AGSC 450 – IMPLEMENTING SEASONAL PIZZA AT PIE R SQUARED

JESSICA FULLER

PREPARED FOR ALEJANDRO ROJAS & LISKA RICHER
FNH 497 E – 921 DIRECTED STUDIES

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INTRODUCTION

The University of British Columbia has several new and ongoing initiatives and programs aimed at increasing campus sustainability and self-sufficiency. One of these initiatives is the Food System Project, an extensive project that has involved the input of hundreds of students, various faculty members, and the primary investigators Dr. Alejandro Rojas, Liska Richer, PhD student, and Julia Wagner, MSc graduate (Rojas, Richer & Wagner, 2006). Under the direction of these investigators, previous years' AGSC 450: "Land, Food and Community III" students have researched a number of areas in which food sustainability and secure on-campus food systems can be improved (Rojas et al., 2006).

Students in group 13 of the 2006 AGSC 450 class worked on a scenario to incorporate seasonal BC food items into campus food provider menus (Rojas & Richer, 2006). During this project they proposed that Pie R Squared (PRS), a pizza parlour located in the UBC Student Union Building, add one seasonal pizza made with ingredients grown on the UBC farm to their menu for the fall of 2006 (Rojas & Richer, 2006). After developing new pizza recipes, making the pizzas at PRS, giving random students pizza samples, and surveying the students as to whether or not they would purchase the sampled pizza, the AGSC 450 students determined that the best pizza to add to the PRS menu was a roasted butternut squash and rosemary pizza with a sour-cream base (Chan et al., 2006). Through meetings with Nancy Toogood, AMS Food & Beverage Department Manager, it was determined that 10 of the new vegetarian pizzas could be added to the PRS menu per day (Chan et al., 2006). The squash and the rosemary used on this pizza were to be grown at the Centre for Sustainable Food Systems at the UBC Farm and sold to AMS Food and Beverage Department (AMSFBD). The students determined appropriate prices at which the squash and rosemary should be sold to AMSFBD which were to cover farm costs

and generate an appropriate profit for the farm, while remaining in a competitive price range that was feasible for AMSFBD. The quantity of squash that needed to be planted in order to meet the proposed supply demands of 70 kg of squash and 600 grams of rosemary per week for 12 weeks starting in September 2006 was also determined. The prices quoted to Nancy were butternut squash at $1.50/kg, and rosemary at $20/kg (Chan et al., 2006). Nancy approved the sale of the new butternut squash pizza at PRS beginning in the fall, if the quoted prices could be confirmed.

The purpose of this project is to continue the work started by Candace Chan's group and solidify a contract between the UBC Farm and AMSFBD for the sale and delivery of the pre-determined amounts of butternut squash and fresh rosemary, starting in September 2006. The contract will outline the details of food prices, expected food quality, and a specific delivery schedule. In addition to this, an analysis of farm costs that have gone into growing the butternut squash and rosemary so far as well as projected upkeep, harvest, and storage costs is required to determine whether or not the prices quoted to Nancy will in fact cover farm costs and generate a profit. Possible marketing strategies that include an educational component will also be addressed within this report.

METHODS

CONTRACT SOLIDIFICATION

In order to construct a contract between the UBC Farm and AMSFBD, a number of steps were taken. These started with a literature review of the *UBC food system collaborative project V AGSC 450: Winter 2006*, which outlined the tasks of the 2006 AGSC 450 student groups, including Scenario 2 which was addressed by group 13; Candace Chan and colleagues. The literature review continued with group 13's paper of their findings at the end of the course, *UBC food system project – Scenario 2.* After learning more about the background work that went into

these projects, Mark Bomford, program coordinator for the Centre for Sustainable Food Systems at UBC Farm, was interviewed on July 4th, 2006. The interview questions that Mark was asked can be found in Appendix A. Through these questions and their respective answers, further insight was gained into what the farm expected out of the contract and how they would be able to meet contract stipulations that Nancy Toogood had set during group 13's project. Further research into what a normal buyer/seller contract usually entailed was found through a Google search for small business contracts. The search uncovered a free copy of a business contract which was used as rough guideline for the contract developed in this project.

