

**Market Potential for Nevada Teff Products**

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## Introduction

The following study represents an evaluation of the market potential for Nevada teff products. This study was initiated by current teff producers in Churchill County, NV in an effort to determine the best course of action for the further marketing of their product. The following pages provide a brief summary of the product, a competitive analysis of the teff flour market, a market analysis of the current and most likely users of teff flour, and the results of a market survey. Finally, recommendations are given for potential strategies and issues to address should the Churchill County teff growers decide to further explore the option of entering the teff market as a flour supplier.

Originating sometime during the early part of the tenth century in northeastern Africa, teff (*Eragrostis tef*) has typically been a staple cereal crop for inhabitants of the region of present-day Ethiopia, Eritrea, Djibouti, southeastern Sudan and northern Kenya. The plant, which has a relatively short growing season, produces a tiny seed similar to millet that is traditionally ground into flour. This flour can be used as a base for semi-leavened breads (such as the traditional Ethiopian *injera*), added as a thickening agent to soups and sauces, fermented to make beer and ethnic beverages, or made into porridge and puddings. Today the flour is also gaining popularity as both a naturally gluten-free alternative to wheat flour and a nutrient-rich ingredient in the baby food industry. When compared to the commonly-used all-purpose enriched wheat flour, teff is found to be more nutritionally complete. In terms of the FDA-recommended nutrient daily values, a one-cup serving of uncooked teff contains 62% of total recommended dietary fiber, 82% of iron, 89% of magnesium, and 83% of phosphorus. It is also high in protein and contains all of the eight essential amino acids (NutrionData, 2008). Also when compared to wheat, the teff grain is tiny, with 150 grains of teff being the rough equivalent of one kernel of wheat (Huntrods, 2008). This difference in sizing creates the potential for equipment problems, specifically for equipment designed to harvest the grains or regulate flow to a milling machine. Apart from the use of the grains for human consumption, the teff's bagasse is also nutrient-rich and makes an excellent fodder for livestock (Stallknecht, 1998).

## Competitive Analysis

Today, the supply side of the market for milled or table-ready teff products is relatively small in the United States, as there are only seven identified teff flour distributors and only six teff product brands. In light of this, the supply side of this market could be considered an oligopoly. Appendix 1 summarizes the firms currently supplying teff to the market, as well as the specific products each firm offers, along with prices. The production volume of teff flour distributors varies greatly. The largest distributor is ConAgra Mills, with 24 flour mills across the US and Canada (Reuters, 2007). The company's most recently renovated milling facility in Saginaw, Texas was projected to reach a new milling capacity of 1.4 million pounds of flour per day in early 2008. It should be noted, however, that this number includes all flours, as specific information on the location and quantity of teff flour production by ConAgra Mills is unavailable at this time. In terms of the moderate sized producers, Bob's Red Mill has a total raw-grain storage capacity of 1.2 million pounds and a daily milling capacity of 130,000 pounds (Bob's Red Mill, 2008). Again, it should be noted that these resources are not exclusively dedicated to the production of teff products, however, of the company's new 320,000 square-foot facility, 23,000 square-feet are dedicated solely to gluten-free products including teff flour and table-

ready grain. This new expansion has allowed the firm to quadruple its gluten-free production capacity.

Of the seven millers or distributors identified, three are headquartered in the western United States: Bob's Red Mill in Milwaukie, Oregon; the Teff Company in Caldwell, Idaho; and True Foods Market, a distributor of Teff Co. products, in Orem, Utah. Bob's Red Mill currently has products carried by a number of Western US grocery chains, although only a select few retail outlets appear to carry the company's teff products. Both Bob's and Teff Co. offer smaller package sizes that are more geared towards small businesses and in-home use while ConAgra, the other major competitor, requires a minimum order of 50 pounds and has promotional strategies targeted at large-scale purchasers. Also, teff products are a very recent addition to the ConAgra Mills product line and were only recently launched as a part of the Ancient Grains line in late 2007. Both Bob's and ConAgra offer pre-mixed flours that contain teff, including ConAgra's 6- and 9-Grain Flours. The teff industry as a whole also faces competition from other grain products, specifically amaranth, quinoa and sorghum. These flours pose the largest level of competition in the gluten-free market, along with corn meal and flax seed meal. Millet, buckwheat, cassava and garbanzo products may also act as substitute goods for teff. The average price per pound of milled flour across all seven millers and distributors in the US is \$3.83, with a range from \$2.50 to \$7.17.

### *Opportunities*

#### Access to Transportation Routes

Nevada teff producers may be geographically well-situated to supply coastal western US markets. Situated along both the Interstate-80 corridor and major rail lines, Churchill County growers and millers have easy access to both trucking and rail facilities. While inclement weather during the winter months may pose the potential for additional costs, completion of the milling process and final delivery during the fall months could alleviate such a problem.

#### Promotional Opportunities: Product Differentiation

The largest competitor (by volume and industry placement), ConAgra Mills, has focused its promotional strategy on the "variety" and "novelty" aspects of ancient grains, such as teff, instead of on that of "gluten-free" or "ethnic." Bob's Red Mill has had a larger focus on the gluten-free market, while Teff Co. focuses on the ethnic market. However, neither is actively pursuing the value that locally grown and certified organic products can provide to producers, a promotional strategy that a small community of producers could take advantage of. The ADA Teff brand from Go-Star wholesale is currently labeled as "100% organic," while Shiloh Farms' teff product (distributed by Garden Spot Distributors) displays an "All Natural" label. Both of these distributors are located in the eastern region of the US.

#### Regional Focus

By focusing on a specific, localized region, Churchill County teff millers may be able to reduce the costs associated with the prevalent methods of shipping through UPS and the United States Postal Service. These costs, which must be absorbed by the producer or passed on to the consumer increase greatly as the area of delivery expands. By placing products in centralized markets such as large cities only on the west coast, a smaller regional producer may be able to offer lower prices than a competitor with a national placement focus.

## *Threats*

### Industry Placement

ConAgra Mills is an established firm within the larger flour and grain products market. It is well placed within the industry and has a wide variety of resources at its disposal. Bob's Red Mill has broad placement of its products in a number of national retail chains, including Whole Foods, Raley's/Bel Aire and Smith's. While the exact level of Bob's Red Mill's teff product placement is still to be determined, the firm's familiarity within the grocery retail market may prove to be an obstacle.

### Milling Experience

An investment in milling equipment provides for only a portion of the initial cost. A large amount of human capital investment may be needed to ensure that a new milling operation is successful. Many of the firms identified have experience in milling and marketing teff flour and other grain-flour products.

### Producer Forward-Contracting

Bob's Red Mill and ConAgra Mills currently provide a large number of producers with forward contracts for their products, ensuring them a market and potentially minimizing their costs of production, transportation, etc. Most importantly, these contracts help the producers manage the costs associated with price risk. A local cooperative style milling operation may not benefit from such a risk reduction technique, although contracting may be available with larger milling companies for raw teff grain or milled flour or with teff flour purchasers on the consumer side.

### Economies of Scale and Size

Larger producers such as ConAgra and Bob's Red Mill may benefit from economies of scale and size, aspects of milling that a small group of producers may not necessarily be able to achieve. Further analysis at the firm level must be conducted to determine project and investment feasibility with respect to estimated returns. The optimal level of production should be determined and maintained to diminish costs associated with over-production.

### Product Diversification

With the exception of Teff Co., the leading distributors or millers in the US (ConAgra, Bob's Red Mill, and Garden Spot Distributors) offer a multitude of products. This product diversification allows the firms broader market access and insulation from market risk. Further, it provides a wider range of customer experience with the brand name and increases the companies' ability to introduce specialty products such as teff to consumers.

## **Market Analysis**

In the analysis of a teff milling operation, two main market segments can be identified. The first is the market for ethnic products, specifically teff, used in Ethiopian and other northeast Africa cuisines. The other main market segment is the specialty-diet market, which includes gluten-free and high-nutrient content products. Subsidiary markets include organics, locally grown products, holistic foods and baby-food products. Potential consumers include ethnic

restaurants and grocers, specialty and holistic foods stores, bakeries, traditional restaurants with gluten-free menu options, gourmet restaurants serving specialty fare such as raw, vegetarian and vegan cuisines and traditional food retailers that offer specialty product lines. A complete listing of gluten-free restaurants can be found in Triumph Dining's annual publication, "The Essential Gluten-Free Restaurant Guide" (the third edition was published in February 2008). Additionally, a comprehensive listing of Ethiopian establishments can be found online at <http://www.ethiopianrestaurant.com/>.

### *Opportunities – Ethnic Restaurants & Groceries*

#### Product Familiarity

Consumers in the identified ethnic markets are already familiar with the potential applications for the product, as well as its specific attributes (taste, texture, etc.). These consumers are looking for a product that is specific to their regional, ethnic cuisine and which is often difficult to come by in traditional, American marketplaces. Therefore, little additional promotional activity will need to take place beyond product establishment in the market and knowledge of product availability.

#### Community Information Sharing

Ethnic communities, especially those in larger urban areas, can be made up of tight-knit groups of consumers. Such communities can provide a great benefit to new products, allowing for popularity and product information to spread quickly through trusted sources.

#### Lack of Competition

Very few of the major producers target the ethnic market for teff flour and grain products. This oligopoly allows for a new competitor to enter the market and provide products to what has historically been a cornered demand market.

#### Dependability

Because teff is a staple commodity for Ethiopian cuisine, teff millers are assured of a relatively stable market in which demand is mostly dependent on the number and scale of firms with little seasonal variability or other "noise."

### *Opportunities - Specialty-Diet Restaurants, Bakeries & Groceries*

#### Need for Product

For many consumers, gluten-free products are required due to the specific dietary needs resulting from gluten intolerance and Celiac disease. These consumers are actively searching for new products that both meet their dietary needs and have a variety of applications. For some of these consumers, teff products may present an invaluable, multi-functional food product that is not currently in their culinary repertoire.

#### Willingness to Pay

In many specialty food markets consumers show a higher willingness to pay for those products they perceive as having enhanced attributes, such as certified organic, increased dietary

and nutritional aspects, or altruistic benefits (see, for example, Lusk et al., 2007 or Batte et al., 2007).

#### Consumer Adaptability

Restaurant and bakery owners are more likely than private consumers to have the ability or willingness to reformulate recipes based on new products, such as teff flour. This increased experience level can diminish the need to implement promotional strategies to educate consumers on product use.

#### Broadening of Market

Chefs, cooks and bakers can also help increase product awareness. By offering products labeled as using teff flour, the larger consumer group becomes aware of the potential applications and new markets may emerge for retail opportunities.

#### Product is Highly Differentiated

Because of the small number of competitors and the low level of product placement, improved product visibility may increase consumer perception that product is highly differentiated amongst alternatives/substitutes. This differentiation may be heightened by the product's gluten-free status, its high-nutritional value, or a "curiosity factor."

#### *Threats - Ethnic Restaurants & Groceries*

#### Consumer Loyalty and Expectations

It may be difficult to enter what can be highly-critical consumer markets. Some ethnic consumers will have a preconceived notion of product quality due to their experience level, or may have specific brand loyalty to their current supplier. Both of these issues have the potential to pose an obstacle to new entrants hoping to establish a solid position in the market.

#### Market Size and Location

The ethnic market is smaller and more concentrated than the specialty foods market. Because of the small size, producers of teff flour must be cautious to maintain good relationships with consumers and may face added costs of transportation or physical market access.

#### *Threats - Specialty-Diet Restaurants, Bakeries & Groceries*

#### Unfamiliarity of Product

Consumers within this market segment may have little to no experience with teff products. They may need to be educated on product attributes and applications before becoming willing to consider a purchase. Improper management of consumer unfamiliarity can lead to negative product experiences for consumers, such as incompatibility with taste preferences or failed attempts at product usage. Further analysis should be conducted as to the best way to increase consumer knowledge with product.

### Perceived or Actual Implementation Risk

Foodservice establishments may be concerned that their consumers will not like products containing teff. Because of this, some establishments may be unwilling to use teff products in menu items due to perceived or actual risks posed by consumers not liking a product offering.

