THE ECONOMIC FEASIBILITY OF SMALL SCALE PROCESSING

OF PEANUTS WITH SPECIALTY ATTRIBUTES IN GEORGIA

by

GARY WARD BLACK, JR

(Under the Direction of Nathan Smith)

ABSTRACT

Georgia leads the nation in the production of peanuts, but a lack of certified organic processing infrastructure is one limitation for organic peanut production in the state. Organic peanuts could be processed inside a facility constructed on a farm. A consumer survey of 208 Georgia peanut consumers was conducted to determine the willingness to pay on three peanut products with *certified organic, locally grown,* and *produced and processed by a small farm* attributes. The economic feasibility is determined for an on-farm processing facility for organic peanuts for three products: (1) a shelled, roasted, and blanched product, (2) a shelled, oil-roasted, and flavored product, and (3) an inshell and roasted product. The estimated per pound breakeven costs for the three products a proposed facility were $2.54, $3.46, and $1.16 for the three products, respectively.

INDEX WORDS: Georgia, Peanuts, Peanut Processing, Organic, Specialty Attributes, Locally Grown, Small Farm, Feasibility, Consumer Survey, Willingness to Pay, Cost Sensitivity

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B.S.A, The University of Georgia, 2009

A Thesis Submitted to the Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

MASTER OF SCIENCE

ATHENS, GEORGIA

2011

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December 2011

ACKNOWLEDGEMENTS

I am extremely grateful for the support and encouragement that I received during graduate school, and I am honored to thank those individuals who helped me as I completed this degree. First and foremost, to Christ, for his love and grace, and for his many blessings He has given me, including the opportunity to study at the University of Georgia.

Pursuing a graduate degree in agricultural economics was incredible learning process, and I was blessed to have an encouraging advisory committee that helped me learn at each step in completing this study.

Dr. Smith, thank you for allowing me, someone with no previous experience in the peanut industry, to conduct research on peanuts. Thank you for answering the "dumb" questions on peanut production – I know I asked a lot! Thank you for challenging me to find out information on my own and for reassuring me that sometimes the estimates are the best possible figure available.

Dr. McKissick, it was an honor to work under your guidance in constructing the feasibility study. Thank you for allowing me the opportunity to work in the Center for Agribusiness as an undergraduate student and for making my graduate assistantship possible. Thank you for staying after work hours and for the patience you showed me if missed a deadline. I will always be grateful of the advice and our long discussions on Georgia history, UGA, and politics.

Dr. Colson, thank you for helping fuel my interest in food product label studies and for encouragement as I compiled my survey results. Thank you for the extra effort you put into explaining the math behind modeling in research papers, and for serving on my committee.

This study would not be possible without the help of several people outside of my advisory committee including: Jimmy and Connie Hayes of Healthy Hollow Farms, Oscar Garrison and Natalie Adan at the Georgia Department of Agriculture, Dr. Chris Butts of USDA, Dr. Manjeet Chinnan, Dr. Ron Pegg, and Dr. Dick Phillips of UGA Food Science Department, Dr. Darlene Cowart of Birdsong Peanuts, Jed Branch of Tifton Quality Peanuts, and Alex Rilko of Whole Foods. These individuals gave me information that was invaluable for the construction of this study.

I would also like to thank CAES administration and the CAES Office of College of Advancement for allowing me to work full-time as I finished this degree. Thank you for your encouragement and flexibility as I balanced work and school responsibilities.

Finally, I would not be where I am today without the love and support of my family. THANK YOU!

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CHAPTER ONE

INTRODUCTION

Georgia is the nation's leader in peanut production. According to the 2007 USDA Census of Agriculture, approximately 45% of American peanut farms are located in the state, accounting for approximately 43% of U.S. peanut production. In 2010, peanuts were grown in 77 Georgia counties in (McKissick and Boatright, 2010). During 2005-2009 the top five peanut producing counties in Georgia are all located in the southwestern corner of the state: Decatur, Worth, Mitchell, Miller, and Early counties (McKissick and Boatright, 2010).

Though Georgia leads the nation in peanut production, peanuts farmers in the state have focused little on growing peanuts using certified organic production methods. In 2008, only two farms grew organically certified peanuts in the state **(**USDA ERS, 2011). While consumer demand exists for Georgia-grown organic peanuts, many barriers of entry exist for Georgia peanut farmers to begin meeting this demand. One current barrier is the lack of organic certified processing facilities in Georgia. This study will determine the economic feasibility of an on-farm processing facility for organic peanuts.

Background on Organic Peanut Production

Most organic peanuts in the United States are grown in Texas and New Mexico **(**USDA ERS, 2011). In Georgia, limited opportunities exist for farmers to offset the transition costs of switching from conventional to organic peanut production. To receive an organic certification, farmers must follow guidelines set by the National Organic Program (NOP). The NOP standards only allow the application of organically approved substances for disease, pest, and weed control

and for fertilizer use during the production of the agricultural products (Nally, 2011). If non-approved substances are applied to a field, this land must wait three years with no application before entering organic production. The three-year transitional period prior to organic certification limits a farm's ability to expand production. Current research is looking at transitional crops, such as velvet bean or other small grains, but a market needs to be developed for these crops to encourage production beyond a small scale. NOP regulations also require that agricultural products labeled as organic must originate from farms or handling operations that are certified by federal, state, or approved third party agencies.

If all NOP requirements are followed during the production of an organic food product, it can be labeled and sold as a certified organic product. Currently, there are four separate categories of organic labeling that signify four levels of organic ingredients in food products: 100% organic, organic, made with organic ingredients, and less than 70% organic (Organic Product Composition, 2011). These labels signify the levels of 100%, between 95-99%, between 75-94%, and less than 75% of organic ingredients, respectively. For 100% organic and organic levels, the producer can use an official USDA Organic label. The third range can label a product as "made with organic ingredients," while the last category can only list "organic ingredients" in the products ingredients list.

Problem Statement

A key obstacle for organic peanut production in Georgia is the current lack of certified organic processing facilities for organically grown peanuts. If an organic food product is processed, then the processing facility must also follow the guidelines set forth by the NOP (Nally, 2011). These guidelines allow the milling and/or separating of agricultural commodities that are grown according to organic guidelines (Organic Handling Requirements, 2011), but the

process must segregate the organic products from the processing of products that are grown using conventional practices. According to the federal *Commingling of Organic Products Standard*, the organic producer "must implement measures necessary to prevent the commingling of organic and nonorganic products and protect organic products from contact with prohibited substances" (2011). This includes packaging an organic product with "synthetic fungicide, preservative or fumigant" or within a container that has stored a conventional product in the past, unless the reusable bag or container "poses no risk of contact" between the organic product and the synthetic product.

Once harvested, peanuts are processed at several different facilities before becoming a retail product. Shelling facilities store, shell, and depending on end product, size shelled peanut kernels to meet specifications of a wholesale customer. Shelled kernels are then delivered to these customers where the kernels are roasted and processed further into a final retail product. If a product buyer requests a blanched peanut product, peanuts can potentially travel to seven different locations during the production chain: the farm, buying point facility, shelling facility, blanching facility, roasting and further processing facility, retail distribution center, and retail store.

All facilities that handle and process organic peanuts designated for a certified organic peanut food product must follow all NOP regulations. There are currently 12 shelling plants located in Georgia located in: Arlington, Ashburn, Bainbridge, Blakely, Colquitt, Dawson, Donalsonville, Columbus, Rochelle, Smithville, Sylvester, and Tifton (American Peanut Council, 2011). Three blanching facilities were located in Blakely, Fitzgerald, and Sylvester. Figure 1.1 shows the location of these facilities in comparison to the 2010 peanut production in Georgia. As of May 2011, not one of these shelling facilities was certified by the USDA to

handle organically grown peanuts for processing of a certified organic retail peanut product. A certified facility will allow organic peanuts to retain organic characteristics throughout processing and will allow farmers to capture the full profit potential of their organic product.

Objectives of Study

The first objective of this study is to estimate the economic feasibility of processing peanuts with specialty attributes, including certified organic, at a small scale, certified organic, processing facility in Southeastern Georgia. With the lack of certified organic processing facilities and the low volume of organic peanut production in the state, small scale processing could take place on existing organic peanut farms. A goal of this study is to estimate the annual costs of producing retail peanut products that best meet the potential demand for peanut products with specialty attributes.

The second objective of this study is to estimate the potential market for peanut products with specialty attributes including certified organic. According to Hayes (2010), a niche market exists for a specialty made, shelled, oil roasted and flavored organic peanut product however a small scale processing facility has the potential to produce other peanut products. If feasible, small scale processing could help a peanut farmer retain the organic characteristics on not only a shelled, oil-roasted product, but also other products made from organically grown farmer's stock peanuts.

Study Methodology

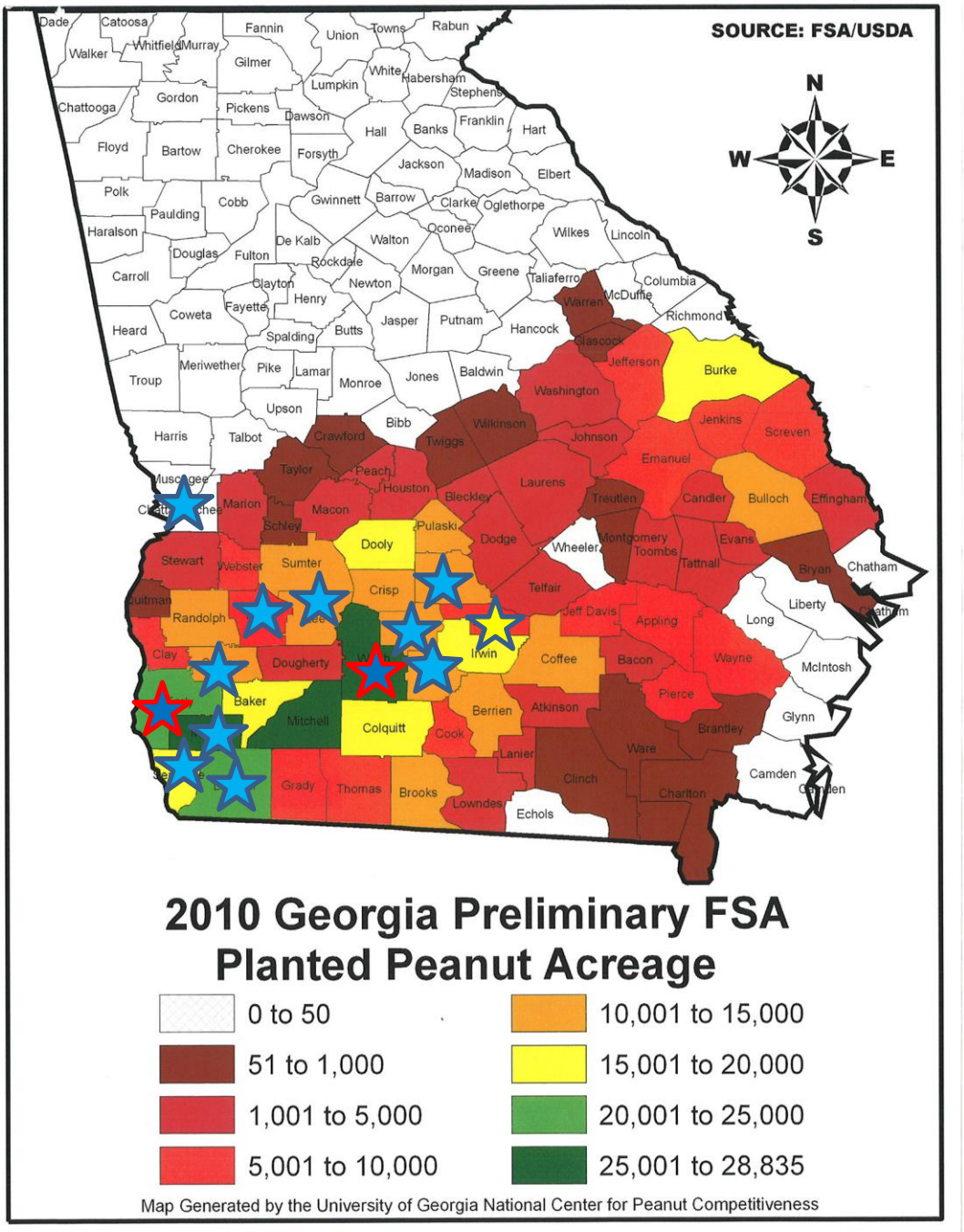
To estimate the market potential of the three organic peanut products with specialty attributes, a consumer survey instrument was designed to elicit willingness to pay responses. The survey was conducted by the University of Georgia Survey Research Center. Survey results were tabulated and summarized using summary statistics and t-statistics analysis was performed.

For the feasibility study section of this study, processing steps, processing rates, and cost estimates were estimated from existing peanut processing facility to construct a cost model. The facility described in this model will include steps for shelling, roasting, blanching, and packaging organic peanuts while following all steps required by federal and state regulations. Interviews were conducted with existing processing facility managers, United States Department of Agriculture (USDA) engineers, Federal State Inspection Service (FSIS) inspectors, and University of Georgia Food Science specialists to determine costs estimates.

Organization of Study

This thesis is divided several sections. Chapter 2 will summarize the results of different feasibility studies on small scale processing facilities and peanut processing facilities. It will also present prior research relating to consumer demand of products with multiple attributes. The market potential for peanut products with organic, locally grown, and produced by a small farmer attributes is assessed in Chapter 3. The fourth chapter will address the economic feasibility of a small scale processing facility for peanuts that includes storing, shelling, roasting, blanching, and packaging of a retail peanut product. The responses of the final costs per pound of each organic peanut product are also estimated in Chapter 4 from changes in input variables. Final conclusions are presented in Chapter 5.

Figure 1.1 Locations of Peanut Processing Facilities in Georgia with 2010 preliminary acreage as of September 2010



Shelling Facility Location

Blanching Facility Location

Both Shelling and Blanching Facility Location

CHAPTER TWO

REVIEW OF LITERATURE

This chapter highlights previous findings related to on-farm processing of peanuts with specialty attributes. The chapter is divided into three sections. The first section will address studies on a consumer's willingness to pay for different credence attributes. The second section will review findings of consumer studies on peanut product consumption. The final section will summarize findings from feasibility studies of peanut processing facilities.

Preferences of Consumers to Specialty Attributes on Food Products

The addition of specialty attributes can add value to an agricultural commodity such as peanuts. Many attributes are considered to be credence attributes, or attributes that require information to be assimilated from the farmer to the consumer. Creedence attributes are not attributes that consumers can perceive, such as the color or size of a product, but rather attributes listed on a label. Consumers who are willing to pay for credence attributes trust that the information given on the label is accurate and trust source of the label. The credence attributes could be added to peanut products from an on-farm processing facility include *certified organic, locally grown,* and *produced and processed by a small farm.*

Consumer Preferences to *Certified Organic* Attribute

Many results have been found concerning consumer attitudes and willingness to pay for a food product grown under organic conditions. Researchers have found that consumers are willing to pay a premium for products grown organically, including chicken (Lacaze, Rodriguez,

and Lupin, 2009), potatoes (Yue et al, 2008; Lourerio and Hine, 2001), milk (Dimitri and Venezia, 2007;Wong et al, 2008**),** and apples (Yue, Alfnes, Jensen, 2009).

The recent growth of the organic foods market increased availability of organics from only all-natural specialty food stores, such as Whole Foods, to big-box stores, such as Wal-Mart, and bulk discount stores, such as Sam's Club or Costco. According to Dimitri and Oberholtzer (2009), the growth of the organic market has, in some cases, decreased the availability of organic products. With increase of buyers of organics, a niche organic food product, such as organic ballpark or snack peanuts, could potentially perform well.

Though results state that consumers pay more for organic foods, determining the socioeconomic profile of an organic foods consumer has provided inconsistent results (Dimitri and Oberholtzer, 2009; Thompson, 1998). One reason may be that the establishment of the NOP increasing availability of organic foods, thus changing the demographic of organic consumers. It has been found that organic food products attract different customers for different reasons, including benefits to health and environment (Durham and Andrade, 2005) and eating from a safe & trusted food source (Naspetti and Zanoli, 2006).

Instead of separating consumers by demographic information, some researchers have found it easier to segment organic consumers by their preferences. Yue et al (2008) found that consumers that desired the source verified attribute for organics purchased more of organic potatoes than others groups of consumers. This applied a k-means cluster analysis to divide study participants into three segments: industry trusting, health oriented, and price-oriented. In the industry trusting group, the individuals care more about the taste of the food, rather than the food's source, whereas the health-oriented cluster preferred a sourced verified product, and would be willing to pay more for this attribute. Those in the price group were influenced more

by price than the other two groups. In their results, the health-oriented participants consume more organic potatoes than the other two groups.

Once the organic market is more developed for an individual food product, research has found that consumers start to alter their preferences for organics. One preference that may change in a "mature" organic market is a preference towards Studies have shown that appearance of fresh product affects organics purchases (Yue, et.al, 2008 & Yue, Alfenes, and Jensen 2009). Peanut products offer the advantage of a processing step, therefore once a market is developed, sales of roasted peanuts should not be affected by appearance.

Consumer Preferences to *Locally Grown* attribute

The *locally grown* label is distinct from the organic brand. With the rise of local farmers markets, consumer demand has increased for food products grown close to home. The term "locally grown" is prevalent in food product labels, though while *certified organic* is a national brand approved by the USDA, *locally grown* labels are typically approved by smaller governing agencies. Many states have a label that certifying that a food product was grown and/or processed within a state's borders. Georgia's program is referred to as "Georgia Grown." The Georgia Department of Agriculture approves the use of the label on food products grown within the state. In order for approval, producers must register with the Department and guarantee that their products were grown within Georgia.

Several studies have found that consumers have a higher preference to locally grown than organic food products. Lourerio and Hine (2001) found that "Colorado grown" potatoes could be sold for a higher level of consumer acceptance and premium when compared to organic or non-GMO products. Also, when comparing the organic to a "Kentucky grown" label on blueberry products, Hu, Woods, and Bastin (2009) found that Kentucky consumers were willing to pay a

higher premium towards the products grown within their state.

Consumer Preferences to a *Small Farm* attribute

A third attribute that many consumers tie to understanding a source of their food is a label that identifies farm size. The USDA defines a small farmer as a farmer that lists farming as their major occupation that receives less than $250,000 per year in sales (USDA, 2009). Unlike organic foods or a state "grown-in" label, a government approved label identifying a product coming from a small farm does not exist. While no defined label exists, some consumers desire products from sources they consider to be a small farm. In some instances, however, this demand for a small farm attribute is tied to another attribute, such as certified organic. Chang and Lusk (2008) found that 38.8 to 42.3 percent of the premium paid for organic foods can be traced to a consumer's concerns for equal distribution to small farmers.

Consumer Preferences and Attitudes on peanut products

A variety of research has been conducted on the consumption habits of peanut consumers. The consumption of peanut products depends on a variety of factors. He, Fletcher, and Rimal (2005) determined that the product form and type is especially important for consumers of snack peanuts. In their study, the researchers used data that recorded a consumer's preferred type of snack peanuts among different types, including dry-roasted, salted cocktail, honey-roasted, peanuts in cocktail mix, peanuts in trail mix, and other kinds of snack peanuts. Based upon the product types available to the survey participants, dry roasted snack peanuts were the most popular choice, followed by honey-roasted.

Nutrition and health considerations have also been found to influence peanut consumption. According to the National Peanut Board, peanuts are known for their nutritional value, including essential vitamins and minerals. The consumption of peanuts can also help

lower LDL, or "bad" cholesterol. Studies show that perception of nutrition content is a factor in consumption of both inshell and snack peanuts (Rimal & Fletcher, 2000; Rimal & Fletcher, 2005).

Consumers are also attracted by brand name peanut products. He, Fletcher, Rimal (2004) found that brand loyalty exists more in the peanut butter market than that of any other peanut product. The researchers also found that reduced-fat peanut butter is an imperfect substitute to generic peanut butter. He, Fletcher, and Rimal (2004) concluded that the reduced-fat attribute increased total consumption of peanut butter.

Summary of Literature Review

These findings show that consumers are willing to pay more for credence type attributes on a variety of products. Research consistently shows that consumers would pay premiums for organic and locally grown attributes. If studies compare a willingness to pay for both locally grow and certified organic, however, the locally grown attribute typically garnered the higher premium. It is expected that this would hold true if peanut products were sold with these attributes.

CHAPTER THREE

CONSUMER INTEREST IN PEANUT PRODUCTS WITH SPECIAL ATTRIBUTES

From peanut butter products to peanut oil, consumers have a wide variety of peanut products to choose from in today's marketplace. In addition to many products, consumers can also decide between the same product bearing different attributes. Actual consumers purchases are useful in determining consumer trends, however when a market does not exist for a product, information must be obtained from potential customers.

In order to determine the peanut products with the highest market potential from a small scale, on-farm processing facility, interest was gathered from a current retailer of peanut products in Georgia. The retailer expressed interest in a shelled, blanched, and roasted peanut product as well as an inshell and roasted peanut product from a proposed on-farm processing facility for peanuts. The retailer was also interested in products bearing different attributes, particularly those that were certified organic, locally grown, and produced and processed by a small farm. The retailer publicly advertised a "locally grown" label to mean that a product was grown within the state retailed, and it did not have a source for organically produced peanut products grown and processed Georgia. Information was also gained from a small existing market for a shelled, oil-roasted, and flavored peanut product bearing the same attributes desired by the major retailer.

Survey Design and Methodology

To further define and supplement current retail interest, a survey was developed to determine a consumer's willingness to pay (WTP) for three peanut products with different

attributes. The three products used in the survey were: (1) a 16 ounce jar of shelled and roasted snack style (Snack) peanuts, (2) a 16 ounce package of inshell and roasted ballpark style (Ballpark) peanuts, and (3) a 16 ounce jar of peanut butter. Though retail markets currently exist for an organic and locally grown peanut butter product, it was determined that peanut butter manufacturers could desire shelled, non-roasted peanuts with multiple attributes for peanut butter products therefore peanut butter was included in the survey at an on-farm processing facility.

This study does not include the feasibility of processing peanut butter at such a facility. The survey in the study was designed to determine a consumer's willingness to pay a premium (WTPP) for three peanut products with three distinct labels: *certified organic*, *locally grown*, and *produced and processed by a small farm* (also stated as *small farm*). Unlike a traditional WTP study in which multiple price points for are tested for a product, a single price point was assigned to each product in the survey, and the price point remained constant throughout the survey. The price points given to each product were $2.15 for a 16 ounce jar of shelled snack style peanuts, $1.25 for a 16 ounce package of in-shell ballpark style peanuts, and $1.55 for a 16 ounce jar of peanut butter. The price points were based upon average retail market prices in Georgia as of March 2011.

Targeted Audience and Participant Demographic Overview

Georgia consumers of peanut products over the age of 18 were targeted as survey participants. Data was collected by the University of Georgia Survey Research Center. The Research Center used a computer assisted telephone interview system and conducted phone interviews between May 2 and May 8, 2011. The survey targeted consumers of peanut products by asking the participant if he or she had consumed peanut products during the last year. The survey received 248 responses to the initial screening question. Only participants that answered in the affirmative to consuming peanut products continued to the remaining questions; the

research center obtained 208 "yes" responses to the first question, or 83.9% of the total. Forty (40) participants, or 16.1% of the total, were excluded from the survey due to a lack of known peanut product consumption in the last 12 months.

An initial goal of the survey was to represent Georgia residents that consume peanut products. The participants in the survey were taken from a random sample of Georgia consumers of peanut products with listed telephone numbers. Not all Georgia consumers of peanut products have listed telephone numbers therefore the telephone survey method introduces some bias in the sample. To limit the survey's length on the phone, the 208 peanut consumers were randomly assigned one of three survey versions. Each survey version held a different combination of two peanut products, thus data was only gained on two products from each participant. Peanut consumption behavior and demographic information were asked in all survey versions. With a sample size of 208, the data gained from questions in all three survey versions is statistically significant at the 0.95 confidence level with a 6.8 percent margin of error. This means that for a dichotomous choice question, such as "have you consumed peanut products in the last year," there is a 95% probability that the mean of the survey sample falls within a range 6.8% less than or greater than the mean from the entire population.

Table 3.1 provides a profile summary of the consumers in the sample and a comparison to the population of Georgia peanut consumers. Little information is available on the demographic profile of a peanut product consumer therefore the population demographics are estimated using the entire population in Georgia over the age of 18. The demographic information gained from the survey participants was gender, age, education, and income level. The sample has a higher percentage of females (60.6%) than the Georgia population (51.2%). The survey participants were also older and more educated than the Georgia population. Finally,

the sample was wealthier than the Georgia population in 2010, as a higher percentage within the sample earned more than $50,000 a year.

Table 3.1 Demographic Profile of peanut product survey sample and Georgia population			
Gender	**N**	**% in sample**	**% in GA population***
Male	78	39.4	48.8
Female	120	60.6	51.2
TOTAL	198	100.0	100.0
Age			
19 – 24	9	4.5	14.7
25 – 44	60	30.2	28.2
45 – 64	85	42.7	25.4
65 and older	45	22.6	15.8
TOTAL	199	100.0	100.0
Education			
< High School	20	10.3	21.4
High School Grad/GED	29	14.9	28.7
Some College	64	32.8	20.4
College Grad or Higher	82	42.0	29.5
TOTAL	195	100.0	100.0
Income			
< $15,000	9	6.3	14.2
$15,000 - $34,999	18	12.6	21.9
$35,000 - $49,999	21	14.7	14.6
$50,000 - $74,999	32	22.4	18.9
$75,000 or more	63	44.0	30.4
TOTAL	143	100.0	100.0
*Source: American Fact Finder, United States Census			

Peanut Consumption Behavior

In the survey's first question, participants were asked which peanut products they consumed. The products shelled and roasted snack style peanuts, in-shell and roasted ballpark style peanuts, peanut butter, boiled peanuts, peanut oil were read aloud to the participant. An option for other products was also given. Participants were allowed to answer as many products

applicable to their consumption during the past year. Table 3.2 summarizes the percentage of "yes" responses of each peanut product. During the past year, 59.52% of survey participants consumed inshell ballpark style peanuts, 97.14% consumed peanut butter, 70.95% consumed shelled snack style peanuts, 56.67% consumed boiled peanuts, and 46.19% consumed peanut oil. In some instances, such as peanut oil, consumers may not know if peanut products were used as an ingredient or during the preparation of a meal, thus it is assumed that these results reflect products that consumers knowingly consumed.

Table 3.2 Summary of peanut product consumption during the last 12 months from 208 Georgia consumers

Product	**Percent Consumed**
Inshell and Roasted Ballpark Style	59.52
Peanut Butter	97.14
Shelled and Roasted Snack Style	70.95
Boiled Peanuts	56.67
Peanut Oil	46.19
Other	2.38

The participants that continued the survey were next asked a series of questions to determine their WTPP for two peanut products with three product attributes. The survey questions were ordered by attribute. Peanut consumers were first asked their WTPP above a price point for a peanut product with a certain attribute. Second, consumers were asked to give a definition of that attribute. Next, the attribute was defined, and the consumer was asked to use the definition given to re-evaluate their WTPP for each attribute, on each product. The definitions given for the three attributes were:

Certified Organic: Indicates that agricultural products have been grown and processed according to USDA's national organic standards and certified by USDA-accredited State and private certification organizations. In short, "certified organic" standards only allow the application of organically approved substances for disease, pest, and weed control and for fertilizer use. Finally, these regulations neither limit the type of producer that can grow "certified organic" crops nor the location where the product was grown.

Locally Grown: means "grown within the State of Georgia" and the product was certified to be grown in the state by the Georgia Department of Agriculture

Produced and Processed by a Small Farmer: defined as a product coming from a producer having gross sales of less than $250,000 per year and the owner/operator receives his or her primary income from farming

Finally, the survey participants were asked their WTPP above the price point for a product with a combination of attributes. Appendices 1-3 show a copy of a survey used in the study.

Consumer Definitions of Product Attributes

Table 3.3 Definitions given for a *Certified Organic* label from 203 survey participants[1]	
Definition	**Percent of Responses**
No Chemicals	49.75 %
Natural	20.20%
Certified By Government Agency	6.90%
No Preservatives	9.36%
Not Sure	3.94%
Other	21.18%

Table 3.4 Definitions given for a *Locally Grown* label from 203 survey participants[1]	
Definition	**Percent of Responses**
Grown in Georgia	38.4%
Grown in County/Hometown	32.02%
Grown within 25 mile radius	7.39%
Grown within 100 mile radius	4.43%
Other	17.73%

The survey participants were asked to give a definition of *certified organic, locally grown,* and *produced and processed by a small farm* attributes using an open-ended question. The results were categorized by the information given from the participants. Each time a category was mentioned it was recorded as a response, even if a participant included one or more categories in a definition. Table 3.3 shows that most common definition of *certified organic,* at 49.75% of the responses, was that the peanut products were grown without chemicals. Other definitions given for *certified organic* were "natural" (20.2%), "was certified by government

[1] The margin of error for a sample size of 203 is 6.88%.

agency" (6.9%), "no preservatives" (9.36%), and other (21.18%). Answers included in the "other" category include "more expensive" (3.94%), "healthier" (2.96%), and "means nothing" (4.93%). A small percentage (3.94%) of the participants did not know a definition.

Table 3.5 Definitions given for a *Produced and Processed by Small Farm* label from 198 consumers[2]	
Definition	**Percent of Responses**
Produced and Processed Locally	18.69%
Not From a Corporation	26.26%
From a Family Farm	9.6%
Produced and Processed by a Small Farm	16.16%
Other	25.76%
Not sure	8.08%

Table 3.4 summarizes the participant's definitions for a *Locally Grown* label. The answers given as definition for *locally grown* are easily divided into two segments. The first defined *locally grown* as within the borders of a certain area, including "grown in Georgia" (38.4%) or grown within their local "county or home town" (32.02%). The second segment gave a specific mileage range; one group answered "within 25 miles" (7.39%) and 4.43% defined the label as "grown within 100 miles" of where they live. Other answers for a "Locally Grown" label included "don't know" (3.45%) and "grown in the US" (2.96%).

The final attribute that survey participants defined was a label identifying a peanut product as being *produced and processed by a small farm*. The results are summarized in Table 3.5. The largest group of participants defined that attribute as "not from a corporation" (26.26%) while 9.6% believed the label to mean "from a family farm." Some (3.5%) thought that the definition meant both "from a family farm" and "not from a corporation." One group (18.69%) defined this label as "produced and processed locally." Grouped in the "Other" category, only a

[2] The margin of error for a sample size of 198 is 6.96%.

portion of the answers defined this label using a specific farm size (6.01%) or amount of workers (1.2%). Eight percent of the survey participants did not know a definition for *small farm*.

WTP Results of a Snack Peanut Product

Table 3.6 Summary of responses and survey participant's willingness to pay more than $2.15[3] on a 16 ounce jar of shelled and roasted snack style peanuts

Single Attributes	Total Responses	Number of "Yes" Responses	Percent of Total with "Yes"	Average amount willing to pay above $2.15	Standard Deviation of Premiums
Certified Organic, undefined	138	49	35.51%	$1.60	$1.112
Certified Organic, After Defined	138	52	37.68%	$1.74	$1.129
Locally Grown, undefined	138	68	49.28%	$1.68	$1.193
Locally Grown, After Defined	138	71	51.45%	$1.69	$1.145
Produced & Processed from Small Farm, undefined	138	81	58.70%	$1.73	$1.2673
Produced & Processed from Small Farm, After Defined	138	82	59.42%	$1.71	$1.255
Combined Attributes					
Certified Organic & Locally Grown	135	71	52.59%	$1.61	$1.2158
Certified Organic & Produced, Processed by Small Farm	135	74	54.81%	$1.64	$1.2849
Locally Grown & Produced, Processed by Small Farm	135	84	62.22%	$1.70	$1.2263
All Three Attributes	135	79	58.52%	$1.76	$1.3372

A package of shelled and roasted snack style peanuts is typically a glass jar of various sizes. The survey participants were asked their WTPP above $2.15 per pound for a 16 ounce jar of snack peanuts, whether or not they consumed the product over the last year. Table 3.6 summarizes the responses to questions on snack style peanuts. When survey participants used their own definitions of attributes that may apply to a snack peanut product, 35.51% of participants were

[3] The margin of error for the sample sizes are 8.34% for 138 total responses and 8.43% for 135 responses.

Table 3.7 Summary of 138 survey responses of consumers willing to pay more than $2.15 for a *certified organic*, *locally grown*, and/or *produced and processed by a small farm* attribute on a 16 ounce jar of shelled and roasted snack style peanuts			
Premium for attribute before and after defined	**Number of Responses**	**Percent of 138 Responses**	**Avg. change in premium after defined**
Certified Organic	41	29.71%	
Increased premium when defined	10	7.25%	$0.93
Decreased premium when defined	5	3.62%	($1.08)
Premium remained the same when defined	26	18.84%	-----
Locally Grown	58	42.02%	
Increased premium when defined	8	5.79%	$0.47
Decreased premium when defined	8	5.79%	($0.28)
Premium remained the same when defined	42	30.43%	-----
Produced & Processed by Small Farm	70	50.72%	
Increased premium when defined	6	4.35%	$0.42
Decreased premium when defined	13	9.42%	($0.84)
Premium remained the same when defined	51	36.96%	-----

willing to pay more than $2.15 per pound for a *certified organic* product, 49.28% were willing to pay more for a *locally grown* product, and 58.70% were willing to pay more for a snack peanut product that *was produced and processed by a small farmer*. In this group, the average amounts above $2.15 per pound that the participants would pay were $1.60 for *certified organic* attribute, $1.68 for *locally grown* attribute, and $1.73 above $2.15 for a label that recognized that the product was *produced and processed by a small farm*. Once the attributes were defined for a jar of snack peanuts, 37.68% of the participants increased their premium for *certified organic* attribute, 51.45% increased their premium for *locally grown*, and 59.42% increased their premium for the *small farm* attribute. The average amounts of those willing to pay more for defined attributes also increased to $1.74 more per pound for *certified organic* and $1.68 more

per pound for *locally grown*. Thought the number of interested consumers increased, the average premium above $2.15 for a *small farm* attribute decreased from $1.73 to $1.71 per pound.

The group of survey participants willing to pay more for a certain attribute can be divided into several sets. The first group, shown in Table 3.7, includes those that are willing to pay more than $2.15 per pound for both the undefined or defined attributes of *certified organic*, *locally grown*, and *small farm*. Forty-one (41), 58, and 70 participants were willing to pay more than $2.15 for both an undefined and defined *certified organic*, *locally grown*, and *small farm* attributes, respectively. Of those that would pay for both definitions, 10 increased their premiums for *certified organic*, 8 increased their premiums for *locally grown*, and 8 increased premiums for *small farm*. The average premium increases that participants were willing to pay were $0.93 for the *certified organic*, $0.47 for *locally grown*, and $0.42 for *small farm*. Among the participants that were willing to pay a premium for a specific attribute, some decreased the level of premium once the attribute was defined. When participants received an attribute definition, 5 decreased their premium for *certified organic*, 8 decreased it for *locally grown*, and 13 decreased the premium after the definition of *small farm* was given. The premiums decreased by an average amount of $1.08 for *certified organic*, $0.28 for *locally grown*, and $0.84 for *small farm*. The remaining participant responses (26 for *certified organic*, 42 for *locally grown*, and 51 for *small farm*) kept their premiums at the same level from an undefined to a defined attribute.

Table 3.8 Summary of 138 survey responses of consumers only willing to pay more than $2.15 for an undefined *certified organic*, *locally grown*, and/or *produced and processed by a small farm* attribute on a 16 ounce jar of shelled and roasted snack style peanuts

Premium for attribute before definition given	Number of Responses	Percent of 138 Responses	Average Amount above $2.15
Certified Organic	8	5.79%	$1.59
Locally Grown	8	5.79%	$1.49
Produced & Processed by Small Farm	11	7.79%	$1.29

Table 3.9 Summary of 138 survey responses of consumers only willing to pay more than $2.15 for a defined *certified organic*, *locally grown*, and/or *produced and processed by a small farm* attribute on a 16 ounce jar of shelled and roasted snack style peanuts			
Premium for defined attribute	**Number of Responses**	**Percent of 138 Responses**	**Average Amount above $2.15**
Certified Organic	11	7.79%	$1.78
Locally Grown	11	7.79%	$1.50
Produced & Processed by Small Farm	12	8.69%	$1.89

Tables 3.8 and 3.9 summarizes the group of responses from survey participants only willing to pay a premium for an attribute either before or after it was defined in the survey. The differences between the number of responses for each attribute in Tables 8 and 9 represent the net change in "yes" responses per attribute in Table 6. The average amounts above $2.15 that those only willing to pay more for an undefined attribute were $1.59 for *certified organic,* $1.49 for *locally grown,* and $1.29 for the *small farm* attribute. Those that would only pay more for an attribute on the snack product after the attribute was defined would be willing to pay $1.78 for the *certified organic,* $1.50 for the *locally grown,* and $1.89 for the *small farm* attribute above $2.15 per pound.

WTP Results of Inshell Peanut Product

Much like snack peanuts, inshell and roasted "Ballpark style" peanuts are sold in a variety of package forms. A common package of ballpark peanuts typically weighs 16 ounces (or 1 pound). The survey asked the participants on their WTPP above $1.25 for a package of this size. Table 3.10 summarizes answers given, including the average premium that the survey participants were willing to pay above $1.25 for each attribute. Like the results from a snack peanut product, the percentages within the sample result in a wide variety of groups. The first is a group that is willing to pay more than $1.25 for an attribute on the ballpark peanut product in which a definition is not given. One-third (33.33%) of participants were willing to pay more than $1.25 per pound.