Following the literature review described above, the interview with Mark Bomford, and the review of the business contracts found online, a rough version of the contract for the sale of butternut squash and fresh rosemary from the UBC Farm to AMSFBD was drafted. This draft took into account the information obtained by group 13 in their *UBC food system project – Scenario 2* paper, the project objectives outlined by project investigators Rojas and Richer in *UBC Food System Collaborative Project V AGSC 450: 2006*, contract expectations of Mark Bomford that were uncovered during the July 4th, 2006 interview, as well as general contract information found in the online contracts. The first draft of this contract can be found in Appendix B. The contract in this stage was then taken to Nancy Toogood on July 14th, 2006 to determine whether or not all of the conditions that she felt were necessary were addressed. Nancy approved the contract at this point, which stipulated the delivery of goods in the quantities and at the prices outlined in the Group 13 paper.

In a subsequent meeting with Mark Bomford, Mark expressed concern that butternut squash crop may not yield the volume needed to fulfill the contract specifications (personal communication, July 20th, 2006). This concern was substantiated by rough estimates of the potential yield per area based on the yields of saleable winter squash per area from the 2005 crop.

These calculations can be found in Appendix D. In addition to this, Mark and other farm employees were concerned that the crop may not be ready for harvest right at the beginning of September (Mark Bomford, personal communication, June 20th, 2006). Due to these findings, renegotiations between Nancy Toogood and Mark over how much squash was to be sold to AMSFBD as well as when deliveries were to commence began via phone and email. After discussing a few possible options with Nancy, a revised contract, which can be found in Appendix G was taken to Mark for approval on July 24th, 2006.

Cost Analysis

The cost analysis of growing the butternut squash and rosemary began with the July 4th interview with Mark Bomford. Some of the interview questions found in Appendix A are focused on determining what labour and off-farm inputs such as mulching paper and squash seeds were put into growing the vegetables. During this initial interview, Mark was unable to provide information on all of the costs that went into the growing of the squash and rosemary. A second interview in which Mark intended to provide the remaining required information was scheduled for July 12th, 2006.

The July 12th interview was rescheduled due to extenuating circumstances and instead took place on July 20th, 2006. This interview also included Greg Rekken, a member of Group 13 from AGSC 450 and former farm production manager, who was in charge of planting the squash in the spring of 2006. The remainder of the information needed from farm inputs was obtained in this meeting. An estimate of how much labour would be needed to keep the squash growing from now until harvest was obtained via email from farm employee Tim Carter.

The raw data from the two interviews with Mark Bomford and the information from Greg Rekken and Tim Carter can be found in Appendix C. These numbers were manipulated to determine costs for growing the whole squash patch. The costs for growing the whole patch of

squash were then divided by the expected yields of saleable butternut squash for the area. The kilogram value of saleable squash per area was estimated based on the yields of saleable winter squash per area from the 2005 crop. The value of squash in dollars/kilogram was not the final value of squash costs. The delivery costs per trip were added to this value and then averaged by the total number of kilograms of squash to be sold to determine the final squash costs in dollars/kilogram. All of the calculations used to determine the final squash costs can be found in Appendix D.

MARKETING STRATEGIES

The objectives for marketing the pizza included integrating an educational component in the advertising strategy. In keeping with the sustainability premise of the overall project, it was determined that ideal marketing strategies would use minimal amounts of paper and costly resources and should be incorporated into as many educational programs and sustainability initiatives as possible.