### **Market Survey Results**

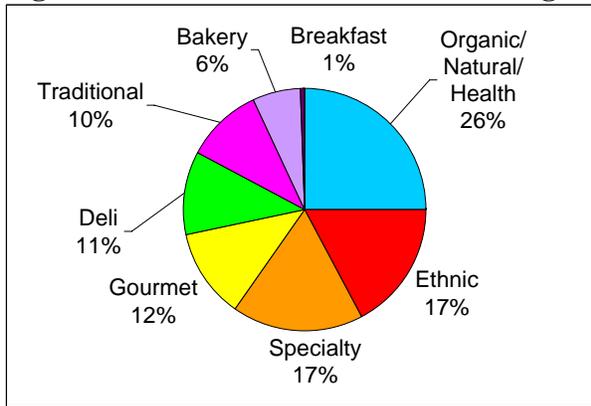
A telephone survey of restaurants and grocery outlets (including conventional grocery stores, ethnic restaurants and groceries, health food restaurants and stores, etc.) was conducted to evaluate the market for teff flours/grains. The survey sought to determine current usage of these products by respondents, the attributes of flour and grain products that retail establishments and their customers prefer, current supply methods, satisfaction with current flour and grain suppliers, past purchasing history, and preferred packaging. The survey focused on establishments that may serve teff products or cater to customers who may be interested in teff products. Establishments in the 11 western states were considered in the survey.

#### *Respondent & Establishment Information*

Of the 119 establishments that completed the survey, 72% (81 respondents) of establishments were restaurants, 27% (30) were grocery stores and 1% (1) of establishments was a corporate office for a food company. Seven establishments (6% of total sample) did not identify their establishment type. Forty-three percent (51 respondents) of establishments said they were independently owned, 34% (40) said they were corporately owned, 23% (27) said their establishment was part of a chain or franchise and the remaining 1% (1) of establishments was a non-profit organization. Respondents who served meals served an average of 356 meal units per day, although this figure ranged from 17 meal units per day to 1,675. Additionally, some respondents were unable to estimate their daily service and others emphasized that their daily service was subject to seasonal fluctuations.

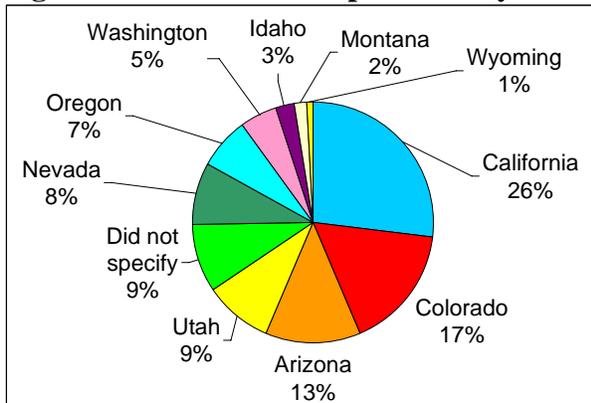
The contacted establishments were asked to describe the segment their establishment most closely resembles (Figure 1). Twenty-six percent (39 respondents) of respondents identified their establishment as providing certified organic and natural food (7%, 11 respondents) or health food (18%, 28). Seventeen percent (27 respondents) of respondents identified their segment as serving ethnic foods, with 6% (10) serving Ethiopian foods, 6% (10) serving Italian foods, 2% (3) serving Latin American foods, 1% (2) serving Yemenese foods, 1% (2) serving Asian foods, and another 1% (2) identifying themselves as serving ethnic foods, but not specifying what type of foods they serve. Seventeen percent (27 respondents) of respondents identified themselves as serving specialty foods, with 3% (4) of respondents serving vegan foods, 2% (3) serving vegetarian foods, 2% (3) serving only seafood, 1% (2) primarily serving steak (steakhouses), 1% (1) serving vegan, vegetarian, raw and organic foods and 1% (1) serving raw foods only, while the remaining 8% (13) who identified their establishment as serving specialty foods did not clarify what those foods were. Thirteen percent (19 respondents) said they serve gourmet foods and 11% (17) said their establishment is a deli. Eleven percent (16 respondents) said they serve conventional or traditional foods, with 7% (10) identifying themselves as being conventional or family restaurants and 4% (6) identifying themselves as a traditional grocery store. Seven percent (10 respondents) said their establishment is a bakery and the remaining 1% (1 respondent) served breakfast foods only.

**Figure 1: Foodservice Establishment Segment**



The city and state of each respondent was noted in an effort to get an idea of where teff and other flour and grain products are being used. Figure 2 shows where the respondents were located by state. Twenty-six percent (32 respondents) were located in California, 17% (20) were in Colorado, 13% (25) were in Arizona, 9% (11) were in Utah, 8% (10) were in Nevada, 7% (8) were in Oregon, 5% (6) were in Washington, 3% (3) were in Idaho, 2% (2) were in Montana and 1% (1) was located in Wyoming. Nine percent (11 respondents) of respondents did not specify their location.

**Figure 2: Location of Respondents by State**



The respondents were asked to describe their title within the organization to give an understanding of the respondent's position. Fifty-two percent (62 respondents) of respondents said they were the manager or team leader for the establishment, 17% (20) said they were the owner, 14% (17) said they were a chef or the executive chef for the establishment, 8% (10) said they were the assistant manager or assistant team leader, 3% (4) said they worked in purchasing or buying, 3% (3) said they worked in marketing and 1% each (1 response each) said they were a clerk, a volunteer, and a bookkeeper.

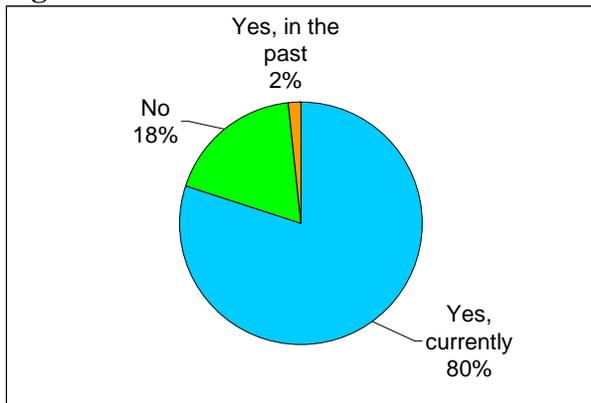
Respondents were also asked to describe their level of autonomy when making purchasing decisions for the establishment in an effort to determine how much input they were allowed in the establishment's decision-making process. Respondents were asked to rate their autonomy level on a scale of 1 to 10, where 1 indicated no autonomy and 10 indicated full autonomy. Forty-four percent (52 respondents) of respondents said they had full autonomy (a rating of 9 or

10), 12% (14) said they had much autonomy (a rating of 7 or 8), 18% (21) said they had some autonomy (a rating of 5 or 6), 5% (6) said they had little autonomy (a rating of 3 or 4) and 19% (23) said they had no autonomy (a rating of 1 or 2). Three respondents (3% of the total sample) did not answer the question. Using the ten-point scale, the average autonomy level was 6.7, meaning that on average, respondents had some to much autonomy. Respondents were asked how long they had had their current level of autonomy. The average length of time respondents had had this level of autonomy was just over 7 years, with responses ranging from a few months to 37 years to “forever.”

### *Local Purchases*

Respondents were asked whether their establishment purchases locally grown/produced foods (Figure 3). Eighty percent (92 respondents) said they currently purchase local foods, 2% (2) said they had purchased local foods in the past but did not currently do so and 18% (21) said they had never purchased local foods. Four respondents (3% of total sample) did not answer the question.

**Figure 3: Does Establishment Purchase Local Foods?**



Respondents who said they made local purchases were asked how long they had done so. The average length of time respondents had made local purchases was 10.4 years, with responses ranging from just a few months to 61 years to “forever.” Respondents were also asked to estimate the percentage of their total monthly purchases that are made locally. The average percentage was 33%, or one-third of purchases, with responses ranging from less than 1% to 100%.

### *Flour & Grain Attributes*

To better understand the motivations behind flour and grain purchasing decisions, the survey respondents were read a list of 12 flour and grain product attributes and were asked to provide their opinion as to the importance of each attribute. The attributes were rated on a scale of 1 to 5, where 1 indicated the attribute was “not important” and 5 indicated it was “extremely important.” The attributes respondents were asked to rate were product quality, product taste, product marketability, the product being healthy or nutritious, product price, the product’s ability to serve as a signature menu item or product for establishment, the product having a variety of menu applications, the product being locally grown, the product’s brand, whether the respondent personally knows the grower or processor, the product being certified natural or organic, and

whether the respondent is personally aware of the product's growing process. Figure 4 shows the six attributes given the highest ratings by respondents, which included quality, taste, price, the nutritious or healthy aspect of the product, marketability, and menu applications. These attributes were given average ratings between 3.91 and 4.93, meaning that on average, these attributes were found to be very important to extremely important.

The quality of a flour/grain product was given an average rating of 4.93, meaning that on average, respondents felt this was an extremely important attribute. Overall, 94% (106 respondents) of respondents rated quality as extremely important, 5% (6) rated it very important, and 1% (1) of respondents rated it as somewhat important. No respondents gave quality a rating of either slightly or not important, which emphasizes the impact of quality on these respondents' purchasing decisions. Six respondents (5% of total population) did not answer the question.

The taste of a flour/grain product was given an average rating of 4.82, just slightly lower than quality, indicating that like quality, respondents found taste to be an extremely important attribute. Overall, 86% (98 respondents) of respondents rated taste as extremely important, 11% (13) rated it as very important, 2% (2) rated it as somewhat important, and 1% (1) rated taste as not important. Five respondents (4% of total population) did not answer the question.

The price of a flour or grain product was given an average rating of 4.14, indicating that on average, respondents found price to be very important. Overall, 46% (52 respondents) of respondents rated price as extremely important, 32% (36) rated it as very important, 16% (18) rated it as somewhat important, 5% (6) rated it as slightly important, and 2% (2) of respondents rated price as not important. Although price was found to be very important on average, it is worth noting that 23% (26 respondents) of respondents rated price as being somewhat or less than somewhat important. This indicates that for some teff-purchasing establishments, price will be less of a consideration than other attributes, particularly quality and taste. Five respondents (4% of total population) did not answer the question.

The nutritious or healthy aspect of a flour or grain product was given an average rating of 4.11, meaning that on average, respondents found nutrition/health to be very important. Overall, 50% (53 respondents) of respondents rated nutrition/health as extremely important, 25% (28) rated it as very important, 16% (18) rated it as somewhat important, 6% (7) rated it as slightly important, and 4% (4) rated it as not important. Again, it is important to note that a greater percent of respondents (50%) rated the health and nutrition as extremely important compared to price (46%). This may be due to the fact that these respondents realize that their customers are often already paying premium prices to obtain products that they view as having greater health benefits than conventional products. This is something for teff suppliers to consider when entering this market. Five respondents (4% of total population) did not answer the question.

Marketability refers to the ease with which a product can be advertised and sold to customers, and was given an average rating of 4.06, indicating that on average, respondents found marketability to be a very important attribute. Overall, 49% (55 respondents) of respondents rated marketability as extremely important, 22% (25) rated it as very important, 20% (23) rated it as somewhat important, 4% (5) rated it as slightly important, and 4% (5) rated marketability as not important. The fact that very few respondents rated marketability as slightly or not important is a reminder that establishments offering these types of products must keep their ability to sell items in mind when considering purchases. Six respondents (5% of total population) did not answer the question.

A product's menu application refers to how versatile the product is in terms of creating dishes. Menu application was given a rating of 3.91, meaning that on average, this attribute was

found to be very important. Overall, 35% (37 respondents) of respondents rated menu applications as extremely important, 36% (38) rated it as very important, 18% (19) rated it as somewhat important, 10% (11) rated it as slightly important, and 2% (2) rated menu applications as not important. Twelve respondents (10% of total population) did not answer the question.

**Figure 4: Flour and Grain Attributes of Most Importance to Respondents**



Figure 5 shows the flour/grain product attributes that were given the lowest average ratings by respondents, including whether the product is a signature product for the establishment, the respondent being personally aware of the product’s growing process, whether the product is certified organic or natural, whether the product is locally grown, the product’s brand name, and whether the respondent personally knows the grower or producer of the product.

A product serves as a signature item for an establishment when it is the item that the establishment is known for, or the item that draws customers to the establishment. This aspect was given an average rating of 3.74, meaning that on average, it was found to be a very important attribute to respondents. Overall, 38% (41 respondents) of respondents rated signature appeal as an extremely important attribute, 20% (21) rated it as very important, 27% (29) rated it as somewhat important, 8% (8) rated it as slightly important, and 8% (8) rated it as not important. Twelve respondents (10% of total population) did not answer the question.

The respondent being personally aware of the growing process (i.e. having visiting the farm, or knowing what sorts of production practices are being employed) was given an average rating of 3.32, meaning that on average, respondents rated this knowledge as somewhat important. Overall, 23% (26 respondents) of respondents rated awareness of the growing process as extremely important, 27% (30) rated it as very important, 24% (27) rated it as somewhat important, 9% (10) rated it as slightly important, and 16% (18) rated it as not important. Eight respondents (7% of total population) did not answer the question.