Table 3.10 Summary of responses and survey participant's willingness to pay more than $1.25[4] on 16 ounce package of inshell and roasted ballpark style peanuts					
Single Attributes	**Total Responses**	**Number of "Yes" Responses**	**Percent of Total with "Yes"**	**Average amount willing to pay above $2.15**	**Standard Deviation of Premiums**
Certified Organic, definition not given	129	42	32.56%	$1.37	$0.9481
Certified Organic, After Defined	129	44	34.11%	$1.43	$0.7641
Locally Grown, undefined	129	65	50.39%	$1.20	$0.8533
Locally Grown, After Defined	129	72	55.81%	$1.17	$0.7975
Produced & Processed from Small Farm, definition not given	129	74	57.36%	$1.36	$0.8988
Produced & Processed from Small Farm, After Defined	129	74	57.36%	$1.36	$0.9351
Combined Attributes					
Certified Organic & Locally Grown	126	66	52.38%	$1.30	$0.9862
Certified Organic & Produced, Processed by Small Farm	126	72	57.14%	$1.27	$0.9389
Locally Grown & Produced, Processed by Small Farm	126	82	65.08%	$1.30	$0.9929
All Three Attributes	126	74	58.73%	$1.36	$1.1208

for a *certified organic* product, 50.39% were willing to pay more for a *locally grown* product, and 57.36% were willing to pay more for the *small farm* attribute. The average amounts above $2.15 that the participants would pay is $1.37 for *certified organic* attribute, $1.20 for a *locally grown* attribute, and $1.36 for a *small farm* attribute above $2.15 for a 16 ounce package of ballpark peanuts. Once the attributes were defined, the percent of participants willing to pay more than $1.25 increased to 34.11% for *certified organic* and 55.81% for *locally grown*. The average amount above $1.25 per package increased to $1.43 for *certified organic*, decreased to

[4] The margin error estimates are 8.63% for 129 total responses and 8.73% for 126 total responses.

$1.17 for the *locally grown* package, but stayed the same for a packaged produced and processed by a *small farm* after the attributes were defined

Table 3.11 Summary of 129 survey responses of consumers willing to pay more than $1.25 for a *certified organic*, *locally grown*, and/or *produced and processed by a small farm* attribute on a 16 ounce package of inshell and roasted ballpark style peanuts			
Premium for attribute before and after defined	**Number of Responses**	**Percent of 129 Responses**	**Avg. change in premium after defined**
Certified Organic	27	20.93%	
Increased premium when defined	5	3.88%	$0.73
Decreased premium when defined	2	0.77%	($0.38)
Premium remained the same when defined	20	15.50%	-----
Locally Grown	57	44.19%	
Increased premium when defined	5	3.88%	$0.38
Decreased premium when defined	4	3.10%	($0.89)
Premium remained the same when defined	48	37.21%	-----
Produced & Processed by Small Farm	65	50.39%	
Increased premium when defined	9	6.98%	$0.33
Decreased premium when defined	7	5.43%	($0.69)
Premium remained the same when defined	49	37.98%	-----

The survey responses on inshell peanut product attributes can also be divided into several groups. Table 3.11 summarizes the group that was willing to pay more for an attribute before and after it was defined. Twenty seven (27) were willing to pay more for both a defined and undefined *certified organic* attribute, 57 regardless of the definition of *locally grown*, and 65 would pay above $1.25 before and after s *small farm* definition was given in the survey. From this group of participants willing to pay a premium for both an undefined and defined attribute, 5 increased their premiums for *certified organic*, 4 increased their premiums for *locally grown*, and 7 increased the premiums for *small farm*. The average premium increases that participants were willing to pay were $0.73 for *certified organic*, $0.38 for *locally grown*, and $0.33 for *small*

farm. Some consumers decreased the level of premium once the attribute was defined. When the survey participants received an attribute definition, 2 decreased their premium for

Table 3.12 Summary of 129 survey responses of consumers only willing to pay more than $1.25 for an undefined *certified organic*, *locally grown*, and/or *produced and processed by a small farm* attribute on a 16 ounce package of inshell and roasted ballpark style peanuts

Premium for attribute before definition given	Number of Responses	Percent of 129 Responses	Average Amount above $1.25
Certified Organic	12	9.30%	$1.31
Locally Grown	7	5.43%	$1.14
Produced & Processed by Small Farm	9	6.98%	$1.10

Table 3.13 Summary of 129 survey responses of consumers only willing to pay more than $1.25 for a defined *certified organic*, *locally grown*, and/or *produced and processed by a small farm* attribute on a 16 ounce package of inshell and roasted ballpark style peanuts

Premium for defined attribute	Number of Responses	Percent of 129 Responses	Average Amount above $1.25
Certified Organic	14	10.85%	$1.44
Locally Grown	14	10.85%	$1.22
Produced & Processed by Small Farm	9	6.98%	$1.34

certified organic, 4 decreased it for *locally grown*, and 7 decreased the premium for the defined *small farm* attribute. The average amount of that these premiums decreased were $0.38 for *certified organic*, $0.89 for *locally grown*, and $0.69 for *small farm*. The participants willing to pay the same amount above $1.25 depended on the attribute (20 remained constant for *certified organic*, 48 for the *locally grown* attribute, and 49 for the *small farm* attribute).

Like the results from snack peanuts, a group of participants would only pay more than $1.25 per pound on a package of ballpark peanuts with a special attribute either before or after a definition was given for that attribute. The consumers that would only pay more for an undefined attribute were willing to pay on average $1.31 for *certified organic*, $1.14 for *locally grown*, and $1.10 for *small farm* above $1.25. Table 3.12 summarizes the number of participant in this group. Above $1.25 for the ballpark peanut product increased to 44 for *certified organic*

attribute and to 72 for the *locally grown* attribute, but remained the same for the *small farm* attribute. Those that would only pay more for a defined attribute on the ballpark peanut product would be willing to pay $1.44 more for the *certified organic*, $1.22 more for the *locally grown*, and $1.34 more for the *small farm* attribute above $1.25 per pound. These results are shown in Table 3.13. The differences in responses per attribute between Tables 12 and 13 represent the net change in per attribute in Table 3.10.

WTP Results of Peanut Butter Product

Table 3.14 Summary of responses and survey participant's willingness to pay more than $1.55[5] on 16 ounce jar of peanut butter

Single Attributes	Total Responses	Number of "Yes" Responses	Percent of Total with "Yes"	Average amount willing to pay above $2.15	Standard Deviation of Premiums
Certified Organic, undefined	134	50	37.31%	$1.54	$0.7363
Certified Organic, After Defined	134	47	35.07%	$1.57	$0.7974
Locally Grown, undefined	134	72	53.73%	$1.51	$0.9151
Locally Grown, After Defined	133	86	64.66%	$1.42	$0.8893
Produced & Processed from Small Farm, undefined	133	83	62.41%	$1.56	$0.9543
Produced & Processed from Small Farm, After Defined	133	83	62.41%	$1.56	$0.9767
Combined Attributes					
Certified Organic & Locally Grown	132	66	56.06%	$1.55	$1.0028
Certified Organic & Produced, Processed by Small Farm	132	72	60.61%	$1.55	$1.0004
Locally Grown & Produced, Processed by Small Farm	132	82	74.24%	$1.55	$0.9814
All Three Attributes	132	74	65.15%	$1.60	$1.0079

[5] The margin error estimates are 8.63% for 129 total responses and 8.73% for 126 total responses.

The third product included in this survey was a 16 ounce jar of peanut butter. The participant responses for this product are summarized in Table 3.14. Before a definition was given for a special attribute on a peanut butter product, 37.31% of participants were willing to pay more than $1.55 per jar for a *certified organic* product, 53.73% were willing to pay more for a *locally grown* product, and 62.41% were willing to pay more for the *small farm* attribute. The average amounts per pound above $1.55 that participants would pay were $1.54 for *certified organic* attribute, $1.51 for a *locally grown* attribute, and $1.56 for a *small farm* attribute. Once the attributes were defined, the percent of participants willing to pay more than $1.55 per jar increased to 35.07% for *certified organic* and to 64.66% for *locally grown*. The average amount above $1.55 per jar of peanut butter also increased to $1.57 for defined *certified organic* attribute, decreased to $1.51 for a defined *locally grown* attribute, and decreased to $1.26 above $1.55 for a defined *small farm* attribute.

Like the snack and ballpark products, the survey participants who would be willing to pay more for an attribute can be divided into different segments. Table 3.15 summarizes the first group. Thirty-eight (38) were willing to pay more for both a defined and undefined *certified organic* attribute, 66 for both a defined and undefined *locally grown* attribute, and 77 would pay above $1.55 for either a defined or undefined *small farm* attribute. Some participants increased their premiums after the definition was given; 11 increased their premiums for *certified organic*, 6 increased their premiums for *locally grown*, and 9 increased premiums for *small farm*. The average premium increases that participants were willing to pay were $0.53 for *certified organic*, $0.39 for *locally grown*, and $0.50 for *small farm*. When participants received an attribute definition, 6 decreased their premium for *certified organic*, 9 decreased it for *locally grown*, and 8 decreased the premium for the defined *small farm* attribute. The average amount of that these

premiums decreased were $0.56 for *certified organic*, $0.48 for *locally grown*, and $0.53 for *small farm*. The participants willing to pay the same amount above $1.55 depended on the attribute (21 remained constant for *certified organic*, 51 for the *locally grown* attribute, and 60 for the *small farm* attribute).

When the attributes were defined, the number of participants willing to pay a premium increased by 3 for *certified organic* attribute and by 14 for the *locally grown* attribute, but remained the same for the *small farm* attribute. These numbers are summarizes in Table 3.15. Table 3.16 presents the amounts tied to only those that would pay for the attributes before they were defined. The participants that would only pay a premium on a jar of peanut butter for an attribute were willing to pay on average $1.69 for *certified organic*, $1.08 for *locally grown*, and

Table 3.15 Summary of survey responses of 133 consumers willing to pay more than $1.55 for a *certified organic, locally grown,* and/or *produced and processed by a small farm* attribute on 16 ounce jar of peanut butter

Premium for attribute before and after defined	**Number of Responses**	**Percent of 133 Responses**	**Avg. change in premium after defined**
Certified Organic	38	28.57%	
Increased premium when defined	11	8.27%	$0.53
Decreased premium when defined	6	4.51%	($0.56)
Premium remained the same when defined	21	15.79%	-----
Locally Grown	66	49.62%	
Increased premium when defined	6	4.51%	$0.39
Decreased premium when defined	9	6.76%	($0.48)
Premium remained the same when defined	51	38.35%	-----
Produced & Processed by Small Farm	77	57.89%	
Increased premium when defined	9	6.76%	$0.50
Decreased premium when defined	8	6.02%	($0.53)
Premium remained the same when defined	60	45.11%	-----

$2.55 for *small farm* attribute above $1.25. Those that would only pay more for a defined attribute on a jar of peanut butter would be willing to pay $1.48 more for the *certified organic,* $1.15 more for the *locally grown,* and $1.418 more for the *small farm* attribute above $1.55 per jar.

Table 3.16 Summary of 133 survey responses of consumers only willing to pay more than $1.55 for an undefined *certified organic, locally grown,* and/or *produced and processed by a small farm* attribute on 16 ounce jar of peanut butter

Premium for attribute before defined	Number of Responses	Percent of Total	Average Amount above $1.55
Certified Organic	12	9.02%	$1.69
Locally Grown	3	2.26%	$1.08
Produced & Processed by Small Farm	5	3.78%	$2.55

Table 3.17 Summary of 133 survey responses of consumers only willing to pay more than $1.55 for a defined *certified organic, locally grown,* and/or *produced and processed by a small farm* attribute on 16 ounce jar of peanut butter

Premium for defined attribute	Number of Responses	Percent of Total	Average Amount above $1.55
Certified Organic	9	6.77%	$1.48
Locally Grown	17	12.78%	$1.15
Produced & Processed by Small Farm	5	3.78%	$1.18

Conclusions from Survey Results

The consumer survey in this study yielded findings on a consumer's willingness to pay a premium for special attributes on three peanut products. For three products, a 16 ounce jar of shelled snack style peanuts, a 16 ounce package of in-shell ballpark style peanuts, and a 16 ounce jar of peanut butter, a large percentage of peanut consumers would be willing to pay a premium if the products included *certified organic, locally grown,* or *small farm* attributes. A retailer could receive a premium if it used just one attribute or a combination of all three attributes. If peanut product had only one label, survey participants were most interested in a peanut product

with a *small farm* attribute, followed by *locally grown*, and then *certified organic*. In addition, a combination label of *locally grown* and *small farm* received the highest level of interest in the survey for all three products.

Though a difference in interested level between the three attributes was recorded, the survey participant's stated premiums were not found to be statistically different across the different attribute combinations, particularly between undefined and defined potential labels of the three attributes. The main reasons for this insignificance result include a small sample size received per individual attribute and larger standard deviations relative to the differences in stated premiums between undefined and defined attributes. It is assumed however that retailers of peanut products with specialty attributes could receive premiums without defining attributes listed on a product.

CHAPTER FOUR

FEASIBILITY ANALYSIS OF A SMALL SCALE, ON-FARM PROCESSING FACILITY FOR PEANUTS

The next section in this study focuses on the economic feasibility of an on-farm certified organic processing facility that produces three peanut products from organically produced, Georgia grown farmer stock peanuts. The economic feasibility analysis will evaluate all projected annual fixed and variable costs, including opportunity cost factors, producing three peanut products from such a processing facility in Southeastern Georgia. The three products are a shelled, roasted, and blanched (SRB) product, a shelled, oil roasted and flavored (SOF) product, and an in-the-shell (or in-shell) and roasted (IR) product. The cost totals in this study are based upon the 2010 costs of all land, labor, and capital regardless of the source of funds. This chapter describes the steps required for each processing each product, including all applicable federal and state regulations, and outlines the production costs for each product.

Overview of Proposed Processing Facility

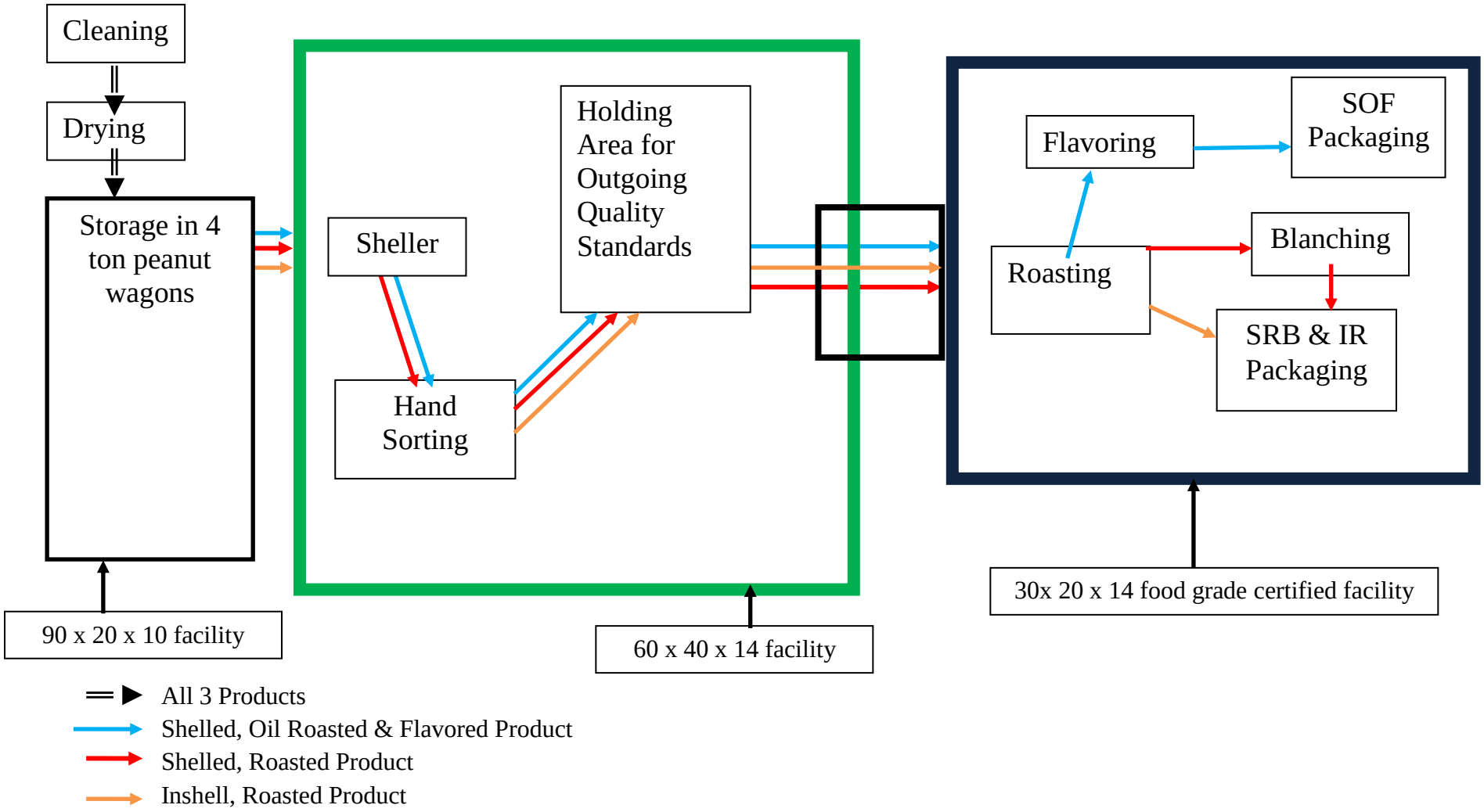
The cost model of the proposed small scale processing facility for peanuts is founded on several planning assumptions. First, the owner/operator is assumed to be able to provide all marketing and financial management responsibilities. The economic cost of management is not included in this analysis due to this assumption. Second, the facility capacity is estimated at 40 tons of inshell and unprocessed peanuts, also known as farmers stock, per year. This amount was the 2010 production of the largest organic peanut producer in Georgia. The plan uses an assumption that 40 tons are processed in equal amounts over a five month period. A five month

processing schedule alleviates the need and eliminates installation and maintenance costs of cold storage facilities. Third, an allocation mix is assumed based upon product interest from potential retailers as well as current producer input. In this plan, 45% of the farmers stock is allocated to the SRB product, 30% to the SOF product, and 25% to the IR product.

All federal and state requirements for food processing facility construction are considered in the planning of this proposed facility. All food processing businesses must be issued a Georgia Food Sales Establishment License by the Georgia Department of Agriculture (Adan). The license requires that smooth, durable, and easily cleanable materials must be used on ceilings, floors, and walls of buildings. Any attachment to the ceiling, floors, and walls, such as light fixtures and equipment, must be also easily cleanable. Regulations for this license also require the installation and use of specific sinks for cleaning and for food product use, an approved facility cleaning plan, and bathroom facility.

Table 4.1 Initial Projected Capital Requirements for a Small, On-Farm Peanut Processing Facility	
Long Term Capital	**Total Costs**
Buildings	
Storing Facility	$ 36,000
Shelling/Sorting	$ 57,600
Roasting & Further Processing	$ 25,740
Total Buildings	$ 119,340
All Equipment	$ 128,356
Subtotal Buildings & Equipment	**$ 247,696**
Land	$ 27,500
Total Long Term Capital	**$ 275,156**
Short Term Capital	
Operating Capital	$ 14,850
Organically Grown Farmers Stock Peanuts	$ 16,800
Total Short Term Capital	**$ 31,650**
Total Initial Capital Requirements	**$ 306,806**

Figure 4.1 Building Layout and Product Flow of a small scale, on-farm peanut processing facility



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A combined building layout and product flow for a proposed facility is shown in Figure 3.1. Three separate building structures are proposed to provide the most efficient structure to follow food processing Good Management Practices (GMP's). In the proposed building layout, farmers stock peanuts are stored in wagons within a storage building once properly cleaned and dried. Peanuts are carried into the second facility to begin the processing steps. The third facility could be used for the roasting, blanching, and packaging steps. The construction and annual operating costs for these facilities and equipment required for each processing step are outlined later in this chapter

The total capital requirement for the facility is estimated at $306,806. The individual capital items are summarized in Table 4.1. The total projected buildings costs are $119,340 and total equipment costs are estimated at $128,356. The facility is assumed to require five acres of land. The economic cost of land is estimated at $5,500 per acre[6], resulting in a total cost of $27,500. The processing facility also requires short term capital to operate. The facility requires an annual operating capital of $14,850 to store and process 40 tons of peanuts. The estimated acquisition cost of $16,800 is based upon a 2010 market price for 40 tons of farmer's stock peanuts at $420 per ton.

Overview of Processing Steps

Peanuts flow through five main processing steps in this proposed facility to produce three finished products. The steps are: storing, shelling/sorting, roasting, blanching, and packaging. Each processing step will require a processing machine, a unique labor step, or both. The maximum processing rate during each step requiring machinery will depend on a machine's engineering rate. The sorting and some packaging steps are not mechanized and thus the processing rates are based upon the estimated hourly rate of one worker. Shrinkage also occurs

[6] This estimated is based upon the 2011 average price of farmland in Southeastern Georgia.

at each step, whether from moisture or dry matter loss. The amount of pounds lost after each process is determined using industry averages, the engineering rates of the required equipment, or estimates obtained from industry sources. The final amount of each peanut product is estimated using the beginning product allocation mix percentage and less shrinkage lost at each processing step.

The first stage within the storage processing step would be an inspection step to ensure peanuts meet Incoming Quality Standards (IQS). Tests for aflatoxin segregation, moisture content, and foreign material levels are three parts in the IQS inspection. These tests are conducted by the Federal State Inspection Service (FSIS). Each IQS inspection category has different requirements. According to the federal minimum IQS levels, peanuts are approved for edible quality standards when an identified lot receives an aflatoxin reading of 15 parts per billion (ppb) or less. The moisture level of the peanuts must be 18% or less prior to inspection. Finally, the identified lot of peanuts must not contain more than 10.49% of foreign material.

During harvest, a farmer typically places peanuts into large storage wagons which are delivered to a local buying point operation. When the farmer's stock arrives at a buying point, it is dried using fan dryers to a moisture level of approximately 9 percent (Birdsong**).** Industry buying points determine the purchase value per ton of peanuts using the lot weight at this moisture level (Birdsong). Though the moisture content in farmers stock must be less than 18% prior to IQS inspection, federal regulations require peanuts to be dried to 10.49 percent moisture or less prior to storing. A moisture content of 9 percent meets both requirements. After the weight is recorded, samples are drawn by the Federal State Inspection Service (FSIS) for the IQS evaluation. IQS testing only takes a small sample from each wagon; the shrinkage estimated for the IQS step is 0.15% of the total amount.

The owner/operator of a small processing facility has two choices to meet the requirements of IQS testing as well as the protocol for handling organically grown peanuts. The first would require the installation of necessary sampling equipment at the small scale facility. The costs of required sampling equipment items are estimated at $70,000 (Ingram). Another method, used in this study, allows a small processing facility to use the sampling equipment owned by a buying point operation. Certified organically grown peanuts can be handled at facilities not approved to handle organic products by the USDA National Organic Program (NOP) given two conditions: (1) processors must guarantee that organic peanuts will not touch or intermingle with conventionally grown peanuts and (2) the methods used to handle the peanuts are approved by a NOP field inspector (Nally). The owner/operator of the small processing facility can meet these NOP requirements at non-certified facility by cleaning the sampling equipment at a buying point using compressed air. A benefit of this approach is that it provides the organic processor access to necessary sampling equipment and the FSIS inspector. It also eliminates the large economies of size required to incur the sampling equipment costs. In addition, the costs of traveling to the buying point are not an added cost to a processing facility budget because these costs are already incurred by the farming operation. A drawback to this method may be the cost charged by the buying point facility to handle an organic peanut product, however the plan assumes that the farmer is not charged such a fee.

The plan assumes that the peanuts will be held at a buying point operation for a maximum for two weeks after harvest and then will return back to the on farm processing facility for storage. The plan also assumes that peanuts will decrease in moisture from 9% to 7.5% without the use of additional drying before storage. The moisture loss during transportation will eliminate the potential need for additional drying.

Before peanuts enter storage in this proposed facility, farmers stock peanuts can be cleaned to remove any additional foreign material. A de-stoning machine can be used in this process, which will remove large rocks, stems, and sticks from the farmer's stock. This plan assumes the use of a de-stoning machine with a 2,000 pounds per hour working rate. During the de-stoning process, each peanut wagon is emptied into the machine, which then feeds clean peanuts into another wagon for storage. The de-stoning step is estimated to remove 0.15% of the total stock amount prior to storage.

Table 4.2 Storage processing steps of small, on-farm peanut processing facility, including shrinkage rates, and allocation of pounds to three products from 40 tons of farmer's stock

Pre-Storage Steps	**Beginning Pounds**	**Percent Loss in Processing Step**	**Pounds Lost in Processing Step**	**Ending Pounds**
IQS Inspection	80,120	0.15%	120	80,000
Additional Drying	80,000	1.50%	1,200	78,800
De-stoning	78,800	0.15%	118	78,682
Storage	78,682	0.10%	80	78,602
Allocation for production of final retail products	**Percent Allocated from Storage to Final Products**	**Allocated Amount in Pounds**	**Pounds Per Month[7]**	**Pounds Per Wagon[8]**
Shelled, Roasted, Blanched (SRB)	45%	35,371	7,074	3,537
Shelled, Oil-Roasted, Flavored (SOF)	30%	23,581	4,716	2,358
Inshell, Roasted (IR)	25%	19,650	3,930	1,965
Total Pounds		**78,602**	**15,720**	**7,860**

Fully cleaned peanuts are assumed to enter a fully enclosed storage facility at 7.5% moisture within the same wagons used for IQS inspection and the de-stoning steps. It is recommended by the USDA that tarps cover wagons to prevent pest contamination (Butts). It is

[7] Assuming 78,602 pounds of farmers stock peanuts are processed each month over 5 months
[8] Assuming storage wagons with a capacity of four tons (or 8,000 pounds)

also assumed that fan dryers will provide air flow through while the wagons are within this facility. A loss of 8 pounds per wagon is estimated while the peanuts are in the storage. The average storage time per wagon is 2.5 months.

Table 4.2 summarizes the shrinkage rates and the ending pounds of each step in the storing process. The price value per ton of peanuts is determined after the farmer stock is sampled for IQS testing, therefore the de-stoning process begins with the facility capacity 40 tons, or 80,000 pounds. A total of 120 pounds is removed from the total amount during destoning, 1,198 is removed due to additional drying, and 80 pounds during storage, resulting in a total amount remaining after storage of 78,602 pounds. When a 45%, 30%, and 25% (later referred to as 45/30/25) product mix percentage is applied to this amount from storage, 35,371 pounds are allocated to the SRB product, 23,581 to the SOF product, and 19,650 to the IR product.

The second proposed building in this plan houses equipment used for shelling and sorting. Peanuts are removed from storage when needed for processing and taken into the second facility. The first proposed step within the second facility is the shelling process for peanuts allocated to the SRB and SOF products. During the shelling process, peanuts are placed into a shelling machine in which they are rotated to rub against each other. This rubbing method splits the pods and separates the kernels from the hulls. Rollers with various slot sizes force the hulls to open without damaging the kernels. Once the hulls are separated, belts within the shelling machine shake the peanuts until the two parts separate. This separation also removes undersized and split kernels. According to industry averages, 35 percent of the farmers stock weight is removed during shelling. Peanuts allocated for the IR product skip the shelling process and are carried straight to the sorting area therefore this shrinkage rate is only applied to the

shelled products. The shelled peanut kernels are loaded into large plastic bins and are moved to the sorting area.

The sorting step is also held in the second proposed facility. Peanut kernels and in-the-shell pods are sorted for several reasons. First, shelled peanuts are sorted for size. The American Peanut Sheller's Association (APSA) divides the kernel size of shelled Runner peanuts for retail use into four grades: jumbo, medium, number one, and splits. Retail outlets typically sell shelled peanuts at the number one grade and larger. The sizes of each grade are determined by the kernel count per ounce of peanuts. Approximately 66 % of the shelled product is estimated to meet the size requirement of the number one size or above. Kernels that do not meet this point can be sold for organic oil stock or non-food items, but are considered as loss for the feasibility analysis. Peanuts are also sorted to remove damaged and immature kernels. Damaged and discoloration on the kernels is typically caused by the presence of the *A flavus* mold. This model assumes that one worker in the facility can sort and size 300 pounds of shelled peanuts during one hour.

In-shell peanuts allocated for the IR product are also sorted for size and content. In-shell peanuts are sorted to remove hollow shells and for size. Sizing of inshell peanuts is different compared to shelled peanuts. The APSA outlines grades for Virginia type inshell peanuts however a size grade for an inshell product does not exist for the Runner type, the variety grown by most Georgia peanut farmers. Owners of this facility would require a specified size from a potential customer before sorting. This model assumes that a customer will accept all sizes of inshell peanuts. An estimated 1.5% of the total pounds from storage, however, are removed due to hollow pods. The facility model also assumes a rate of 300 pounds per labor hour during sorting of inshell peanuts.

The next processing step is the Outgoing Quality Standards (OQS) test. Both shelled and in-shell peanuts must meet OQS prior to roasting according to federal law. Like the test for IQS, an OQS evaluation determines the level of aflatoxin, moisture, and foreign material within a sample. According to the U.S. minimum standards for outgoing quality, shelled peanuts at OQS inspection must not have more than 1.5 % of damaged kernels, 0.2% of foreign material, and a 9% moisture content. Inshell peanuts must not have more than 2% of damaged kernels, 0.50 % of foreign material, and a 10% moisture level. Aflatoxin readings must not be higher than 15 parts per billion (ppb) within both products. The sampling method for the OQS test must conducted by the FSIS and a federally approved lab must conduct chemical analyses for aflatoxin tests. The FSIS removes 160 pounds from each lot during sampling, regardless of the amount of sized and sorted peanuts available to sample (Taylor). This model assumes that FSIS will draw OQS samples twice a month over five months, for a total of 10 samples. Therefore a total loss due to OQS testing is 1,600 pounds, or 4% of the total product. The shrinkage loss per product is determined by multiplying the total shrinkage amount by the initial product allocation mix. It takes approximately five days for the facility to receive results from an OQS test.

When OQS test results are approved by FSIS, the peanuts can be carried into the third proposed building for further processing operations. The roasting process for all three products can be conducted by the same roasting machine, heating peanuts to 350 degrees for 20 minutes. The processing rate per hour of the roasting step is estimated by the amount of each product that a roasting machine can hold. A roasting machine proposed for the facility can roast 600 pounds of shelled peanuts and 450 pounds of in-the-shell peanuts during one, 20 minute batch. The roasting rates for a shelled product decrease to 500 pounds per batch if used for the oil roasted product. After peanuts allocated for the SOF product complete the oil roasting step, they are

flavored using salt and/or a mixture of assorted spices. A shrinkage percentage of 4% is assumed for dry roasting of SRB and IR products, but the oil roasting method used for the SOF product only causes a 3% shrinkage rate due to the addition of oil (Pegg).

After shelled and roasted, peanuts allocated for the SRB product are placed in a blanching machine. Blanching is a process in which the reddish brown skins are taken off of the peanut kernel. This process also helps to lower the aflatoxin amounts found in the peanuts due to presence of the toxin in these skins (Hayes). The blanching machine presses the kernels between large metal rollers, rubbing the kernels until the skins are completely removed. An average industry blanching shrinkage of 4% is used in this plan during blanching of the SRB product (Cowart).

The final step prior to packaging is the final retail inspection. According to Georgia Law, each product is subject to inspection for substances "that would be injurious to human health" (40-70-18-06 (C)). Peanuts currently fall under high-risk products in Georgia (Adan) and samples must be sent to a federally approved lab for testing on a bi-monthly basis during the months of operation. Georgia law 40-7-18 also specifies the records of a food processor must be approved annually by the Georgia Department of Agriculture. Only 0.05% of the final processed amount of all three products is estimated as loss due to samples drawn for the final inspection. Approval for final inspection can be received by the facility after three days.

Packaging is the final processing step proposed for the operation. No shrinkage is estimated for this step. In this plan, the three peanut products are packaged using two methods. The SRB and IR products are packaged into bags holding 10 pounds per bag. These bags will be vacuum sealed, which will allow customers the ability store these products for up to one year without spoilage (Chinnan). The SOF peanuts are packaged in 4 ounce food grade paper bag

packages with twist-tie fasteners and a protective plastic seal. This bag gives the SOF product shelf life of up to 6 months (Chinnan).

Table 4.3 Shrinkage Rates and Pounds Lost Per Processing Step (Post Storage) at a 45/30/25 percentage product mix applied to 40 tons

		SRB		SOF		IR	
Processing Steps	**Percent Loss**	**Pounds Lost**	**Ending Amount**	**Pounds Lost**	**Ending Amount**	**Pounds Lost**	**Ending Amount**
Shelling	35%	12,380	22,991	8,253	15,327	N/A	N/A
Inshell Sorting	1.0%	N/A	N/A	N/A	N/A	197	19,454
Shelled Sorting	33%	7,587	15,404	5,058	10,269	N/A	N/A
OQS Inspection	4%	616.16	14,788	411	9,859	778	18,676
SRB & IR Roasting	4%	591.51	14,196	N/A	N/A	747	17,929
SOF Roasting	3%	N/A	N/A	296	9,563	N/A	N/A
Blanching	4%	567	13,628	N/A	N/A	N/A	N/A
Final Inspection	0.05%	6	13,622	5	9,563	9	17,920
Packaging			**13,622**		**9,563**		**17,920**

The total product amount that the facility will produce is determined by the product mix allocation percentage and shrinkage rates. Table 4.3 summarizes the shrinkage that applies to each product during processing. When shrinkage and a 45/30/25 allocation percentage mix is applied to 80,000 pounds of beginning input, this facility can produce 13,622 total pounds of the SRB product, 9,563 pounds of the SOF product, and 17,920 pounds of the IR product. The total amount of shrinkage caused by processing is estimated to be 61.5%, 59.5%, and 8.8% of the total weight taken from storage for the SRB, SOF, and IR products respectively.

Cost Model

The small scale and on-farm processing facility requires three buildings and several pieces of processing equipment**.** Table 4.4 presents the estimated total cost of these items that are considered to be long-term capital, or fixed assets with a year or longer economic life. The buildings include: (1) a 1,800 square foot, fully enclosed storage facility to hold peanuts in

storage wagons, (2) a 2,400 square foot facility to hold the business office, shelling machine, sorting area, and holding area for OQS sampling, and (3) a 600 square foot certified food grade facility. The total materials and construction costs were estimated at $119,340. Estimates for the proposed equipment were taken from multiple sources and include shipping and installation costs. The total for all equipment including processing machinery and handling tools is $128,356. The total capital for required buildings and equipment is estimated at $247,696.

Equipment categories that require more than one item are dependent on the product amounts at each process. This model estimates the costs of one wagon per every four tons of farmers stock. The estimated costs of two additional wagons are also included to efficiently carry out the de-stoning process. One dryer is assumed to connect with two wagons therefore the costs of five dryers are included. After the shelling and sorting processes are completed, peanuts can be placed into plastic storage bins holding 200 pounds per bin. This assumption results in an estimate of 25 bins. Finally, perforated cooling trays can hold approximately 20 pounds per tray and each rack can hold 20 trays. Two racks and 40 trays are estimated for the cooling peanuts after roasting.

Table 4.4 Initial Capital Investment of Small Scale Peanut Processing Facility			
Buildings	**Units**	**Price Per Unit**	**Cost**
Storing Facility	1	$36,000	$36,000
Shelling & Sorting Facility	1	$57,600	$57,600
Roasting (Certified Food Grade) Facility	1	$25,740	$25,740
Total Buildings Costs			**$119,340**
Equipment	**Units**	**Price Per Unit**	**Cost**
De-stoning/Cleaning Machine	1	$ 3,650	$ 3,650
Air Compressor	1	$ 260	$ 260
14’ Wagons	12	$ 6,375	$ 76,500
Tarps	10	$18	$ 180
Dryers	5	$ 3,875	$ 19,375
Shelling Machine	1	$ 2,120	$ 2,120
Plastic Storage Bins	25	$ 89	$ 2,225
Sorting Tables	3	$ 445	$ 1,335
Processing Tables	3	$ 445	$ 1,335
Hand Washing Sink	1	$ 156	$ 156
Well Water Equipment	1	$ 5,000	$ 5,000
Three Compartment Sink	1	$ 643	$ 643
Roasting Machine	1	$ 3,990	$ 3,990
Perforated Cooling Trays	40	$ 12.75	$ 510
Pan Racks	2	$ 124	$ 248
Blanching Machine	1	$ 1,580	$ 1,580
Heavy Scale	1	$ 1,419	$ 1,419
Light Scale	1	$ 31	$ 31
Vacuum Packaging Machine	1	$ 3,250	$ 3,250
Computer	1	$ 639	$ 639
Printer	1	$ 179	$ 179
Office Desk	1	$ 230	$ 230
Total Equipment Costs			**$ 128,356**
Total Capital Costs			**$ 247,696**

The economic fixed costs are annualized in this plan to estimate the annual costs per pound of each product. Total economic fixed costs are costs that will not change with the finished amount produced by the facility. Annual economic fixed costs in this operation include depreciation, interest on capital investment, insurance, taxes, and annual fees. A per pound fixed cost amount for each product is determined by dividing the total costs by final pounds produced of each product. The economic fixed costs per product are estimated using a product mix allocation. When a machine is utilized in the production of only two products, a usage ratio is calculated based upon the product mix percentages of the two products. For example, the shelling machine is only used in the production of the SRB and SOF products. The percentage of peanuts entering the facility that will use the shelling machine is the sum of the product mix allocated to each product. If 45% and 30% is used respectively for the SRB and SOF products, 75% of the peanuts will use this machine. A ratio of the product mix and the total usage amount is used to allocate coasts. Therefore, 60% of the annual economic fixed costs of the shelling machine are applied to the SRB product and 40% to the SOF product.

