers who make them. Thus, the development and sale of value-added products is one of the most optimal ways for farmers to stay in business.

The results of this study can be used to assist farmers in establishing and growing this type of business. The programs that offer services to the farmers are the key to addressing the issues found in this study. Unfortunately, a common thread in the free text comments was that participants felt that the people who developed the programs and established the rules of home-based processing do not understand their situation at all. If the farmers cannot access the programs or do not view them favorably, more sessions and services will not improve the situation. However, hearing advice from a colleague may garner a warmer welcome.

In order to avoid the waste of time, effort, and resources, programs should heed the feedback given by farmers. Paying attention to the products that most farmers are making and addressing their primary needs should be the focus of these programs. In this way, farmers will be enabled to do what they do best and the farmland, local culture, and unique products of Kentucky will be preserved.

Appendix A: Letter and Email to Participants

Letter

Dear Participant:

My name is Amy Camenisch and I am a graduate student at the University of Kentucky. For my thesis, I am examining Kentucky farmers' perceptions of entrepreneurship on the farm. The data collected will provide useful information regarding how Kentucky farmers can be assisted in their entrepreneurial undertakings. Because you are or have been a Homebased Processor or Microprocessor, I am inviting you to participate in this research study by completing a survey. Since my graduation depends on my completion of this project, I greatly appreciate your time.

The survey will require approximately 10-15 minutes to complete. There is no compensation for responding nor is there any known risk. All responses are strictly anonymous. Participation is strictly voluntary and you may refuse to participate at any time. Refusal to participate will involve no penalty or loss of benefits as a Homebased Processor or Microprocessor. To participate in this project by taking the survey, please type the following url into your internet browser:

<http://tinyurl.com/hbprocessor>

Please answer all questions as honestly as possible. If you decide to participate, we ask that you please complete the survey by Friday, October 4, 2013.

Your contact information was accessed from the Kentucky Cabinet for Health and Family Services/Department for Public Health/Food Safety Branch list of Homebased Processors or Microprocessors. Dr. Sandra Bastin, RD, LD, from the University of Kentucky Department of Dietetics and Human Nutrition, is the lead researcher (859-257-3800).

For additional information about your rights as a participant, please contact the University of Kentucky Office of Research Integrity at 859-257-9428 or call toll free at 1-866-400-9428.

Thank you for taking the time to assist me in my educational endeavors.

Sincerely,

Amy Camenisch

amy.camenisch@gmail.com

Instructor: Sandra Bastin, PhD, RD, LD, CCE

Sandra.bastin@uky.edu

Email

Dear Participant:

My name is Amy Camenisch and I am a graduate student at the University of Kentucky. For my thesis, I am examining Kentucky farmers' perceptions of entrepreneurship on the farm. The data collected will provide useful information regarding how Kentucky farmers can be assisted in their entrepreneurial undertakings. Because you are or have been a Homebased Processor or Microprocessor, I am inviting you to participate in this research study by completing a survey. Since my graduation depends on my completion of this project, I greatly appreciate your time.

The survey will require approximately 10-15 minutes to complete. There is no compensation for responding nor is there any known risk. All responses are strictly anonymous. Participation is strictly voluntary and you may refuse to participate at any time. Refusal to participate will involve no penalty or loss of benefits as a Homebased Processor or Microprocessor. To participate in this project by taking the survey, please go to the following link:

Follow this link to the Survey:

`{1://SurveyLink?d=Take the Survey}`

Or copy and paste the URL below into your internet browser:

`{1://SurveyURL}`

Please answer all questions as honestly as possible. If you decide to participate, we ask that you please complete the survey by Friday, September 27, 2013.

Your contact information was accessed from the Kentucky Cabinet for Health and Family Services/Department for Public Health/Food Safety Branch list of Homebased Processors or Microprocessors. Dr. Sandra Bastin, RD, LD, from the University of Kentucky Department of Dietetics and Human Nutrition, is the lead researcher (859-257-3800). For additional information about your rights as a participant, please contact the University of Kentucky Office of Research Integrity at 859-257-9428 or call toll free at 1-866-400-9428.

Thank you for taking the time to assist me in my educational endeavors.