A flour or grain product being certified organic and/or natural received an average rating of 3.29, meaning that on average, this attribute was found to be somewhat important. Overall, 30% (34 respondents) of respondents rated organic and/or natural certification as extremely important, 22% (25) rated it as very important, 18% (20) rated it as somewhat important, 7% (8) rated it as slightly important, and 23% (26) rated it as not important. Six respondents (5% of total population) did not answer the question.

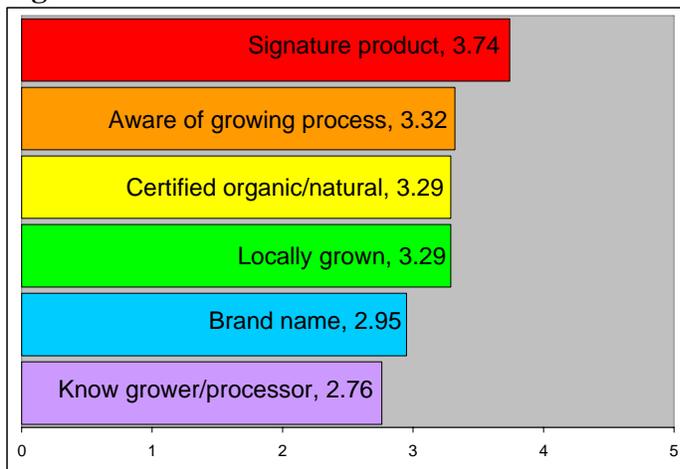
As with organic/natural certification, a flour or grain product being locally grown or produced received an average rating of 3.29, meaning that on average, the local aspect was found

to be somewhat important. Overall, 22% (25 respondents) of respondents rated locally grown as extremely important, 34% (39) rated it as very important, 12% (14) rated it as somewhat important, 14% (16) rated it as slightly important, and 18% (20) rated it as not important. Five respondents (4% of total population) did not answer the question.

The brand name of a flour/grain product was given an average rating of 2.95, indicating that this attribute was found to be somewhat important on average. Overall, 21% (23 respondents) rated brand name as extremely important, 11% (12) rated it as very important, 30% (33) rated it as somewhat important, 21% (23) rated it as slightly important, and 18% (20) rated brand name as not important. Eight respondents (7% of total population) did not answer the question.

Finally, the respondent personally knowing the grower or producer of the flour/grain product received an average rating of 2.76, indicating that on average this attribute was found to be somewhat important, but to a much lesser degree than the other attributes receiving average ratings around 3.0. Overall, 12% (13 respondents) of respondents rated knowing the grower or processor as extremely important, 22% (25) rated it as very important, 25% (28) rated it as somewhat important, 14% (16) rated it as slightly important, and 27% (31) rated it as not important. The lower rating of this attribute may be a product of the fact that there is likely to be more of a gap between growers and end users of flour and grain relative to products such as fresh fruits and vegetables. Six respondents (5% of total population) did not answer the question.

**Figure 5: Flour and Grain Attributes of Lesser Importance to Respondents**



Next respondents were read another 12 attributes and were asked to rate them based on how important they thought the attributes were to their customers. As with the previous attributes, these were rated on a scale of 1 to 5, with 1 indicating the attribute is “not important,” and 5 indicating that it is “extremely important.” The attributes respondents were asked to rate in terms of importance to their customers were freshness, taste and flavor, brand name, gluten-free, food safety, packing material (material and size), sales or promotions, organic, natural, origin of the product (local or not), environmentally friendly production, and price. Figure 6 shows the five attributes respondents felt were most important to their customers when considering flour/grain purchases. These attributes included taste and flavor, food safety, freshness, price, and certified natural.

Respondents felt that taste/flavor was the attribute their customers value most when purchasing flour and grain products, giving it an average rating of 4.81, meaning that on average, respondents felt taste and flavor were extremely important to their customers. Overall, 86% (95

respondents) rated taste and flavor as extremely important, 10% (11) rated it as very important, and 5% (5) rated it as somewhat important. The fact that no respondents rated taste and flavor as either slightly or not important indicates that respondents felt that this is an attribute that motivates their customers.

Food safety is an issue that has emerged with increased importance over the past decade, as concerns of BSE (Bovine Spongiform Encephalopathy, or “Mad Cow Disease”), *Salmonella*, *E. Coli*, and *Listeria* have led to recalls ranging from small-scale to widespread. Respondents rated food safety as being only a little less important to customers than taste and flavor, giving it an average rating of 4.79, which indicates that on average, respondents felt this was an extremely important attribute. Overall, 85% (93 respondents) of respondents rated food safety as extremely important, 11% (12) rated it as very important, 4% (4) rated it as somewhat important, and 1% (1) rated food safety as slightly important. Again, it is worth noting that none of the respondents rated food safety as not important. Nine respondents (8% of total population) did not answer the question.

Freshness was given an average rating of 4.75, indicating that on average, respondents felt their customers think product freshness is extremely important. Overall, 81% (90 respondents) of respondents rated freshness as extremely important, 14% (16) rated it as very important, 3% (3) rated it as somewhat important, and 2% (2) rated freshness as slightly important. Again, no respondents gave this attribute a rating of not important. Eight respondents (7% of total population) did not answer the question.

Price received the next-highest rating at 4.02, considerably lower than the top three attributes. Price was considered to be very important on average in terms of respondents’ customers. Overall, 44% (48 respondents) of respondents rated price as extremely important, 30% (33) rated it as very important, 17% (19) rated it as somewhat important, 3% (2) rated it as slightly important, and 6% (7) rated price as not important. Nine respondents (8% of total population) did not answer the question.

Certified natural was given a rating of 3.69, meaning that on average, respondents found natural certification to be very important to their customers, but to a much lesser degree than price. Overall, 41% (45 respondents) of respondents rated natural certification as extremely important, 20% (22) rated it as very important, 17% (19) rated it as somewhat important, 11% (12) rated it as slightly important, and 11% (12) rated natural certification as not important. Nine respondents (8% of total population) did not answer the question.

**Figure 6: Flour and Grain Attributes of Most Importance to Customers**

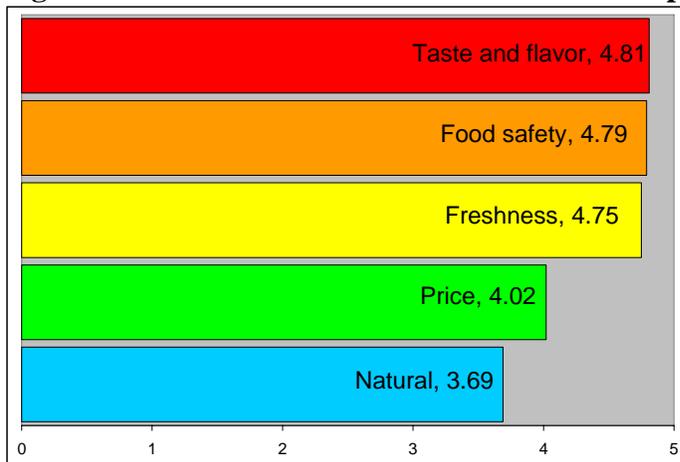


Figure 7 shows the flour and grain attributes respondents felt were of less importance to their customers. These attributes include environmentally-friendly production, gluten-free, certified organic, packaging, sales and promotions, locally grown/processed, and brand name.

Environmentally-friendly production was given an average rating of 3.58, meaning that on average, it was found by respondents to be very important to their customers. Overall, 29% (32 respondents) of respondents rated environmentally-friendly production as extremely important, 27% (30) rated it as very important, 26% (29) rated it as somewhat important, 7% (8) rated it as slightly important, and 10% (11) rated it as not important. Nine respondents (8% of total population) did not answer the question.

Gluten-free was given a rating of 3.57, meaning that on average, respondents felt it was somewhat important to very important to their customers. Overall, 32% (34 respondents) of respondents rated gluten-free as extremely important, 21% (23) rated it as very important, 30% (32) rated it as somewhat important, 8% (9) rated it as slightly important, and 9% (10) rated gluten-free as not important. Eleven respondents (9% of total population) did not answer the question.

Organic certification was given an average rating of 3.32, indicating that on average, respondents felt this attribute was somewhat important to their customers. Overall, 29% (32 respondents) of respondents rated organic certification as extremely important, 18% (20) rated it as very important, 25% (28) rated it as somewhat important, 12% (13) rated it as slightly important, and 16% (18) rated organic certification as not important. Eight respondents (7% of total population) did not answer the question.

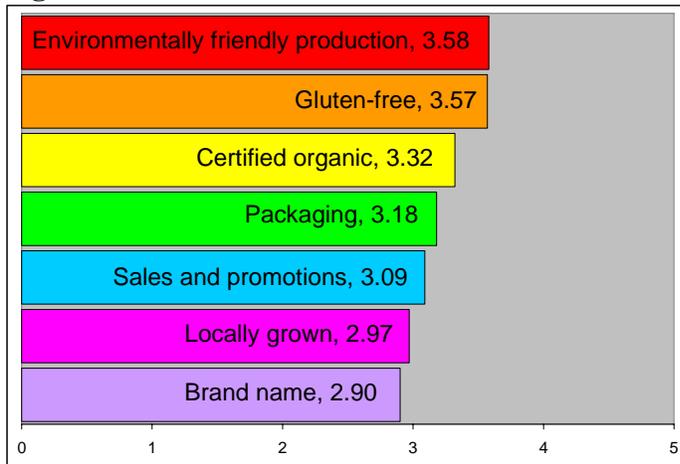
Product packaging, meaning the material the product is packaged in as well as the size of the package, was given a rating of 3.18, meaning that on average, respondents felt that product packaging was somewhat important to their customers. Overall, 23% (25 respondents) of respondents rated product packaging as extremely important, 22% (24) rated it as very important, 26% (28) rated it as somewhat important, 11% (12) rated it as slightly important, and 19% (21) rated product packaging as not important. Nine respondents (8% of total population) did not answer the question.

Sales and promotional pricing was given an average rating of 3.09, meaning that on average, respondents felt this attributes was somewhat important to their customers. Overall, 19% (21 respondents) of respondents rated sales and promotional pricing as extremely important, 23% (25) rated it as very important, 22% (24) rated it as somewhat important, 23% (25) rated it as slightly important, and 14% (16) rated sales and promotional pricing as not important. Eight respondents (7% of total population) did not answer the question.

Locally grown and/or processed was given an average rating of 2.97, indicating that on average, respondents felt local production was somewhat important to their customers. Overall, 13% (14 respondents) of respondents rated local production as extremely important, 26% (28) rated it as very important, 28% (31) rated it as somewhat important, 14% (15) rated it as slightly important, and 20% (22) rated it as not important. Nine respondents (8% of total population) did not answer the question.

The brand name of a flour or grain product was given an average rating of 2.90, indicating that on average, respondents felt brand name was somewhat important to their customers, but to a lesser degree than the previous attributes. Overall, 13% (14 respondents) of respondents rated brand name as extremely important, 17% (19) rated it as very important, 36% (40) rated it as somewhat important, 16% (18) rated it as slightly important, and 18% (20) rated brand name as not important. Eight respondents (7% of total population) did not answer the question.

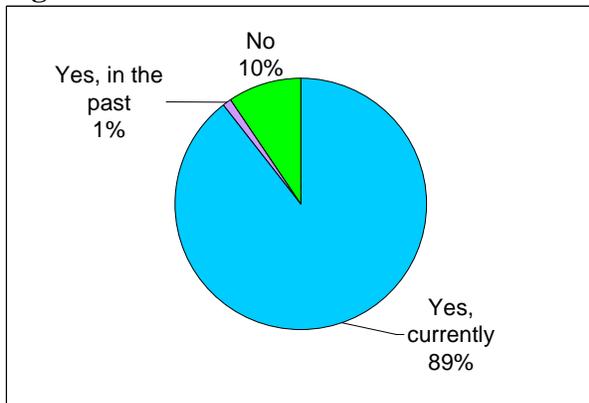
**Figure 7: Flour and Grain Attributes of Lesser Importance to Customers**



*Flour, Grain and Teff Purchasing History & Supplier Attributes*

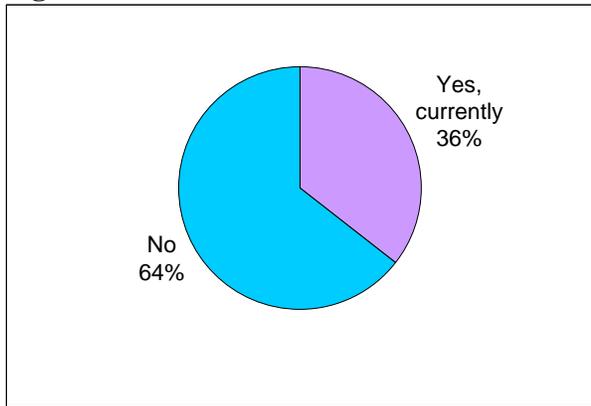
Respondents were asked whether their establishment offers special gluten-free products, options, or menu items (Figure 8). Eighty-nine percent (103 respondents) of respondents said they do currently offer gluten-free products, 1% (1) said they do not currently offer gluten-free products but have done so in the past, and 10% (11) of respondents said their establishment does not offer gluten-free products, options, or menu items. Four respondents (3% of total population) did not answer the question.