Table 4.5 The estimated and annualized Total Fixed Costs Per Pound of Product, using a 45/30/25 product mix applied to 40 tons of farmer stock peanuts

		Farmers Stock	**SRB**	**SOF**	**IR**
Percent Allocated from 40 tons			45%	30%	25%
Pounds Allocated from storage		78,602	35,371	23,581	19,650
Fixed Cost	**Total Cost**	**Cost/Lb**	**Cost/Lb. of Product**	**Cost/Lb. of Product**	**Cost/Lb. of Product**
Depreciation	$7,319	$0.09	$0.25	$0.22	$0.10
Int. on Avg Invest	$8,201	$0.10	$0.28	$0.25	$0.12
Insurance + Taxes	$3,328	$0.04	$0.11	$0.10	$0.05
Land	$1,650	$0.02	$0.05	$0.05	$0.02
Audits & HAACP	$5,300	$0.07	$0.18	$0.17	$0.07
Total Fixed Costs	**$25,751**	**$0.32**	**$0.87**	**$0.79**	**$0.36**
Total Pounds Produced			**13,622**	**9,563**	**17,920**

Appendices 4-6 present the specific fixed cost calculations per building and equipment item as they apply to the cost of producing the SRB, SOF, and IR products.

The total annual estimated fixed costs for this operation are $25,751. Table 4.5 summarizes each fixed cost category and the fixed costs per pound. The total fixed cost per pound of the final amounts produced is $0.87, $0.79, and $0.36 for the SRB, SOF, and IR products respectively. The costs per pound of the beginning amount represent the cost per pound of initial farmer's stock peanuts. The fixed costs per pound of a beginning input amount of 80,000 pounds is $0.32 per pound. This per pound cost of a beginning amount means that the owner/operator of the facility would need to receive $640 per ton in addition to the acquisition cost of peanuts to cover fixed costs.

Annual economic depreciation is calculated using a straight line method during the assumed economic life of buildings and equipment. Buildings are assumed to have no salvage value however the remaining value after useful life for equipment is calculated at 20% of the purchase price. Interest, tax, and insurance costs are determined using an average investment amount per item. The interest on average investment is equivalent to the opportunity cost of using capital, regardless of source. The interest of capital is calculated by multiplying an investment interest rate of 6% times the amount of average investment. A rate of 2.4% is also multiplied by the amount of average investment to estimate a combined insurance and tax cost for equipment.

Two categories of annual fees fall under fixed costs. The first category is the preparation and approval of a Hazard Analysis and Critical Control Points (HAACP) plan. A HAACP plan in this facility will be used to control for aflatoxin and microbial growth in the peanut products. Though not a true annual cost, the cost of HAACP training and plan approval will occur within

the first year of operation, therefore it is listed as a cost for this operation. HAACP training and plan certification is estimated at $2,000 for the first year of operation.

Also included in fee costs are costs of facility audits. Potential customers of peanut products produced by this facility require two types of facility audits from a third party, non-governmental certification agency. A Good Management Practices (GMPs) audit to determine food safety practices costs $1,600, including travel costs of an auditor. The estimated cost for an audit examining the handling of organic products is $1,700, which also includes travel cost. The total cost for facility audits is estimated at $3,300 (Salinas). The estimated total fee and audit costs of $5,300 are shared by each product according to the amount allocated in the product mix. The cost of land is the final economic fixed cost estimated for the proposed facility. It is assumed that an operation of this size will require five acres. A land cost of $5,500 per acre is used to calculate a land cost estimate of $27,500. The total annual fixed cost of land at $1,650 is calculated from 6% of $27,500. The annual land cost is allocated to each product budget according to the product mix percentage. Annual land costs are estimated at $0.05 per pound for

Table 4.6 Estimated Fixed Cost Breakdown Per Process and Product at 45/30/25 product mix applied to 40 tons of unprocessed peanut input

	Facility		**SRB**		**SOF**		**IR**	
Total Costs	**$/Lb.**	**Costs**	**$/Lb**	**Total Costs**	**$/Lb**	**Total Costs**	**$/Lb**	**Total Costs**
Storing	$12,556	$0.16	$5,563	$0.41	$3,815	$0.40	$3,179	$0.18
Shelling/Sorting	$5,984	$0.07	$2,631	$0.19	$1,861	$0.19	$1,49	$0.08
Roasting	$3,014	$0.04	$1,173	$0.09	$1,004	$0.10	$837	$0.05
Blanching	$1,148	$0.01	$1,148	$0.08	$0.00	$0.00	$0.00	$0.00
Packaging	$3,049	$0.04	$1,276	$0.09	$880	$0.09	$894	$0.05
Total Fixed Costs	**$25,751**	**$0.32**	**$11,790**	**$0.87**	**$7,559**	**$0.79**	**$6,401**	**$0.36**
Total Pounds Produced				**13,622**		**9,563**		**17,920**

SRB and SOF product and $0.02 per pound for the IR product, given production of 13,622 pounds of SRB peanuts, 9,563 pounds of SOF peanuts, and 17,920 pounds of the IR product. Annual fixed costs can also be estimated at each processing step. Table 4.6 outlines the fixed cost per processing step as well as a fixed cost per pound of each product. The storage process is estimated to have the highest fixed cost requirement for any processing step. The high fixed costs associated with storing are caused by the high annual fixed cost of long term capital, for items such as the storage facility and drying wagons. The fixed costs are estimated to be $25,771 annually.

The next section in the annualized budget is variable cost. Total variable costs are costs that will change depending on the amount of product produced. The variable costs for this operation include utilities, labor, supplies, inspection fees, maintenance, and interest on operating costs. Table 4.7 outlines the each estimated variable cost category and the total cost per pound of each product. The estimated total variable cost associated with a 45/30/25 product mix applied to 40 tons of beginning input is $62,790. When evaluated in terms of the beginning amount of 80,000 pounds, the total annual variable cost is $0.79 per pound. The total variable costs are $1.68 per pound for the SRB product, $2.67 per pound for the SOF product, and $0.81 per pound for the IR product. The highest estimated variable cost category is labor for all three products at $0.60 per pound for the SRB product, $0.53 per pound for the SOF product, and $0.28 per pound for the IR product.

Table 4.7 Estimated Total Variable Costs Per Pound of Product at 45/30/25 product mix applied to 40 tons of unprocessed peanut input					
		Farmers Stock	**SRB**	**SOF**	**IR**
Percent Allocated from 40 tons			45%	30%	25%
Pounds Allocated from storage		78,602	35,371	23,581	19,650
Variable Cost	**Total Cost**	**Cost/Lb**	**Cost/Lb. Produced**	**Cost/Lb. Produced**	**Cost/Lb. Produced**
Utilities	$349.17	$0.004	$0.009	$0.012	$0.006
Labor	$18,203.68	$0.228	$0.60	$0.53	$0.28
Supplies	$14,850.26	$0.186	$0.10	$1.22	$0.10
Fees	$7,230	$0.090	$0.24	$0.23	$0.10
Maintenance	$4,581.69	$0.057	$0.15	$0.13	$0.07
Int. on Operating Costs	$565	$0.007	$0.02	$0.03	$0.01
Subtotal Variable Costs	**$45,780**	**$0.572**	**$1.12**	**$2.14**	**$0.57**
Interest on Inventory	$210	$0.003	$0.0069	$0.0066	$0.0029
Beginning Value	$16,800	$0.210	$0.55	$0.53	$0.23
Total Variable Costs	**$62,790**	**$0.79**	**$1.68**	**$2.67**	**$0.81**
Total Pounds Produced			**13,622**	**9,563**	**17,920**

Utility costs are estimated per equipment used at each processing step. A total Killowatt-Hour (KwH) usage amount is estimated at the engineering rates per machine to calculate a total utility cost. Engineering rates represent the rates in which each machine is in operation**.** The hours required per machine is determined by dividing the pounds of peanuts to process at each step by the engineering rate. KwH usage is determined by multiplying the total hours used by the kilo-watt usage per machine. Total utility costs are determined using a $0.095 price per KwH. This is an average business rate charged by a local utility provider (Taylor). The total KwH usage is multiplied by $0.095 to calculate total annual utility costs. The total annual utility costs are estimated at $349, with respective price per pound costs of $0.009, $0.012, and $0.006 for the SRB, SOF, and IR products.

All labor used in this processing operation is valued at $15 per hour. The total labor hours required for each processing step are determined using an adjusted processing rate per machine and estimated labor rates. The adjusted machine rates are estimated using 70% of the engineering rate of each machine. The labor hours required per mechanized processing step is calculated by dividing the total pounds of peanuts that enter each processing stage by this adjusted rate. In mechanized processing steps, the labor hours required per machine hour depends on the type of machine. Some equipment pieces, such as a blanching machine, are through-put machines, or machines in which the processing only requires several minutes and the engineering rates per hour are determined by the volume of product fed into the machine. The other types of machines, such as the roaster, are batch-types. These machines process a bulk amount during one hour.

One labor hour is assumed per one hour required by the adjusted processing rate of each machine. Some machines require additional labor hours per machine hour and these additional hours represent the time required to prepare each machine for processing. Table 4.8 summarizes the additional hours required per machine hour**.** The destoning, shelling, blanching machines only require one additional labor hour for loading and unloading, resulting in effective processing rates of 700, 280, and 175 pounds per hour, respectively, regardless of product. The roasting process for the SRB and IR process is assumed to require ½ hour for both and loading and unloading, and one additional hour for cooling, for a total of 2 hours in additional to the hour a machine is in operation. An estimated rate of 3 labor hours per machine hour results in an effective roasting rate of 420 pounds per hour for the SRB product and 315 pounds per hour for the IR product. The roasting process for SOF product requires five additional hours per machine hour. The five hours are caused by two additional hours from other roasting produced, plus

another hour for adding flavoring ingredients to the peanuts and a final labor hour required for cleaning the roasting machine of excess oil. It is estimated that with these additional labor steps, the SOF product will have an effective roasting rate of 210 pounds per hour.

Table 4.8 Effective Rates of Each Mechanized Processing Step in a Small Peanut Processing Facility

Process	Engineering Rate (Lbs/Hour)	Effective Rate (Lbs/Hour)	Labor Hours/ Machine Hr	Effective Pounds Per Hour Rate
Destoning	2,000	1,400	2.00	700
Shelling	800	560	2.00	280
Roasting				
SRB	1,800	1,260	3.00	420
SOF	1,500	1,050	5.00	210
IR	1,350	945	3.00	315
Blanching (SRB)	500	350	2.00	175

The hours required for processing steps that only require labor are based upon estimated assumed labor rates. The processing steps that would require only labor are the sorting and packaging steps. The rate of sorting peanuts prior to OQS inspection is estimated at 300 pounds per hour (Hayes). Packaging rates are assumed to be 180 pounds per hour of SRB and IR products, and 120 pounds per hour for the SOF peanuts. The total labor costs are estimated at $18,204 with a final per pound costs of labor of $0.60 for SRB peanuts, $0.53 for SOF peanuts, and $0.28 for IR peanuts.

The production of three processed peanut products requires packaging and ingredient supplies. In this plan, the SRB and IR products are packaged into vacuum sealable bags holding 30 pounds, whereas the SOF products are packaged into food grade paper bags holding 4 ounces of peanuts. The estimated costs of vacuum sealable bags are $0.48 per bag and the cost of food grade paper bags are $0.10 per bag. The cost of packaging labels is estimated at $0.12 per bag

for all three products. In addition to packaging supplies, the oil roasted product requires roasting and flavoring ingredients. The amount of oil required during roasting of the SOF product is estimated by using a ratio of 0.5 ounces of oil per one pound of peanuts (Hayes). This ratio results in total estimate of 7,279 ounces, or just over 40 gallons, of oil for the roasting of 9,859 pounds of peanuts allocated for the SRB product. The cost of organic peanut oil is estimated at $0.46 per ounce, for a total of $3,348.34 in oil costs. The flavoring ingredients used on SOF peanuts in this plan are salt and a mixture of assorted spices. It is assumed in this plan that 75% of the oil roasted peanuts will be salted, and the remaining 25% will be flavored with the assorted mixture. The total cost of flavoring ingredients is determined on a per pound basis. The total estimated supply costs are $14,850 and the final per pound costs are $0.10 for the SRB product, $1.22 for the SOF product, and $0.10 for the IR product.

Another variable cost for this facility will be the fees associated with required inspection steps. The cost of inspection fees applies to the facility regardless of production; while the facility is not in production, inspection fee costs are not incurred, thus fees are a variable cost. Peanuts will pass through three inspection points during processing: the IQS inspection, the OQS inspection, and the final retail inspection. Costs associated with IQS inspection are not evaluated in this facility budget because the farmer already pays for a fee to FSIS for this inspection at a local buying point. The costs for conducting OQS tests, however, are additional costs to this facility. FSIS uses a series of steps to determine the cost of taking an OQS sample. First, a cost per identified lot is $54. Second, FSIS assesses a travel cost of $0.46 per mile and $36 per labor hour required to take the necessary samples. Finally, an $80 processing fee is charged per trip. The total fee cost in this plan is estimated at $583 per trip (Taylor). A main assumption is that FSIS will conduct OQS evaluations twice a month during five months, for a total of ten trips.

Therefore the cost per trip is multiplied by this amount to calculate an annual OQS cost. The estimated annual fee costs for FSIS sampling are $5,830 for ten trips. After FSIS acquires a sample, a part of each sample is sent to a federally approved lab for chemical analysis. Chemical analysis tests are estimated at $70 per test, thus a total for ten FSIS samples is $700 (JLA). The final inspection prior to packaging is also required twice a month during five months of operation. The final retail inspection is assumed to take place at the same lab as OQS chemical analysis, therefore $700 is also estimated for the final inspection total fee. The total annual fee cost for the proposed facility is estimated at $7,230, with a per pound cost of $0.24 for the SRB product, $0.23 for the SOF product, and $0.10 for the IR product.

Each equipment item in this facility will require annual maintenance and the annual cost of maintenance is estimated using two formulas. First, a 4% maintenance rate is multiplied by the purchase price of the equipment. When all three products utilize an equipment item, the maintenance cost per product is estimated by using the product allocation mix. If a piece of equipment will only be used in processing two products, the usage ratio used to estimate fixed cost per product of the machine is applied to estimate the maintenance cost per item[9]. The second formula estimates the maintenance cost per hour of processing machines.

This maintenance cost per hour is determined by dividing four percent of the purchase price by each processing machine's engineering rate. The cost per hour is then multiplied by the hours that the machine will operate. The sum of the two factors, four percent of the purchase price plus a cost per hour, results in an annual maintenance cost per machine. The estimated total cost of annual maintenance is $4,582. The estimated per pound cost of maintenance is $0.15 for SRB peanuts, $0.13 for SOF peanuts, and $0.07 for the IR peanut product.

[9] The annual maintenance cost per machine of each product is outlined in the product budgets given in Appendices 4-6.

The interest of operating costs is the final category of variable costs in this model. Interest is determined by multiplying the total processing costs of the facility, excluding the value of raw peanut inventory, by a monthly interest rate[10]. This amount represents the interest paid on money borrowed to purchase annual operating capital. Using an estimated subtotal of $45,215 in annual operating costs, the interest on operating capital is estimated at $565.

The opportunity costs associated with processing peanuts include the interest on raw peanut inventory and acquisition cost of peanuts. The interest on inventory is calculated by taking the average amount of inventory through the time of operation and multiplying the total by a monthly interest rate. This figure represents the average value of the peanut inventory in storage during the months of operation. Finally, a main assumption in this model is that peanuts are valued at $420 per ton after harvest. This equals a total cost of $16,800 or $0.21 per pound before the peanuts are processed.

Table 4.9 summarizes the breakdown of estimated variable costs by processing step. The packaging step is predicted to have highest estimated total cost, however much of this cost is derived from the estimated supply costs for the oil roasted product. The shelling/sorting processing step has the highest estimated per pound variable cost for the SRB product at $0.48 per pound. Variable costs impact the estimated total costs SOF and IR products in similar ways. One, neither product requires blanching therefore no costs are associated with that process. Second, the highest variable costs category is estimated to packaging of both products.

[10] The monthly interest rate is based upon a 6% annual interest rate.

Table 4.9 Estimated Variable Cost Breakdown Per Process and Product at 45/30/25 product mix applied to 40 tons of unprocessed peanut input								
	Facility		**SRB**		**SOF**		**IR**	
Process	**Total Costs**	**$/Lb.**	**Costs**	**$/Lb**	**Costs**	**$/Lb**	**Costs**	**$/Lb**
Storing	$12,007	$0.15	$5,458	$0.40	$3,343	$0.35	$3,206	$0.18
Shelling/Sorting	$15,330	$0.19	$6,596	$0.48	$5,672	$0.59	$3,062	$0.17
Roasting	$7,479	$0.09	$3,223	$0.24	$1,806	$0.19	$2,451	$0.14
Blanching	$1,434	$0.02	$1,434	$0.11	$0.00	$0.00	$0.00	$0.00
Packaging	$26,540	$0.33	$6,094	$0.45	$14,713	$1.54	$5,733	$0.32
Total Var. Costs	**$62,790**	**$0.78**	**$22,80**	**$1.67**	**$25,534**	**$2.67**	**$14,452**	**$0.81**
Total Pounds Produced				**13,622**		**9,563**		**17,920**

The sum of all estimated annual fixed and variable costs is the assumed breakeven point for each product. Total revenue must exceed the breakeven point of each product to result in a positive return to management. Table 4.10 summarizes the total costs per product. The total costs per pound for each product are $2.54 for the SRB product, $3.46 for the SOF product, and $1.16 for the IR product. Appendices 4-6 present the full per product budgets of the SRB, SOF, and IR products under the 45/30/25 product mix allocation is applied to 40 tons of farmers stock peanuts at an on-farm processing facility.

Table 4.10 Summary of Estimated Total Costs of a small scale, on-farm processing facility. Estimates are based on an allocation of 45% SRB, 30% SOF, and 25% from 40 tons of farmer's stock peanuts					
		Farmers Stock	**SRB**	**SOF**	**IR**
Percent Allocated from 40 tons			45%	30%	25%
Pounds Allocated from storage		78,602	35,371	23,581	19,650
Fixed Cost	**Total Cost**	**Cost/Lb**	**Cost/Lb. Produced**	**Cost/Lb. Produced**	**Cost/Lb. Produced**
Depreciation	$7,319	$0.09	$0.25	$0.22	$0.10
Int. on Avg Invest	$8,201	$0.10	$0.28	$0.25	$0.12
Insurance + Taxes	$3,328	$0.04	$0.11	$0.10	$0.05
Land	$1,650	$0.02	$0.05	$0.05	$0.02
Audits & HAACP	$5,300	$0.07	$0.18	$0.17	$0.07
Total Fixed Costs	**$25,751**	**$0.32**	**$0.87**	**$0.79**	**$0.36**
Variable Costs					
Utilities	$349.17	$0.004	$0.009	$0.012	$0.006
Labor	$18,203.68	$0.228	$0.60	$0.53	$0.28
Supplies	$14,850.26	$0.186	$0.10	$1.22	$0.10
Fees	$7,230	$0.090	$0.24	$0.23	$0.10
Maintenance	$4,581.69	$0.057	$0.15	$0.13	$0.07
Int. on Operating Costs	$565	$0.007	$0.02	$0.03	$0.01
Subtotal Variable Costs	**$45,780**	**$0.572**	**$1.12**	**$2.14**	**$0.57**
Interest on Inventory	$210	$0.003	$0.0069	$0.0066	$0.0029
Beginning Value	$16,800	$0.210	$0.55	$0.53	$0.23
Total Variable Costs	**$62,790**	**$0.79**	**$1.68**	**$2.67**	**$0.81**
Total Costs	**$88,540**	**$1.11**	**$2.54**	**$3.46**	**$1.16**
Total Pounds Produced			**13,622**	**9,563**	**17,920**

The estimated total annual cost for this facility is $88,540, and the estimated breakeven amount is $1.11 per pound of the beginning amount of peanuts (80,000 pounds). The sum of each amount produced per product and the final cost per pound is equivalent to the final breakeven costs in this facility. Appendix 4 summarizes the processing steps, shrinkage amounts, and initial capital required for the small scale and certified organic peanut processing facility. A

brief summary of each processing step includes the equipment required for each step and all applicable federal and state regulations. The figure also includes the estimated time required at each processing step.

Estimated Processing Schedule

Table 4.11 Estimated processing schedule of a small scale, on-farm processing facility. Estimates are based upon 4 tons (8,000 lbs.) of raw input per 2 week period, using an allocation of 45% to SRB product, 30% to SOF product, and 25% to IR product

Post-Storage Processing Steps	Effective Pounds Per Hour	Pounds to Process	Total Hours Required	10 Hour Days Required	Total Days Required
Shelling	280	5,895	21.05	2.11	2.11
Sorting					
Shelled Product	300	3,832	12.77	1.28	3.38
In-shell	300	1,965	6.55	0.66	4.04
OQS Inspection					
Shelled Product		2,567		5.00	9.04
In-shell		1,945			
Roasting					
SRB	420	1,479	3.52	0.35	9.39
SOF	210	986	4.69	0.47	9.51
IR	315	1,868	5.93	0.59	9.63
Blanching					
SRB	175	1,420	8.11	0.81	10.44
Final Inspection				3.00	13.44
Packaging					
SRB	180	1,362	7.57	0.76	14.20
SOF	120	956	7.97	0.80	14.24
IR	180	1,792	9.96	1.00	14.44

A processing schedule for the proposed facility can be estimated based upon the estimated labor rates for one worker and machine processing rates. A main assumption of this model is that the facility will only operate for five months. It is assumed that 2,724 pounds of the SRB product, 1,912 pounds of the SOF product, and 3,584 pounds of the IR product are produced per month[11]. This estimate requires that farmer's stock peanuts from two, 4-ton storage wagons are processed

[11] Calculated by dividing total estimated product from 40 tons (Table 27) by 5

per month. A potential processing schedule for the proposed facility can based upon the effective processing rates for mechanized steps from Table 25, the estimated labor rates of sorting and packaging, and the estimated time required during inspection steps. It is assumed that the OQS inspection step will take a maximum of five days and the final retail inspection will take a maximum of three days.

Table 4.11 summarizes the time required for each processing step using an input of four tons, or one wagon, every two weeks. The most time sensitive processing step in this proposed facility is assumed to occur between the sorting and roasting steps. Peanuts can be held without cold storage for a maximum of two weeks prior to roasting (Butts). Therefore, the owner/operator of this facility could process an equal amount over five months and follow recommended handling practices.

The estimates in Table 4.11 are based upon ten hour working days. The shelling processing step requires 2.11 days, the longest time required to complete any other processing step. The total estimated time required to sort both shelled and inshell product is an estimated 1.94 days. The total estimated time to processing eight tons of farmer stock peanuts in to three peanut products is 14.44 days. The owner/operator of the processing facility to remain on a 14 day schedule required by recommended handling practices, he or she can utilize additional workers at the sorting and packaging steps.

Sensitivity Analysis

The facility cost model is founded on many assumptions. A sensitivity analysis for the model will show how responsive total annual costs and the production cost per pound of all three products are to changes in some assumptions. The most important categories impacting final costs are examined. The sensitivity analysis shows the response of total annual cost and

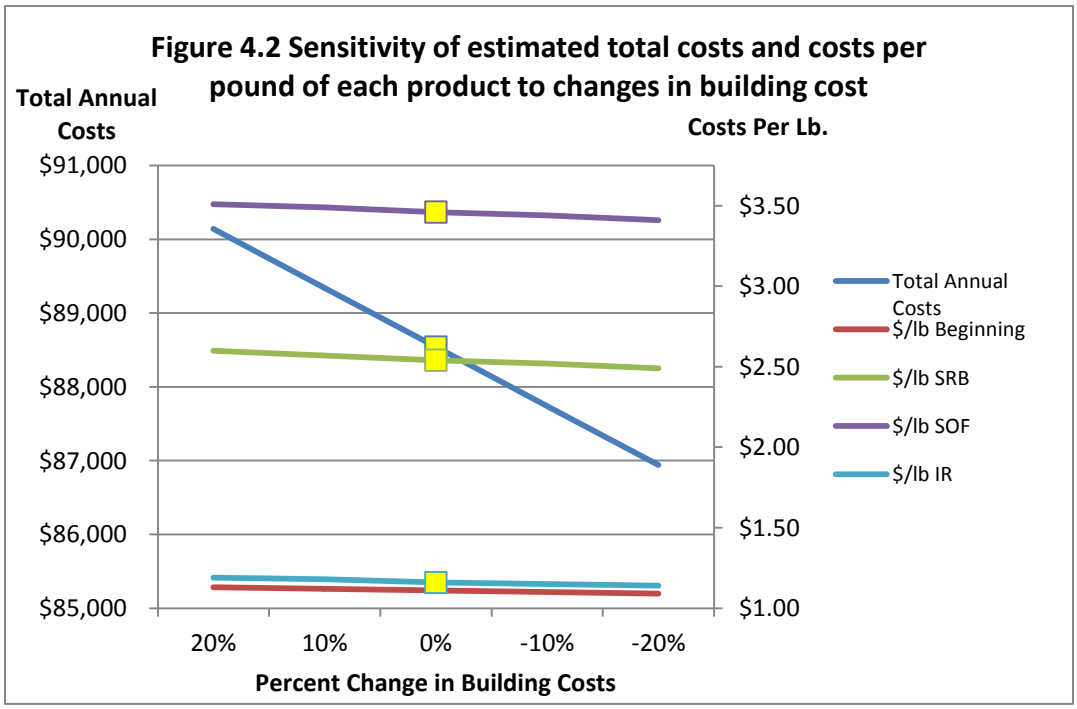
resulting cost per pound of product to changes the estimated building and equipment costs, the acquisition value of farmer's stock, the value of labor, the amount of beginning stock, and the product mix allocation.

Change in Initial Building and Equipment Costs

A change in the costs of capital will affect total fixed costs in the operation. The total estimated building construction cost is $119,340. The impact on total cost from changes in the building costs are shown in Table 4.12. If the construction and materials costs of buildings are

Table 4.12 Sensitivity of estimated total costs and costs per pound of each product to changes in estimated building costs

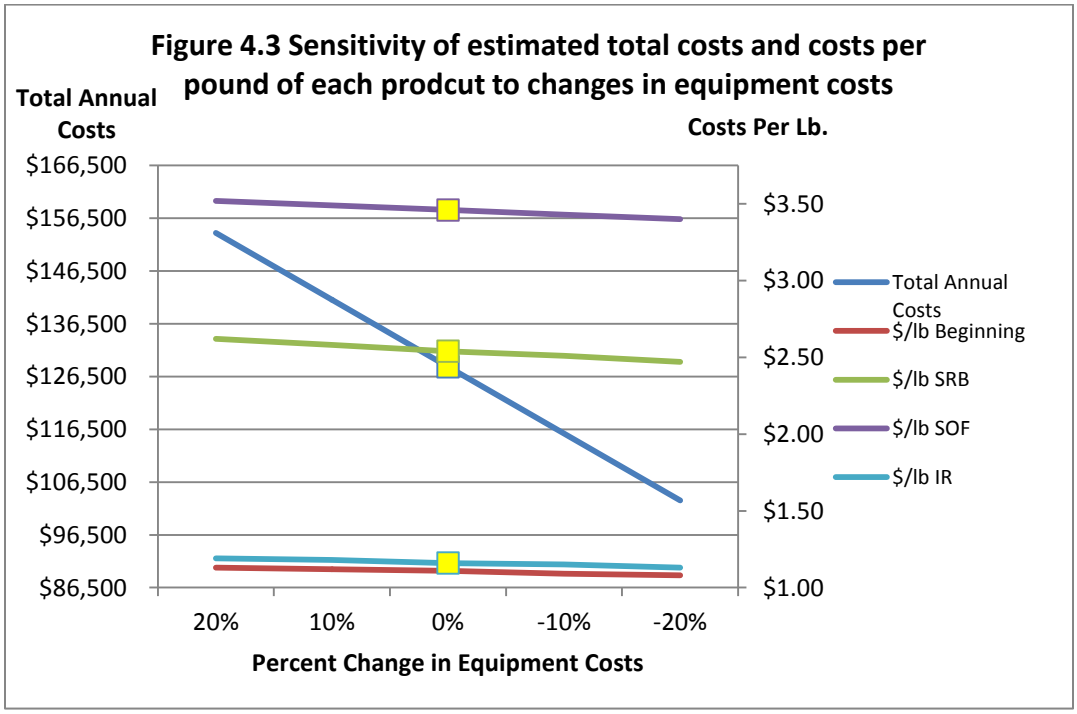
% Change in Building Cost	Total Building Costs	Total Annual Costs	$/Lb. of Farm Stock	$/Lb. SRB	$/Lb. SOF	$/Lb. IR
20% increase	$143,208	$91,140	$1.13	$2.60	$3.51	$1.19
10% increase	$131,274	$89,340	$1.12	$2.57	$3.49	$1.18
No Change	$119,340	$88,540	$1.11	$2.54	$3.46	$1.16
10% decrease	$107,406	$87,741	$1.10	$2.52	$3.44	$1.15
20% decrease	$95,472	$86,941	$1.09	$2.49	$3.41	$1.14



20% higher, the cost per pound of the SRB peanut product will increase by $0.05, the SOF product by $0.05, and the IR product by $0.02. The costs per pound of each product will decrease by the same amount if the buildings costs are 20% less that estimated. Figure 2 illustrates the changes in total cost and cost per pound in graph form.

Table 4.13 Sensitivity of estimated annual total costs to changes in equipment acquisition and installation costs

% Change in Equip. Costs	Total Equipment Costs	Total Annual Costs	$/Lb. of Farm Stock	$/Lb. SRB	$/Lb. SOF	$/Lb. IR
20% increase	$153,711	$90,701	$1.13	$2.62	$3.52	$1.19
10% increase	$141,033	$89,621	$1.12	$2.58	$3.49	$1.18
No Change	$128,356	$88,540	$1.11	$2.54	$3.46	$1.16
10% decrease	$115,678	$87,460	$1.09	$2.51	$3.43	$1.15
20% decrease	$103,001	$86,380	$1.08	$2.47	$3.40	$1.13



The impact of changes in equipment cost on total can also be evaluated. Table 4.13 summarizes the response of total costs when the cost of equipment increases or decreases by 20%. When equipment costs increase by 20%, the cost of producing the SRB product per pound increases by $0.08. A 20% increase also causes the total costs per pound to increase by $0.07

per pound for SOF product and by $0.03 per pound for the IR product. The changes to total costs and costs per pound are illustrated in Figure 3.

Change in cost and amount of acquired farmers stock peanuts

The estimated total costs and total cost per pound per product will also change with the initial value of the peanuts. The initial value represents the facility's cost of acquiring organic peanuts. Table 4.14 summarizes the changes in the cost of farmer stock peanuts would have on total costs and cost per pound of each product. Figure 4 presents illustrates the positive relationship between stock acquisition cost and the total costs for all three products. An increase in the stock acquisition cost is estimated to have the largest impact on the final cost per pound of the SOF product.

Figure 4.4 Sensitivity of estimated annual total costs and costs per pound to changes in stock acquisition costs

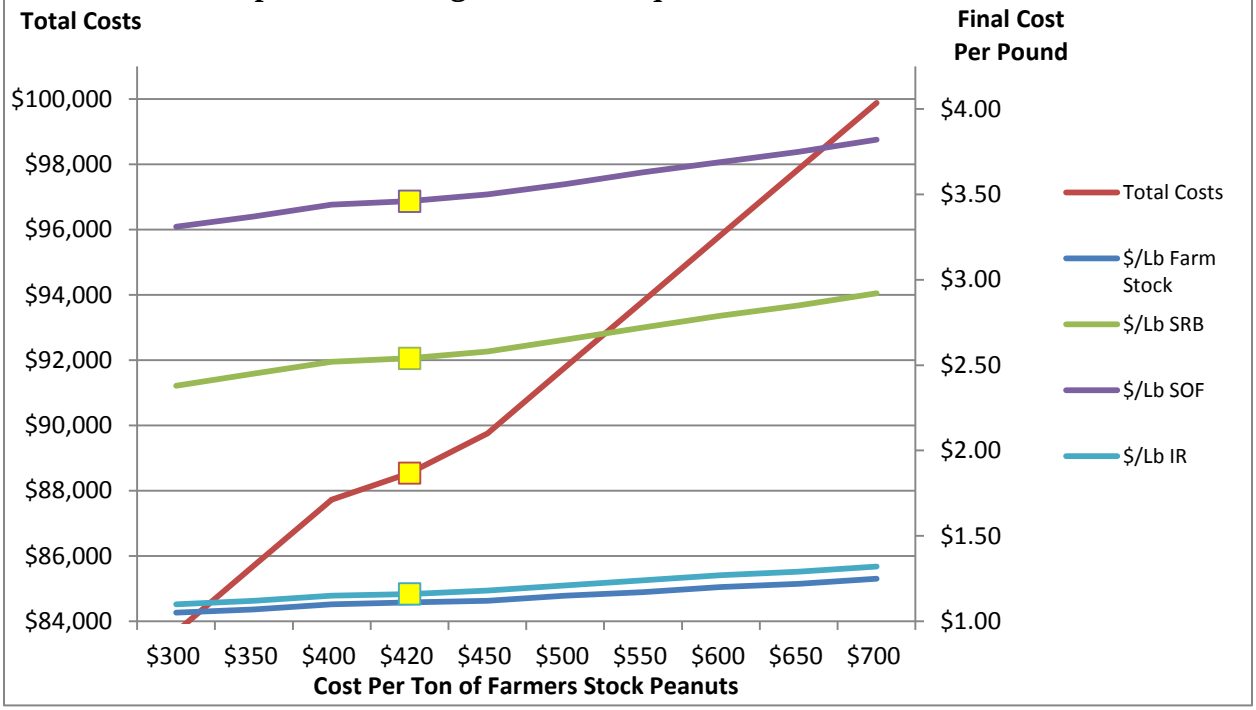
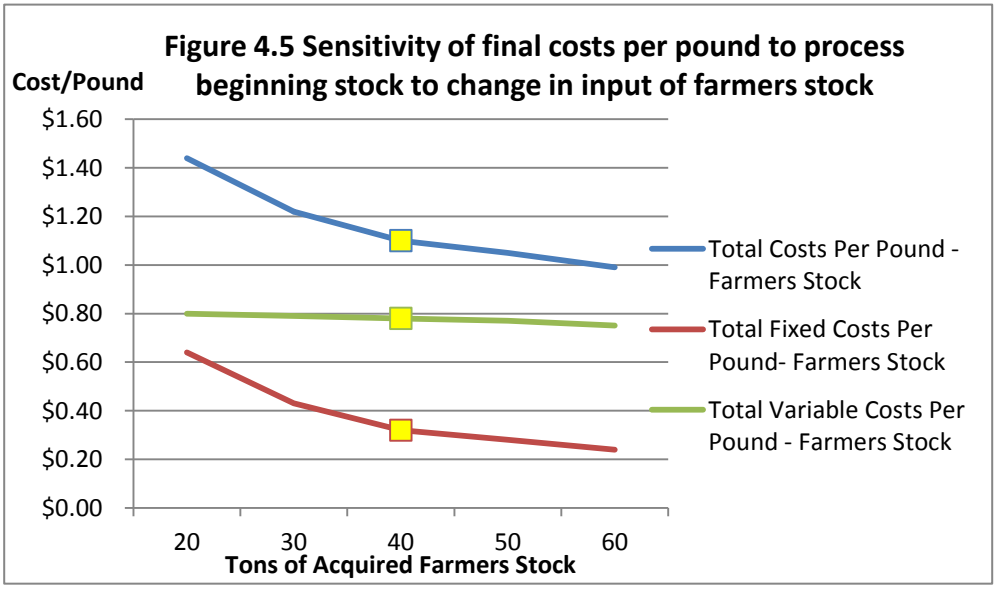


Table 4.14 Sensitivity of estimated annual total costs to changes in cost of acquiring 40 tons of organically grown farmer stock peanuts with annual interest of 6%							
Cost Per Ton	**Total Stock Cost**	**Annual Interest**	**Total Costs**	**$/Lb Farmers Stock**	**$/Lb SRB**	**$/Lb SOF**	**$/Lb IR**
$300	$12,000	$150	$83,680	$1.05	$2.38	$3.31	$1.10
$350	$14,000	$175	$85,705	$1.07	$2.45	$3.37	$1.12
$400	$16,000	$200	$87,730	$1.10	$2.52	$3.44	$1.15
$420	$16,800	$210	$88,540	$1.11	$2.54	$3.46	$1.16
$450	$18,000	$225	$89,755	$1.12	$2.58	$3.50	$1.18
$500	$20,000	$250	$91,780	$1.15	$2.65	$3.56	$1.21
$550	$22,000	$275	$93,805	$1.17	$2.72	$3.63	$1.24
$600	$24,000	$300	$95,830	$1.20	$2.79	$3.69	$1.27
$650	$26,000	$325	$97,855	$1.22	$2.85	$3.75	$1.29
$700	$28,000	$350	$99,880	$1.25	$2.92	$3.82	$1.32

Table 4.15 Sensitivity of estimated total costs to changes in tonnage of farmers stock peanuts. The product allocation percentage is held constant at 45% for SRB product, 30% for SOF product, and 25% for the IR peanut product for different input amounts.					
Input Tons	**20**	**30**	**40**	**50**	**60**
Beginning Pounds	40,000	60,000	80,000	100,000	120,000
Pounds from Storage	39,261	59,011	78,602	98,272	117,943
Total Fixed Costs	$25,751	$25,751	$25,751	$27,652	$29,027
TFC/Lb. FS*	$0.64	$0.43	$0.32	$0.28	$0.24
Total Var. Costs	$31,999	$47,486	$62,790	$76,514	$89,980
TVC/Lb. FS*	$0.80	$0.79	$0.78	$0.77	$0.75
Total Costs	$57,750	$73,237	$88,541	$104,166	$119,007
TC/Lb. FS*	$1.44	$1.22	$1.10	$1.05	$0.99
SRB Product					
Pounds Produced	6,804	10,213	13,622	17,301	20,439
Total Fixed Costs	$11,790	$11,790	$11,790	$12,647	$13,265
TFC/Lb. SRB	$1.73	$1.15	$0.87	$0.74	$0.65
Total Var. Costs	$11,708	$17,307	$22,804	$27,620	$32,320
TVC/Lb. SRB	$1.71	$1.69	$1.68	$1.62	$1.58
Total Costs	$26,875	$29,097	$34,594	$40,267	$45,585
TC/Lb. SRB	$3.44	$2.84	$2.55	$2.36	$2.23
SOF Product					
Pounds Produced	4,777	7,170	9,563	11,956	14,349
Total Fixed Costs	$7,559	$7,559	$7,559	$8,130	$8,542
TFC/Lb. SOF	$1.58	$1.05	$0.79	$0.68	$0.60
Total Var. Costs	$12,940	$19,259	$25,534	$31,319	$37,092
TVC/Lb. SOF	$2.71	$2.69	$2.67	$2.62	$2.58
Total Costs	$23,133	$7,562	$33,093	$39,449	$45,634
TC/Lb. SOF	$4.29	$3.74	$3.46	$3.30	$3.18
IR Product					
Pounds Produced	8,951	13,435	17,920	22,404	26,889
Total Fixed Costs	$6,401	$6,401	$6,401	$6,878	$7,220
TFC/Lb. IR	$0.72	$0.48	$0.36	$0.31	$0.27
Total Var. Costs	$7,421	$10,960	$14,452	$17,551	$20,586
TVC/Lb. IR	$0.83	$0.82	$0.81	$0.78	$0.77
Total Costs	$15,025	$17,361	$20,853	$24,429	$27,806
TC/Lb. IR	$1.55	$1.30	$1.17	$1.09	$1.04
* FS – “Farmers Stock”					

The farmer's stock amount acquired by the processing facility will change amount produced of the three peanut products. Table 4.15 presents the total costs of the operation and final costs per pound of each product when the acquired input changes and the product mix percentage is held constant at the 45/30/25 product mix. Figures 4.5- 4.8 present graphically the impacts on the cost per pound for each product due to changes in the acquired stock amount. As the stock amount changes, fixed costs remain the same with an acquisition of 20, 30, and 40 tons. If the facility acquires more than 40 tons, fixed costs increase due to the need for more fixed capital. The fixed capital required for the facility increases by an estimated $6,375 per wagon for each 4 tons and $89 per plastic handling bin for 250 pounds acquired above 40 tons. The annual fixed costs are estimated to be $284 per wagon and $104 per handling bin. Estimated fixed cost per pound varies from $1.73, $1.58 and $0.23 at a 20 ton input to $0.65, $0.60, and $0.27 per pound at a 60 ton input for the SRB, SOF, and IR products respectively.