Sincerely,

Amy Camenisch

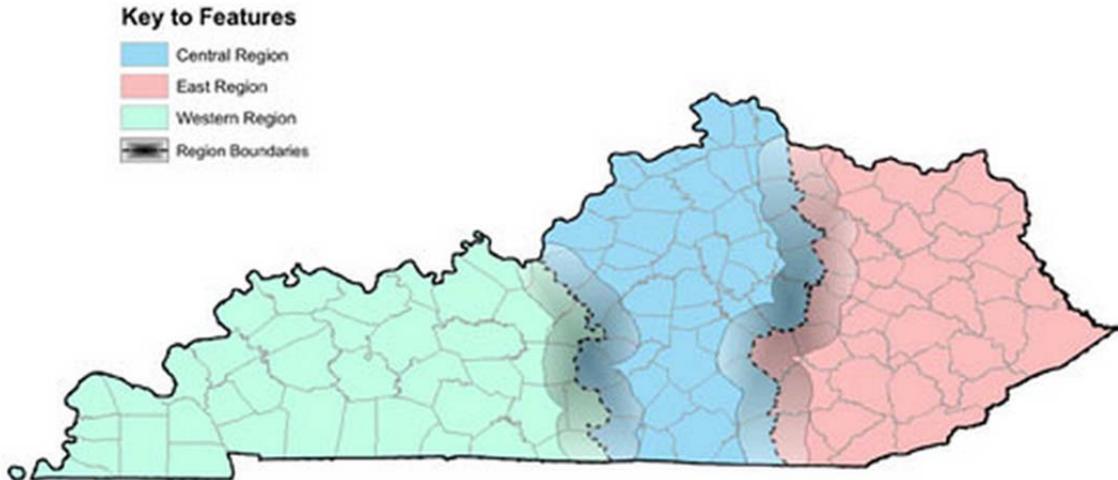
amy.camenisch@gmail.com

Instructor: Sandra Bastin, PhD, RD, LD, CCE

Sandra.bastin@uky.edu

Appendix B: Cooperative Extension Service's Programming Regions Map

Extension Programming Regions



Appendix C: List of Kentucky Counties by Region

Western	Central	Eastern
Allen	Adair	Bath
Ballard	Anderson	Bell
Barren	Boone	Boyd
Breckinridge	Boone	Bracken
Butler	Bourbon	Breathitt
Caldwell	Boyle	Carter
Calloway	Bullitt	Clay
Carlisle	Campbell	Elliott
Christian	Carroll	Estill
Crittenden	Casey	Fleming
Daviess	Clark	Floyd
Edmonson	Clinton	Greenup
Fulton	Cumberland	Harlan
Graves	Fayette	Jackson
Grayson	Franklin	Johnson
Hancock	Gallatin	Knott
Hardin	Garrard	Knox
Hart	Grant	Laurel
Henderson	Green	Lawrence
Hickman	Harrison	Lee
Hopkins	Henry	Leslie
Larue	Jefferson	Letcher
Livingston	Jessamine	Lewis
Logan	Kenton	Magoffin
Lyon	Lincoln	Martin
Marshall	Madison	Mason
McCracken	Marion	Menifee
McLean	McCreary	Montgomery
Meade	Mercer	Morgan
Metcalfe	Nelson	Nicholas
Monroe	Oldham	Owsley
Muhlenburg	Owen	Perry
Ohio	Pendleton	Pike
Simpson	Pulaski	Powell
Todd	Russell	Robertson
Trigg	Scott	Rockcastle
Union	Shelby	Rowan
Warren	Spencer	Whitley
Webster	Taylor	Wolfe
	Trimble	
	Washington	
	Wayne	
	Woodford	

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Vita

Amy Lorraine Camenisch

Education:

- Bachelor of Science in Dietetics, Coordinated Program, University of Kentucky,
08/2012

Professional Positions:

- Clinical Dietitian, Saint Joseph Hospital, since 09/2013
- Teaching Assistant, Department of Dietetics and Human Nutrition, University of
Kentucky, 08/2012 to 12/2013

Scholastic Honors

- Student of Excellence, School of Human Environmental Sciences, University of
Kentucky, 2012
- Dean's List, Fall 2008 through Spring 2012
- Presidential Scholarship, Fall 2008 through Spring 2012