**Figure 8: Does Establishment Offer Gluten-Free Products?**



Respondents were asked if their establishment uses teff products (Figure 9). Thirty-six percent (41 respondents) of respondents said their establishment does currently use teff products, while the other 64% (74) of respondents said they do not. Four respondents (3% of total population) did not answer the question.

**Figure 9: Does Establishment Utilize Teff Products?**



Respondents who said their establishment uses teff products were asked to describe the purchasing outlet they use to obtain teff. Table 1 lists the teff purchasing outlets respondents described, the number of respondents who said they use each outlet, and the percent of respondents making teff purchases who said they used each outlet. Please note that respondents were given the option of describing more than one purchasing outlet.

The teff purchasing outlet that was most popular among respondents was a regional or national grain miller or processor, with 15 respondents selecting this outlet, representing 37% of teff purchases. Foodservice distributors were the next most popular outlet, with 10 respondents (24% of teff purchases) using this outlet, followed by a local grain miller or processor with 9 respondents (22%). Eight respondents (20%) said they purchase teff directly from a farmer, 3 respondents (7%) said they use a farmers’ market, 2 respondents (5%) use a local conventional grocery outlet, 2 respondents (5%) use a specialty or ethnic foods grocery outlet, and another 2 respondents (5%) purchase teff from a health food store. Ten respondents (24% of respondents purchasing teff) said they use an “other” unspecified outlet.

**Table 1: Teff Purchasing Outlets**

Teff Purchasing Outlet	Respondents Who Use This Outlet	Percent of Total Respondents Purchasing Teff
Regional/national miller/processor	15	37%
Foodservice distributor	10	24%
Local miller/processor	9	22%
Direct from farmer	8	20%
Farmers' market	3	7%
Local grocery outlet	2	5%
Specialty/ethnic foods grocery/outlet	2	5%
Health food store	2	5%
Other	10	24%

Respondents who purchase teff were asked whether they purchase other products from their teff supplier. Thirty-two respondents (78% of teff-purchasing respondents) said they do make additional purchases from their teff supplier. Respondents were then asked to describe the types of additional products they purchase from their teff supplier. Table 2 lists the products respondents described, the number of respondents who said they purchase that product, and the

percent of respondents who purchase each item (out of respondents who make additional purchases). Please note that respondents were given the option of listing more than one product.

Twenty-four respondents (75% of respondents making additional purchases) said they purchase other gluten-free flours (such as amaranth, sorghum, millet, quinoa, buckwheat, etc.) from their teff suppliers, 21 respondents (66%) said they purchase specialty meals (such as corn and flax seed), 19 respondents (59%) said they purchase mixed-grain flours, 9 respondents (28%) said they purchase cooking oils, 9 respondents (28%) said they purchase fresh fruits and vegetables, 9 respondents (28%) said they purchase processed fruits and vegetables, 9 respondents (28%) said they purchase ethnic food products, 7 respondents (22%) said they purchase un-milled grains, and 6 respondents (19%) said they also purchase spices and herbs from their teff suppliers. An additional 7 respondents (22%) said they purchase “other” unspecified products from their teff supplier.

**Table 2: Other Products Purchased From Teff Supplier**

Products Purchased From Teff Supplier	Respondents Who Purchased Product	Percent of Total Respondents Making Additional Purchases
Other gluten-free flours	24	75%
Specialty meals	21	66%
Mixed-grain flours	19	59%
Cooking oils	9	28%
Fresh fruits and vegetables	9	28%
Processed fruits and vegetables	9	28%
Ethnic food products	9	28%
Un-milled grains	7	22%
Spices and herbs	6	19%
Other	7	22%

Next respondents were presented with a list of ten attributes and were asked to rate them in relation to their current teff, flour and/or grain supplier. The attributes were rated on a scale of 1 to 5, with 1 indicating the respondent was very unsatisfied with the establishment’s supplier, and 5 indicating the respondent was very satisfied with the supplier. The supplier attributes respondents were asked to rate were timeliness of delivery, method of delivery, price, promotional strategies, quality of product, product consistency, product offering, product sizes, customer service, and product availability. Figure 10 lists the supplier attributes that respondents were most satisfied with, including product quality, product consistency, timeliness of delivery, method of delivery, customer service, and product availability.

Product quality was given the highest average rating of 4.57, indicating that on average, respondents were very satisfied with their suppliers in terms of product quality. Overall, 64% (58 respondents) of respondents said they were very satisfied with their supplier’s product quality, 30% (27) were satisfied, and 7% (6) said they were neither satisfied nor unsatisfied. This indicates that suppliers wishing to break into this market must be very concerned with the quality of their product, as current purchasers are already very satisfied with the quality of product they are purchasing. Twenty-eight respondents (24% of total population) did not answer the question.

Product consistency (in terms of receiving a product of consistent quality) was given an average rating of 4.49, indicating that on average, respondents were satisfied to very satisfied

with the consistency of the product they receive from their flour/grain suppliers. Overall, 62% (57 respondents) of respondents said they were very satisfied with the consistency of their supplier's product, 29% (27) said they were satisfied, 5% (5) were neither satisfied nor unsatisfied, 2% (2) were unsatisfied, and 1% (1) was very unsatisfied. Twenty-seven respondents (23% of total population) did not answer the question.

Timeliness of delivery was given an average rating of 4.45, indicating that on average, respondents were satisfied to very satisfied with the timeliness of their supplier's deliveries. Overall, 55% (51 respondents) of respondents were very satisfied with their supplier's timeliness of delivery, 36% (33) were satisfied, 7% (6) were neither satisfied nor unsatisfied, and 2% (2) were unsatisfied. Twenty-seven respondents (23% of total population) did not answer the question.

Respondents gave method of delivery an average rating of 4.42, indicating that on average, respondents were satisfied to very satisfied with their supplier's method of delivery. Overall, 55% (51 respondents) of respondents were very satisfied with their supplier's method of delivery, 33% (31) were satisfied, 11% (10) were neither satisfied nor unsatisfied, and 1% (1) was unsatisfied. Twenty-six respondents (22% of total population) did not answer the question.

Customer service received an average rating of 4.30, indicating that on average, respondents were satisfied to very satisfied with the customer service of their suppliers. Overall, 52% (48 respondents) of respondents were very satisfied with their supplier's customer service, 28% (26) were satisfied, 17% (16) were neither satisfied nor unsatisfied, and 2% (2) were unsatisfied. Twenty-seven respondents (23% of total population) did not answer the question.

Product availability was given an average rating of 4.25, indicating that on average, respondents were satisfied to very satisfied with the product availability of their suppliers. Overall, 53% (48 respondents) of respondents said they were very satisfied with the product availability of their suppliers, 29% (26) said they were satisfied, 13% (12) said they were neither satisfied nor unsatisfied, 2% (2) said they were unsatisfied, and 3% (3) said they were very unsatisfied. Twenty-eight respondents (24% of total population) did not answer the question.

**Figure 10: Most Satisfactory Supplier Attributes**

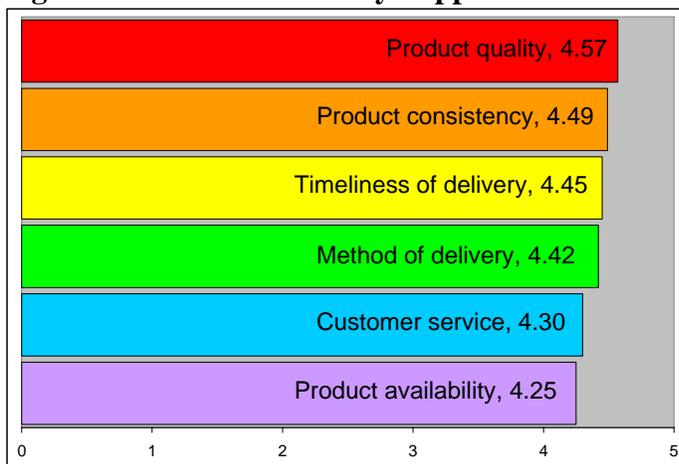


Figure 11 shows the supplier attributes that respondents were less satisfied with, including product sizes, product offering, price, and promotional strategies. Product sizing was given an average rating of 4.18, indicating that on average, respondents were satisfied with their supplier's product sizes. Overall, 48% (44 respondents) of respondents were very satisfied with their

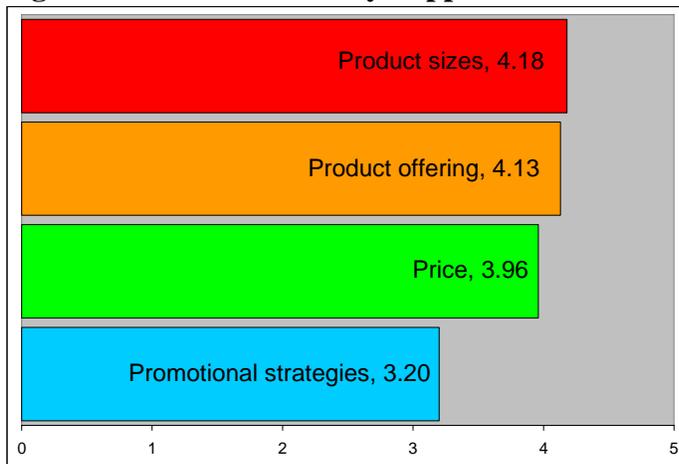
supplier's product sizes, 30% (27) were satisfied, 14% (13) were neither satisfied nor unsatisfied, 7% (6) were unsatisfied, and 1% (1) was very unsatisfied. Twenty-eight respondents (24% of total population) did not answer the question.

Product offering received an average rating of 4.13, indicating that on average, respondents were satisfied with their supplier's product offering. Product offering differs from availability in that offering refers to the range of products the supplier offers, while availability refers to which of the offered products are available at a given time. Overall, 50% (45 respondents) of respondents were very satisfied with their supplier's product offering, 30% (27) were satisfied, 10% (9) were neither satisfied nor unsatisfied, 7% (6) were unsatisfied, and 4% (4) were very unsatisfied. This may be an indication that establishments are looking for suppliers who can offer a wider range of items. Twenty-eight respondents (24% of total population) did not answer the question.

Price was given an average rating of 3.96, indicating that on average, respondents were satisfied with the pricing of their suppliers. Overall, 33% (30 respondents) of respondents were very satisfied with their supplier's pricing, 40% (37) were satisfied, 20% (18) were neither satisfied nor unsatisfied, 5% (5) were unsatisfied, and 2% (2) were very unsatisfied. Twenty-seven respondents (23% of total population) did not answer the question.

Promotional strategies received an average rating of 3.20, indicating that on average, respondents were neither satisfied nor unsatisfied with the promotional strategies of their suppliers. Overall, 22% (20 respondents) of respondents were very satisfied with their supplier's promotional strategies, 20% (18) were satisfied, 28% (25) were neither satisfied nor unsatisfied, 16% (14) were unsatisfied, and 14% (13) were very unsatisfied. This is an area that teff suppliers may consider when attempting to enter the market, as 30% (19) of respondents are experiencing some degree of dissatisfaction with the promotional strategies their current suppliers use. Twenty-nine respondents (24% of total population) did not answer the question.