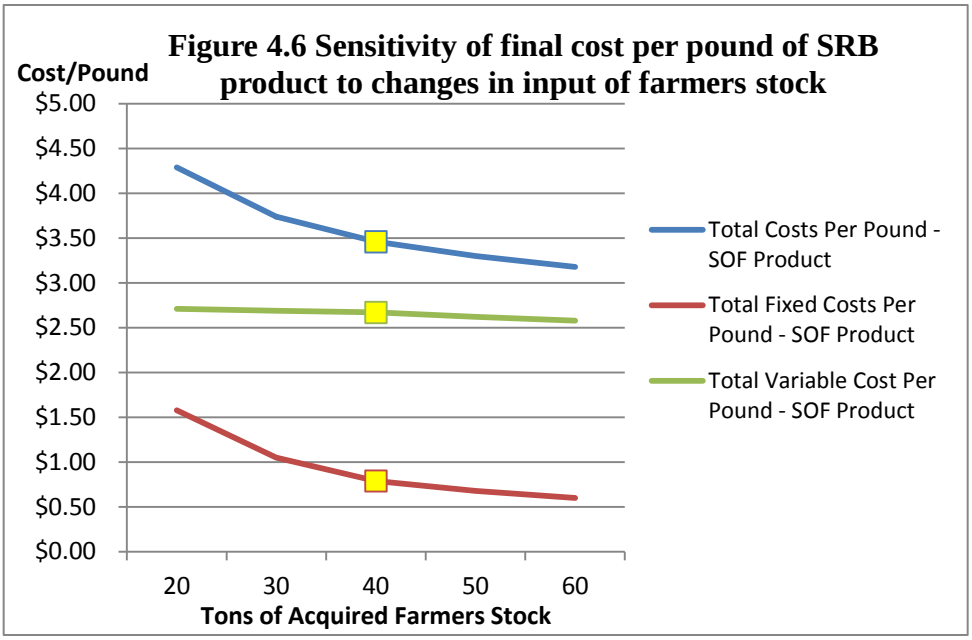


Figure 4.6 Sensitivity of final cost per pound of SRB product to changes in input of farmers stock
Cost/Pound
$5.00
$4.50
$4.00
$3.50
$3.00
$2.50
$2.00
$1.50
$1.00
$0.50
$0.00
20
30
40
50
60
Tons of Acquired Farmers Stock
Total Costs Per Pound - SOF Product
Total Fixed Costs Per Pound - SOF Product
Total Variable Cost Per Pound - SOF Product

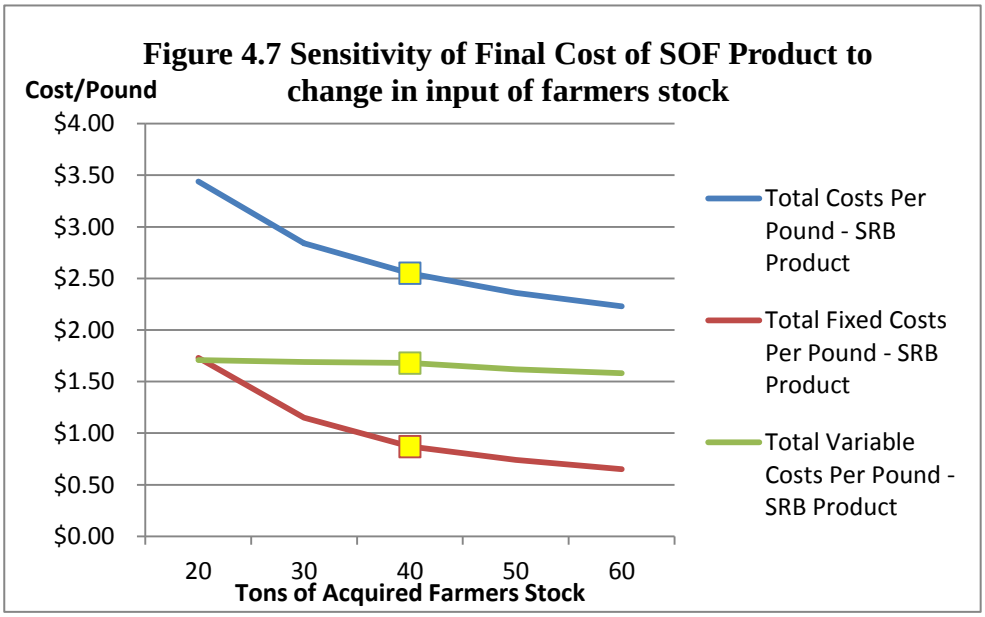
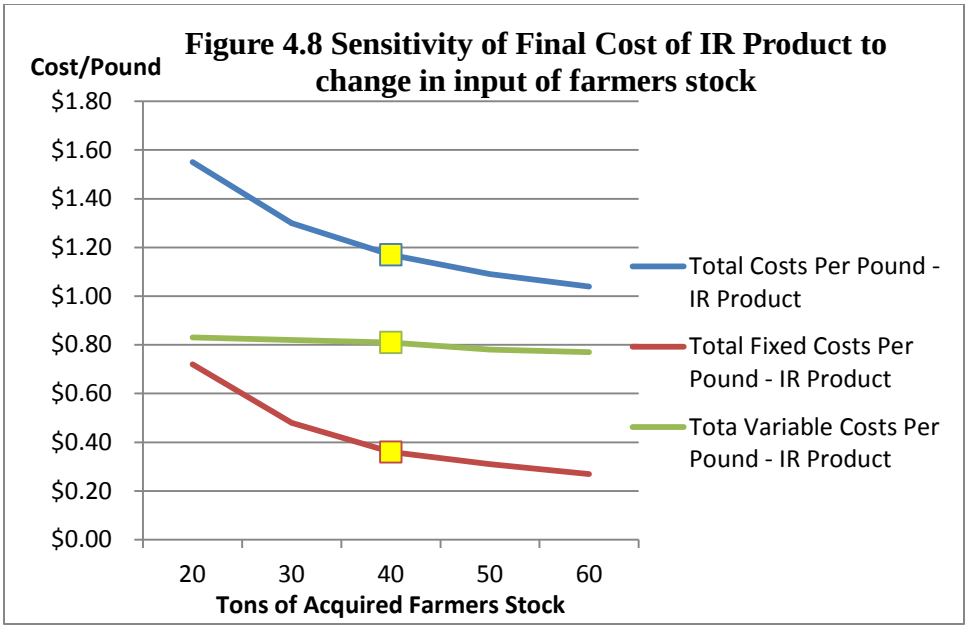


Figure 4.7 Sensitivity of Final Cost of SOF Product to change in input of farmers stock
Cost/Pound
$4.00
$3.50
$3.00
$2.50
$2.00
$1.50
$1.00
$0.50
$0.00
20
30
40
50
60
Tons of Acquired Farmers Stock
Total Costs Per Pound - SRB Product
Total Fixed Costs Per Pound - SRB Product
Total Variable Costs Per Pound - SRB Product



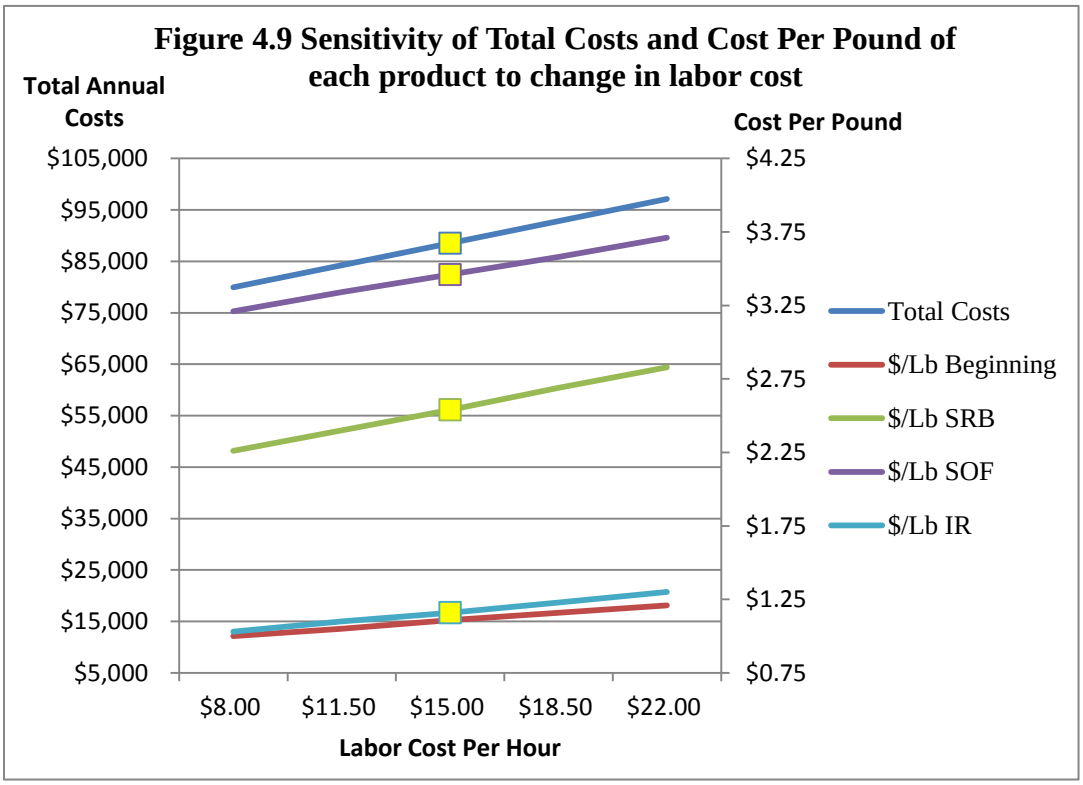
The variable costs listed in Table 4.15 are estimated according to a processing schedule with different inputs. For inputs less than 40 tons, the time period for 5 months is scaled down. The cost estimates for 20 tons are estimated using a time period of 2.5 months and 3.75 months for a 30 ton input. If only beginning input changes in this model, variable cost per pound for each product should remain the same. However, some variables in this model exhibit a kinked behavior – it changes in value up to a certain point, and then decreases. Maintenance cost is one cost category that causes this kinked behavior.

Change in Cost of Labor

Much like the cost of acquiring farmer stock, labor value has a positive relationship with total costs; as the cost of labor rises, so does total costs. The specific costs per pound associated with labor cost changes are listed in Table 4.16 and these changes are illustrated in Figure 9. If the value of labor decreased to $8 per hour, total costs would decrease to $79,939 and the total cost per pound of the products would decrease by $0.28 per pound for the SRB product, $0.27 for the SOF product, and $0.13 for the IR product compared to the total cost at $15 per labor hour. If value of labor increased to $22 per hour, total cost would increase to $97,142 and the

estimated per pound cost would increase by $0.29 for the SRB product, $0.25 for the SOF product, and $0.14 for the IR product.

Table 4.16 Sensitivity of estimated annual total costs to changes in labor value					
Value Per Hour	**Total Cost**	**Cost/Lb Farmer Stock**	**Cost/Lb SRB**	**Cost/Lb SOF**	**Cost/Lb IR**
$8.00	$79,939	$1.00	$2.26	$3.21	$1.03
$11.50	$84,240	$1.05	$2.40	$3.34	$1.10
$15.00	$88,540	$1.11	$2.54	$3.46	$1.16
$18.50	$92,841	$1.16	$2.69	$3.58	$1.23
$22.00	$97,142	$1.21	$2.83	$3.71	$1.30



Change in Product Mix Allocation

Total costs and total costs per pound can also be responsive to a change in the product mix allocation. Table 34 summarizes the differences in costs over several allocations of raw product input. It is important to note the response in costs if the facility only produced one of the three peanut products. The potential profit from only producing one product may exceed profits

from producing all three products. Scenarios 2-4 in Table 4.17 outline the total costs of producing only one product. Assuming all processing equipment was purchased for all three products, but only one product is produced, the final cost per pound would be $2.50 for SRB peanuts, $3.45 for SOF peanuts, and $1.19 for IR peanuts. The equal allocation for each product, shown in Scenario 5, would result in a final per pound cost of $2.56 for SRB peanuts, $3.46 for SOF peanuts, and $1.16 for IR peanuts. Like the results estimated in Table 32, variable costs per pound of each product differ slightly due the change in annual maintenance costs.

Table 4.17 Sensitivity of estimated annual total costs and final costs per pound to changes in product mix scenarios. Potential allocation percentages are displayed as SRB/SOF/IR

Scenarios	**1**	**2**	**3**	**4**	**5**
Product Mix %	**45/30/25**	**100/0/0**	**0/100/0**	**0/0/100**	**33/34/33**
Total Fixed Costs	$25,751	$25,751	$25,751	$25,751	$25,751
$/Lb. Farm Stock	$0.32	$0.32	$0.32	$0.32	$0.32
$/Lb. SRB	$0.87	$0.85	$0.00	$0.00	$0.87
$/Lb. SOF	$0.79	$0.00	$0.81	$0.00	$0.79
$/Lb. IR	$0.36	$0.00	$0.00	$0.36	$0.36
Total Var. Costs	$62,790	$50,653	$86,254	$59,736	$64,797
$/Lb. Farm Stock	$0.79	$0.63	$1.08	$0.71	$0.81
$/Lb. SRB	$1.68	$1.65	$0.00	$0.00	$1.69
$/Lb. SOF	$2.67	$0.00	$2.65	$0.00	$2.67
$/Lb. IR	$0.81	$0.00	$0.00	$0.83	$0.81
Total Costs	$88,540	$75,770	$110,476	$85,486	$90,547
$/Lb. Farm Stock	$1.11	$0.95	$1.38	$1.07	$1.13
$/Lb. SRB	$2.46	$2.50	$0.00	$0.00	$2.56
$/Lb. SOF	$3.52	$0.00	$3.45	$0.00	$3.46
$/Lb. IR	$1.16	$0.00	$0.00	$1.19	$1.16

Change in Shrinkage Rates

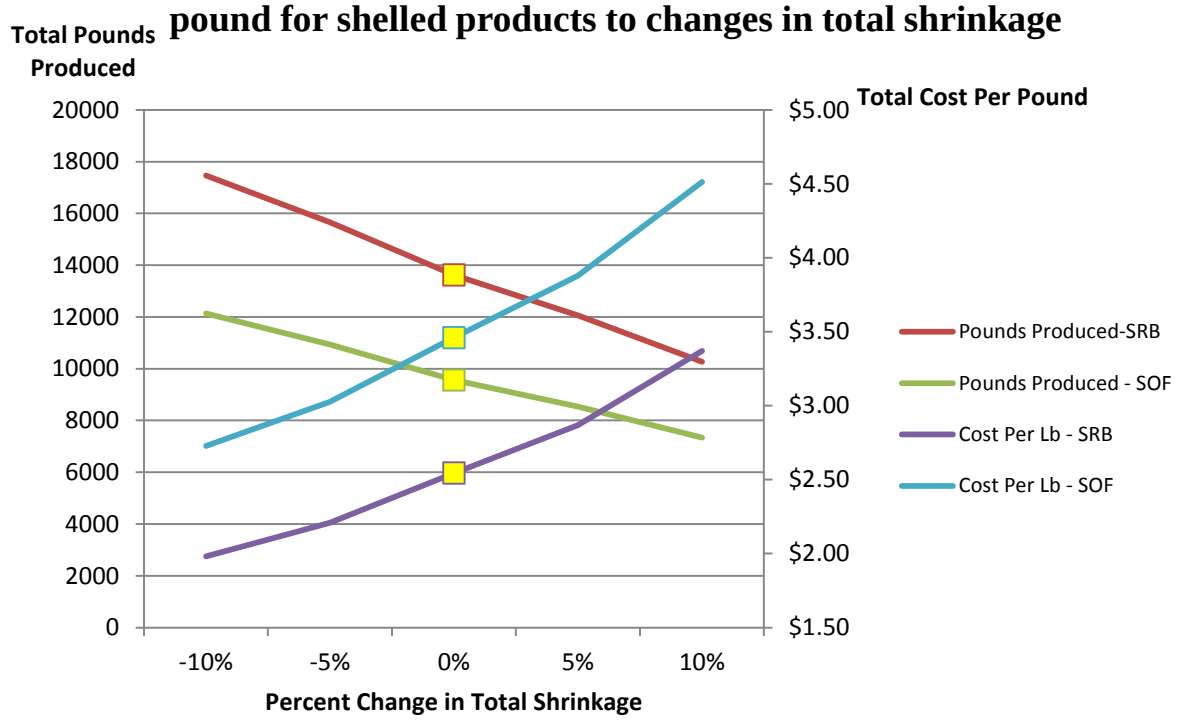
The estimated shrinkage rates during each processing step impacts the total amount produced as well as the final costs per pound of each product. The estimated total shrinkage loss during processing is 61.5%, 59.5%, and 8.8% for the SRB, SOF, and IR products respectively.

The amounts in Table 4.18 represent the estimated change in the total pounds produced and the final cost per pound of each shelled product when total shrinkage rates change. If total shrinkage loss decreases by 10% for both shelled products, the pounds produced and costs per pound changes to 17,464 pounds and $2.03 per pound for the SRB product and to 12,132 pounds and $2.83 per pound for the SOF product. If 0% more loss occurs, the pounds produced decrease to 10,264 and 7,332 pounds for each respective product and the cost per pound increases to $3.45 for the SRB product and $4.68 for the SOF product. These estimates are also illustrated in Figure 10.

Table 4.18 Sensitivity of pounds produced and final costs per pound for shelled products to changes in estimated total shrinkage rates

	SRB			SOF		
Change in Shrinkage	Total Shrinkage	Pounds Produced	Final Cost per Pound	Total Shrinkage	Pounds Produced	Final Cost per Pound
10% Less	51.5%	17,464	$1.98	49.5%	12,132	$2.73
5% Less	56.5%	15,664	$2.21	54.5%	10,932	$3.03
No Change	61.5%	13,662	$2.54	59.5%	9,563	$3.46
5% more	66.5%	12,064	$2.87	64.5%	8,532	$3.88
10% more	71.5%	10,264	$3.37	69.5%	7,332	$4.51

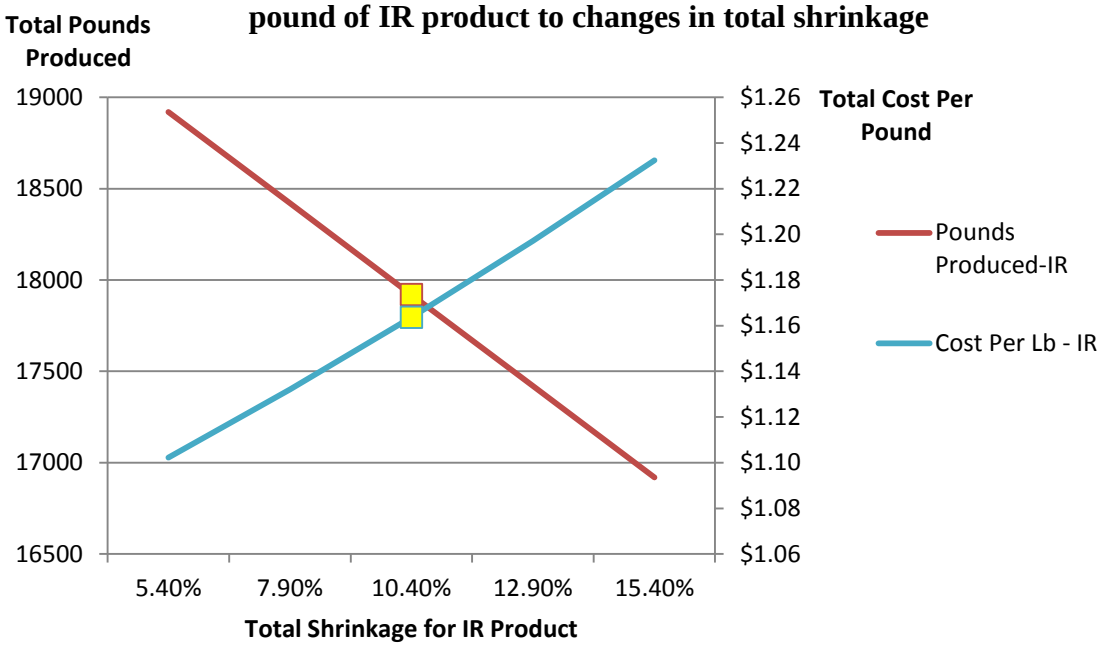
Figure 4.10 Sensitivity of pounds produced and final costs per pound for shelled products to changes in total shrinkage



Compared to the shelled products, the shrinkage loss during processing of the IR product is minimal. Table 4.19 and Figure 11 both summarize the potential impacts of changes in estimated shrinkage by 5 and 2.5 percent on total pounds produced and the final costs per pound of the inshell product. If total shrinkage decreases to 5.4%, the estimated pounds produced would be 18,920 pounds and the estimated final cost per pound would decrease to $1.10 per pound. If shrinkage increases to 15.4%, the estimated pounds produced decreases to 16,920 and the estimated cost per pound increases to $1.23 for the IR product.

Table 4.19 Sensitivity of Pounds Produced and Final Costs Per Pound of IR Product to changes in estimated total shrinkage			
Change in Shrinkage	Total Shrinkage	Pounds Produced	Final Cost per Pound
5% Less	5.4%	18,920	$1.10
2.5% Less	7.9%	18,420	$1.13
No Change	10.4%	17,920	$1.16
2.5% More	12.9%	17,420	$1.20
5% More	15.4%	16,920	$1.23

Figure 4.11 Sensitivity of pounds produced and final costs per pound of IR product to changes in total shrinkage



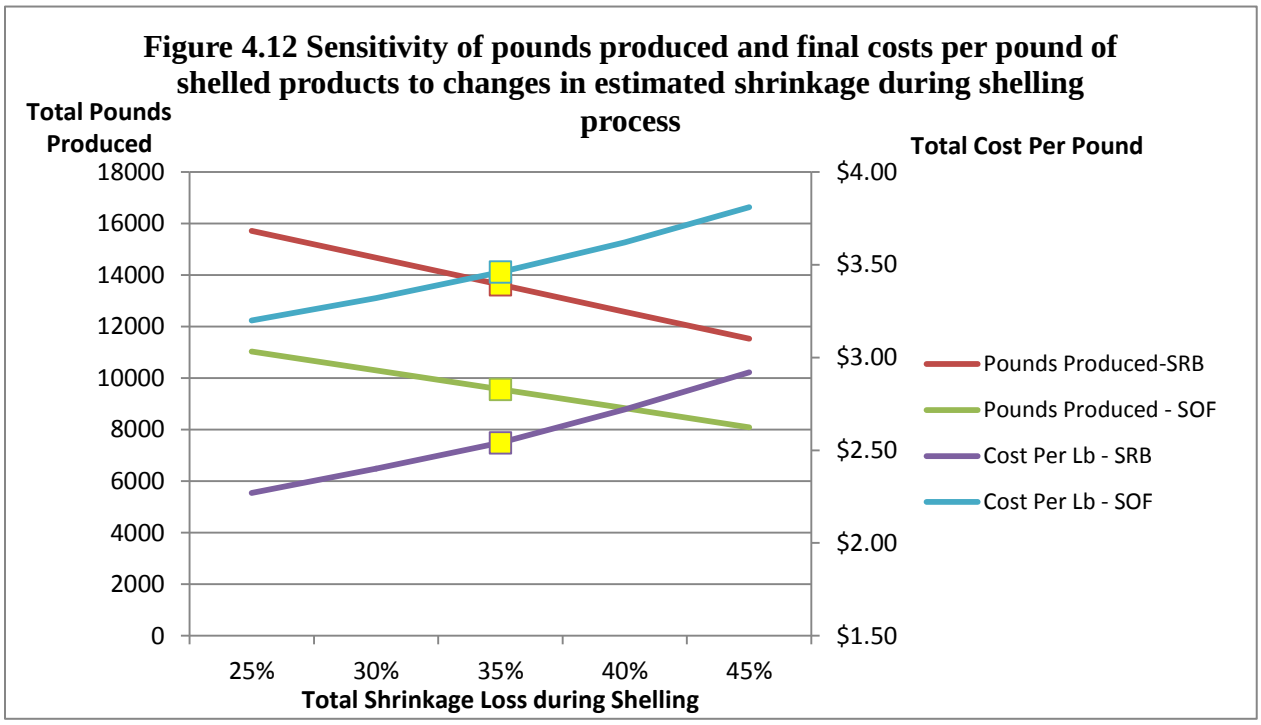
Though these estimates are useful to determine how shrinkage impacts the cost per pound, it is difficult to estimate the true impact of shrinkage loss on the estimated costs per pound because shrinkage rates exist at different processing points. The change in shrinkage loss at during the first stages of processing will have a larger impact on pounds produced than the changes in shrinkage rates during ending processes. The shelling and sorting steps, the first two steps after storage, are the largest sources of shrinkage loss during processing of the shelled products. Changes in the loss during these processes will significantly affect total pounds

produced and the estimated final costs per pound.

Shelling is the first processing step after storage. The estimated shrinkage loss of 35% applies to both shelled products during shelling. This shrinkage loss, or shell rate, can change depending on variety of production and environmental factors, and a change in the shell rate will significantly affect the final amount produced of both shelled products. Table 4.20 and Figure 12 summarizes the estimated results from changes in the shelling rate. If the shrinkage loss during shelling decreases to 25% (or increases to a 75% shell rate), the 15,715 of the SRB product could be produced at a final cost per pound of $2.27. At this same shelling rate, 11,034 pounds of the SOF product can be produced at an estimated final cost per pound of $3.25. If the shrinkage rate increases to 45%, pounds produce decrease to 11,526 and 8,092 for the SRB and OF products respectively. The final costs per pound at 45% shelling loss would be $2.92 for the SRB product and $3.81 for the SOF product.

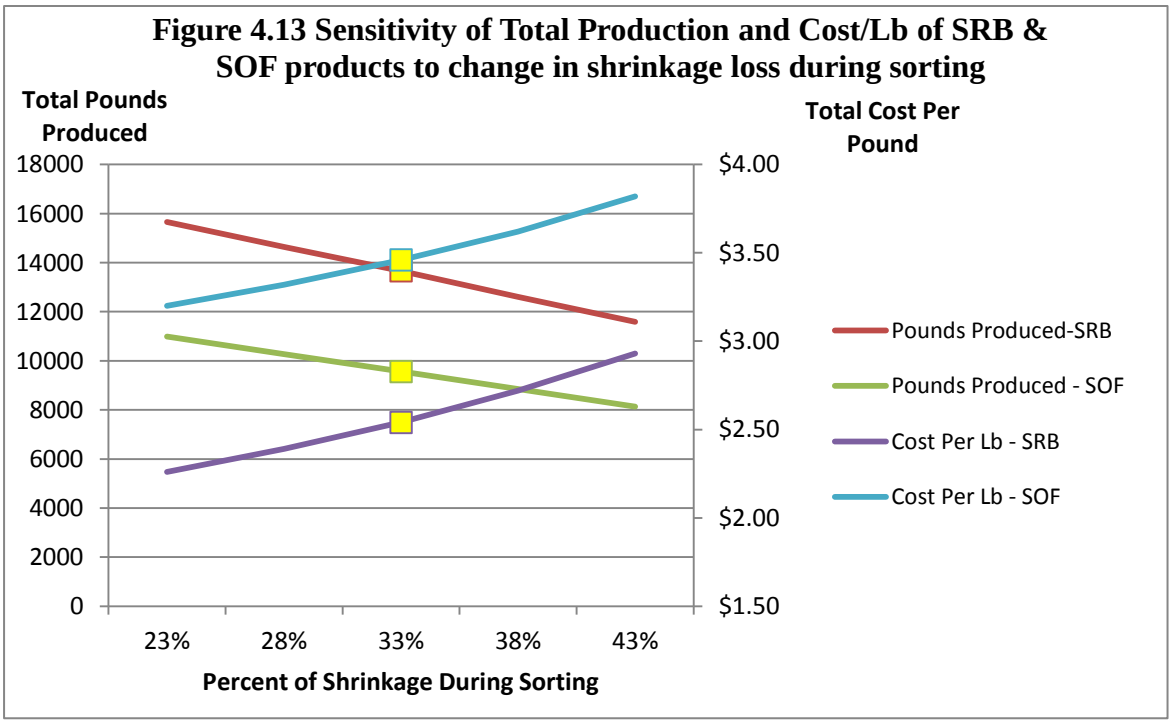
Table 4.20 Sensitivity of Pounds Produced and Final Costs Per Pound of Shelled Products to changes in estimated shrinkage during shelling process

	SRB		SOF	
Shrinkage During Shelling	Pounds Produced	Final Cost per Pound	Pounds Produced	Final Cost per Pound
25%	15,715	$2.27	11,034	$3.20
30%	14,669	$2.40	10,298	$3.32
35%	13,622	$2.54	9,563	$3.46
40%	12,574	$2.72	8,827	$3.62
45%	11,526	$2.92	8,092	$3.81



The estimated shrinkage during sorting is 33 percent for shelled products. The estimated pounds produced and final costs per pound if the shrinkage during sorting increases or decreases by 5 and 10 percent are shown in Table 4.21. A smaller shrinkage amount removed during sorting increases the total pounds to roast, blanch and package, thus increasing the production costs at these processing points. If shrinkage loss during the sorting process decreases by 10% (for a total of 23%) the estimated final costs per pound would be approximately $2.28 and $3.25 for the SRB and SOF products respectively. If the sorting step causes 10% more loss than the base level of 33%, the costs per pound increases to $2.95 and $3.89 per pound for each product. Figure 13 illustrates the positive linear relationship between shrinkage rate during sorting and the final costs per pound of the shelled products.

Table 4.21 Sensitivity of Pounds Produced and Final Costs Per Pound of Shelled Products to changes in estimated shrinkage during sorting process				
	SRB		SOF	
Shrinkage During Sorting	Pounds Produced	Final Cost per Pound	Pounds Produced	Final Cost per Pound
23%	15,655	$2.26	10,990	$3.20
28%	14,638	$2.39	10,276	$3.32
33%	13,662	$2.54	9,563	$3.46
38%	12,605	$2.72	8,849	$3.62
43%	11,589	$2.93	8,136	$3.82



Sorting loss may also apply to inshell peanuts. A main assumption of this model is that only 1% of inshell peanuts will be removed from the amount produced during sorting. This assumption is based upon the lack of grade size for inshell Runner peanuts. If a minimum size requirement for inshell peanuts did exist however, it would impact the amount produced and final costs per pound for the IR product processed by this facility. Table 4.22 summarizes the impacts of an increasing shrinkage rate for inshell peanuts during sorting. If shrinkage loss

increased to 30%, the pounds produced would decrease to 12,671 pounds at a final cost per pound of $1.53, 40 cents above the final cost at 1% shrinkage loss.

Table 4.22 Sensitivity of Pounds Produced and Final Costs Per Pound of IR product with change in shrinkage during sorting process

	IR	
Shrinkage During Sorting	**Pounds Produced**	**Final Cost per Pound**
1%	17,920	$1.16
5%	17,196	$1.20
10%	16,291	$1.25
20%	14,481	$1.37
30%	12,671	$1.53

Comparison of Input Sensitivity

As summarized in the sensitivity analysis, the breakeven costs of producing three peanut products in an on-farm processing facility are influenced by a variety of variables. A change in one variable input, however, may impact the breakeven costs in a different way. Tables 4.23-4.26 and Figures 14-17 summarize the impacts that changes in five inputs have on breakeven cost per pound of each product. The inputs examined in the following tables are: the cost per ton of farmer's stock peanuts, the cost of labor, amount of total shrinkage for each product during processing, the costs of buildings and equipment, and the amount of farmers stock tons processed. While all cost categories affect the breakeven cost, a change in total shrinkage has the largest effect of those examined in the study. If total shrinkage increases to 20% above the level estimated in the cost model, the per pound breakeven costs would increase to $5.39 for the SRB product, $6.73 for the SOF product, and $1.50 for the IR product. The estimated costs at 20% above the base level would result in a 112%, 94%, and 29% increase in the costs per pound of the three products, respectively.

Though total cost appears to be the most sensitive changes in shrinkage and operational

scale, other inputs, such as the initial cost of farmer's stock peanuts, may have greater importance over the likely range of outcomes. For example, the 2011 farmer's stock price per ton is over $200 per ton or approximately 50% more than 2010 farmers stock cost used in this study. A 50% increase in the acquisition cost per ton would result in an increase of 112% for the SRB product, 108% increase in the SOF product, and 111% in the IR product per pound over the breakeven costs estimated in this study. In comparison to a potential change in shrinkage amounts, a 50% change in shrinkage is not possible. The owner/operator must consider all cost variables in marketing a price per pound for the three peanut products.