The first advertising strategy that was explored was making educational, eye-catching posters which could be placed in strategic locations such as outside of PRS, other areas in the SUB, including Sprouts Co-op, student residences, in the MacMillan building, and on bulletin boards in other campus buildings, as well as in the UBC village. The location of the posters as well as poster design should appeal to many members of the UBC community including students, faculty, other campus staff, and endowment land residents. A sample of the type of poster that could be used can be found in Appendix E. This poster design and layout was made with all of the above factors in mind. It will include pictures of the squash and rosemary growing on the UBC farm as well as pictures of the produce and PRS. Some of these pictures could not be obtained. As the SUB is currently under construction, a picture of PRS could not be included. A picture of butternut squash was obtained from the internet, as the plants on the UBC farm do not

yet have squash. A picture of the pizza itself could not be included as none is being made right now. All of the pictures were included to try and form a connection in the readers between the food growing on the nearby farm and ending up at PRS and on their pizza.

The second marketing initiative involves updating various websites that are connected to the UBC farm, UBC sustainability initiatives, or Pie R Squared to include a small eye-catching, informative blurb on the new pizza that is available at PRS. In order to determine which websites could be included in this plan, an on-line search of the related websites was performed. The websites of the following organizations or businesses were determined to fit with the above criteria: Pie R Squared, Sprouts, UBC Sustainability, UBC Farm, UBC Food System Project, and UBC Sustainability Leaders. A list of these websites can be found in Appendix F.

The final proposed marketing scheme involves the cooperation of UBC Sustainability and IMAGINE UBC. To determine the level of involvement that UBC Sustainability could have in the marketing of the PRS pizza, particularly through IMAGINE, UBC's orientation program for new students, Lia Moyes, the 2005/2006 IMAGINE coordinator for UBC first year students orientation was interviewed. Lia was also specifically involved in working with the UBC Sustainability Office and Waste Management (Lia Moyes, personal communication, July 7, 2006). She was asked to describe ways that IMAGINE UBC and UBC Sustainability are involved in promoting or using the services of PRS. In addition to this, Lia was asked if there were any simple ways that PRS's new pizza could be promoted within these programs.

FINDINGS

CONTRACT SOLIDIFICATION

Through the meetings with Mark Bomford, Greg Rekken, and emails of Tim Carter a number of interesting facts regarding the growth of the butternut squash were found. First of all,

emails from Tim Carter revealed that butternut squash was originally planted on May 30th, 2006 (personal communication, July 19th, 2006). However, due to poor germination and/or rodents, the squash was replanted on June 18th, 2006. According to Tim, the paper mulch which has been used on the majority of the squash beds (only one bed is covered with black plastic) may have significantly lowered the soil temperature to a point the plant growth has been slowed (personal communication, July 19th, 2006). From personal observation, the plants in the bed covered in black plastic are currently significantly larger than those covered by paper mulch. This may also be due to the fact that the bed covered in plastic is on the edge of the plot and receives more sun than the rows in the middle of the bed which are also being shaded by overgrown cover crops.

Another issue uncovered during interviews at the farm was whether or not the planted squash plants would be able to produce the desired yield of 1200 kg that Group 13 had originally planned for the farm to sell to AMSFBD (Chan et al., 2006). Because of the possible decreased soil temperature due to the use of paper mulch as well as the overall low temperatures of the Vancouver summer climate, and probable miscalculations in the volume of squash planted in relation to the desired yield, Mark feels that he can only guarantee 600 kg of saleable squash (personal communication, July 20th, 2006). Mark arrived at this value based on estimations from the saleable winter squash yields of the 2005 growing season. The calculation of this value can be found in Appendix D.

The above factors that appear to be decreasing plant growth and the low yield estimations have resulted in concern that the squash will not be ready to harvest in early September and the desired yields will not be achieved (Mark Bomford, personal communication, July 20th, 2006). This poses a problem for meeting the both terms 1 and 2 in the contract found in Appendix B. When approached regarding these issues, Nancy Toogood expressed apprehension towards starting to produce the butternut squash and rosemary pizza any later than the first weekend of

September (personal communication, July 20, 2006). From previous experience Nancy has found that new products or ideas that are not implemented within the first week of a new school year are not successful, since the first week of school is when new students form the eating patterns that they stick with for the remainder of the school year. However, Nancy does not see a problem in cutting down the overall squash volume to 600 kg and also halving the overall rosemary, in response to this.