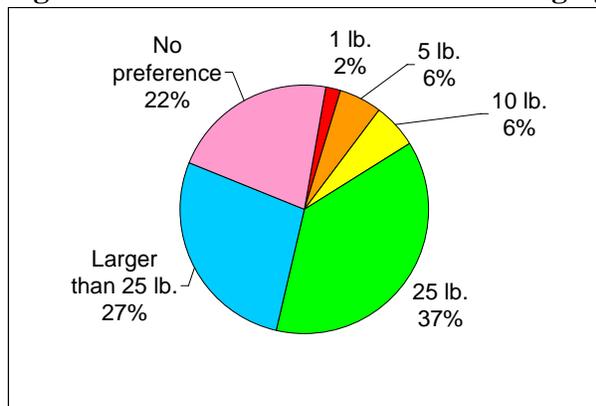
**Figure 11: Less Satisfactory Supplier Attributes**



Respondents were asked what sort of packing size they prefer when purchasing flour and grains (Figure 12). Only 2% (2 respondents) of respondents preferred 1-pound packages, while 6% (6) of respondents preferred 5-pound packages, and another 6% (6) preferred 10-pound packages. More than one-third of respondents, 37% (40 respondents), preferred flour/grain to come in 25-pound packages, while 27% (29) preferred packages in excess of 25 pounds, and the

remaining 22% (23) of respondents said they had no particular preference as to packaging sizes. Thirteen respondents (11% of the total population) did not answer the question.

**Figure 12: Preferred Flour/Grain Packaging Sizes**



Survey respondents were asked to estimate how many pounds of flour, grain and meal they had purchased over the past three months and of what type. Table 3 lists the items that were purchased, the total pounds that were purchased in the past three months, the pounds that were purchased per month, total average purchases for the past three months, the average per-month purchases and the number of respondents who purchased each item along with the percent of the total population this represents. The table is ordered by the number of respondents who purchased the item, from most to least popular.

Corn starch was purchased by the greatest number of respondents, with 43% (51 respondents) of respondents purchasing this product. The total amount purchased was 2,177 pounds, which translates to 726 pounds per month. The average amount purchased in the three month time frame was 43 pounds, which is an average of 14 pounds per respondent per month.

Corn meal was purchased by 40% (48 respondents) of respondents. A total of 11,710 pounds of corn meal was purchased in the three month period, or 3,903 pounds per month, making this the fifth most purchased product. Respondents purchased an average of 244 pounds of corn meal during this period, or 81 pounds per respondent per month.

Bleached all-purpose wheat flour was purchased by 29% (35 respondents) of respondents. A total of 40,675 pounds was purchased during the three-month period, or 13,558 pounds per month, making this the most-purchased product. Respondents purchased an average of 1,162 pounds of bleached all-purpose wheat flour, or 387 pounds per respondent per month.

Garbanzo (chickpea) flour was purchased by 21% (25 respondents) of respondents. A total of 2,265 pounds of garbanzo flour was purchased during the three-month period, or 755 pounds per month. Respondents purchased an average of 91 pounds of garbanzo flour, or 30 pounds per respondent per month.

Buckwheat flour was purchased by 20% (24 respondents) of respondents. A total of 2,041 pounds of buckwheat flour was purchased over the course of the three-month period, or 680 pounds per month. Respondents purchased an average of 85 pounds of buckwheat flour during this period, or 28 pounds per respondent per month.

Flax seed meal was purchased by 20% (24 respondents) of respondents. A total of 1,857 pounds of flax seed meal was purchased during the three-month period, or 619 pounds per

month. Respondents purchased an average of 77 pounds of flax seed meal during this time, or 26 pounds per respondent per month.

Teff flour was purchased by 19% (23 respondents) of respondents. A total of 10,458 pounds of teff flour was purchased during the three-month period, or 619 pounds per month, making this the sixth most popular item. Respondents purchased an average of 455 pounds of teff flour, or 152 pounds per respondent per month.

Millet flour was purchased by 18% (22 respondents) of respondents. A total of 1,999 pounds of millet flour was purchased by respondents during the three-month period, or 666 pounds per month. Respondents purchased an average of 91 pounds of millet flour, or 30 pounds per respondent per month.

Sorghum flour was purchased by 18% (21 respondents) of respondents. A total of 9,773 pounds of sorghum flour was purchased in three months, or 3,258 pounds per month. Respondents purchased an average of 465 pounds of sorghum flour, or 155 pounds per respondent per month.

Amaranth flour was purchased by 17% (20 respondents) of respondents. A total of 2,850 pounds of amaranth flour was purchased in three months, or 950 pounds per month. Respondents purchased an average of 142 pounds of amaranth flour during this period, or 47 pounds per respondent per month.

Quinoa flour was purchased by 17% (20 respondents) of respondents. A total of 2,845 pounds of quinoa flour was purchased during the three-month period, or 948 pounds per month. Respondents purchased an average of 142 pounds of quinoa flour during this period, or 47 pounds per respondent per month.

Rice flour was purchased by 10% (12 respondents) of respondents. A total of 31,298 pounds of rice flour was purchased during the three-month period, or 10,433 pounds per month, making rice flour the second most popular product (note that this included respondents who described the product as “rice flour” as there is a separate category for respondents who specified “brown rice flour”). Respondents purchased an average of 2,608 pounds of rice flour during this period, or 869 pounds of rice flour per respondent per month.

Mixed whole grain flour was purchased by 10% (12 respondents) of respondents. A total of 1,103 pounds of mixed whole grain flour was purchased during the three-month period, or 368 pounds per month. Respondents purchased an average of 92 pounds during this period, or 31 pounds per respondent per month.

All-purpose flour was purchased by 8% (9 respondents) of respondents. A total of 17,440 pounds of all-purpose flour was purchased during the three-month period, or 5,813 pounds per month, making this the third most popular product. Respondents purchased an average of 1,938 pounds of all-purpose flour during this period, or 646 pounds per respondent per month.

Un-milled teff grain was purchased by 7% (8 respondents) of respondents. A total of 329 pounds of un-milled teff grain was purchased over the course of three months, or 110 pounds per month. Respondents purchased an average of 41 pounds of un-milled teff grain during this period, or 14 pounds per respondent per month.

Unbleached all-purpose flour was purchased by 5% (6 respondents) of respondents. A total of 4,306 pounds of unbleached all-purpose flour was purchased during the three-month period, or 1,435 pounds per month. Respondents purchased an average of 718 pounds of unbleached all-purpose flour during this period, or 239 pounds per respondent per month.

Cassava flour was purchased by 4% (5 respondents) of respondents. A total of 14,107 pounds of cassava flour was purchased during the three-month period, or 4,702 pounds per

month, making this the fourth most popular item. Respondents purchased 2,821 pounds of cassava flour during this period, or 940 pounds per respondent per month.

Brown rice flour was purchased by 3% (4 respondents) of respondents. A total of 3,114 pounds of brown rice flour was purchased during the three-month period, or 1,038 pounds per month. Respondents purchased an average of 779 pounds of brown rice flour during this period, or 260 pounds per month.

Bread flour was purchased by 3% (4 respondents) of respondents. A total of 2,050 pounds of bread flour was purchased during the three-month period, or 683 pounds per month. Respondents purchased an average of 513 pounds of bread flour during this period, or 171 pounds per respondent per month.

Tapioca flour was purchased by 3% (4 respondents) of respondents. A total of 481 pounds of tapioca flour was purchased during the three-month period, or 160 pounds per month. Respondents purchased an average of 120 pounds of tapioca flour, or 40 pounds per respondent per month.

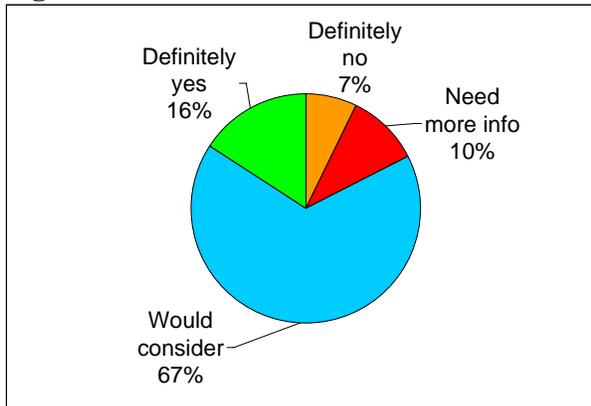
**Table 3: Three-Month Purchases**

Flour Type	Total Purchased (lbs)	Monthly Purchases (lbs/mo)	Average Purchased (lbs)	Monthly Average (lbs/mo)	Number Purchased (Percent of Total Respondents)
Corn starch	2,177	726	43	14	51 (43%)
Corn meal	11,710	3,903	244	81	48 (40%)
Bleached all-purpose wheat flour	40,675	13,558	1,162	387	35 (29%)
Garbanzo/Chickpea flour	2,265	755	91	30	25 (21%)
Buckwheat flour	2,041	680	85	28	24 (20%)
Flax seed meal	1,857	619	77	26	24 (20%)
Teff flour	10,458	3,486	455	152	23 (19%)
Millet flour	1,999	666	91	30	22 (18%)
Sorghum flour	9,773	3,258	465	155	21 (18%)
Amaranth flour	2,850	950	142	47	20 (17%)
Quinoa flour	2,845	948	142	47	20 (17%)
Rice flour	31,298	10,433	2,608	869	12 (10%)
Mixed whole grain flour	1,103	368	92	31	12 (10%)
All purpose flour	17,440	5,813	1,938	646	9 (8%)
Teff grain, un-milled	329	110	41	14	8 (7%)
Unbleached all-purpose flour	4,306	1,435	718	239	6 (5%)
Cassava flour	14,107	4,702	2,821	940	5 (4%)
Brown rice flour	3,114	1,038	779	260	4 (3%)
Bread flour	2,050	683	513	171	4 (3%)
Tapioca flour	481	160	120	40	4 (3%)

*Respondents Who Do Not Currently Offer/Use Teff Products*

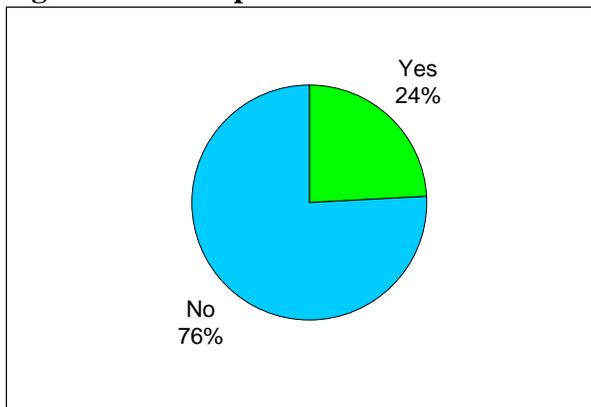
The respondents who said they do not currently offer teff products were asked whether or not they would consider offering teff in the future (Figure 13). While 7% (5 respondents) said they would definitely not offer teff in the future, 16% (11) said they definitely would, 67% (46) said they would consider it, and another 10% (7) said they would need more information about teff before drawing any conclusions. Five respondents (7% of respondents who said they do not currently offer teff) did not answer the question.

**Figure 13: Would Establishment Consider Offering Teff?**



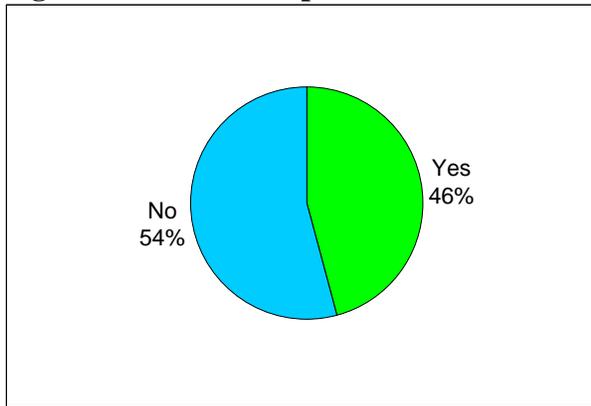
Respondents who do not currently offer teff were asked if they were familiar with the attributes and potential uses for teff (Figure 14). While 24% (17 respondents) of respondents said they were familiar with teff’s attributes and uses, the majority of respondents not currently using teff, 76% (53), said they were unfamiliar with teff’s qualities. Four respondents (5% of respondents not currently using teff) did not answer the question.