Table 4.23 Comparison of sensitivities on final cost per pound of a shelled, roasted, and blanched (SRB) peanut product from changes in inputs. It is assumed that 45% of the beginning amount of farmer's stock peanuts is allocated to SRB product

Percent Change In Variable	Cost Per Ton of Farmers Stock Peanuts		Labor Cost		Total Shrinkage		Capital Costs (Buildings & Equipment)		Input Tons	
	Cost	Final Product Cost Per Pound	Cost Per Hour	Final Product Cost Per Pound	Shrinkage Percentage	Final Product Cost Per Pound	Cost	Final Product Cost Per Pound	Tons Per Year	Final Product Cost Per Pound
20 % Decrease	$336	$2.43	$12	$2.42	42.16%	$1.66	$198,473	$2.42	32	$2.76
15 % Decrease	$357	$2.46	$12.75	$2.45	47.16%	$1.82	$210,778	$2.45	34	$2.75
10% Decrease	$378	$2.49	$13.5	$2.48	51.49%	$1.98	$223,084	$2.48	36	$2.67
5% Decrease	$399	$2.52	$14.25	$2.51	56.49%	$2.21	$235,390	$2.51	38	$2.61
Base Amount	**$420**	**$2.54**	**$15**	**$2.54**	**61.49%**	**$2.54**	**$247,696**	**$2.54**	**40**	**$2.54**
5% Increase	$441	$2.57	$15.75	$2.57	66.49%	$2.87	$260,002	$2.58	42	$2.53
10% Increase	$462	$2.60	$16.5	$2.61	71.49%	$3.37	$272,307	$2.61	46	$2.44
15% Increase	$483	$2.63	$17.25	$2.64	77.16%	$4.21	$284,613	$2.64	53	$2.34
20% Increase	$504	$2.66	$18	$2.67	82.16%	$5.39	$296,919	$2.67	64	$2.21

Figure 4.14 Comparison of changes in input variables to final Cost/Lb of SRB Product

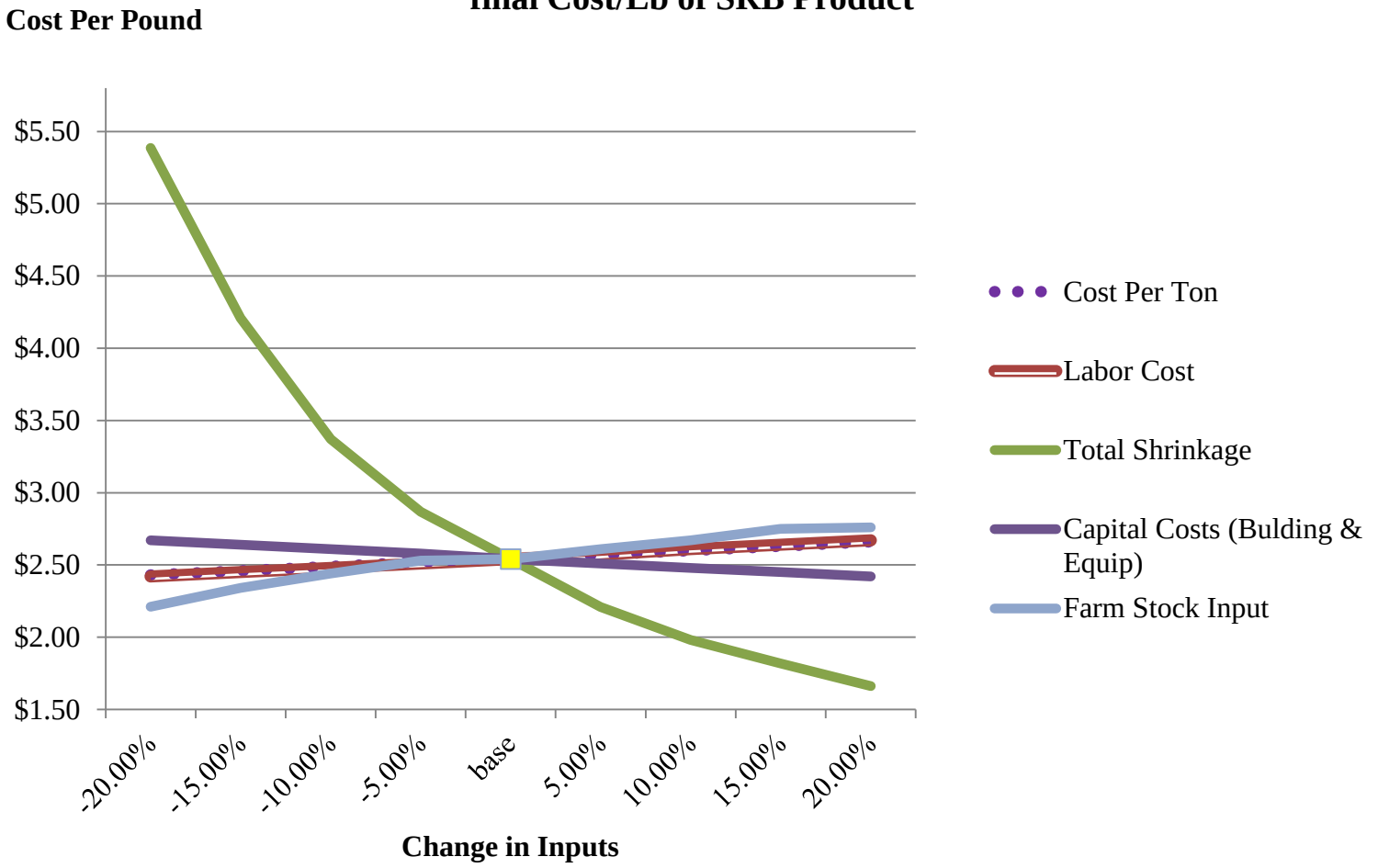


Table 4.24 Comparison of sensitivities on final cost per pound of a shelled, oil-roasted, and flavored (SOF) peanut product from changes in inputs. It is assumed that 30% of beginning amount of farmers stock peanuts is allocated to SOF product

Percent Change In Variable	Cost Per Ton of Farmers Stock Peanuts		Labor Cost		Total Shrinkage		Capital Costs (Buildings & Equipment)		Input Tons	
	Cost	Final Product Cost Per Pound	Cost Per Hour	Final Product Cost Per Pound	Shrinkage Percentage	Final Product Cost Per Pound	Cost	Final Product Cost Per Pound	Tons Per Year	Final Product Cost Per Pound
20 % Decrease	$336	$3.35	$12	$3.35	39.5%	$2.28	$198,473	$3.35	32	$3.66
15 % Decrease	$357	$3.38	$12.75	$3.38	74.5%	$2.48	$210,778	$3.37	34	$3.65
10% Decrease	$378	$3.41	$13.5	$3.41	69.5%	$2.73	$223,084	$3.40	36	$3.58
5% Decrease	$399	$3.43	$14.25	$3.43	64.5%	$3.03	$235,390	$3.43	38	$3.52
Base Amount	**$420**	**$3.46**	**$15**	**$3.46**	**59.5%**	**$3.46**	**$247,696**	**$3.46**	**40**	**$3.46**
5% Increase	$441	$3.49	$15.75	$3.49	54.5%	$3.88	$260,002	$3.49	42	$3.44
10% Increase	$462	$3.51	$16.5	$3.51	49.5%	$4.52	$272,307	$3.52	46	$3.37
15% Increase	$483	$3.54	$17.25	$3.54	44.5%	$5.41	$284,613	$3.55	53	$3.27
20% Increase	$504	$3.57	$18	**$3.57**	78.5%	$6.73	$296,919	$3.58	64	$3.15

Figure 4.15 Comparison of changes in input variables to Cost/Lb of SOF Product

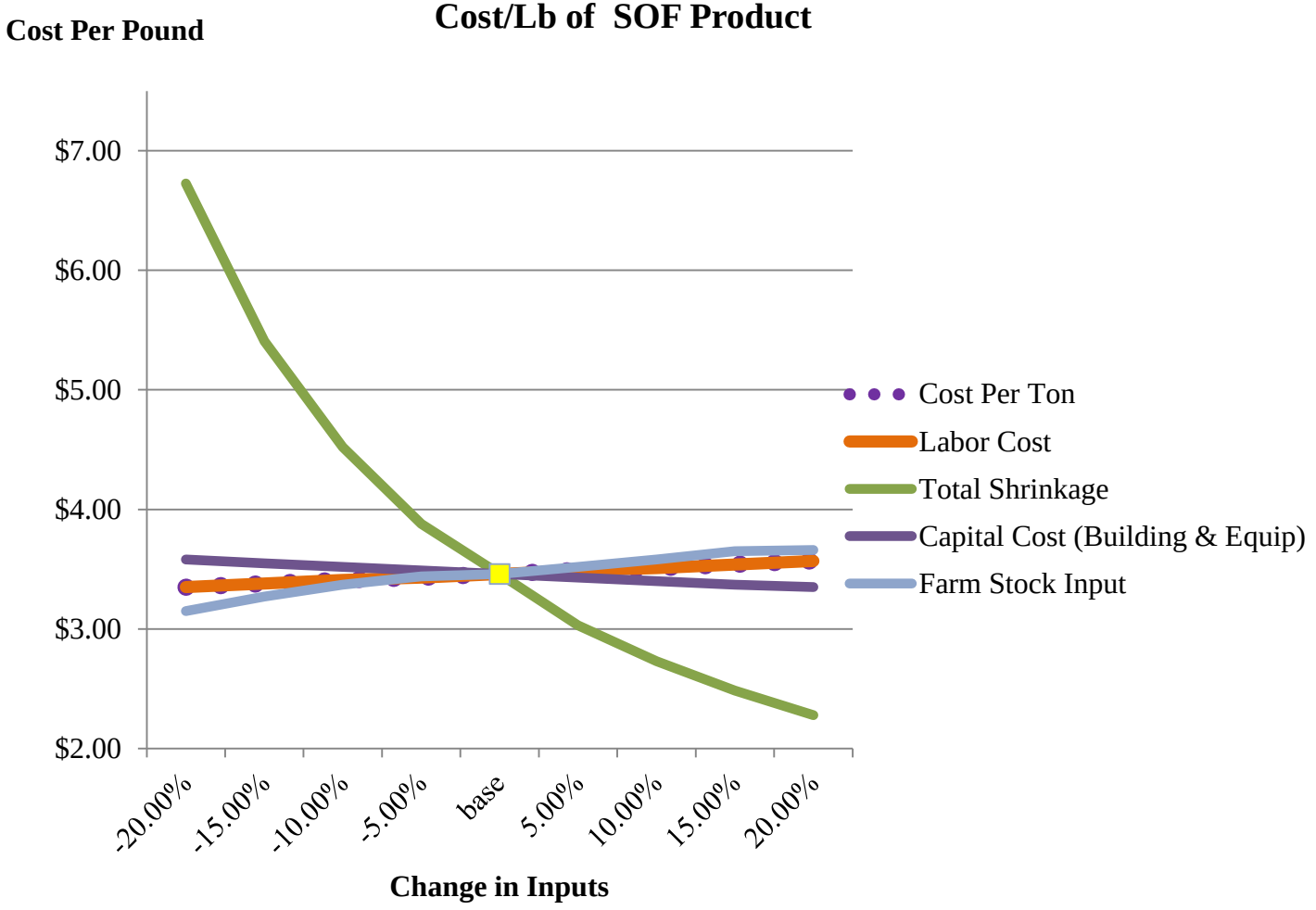


Table 4.25 Comparison of sensitivities on final cost per pound of a inshell and roasted (IR) peanut product from changes in inputs. It is assumed that 25% of the beginning amount of farmer's stock peanuts is allocated to IR product.

Percent Change In Variable	Cost Per Ton of Farmers Stock Peanuts		Labor Cost		Total Shrinkage		Capital Costs (Buildings & Equipment)		Input Tons	
	Cost	Final Product Cost Per Pound	Cost Per Hour	Final Product Cost Per Pound	Shrinkage Percentage	Final Product Cost Per Pound	Cost	Final Product Cost Per Pound	Tons Per Year	Final Product Cost Per Pound
20 % Decrease	$336	$1.12	$12	$1.11			$198,473	$1.11	32	$1.26
15 % Decrease	$357	$1.13	$12.75	$1.12			$210,778	$1.13	34	$1.25
10% Decrease	$378	$1.14	$13.5	$1.14	0.40%	$1.05	$223,084	$1.14	36	$1.22
5% Decrease	$399	$1.15	$14.25	$1.15	5.40%	$1.10	$235,390	$1.15	38	$1.19
Base Amount	**$420**	**$1.16**	**$15**	**$1.16**	**10.40%**	**$1.16**	**$247,696**	**$1.16**	**40**	**$1.16**
5% Increase	$441	$1.18	$15.75	$1.18	15.40%	$1.23	$260,002	$1.18	42	$1.14
10% Increase	$462	$1.19	$16.5	$1.19	20.40%	$1.31	$272,307	$1.19	46	$1.12
15% Increase	$483	$1.20	$17.25	$1.21	25.40%	$1.40	$284,613	$1.20	53	$1.08
20% Increase	$504	1.21	$18	$1.22	30.40%	$1.50	$296,919	$1.22	64	$1.02

Figure 4.16 Comparison of changes in input variables to Cost/Lb of IR Product

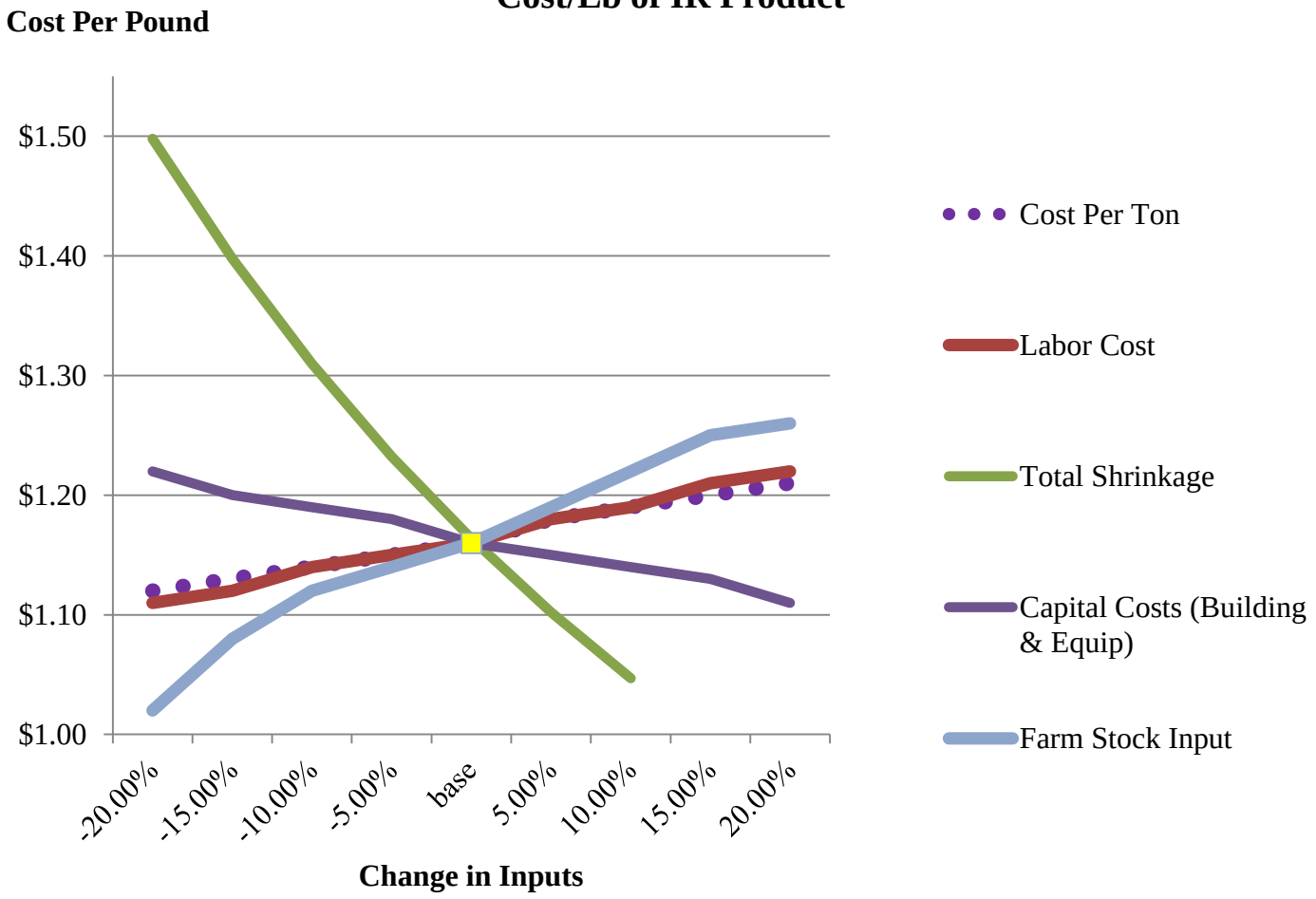


Table 4.26 Comparison input sensitivities on the processing cost per pound of farmer's stock peanuts. The product allocation percentage is held constant at 45% for SRB product, 30% for SOF product, and 25% for the IR peanut product for different input amounts

Percent Change In Variable	Cost Per Ton of Farmers Stock Peanuts		Labor Cost		Capital Costs (Buildings & Equipment)		Input Tons	
	Cost	Final Product Cost Per Pound	Cost Per Hour	Final Product Cost Per Pound	Cost	Final Product Cost Per Pound	Tons Per Year	Final Product Cost Per Pound
20 % Decrease	$336	$1.06	$12	$1.06	$198,473	$1.06	32	$1.19
15 % Decrease	$357	$1.08	$12.75	$1.07	$210,778	$1.07	34	$1.18
10% Decrease	$378	$1.09	$13.5	$1.08	$223,084	$1.08	36	$1.15
5% Decrease	$399	$1.10	$14.25	$1.10	$235,390	$1.10	38	$1.13
Base Amount	**$420**	**$1.11**	**$15**	**$1.11**	**$247,696**	**$1.11**	**40**	**$1.11**
5% Increase	$441	$1.12	$15.75	$1.12	$260,002	$1.12	42	$1.10
10% Increase	$462	$1.13	$16.5	$1.13	$272,307	$1.13	46	$1.07
15% Increase	$483	$1.14	$17.25	$1.14	$284,613	$1.14	53	$1.03
20% Increase	$504	$1.15	$18	$1.15	$296,919	$1.15	64	$0.98

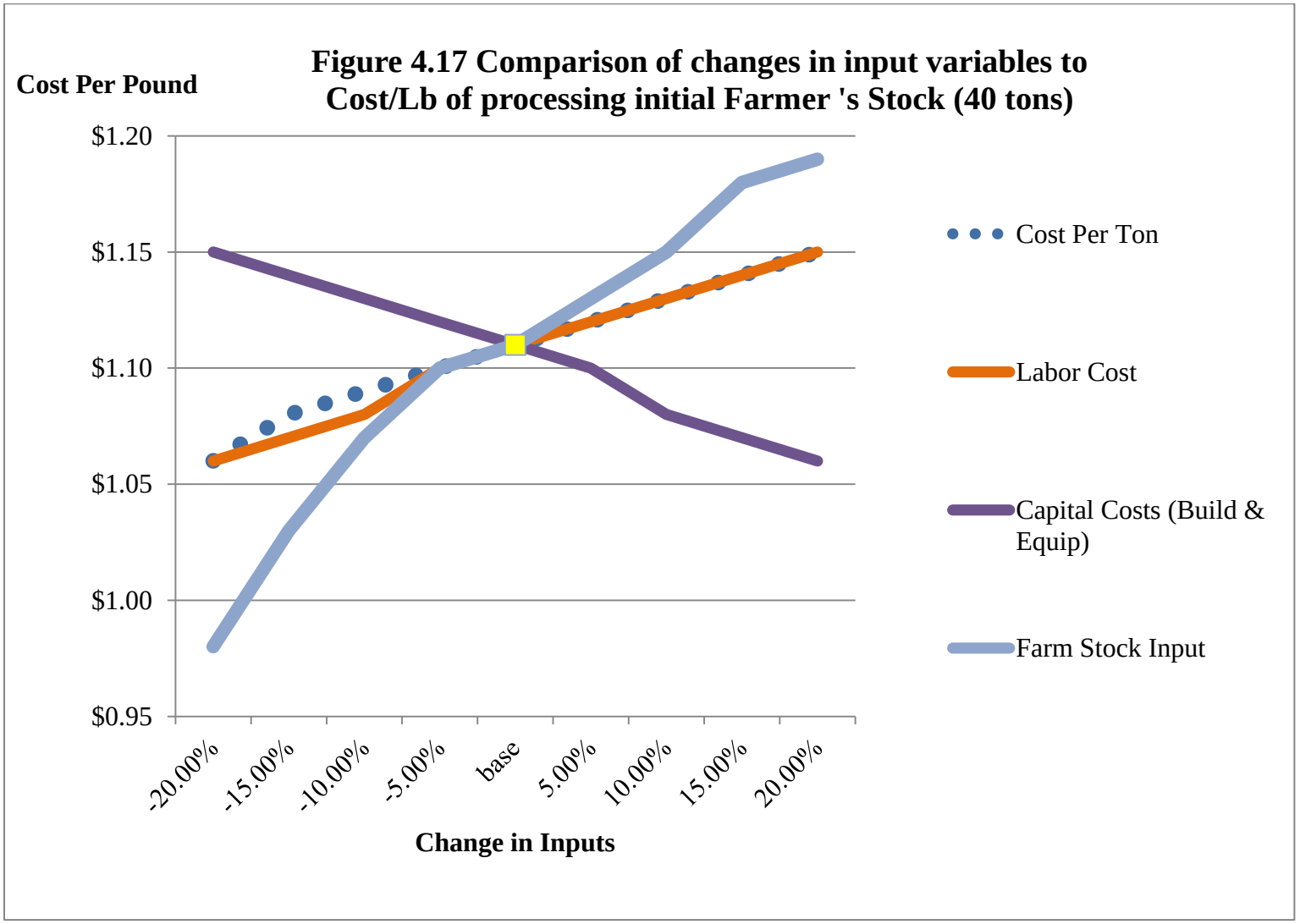


Figure 4.17 Comparison of changes in input variables to Cost/Lb of processing initial Farmer 's Stock (40 tons)
Cost Per Pound
$1.20
$1.15
$1.10
$1.05
$1.00
$0.95
-20.00%
-15.00%
-10.00%
-5.00%
base
5.00%
10.00%
15.00%
20.00%
Change in Inputs
Cost Per Ton
Labor Cost
Capital Costs (Build & Equip)
Farm Stock Input

Feasibility Study Conclusion

The main processing steps that can be carried out in this facility will be storing, shelling, sorting, roasting, and packaging. After processed, the estimated per pound breakeven costs are $2.56 for the SRB product, $3.52 for the SOF product, and $1.15 for the IR product. These costs reflect an estimate that the business must receive to receive a profit for each product. According this model, if a small scale, on-farm processing facility acquires 40 tons of organic farmers stock peanuts, it is estimated that it can produce 13,622 pounds of the SRB product, 9,563 pounds of the SOF product, and 17,920 pounds of the IR product. Though management costs are not included in this total, management practices, specifically the ability to control shrinkage rates, will significantly affect these cost estimates. Any additional management costs will increase the costs per pound of each product.

CHAPTER FIVE

SUMMARY AND REPORT CONCLUSIONS

The purpose of this study was to determine the economic feasibility of a certified organic, small scale, and on-farm processing facility for peanuts. This facility could enable a peanut farmer to receive premiums on a peanut product by retaining the organic characteristics of organically grown peanuts. The second purpose of this study was to determine a premium level that Georgia consumers would be willing to pay for three peanut products with three attributes: Certified Organic, Locally Grown, and Produced and Processed by a Small Farm.

A telephone survey was conducted to evaluate a consumer's willingness to pay (WTP) a premium for three attributes on peanut products. Survey participants were asked to state their WTP a premium above certain price points. In addition, participants were asked to define the meanings of *certified organic, locally grown,* and *small farm* without any prior information. The participants were then given a definition of these labels and then asked again to state their WTP above a price point.

The results from the consumer survey provide an estimate for the prices that consumers would pay for a SRB and IR product with *certified organic, locally grown,* and *produced and processed by a small farm*. An on-farm facility can provide a farmer the opportunity to utilize all three attributes on a peanut product. The average premiums that participants in the consumer survey would pay are $1.76 per pound above $2.15 (a total of $3.91 a pound) for a SRB product and $1.36 above $1.25 (a total of $2.61) for an IR product with all three attributes. A small

market is already established for the SOF product at $8.00 per pound.

A cost model was developed for a proposed processing facility for peanuts in Southeastern Georgia. Annual cost estimates were determined for three retail peanut products: a shelled, roasted, and blanched (SRB), a shelled, oil-roasted, and flavored (SOF) product, and an in-shell and roasted (IR) product. In this proposed facility, farmer's stock peanuts would be stored and processed over a 5 month period. During processing, peanuts would be shelled (if necessary), sorted, roasted, blanched (if necessary), and packaged, while following inspection steps required by federal and state agencies. Results from the facility annual cost model show that an owner/operator could produce three peanut products at on-farm processing facility. The estimated per pound breakeven costs from this study are $2.56 for the SRB product, $3.52 for the SOF product and $1.15 for the IR product.

The findings from this survey present a potential retail price for the peanut products, but not a wholesale price. A wholesale price will be significantly less than the retail price of a given product. Table 40 summarizes the findings from this study along with a summary of potential margins a retailer could assume if the peanut products were purchased at the breakeven cost of the proposed facility and sold at the anticipated premium levels associated with the consumer responses. Before shipping costs, the retailer could expect a per pound margin between 46.88% and 52.73% for the SRB product and between 121.74% and 126.96% for the IR product.

According to the average market prices of peanut products with no specialty attributes in Table 40, only the SOF and IR product would be economically feasible to produce. Specialty attributes could add value to all three peanut products, possibly allowing production of the SRB to become feasible as well. Production within the proposed small scale, on-farm processing facility will be economically feasible if a price per pound is above the breakeven points.

Table 5.1 Summary of estimated per pound breakeven cost for three peanut products in a small scale, on-farm processing facility, average market prices per pound, and consumer willingness to pay for peanut products with special attributes						
Peanut Product	**Estimated total breakeven cost per pound**[12]	**Average Market price per lb. for peanuts with no special attributes (16 oz), March 2011**		**Consumer's Willingness to pay for special attributes**		
	Cost ($) Per Pound	**$/Lb**	**% price of breakeven costs**	**Total $/Lb. (Avg Premiums above March 2011 price)**	**% WTP of breakeven costs**	**Percent of survey responses of consumers willing to pay more for attribute, May 2011**
Shelled, Roasted, Blanched (SRB)	$2.54	$2.15	83.98%			
Certified Organic & Locally Grown				$3.76 ($1.61)	146.88%	52.59%
Certified Organic & Small Farm				$3.79 ($1.64)	148.05%	54.81%
Locally Grown & Small Farm				$3.85 ($1.70)	150.39%	62.22%
All Three Attributes				$3.91 ($1.76)	152.73%	58.52%
Shelled, Oil-Roasted, Flavored	$3.46	$8.00[13]	227.27%	$8.00[15]	227.27%	
Inshell, Roasted	$1.16	$1.25	108.7%			
Certified Organic & Locally Grown				$2.55 ($1.30)	221.74%	52.38%
Certified Organic & Small Farm				$2.52 (($1.27)	219.13%	57.14%
Locally Grown & Small Farm				$2.55 ($1.30)	221.74%	65.08%
All Three Attributes				$2.61 ($1.36)	226.96%	58.73%

[12] Based upon 40 tons of farmer's stock input processed a year assuming a 45% allocation to SRB product, 30% allocation to SOF product, and 25% allocation to IR product. The 40 tons is estimated to result in 13,622 pounds of the SRB product, 9,563 pounds of the SOF product, and 17,920 pounds of the IR product.
[13] Estimated from retail price in a small existing market

Limitations and Future Research

The findings from this study can be used to expand research on organic peanut production in Georgia. Though Georgia farmers lead the nation in peanut production, limited infrastructure exists to support organic peanut production within the state. On-farm processing for organic peanuts may be the most efficient method to develop this market. While the findings in this research are a start, the results are limited in several ways.

The first limitation is found within the consumer survey results. The stated premiums that survey participants were willing to pay are based upon a set price point for each product. These price points were based upon an average market price, though the price point may not represent the true WTP of a consumer for an individual peanut product. The positive WTP should increase if a lower price point was used. In addition, the value of revealed information food product labels is useful, though more significant results could come by using an auction method or by conducting an experiment with grocery store shoppers using real dollars. Finally, a larger sample size of Georgia consumers is necessary for a smaller margin of error in the survey results.

Some location bias may also exist in the survey results. Peanuts are only grown in 77 counties in Georgia and approximately 60% of Georgia's population lives within a 28 county region surrounding metro Atlanta. Yet, the northern most county that produces peanuts in the state is more than 100 miles south than the southern-most county in this metro region. Though the survey participant may have thought of peanuts when answering questions defining attributes, the participants were not asked to define the attribute specific to peanuts. If a participant from this metro area defined *locally grown* as 25 miles or less, then it would not be possible to provide a peanut product grown within that radius. Further research could explore

whether a consumer's definition of attributes change per food product depending on location and proximity to production areas of that product.

An extension of the consumer survey in this study could also address potential WTP value differences in different in-shell peanut products. Though most in-shell peanut products in the marketplace today are produced using the Virginia peanut variety, this study assumes that an in-shell product could be developed using the Runner variety. If a consumer's WTP differs from one variety to another, the owner/operator and organic peanut farmer could produce the variety with the highest premiums available.

The costs model of this study could improve with additional research. First, the acquisition value within the cost model of organically grown peanuts is valued at $420 per ton. This value was estimated based upon a 2010 per ton average, however this cost may not reflect the true value of organically grown farmer's stock peanuts. If certified organic processing infrastructure is present in Georgia, the supply of organic peanuts may increase, resulting in a more accurate price per ton of organic peanuts.

Opportunities for further research could address alternative sources of income for the proposed facility. The processing steps within the facility will result in large quantities of peanut by-products, including hulls and skins. The facility could attract high premiums for certified organic by-products for animal feeds. Further studies could be also conducted to determine the costs necessary for an on-farm facility to produce a peanut butter product. Peanut butter is consumed more than any other processed peanut product. Approximately 97% of survey participants in the study have consumed peanut butter over the last year, in comparison to 70.95% for shelled, snack style peanuts and 59.25% for in-shell ballpark style peanuts.

REFERENCES

Adan, Natalie. (2011). Georgia Department of Agriculture. Email Interview April 20, 2011.

Best Buy, Inc. (2011). "Epson Stylus Printer." Online. http://www.bestbuy.com/site/Epson+-+Stylus+127+All-in-One+Printer/1005463.p?id=1218207307449&skuId=1005463 [Retrieved March 2, 2011].

Blue Sky Cook. (2011). "Perforated Aluminum Pans." Online. http://www.blueskycook.com/winco-alxp-1318p-perforated-aluminum-sheet-pan.html [Retrieved June 8, 2011]

Byrne, Robert J., Smith, Nathan B., Fletcher, Stanley, M. & Barnett, Barry J. (2005, February). "Risk Management Strategies for a Producer-Owned Peanut Shelling Cooperative." Presentation to Southern Agricultural Economics Association Annual Meeting, Little Rock, AR, February 2005.

Butts, Chris. (2011). United States Department of Agriculture. Email Interview.

Calhoun, Kevin. (2011). Birdsong Peanuts, Inc. Phone Interview March 14, 2011

Chang, Jae Bong & Lusk, Jayson, L. Concerns for Fairness and Preferences for Organic Food. (2008). Selected Paper Agricultural and Applied Economics Association Meeting.

Chinnan, Manjeet. University of Georgia. Interview March 29, 2011.

"Commingling and contact with prohibited substance prevention practice standard." *Code of Federal Regulations* Title 7, Pt. 205.272, 2011.

Conner, David & Christy, Ralph. (March 2004). "The Organic Label: How to Reconcile its Meaning with Consumer Preferences." *Journal of Food Distribution Research* 35 (1), 4 0-44.

Conyeager Spice (2011). Online. http://www.conyeagerspice.com/pdf/pricelistbulk.pdf. [Retrieved April 5, 2011]

Cowart, Darlene. Birdsong Peanuts, Inc. Phone Interview March 14, 2011.

CPAPC, Inc. (2011). Economy Ingredient Bin. Online. http://www.cpapc.com/Continental-32-gallon-Economy-Ingredient-Bin-P1286.aspx. [Retrieved March 29, 2011]

Dell, Inc. (2011). “Vostro Mini Tower Desktop.” Online. http://www.dell.com/us/business/p/vostro-460/pd?oc=bvctg3b&model_id=vostro-460. [Retrieved March 2, 2011].

Dimitri, C., and K. Venezia. (2007). “Retail and Consumer Aspects of the Organic Milk Market.” Outlook Report LDP-M-155-01, U.S. Department of Agriculture, Economic Research Service, www.ers.usda.gov/publications/LDP/2007/05May/LDPM15501/ldpm15501.pdf [Retrieved February 13, 2011]

Dimitri, C, and Oberholtzer, L. (2009). “Marketing U.S. Organic Foods: Recent Trends From Farms to Consumers.” Economic Information Bulletin Number 58. September 2009. United States Department of Agriculture, Economic Research Service. http://www.ers.usda.gov/Publications/EIB58/EIB58.pdf [Retrieved February 13, 2011]

Durham, C.A., and Andrade, D. (2005). "Health vs. environmental motivation in organic preferences and purchases", paper presented at the American Agricultural Economics Association Annual Meeting, Providence, RI, July 2005

Food Saver, Inc. (2011). Vacuum Sealer Bags. Online. http://sealerbags.com/8x24_vacuum_sealer_bags.php [Retrieved March 10, 2011]

Food Service Warehouse (2011a) Hand Washing Sink. Online. http://www.foodservicewarehouse.com/eagle/sr10-14-5-1/p388710.aspx [Retrieved March 2, 2011].

Food Service Warehouse (2011b) Pan Racks. http://www.foodservicewarehouse.com/channel-mfg/401akd/p349120.aspx [Retrieved March 2, 2011].

Food Service Warehouse (2011c) Scale. Online. http://www.foodservicewarehouse.com/escali-scales/p115/p348360.aspx?selectedSku=P115C [Retrieved March 2, 2011].

Food Service Warehouse (2011d) Three Compartment Sink. Online. http://www.foodservicewarehouse.com/advance-tabco/fe-3-1812-18r-x/p1353624.aspx [Retrieved March 2, 2011].

Food Service Warehouse (2011e) Win-Holt Tables. Online. http://www.foodservicewarehouse.com/win-holt/dtr-2436/p512141.aspx [Retrieved March 2, 2011].

Hayes, Jimmy and Connie. (2010). Healthy Hollow Farms, Brooklet, GA. Interview December 6, 2010.

Hayes, Jimmy and Connie. (2011). Healthy Hollow Farms, Brooklet, GA. Interview May 1, 2011.

He, Senhui, Fletcher, Stanley, Rimal, Arbindra. (2004, February) “Consumption of Reduced-Fat

Peanut Butter in Addition to the consumption of Regular Peanut Butter." Selected paper at Southern Agricultural Economics Association Annual Meeting, Tulsa, OK, February 2004.

He, Senhui, Fletcher, Stanley, Rimal, Arbindra. (2005, March). "Snack Peanut Consumption: Type Preference and Consumption Manners." *Journal of Food Distribution Research* 36(1), 79-85.

He, Senhui, Fletcher, Stanley (2000, November). "Influence of Product Attributes and Household Characteristics on Consumers' Attitude Toward and Purchase Pattern of In-shell Peanuts." *Journal of Food Distribution Research* 31(3), 28-36.

Hu, W., Woods, T., and Bastin, S. (2009). "Consumer Acceptance and Willingness to Pay for Blueberry Products with Nonconventional Attributes." *Journal of Agricultural and Applied Economics*, 41(1), 47-60.

Ingram, Doyle. Georgia Federal State Inspection Service (FSIS). Email Interview March 7, 2011.

Lacaze, Victoria, Rodriguez, Elsa; Lupin, Beatriz. (2009) "Risk perceptions and WTP for Organic Fresh Chicken in Argentina." Presented paper for 2009 International Association of Agricultural Economists Conference, Beijing, China.

Loureiro, M. and Hine, S. (2001). "Discovering Niche Markets: A Comparison of Consumer Willingness To Pay for A Local (Colorado Grown), Organic, and GMO-Free Product." Selected paper at American Agricultural Economics Association meeting, Chicago, IL, August 2001.

Lumpkin, Tracey (2011). Email Interview May 25, 2011

McKissick, John C. (April 2003) "The Feasibility of Green Boiled Peanuts in Georgia." The University of Georgia: Center for Agribusiness and Economic Development. Report Number FR-03-03.

McKissick, John C. and Boatright, Sue. (2010) "2009 Georgia Farm Gate Value Report." The University of Georgia: Center for Agribusiness and Economic Development. Report Number AR-10-01.

"Minimum incoming quality standards for peanuts." *Code of Federal Regulations* Title 7, Pt. 996.30, 2005.

"Minimum outgoing quality stanadards for peanuts." *Code of Federal Regulations* Title 7, Pt. 996.31, 2005.

Naspetti, S. and Zanoli, R. (2006). "Organic Food Quality and Safety Perception Throughout Europe." Paper prepared for European Association of Agricultural Economics meeting,

Creete, Greece, June 2006.

Nally, Shannon. United States Department of Agriculture (USDA). Email Interview. March 7, 2011.

"Negative aflatoxin content definition." *Code of Federal Regulations* Title 7, Pt. 996.11, 2005.

Nolin, Grant. (2011). Phone Interview March 21, 2011.

"Organic Handling Requirements." *Code of Federal Regulations* Title 7, Pt. 205.270, 2011.

"Organic Product Composition." *Code of Federal Regulations* Title 7, Pt. 205.301, 2011.

PaperMart.Com. (2011). Tin Tie Paper Packaging. Online. http://www.papermart.com/Product%20Pages/Product.aspx?GroupID=14726&SubGroupID=14727&ParentGroupID=18899#14727 [Retrieved March 9, 2011]

Pegg, Ronald, PhD. University of Georgia. Email Interview June 6, 2011.

Salinas, Liz. Primus Labs, Inc. Email Interview May 19, 2011.

Sears, Inc. (2011). "Craftsman Air Compressor." Online. http://www.sears.com/shc/s/p_10153_12605_00916643000P?blockNo=8&blockType=G8&prdNo=8&i_cntr=1309188873908 [Retrieved April 27, 2011]

Spectrum, Inc. (2011) Organic Peanut Oil. Online. http://www.amazon.com/Spectrum-Organic-High-Peanut-12x16/dp/B001HTPCNI [Retrieved April 5, 2011]

Storer, Stephen. (2011) WeightTech, Inc. Email Interview April 14, 2011.