A compromise was proposed to both parties. This compromise involved starting the first deliveries of squash and rosemary to AMSFBD on September 5th, 2006 as stated in the contract. However, deliveries for the first month would only be for 35 kg of squash and 300 g of rosemary. In October, the delivery volume would be increased to 70 kg of squash/wk and 600 g of rosemary/ wk for the remainder of the contract, which would include the delivery of 600 kg of squash in total. Nancy verbally agreed to these conditions and the proposal was emailed to Mark Bomford on July 20th, 2006 (Nancy Toogood, personal communication, July 20th, 2006).

The revised contract was taken to Mark on July 24, 2006. Unfortunately due to a number of reasons, Mark felt unable to commit to any contract at this point in time. Mark gave the following explanation for not signing the contract: 1) the squash plants are too young to accurately estimate how much squash they will produce and when that squash will be mature 2) other on-farm squash patches are also not far enough along in growth to determine whether their squash could be used to supplement the patch that Greg planted specifically for the pizza 3) some major transitions on the farm have occurred over the summer, particularly Greg leaving his position as production manager and as a result the squash patch may have been neglected 4) with the little funding that the farm receives and the anticipated decrease in staffing that will occur in September, Mark doesn't feel that it is feasible for the farm to supplement their squash supply with squash from another local organic farm at the cost of $1.80/kg (Mark Bomford, personal

communication, July 24, 2006). At this point in time the sale of butternut squash and rosemary to AMSFBD cannot be completely ruled out; however it is not in the farm's best interest to commit to a solid contract until the squash plants are more mature (Mark Bomford, personal communication, July 24, 2006). Currently, the squash plants are only a few inches tall and have not flowered. Therefore, no squash is growing on the plants and so an estimation of when the squash will be ready for harvest cannot be made.

Cost Analysis

In his first interview on July 4th, 2006, Mark Bomford indicated that the costs of planting, growing, and maintaining the rosemary were negligible (personal communication). As a result, the rosemary was not taken into account in the cost analysis and all discussion of farm costs were centred on the production of the butternut squash.

The UBC farm currently is subsidized by the university with $60000/year (Mark Bomford, personal communication, July 20th, 2006). However, the costs of labour and off-farm inputs to operate the farm average $80000/year. The high costs to operate the farm are due to high labour costs and the fact that on average, the farm sells produce at a value 30% below costs in order to maintain competitive prices (Mark Bomford, personal communication, July 20th, 2006). The farm market, held every Saturday generates a significant amount of money, however the farm currently unable to operate without the university funding and volunteer workers.

Determining the probable costs of growing the squash was difficult as many of the values used in calculations are estimates. In addition to this, some of the labour that went into planting the squash was done by volunteer workers (Greg Rekken, personal communication, July 20th, 2006). These workers do not receive any wages for their labour; however organizing volunteer still costs the farm approximately five dollars per hour (Mark Bomford, personal communication, July 20th, 2006). In order to determine how much it would cost to grow the squash without

reliance on volunteer workers, wage rates for a regular farm employee were used in the cost calculations.

Using all of the information obtained from Mark, Greg, and Tim a rough estimate of the cost of growing the squash and delivering it to the AMSFBD 8 times was determined as a per kg value. This was found to be $1.14/kg of butternut squash. At a retail rate of $1.50/kg, the squash can bring the farm a profit of $0.36/kg or 32%. Calculations of these values can be found in Appendix D. These profit margins are significantly above those that the farm generates on average. However, since a large proportion of the values used to calculate these numbers were estimates, their accuracy is unknown. The farm agreed that the pizza project would be considered successful if profit losses were within the normal range of the farm, i.e. less than 30% loss (Mark Bomford, personal communication, July 20th, 2006). Therefore, even if these profit margins are significantly overestimated, the project should be feasible by farm standards.