**Figure 14: Is Respondent Familiar With Attributes of/Uses for Teff?**



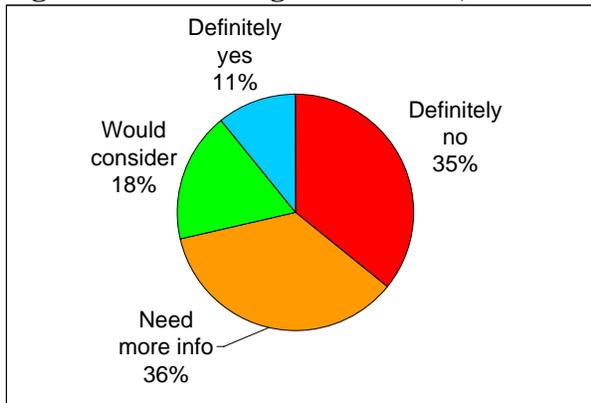
Respondents were then asked if they would like to receive a brief overview of teff characteristics (Figure 15). The responses were divided fairly evenly, with 46% (28 respondents) of respondents accepting the offer of more information and the other 54% (33) declining the offer. Thirteen respondents (18% of respondents not currently offering teff) did not answer the question.

**Figure 15: Would Respondent Like to Hear an Overview of Teff Characteristics?**



Following the offer of more information about teff, respondents who said they would like to hear more were read a short description of teff’s attributes and potential uses. These respondents were then asked whether they would consider offering teff now that they knew more about it (Figure 16). While 35% (10 respondents) of these respondents said they would still definitely not offer teff in the future, 11% (3) said they definitely would offer teff, 18% (5) said they would consider offering teff, and the remaining 36% (10) said they would need even more information to be sure.

**Figure 16: Following Information, Would Respondent Consider Offering Teff Products?**



## Recommendations

The following paragraphs provide recommendations based on the competitive analysis, market analysis and market survey results. Overall, the market potential for a new teff flour supplier is favorable, as there are few teff suppliers nationwide and teff users find the availability of teff flour inconsistent. However, consumers in ethnic and specialty-diet markets can be very loyal to their suppliers, making market entry for new suppliers difficult. The “threats” discussed in the previous sections should be strongly considered.

When asked about their current supplier, product availability, size and price rated in the bottom five of current supplier attributes, meaning they were considered to be less satisfactory. This result could indicate that their current supplier does not always have the teff products available when ordered, meaning that the supply isn’t keeping up with demand. If this is the

case, additional suppliers could benefit from the unfulfilled demand. If the sizes offered are not agreeable to the respondent, a new supplier could offer the sizes of interest and differentiate itself from other suppliers in this way. For example, the majority of respondents (64%) preferred 25-pound bags or larger, while the majority of current teff millers and distributors only offer 1-, 5-, and 25-pound bags. If a new supplier was to offer 25-, 50- and perhaps 75-pound bags, this would also be a way for the supplier to differentiate itself from the competition. Current pricing for 25- to 50-pound bags ranges from \$2.20 to \$2.50 per pound. A new supplier who could effectively mill, package, market and transport for \$2.20 per pound or less would be in a potentially profitable position. Teff seed producers in Nevada are currently receiving \$0.38 per pound of teff seed, leaving a margin of \$1.82 per pound for milling, packaging, marketing, and transportation functions. As 80% of the respondents currently purchase local foods and rated locally grown as a somewhat important attribute (3.2 out of 5), a supplier focusing on “local” as a marketing strategy may also find they could garner a slightly higher price.

Survey respondents mentioned that product quality, taste and price were the three most important product attributes. They were also very satisfied with the product quality of their current supplier. Hence, it would be of utmost importance for a new supplier to maintain the highest quality and food safety standards. Packaging and delivery options should be examined to make sure they preserve a high product quality.

Finally, a new supplier focused on teff seed production in Nevada would want to concentrate on Ethiopian and gluten-free specialty restaurants and groceries in Nevada, as well as in neighboring states such as California and Arizona. There are several reasons for this. The first is the ability to reduce shipping charges by covering a smaller distribution area. The second is the ability to focus on the “local” aspect of the product and effectively market the small farmer image, which is appealing to those consumers interested in food safety, energy efficiency, and support of local agriculture. Finally, the majority of Ethiopian and other African ethnic restaurants and groceries are in California and Arizona, with many now emerging in the Las Vegas, NV area as well.



## Appendices

### Appendix 1: U.S. Teff Millers and Distributors

Company	Location	Product	Total		Price per		Other Notes	Company Average Price per Pound- Teff Flour	Company Average Price per Pound- Teff Grain
			Poundage	Unit Price	price per pound	Product Notes			
Bob's Red Mill	Milwaukee, OR	Flour	25	\$53.36	\$2.13				
		Flour	6.5	\$23.36	\$3.59	6.5 lbs- Case of 4 24 oz pkg			
		Flour	1.5	\$6.49	\$4.33	1.5 lbs- single 24 oz pkg		\$3.35	
ADA Teff from Go-Star Wholesale	Austin, TX	Flour	55	\$125.99	\$2.29	Labeled "100% Organic"			
		Flour	20	\$49.00	\$2.45	Labeled "100% Organic"	Shipping included for US orders		
		Flour	15	\$35.99	\$2.40	Labeled "100% Organic"			
		Flour	5	\$18.99	\$3.80	Labeled "100% Organic"		\$2.73	
Garden Spot Distributors	New Holland, PA	Flour	6	\$28.20	\$4.70	1 lb bags in case of 6	Label: "All Natural"		
		Flour		\$6.99	N/A	SRP per 1 lb bag		\$4.70	
Teff Co	Caldwell, ID	Sample pack	4	\$20.00	N/A	Ivory and brown flour and grain			
		Flour- Ivory	5	\$20.00	\$4.00				
		Flour- Brown	5	\$20.00	\$4.00				
		Flour- Ivory	25	\$63.25	\$2.53		Shipping included. Prices for US only.		
		Flour- Brown	25	\$63.25	\$2.53				
		Grain- Ivory	5	\$20.00	\$4.00				
		Grain- Brown	5	\$20.00	\$4.00				
		Grain- Ivory	25	\$60.50	\$2.42				
		Grain- Brown	25	\$60.50	\$2.42			\$3.27	\$3.21
True Foods Market (selling Teff Co Products)	Ormet, UT	Flour- Brown	1	\$3.65	\$3.65				
		Flour- Brown	25	\$64.68	\$2.59				
		Flour- Ivory	1	\$3.65	\$3.65				
		Flour- Ivory	25	\$63.15	\$2.53				
		Grain- Brown	1	\$3.40	\$3.40				
		Grain- Brown	25	\$57.37	\$2.29				
		Grain- Brown	5	\$14.53	\$2.91				
		Grain- Ivory	1	\$3.40	\$3.40				
Abyssinian Market	Durham, NC	Flour	1	\$7.95	\$7.95				
		Flour	5	\$31.95	\$6.39			\$7.17	
ConAgra Mills		Grain			\$2.04		Minimum order of 50 lbs; Price/lb for all orders 50-1000 pounds; In 50 lb bags		
		Flour			\$2.50				
		6-Grain Flour			\$1.39				
		9-Grain Flour			\$1.58		\$2.50	\$2.04	

## Appendix 2: Market Survey Instrument

1. Out of the following choices, which foodservice/grocery segment would your establishment most identify with?
  - Gourmet
  - Specialty
    - Vegan    Vegetarian    Raw    Certified-organic only    Other\_\_\_\_\_ (please circle)
  - Ethnic
    - Ethiopian    Other African    Yemenese/Indian    Italian    Other\_\_\_\_\_ (please circle)
  - Health food (Wild Oats, Whole Foods, Trader Joe's, etc.)
  - Traditional grocery (Raley's, Scolari's, Smith's)
  - Conventional/Family
  - Bakery    Deli    Tea/Coffee house    (please circle)
  - Other\_\_\_\_\_
  
2. Which of the following best describes the ownership status of your establishment?
  - Chain/Franchise
  - Corporate
  - Independent
  - Other \_\_\_\_\_
  
3. (If a restaurant): Approximately how many meal units does your establishment serve daily?  
 \_\_\_\_\_ Units
  
4. What is your title/position? \_\_\_\_\_ Establishment location? \_\_\_\_\_(city)
  
5. How much autonomy or freedom do you have to select suppliers? Please rate autonomy on a scale of 1 to 10 where 1 indicates you have *No Autonomy* and 10 indicates you have *Complete Autonomy*.
 

No Autonomy	Complete Autonomy
1    2    3    4    5    6    7    8    9    10	
  
6. How long have you had this level of autonomy? \_\_\_\_\_ (Years/Months)
  
7. Does your establishment currently purchase locally grown products?
  - Yes, currently (Continue on)
  - Yes, in the past but not currently (Skip to Question 10)
  - No (Skip to Question 10)
  
8. How long has your establishment been offering locally grown foods?  
 \_\_\_\_\_ (Years/Months)
  
9. What percent of your establishment's monthly food purchases are locally grown food products?  
 \_\_\_\_\_% (Please provide your best estimate)

10. I am going to list 12 flour/grain attributes for you. After I read each attribute, please rate it on a scale of 1 to 5 where 1 indicates the attribute is *Not Important* and 5 indicates it is *Extremely Important*.

<u>Attribute</u>	<u>Not Important</u>	<u>Slightly Important</u>	<u>Somewhat Important</u>	<u>Very Important</u>	<u>Extremely Important</u>
Product quality	1	2	3	4	5
Product taste	1	2	3	4	5
Product marketability	1	2	3	4	5
Product is nutritious & healthy	1	2	3	4	5
Product price	1	2	3	4	5
Signature product for my establishment	1	2	3	4	5
Product has a variety of menu applications	1	2	3	4	5
Product is locally grown	1	2	3	4	5
Product's brand	1	2	3	4	5
Personally know grower/processor	1	2	3	4	5
Product is certified organic or natural	1	2	3	4	5
Personally aware of growing process	1	2	3	4	5

11. Now, I am going to list another 12 attributes for you. This time, I would like you to rate how important you think these flour/grain attributes are to your customers. The 1 to 5 scale is the same, where 1 indicates the attribute is not important, and 5 indicates it is extremely important.

<u>Attribute</u>	<u>Not Important</u>	<u>Slightly Important</u>	<u>Somewhat Important</u>	<u>Very Important</u>	<u>Extremely Important</u>
Freshness	1	2	3	4	5
Taste and flavor	1	2	3	4	5
Brand name	1	2	3	4	5
Gluten-free	1	2	3	4	5
Food safety	1	2	3	4	5
Packaging (material & size)	1	2	3	4	5
Sales or promotion	1	2	3	4	5
Organic	1	2	3	4	5
Natural	1	2	3	4	5
Origin of grain (grown locally or not)	1	2	3	4	5
Environmentally friendly production	1	2	3	4	5
Price	1	2	3	4	5

12. Does your establishment offer special gluten-free products, options or menu items?

- Yes, currently
- Yes, in the past but not currently
- No

13. Does your establishment utilize teff products?

- Yes, currently (Continue on)
- Yes, in the past but not currently (Continue on)
- No (Skip to Question 17)

14. Where has your establishment purchased teff products?

- |  |   |
|--|---|
| <input type="checkbox"/> Direct from a farmer                            | <input type="checkbox"/> From a local grocery outlet                    |
| <input type="checkbox"/> From a farmers' market                          | <input type="checkbox"/> From a specialty or ethnic foods grocery store |
| <input type="checkbox"/> From a regional or national miller or processor | <input type="checkbox"/> From a health foods store                      |
| <input type="checkbox"/> From a local miller or processor                | <input type="checkbox"/> Other (please list)_____                       |
| <input type="checkbox"/> From a foodservice distributor                  |   |

15. Does your establishment purchase other products from this vendor?

- Yes, currently (Continue on)
- Yes, in the past but not currently (Continue on)
- No (Skip to 17)

16. What other products do you/have you purchased from this vendor?

- |  |   |
|--|---|
| <input type="checkbox"/> Other Gluten-free flours (Amaranth, Sorghum, Millet, Quinoa, Buckwheat, etc.) | <input type="checkbox"/> Fruits and vegetables fresh processed (circle one) |
| <input type="checkbox"/> Mixed-grain flours  | <input type="checkbox"/> Spices and herbs                                   |
| <input type="checkbox"/> Specialty meals (corn, flax seed, etc.)                                       | <input type="checkbox"/> Ethnic food products                               |
| <input type="checkbox"/> Oils for cooking and food preparation   | <input type="checkbox"/> Un-milled grains                                   |
|  | <input type="checkbox"/> Other (please list)_____                           |

17. I have another set of 10 attributes which are related to your **teff and/or flour/grain supplier**. After I read each attribute, please rate it on a scale of 1 to 5 where 1 indicates that you are *Very Unsatisfied* with your supplier in regards to the attribute and 5 indicates that you are *Very Satisfied*

<u>Attribute</u>	<u>Very Unsatisfied</u>	<u>Unsatisfied</u>	<u>Unsure</u>	<u>Satisfied</u>	<u>Very Satisfied</u>
Timeliness of delivery	1	2	3	4	5
Method of delivery	1	2	3	4	5
Price	1	2	3	4	5
Promotional strategies	1	2	3	4	5
Quality of product	1	2	3	4	5
Product is consistent	1	2	3	4	5
Product offering	1	2	3	4	5
Product sizes	1	2	3	4	5
Customer service	1	2	3	4	5
Product availability	1	2	3	4	5

18. When purchasing flours and grains, what is your preference regarding packaging size?

- I prefer 1 pound bags
- I prefer 5 pound bags
- I prefer 10 pound bags
- I prefer 25 pound bags
- I have no preferred product size

19. How many pounds of the following products did you purchase for your establishment in the last 3 months? (Check the appropriate box or write in if “more than”)

Product	1-10 lbs.	10-25 lbs.	26-50 lbs.	51-75 lbs.	More than 75 lbs.	Did not purchase
Teff flour (Ivory or Brown) (circle)						
Amaranth flour						
Sorghum flour						
Millet flour						
Quinoa flour						
Buckwheat flour						
Cassava flour						
Garbanzo/Chickpea flour						
Corn meal						
Flax seed meal						
Mixed, whole grain flour						
Bleached all-purpose (wheat) flour						
Corn Starch						
Teff grain, un-milled (Ivory or						
Other, un-milled, gluten-free grains						
Other: _____						
Other: _____						

If answered no to question 13 (teff utilization) then continue. If answered yes to question 13 survey is complete.