TarpsPlus (2011). Poly Tarps. http://www.tarpsplus.com/noname.html [Retrieved March 3, 2011]

Taylor, Randall. Georgia Federal State Inspection Service (FSIS). Email interview April 19, 2011.

Thompson, Gary. (1998). "Consumer demand for organic produce: What we know and what we need to know." *American Journal for Agricultural Economics* 80 (5),113-118.

Tho, Carol. (2011). Zhengzhou Thoyu Machinery Co, LTD. Email Interview April 17, 2011.

ULine Packaging (2011). Best Selling Shipping Boxes. Online. http://www.uline.com/Promotion/MonthlySpecial.aspx?pagename=sp000_Best_Selling_Boxes.htm [Retrieved March 9, 2011].

United States Census Bureau, Population Division (2010). 2009 Population Data. Atlanta Metropolitan area. http://www.census.gov/popest/metro/tables/2009/CBSA-EST2009-02.csv

United States Department of Agriculture. (2009). "Small Farms Overview." http://www.nifa.usda.gov/nea/ag_systems/in_focus/smallfarms_if_overview.html

Wetzstein, Michael. (2005). *Microeconomic Theory: Concepts and Connections*. South-Western, 2005.

Wong, J., Raghunahtan, U., Escalante, C., and Wolfe. K. (2008). "Grass-Fed versus Organic Dairy Production: Southeastern US Willingness to Pay." Selected paper for American Agricultural Economics Association Annual Meeting, Orlando, FL, July 2008.

Yue, Chengyan; Alfnes, Frode; and Jensen, Helen H. (April 2009). "Discounting Spotted Apples: Investigating Consumer's Willingness to Accept Cosmetic Damage in an Organic Product." *Journal of Agricultural and Applied Economics* 41, 29-46

Yue, C., Grebitus, C., Bruhn, M. and Jensen, H.H. (2008) "Potato Marketing – Factors Affecting Organic and Conventional Potato Consumption Patterns." Selected paper at 2008 International Congress, August 26-29, 2008, Ghent, Belgium.

APPENDIX 1 – Consumer Survey Version 1 - Product Combination: Inshell & Roasted Ballpark Style Peanuts and Shelled & Roasted Snack Style Peanuts

ORGANIC PEANUT PRODUCT CONSUMPTION SURVEY

Hello, my name is [NAME], and I'm calling from the University of Georgia in Athens. The Survey Research Center is assisting a graduate student at the University in conducting a short survey today about peanut products, and I'd like to interview a member of your household. Would you be willing to help us out for a few minutes this evening?

[INTERVIEWER: THE SURVEY SHOULD LAST ABOUT 12 MINUTES]

In order for the results of the survey to be representative of the state's population, I need to speak to the adult aged 18 or older in the household who last celebrated a birthday. Would that be you?

1. Yes [CONTINUE]
2. No [WHEN WOULD BE A GOOD TIME TO REACH THAT PERSON?]

[REINTRODUCE YOURSELF AND THE STUDY OR ARRANGE TIME FOR CALL-BACK AND GET THE RESPONDENT'S FIRST NAME]

Great! Before I start, I need to let you know that any INDIVIDUALLY-IDENTIFIABLE information about you will be kept strictly confidential and your participation is completely voluntary. You can skip any questions you don't want to answer, and YOU MAY REFUSE TO PARTICIPATE OR DISCONTINUE PARTICIPATION AT ANY TIME WITHOUT PENALTY OR LOSS OF BENEFITS TO WHICH YOU ARE OTHERWISE ENTITLED. No risk or discomfort is anticipated from participation in this study, and you will benefit by expressing your opinions on issues important to Georgians. Also, my supervisor may listen to part of the interview for quality control purposes.

THIS SURVEY IS ABOUT PEANUT PRODUCT CONSUMPTION AND WILL GIVE FARMERS AND PEANUT PROCESSORS INSIGHT TO ABOUT A POTENTAIL MARKET FOR NEW PEANUT PRODUCTS. QUESTIONS ABOUT THE RESEARCH CAN BE DIRECTED TO THE RESEARCHERS (DR. JOHN MCKISSICK, DR. NATHAN SMITH, AND WARD BLACK) AND THAT CONTACT INFORMATION CAN BE PROVIDED UPON REQUEST.

ALSO, YOUR RIGHTS AS A RESEARCH PARTICIPANT CAN BE ADDRESSED TO THE UGA IRB AND THAT CONTACT INFORMATION CAN BE PROVIDED UPON REQUEST.

SECTION I: General Questions

Q1. Do you consume peanuts or peanut products?

Yes [To Q2]
No [Interview Over]
Don't Know
Refused

Q2. What type of peanut products have you consumed over the past year? Please answer all that apply.

In-shell & Roasted Ballpark Style Peanuts
Peanut Butter
Shelled & Roasted Snack Style Peanuts
Boiled Peanuts
Peanut Oil
Other. Please list: _____
Don't Know
Refused

SECTION II:
Q 3. This next series of questions will ask you about your willingness to pay for a specific attribute about peanut products.

For the first product, please think about a 16 ounce package of In-shell & Roasted Ballpark Style Peanuts. The average price for a package of this size in a typical grocery store is $1.25.

Would you be willing to pay more for a 16 ounce package of CERTIFIED ORGANIC In-shell & Roasted Ballpark Style Peanuts?
Yes [To Q 4]
No [Skip to Q 5]

Q 4-- How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage more than $1.25. $ _____ or ____ % more

Q 5 -- For the second product, please think about a 16 ounce jar of Shelled and Roasted Snack Style Peanuts. The average price for a jar of this size in a typical grocery store is $2.15.

Would you pay more than $2.15 for a 16 ounce jar of CERTIFIED ORGANIC, Shelled and Roasted Snack Style Peanuts?
Yes [To Q 6]
No [Skip to Q 7]

Q 6-- How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage **more than $2.15.** $ _____ or ____ % more

Q. 7 – What does the label CERTIFIED ORGANIC mean to you?

_____

Q. 8-- The term "certified organic" indicates that agricultural products have been grown and processed according to USDA's national organic standards and certified by USDA-accredited State and private certification organizations. In short, “certified organic” standards only allow the application of organically approved substances for disease, pest, and weed control and for fertilizer use. Finally, these regulations neither limit the type of producer that can grow “certified organic” crops nor the location where the product was grown.

With this knowledge of the definition, would you be willing to pay more than $1.25 for a 16 ounce package of CERTIFIED ORGANIC In-shell & Roasted Ballpark Style Peanuts?
Yes [To Q 9]
No [To Q 10]

Q 9. How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage more than $1.25. $ _____ or ____ % more

Q 10. With this knowledge of the definition, would you be willing to pay more than $2.15 for a 16 oz jar of CERTIFIED ORGANIC, Shelled & Roasted Snack Style Peanuts?
Yes [To Q 11]
No [To Q 12]

Q 11 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage **more than $2.15.** $ _____ or ____ % more

SECTION III: We would next like to ask you about the same peanut products using another attribute.

Q 12 Would you be willing to pay more than $1.25 for a 16 ounce package of LOCALLY GROWN In-shell & Roasted Ballpark Style Peanuts?
Yes [To Q 13]
No [To Q 14]

Q 13 How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage more than $1.25. $ _____ or ____ % more

Q 14 Would you be willing to pay more than $2.15 for a 16 ounce jar of LOCALLY GROWN, Shelled and Roasted Snack Style Peanuts?
Yes [To Q 15]
No [To Q 16]

Q 15 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage **more than $2.15.** $ _____ or ____ % more

Q 16. What does the label LOCALLY GROWN mean to you?

_____

Q 17. For these next questions, think about if the label "LOCALLY GROWN" meant "grown within the state of Georgia" and the product was certified to be grown in the state by the Georgia Department of Agriculture.

With this knowledge, would you be willing to pay more than $1.25 for a 16 ounce package of LOCALLY GROWN, In-shell & Roasted Ballpark Style Peanuts?
Yes [to Q 18]
No [To Q 19]

Q 18 How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage more than $1.25. $ _____ or ____ % more

Q 19 With this knowledge, would you be willing to pay more than $2.15 for a 16 ounce jar of LOCALLY GROWN, Shelled and Roasted Snack Style Peanuts?
Yes [To Q 20]
No [Skip to Q 21]

Q 20 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage **more than $2.15.** $ _____ or ____ % more

SECTION IV:
We would now like to ask you about the same products again, using another attribute.

Q 21 Would you be willing to pay more than $1.25 for a 16 ounce package of In-shell & Roasted Ballpark Style Peanuts, if it was produced and processed by a SMALL FARMER?

1. Yes [To Q 22]

2. No [To Q 23]

Q 22 How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage more than $1.25. $ _____ or ____ % more

Q 23 Would you be willing to pay more than $2.15 for a 16 ounce jar of Shelled and Roasted Snack Style Peanuts, if it was produced and processed by a SMALL FARMER?
Yes [To Q 24]
No [Skip To Q 25]

Q 24 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage **more than $2.15.** $ _____ or ____ % more

Q 25 What does the label "produced and processed by a SMALL FARMER" mean to you?

_____

For these next questions, think about a SMALL FARMER is defined as having gross sales of less than $250,000 per year and the owner/operator received his or her primary income from farming.

Q 26 With this knowledge, would you be willing to pay more than $1.25 for a 16 ounce package of In-shell & Roasted Ballpark Style Peanuts, if it was certified to be produced and processed by a SMALL FARMER?

1. Yes [To Q 26]

2. No [To Q 27]

Q 27 How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage more than $1.25. $ _____ or ____ % more

Q 28 With this knowledge, would you be willing to pay more for a 16 ounce jar of Shelled and Roasted Snack Style Peanuts, if it was certified to be produced and processed by a SMALL FARMER?
Yes [To Q 27]
No [Skip To Q 29]

Q 29 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage **more than $2.15.** $ _____ or ____ % more

SECTION V: The next section we will ask you to think about combining these three attributes.

Q 30 Would you pay more than $1.25 for a 16 ounce package of CERTIFIED ORGANIC AND LOCALLY GROWN, In-shell & Roasted Ballpark Style Peanuts?
Yes [To 31]
No [To Q 32]

Q 31 How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage more than $1.25. $ _____ or ____ % more

Q 32 Would you pay more than $2.15 for a 16 ounce jar of CERTIFIED ORGANIC AND LOCALLY GROWN, Shelled and Roasted Snack Style Peanuts?

Yes [To Q 33]
No [To Q 34]

Q 33 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage **more than $2.15.** $ _____ or ____ % more

Q 34 Would you pay more than $1.25 for a 16 ounce package of CERTIFIED ORGANIC, In-shell & Roasted Ballpark Style Peanuts which were produced and processed by a SMALL FARMER?
Yes [To Q 35]
No [To Q36]

Q 35 How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage more than $1.25. $ _____ or ____ % more

Q36 Would you pay more than $2.15 for a 16 ounce jar of CERTIFIED ORGANIC, Shelled and Roasted Snack Style Peanuts, which were produced and processed by a SMALL FARMER?
Yes [To Q37]
No [To Q38]

Q37 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage **more than $2.15.** $ _____ or ____ % more

Q 38 Would you pay more than $1.25 for a 16 ounce package of LOCALLY GROWN In-shell & Roasted Ballpark Style Peanuts, which were produced and processed by a SMALL FARMER?
Yes [To Q 39]
No [To Q 40]

Q 39 How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage more than $1.25. $ _____ or ____ % more

Q 40 Would you pay more than $2.15 for a 16 ounce jar of LOCALLY GROWN, Shelled and Roasted Snack Style Peanuts which were produced and processed by a SMALL FARMER?
Yes [To Q 41]
No [To Q 42]

Q 41 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage **more than $2.15.** $ _____ or ____ % more

Q 42 Would you pay more than $1.25 for a 16 ounce package of CERTIFIED ORGANIC AND LOCALLY GROWN, In-shell & Roasted Ballpark Style Peanuts, which were produced and processed by a SMALL FARMER?
Yes [To Q 43]
No [To Either Q 44]

Q 43 How much more than $1.25 would you pay? You can answer in either cents per pound or a percentage more than $1.25. $ _____ or ____ % more

Q 44 Would you pay more than $2.15 for a 16 ounce jar of CERTIFIED ORGANIC AND LOCALLY GROWN, Shelled and Roasted, Either Salted or Unsalted, Peanuts, also known as Snack Style Peanuts, which were produced and processed by a SMALL FARMER?
Yes [To Q 45]
No [To Q 46]

Q 45 How much more than $2.15 would you pay? You can answer in either cents per pound or a percentage **more than $2.15.** $ _____ or ____ % more

Thank you for your patience. You are almost finished. Please answer just a few more questions about you, so we can compare your answers with others.

Q 46. What is your Gender?
1. Male
2. Female

Q 47 What is the highest level of education you have completed?
1. less High School Diploma/GED
2. High School Diploma/GED
3. Some college or Technical/Associate degree
4. Bachelors Degree
5. Some graduate work
6. Advanced Degree, Professional Degree (M.S., PhD, etc)

Q 48 What is your age range?
1. 18 -20
2. 21 – 30
3. 31- 40
4. 41-50
5. 51-60
6. 61-70
7. 70 +

Q 49 What was your total household income (before taxes) last year? We don't need an exact figure, just an approximate category, so please check your total family income for last year.
14,999 or less
$15,000 -- $24,999
$25,000 - $34,999
$35,000 - $49,999
$50,000 - $74,999
$75,000 or more
Don’t know/ Do not want to answer

THAT’S ALL THE QUESTIONS. THE INFORMATION GAINED FROM THIS SURVEY WILL BE PRESENTED WITH NO IDENTIFYING INFORMATION. THANK YOU FOR PARTICIPATING!

APPENDIX 2 -- Consumer Survey Version 2. Product combination: Shelled & Roasted Snack Style Peanuts and Peanut Butter

ORGANIC PEANUT PRODUCT CONSUMPTION SURVEY

Hello, my name is [NAME], and I'm calling from the University of Georgia in Athens. The Survey Research Center is assisting a graduate student at the University in conducting a short survey today about peanut products, and I'd like to interview a member of your household. Would you be willing to help us out for a few minutes this evening?

[INTERVIEWER: THE SURVEY SHOULD LAST ABOUT 12 MINUTES]

In order for the results of the survey to be representative of the state's population, I need to speak to the adult aged 18 or older in the household who last celebrated a birthday. Would that be you?

1. Yes [CONTINUE]
2. No [WHEN WOULD BE A GOOD TIME TO REACH THAT PERSON?]

   [REINTRODUCE YOURSELF AND THE STUDY OR ARRANGE TIME FOR CALL-BACK AND GET THE RESPONDENT'S FIRST NAME]

Great! Before I start, I need to let you know that any INDIVIDUALLY-IDENTIFIABLE information about you will be kept strictly confidential and your participation is completely voluntary. You can skip any questions you don't want to answer, and YOU MAY REFUSE TO PARTICIPATE OR DISCONTINUE PARTICIPATION AT ANY TIME WITHOUT PENALTY OR LOSS OF BENEFITS TO WHICH YOU ARE OTHERWISE ENTITLED. No risk or discomfort is anticipated from participation in this study, and you will benefit by expressing your opinions on issues important to Georgians. Also, my supervisor may listen to part of the interview for quality control purposes.

THIS SURVEY IS ABOUT PEANUT PRODUCT CONSUMPTION AND WILL GIVE FARMERS AND PEANUT PROCESSORS INSIGHT TO ABOUT A POTENTAIL MARKET FOR NEW PEANUT PRODUCTS. QUESTIONS ABOUT THE RESEARCH CAN BE DIRECTED TO THE RESEARCHERS (DR. JOHN MCKISSICK, DR. NATHAN SMITH, AND WARD BLACK) AND THAT CONTACT INFORMATION CAN BE PROVIDED UPON REQUEST.

ALSO, YOUR RIGHTS AS A RESEARCH PARTICIPANT CAN BE ADDRESSED TO THE UGA IRB AND THAT CONTACT INFORMATION CAN BE PROVIDED UPON REQUEST.

SECTION I: General Questions

Q1. Do you consume peanuts or peanut products?

Yes [To Q2]
No [Interview Over]
Don't Know
Refused

Q2. What type of peanut products have you consumed over the past year? Please answer all that apply.

In-shell & Roasted Ballpark Style Peanuts
Peanut Butter
Shelled & Roasted Snack Style Peanuts
Boiled Peanuts
Peanut Oil
Other. Please list: _____
Don't Know
Refused

SECTION II:

Q 3. This next series of questions will ask you about your willingness to pay for a specific attribute about peanut products.

For the first product, please think about a 16 ounce jar of Shelled and Roasted Snack Style Peanuts. The average price for a jar of this size in a typical grocery store is $2.15.

Would you pay more than $2.15 for a 16 ounce jar of CERTIFIED ORGANIC, Shelled and Roasted, Snack Style Peanuts?

1. Yes [To Q 4]
2. No [Skip to Q 5]

Q 4-- How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage more than $2.15. $ _____ or ____ % more

Q 5 -- For the second product, please think about a 16 ounce jar of Peanut Butter. A typical retail price for a 16 ounce jar is $1.55.

Would you pay more than $1.55 for a 16 ounce jar of CERTIFIED ORGANIC Peanut Butter?

1. Yes [To Q 6]
2. No [Skip to Q 7]

Q 6-- How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

Q. 7 – What does that label CERTIFIED ORGANIC mean to you?

_____

Q. 8-- The term "certified organic" indicates that agricultural products have been grown and processed according to USDA's national organic standards and certified by USDA-accredited State and private certification organizations. In short, “certified organic” standards only allow the application of organically approved substances for disease, pest, and weed control and for fertilizer use. Finally, these regulations neither limit the type of producer that can grow “certified organic” crops nor the location where the product was grown.

With this knowledge of the definition, would you pay more than $2.15 for a 16 ounce jar of CERTIFIED ORGANIC, Shelled and Roasted, Snack Style Peanuts?

1. Yes [To Q 9]
2. No [Skip to Q 10]

Q 9. How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage more than $2.15. $ _____ or ____ % more

Q 10. With this knowledge, would you pay more than $1.55 for a 16 ounce jar of CERTIFIED ORGANIC Peanut Butter?

1. Yes [To Q 11]
2. No [Skip to Q 12]

Q 11 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

SECTION III: We would next like to ask you about the same peanut products using another attribute.

Q 12 Would you be willing to pay more than $2.15 for a 16 ounce jar of LOCALLY GROWN, Shelled and Roasted Snack Style Peanuts?

1. Yes [To Q 13]
2. No [To Q 14]

Q 13 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage more than $2.15. $ _____ or ____ % more

Q 14 Would you be willing to pay more than $1.55 for a 16 ounce jar of LOCALLY GROWN Peanut Butter?

1. Yes [To Q 15]
2. No [To Q 16]

Q 15 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

Q 16. What does that label LOCALLY GROWN mean to you?

_____

Q 17. For these next questions, think about if the label "LOCALLY GROWN" meant "grown within the state of Georgia" and the product was certified to be grown in the state by the Georgia Department of Agriculture.

With this knowledge of the definition, would you be willing to pay more than $2.15 for a 16 ounce jar of LOCALLY GROWN, Shelled and Roasted Snack Style Peanuts?

1. Yes [to Q 18]
2. No [To Q 19]

Q 18 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage more than $2.15. $ _____ or ____ % more

Q 19 With this knowledge of the definition, would you be willing to pay more than $1.55 for a 16 ounce jar of LOCALLY GROWN Peanut Butter?

1. Yes [To Q 20]
2. No [Skip to Q 21]

Q 20 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

SECTION IV:

We would now like to ask you about the same products again, another attribute.

Q 21 Would you be willing to pay more than $2.15 for a 16 ounce jar of Shelled and Roasted Snack Style Peanuts if it was produced and processed by a SMALL FARMER?

3. Yes [To Q 22]
4. No [To Q 23]

Q 22 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage more than $2.15. $ _____ or ____ % more

Q 23 Would you be willing to pay more than $1.55 for a 16 ounce jar of Peanut Butter if it was produced and processed by a SMALL FARMER?

1. Yes [To Q 24]
2. No [Skip To Q 25]

Q 24 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

Q 25 What does the label "produced and processed by a SMALL FARMER", mean to you?

_____

For these next questions, think about if a SMALL FARMER is defined as having gross sales of less than $250,000 per year and the owner/operator received his or her primary income from farming.

Q 26 With this knowledge, would you be willing to pay more than $2.15 for a 16 ounce jar of Shelled and Roasted Snack Style Peanuts if it was certified to be produced and processed by a SMALL FARMER?

3. Yes [To Q 26]
4. No [To Q 27]

Q 27 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage more than $2.15. $ _____ or ____ % more

Q 28 With this knowledge, would you be willing to pay more than $1.55 for a 16 ounce jar of Peanut Butter if it was certified to be produced and processed by a SMALL FARMER?

1. Yes [To Q 27]
2. No [Skip To Q 29]

Q 29 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

SECTION V: The next section we will ask you to think about combining these three attributes.

Q 30 Would you pay more than $2.15 for a 16 ounce jar of CERTIFIED ORGANIC AND LOCALLY GROWN, Shelled and Roasted Snack Style Peanuts?

1. Yes [To 31]
2. No [To Q 32]

Q 31 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage more than $2.15. $ _____ or ____ % more

Q 32 Would you pay more than $1.55 for a 16 ounce jar of CERTIFIED ORGANIC AND LOCALLY GROWN Peanut Butter?

1. Yes [To Q 33]
2. No [To Q 34]

Q 33 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

Q 34 Would you pay more than $2.15 for a 16 ounce jar of CERTIFIED ORGANIC, Shelled and Roasted Snack Style Peanuts, which were produced and processed by a SMALL FARMER?

1. Yes [To Q 35]
2. No [To Q36]

Q 35 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage more than $2.15. $ _____ or ____ % more

Q36 Would you pay more than $1.55 for a 16 ounce jar of CERTIFIED ORGANIC Peanut Butter which was produced and processed by a SMALL FARMER?

1. Yes [To Q37]
2. No [To Q38]

Q37 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

Q 38 Would you pay more than $2.15 for a 16 ounce jar of LOCALLY GROWN Shelled and Roasted Snack Style Peanuts, which were produced and processed by a SMALL FARMER?

1. Yes [To Q 39]
2. No [To Q 40]

Q 39 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage more than $2.15. $ _____ or ____ % more

Q 40 Would you pay more than $1.55 for a 16 ounce jar of LOCALLY GROWN Peanut Butter which was produced and processed by a SMALL FARMER?

1. Yes [To Q 41]
2. No [To Q 42]

Q 41 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

Q 42 Would you pay more than $2.15 for a 16 ounce jar of CERTIFIED ORGANIC AND LOCALLY GROWN, Shelled and Roasted Snack Style Peanuts which were produced and processed by a SMALL FARMER?

1. Yes [To Q 43]
2. No [To Either Q 44]

Q 43 How much more than $2.15 would you pay? You can answer in either a dollar amount or a percentage more than $2.15. $ _____ or ____ % more

Q 44 Would you pay more than $1.55 for a 16 ounce jar of CERTIFIED ORGANIC AND LOCALLY GROWN Peanut Butter which was produced and processed by a SMALL FARMER?

1. Yes [To Q 45]
2. No [To Q 46]

Q 45 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

Thank you for your patience. You are almost finished. Please answer just a few more questions about you, so we can compare your answers with others.

Q 46. What is your Gender?

1. Male
2. Female

Q 47 What is the highest level of education you have completed?

1. less High School Diploma/GED
2. High School Diploma/GED
3. Some college or Technical/Associate degree
4. Bachelors Degree
5. Some graduate work
6. Advanced Degree, Professional Degree (M.S., PhD, etc)

Q 48 What is your age range?

1. 18 -20
2. 21 – 30
3. 31- 40
4. 41-50
5. 51-60
6. 61-70
7. 70 +

Q 49 What was your total household income (before taxes) last year? We don't need an exact figure, just an approximate category, so please check your total family income for last year.

1. $14,999 or less
2. $15,000 -- $24,999
3. $25,000 - $34,999
4. $35,000 - $49,999
5. $50,000 - $74,999
6. $75,000 or more
7. Don’t know/ Do not want to answer

THAT’S ALL THE QUESTIONS. THE INFORMATION GAINED FROM THIS SURVEY WILL BE PRESENTED WITH NO IDENTIFYING INFORMATION. THANK YOU FOR PARTICIPATING!

APPENDIX 3 – CONSUMER SURVEY VERSION 3: Product combination: Inshell & Roasted Ballpark Style Peanuts and Peanut Butter

ORGANIC PEANUT PRODUCT CONSUMPTION SURVEY

Hello, my name is [NAME], and I'm calling from the University of Georgia in Athens. The Survey Research Center is assisting a graduate student at the University in conducting a short survey today about peanut products, and I'd like to interview a member of your household. Would you be willing to help us out for a few minutes this evening?

[INTERVIEWER: THE SURVEY SHOULD LAST ABOUT 12 MINUTES]

In order for the results of the survey to be representative of the state's population, I need to speak to the adult aged 18 or older in the household who last celebrated a birthday. Would that be you?

1. Yes [CONTINUE]
2. No [WHEN WOULD BE A GOOD TIME TO REACH THAT PERSON?]

   [REINTRODUCE YOURSELF AND THE STUDY OR ARRANGE TIME FOR CALL-BACK AND GET THE RESPONDENT'S FIRST NAME]

Great! Before I start, I need to let you know that any INDIVIDUALLY-IDENTIFIABLE information about you will be kept strictly confidential and your participation is completely voluntary. You can skip any questions you don't want to answer, and YOU MAY REFUSE TO PARTICIPATE OR DISCONTINUE PARTICIPATION AT ANY TIME WITHOUT PENALTY OR LOSS OF BENEFITS TO WHICH YOU ARE OTHERWISE ENTITLED. No risk or discomfort is anticipated from participation in this study, and you will benefit by expressing your opinions on issues important to Georgians. Also, my supervisor may listen to part of the interview for quality control purposes.

THIS SURVEY IS ABOUT PEANUT PRODUCT CONSUMPTION AND WILL GIVE FARMERS AND PEANUT PROCESSORS INSIGHT TO ABOUT A POTENTAIL MARKET FOR NEW PEANUT PRODUCTS. QUESTIONS ABOUT THE RESEARCH CAN BE DIRECTED TO THE RESEARCHERS (DR. JOHN MCKISSICK, DR. NATHAN SMITH, AND WARD BLACK) AND THAT CONTACT INFORMATION CAN BE PROVIDED UPON REQUEST.

ALSO, YOUR RIGHTS AS A RESEARCH PARTICIPANT CAN BE ADDRESSED TO THE UGA IRB AND THAT CONTACT INFORMATION CAN BE PROVIDED UPON REQUEST.

SECTION I: General Questions

Q1. Do you consume peanuts or peanut products?

Yes [To Q2]
No [Interview Over]
Don't Know
Refused

Q2. What type of peanut products have you consumed over the past year? Please answer all that apply.

In-shell & Roasted Ballpark Style Peanuts
Peanut Butter
Shelled & Roasted Snack Style Peanuts
Boiled Peanuts
Peanut Oil
Other. Please list: _____
Don't Know
Refused

SECTION II:

Q 3. This next series of questions will ask you about your willingness to pay for a specific attribute about peanut products.

For the first product, please think about a 16 ounce package of In-shell & Roasted Ballpark Style Peanuts. The average price for a package of this size in a typical grocery store is $1.25.

Would you be willing to pay more for a 16 ounce package of CERTIFIED ORGANIC In-shell & Roasted Ballpark Style Peanuts?

3. Yes [To Q 4]
4. No [Skip to Q 5]

Q 4-- How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage more than $1.25. $ _____ or ____ % more

Q 5 -- For the second product, think about a 16 ounce jar of Peanut Butter. A typical retail price for a 16 ounce jar is $1.55.

Would you pay more than $1.55 for a 16 ounce jar of CERTIFIED ORGANIC Peanut Butter?

3. Yes [To Q 6]
4. No [Skip to Q 7]

Q 6-- How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

Q. 7 – What does the label CERTIFIED ORGANIC mean to you?

_____

Q. 8-- The term "certified organic" indicates that agricultural products have been grown and processed according to USDA's national organic standards and certified by USDA-accredited State and private certification organizations. In short, “certified organic” standards only allow the application of organically approved substances for disease, pest, and weed control and for fertilizer use. Finally, these regulations neither limit the type of producer that can grow “certified organic” crops nor the location where the product was grown.

With this knowledge of this definition, would you be willing to pay more than $1.25 for a 16 ounce package of CERTIFIED ORGANIC In-shell & Roasted Ballpark Style Peanuts?

3. Yes [To Q 9]
4. No [Skip to Q 10]

Q 9. How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage more than $1.25. $ _____ or ____ % more

Q 10. With this knowledge of this definition, would you pay more than $1.55 for a 16 ounce jar of CERTIFIED ORGANIC Peanut Butter?

3. Yes [To Q 11]
4. No [Skip to Q 12]

Q 11 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

SECTION III: We would next like to ask you about the same peanut products using another attribute.

Q 12 Would you be willing to pay more than $1.25 for a 16 ounce package of LOCALLY GROWN, In-shell & Roasted Ballpark Style Peanuts?

3. Yes [To Q 13]
4. No [To Q 14]

Q 13 How much more than $1.25 would you pay? You can answer in either cents per pound or a percentage more than $1.25. $ _____ or ____ % more

Q 14 Would you be willing to pay more than $1.55 for a 16 ounce jar of LOCALLY GROWN Peanut Butter?

3. Yes [To Q 15]
4. No [To Q 16]

Q 15 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

Q 16. What does the label LOCALLY GROWN mean to you?

_____

Q 17. For these next questions, think about if the label "LOCALLY GROWN" meant "grown within the state of Georgia" and the product was certified to be grown in the state by the Georgia Department of Agriculture.

With this knowledge, would you be willing to pay more than $1.25 for a 16 ounce package of LOCALLY GROWN In-shell & Roasted Ballpark Style Peanuts?

3. Yes [to Q 18]
4. No [To Q 19]

Q 18 How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage more than $1.25. $ _____ or ____ % more

Q 19 With this knowledge, would you be willing to pay more than $1.55 for a 16 ounce jar of LOCALLY GROWN Peanut Butter?

3. Yes [To Q 20]
4. No [Skip to Q 21]

Q 20 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

SECTION IV:

We would now like to ask you about the same products again, using another attribute.

Q 21 Would you be willing to pay more than $1.25 for a 16 ounce package of In-shell & Roasted Ballpark Style Peanuts if it was produced and processed by a SMALL FARMER?

5. Yes [To Q 22]
6. No [To Q 23]

Q 22 How much more than $1.25 would you pay? You can answer in either cents per pound or a percentage more than $1.25. $ _____ or ____ % more

Q 23 Would you be willing to pay more than $1.55 for a 16 ounce jar of Peanut Butter if it was produced and processed by a SMALL FARMER?

3. Yes [To Q 24]
4. No [Skip To Q 25]

Q 24 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

Q 25 What does the label "produced and processed by a SMALL FARMER", mean to you?

_____

For these next questions, think about if a SMALL FARMER is defined as having gross sales of less than $250,000 per year and the owner/operator received his or her primary income from farming.

Q 26 With this knowledge, would you be willing to pay more than $1.25 for package In-shell & Roasted Ballpark Style Peanuts if it was certified to be produced and processed by a SMALL FARMER?

5. Yes [To Q 26]
6. No [To Q 27]

Q 27 How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage **more than $1.25.** $ _____ or ____ % more

Q 28 With this knowledge, would you be willing to pay more than $1.55 for a 16 ounce jar of Peanut Butter if it was certified to be produced and processed by a SMALL FARMER?

3. Yes [To Q 27]
4. No [Skip To Q 29]

Q 29 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

SECTION V: The next section we will ask you to think about combining these three attributes.

Q 30 Would you pay more than $1.25 for a 16 ounce package of CERTIFIED ORGANIC AND LOCALLY GROWN, In-shell & Roasted Ballpark Style Peanuts?

3. Yes [To 31]
4. No [To Q 32]

Q 31 How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage more than $1.25. $ _____ or ____ % more

Q 32 Would you pay more than $1.55 for a 16 ounce jar of CERTIFIED ORGANIC AND LOCALLY GROWN Peanut Butter?

3. Yes [To Q 33]
4. No [To Q 34]

Q 33 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

Q 34 Would you pay more than $1.25 for a 16 ounce package of CERTIFIED ORGANIC, In-shell & Roasted Ballpark Style Peanuts, which were produced and processed by a SMALL FARMER?

3. Yes [To Q 35]
4. No [To Q36]

Q 35 How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage more than $1.25. $ _____ or ____ % more

Q36 Would you pay more than $1.55 for a 16 ounce jar of CERTIFIED ORGANIC Peanut Butter which was produced and processed by a SMALL FARMER?

3. Yes [To Q37]
4. No [To Q38]

Q37 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

Q 38 Would you pay more than $1.25 for a 16 ounce package of LOCALLY GROWN In-shell & Roasted Ballpark Style Peanuts which were produced and processed by a SMALL FARMER?

3. Yes [To Q 39]
4. No [To Q 40]

Q 39 How much more than $1.25 would you pay? You can answer in either cents per pound or a percentage more than $1.25. $ _____ or ____ % more

Q 40 Would you pay more than $1.55 for a 16 ounce jar of LOCALLY GROWN Peanut Butter which was produced and processed by a SMALL FARMER?

3. Yes [To Q 41]
4. No [To Q 42]

Q 41 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

Q 42 Would you pay more than $1.25 for a 16 ounce package of CERTIFIED ORGANIC AND LOCALLY GROWN, In-shell & Roasted Ballpark Style Peanuts, which were produced and processed by a SMALL FARMER?

3. Yes [To Q 43]
4. No [To Either Q 44]

Q 43 How much more than $1.25 would you pay? You can answer in either a dollar amount or a percentage more than $1.25. $ _____ or ____ % more

Q 44 Would you pay more than $1.55 for a 16 ounce jar of CERTIFIED ORGANIC AND LOCALLY GROWN Peanut Butter which was produced and processed by a SMALL FARMER?

3. Yes [To Q 45]
4. No [To Q 46]

Q 45 How much more than $1.55 would you pay? You can answer in either a dollar amount or a percentage **more than $1.55.** $ _____ or ____ % more

Thank you for your patience. You are almost finished. Please answer just a few more questions about you, so we can compare your answers with others.

Q 46. What is your Gender?

1. Male
2. Female

Q 47 What is the highest level of education you have completed?

1. less High School Diploma/GED
2. High School Diploma/GED
3. Some college or Technical/Associate degree
4. Bachelors Degree
5. Some graduate work
6. Advanced Degree, Professional Degree (M.S., PhD, etc)

Q 48 What is your age range?

1. 18 -20
2. 21 – 30
3. 31- 40
4. 41-50
5. 51-60
6. 61-70
7. 70 +

Q 49 What was your total household income (before taxes) last year? We don't need an exact figure, just an approximate category, so please check your total family income for last year.

8. $14,999 or less
9. $15,000 -- $24,999
10. $25,000 - $34,999
11. $35,000 - $49,999
12. $50,000 - $74,999
13. $75,000 or more
14. Don’t know/ Do not want to answer

THAT’S ALL THE QUESTIONS. THE INFORMATION GAINED FROM THIS SURVEY WILL BE PRESENTED WITH NO IDENTIFYING INFORMATION. THANK YOU FOR PARTICIPATING!

APPENDIX 4

Flow Chart Diagram of Possible Processing Steps in Small, On-Farm Processing Facility for Peanuts

I. INCOMING QUALITY STANDARDS INSPECTION

Farm carries wagons to local buying point for sampling
Equipment Cost: 12 Wagons ($6,375 each, $75,735 total)
Amount in Beginning: 80,120 lbs
Amount at End: 80,000 (0.15 % Loss)
Applicable Regulations:
1. Peanuts must meet federal incoming quality standards (7CFR § 996.30) for moisture (less than 12% prior to inspection) & foreign material (less than10.49% prior to storage) & must meet minimum aflatoxin levels
2. Organic peanuts must not intermingle with conventionally grown peanuts at buying point. Handling plan must be approved by USDA NOP inspector (§ 205.201, 205.270-272, 205.400-403).

↓

II. DE-STONING

Removes rocks, other large foreign material from farmers stock
100% rate: 2000 lbs/hr **70% rate**: 1400 lbs/hr
Equipment Cost: De-stoning Machine ($3,650), One Wagon ($6,375)
Amount in Beginning: 80,000 lbs
Amount at End: 79,880 lbs (0.15 % Loss) **Time Required:** 40 hours
Applicable Regulations:
"No handler or importer shall receive or acquire farmers stock peanuts … containing more than 10.49 percent foreign material "(7CFR § 996.30 Part c).

↓

III. DRYING

Farmers stock peanuts dried on farm to moisture level of 7.5-8%
100% rate: 5 hrs/wagon **70% rate:** 8 hours/wagon
Equipment Cost:, 4 Dryers ($2,650 each, $10,600 total)
Amount in Beginning: 79,880 lbs
Amount at End: 78,682 (1.5% Loss)
Applicable Regulations:
"Peanuts must be dried to 10.49 percent moisture or less prior to storing and milling [shelling]" (7 CFR § 996.30 Part b).