MARKETING STRATEGIES

The first proposed marketing strategy of putting posters advertising the pizza in various locations around UBC could not be completed with all of the desired pictures. These pictures could be obtained during the first week of school and included in the poster. The second marketing strategy, updating various websites did not involve any significant findings. However, the final strategy, which involved interviewing former IMAGINE UBC coordinator, Lia Moyes, revealed a few potential marking options.

Through this meeting with Lia, it was found that MUG leaders, who lead orientations to new UBC students are given a 20 minute sustainability presentation during their orientation (Lia Moyes, personal communication, July 7th, 2006). In addition to this, MUG leaders must read online sustainability modules provided by the UBC Sustainability Office via WebCT. The sustainability presentations to MUG leaders as well as the WebCT sustainability modules are

possible means that could be used to promote the PRS pizza to the 500 plus MUG leaders as well as to thousands of new UBC students. MUG leaders already promote PRS in their orientations. They could expand on this by adding a short blurb about how PRS is involved in promoting sustainability, both through its on-site practices as well as incorporating UBC-grown ingredients into its menu. This would involve coordination with the UBC Sustainability Office before the start of school in September.

Another possible pizza promotion opportunity is the IMAGINE coordinator and UBC Sustainability meetings previously known as "BOO", *Brains of the operation.* BOO meetings (which will resume in September under a new name) use PRS to cater their meetings (Lia Moyes, personal communication, July 7th, 2006). PRS was chosen to cater their meetings because they give the group a reduced price on their pizza, their pizza boxes are recycled on-campus, and they are a student-driven business. If possible, the new butternut squash and rosemary pizza could be used at these meetings to increase the number of people who have eaten it and potentially increase sales via word-of-mouth.

A final area in which the new PRS pizza could be promoted to students is during the IMAGINE UBC orientations as a part of the catering menu (Lia Moyes, personal communication, July 7th, 2006). In previous years IMAGINE has used Panago pizzas to cater their events during the first week of school. Panago has been used because they are able to produce the large quantities of pizza needed by coordinating their supply through various locations in the Vancouver area. Lia feels that IMAGINE would be open to replacing the Panago pizzas with those of PRS if they were able to supply the required quantities and could offer competitive prices. If the new pizza could be offered free at the IMAGINE events during the beginning of school, its exposure to students would be greatly increased which would increase its sales if it is popular among students.

DISCUSSION & RECOMMENDATIONS

CONTRACT SOLIDIFICATION

The solidification of a contract for the sale of butternut squash and fresh rosemary from the Centre of Sustainable Food Systems at UBC Farm to the Alma Mater Society Food and Beverage Department has proved to be the most challenging aspect of this project. Mainly due to the late harvest of squash expected by the farm and AMSFBD's need for squash the first week of September, it has been difficult to come to a compromise between the two parties. If the farm is unable to deliver the 35 kg of squash/wk for the four weeks of September as proposed in the revised contract, it will need to supplement its supply with butternut squash from a local organic farm. This is not a route that the farm wishes to take (Mark Bomford, personal communication, July 20th, 2006). Since Mark has declined signing a contract at this early of a date, if squash growth does look promising then he will approach Nancy with a contract. The inability to solidify a contract between AMSFBD and UBC Farm was a major disappointment in this project. Mark feels that only more time will determine whether or not the contract will seem at all feasible this year (personal communication, July 24, 2006). An email detailing Mark's reasoning behind not signing a contract can be found in Appendix H.

COST ANALYSIS

Calculating an estimate of the costs of growing the butternut squash was not a difficult task once all of the required data was collected through the various meetings with farm staff. However, it was through the cost analysis calculations that it was determined that the farm would not be able to meet the yields 1200 kg of squash originally proposed by AGSC 450 Group 13. As mentioned above, the labour costs for growing the squash was overestimated as some of the

labour used to plant the squash was done by volunteers. However, in efforts to estimate the actual costs involved in growing the squash, the wages of farm staff were used in calculations.