20. Would you consider incorporating teff into your product offering?

- Definitely Yes
- I would consider it
- I would need more information
- Definitely No

21. Are you familiar with the attributes and potential uses of teff flour?

- Yes (this ends the survey)
- No (continue to 22)

22. Would you like a brief overview of these attributes and potential applications?

- Yes (read script, then continue to 23)
- No (this ends the survey)

23. With this new information, would you consider incorporating teff into your product offering?

- Definitely Yes
- I would consider it
- I would need more information
- Definitely No

## Appendix 3: Northwestern Nevada Teff Production Costs & Returns, 2008

### Northwestern Nevada Teff Production Costs & Returns, 2008

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#### Introduction

Sample costs and returns to establish and produce teff seed (and hay) under flood irrigation in Northwestern Nevada are presented in this publication (where inputs or outputs differ with regard to hay quantities are shown in parenthesis). This publication is intended to be a guide, used to make production decisions, determine potential returns, and prepare business and marketing plans. Practices described are based on the production practices considered typical for this crop and region, but may not apply to every situation. A “*Your Farm*” column in Tables 1 & 2 is provided for your use.

#### Assumptions

The following assumptions refer to Tables 1, 3, and 4, and reflect the typical costs and returns to establish and produce teff seed under flood irrigation in Northwestern Nevada. Typical costs and returns for teff hay are shown in Table 2. The practices described are not the recommendations of the University of Nevada, Reno, but rather the production practices and materials considered typical of a well-managed farm in the region, as determined by a producer panel in January 2008. Costs, materials, and practices are not applicable to all situations, as establishment and cultural practices vary among growers within the region.

**Farm.** The representative farm consists of 62 acres of land, on which 60 acres is cultivated for teff seed (or hay) production and 2 acres are used for owner housing, machine shop, and roads. During the growing season the enterprise will produce one cutting (two cuttings) with total production at 1 ton of seed and 2.5 tons of chaff (5 tons of hay) per acre. The minimum land market value in 2008 was approximately \$11,500.00 per acre.

**Land Preparation.** The ground is ripped to break up the soil to improve water infiltration and fertilizer penetration. The field is then disked and floated to remove small high and low spots, followed by a custom laser, which will level the land. The cost for this combination of custom land preparation is \$70.00 per acre.

**Planting.** In June, teff seed is custom planted by broadcast seeding at 2 pounds per acre (6 pounds for hay) at a cost of \$16.00 per acre and then rolled with a culti-packer to ensure firm contact with the soil.

## ***Production Cultural Practices and Material Inputs***

**Irrigation.** Irrigation begins immediately after planting to establish the teff seedlings. Six inches of water is applied to fields via flood irrigation and continues through September. Irrigation costs shown in Tables 1 and 2 cover the per acre cost of water at \$25.00 per acre foot, plus an administration fee of \$50.00 per land parcel, which is assumed to be one parcel per every 50 acres. Also included is maintenance costs on ditches, such as hauling dirt to fix wash-outs, broken head gates, and machinery costs to weed the ditches are \$600.00 annually. Total irrigation costs are \$86.00 per acre.

**Fertilization.** After planting in June, fluid fertilizers are spread by broadcast spraying. For seed, commercial fertilizer with a nitrogen content of 32-0-0, UN32\* at \$36.00/acre, is normally applied. (Fertilization of teff hay is by application of ammonia sulfate, 42 pounds/acre actual N.)

**Pest Management.** A variety of pest management methods are used depending on pest population cycles. Pest treatment will normally begin in March.

**Weeds.** Herbicide commonly used is 2-4-D for broadleaf control, at an average annual per-acre cost of \$12.00.

**Insects.** There exists no primary insect threat to teff production. Therefore, insects are not an annual threat and there are no associated costs.

**Vertebrates.** Gophers are the common vertebrate problem in teff stands. Rodenticide and/or trapping are common treatments, at an annual per-acre rate of \$1.50.

**Harvest.** Harvest occurs in September, and consists of swathing, combining, baling, and pickup baling, all of which is usually contracted out at a combined cost of \$120.00 per acre.

**Labor.** The owner/operator wage is based on an annual salary of \$30,000.00. All employee benefits, payroll taxes, and worker's compensation insurance are included in labor costs. Employee housing and associated utilities are included in the farm investment costs.

**Utilities.** Current utilities rates calculated using information from <http://econdev.nevadapower.com/sppc/county/lyon/utilities.htm> and [http://www.swgas.com/tariffs/nvtariff/rates/rates\\_nnv.pdf](http://www.swgas.com/tariffs/nvtariff/rates/rates_nnv.pdf)

Base utility costs of \$350 per month for the household were combined with costs of \$7 per acre per year to allow for utilities for outbuildings and shops.

**Yield.** The 60 acre farm yields 60 tons of teff seed and 150 tons of chaff from one annual cutting (300 tons teff hay).

**Returns.** Returns are based on 2007 market prices across a range of seed quality levels. An estimated price of \$0.38 per pound for clean seed and \$100 ton for chaff was used to calculate returns (\$180 ton teff hay). Returns will vary during the growing season due to market conditions.

### ***Overhead and Capital Recovery Costs***

**Cash Overhead.** Cash overhead consists of various cash expenses paid out during the year. These costs include property taxes, interest, office expenses, liability and property insurance, as well as investment/machinery repairs. A complete listing of farm investments and associated costs can be found in Table 3.

**Interest on Operating Capital.** Total operating capital is calculated based on 80% of total operating (variable) costs. The interest on operating capital is calculated at a rate of 6.5% for the four month production cycle.

**Property Taxes.** Property taxes in Nevada differ across counties. For the purposes of this publication, investment property taxes are calculated at 1% of the average asset value of the property.

**Insurance.** Insurance on farm investments vary, depending on the assets included and the amount of coverage. Property insurance provides coverage for property loss at .666% of the average asset value. Liability insurance covers accidents on the farm at an annual cost of \$1,749.00, or a four month cost of \$500.00. Insurance information provided by Kevin Ogan of Beuchamp & McSpadden.

**Fuel and Lube.** The fuel and lube for each piece of equipment is calculated at 8% of the average asset value.

**Investment Repairs.** Annual repairs on all farm investments or capital recovery items that require maintenance are calculated at 2% of the average asset value.

**Office & Travel.** Office and travel costs are estimated at \$3,000.00 for an average year. These expenses include office supplies, telephone service, Internet service, and travel expenses to educational seminars.

**Pro-rated Expenses.** Owner/operator labor, accounting and legal expenses, insurance, fuel and lube, maintenance, utilities, and office and travel expenses, have all been pro-rated to reflect the short seed-to-harvest season, only four months of the year for teff production.

**Capital Recovery.** Capital recovery costs are the annual depreciation (opportunity cost) of all farm investments. Capital recovery costs are calculated using straight line depreciation. Farm equipment may be purchased new or used, depending on producer panel preferences.

**Salvage Value.** Salvage value is 10% of the new purchase price, which is an estimate of the remaining value of an investment at the end of its useful life. The salvage value for land is the purchase price, as land does not normally depreciate.

### **Average Asset Value Computation**

$$\left( \frac{\text{Purchase Price} + \text{Salvage Value}}{2} \right)$$

### **Straight Line Depreciation Computation**

$$\left( \frac{\text{Purchase Price} - \text{Salvage Value}}{\text{Useful Life}} \right)$$

\*The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by Cooperative Extension is implied.

### **References**

Davison, Jay (2006). Tef Demonstration Planting Results for 2005. University of Nevada Cooperative Extension Fact Sheet #FS-06-58.

Smathers, Robert (2007). The Costs of Owning and Operating Farm Machinery in the Pacific Northwest 2005. A Pacific Northwest Publication #346. University of Idaho, Washington State University, and Oregon State University.

### **Notes**

Sample production costs and returns publications for significant agricultural products in various regions of Nevada are available online at the University of Nevada Cooperative Extension Web site at <http://www.unce.unr.edu/pubs.html>. For additional information, contact the Department of Resource Economics at the University of Nevada, Reno at (775) 784-6701 or your local University of Nevada Cooperative Extension office.

**Table 1: Northwestern Nevada Teff Production Costs & Returns – Seed, 60 acres, 2008**

	<b>Total Units</b>	<b>Unit</b>	<b>Price/Cost Per Unit</b>	<b>Total Cost/Value</b>	<b>Total Cost/Value Per Acre</b>	<b>Your Farm</b>
<b>GROSS INCOME</b>						
Teff Seed	1.00	Tons	\$ 760.00	\$ 45,600.00	\$ 760.00	_____
Chaff	2.50	Tons	\$ 100.00	\$ 15,000.00	\$ 250.00	_____
<b>TOTAL GROSS INCOME</b>				<b>\$ 60,600.00</b>	<b>\$ 1,010.00</b>	
<b>OPERATING COSTS</b>						
Rodent Control	60.00	Acre	\$ 1.50	\$ 90.00	\$ 1.50	_____
Herbicide	60.00	Acre	\$ 12.00	\$ 720.00	\$ 12.00	_____
Fertilizer	60.00	Acre	\$ 36.00	\$ 2,160.00	\$ 36.00	_____
Seed	60.00	Acre	\$ 8.00	\$ 480.00	\$ 8.00	_____
Custom Land Prep	60.00	Acre	\$ 70.00	\$ 4,200.00	\$ 70.00	_____
Custom Drilling/Seeding	60.00	Acre	\$ 16.00	\$ 960.00	\$ 16.00	_____
Custom Swathing	60.00	Acre	\$ 15.00	\$ 900.00	\$ 15.00	_____
Custom Combine	60.00	Acre	\$ 40.00	\$ 2,400.00	\$ 40.00	_____
Custom Baling	60.00	Acre	\$ 42.50	\$ 2,550.00	\$ 42.50	_____
Custom Pickup Baling	60.00	Acre	\$ 22.50	\$ 1,350.00	\$ 22.50	_____
Irrigation	60.00	Acre	\$ 86.00	\$ 5,160.00	\$ 86.00	_____
Bags	60.00	Acre	\$ 15.00	\$ 900.00	\$ 15.00	_____
Shipping	60.00	Acre	\$ 50.00	\$ 3,000.00	\$ 50.00	_____
Operator Labor	0.33	Annual	\$ 30,000.00	\$ 9,900.00	\$ 165.00	_____
Accounting & Legal	0.33	Annual	\$ 2,000.00	\$ 660.00	\$ 11.00	_____
Fuel & Lube	1.00	Annual	\$ 1,752.55	\$ 1,752.55	\$ 29.21	_____
Maintenance	1.00	Annual	\$ 2,009.71	\$ 2,009.71	\$ 33.50	_____
Utilities	0.33	Annual	\$ 4,620.00	\$ 1,524.60	\$ 25.41	_____
Miscellaneous	60.00	Acre	\$ 5.00	\$ 300.00	\$ 5.00	_____
Operating Capital Interest	\$ 32,813.49	\$	\$ 0.065	\$ 710.96	\$ 11.85	_____
<b>TOTAL OPERATING COSTS</b>				<b>\$ 41,727.82</b>	<b>\$ 695.46</b>	
<b>INCOME ABOVE OPERATING COSTS</b>				<b>\$ 18,872.18</b>	<b>\$ 314.54</b>	
<b>OWNERSHIP COSTS</b>						
<b>CASH OVERHEAD COSTS</b>						
Liability Insurance				\$ 500.00	\$ 8.33	_____
Office & Travel				\$ 1,000.00	\$ 16.67	_____
Annual Investment Insurance				\$ 669.23	\$ 11.15	_____
Annual Investment Taxes				\$ 3,281.86	\$ 54.70	_____
<b>TOTAL CASH OVERHEAD COSTS</b>				<b>\$ 5,451.09</b>	<b>\$ 90.85</b>	
<b>NONCASH OVERHEAD COSTS (Capital Recovery)</b>						
Buildings, Improvements, & Equipment				\$ 885.16	\$ 14.75	_____
Machinery & Vehicles				\$ 3,652.09	\$ 60.87	_____
<b>TOTAL NONCASH OVERHEAD COSTS</b>				<b>\$ 4,537.25</b>	<b>\$ 75.62</b>	
<b>TOTAL OWNERSHIP COSTS</b>				<b>\$ 9,988.34</b>	<b>\$ 166.47</b>	
<b>TOTAL COSTS</b>				<b>\$ 51,716.16</b>	<b>\$ 861.94</b>	
<b>NET PROJECTED RETURNS</b>				<b>\$ 8,883.84</b>	<b>\$ 148.06</b>	