↓

IV. STORAGE

Farmer's stock stored in wagons
Rate: 80,000 lbs stored in 10 wagons
Equipment Cost: Uses Wagons
Building Cost: $36,000 for 90x20 storage building
Amount in Beginning*: 78,682
Amount at End: 78,582 lbs (100 Total Lbs. Loss)
Applicable Regulations: No applicable regulations
Applicable BMP's: Workers – Healthy and Wearing Protective Clothing; Building Exterior – void of any environment to harbor pests or contaminants; Building Operations – cleaning procedures planned and followed, sanitation steps established, food products and cleaning products stored in appropriate place

V. SHELLING

-Applies to Shelled products only. Removes hulls from kernels

100% Rate: 800 lbs/hour **70% Rate:** 560 lbs/hour **Time Required:** 21.05 hours

Equipment Cost: Shelling Machine ($2,120)

Building Cost: $57,600 for Building for Shelling, Sorting, & OQS Inspection

Amount in Beginning*: 78,582

Amount of Shrinkage: 35% Loss

Applicable Regulations: Facility must follow GA Retail Food Establishment regulations

Shelled/Roasted/Blanched	**Shelled/Oil Roasted/Flavored**	**Inshell/Roasted**
Amount after Shelling: 22,985	Amount after Shelling: 15,323	Amount after Storage: 19,645

VI. SORTING

Shelled peanuts are sorted to remove damage, inshell peanuts sorted to remove hollow pods

100% Rate: 285 lbs hr **70% Rate**: 200 lbs hr

Time Required: Shelled: 12.77 hours, Inshell: 6.55

Equipment Cost: 3 Tables ($445 per, $1335 total)

Amount of Shrinkage: 2% Loss

Applicable Regulations: Facility must follow GA Retail Food Establishment regulations

Applicable BMP's: Workers – Healthy and Wearing Protective Clothing; Building Exterior – void of any environment to harbor pests or contaminants; Building Operations – cleaning procedures planned and followed, sanitation steps established, food products and cleaning products stored in appropriate place

Shelled/Roasted/Blanched	**Shelled/Oil Roasted/Flavored**	**Inshell/Roasted**
Amount after Sorting: 22,640	Amount after Sorting: 15,094	Amount after Sorting: 19,351

VII. OUTGOING QUALITY STANDARDS INSPECTION

FSIS travels to the farm to probe samples for outgoing quality standards.

Time Required: 5 days for FSIS sampling and JLA inspection

Equipment Cost: 5 Bulk Bags at $8.00 each($40 total), Pallets at $4.50 a piece, Lift Cart at $299

Amount of Shrinkage: 160 lbs less per lot. At 10 lots is 1600 lbs total

Applicable Regulations:

1. Facility must follow GA Retail Food Establishment regulations
2. Shelled - Must not have more than: 1.5 % Damaged Kernels, 0.2%, Foreign Material, and 9% Moisture Content; Inshell Must not have more than: 2% Damaged Kernels, 0.50 % foreign material, 10% moisture (7 CFR § 996.31)

Shelled/Roasted/Blanched	**Shelled/Oil Roasted/Flavored**	**Inshell/Roasted**
Amount after OQS: 21,920	Amount after OQS: 14,614	Amount after OQS: 18,951

*** Assuming 45/30/25 Product Mix between SRB, SOF, and IR products**

**** Steps with box in bold border assumed conducted in a certified food grade facility**

VIII. ROASTING

Peanuts are roasted at 350 degrees Fahrenheit, 15-20 min for shelled, longer for inshell product
100% Rate: 600 lbs/hr (shelled), 450 lbs/hr (inshelled)
70 % Rate: 420 lbs/hr (shelled), 315 lbs/hr (inshelled)
Time Required: SRB: 5.22 hours, SOF: 6.96 hours, IR: 6.02 hours
Equipment Cost: Roasting Machine ($3,990)
Amount of Shrinkage: 7% Loss
Applicable Regulations: Facility must follow GA Retail Food Establishment regulations
Applicable BMP's: Workers – Healthy and Wearing Protective Clothing;
Building Exterior – void of any environment to harbor pests or contaminants;
Building Operations – cleaning procedures planned and followed, sanitation steps established, food products and cleaning products stored in appropriate place

Shelled/Roasted/Blanched
Amount after Roasting:
21,044

Shelled/Oil Roasted/Flavored
Amount after Roasting:
14,175

Inshell/Roasted
Amount after Roasting:
18,193

IX. BLANCHING

Removal of reddish-brown skins, for shelled product only
100% Rate: 500 lbs/hr **70% Rate:** 350 lbs/hr
Time Required: 12.03 hours
Equipment Cost: Blanching Machine ($3,560)
Amount of Loss: 4% Loss
Applicable Regulations: Facility must follow GA Retail Food Establishment regulations
Applicable BMP's: Workers – Healthy and Wearing Protective Clothing; Building Exterior – void of any environment to harbor pests or contaminants; Building Operations – cleaning procedures planned and followed, sanitation steps established, food products and cleaning products stored in appropriate place

Shelled/Roasted/Blanched
Amount after Blanching:
20,202

X. FINAL INSPECTION

Samples sent to JLA on a bi-monthly basis during operating months
Rate: 2 Lb. sample every 500 lbs. Testing must be done 2 times each month during operation
Equipment Cost: None Required
Time Required: 3 days
Amount of Loss: 0.5%
Applicable Regulations:

1. Facility must follow GA Retail Food Establishment regulations
2. Testing required by GA State Law 40-7-18-.06

Applicable BMP's: Workers – Healthy and Wearing Protective Clothing; Building Exterior – void of any environment to harbor pests or contaminants; Building Operations – cleaning procedures planned and followed, sanitation steps established, food products and cleaning products stored in appropriate place

Shelled/Roasted/Blanched
Amount after Inspection:
20,182

Shelled/Roasted/Flavored
Amount after Inspection:
14,168

Inshell/Roasted
Amount after Inspection:
18,184

PACKAGING

Peanuts vacuum sealed in 10 lb. bags, then packaged 3 bags to a box
100% Rate:180 lbs./hr (SRB, Inshell/Roasted) 120 lbs/hr (Shelled/Oil Roasted)
70% Rate: 126 lbs./hr (SRB, Inshell/Roasted) 84 lbs/hr (Shelled/Oil Roasted)
Time Required: SRB: 16.16 hours, SOF: 11.82 hours, IR: 14.55 hours
Equipment Cost: Vacuum Machine ($3,250), Heavy Scales ($1420), Light Scales ($31)
Amount of Loss: None
Applicable Regulations: Facility must follow GA Retail Food Establishment regulations

Shelled/Roasted/Blanched
Final Amount Packaged:
20,182

Shelled/Roasted/Flavored
Final Amount Packaged:
14,168

Inshell/Roasted
Final Amount Packaged:
18,184

APPENDIX 5

Estimated annual budget of producing a shelled, roasted, and blanched (SRB) peanut product in an on-farm peanut processing facility at 45% Allocation from 40 tons of farmers stock peanuts

SHELLED, ROASTED, AND BLANCHED (SRB) PRODUCT			
Amount In Product Mix	**Pounds Allocated from 40 tons of farmers stock**	**Tons**	**Beginning Value (At $420 Per Ton)**
Farmer's Stock	36,000	18.00	$ 7,560.00
From Storage	35,371		
Estimated Total Amount of Processed SRB Product	13,622		

ANNUAL FIXED COSTS

LAND & MISCELLANEOUS FIXED COSTS

	Unit	Price Per Unit	Total Costs	Total Annual Interest Cost of Land @ 6%	Percent of Cost Allocated to SRB Product	Total Per Product Cost	Total Costs/Lb Farm Stock	Total Costs/Lb Final Amount
Land	5 acres	$5,500	$27,500	$1,650	45%	$742.50	$0.02	$0.05

Miscellaneous Fixed Costs	Unit	Price Per Unit	Total Costs	Percent of Cost Allocated to SRB Product	Total Per Product Cost	Total Costs/Lb Farm Stock	Total Costs/Lb Final Amount
Food Safety GMP Audit	1	$1,600	$1,600	45%	$720.00	$0.02	$0.05
Organic Audit	1	$1,700	$1,700	45%	$765.00	$0.02	$0.06
HAACP Training & Plan Approval	1	$2,000	$2,000	45%	$900.00	$0.03	$0.07
Subtotal Misc. Costs			$5,300		$2,385.00	$0.07	$0.18
				Total Costs	**Total Annual Fixed Cost to SRB Product**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amt.**
SUBTOTAL ANNUAL LAND & MISC FIXED COST				**$32,800**	**$3,127.50**	**$0.09**	**$0.23**

BUILDING COSTS													
Item	**Unit**	**Price Per Unit**	**Percent of Cost to SRB Product**	**Total Costs**	**Total Cost for SRB Product**	**Econ Life**	**Avg Invest-ment**	**Annual Depr.**	**Annual Interest Costs**	**Insrce & Tax**	**Total Annual Fixed Cost**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
Storage	1	$36,000	45%	$36,000	$16,200	40	$8,100	$405	$486.00	$194	$1,085	$0.03	$0.08
Shelling	1	$57,600	45%	$57,600	$25,920	40	$12,960	$648	$777.60	$311	$1,737	$0.05	$0.13
Roasting, Blanching, Packaging	1	$25,740	45%	$25,740	$11,583	40	$5,792	$289.58	$347.49	$139	$776	$0.02	$0.06
SUBTOTAL BUILDING COSTS				**$119,340**	**$53,703**		**$26,852**	**$1,343**	**$1,611**	**$644**	**$3,598**	**$0.10**	**$0.26**

EQUIPMENT COSTS													
Item	**Unit**	**Cost Per Unit**	**Total Costs**	**Percent of Cost to SRB Product [14]**	**Total Cost For SRB Product**	**Econ. Life**	**Annual Depr.**	**Avg Invest-ment**	**Annual Interest Cost**	**Insrce & Tax**	**Total Annual Fixed Cost**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
Storage													
De-stoning Machine	1	$3,650	$3,650	45%	$1,643	25	$53	$985.50	$59	$23.65	$135.34	$0.00	$0.01
Air Compressor	1	$260	$260	45%	$117	25	$4	$70.20	$4	$1.68	$9.64	$0.00	$0.00
Conveyer Machine	1	$3,500	$3,500	45%	$1,575	25	$50	$945	$57	$22.68	$129.78	$0.00	$0.01
Wagons	12	$6,375	$76,500	45%	$34,425	25	$1,102	$20,655	$1,239	$495.7	$2,836.6	$0.08	$0.21
Tarps	10	$18	$180	45%	$81	10	$6.5	$48.60	$2.92	$1.17	$10.56	$0.00	$0.00
Wagon Dryers	5	$3,875	$19,375	45%	$8,719	25	$279	$5,232	$314	$125.6	$718.43	$0.02	$0.05
Subtotal			**$103,465**		**$46,559**		**$1,494**	**$27,936**	**$1,676**	**$670.5**	**$3,840.4**	**$0.11**	**$0.28**

[14] The usage rates are estimated by the product mix allocation. If a machine could only be used in the production of two products, then the per product usage rate estimated using a proportion of percentages allocated to the two peanut products.

EQUIPMENT CONT'D													
	Unit	**Cost Per Unit**	**Total Costs**	**Percent of Cost to SRB Product [15]**	**Total Cost For SRB Product**	**Econ. Life**	**Annual Depr.**	**Average Investment**	**Annual Interest Cost**	**Insrce & Tax**	**Total Annual FC**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
Shelling													
Shelling Machine	1	$2,120	$2,120	60%	$1,272	25	$41	$763.20	$45.79	$18.32	$104.81	$0.00	$0.01
Plastic Bins	25	$89	$2,225	45%	$1,001	15	$53	$600.75	$36	$14.42	$103.86	$0.00	$0.01
Tables	3	$445	$1,335	45%	$601	25	$19	$360.45	$21.63	$8.65	$49.50	$0.00	$0.00
Subtotal			**$5,680**		**$2,874**		**$113**	**$1,724**	**$103.46**	**$41.39**	**$258.18**	**$0.01**	**$0.02**
Roasting, Blanching, Packaging													
Tables	3	$445	$1,335	45%	$600.75	25	$19.22	$360.45	$21.63	$8.65	$49.50	$0.00	$0.00
Hand Sink	1	$156	$156	45%	$70.20	25	$2.25	$42.12	$2.53	$1.01	$5.78	$0.00	$0.00
Well water Equipment	1	$5,000	$5,000	45%	$2,250	25	$72	$1,350	$81	$32.40	$185.40	$0.01	$0.01
3-compart. Sink	1	$643	$643	45%	$289.35	25	$9.26	$173.61	$10.42	$4.17	$23.84	$0.00	$0.00
Subtotal RBP			**$7,134**		**$3,210.3**		**$102.73**	**$1,926**	**$115.57**	**$46.23**	**$264.53**	**$0.01**	**$0.02**
Roasting													
Roaster	1	$3,990	$3,990	45%	$1,796	25	$57.46	$1,077	$64.64	$25.86	$147.95	$0.00	$0.01
Cooling Trays	40	$12.76	$510.4	45%	$229.68	10	$45.94	$137.81	$18.37	$3.31	$29.95	$0.00	$0.00
Pan Racks	2	$124	$249	45%	$111.78	15	$22.36	$67.07	$5.96	$1.61	$11.60	$0.00	$0.00
Roasting Subtotal			**$4,749.4**		**$2,136.96**		**$427.39**	**$1,282**	**$81.79**	**$30.77**	**$189.49**	**$0.01**	**$0.01**
Blanching													
Blanching Machine	1	$1,580	$1,580	100%	$1,580	15	$316.00	$948	$84.27	$22.75	$163.90	$0.00	$0.01
Subtotal			**$1,580**		**$1,580**		**$316.00**	**$948**	**$84.27**	**$22.75**	**$163.90**	**$0.00**	**$0.01**

[15] The usage rates are estimated by the product mix allocation. If a machine could only be used in the production of two products, then the per product usage rate is estimated using a proportion of percentages allocated to the two peanut products.

EQUIPMENT CONT'D													
Packaging	**Unit**	**Cost Per Unit**	**Total Costs**	**Percent of Cost to SRB Product [16]**	**Total Cost For SRB Product**	**Econ. Life**	**Annual Depr.**	**Average Investment**	**Annual Interest Cost**	**Insrce & Tax**	**Total Annual FC**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
Heavy Scale	1	$1,419	$1,419	64%	$912.21	25	$182.44	$547.33	$29.19	$13.14	$75.17	$0.00	$0.01
Light Scale	1	$31	$31	0%	$0.00	25	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Vacuum Packager	1	$3,250	$3,250	64%	$2,089.29	15	$417.86	$1,254	$111.43	$30.09	$216.73	$0.01	$0.02
Subtotal			**$4,700**		**$3,001.50**		**$600.30**	**$1,801**	**$140.62**	**$43.22**	**$291.90**	**$0.01**	**$0.02**
All Processes													
Computer	1	$639	$639	45%	$287.55	10	$57.51	$172.53	$172.53	$4.14	$37.50	$0.00	$0.00
Printer	1	$179	$179	45%	$80.55	10	$16.11	$48.33	$48.33	$1.16	$10.50	$0.00	$0.00
Office Desk	1	$230	$230	45%	$103.50	25	$20.70	$62.10	$62.10	$1.49	$8.53	$0.00	$0.00
Subtotal			**$1,048**		**$471.60**		**$94.32**	**$282.9**	**$282.96**	**$6.79**	**$56.53**	**$0.00**	**$0.00**

	Total Equipment Costs	**Total Equipment Cost For SRB Product**	**Annual Depreciation**	**Average Annual Investment**	**Annual Interest Cost**	**Insurance & Tax**	**Total Annual FC**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
SUBTOTAL EQUIPMENT COSTS	**$128,356**	**$59,833.6**	**$11,967**	**$35,900.8**	**$2,154**	**$861.6**	**$5,065**	**$0.14**	**$0.37**

	Total Fixed Costs for SRB Product	**Total Cost/Lb of Farmer's Stock Peanuts (36.000)[17]**	**Total Cost/Lb of Final Amount Produced (13,622 Pounds)[18]**
SUBTOTAL ANNUAL FIXED COSTS	**$11,790.49**	**$0.33**	**$0.87**

[16] The usage rates are estimated by the product mix allocation. If a machine could only be used in the production of two products, then the per product usage rate is estimated using a proportion of percentages allocated to the two peanut products.
[17] Calculated from 45% of initial input of 40 tons (80,000 pounds)
[18] Calculated using estimated shrinkage rates at each processing step

VARIABLE COSTS

UTILITY COSTS

Process	Engineering Rate (Lbs/Hr)	Pounds to Process	Hours Required	Kw Usage	Total KwH Usage	Number of Machines	Annual Total Cost	Total Costs/Lb Farm Stock	Total Costs/Lb Final Amount
Storage									
De-stoning Machine	2,000.00	36,000.00	18.00	4.00	72.00	1	$6.84	$0.00	$0.00
Drying Fans	16,000.00	35,460.00	20.00	9.00	180.00	5	$85.50	$0.00	$0.01
Shelling									
Shelling Machine	800.00	35,370.81	44.21	4	176.85	1	$16.80	$0.00	$0.00
Roasting									
Roasting Machine	1,800.00	14,787.83	8.22	17	139.66	1	$13.27	$0.00	$0.00
Blanching									
Blanching Machine	500.00	14,196.32	28.39	0.74	21.01	1	$2.00	$0.00	$0.00
Packaging									
Vacuum Sealing Machine	1,800.00	13,628.46	7.57	0.75	5.68	1	$0.54	$0.00	$0.00
SUBTOTAL ANNUAL UTILITY COST							**$124.94**	**$0.00**	**$0.01**

LABOR COSTS

Process	Engineering Rate (Lbs/Hr)	Effective Rate[19] (Lbs/hr)	Pounds to Process	Machine Hours[20]	Labor Hours Per Machine Hour	Number of Machines	Total Labor Hours	Annual Total Cost	Total Costs/Lb Farm Stock	Total Costs/Lb Final Amount
Storage										
Destoning	2,000.00	1,400.00	36000	25.71	2.00	51.43	$771.43	$0.02	$0.06	$0.06
Machine Hookup					1.00					
Drying Fans	16,000.00		35460	20.00	1.00	20.00	$300.00	$0.01	$0.02	$0.11
Shelling	800.00	560.00	35371	63.16	2.00	126.32	$1,894.9	$0.05	$0.14	$0.14

[19] Estimated at 70% of the engineering rate
[20] Estimated by dividing amount of pounds to process by machine effective rate

LABOR COST (CONT'D)										
Sorting	N/A	300.00	22991	N/A	N/A	76.64	$1,149.6	$0.03	$0.08	$0.08
Roasting	1,800.00	1,260.00	14788	11.74	3.00	35.21	$528.14	$0.01	$0.04	$0.04
Loading + Unloading					1.00					
Cooling					1.00					
Blanching	500.00	350.00	14196	40.56	2.00	81.12	$1,216.8	$0.03	$0.09	$0.09
Loading + Unloading					1.00					
Packaging	1800	1,260.00	13628	10.82	10.00	108.16	$1,622.4	$0.05	$0.12	$0.12
Subtotal Processing Labor Cost						**498.88**	**$7,483.2**	**$0.21**	**$0.55**	**$0.64**

Facility Cleaning Steps	**Machine Hours**	**Processing Days**	**Cleaning Per Day**	**Total Labor Hours**	**Annual Total Cost**			**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
Storage									
Destoning	25.71	3.21	1.50	4.82	$72.32			$0.00	$0.01
Shelling/Sorting	139.80	17.47	1.50	26.21	$393.18			$0.01	$0.03
Roasting	11.74	1.47	1.50	2.20	$33.01			$0.00	$0.00
Blanching	40.56	5.07	1.50	7.61	$114.08			$0.00	$0.01
Packaging	10.82	1.35	1.50	2.03	$30.42			$0.00	$0.00
Subtotal Facility Labor Cost				42.87	$643.01			$0.02	$0.05
						Annual Labor Hours	**Annual Total Costs**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
SUBTOTAL ANNUAL LABOR COSTS						**541.75**	**$8,126.3**	**$0.23**	**$0.60**

SUPPLY COSTS									
Process	**Pounds to Process**	**Lbs. per Unit**	**Amount Needed**	**Unit Per Order**	**Price Per Order**	**Cost Per Unit**	**Total Cost**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
Storage	0	0	0	0	$0.00	$0.00	$0.00	$0.00	$0.00
Shelling	0	0	0	0	$0.00	$0.00	$0.00	$0.00	$0.00
Roasting	0	0	0	0	$0.00	$0.00	$0.00	$0.00	$0.00
Blanching	0	0	0	0	$0.00	$0.00	$0.00	$0.00	$0.00
Packaging									
Vacuum Bags	13,628	10	1363	100	$48.95	$0.49	$667.11	$0.02	$0.05
Boxes	13,628	30	454	1000	$1,110.00	$1.11	$504.25	$0.01	$0.04
Bag Labels	13,628	10	1363	5000	$595.76	$0.12	$162.39	$0.00	$0.01
Box Labels	13,628	30	454	5000	$651.52	$0.13	$59.19	$0.00	$0.00
Subtotal Packaging							$1,392.95	$0.04	$0.10
SUBTOTAL ANNUAL SUPPLY COSTS							**$1,392.95**	**$0.04**	**$0.10**

FEE COSTS						
Cost	**Units**	**Price Per Unit**	**Percent of Cost**	**Total Fixed Costs**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
Storage	0	$ -	45%	$0.00	$0.00	$0.00
Shelling						
OQS Testing Fees						
FSIS PLI Tags	10	$ 54.00	45%	$243.00	$0.01	$0.02
FSIS Mileage Cost	3500	$ 0.46	45%	$724.50	$0.02	$0.05
FSIS Flat Fee	10	$ 80.00	45%	$360.00	$0.01	$0.03
FSIS Hourly Charge	80	$ 36.00	45%	$1,296.00	$0.04	$0.10
JLA Inspection Fee	10	$ 70.00	45%	$315.00	$0.01	$0.02
Subtotal Shelling				$2,938.50	$0.08	$0.22

Roasting	0	$	-	45%	$0.00	$0.00	$0.00
Blanching	0	$	-	45%	$0.00	$0.00	$0.00
Packaging	-	-		-	-	-	-
JLA Final Inspection Fee	10	$	70.00	45%	$315.00	$0.01	$0.02
SUBTOTAL ANNUAL FEE COSTS					**$3,253.50**	**$0.09**	**$0.24**

MAINTENANCE COST

Equipment	Unit	Amount Per Unit	Total Equipment Costs	Percent of Cost to SRB Product [21]	Total Costs	Annual Main. Cost @ 4%	Total Machine Hours	Per Hour Main. Cost	Total Cost	Total Costs/Lb Farm Stock	Total Costs/Lb Final Amount
Storing											
Destoning Machine	1	$3,650	$3,650.00	45%	$1,642.5	$65.70	18.00	$0.03	$66.29	$0.00	$0.00
Air Compressor	1	$260	$260.00	45%	$117	$4.68			$4.68	$0.00	$0.00
Conveyer Machine	1	$3,500	$3,500.00	45%	$1,575	$63			$63.00	$0.00	$0.00
Wagons	10	$6,375	$63,750.00	45%	$34,425	$1,377			$1,147.50	$0.04	$0.10
Wagon Dryers	5	$3,875	$19,375.00	45%	$8,718.8	$348.75	20.00	$0.02	$349.19	$0.01	$0.03
Subtotal Storing			$90,535.00			$1,859.1			$1,630.66	$0.05	$0.14
Shelling											
Shelling Machine	1	$2,120	$2,120.00	60%	$1,272	$50.88	44.21	$0.06	$53.69	$0.00	$0.00
Tables	3	$445	$2,225.00	45%	$600.75	$24.03			$40.05	$0.00	$0.00
Plastic Bins	25		$1,335.00						$24.03		
Subtotal Shelling			$2,120.00			$86.48			$117.77	$0.00	$0.01
Roasting, Blanching, Packaging											
Tables	3	$445	$1,335.00	45%	$600.75	$24.03			$24.03	$0.00	$0.00
Hand washing	1	$156	$156.00	45%	$70.20	$2.81			$2.81	$0.00	$0.00

[21] The usage rates are estimated by the product mix allocation. If a machine could only be used in the production of two products, then the per product usage rate is estimated using a proportion of percentages allocated to the two peanut products.

Sink											
3-compartment Sink	1	$643	$643.00	45%	$289.35	$11.57			$11.57	$0.00	$0.00
Subtotal RBP			$2,134.00			$38.41			$38.41	$0.00	$0.00
Roasting											
Roasting Machine	1	$3,990	$3,990.00	45%	$1,795.50	$71.82	8.22	$0.04	$72.15	$0.00	$0.01
Subtotal Roasting			$3,990.00			$71.82			$72.15	$0.00	$0.01
Blanching											
Blanching Machine	1	$1,580.	$1,580.00	100%	$1,580.00	$63.20	28.39	$0.13	$66.79	$0.00	$0.00
Subtotal Blanching			$1,580.00			$63.20			$66.79	$0.00	$0.00
Packaging											
Heavy Scale	1	$1,419	$1,419.00	64%	$912.21	$36.49			$36.49	$0.00	$0.00
Light Scale	1	$31.00	$31.00	0%	$0.00	$0.00			$0.00	$0.00	$0.00
Vacuum Packager	1	$3,250	$3,250.00	64%	$2,089.29	$83.57	7.57	$0.05	$83.92	$0.00	$0.01
Subtotal Packaging			$4,700.00			$120.06			$120.41	$0.00	$0.01
All Processes											
Computer	1	$639	$639.00	45%	$287.55	$11.50			$11.50	$0.00	$0.00
Printer	1	$179	$179.00	45%	$80.55	$3.22			$3.22	$0.00	$0.00
Office Desk	1	$230	$230.00	45%	$103.50	$4.14			$4.14	$0.00	$0.00
Subtotal All Processes			$1,048.00			$18.86			$18.86	$0.00	$0.00
SUBTOTAL MAINTENANCE COST				**$2,257.97**					**$2,065.05**	**$0.06**	**$0.15**

	Subtotal Variable Costs for SRB Product	**Total Cost/Lb for Farmer's Stock Peanuts (36.000 pounds)[22]**	**Total Cost/Lb of Final Amount Produced (13,622 Pounds)[23]**
SUBTOTAL ANNUAL VARIABLE COSTS	**$15,149.7**	**$0.42**	**$1.11**

[22] Calculated from 45% of initial input of 40 tons (80,000 pounds)
[23] Calculated using estimated shrinkage rates at each processing step

Total Cost Summary for SRB Product

Fixed Costs	Storing	Shelling/Sorting	Roasting	Blanching	Packaging	Total	Costs/Lb-Farm Stock	Cost/Lb – Final Amount
Depreciation	$1,905.34	$767.88	$219.11	$221.59	$277.94	**$3,391.85**	$0.09	$0.25
Int on Avg Invest	$2,165.53	$884.46	$234.68	$214.63	$265.80	**$3,765.10**	$0.10	$0.28
Insurance + Taxes	$866.21	$353.78	$93.87	$85.85	$106.32	**$1,506.04**	$0.04	$0.11
Miscellaneous	$477.00	$477.00	$477.00	$477.00	$477.00	**$2,385.00**	$0.07	$0.18
Land	$148.50	$148.50	$148.50	$148.50	$148.50	**$742.50**	$0.02	$0.05
Total Fixed Costs	$5,562.58	$2,631.62	$1,173.16	$1,147.57	$1,275.56	**$11,790.5**	**$0.33**	**$0.87**
Costs/Lb Beginning	$0.15	$0.07	$0.03	$0.03	$0.04	**$0.33**		
Costs/Lb Ending	$0.41	$0.19	$0.09	$0.08	$0.09	**$0.87**		
Variable Costs								
Utilities	$92.34	$16.80	$13.27	$2.00	$0.54	**$124.94**	$0.00	$0.01
Labor	$1,143.75	$3,437.60	$561.15	$1,330.90	$1,652.86	**$8,126.26**	$0.23	$0.60
Supplies	$0.00	$0.00	$0.00	$0.00	$1,392.95	**$1,392.95**	$0.04	$0.10
Fees	$0.00	$2,938.50	$0.00	$0.00	$315.00	**$3,253.50**	$0.09	$0.24
Maintenance	$1,634.43	$121.54	$88.72	$83.37	$136.99	**$2,065.05**	$0.06	$0.15
Interest on Operating Costs	$35.88	$81.43	$8.29	$17.70	$43.73	**$187.03**	$0.01	$0.01
Subtotal Variable Cost	$2,906.40	$6,595.88	$671.43	$1,433.97	$3,542.06	**$15,149.7**	**$0.42**	**$1.11**
Interest on Inventory	$31.50	$0.00	$31.50	$0.00	$31.50	**$94.50**	$0.00	$0.01
Beginning Value	$2,520.00	$0.00	$2,520.00	$0.00	$2,520.00	**$7,560.00**	$0.21	$0.55
Total Variable Costs	$5,457.90	$6,595.88	$3,222.93	$1,433.97	$6,093.56	**$22,804.2**	**$0.63**	**$1.67**
Costs/Lb Beginning	$0.15	$0.18	$0.09	$0.04	$0.17	**$0.63**		
Costs/Lb. Ending	$0.40	$0.48	$0.24	$0.11	$0.45	**$1.67**		
Total Costs	**$11,020.48**	**$9,227.50**	**$4,396.09**	**$2,581.54**	**$7,369.12**	**$34,594.7**	**$0.96**	**$2.54**
Costs/Lb. Beginning	$0.31	$0.26	$0.12	$0.07	$0.20	**$0.96**		
Costs/Lb. Ending	$0.81	$0.68	$0.32	$0.19	$0.54	**$2.54**		

APPENDIX 6

Estimated annual budget of producing a shelled, oil-roasted, and flavored (SOF) peanut product in an on-farm peanut processing facility at 30% of allocation from 40 tons of farmers stock peanuts

SHELLED, OIL-ROASTED, AND FLAVORED (SOF) PRODUCT			
Amount In Product Mix	**Pounds Allocated from 40 tons of farmers stock**	**Tons**	**Beginning Value (At $420 Per Ton)**
Farmer's Stock	24,000	12	$ 5,040.00
From Storage	23,581		
Estimated Total Amount of Processed SRB Product	9,563		

ANNUAL FIXED COSTS

LAND & MISCELLANEOUS FIXED COSTS

	Unit	Price Per Unit	Total Costs	Total Annual Interest Cost of Land @ 6%	Percent of Cost Allocated to SOF Product	Total Per Product Cost	Total Costs/Lb Farmers Stock	Total Costs/Lb Final Amount
Land	5 acres	$5,500	$27,500	$1,650	30%	$495.00	$0.02	$0.05

Miscellaneous Fixed Costs	**Unit**	**Price Per Unit**	**Total Costs**	**Percent of Cost Allocated to Product**	**Total Per Product Cost**	**Total Costs/Lb Farmers Stock**	**Total Costs/Lb Final Amount**
Food Safety GMP Audit	1	$1,600	$1,600	45%	$480.00	$0.02	$0.05
Organic Audit	1	$1,700	$1,700	45%	$600.00	$0.03	$0.06
HAACP Training & Plan Approval	1	$2,000	$2,000	45%	$510.00	$0.02	$0.05
Subtotal Misc. Costs			$5,300		$2,085.00	$0.07	$0.16
				Total Costs	**Total Annual Fixed Cost to SRB Product**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amt.**
SUBTOTAL ANNUAL LAND & MISC FIXED COST				**$32,800**	**$2,085**	**$0.04**	**$0.21**

BUILDING COSTS

Item	Unit	Price Per Unit	Total Costs	Percent of Cost to SOF Product	Total Cost for SOF Product	Econ. Life	Annual Depr.	Avg Invest-ment	Annual Interest Costs	Insrce & Tax	Total Annual FC	Total Costs/Lb Farmers Stock	Total Costs/Lb Final Amount
Storage	1	$36,000	$36,000	30%	$16,200	40	$270.00	$5,400	$324	$130	$723.60	$0.03	$0.08
Shelling	1	$57,600	$57,600	30%	$25,920	40	$432.00	$8,640	$518.40	$207.4	$1,158	$0.05	$0.12
Roasting, Blanching, Packaging	1	$25,740	$25,740	30%	$11,583	40	$193.05	$3,861	$231.66	$92.66	$517.37	$0.02	$0.05
TOTAL BUILDING COSTS			**$119,340**	**30%**	**$35,802**		**$895.05**	**$17,901**	**$1,074**	**$429.6**	**$2,399**	**$0.10**	**$0.25**

EQUIPMENT COSTS

Item	Unit	Cost Per Unit	Total Costs	Percent of Cost to SOF Product [24]	Total Cost For SOF Product	Econ. Life	Annual Depr.	Avg Invest-ment	Annual Interest Cost	Insrce & Tax	Total Annual FC	Total Costs/Lb Farmers Stock	Total Costs/Lb Final Amount
Storage													
De-stoning Machine	1	$3,650	$3,650	30%	$1,095	25	$35	$657.00	$39.42	$15.77	$90.23	$0.00	$0.01
Air Compressor	1	$260	$260	30%	$78	25	$2.50	$46.80	$2.81	$1.12	$6.43	$0.00	$0.00
Conveyer Machine	1	$3,500	$3,500	30%	$1,020	25	$33.60	$630.00	$37.80	$15.12	$86.52	$0.00	$0.01
Wagons	12	$6,375	$76,500	30%	$22,950	25	$734.40	$13,770	$826.20	$330.48	$1,891.1	$0.08	$0.20
Tarps	10	$18	$180	30%	$54	10	$4.32	$32.40	$1.94	$0.78	$7.04	$0.00	$0.00
Wagon Dryers	5	$3,875	$19,375	30%	$5,812.50	25	$186	$3,487	$209.25	$83.70	$478.95	$0.02	$0.05
Subtotal			**$103,465**		**$31,040**		**$995.86**	**$18,624**	**$1,117**	**$446.97**	**$2,560.3**	**$0.10**	**$0.27**

[24] The usage rates fore equipment are estimated by the product mix allocation. If a machine could only be used in the production of two products, then the per product usage rate is estimated using a proportion of percentages allocated to the two peanut products.

EQUIPMENT CONT'D													
	Unit	**Cost Per Unit**	**Total Costs**	**Percent of Cost to SOF Product[25]**	**Total Cost For SOF Product**	**Econ Life**	**Annual Depr.**	**Avg Invest-ment**	**Annual Interest Cost**	**Insrce & Tax**	**Total Annual Fixed Cost**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
Shelling													
Shelling Machine	1	$2,120	$2,120	40%	$848.00	25	$27.14	$508.80	$30.53	$12.21	$69.88	$0.00	$0.01
Plastic Bins	25	$89	$2,225	30%	$667.50	15	$35.60	$400.50	$24.03	$9.61	$69.24	$0.00	$0.01
Tables	3	$445	$1,335	30%	$400.50	25	$12.82	$240.30	$14.42	$5.77	$33.00	$0.00	$0.00
Subtotal			**$5,680**		**$1,916.00**		**$75.55**	**$1,150**	**$68.98**	**$27.59**	**$172.12**	$0.01	$0.02
Roasting, Blanching, Packaging													
Tables	3	$445	$1,335	30%	$400.50	25	$12.82	$240.30	$14.42	$5.77	$33.00	$0.00	$0.00
Well water Equipment	1	$5,000	$5,000	30%	$1,500.00	25	$48.00	$900.00	$54.00	$21.60	$123.60	$0.01	$0.01
Hand Sink	1	$156		30%	$46.80	25	$1.50	$28.08	$1.68	$0.67	$3.86	$0.00	$0.00
3-compart. Sink	1	$643	$643	30%	$192.90	25	$6.17	$115.74	$6.94	$2.78	$15.89	$0.00	$0.00
Subtotal			**$7,134**		**$2,140.20**		**$68.49**	**$1,284**	**$77.05**	**$30.82**	**$176.35**	$0.01	$0.02
Roasting													
Roaster	1	$3,990	$3,990	30%	$1,197.00	25	$38.30	$718.20	$43.09	$17.24	$98.63	$0.00	$0.01
Cooling Trays	40	$12.76	$510.4	30%	$153.12	10	$12.25	$91.87	$5.51	$2.20	$19.97	$0.00	$0.00
Pan Racks	2	$124	$249	30%	$74.52	15	$3.97	$44.71	$2.68	$1.07	$7.73	$0.00	$0.00
Subtotal			**$4,749**		**$1,424.64**		**$54.53**	**$854.78**	**$51.29**	**$20.51**	**$126.33**	$0.01	$0.01
Blanching													
Blanching Machine	1	$1,580	$1,580	0%	$0.00	15	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Subtotal			**$1,580**		**$0.00**		**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	$0.00	$0.00

[25] The usage rates are estimated by the product mix allocation. If a machine could only be used in the production of two products, then the per product usage rate is estimated using a proportion of percentages allocated to the two peanut products.