The wages of UBC Farm staff significantly factor into the high operating costs of the farm (Greg Rekken, personal communication, July 20th, 2006). While other farms in the area are able to pay employees an agricultural wage of $8/hour, the farm is not able to hire workers at this low rate (Greg Rekken, personal communication, July 20th, 2006). Instead, farm staff is paid a minimum of $12/hour as stipulated by the university. Factors such as this cut into the farm's potential profits and reduce productivity as the farm cannot afford to hire as many full-time employees. The low numbers of employees results in a diminished quality in areas of the farm that do not require constant attention, such as the butternut squash patch. Also, with low or no profit margins, the farm cannot afford to supplement their produce orders from outside sources if their supplies run low. For example, according to the 2005 price list from a local organic farm, butternut squash sold for $1.80/kg through the months of September through November (Mark Bomford, personal communication, July 20th, 2006). Buying squash at this price in order to meet AMSFBD requirements will greatly reduce the farm's profit and could potentially lead to a net loss of money for the farm. A net loss could result even if the delivery order is reduced during this time and only continues for 2-4 weeks. Possible losses like this have prevented the farm from entering into similar supply contracts so far (Mark Bomford, personal communication, July 24, 2006).

MARKETING STRATEGIES

The three marketing strategies described: making and putting pizza posters up around the UBC campus; updating various UBC websites related to the farm, PRS, the UBC Food System Project, UBC sustainability, etc; and incorporating pizza advertisement into IMAGINE UBC programs, were all chosen because they use minimal resources (i.e. paper) and all have the

potential to include educational components that raise awareness about sustainability in general, the role of UBC students in promoting sustainability, as well as showcasing the cooperation coordination of various UBC faculties and services improving campus sustainability (i.e. AGSC 450 students and faculty, the UBC Farm, and AMS Food and Beverage Department).

The implementation of the posters is relatively simple and involves someone making necessary changes/improvements to the poster in Appendix E, such as adding the required pictures. The application of the other two proposed strategies involves coordination of different on-campus services with someone who is willing take the time to promote the pizza. Additionally, if any of the marketing strategies that involve IMAGINE UBC and the Sustainability Office are to be implemented for September, coordination with these two programs needs to start immediately. With the recent project developments, mainly lack of a contract, coordinating website updates and information modifications with IMAGINE UBC does not seem like a viable option. Unfortunately, if coordinating with other on-campus programs is not begun in August, the likelihood that they could be implemented in September, should a contract be signed, is unlikely.

Recommendations that have resulted from work on this project have been broken into two separate categories: recommendations to AGSC 450/Land & Food System representatives and recommendations to the Centre for Sustainable Food Systems at UBC Farm.

AGSC 450/LAND & FOOD SYSTEM REPRESENTATIVES:

- Update UBC Food System Project site to have a link to current changes that have come into affect recently as a result of the project, including the production of the butternut squash and rosemary pizza at PRS
- Work with UBC SEEDS to update their report website so that it includes a link to the UBC Food System Project site

- Coordinate with UBC Sustainability and IMAGINE UBC to incorporate a bit of educational information on the new pizza into the section on PRS (Sustainability and IMAGINE leaders)
- Encourage PRS to sell the new pizza at the *BOO* meetings
- Have next year's AGSC 450 class do a follow-up on the pizza project to determine how effective the project was, whether or not it will continue or expand in upcoming years and what was effective/ineffective in this project (i.e. what are some barriers to its continuance)
- Determine whether or not it is feasible to add more UBC Farm-grown vegetables to the PRS menu
- Increase communication between the various sustainability-promoting programs on-campus so that they can promote each other and increase awareness of other initiatives being taken to improve sustainability

CENTRE FOR SUSTAINABLE FOOD SYSTEMS AT UBC FARM:

- Complete a thorough cost analysis of growing the squash and rosemary at the end of the growing season/end of the contract with AMSFBD – discrepancies found between prices of this year's contract and the actual costs of input and desired profit margins should be addressed if subsequent contracts with AMSFBD are wanted
- Analyze areas that could be improved in the growing of produce to reduce costs and increase profits
- Determine whether or not changes should be made to how the squash is grown (i.e. plant sooner, use black plastic on all beds, keep the cover crop from shading the squash plants, etc.)