**Table 2: Western Nevada Teff Production Costs & Returns – Forage, 60 acres, 2008**

	Total Units	Unit	Price/Cost Per Unit	Total Cost/Value	Total Cost/Value Per Acre	Your Farm
<b>GROSS INCOME</b>						
Teff Hay	5.00	Tons	\$ 180.00	\$ 54,000.00	\$ 900.00	_____
<b>TOTAL GROSS INCOME</b>				<b>\$ 54,000.00</b>	<b>\$ 900.00</b>	
<b>OPERATING COSTS</b>						
Rodent Control	60.00	Acre	\$ 1.50	\$ 90.00	\$ 1.50	_____
Herbicide	60.00	Acre	\$ 12.00	\$ 720.00	\$ 12.00	_____
Fertilizer	60.00	Acre	\$ 36.00	\$ 2,160.00	\$ 36.00	_____
Seed	60.00	Acre	\$ 24.00	\$ 1,440.00	\$ 24.00	_____
Custom Land Prep	60.00	Acre	\$ 70.00	\$ 4,200.00	\$ 70.00	_____
Custom Drilling/Seeding	60.00	Acre	\$ 16.00	\$ 960.00	\$ 16.00	_____
Custom Swathing	60.00	Acre	\$ 30.00	\$ 1,800.00	\$ 30.00	_____
Custom Rake	60.00	Acre	\$ 10.00	\$ 600.00	\$ 10.00	_____
Custom Baling	60.00	Acre	\$ 85.00	\$ 5,100.00	\$ 85.00	_____
Custom Pickup Baling	60.00	Acre	\$ 45.00	\$ 2,700.00	\$ 45.00	_____
Irrigation	60.00	Acre	\$ 86.00	\$ 5,160.00	\$ 86.00	_____
Operator Labor	0.33	Annual	\$ 30,000.00	\$ 9,900.00	\$ 165.00	_____
Accounting & Legal	0.33	Annual	\$ 2,000.00	\$ 660.00	\$ 11.00	_____
Fuel & Lube	1.00	Annual	\$ 1,752.55	\$ 1,752.55	\$ 29.21	_____
Maintenance	1.00	Annual	\$ 2,009.71	\$ 2,009.71	\$ 33.50	_____
Utilities	0.33	Annual	\$ 4,620.00	\$ 1,524.60	\$ 25.41	_____
Miscellaneous	60.00	Acre	\$ 5.00	\$ 300.00	\$ 5.00	_____
Operating Capital Interest	\$ 32,861.49	\$	\$ 0.065	\$ 712.00	\$ 11.87	_____
<b>TOTAL OPERATING COSTS</b>				<b>\$ 41,788.86</b>	<b>\$ 696.48</b>	
<b>INCOME ABOVE OPERATING COSTS</b>				<b>\$ 12,211.14</b>	<b>\$ 203.52</b>	
<b>OWNERSHIP COSTS</b>						
<b>CASH OVERHEAD COSTS</b>						
Liability Insurance				\$ 500.00	\$ 8.33	_____
Office & Travel				\$ 1,000.00	\$ 16.67	_____
Annual Investment Insurance				\$ 669.23	\$ 11.15	_____
Annual Investment Taxes				\$ 3,281.86	\$ 54.70	_____
<b>TOTAL CASH OVERHEAD COSTS</b>				<b>\$ 5,451.09</b>	<b>\$ 90.85</b>	
<b>NONCASH OVERHEAD COSTS (Capital Recovery)</b>						
Buildings, Improvements, & Equipment				\$ 885.16	\$ 14.75	_____
Machinery & Vehicles				\$ 3,652.09	\$ 60.87	_____
<b>TOTAL NONCASH OVERHEAD COSTS</b>				<b>\$ 4,537.25</b>	<b>\$ 75.62</b>	
<b>TOTAL OWNERSHIP COSTS</b>				<b>\$ 9,988.34</b>	<b>\$ 166.47</b>	
<b>TOTAL COSTS</b>				<b>\$ 51,777.20</b>	<b>\$ 862.95</b>	
<b>NET PROJECTED RETURNS</b>				<b>\$ 2,222.80</b>	<b>\$ 37.05</b>	

**Table 3: Investment Summary**

Description	Purchase Price	Teff %	Purchase Price	Useful Life (Yrs)	Salvage Value	Annual Capital Recovery	Annual Insurance	Annual Taxes	Annual Repairs	Annual Fuel & Lube
<b>Buildings, Improvements, and Equipment</b>										
Owner House	\$ 200,000.00	33.00%	\$ 66,000.00	50.00	\$ 66,000.00	\$ -	\$ 439.56	\$ 660.00	\$ 1,320.00	
Shop (30X40) & Tools	\$ 37,500.00	33.00%	\$ 12,375.00	25.00	\$ 1,237.50	\$ 445.50	\$ 45.33	\$ 68.06	\$ 136.13	
Land	\$ 690,000.00	33.00%	\$ 227,700.00	150.00	\$ 227,700.00	\$ -	\$ -	\$ 2,277.00	\$ -	
Metal Shed	\$ 24,000.00	33.00%	\$ 7,920.00	25.00	\$ 792.00	\$ 285.12	\$ 29.01	\$ 43.56	\$ 87.12	
Implements	\$ 7,805.00	33.00%	\$ 2,575.65	15.00	\$ 257.57	\$ 154.54	\$ 9.43	\$ 14.17	\$ 28.33	
Sub Total			\$ 316,570.65	NA	\$ 295,987.07	\$ 885.16	\$ 523.34	\$ 3,062.79	\$ 1,571.58	
<b>Machinery and Vehicles</b>										
95 HP 4WD Tractor	\$ 60,699.00	33.00%	\$ 20,030.67	15.00	\$ 2,003.07	\$ 1,201.84	\$ 73.37	\$ 110.17	\$ 220.34	\$ 881.35
4 Wheeler	\$ 10,000.00	33.00%	\$ 3,300.00	5.00	\$ 330.00	\$ 594.00	\$ 12.09	\$ 18.15	\$ 36.30	\$ 145.20
1 Ton Pickup	\$ 50,000.00	33.00%	\$ 16,500.00	8.00	\$ 1,650.00	\$ 1,856.25	\$ 60.44	\$ 90.75	\$ 181.50	\$ 726.00
Sub Total			\$ 39,830.67	NA	\$ 3,983.07	\$ 3,652.09	\$ 145.90	\$ 219.07	\$ 438.14	\$ 1,752.55
<b>Total</b>			<b>\$ 356,401.32</b>	<b>NA</b>	<b>\$ 299,970.13</b>	<b>\$ 4,537.25</b>	<b>\$ 669.23</b>	<b>\$ 3,281.86</b>	<b>\$ 2,009.71</b>	<b>\$ 1,752.55</b>

**Table 4: Monthly Cash Flow**

Description	January	February	March	April	May	June	July	August	September	October	November	December	Total
Production:													
Teff Seed	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 45,600.00	\$ -	\$ -	\$ -	\$ 45,600.00
Chaff	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,500.00	\$ 7,500.00	\$ -	\$ 15,000.00
<b>Total Income</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 45,600.00</b>	<b>\$ 7,500.00</b>	<b>\$ 7,500.00</b>	<b>\$ -</b>	<b>\$ 60,600.00</b>					
Operating Inputs:													
Rodent Control	\$ -	\$ -	\$ 22.50	\$ 22.50	\$ 11.25	\$ 11.25	\$ 11.25	\$ 11.25	\$ -	\$ -	\$ -	\$ -	\$ 90.00
Herbicide	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 180.00	\$ 180.00	\$ 180.00	\$ 180.00	\$ -	\$ -	\$ -	\$ 720.00
Fertilizer	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,160.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,160.00
Seed	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 480.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 480.00
Custom Land Prep	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,200.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,200.00
Custom Drilling/Seeding	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 960.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 960.00
Custom Swathing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 900.00	\$ -	\$ -	\$ -	\$ 900.00
Custom Combine	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,400.00	\$ -	\$ -	\$ -	\$ 2,400.00
Custom Baling	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,550.00	\$ -	\$ -	\$ -	\$ 2,550.00
Custom Pickup Baling	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,350.00	\$ -	\$ -	\$ -	\$ 1,350.00
Irrigation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,290.00	\$ 1,290.00	\$ 1,290.00	\$ 1,290.00	\$ -	\$ -	\$ -	\$ 5,160.00
Bags	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 900.00	\$ -	\$ -	\$ -	\$ 900.00
Shipping	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,000.00	\$ -	\$ -	\$ -	\$ 3,000.00
Operator Labor	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,475.00	\$ 2,475.00	\$ 2,475.00	\$ 2,475.00	\$ -	\$ -	\$ -	\$ 9,900.00
Accounting & Legal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 165.00	\$ 165.00	\$ 165.00	\$ 165.00	\$ -	\$ -	\$ -	\$ 660.00
Fuel & Lube	\$ 146.05	\$ 146.05	\$ 146.05	\$ 146.05	\$ 146.05	\$ 146.05	\$ 146.05	\$ 146.05	\$ 146.05	\$ 146.05	\$ 146.05	\$ 146.05	\$ 1,752.55
Maintenance	\$ 167.48	\$ 167.48	\$ 167.48	\$ 167.48	\$ 167.48	\$ 167.48	\$ 167.48	\$ 167.48	\$ 167.48	\$ 167.48	\$ 167.48	\$ 167.48	\$ 2,009.71
Utilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 381.15	\$ 381.15	\$ 381.15	\$ 381.15	\$ -	\$ -	\$ -	\$ 1,524.60
Miscellaneous	\$ 25.00	\$ 25.00	\$ 25.00	\$ 25.00	\$ 25.00	\$ 25.00	\$ 25.00	\$ 25.00	\$ 25.00	\$ 25.00	\$ 25.00	\$ 25.00	\$ 300.00
Interest OC	\$ 59.25	\$ 59.25	\$ 59.25	\$ 59.25	\$ 59.25	\$ 59.25	\$ 59.25	\$ 59.25	\$ 59.25	\$ 59.25	\$ 59.25	\$ 59.25	\$ 710.96
<b>Total Operating Costs</b>	<b>\$ 397.77</b>	<b>\$ 397.77</b>	<b>\$ 420.27</b>	<b>\$ 420.27</b>	<b>\$ 409.02</b>	<b>\$ 12,700.17</b>	<b>\$ 4,900.17</b>	<b>\$ 4,900.17</b>	<b>\$ 15,988.92</b>	<b>\$ 397.77</b>	<b>\$ 397.77</b>	<b>\$ 397.77</b>	<b>\$ 41,727.82</b>
<b>Net Returns</b>	<b>\$ (397.77)</b>	<b>\$ (397.77)</b>	<b>\$ (420.27)</b>	<b>\$ (420.27)</b>	<b>\$ (409.02)</b>	<b>\$ (12,700.17)</b>	<b>\$ (4,900.17)</b>	<b>\$ (4,900.17)</b>	<b>\$ 29,611.08</b>	<b>\$ 7,102.23</b>	<b>\$ 7,102.23</b>	<b>\$ (397.77)</b>	<b>\$ 18,872.18</b>