EQUIPMENT CONT'D

Packaging	Unit	Cost Per Unit	Total Costs	Percent of Cost to SOF Product [26]	Total Cost For SOF Product	Econ. Life	Annual Depr.	Average Invest-ment	Annual Interest Cost	Insrce & Tax	Total Annual FC	Total Costs/Lb Farm Stock	Total Costs/Lb Final Amount
Heavy Scale	1	$1,419	$1,419	0%	$0.00	25	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Light Scale	1	$31	$31	100%	$31.00	25	$0.99	$18.60	$1.12	$0.45	$2.55	$0.00	$0.00
Vacuum Packager	1	$3,250	$3,250	0%	$0.00	15	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Subtotal			**$4,700**		$31.00		$0.99	$18.60	$1.12	$0.45	$2.55	$0.00	$0.00
All Processes													
Computer	1	$639	$639	30%	$191.70	10	$15.34	$115.02	$6.90	$2.76	$25.00	$0.00	$0.00
Printer	1	$179	$179	30%	$53.70	10	$4.30	$32.22	$1.93	$0.77	$7.00	$0.00	$0.00
Office Desk	1	$230	$230	30%	$69.00	25	$2.21	$41.40	$2.48	$0.99	$5.69	$0.00	$0.00
Subtotal			**$1,048**		$314.40		$21.84	$188.64	$11.32	$4.53	$37.69	$0.00	$0.00

	Total Equipment Costs	Total Equipment Cost For SOF Product	Annual Depreciation	Average Investment	Annual Interest Cost	Insurance & Tax	Total Annual Fixed Cost	Total Costs/Lb Farm Stock	Total Costs/Lb Final Amount
TOTAL EQUIPMENT COSTS	**$128,356**	**$36,865**	**$1,217.25**	**$22,119.44**	**$1,327.17**	**$530.87**	**$3,075**	**$0.13**	**$0.32**

	Total Fixed Costs for SOF Product	Total Cost/Lb of Farmer's Stock Peanuts (24,000)[27]	Total Cost/Lb of Final Amount Produced (9,563 Pounds)[28]
TOTAL ANNUAL FIXED COSTS	**$7,559.02**	**$0.31**	**$0.79**

[26] The usage rates are estimated by the product mix allocation. If a machine could only be used in the production of two products, then the per product usage rate is estimated using a proportion of percentages allocated to the two peanut products.
[27] Calculated from 30% of initial input of 40 tons (80,000 pounds)
[28] Calculated using estimated shrinkage rates at each processing step

Variable Costs

UTILITY COSTS

Process	Engineering Rate (Lbs/Hr)	Pounds to Process	Hours Required	Kw Usage	Total KwH Usage	Number of Machines	Annual Total Cost	Total Costs/Lb Farm Stock	Total Costs/Lb Final Amount
Storage									
De-stoning Machine	2,000.00	24,000.00	12.00	4.00	48.00	1	$4.56	$0.00	$0.00
Drying Fans	16,000.00	23,640.00	20.00	9.00	180.00	5	$85.50	$0.00	$0.01
Shelling									
Shelling Machine	800.00	23,580.54	29.48	4	117.90	1	$11.20	$0.00	$0.00
Roasting									
Roasting Machine	1,500.00	9,858.55	6.57	17	111.73	1	$10.61	$0.00	$0.00
Blanching									
Blanching Machine	500.00	0.00	0.00	0.74	0.00	1	$0.00	$0.00	$0.00
Packaging									
Vacuum Sealing Machine	1,800.00	0.00	0.00	0.75	0.00	1	$0.00	$0.00	$0.00
SUBTOTAL ANNUAL UTILITY COST							**$103.07**	**$0.00**	**$0.01**

LABOR COSTS

Process	Engineering Rate (Lbs/Hr)	Effective Rate[29] (Lbs/hr)	Pounds to Process	Machine Hours[30]	Labor Hours Per Machine Hour	Total Labor Hours	Annual Total Cost	Total Costs/Lb Farm Stock	Total Costs/Lb Final Amount
Storage									
Destoning	2,000.00	1,400.00	24,000	17.14	2.00	34.29	$514.29	$0.02	$0.05
Machine Hookup					1.00				
Drying Fans	16,000.00		23,640	20.00	1.00	20.00	$300.00	$0.01	$0.03

[29] Estimated at 70% of the engineering rate
[30] Estimated by dividing amount of pounds to process by machine effective rate.

Shelling	800.00	560.00	23,580.5	42.11	2.00	84.22	$1,263	$0.05	$0.13	
LABOR COSTS (CONT'D)										
Load + Unload					1.00					
Sorting	N/A	300.00	15,327.4	N/A	N/A	51.09	$766.37	$0.03	$0.08	
Roasting	1,800.00	1,260.00	9,858.55	9.39	3.00	28.17	$422.51	$0.02	$0.04	
Loading + Unloading					1.00					
Cooling					1.00					
Blanching	500.00	350.00	0.00	0.00	2.00	0.00	$0.00	$0.00	$0.00	
Loading + Unloading					1.00					
Packaging	1800	1,260.00	9,562.80	N/A	1.00	79.69	$1,195.35	$0.05	$0.13	
Subtotal Processing Labor						**297.45**	**$4,461.76**	**$0.19**	**$0.47**	
Facility Cleaning Steps	**Machine Hours**	**Processing Days**	**Cleaning Hours Per Day**	**Total Labor Hours**	**Annual Total Cost - Cleaning**			**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**	
Storage										
Destoning	17.14	2.14	1.50	3.21	$48.21			$0.00	$0.01	
Shelling/Sorting	93.20	11.65	1.50	17.47	$262.12			$0.01	$0.03	
Roasting	9.39	1.17	1.50	1.76	$26.41			$0.00	$0.00	
Blanching	0.00	0.00	1.50	0.00	$0.00			$0.00	$0.00	
Packaging	79.69	9.96	1.50	14.94	$224.13			$0.01	$0.02	
Subtotal Facility Labor				37.39	$560.87			$0.02	$0.06	
						Annual Labor Hours	**Annual Total Costs**	**Total Costs/Lb Beginning Stock**	**Total Costs/Lb Final Amount**	
SUBTOTAL ANNUAL LABOR COSTS						**334.84**	**$5,022.6**	**$0.21**	**$0.53**	

SUPPLY COSTS

Process	Pounds to Process	Units Per Pound	Units	Total Amt of Supply Units Required	Units Per Order	Price Per Order	$/Unit	Total Cost	Total Costs/Lb. Farm Stock	Total Costs/Lb Final Amount
Storage	0	0		0	0	$0.00	$0.00	$0.00	$0.00	$0.00
Shelling	0	0		0	0	$0.00	$0.00	$0.00	$0.00	$0.00
Roasting	0	0		0	0	$0.00	$0.00	$0.00	$0.00	$0.00
Flavoring Ingredients										
Organic Peanut Oil	9,858.6	0.5	ounces	4,929.28	16	$7.38	$0.46	$2,273.63	$0.09	$0.24
Salt	7,393.9	0.25	pounds	1,848.48	50	$13.50	$0.27	$499.09	$0.02	$0.05
Assorted Flavors	2,464.6	0.25	pounds	616.16	25	$3.00	$0.12	$73.94	$0.00	$0.01
Subtotal Roasting								$2,846.66	$0.12	$0.30
Blanching	0	0	0	0	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Pounds to Process	**Lbs. per Unit**	**Amount Needed**	**Units Per Order**	**Price Per Order**	**$/Unit**	**Total Cost**	**Total Costs/Lb. Farm Stock**	**Total Costs/Lb Final Amount**	
Packaging										
Paper Bags	9,563	0.25	38,251	1000	$100.00	$0.10	$3,825.12	$0.16	$0.40	
Boxes	9,563	30	319	1000	$1,110.00	$1.11	$353.82	$0.01	$0.04	
Bag Labels	9,563	10	38,251	5000	$595.76	$0.12	$4,557.70	$0.19	$0.48	
Box Labels	9,563	30	319	5000	$651.52	$0.13	$41.54	$0.00	$0.00	
Subtotal Packaging							$8,778.18	$0.37	$0.92	
TOTAL							**$11,624.84**	**$0.48**	**$1.22**	

FEE COSTS						
Cost	**Units**	**Price Per Unit**	**Percent of Cost**	**Total Fixed Costs**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
Storage	0	$ -	30%	$0.00	$0.00	$0.00
Shelling						
OQS Testing Fees						
FSIS PLI Tags	10	$ 54.00	30%	$243.00	$0.01	$0.02
FSIS Mileage Cost	3500	$ 0.46	30%	$724.50	$0.02	$0.05
FSIS Flat Fee	10	$ 80.00	30%	$360.00	$0.01	$0.03
FSIS Hourly Charge	80	$ 36.00	30%	$1,296.00	$0.04	$0.09
JLA Inspection Fee	10	$ 70.00	30%	$315.00	$0.01	$0.02
Subtotal Shelling				$2,938.50	$0.08	$0.20
Roasting	0	$ -	30%	$0.00	$0.00	$0.00
Blanching	0	$ -	30%	$0.00	$0.00	$0.00
Packaging						
JLA Final Inspection Fee	10	$ 70.00	30%	$315.00	$0.01	$0.02
SUBTOTAL ANNUAL FEE COSTS				**$3,253.50**	**$0.09**	**$0.23**

MAINTENANCE COSTS											
Equipment	**Unit**	**Amt Per Unit**	**Total Cost**	**Percent of Cost to SOF Product**	**Total Cost For SOF Product**	**Annual Main. Cost @ 4%**	**Total Machine Hours**	**Per Hour Cost**	**Total Main. Cost**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Ending**
Storing											
Destoning Machine	1	$3,650	$3,650	30%	$1,095	$43.80	12.00	$0.02	$44.06	$0.00	$0.00
Air Compressor	1	$260	$260	30%	$78	$3.12			$3.12	$0.00	$0.00
Conveyer Machine	1	$3,500	$3,500	30%	$1,050	$42.00			$42.00	$0.00	$0.00
Wagons	10	$6,375	$63,750	30%	$19,125	$765.00			$765.00	$0.03	$0.08

Wagon Dryers	5	$3,875	$19,375	30%	$5,813	$232.50	20.00	$0.01	$232.79	$0.01	$0.02
Subtotal Storing			$90,535		$21,348	$853.92			$1,086.42	$0.05	$0.11
Shelling											
Shelling Machine	1	$2,120	$2,120	40%	$848	$33.92	29.48	$0.04	$35.17	$0.00	$0.00
Tables	25	$89	$2,225	30%	$668	$26.70			$26.70	$0.00	$0.00
Lift Carts	3	$445	$1,335	30%	$401	$16.02			$16.02	$0.00	$0.00
Pallets			$2,120		$1,916	$76.64			$76.64	$0.00	$0.01
Subtotal Shelling											
Roasting, Blanching, Packaging	3	$445	$1,335	30%	$401	$16.02			$16.02	$0.00	$0.00
Tables	1	$156	$156	30%	$47	$1.87			$1.87	$0.00	$0.00
Hand washing Sink	1	$643	$643	30%	$193	$7.72			$7.72	$0.00	$0.00
3-compartment Sink			$2,134		$640	$25.61			$25.61	$0.00	$0.00
Subtotal RBP											
Roasting	1	$3,990	$3,990	30%	$1,197	$47.88	6.57	$0.03	$48.09	$0.00	$0.01
Roasting Machine			$3,990		$1,197	$47.88			$47.88	$0.00	$0.01
Subtotal Roasting											
Blanching	1	$1,580	$1,580	0%	$0	$0.00	0.00	$0.00	$0.00	$0.00	$0.00
Blanching Machine			$1,580		$0	$0.00			$0.00	$0.00	$0.00
Subtotal Blanching											
Packaging	1	$1,419	$1,419	0%	$0	$0.00			$0.00	$0.00	$0.00
Heavy Scale	1	$31	$31	100%	$31	$1.24			$1.24	$0.00	$0.00
Light Scale	1	$3,250	$3,250	0%	$0	$0.00			$0.00	$0.00	$0.00
Vacuum Packager			$4,700		$31	$1.24			$1.24	$0.00	$0.00
Subtotal Packaging											
All Processes	1	$639	$639	30%	$192	$7.67			$7.67	$0.00	$0.00
Computer	1	$179	$179	30%	$54	$2.15			$2.15	$0.00	$0.00
Printer	1	$230	$230	30%	$69	$2.76			$2.76	$0.00	$0.00
Office Desk			$1,048		$314	$12.58			$12.58	$0.00	$0.00
Subtotal All Processes						**$1,017.86**			**$1,250.36**	**$0.05**	**$0.13**
SUBTOTAL MAINTENANCE COSTS						**$1,151.9**			**$1,416.2**	**$0.06**	**$0.15**

	Total Var. Costs for SOF Product	Total Cost/Lb of Farmer's Stock Peanuts (24,000)[31]	Total Cost/Lb of Final Amount Produced (9,563 Pounds)[32]
SUBTOTAL ANNUAL VARIABLE COSTS	**$20,430.94**	**$0.85**	**$2.14**

[31] Calculated from 30% of initial input of 40 tons (80,000 pounds)
[32] Calculated using estimated shrinkage rates at each processing step

TOTAL COST SUMMARY FOR SOF PRODUCT

Fixed Costs	**Storing**	**Shelling/Sorting**	**Roasting**	**Blanching**	**Packaging**	**Total**	**Costs/Lb-Farm Stock**	**Cost/Lb Final Amount**
Depreciation	$1,271.32	$513.01	$190.76	$0.00	$137.22	**$2,112.30**	$0.09	$0.22
Int on Avg Invest	$1,444.25	$590.21	$208.47	$0.00	$158.30	**$2,401.23**	$0.10	$0.25
Insurance + Taxes	$577.70	$236.08	$83.39	$0.00	$63.32	**$960.49**	$0.04	$0.10
Miscellaneous	$397.50	$397.50	$397.50	$0.00	$397.50	**$1,590.00**	$0.07	$0.17
Land	$123.75	$123.75	$123.75	$0.00	$123.75	**$495.00**	$0.02	$0.05
Total Fixed Costs	$3,814.52	$1,860.55	$1,003.86	$0.00	$880.09	**$7,559.02**	**$0.31**	**$0.79**
Cost/Lb Farm Stock	$0.16	$0.08	$0.04	$0.00	$0.04	**$0.31**		
Cost/Lb Ending	$0.40	$0.19	$0.10	$0.00	$0.09	**$0.79**		
Variable Costs								
Utilities	$90.06	$11.20	$10.61	$0.00	$0.00	**$111.88**	$0.00	$0.01
Labor	$862.50	$2,291.73	$448.92	$0.00	$1,419.48	**$5,022.63**	$0.21	$0.53
Supplies	$0.00	$0.00	$0.00	$0.00	$11,624.84	**$11,624.8**	$0.48	$1.22
Fees	$0.00	$1,959.00	$0.00	$0.00	$210.00	**$2,169.00**	$0.09	$0.23
Maintenance	$1,089.56	$79.78	$63.83	$0.00	$17.19	**$1,250.36**	$0.05	$0.13
Interest on Operating Costs	$25.53	$54.27	$6.54	$0.00	$165.89	**$252.23**	$0.01	$0.03
Subtotal Var. Cost	$2,067.65	$4,395.99	$529.90	$0.00	$13,437.40	**$20,430.9**	$0.85	$2.14
Interest on Inventory	$15.75	$15.75	$15.75	$0.00	$15.75	**$63.00**	$0.00	$0.01
Beginning Value	$1,260.00	$1,260.00	$1,260.00	$0.00	$1,260.00	**$5,040.00**	$0.21	$0.53
Total Variable Costs	$3,343.40	$5,671.74	$1,805.65	$0.00	$14,713.15	**$25,533.9**	**$1.06**	**$2.67**
Cost/Lb Farm Stock	$0.14	$0.24	$0.08	$0.00	$0.61	**$1.06**		
Cost/Lb. Ending	$0.35	$0.59	$0.19	$0.00	$1.54	**$2.67**		
Total Costs	$7,157.92	$7,532.29	$2,809.52	$0.00	$15,593.24	**$33,093**	**$1.38**	**$3.46**
Cost/Lb Farm Stock	$0.30	$0.31	$0.12	$0.00	$0.65	**$1.38**		
Cost/Lb. Ending	$0.75	$0.79	$0.29	$0.00	$1.63	**$3.46**		

APPENDIX 7

Estimated annual budget of producing an Inshell and Roasted (IR) peanut product in an on-farm processing facility at 25% Allocation from 40 tons of farmers stock peanuts

INSHELL AND ROASTED (IR) PRODUCT			
Amount In Product Mix	**Pounds Allocated from 40 tons of farmers stock**	**Tons**	**Beginning Value (At $420 Per Ton)**
Farmer's Stock	20,000	10	$ 4,200
From Storage	19,650		
Estimated Total Amount of Processed SRB Product	17,920		

ANNUAL FIXED COSTS

LAND & MISCELLANEOUS FIXED COSTS

	Unit	Cost Per Unit	Total Costs	Total Annual Interest Cost of Land @ 6%	Percent of Cost Allocated to IR Product	Total Per Product Cost	Total Costs/Lb Farmers Stock	Total Costs/Lb Final Amount
Land	5 acres	$5,500	$27,500	$1,650	25%	$412.50	$0.02	$0.02

Miscellaneous Fixed Costs	Unit	Cost Per Unit	Total Costs	Percent of Cost Allocated to IR Product	Total Per Product Cost	Total Costs/Lb Farmers Stock	Total Costs/Lb Final Amount
Food Safety GMP Audit	1	$1,600	$1,600	30%	$400.00	$0.02	$0.02
Organic Audit	1	$1,700	$1,700	30%	$500.00	$0.03	$0.03
HAACP Training & Plan Approval	1	$2,000	$2,000	30%	$420.00	$0.02	$0.02
Subtotal Misc. Costs			$5,300		$2,085.00	$0.07	$0.07
				Total Costs	**Total Annual Fixed Cost to SRB Product**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amt.**
SUBTOTAL ANNUAL LAND & MISC FIXED COST				**$32,800**	**$1,737.50**	**$0.09**	**$0.10**

BUILDING COSTS

Item	Unit	Price Per Unit	Total Costs	Percent of Cost to IR Product	Total Cost for IR Product	Econ. Life	Annual Depr.	Avg Invest-ment	Annual Interest Costs	Insrce & Tax	Total Annual FC	Total Costs/Lb Farm Stock	Total Costs/Lb Final Amount
Storage	1	$36,000	$36,000	25%	$9,000	40	$225	$4,500	$270	$108	$603	$0.03	$0.03
Shelling	1	$57,600	$57,600	25%	$14,400	40	$360	$7,200	$432	$173	$964.8	$0.05	$0.05
Roasting, Blanching, Packaging	1	$25,740	$25,740	25%	$6,435	40	$161	$3,218	$193.1	$77	$431.2	$0.02	$0.02
TOTAL BUILDING COSTS			**$119,340**	**25%**	**$29,835**		**$745.88**	**$14,918**	**$895.1**	**$358**	**$1,999**	**$0.10**	**$0.11**

EQUIPMENT COSTS

Item	Unit	Cost Per Unit	Total Costs	Percent of Cost to IR Product [33]	Total Cost For IR Product	Econ. Life	Annual Depr.	Avg Invest-ment	Annual Interest Cost	Insrce & Tax	Total Annual FC	Total Costs/Lb Farm Stock	Total Costs/Lb Final Amount
Storage													
De-stoning Machine	1	$3,650	$3,650	25%	$913	25	$29.20	$547.5	$32.85	$13.14	$75.19	$0.00	$0.00
Air Compressor	1	$260	$260	25%	$65	25	$2.08	$39	$2.34	$0.94	$5.36	$0.00	$0.00
Conveyer Machine	1	$3,500	$3,500	25%	$875	25	$28	$525	$31.50	$12.60	$72.10	$0.00	$0.00
Wagons	12	$6,375	$76,500	25%	$19,125	25	$612	$11,475	$688.5	$275.4	$1,575.9	$0.08	$0.09
Tarps	10	$18	$180	25%	$45	10	$3.60	$27	$1.62	$0.65	$5.87	$0.00	$0.00
Wagon Dryers	5	$3,875	$19,375	25%	$4,844	25	$155	$2,906	$174.4	$69.75	$399.13	$0.02	$0.02
Subtotal			**$103,465**		$25,866		$829.9	$15,520	$931.2	$372.5	$2,133.5	$0.11	$0.12

[33] The usage rates fore equipment are estimated by the product mix allocation. If a machine could only be used in the production of two products, then the per product usage rate is estimated using a proportion of percentages allocated to the two peanut products.

EQUIPMENT CONT'D													
	Unit	**Cost Per Unit**	**Total Costs**	**Percent of Cost to IR Product[34]**	**Total Cost For IR Product**	**Econ Life**	**Annual Depr.**	**Avg Invest-ment**	**Annual Interest Cost**	**Insrce & Tax**	**Total Annual Fixed Cost**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
Shelling													
Shelling Machine	1	$2,120	$2,120	0%	$0.00	25	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Plastic Bins	25	$89	$2,225	25%	$556.20	15	$29.67	$333.75	$20.03	$8.01	$57.70	$0.00	$0.00
Tables	3	$445	$1,335	25%	$333.75	25	$10.68	$200.25	$12.02	$4.81	$27.50	$0.00	$0.00
Subtotal			**$5,680**		**$890.00**		$40.35	$534.00	$32.04	$12.82	$85.20	$0.00	$0.00
Roasting, Blanching, Packaging													
Tables	3	$445	$1,335	25%	$400.50	25	$10.68	$200.25	$12.02	$4.81	$27.50	$0.00	$0.00
Well water Equipment	1	$5,000	$5,000	25%	$1,500.00	25	$40.00	$750.00	$45.00	$18.00	$103.00	$0.01	$0.01
Hand Sink	1	$156		25%	$46.80	25	$1.25	$23.40	$1.40	$0.56	$3.21	$0.00	$0.00
3-compart. Sink	1	$643	$643	25%	$192.90	25	$5.14	$96.45	$5.79	$2.31	$13.25	$0.00	$0.00
Subtotal			**$7,134**		**$2,140.20**		$57.07	$1,070	$64.21	$25.68	$146.96	$0.01	$0.01
Roasting													
Roaster	1	$3,990	$3,990	25%	$1,197.00	25	$31.92	$598.50	$35.91	$14.36	$82.19	$0.00	$0.00
Cooling Trays	40	$12.76	$510.4	25%	$153.12	10	$10.21	$76.56	$4.59	$1.84	$16.64	$0.00	$0.00
Pan Racks	2	$124	$249	25%	$74.52	15	$3.31	$37.26	$2.24	$0.89	$6.44	$0.00	$0.00
Subtotal			**$4,749**		**$1,424.64**		$45.44	$712.32	$42.74	$17.10	$105.27	$0.01	$0.01
Blanching													
Blanching Machine	1	$1,580	$1,580	0%	$0.00	15	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Subtotal			**$1,580**		**$0.00**		**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	$0.00	$0.00

[34] The usage rates are estimated by the product mix allocation. If a machine could only be used in the production of two products, then the per product usage rate is estimated using a proportion of percentages allocated to the two peanut products.

EQUIPMENT CONT'D													
Packaging	**Unit**	**Cost Per Unit**	**Total Costs**	**Percent of Cost to IR Product [35]**	**Total Cost For IR Product**	**Econ. Life**	**Annual Depr.**	**Average Invest-ment**	**Annual Interest Cost**	**Insrce & Tax**	**Total Annual FC**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
Heavy Scale	1	$1,419	$1,419	36%	$506.79	25	$16.22	$304.07	$18.24	$7.30	$41.76	$0.00	$0.00
Light Scale	1	$31	$31	0%	$0.00	25	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Vacuum Packager	1	$3,250	$3,250	36%	$1,160.7	15	$61.90	$696.43	$41.79	$16.71	$120.40	$0.01	$0.01
Subtotal			**$4,700**		$1,667.5		$78.12	$1,000.50	$60.03	$24.01	$162.16	$0.01	$0.01
All Processes													
Computer	1	$639	$639	25%	$159.75	10	$12.78	$95.85	$5.75	$2.30	$20.83	$0.00	$0.00
Printer	1	$179	$179	25%	$44.75	10	$3.58	$26.85	$1.61	$0.64	$5.84	$0.00	$0.00
Office Desk	1	$230	$230	25%	$57.50	25	$1.84	$34.50	$2.07	$0.83	$4.74	$0.00	$0.00
Subtotal			**$1,048**		$262.00		$18.20	$157.20	$9.43	$3.77	$31.40	$0.00	$0.00

	Total Equipment Costs	**Total Equipment Cost For IR Product**	**Annual Depreciation**	**Average Annual Investment**	**Annual Interest Cost**	**Insurance & Tax**	**Total Annual Fixed Cost**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
TOTAL EQUIPMENT COSTS	**$128,356**	**$31,656.45**	**$1,069.06**	**$18,993.87**	**$1,139.63**	**$455.85**	**$2,665**	**$0.13**	**$0.15**

	Total Fixed Costs for SOF Product	**Total Cost/Lb of Farmer's Stock Peanuts (20,000)[36]**	**Total Cost/Lb of Final Amount Produced (17,920 Pounds)[37]**
TOTAL ANNUAL FIXED COSTS	**$6,400.99**	**$0.32**	**$0.36**

[35] The usage rates are estimated by the product mix allocation. If a machine could only be used in the production of two products, then the per product usage rate is estimated using a proportion of percentages allocated to the two peanut products.
[36] Calculated from 25% of initial input of 40 tons (80,000 pounds)
[37] Calculated using estimated shrinkage rates at each processing step

VARIABLE COSTS

UTILITY COSTS

Process	Engineering Rate (Lbs/Hr)	Pounds to Process	Hours Required	Kw Usage	Total KwH Usage	Number of Machines	Annual Total Cost	Total Costs/Lb Farm Stock	Total Costs/Lb Final Amount
Storage									
De-stoning Machine	2,000.00	20,000.00	10.00	4.00	40.00	1	$3.80	$0.00	$0.00
Drying Fans	16,000.00	19,700.00	20.00	9.00	180.00	5	$85.50	$0.00	$0.00
Shelling									
Shelling Machine	800.00	0.00	0.00	4	0.00	1	$0.00	$0.00	$0.00
Roasting									
Roasting Machine	1,350.00	18,675.79	13.83	17	235.18	1	$22.34	$0.00	$0.00
Blanching									
Blanching Machine	500.00	0.00	0.00	0.74	0.00	1	$0.00	$0.00	$0.00
Packaging									
Vacuum Sealing Machine	1,800.00	17,928.76	9.96	0.75	7.47	1	$0.71	$0.00	$0.00
SUBTOTAL ANNUAL UTILITY COST							**$112.35**	**$0.01**	**$0.01**

LABOR COSTS

Process	Engineering Rate (Lbs/Hr)	Effective Rate[38] (Lbs/hr)	Pounds to Process	Machine Hours[39]	Labor Hours Per Machine Hour	Total Labor Hours	Annual Total Cost	Total Costs/Lb Farm Stock	Total Costs/Lb Final Amount
Storage									
Destoning	N/A	300.00	19,650.45	N/A	N/A	65.50	$982.52	$0.05	$0.05
Machine Hookup	1,350.00	945.00	18,675.79	19.76	3.00	59.29	$889.32	$0.04	$0.05
Drying Fans					1.00				
Shelling	500.00	350.00	0.00	0.00	2.00	0.00	$0.00	$0.00	$0.00

[38] Estimated at 70% of the engineering rate
[39] Estimated by dividing amount of pounds to process by machine effective rate

LABOR COSTS (CONT'D)									
Sorting	1800	1,260.00	17,928.76	14.23	10.00	142.29	$2,134.38	$0.11	$0.12
Roasting	N/A	300.00	19,650.45	N/A	N/A	65.50	$982.52	$0.05	$0.05
Loading + Unloading	1,350.00	945.00	18,675.79	19.76	3.00	59.29	$889.32	$0.04	$0.05
Cooling					1.00				
Blanching					1.00				
Loading + Unloading	500.00	350.00	0.00	0.00	2.00	0.00	$0.00	$0.00	$0.00
Packaging					1.00				
Subtotal Processing Labor Cost						315.65	$4,734.79	$0.24	$0.26
Facility Cleaning Steps	**Machine Hours**	**Processing Days**	**Cleaning Per Day**	**Total Labor Hours**	**Annual Total Cost**			**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
Storage									
Destoning	14.29	1.79	1.50	2.68	$40.18			$0.00	$0.00
Shelling/Sorting	65.50	8.19	1.50	12.28	$184.22			$0.01	$0.01
Roasting	19.76	2.47	1.50	3.71	$55.58			$0.00	$0.00
Blanching	0.00	0.00	1.50	0.00	$0.00			$0.00	$0.00
Packaging	14.23	1.78	1.50	2.67	$40.02			$0.00	$0.00
Subtotal Facility Labor Cosrt				21.33	$320.00			$0.02	$0.02
						Annual Labor Hours	**Annual Total Costs**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
SUBTOTAL ANNUAL LABOR COSTS						**$336.52**	**$5,047.77**	**$0.25**	**$0.28**

SUPPLY COSTS									
Process	**Pounds to Process**	**Lbs. per Unit**	**Amount Needed**	**Unit Per Order**	**Cost Per Order**	**$/Unit**	**Total Cost**	**Total Costs/Lb. Farm Stock**	**Total Costs/Lb Ending**
Storage	0	0	0	0	$0.00	$0.00	$0.00	$0.00	$0.00
Shelling	0	0	0	0	$0.00	$0.00	$0.00	$0.00	$0.00
Roasting	0	0	0	0	$0.00	$0.00	$0.00	$0.00	$0.00
Blanching	0	0	0	0	$0.00	$0.00	$0.00	$0.00	$0.00
Packaging									
Vacuum Bags	17,929	10	1793	100	$48.95	$0.49	$877.61	$0.04	$0.05
Boxes	17,929	30	598	1000	$1,110.00	$1.11	$663.36	$0.03	$0.04
Bag Labels	17,929	10	1793	5000	$595.76	$0.12	$213.62	$0.01	$0.01
Box Labels	17,929	30	598	5000	$651.52	$0.13	$77.87	$0.00	$0.00
Subtotal Packaging							$1,832.47	$0.09	$0.10
TOTAL SUPPLY COST							**$1,832.47**	**$0.09**	**$0.10**

FEE COSTS						
Cost	**Units**	**Price Per Unit**	**Percent of Cost**	**Total Fixed Costs**	**Total Costs/Lb Farm Stock**	**Total Costs/Lb Final Amount**
Storage	0	$0.00	30%	$0.00	$0.00	$0.00
Shelling						
OQS Testing Fees						
FSIS PLI Tags	10	$54.00	30%	$162.00	$0.01	$0.02
FSIS Mileage Cost	3500	$0.46	30%	$483.00	$0.02	$0.05
FSIS Flat Fee	10	$80.00	30%	$240.00	$0.01	$0.03
FSIS Hourly Charge	80	$36.00	30%	$864.00	$0.04	$0.09
JLA Inspection Fee	10	$70.00	30%	$210.00	$0.01	$0.02
Subtotal Shelling				$1,959.00	$0.08	$0.20
Roasting	0	$0.00	30%	$0.00	$0.00	$0.00
Blanching	0	$0.00	30%	$0.00	$0.00	$0.00

Packaging	-	-	-	-	-	-
JLA Final Inspection Fee	10	$70.00	30%	$210.00	$0.01	$0.02
SUBTOTAL ANNUAL FEE COSTS				**$2,169.00**	**$0.09**	**$0.23**

MAINTENANCE COSTS

Equipment	Unit	Amount Per Unit	Total Costs	Percent of Cost to IR Product	Total Cost For IR Product	Annual Main. Cost @ 4%	Total Machine Hours	Per Hour Main. Cost	Total Main. Cost	Total Costs/Lb Farm Stock	Total Costs/Lb Final Amount
Storing											
Destoning Machine	1	$3,650	$3,650	25%	$912.50	$36.50	10.00	0.01	$36.50	$0.00	$0.00
Air Compressor	1	$260	$260	25%	$65.00	$2.60			$2.60	$0.00	$0.00
Conveyer Machine	1	$3,500	$3,500	25%	$875.00	$35.00			$35.00	$0.00	$0.00
Wagons	10	$6,375	$63,750	25%	$15,937.50	$637.50			$637.50	$0.03	$0.04
Wagon Dryers	5	$3,875	$19,375	25%	$4,843.75	$193.75	20.00	$0.01	$193.75	$0.01	$0.01
Subtotal Storing			$90,535	25%	$17,790.00	$905.35			$905.35	$0.05	$0.05
Shelling											
Shelling Machine	1	$2,120	$2,120	0%	$0.00	$0.00			$0.00	$0.00	$0.00
Tables	3	$445	$1,335	25%	$333.75	$83.44			139.06	$0.00	$0.00
Plastic Bins	25	$89	$2,225	25%	$556.25	$139.06			83.44	$0.00	$0.00
Subtotal Shelling			$2,120		$890.00	$222.50			$222.50	$0.00	$0.00
Roasting, Blanching, Packaging											
Tables	3	$445	$1,335	25%	$333.75	$13.35			$13.35	$0.00	$0.00
Hand washing Sink	1	$156	$156	25%	$39.00	$1.56			$1.56	$0.00	$0.00
3-compartment Sink	1	$643	$643	25%	$160.75	$6.43			$6.43	$0.00	$0.00
Subtotal RBP			$2,134		$533.50	$21.34			$21.34	$0.00	$0.00
Roasting											
Roasting Machine	1	$3,990	$3,990	25%	$997.50	$39.90	13.83	0.02	$39.90	$0.00	$0.00
Subtotal Roasting			$3,990			$39.90			$39.90	$0.00	$0.00

Blanching											
Blanching Machine	1	$1,580	$1,580	0%	$0.00	$0.00	0.00	0.00	$0.00	$0.00	$0.00
Subtotal Blanching			$1,580			$0.00			$0.00	$0.00	$0.00
Packaging											
Heavy Scale	1	$1,419	$1,419	35.71%	$506.79	$20.27			$20.27	$0.00	$0.00
Light Scale	1	$31	$31	0.00%	$0.00	$0.00			$0.00	$0.00	$0.00
Vacuum Packager	1	$3,250	$3,250	35.71%	$1,160.71	$46.43	9.96	0.01	$46.43	$0.00	$0.00
Subtotal Packaging			$4,700			$66.70			$66.70	$0.00	$0.00
All Processes											
Computer	1	$639	$639	25%	$159.75	$6.39			$6.39	$0.00	$0.00
Printer	1	$179	$179	25%	$44.75	$1.79			$1.79	$0.00	$0.00
Office Desk	1	$230	$230	25%	$57.50	$2.30			$2.30	$0.00	$0.00
Subtotal All Processes			$1,048			$10.48			$10.48	$0.00	$0.00
SUBTOTAL MAINTENANCE COST					**$1,266.27**				**$1,266.27**	**$0.05**	**$0.06**

	Total Fixed Costs for IR Product	**Total Cost/Lb of Farmer's Stock Peanuts (20,000 Pounds)[40]**	**Total Cost/Lb of Final Amount Produced (17,920 Pounds)[41]**
TOTAL ANNUAL VARIABLE COSTS	**$ 14,451.81**	**$ 0.72**	**$ 0.81**

[40] Calculated from 25% of initial input of 40 tons (80,000 pounds)
[41] Calculated using estimated shrinkage rates at each processing step

TOTAL COST SUMMARY FOR IR PRODUCT

Fixed Costs	Storing	Shelling/Sorting	Roasting	Blanching	Packaging	Total	Costs/Lb- Farm Stock	Cost/Lb – Final Amount
Depreciation	$1,059.43	$404.90	$158.96	$0.00	$191.65	**$1,814.94**	$0.09	$0.10
Int on Avg Invest	$1,203.54	$466.40	$173.73	$0.00	$191.02	**$2,034.68**	$0.10	$0.11
Insurance + Taxes	$481.42	$186.56	$69.49	$0.00	$76.41	**$813.87**	$0.04	$0.05
Miscellaneous	$331.25	$331.25	$331.25		$331.25	**$1,325.00**	$0.07	$0.07
Land	$103.13	$103.13	$103.13	$0.00	$103.13	**$412.50**	$0.02	$0.02
Total Fixed Costs	$3,178.77	$1,492.23	$836.55	$0.00	$893.44	**$6,400.99**	**$0.32**	**$0.36**
Costs/Lb Beginning	$0.16	$0.07	$0.04	$0.00	$0.04	**$0.32**		
Costs/Lb Ending	$0.18	$0.08	$0.05	$0.00	$0.05	**$0.36**		
Variable Costs								
Utilities	$89.30	$0.00	$22.34	$0.00	$0.71	**$112.35**	$0.01	$0.01
Labor	$768.75	$1,166.75	$944.91	$0.00	$2,174.40	**$5,054.80**	$0.25	$0.28
Supplies	$0.00	$0.00	$0.00	$0.00	$1,832.47	**$1,832.47**	$0.09	$0.10
Fees	$0.00	$1,632.50	$0.00	$0.00	$175.00	**$1,807.50**	$0.09	$0.10
Maintenance	$907.97	$225.12	$53.19	$0.00	$79.99	**$1,266.27**	$0.06	$0.07
Int. on Operating Costs	$22.08	$37.80	$12.76	$0.00	$53.28	**$125.92**	$0.01	$0.01
Subtotal Variable Cost	$1,788.10	$3,062.17	$1,033.19	$0.00	$4,315.85	**$10,199.3**	$0.51	$0.57
Interest on Inventory	$17.50	$0.00	$17.50	$0.00	$17.50	**$52.50**	$0.00	$0.00
Beginning Value	$1,400.00	$0.00	$1,400.00	$0.00	$1,400.00	**$4,200.00**	$0.21	$0.23
Total Variable Costs	$3,205.60	$3,062.17	$2,450.69	$0.00	$5,733.35	**$14,451.8**	**$0.72**	**$0.81**
Costs/Lb Beginning	$0.16	$0.15	$0.12	$0.00	$0.29	**$0.72**		
Costs/Lb. Ending	$0.18	$0.17	$0.14	$0.00	$0.32	**$0.81**		
Total Costs	$6,384.36	$4,554.40	$3,287.25	$0.00	$6,626.79	**$20,852.8**	**$1.04**	**$1.16**
Costs/Lb. Beginning	$0.32	$0.23	$0.16	$0.00	$0.33	**$1.04**		
Costs/Lb. Ending	$0.36	$0.25	$0.18	$0.00	$0.37	**$1.16**		