- If it seems that prices comparable to other organic farms are not feasible, look into reasons why and ways to improve farm productivity without increasing expenses – possibly by looking into techniques that other organic farms practice
- Determine how feasible and profitable it is to build a root cellar for storage of squash and other produce grown in large quantities to increase sale time

CONCLUSION

To get to this stage, this project has included the coordination of many people involved in various aspects of sustainability on-campus. The objectives outlined for this project were: solidify a contract between the UBC Farm and AMSFBD, analyze farm costs for growing, harvesting, and storing squash, and develop possible marketing strategies for the butternut squash and rosemary pizza. Unfortunately, the first objective of the project was not achieved for various reasons. Despite this, a two different contracts (found in Appendices B and G) have been drafted and are ready to use, should the farm decide that they will be apply to supply the butternut squash for the fall of 2006 or in a subsequent year. The cost analysis for growing squash was determined and it was found that it is economically feasible for the farm to grow butternut squash according to the inputs used in the 2006 growing season. Under current conditions, selling the squash at the price of $1.50/kg will result in profit margins of approximately 32% for the farm. The marketing strategies that were proposed could still be used in upcoming years should the project not proceed as expected in September. The butternut squash and rosemary pizza project is a good example of how much effort and coordination between various people is necessary to turn good ideas into reality. It is hoped that the project as completed thus far can be continued and that by considering and implementing some of the recommendations the butternut squash and rosemary pizza will be sold at UBC's Pie R Squared in future years.

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APPENDIX A –

Interview Questions for Mark Bomford of UBC Farms – July 4th, 2006

1. Is enough butternut squash and rosemary currently growing to meet the proposed supply amount of 1200 kg?

2. What were the costs/what are the expected costs involved in growing the squash and rosemary in terms of:
   - Laying the two crops
   - Paper mulching for the squash
   - Seed processing time
   - Curing season
   - Labour inputs
   - Fuel inputs

3. Do the prices originally quoted to Nancy of squash at $1.50/kg and rosemary at $20/kg still seem feasible in terms of costs and profits?

4. Has a root cellar been built to ensure adequate storage of the squash?

   If so, what were the costs incurred in building the root cellar? Is the revenue from the squash and rosemary expected to contribute towards the costs of the root cellar?

   If not, how do you plan to store the squash over the 12 wks of delivery to Pie R Squared?

5. Will fresh rosemary be available for the whole 12 wks starting in September?

6. What delivery day(s) will work for the farm starting in early September for 6:30 am – 10:30 am delivery to Pie R Squared? Delivery time frame?

7. What are the farm expectations for food quality?

APPENDIX B –

CONTRACT FOR SALE OF GOODS DRAFT

THIS AGREEMENT, made and entered into this 20th day of July, 2006, by and between **UBC Farm**, the Seller and **AMS Food & Beverage Department**, the Buyer:

1. The seller hereby undertakes to transfer and deliver to the buyer the following described goods:
    - 70 kg of butternut squash
    - 600 g of fresh rosemary

2. The seller agrees to deliver the above goods, in the specified quantities, on Tuesday mornings between the hours of 6:30 am and 10:30 am beginning on September 5th, 2006, for a period of 12 consecutive weeks, ending on November 21st, 2006.

3. The buyer hereby undertakes to accept the goods during the above times and pay for them in accordance with the terms of the contract.

4. The seller agrees to include an invoice with every delivery of the goods, detailing the exact quantities sold, and the resulting costs based on the following prices:
    - Butternut squash @ $1.50/kg
    - Fresh rosemary @ $20.00/kg

5. The buyer shall make payment for the goods every net 30 days by cheque made payable to *UBC Farm*.

6. The seller warrants that the butternut squash will be clean and cured in a light bleach solution at the time of delivery and the rosemary will be picked fresh the morning of delivery.

7. The seller warrants that the goods will be free from any visible damage that would compromise their use. The buyer has the right to examine the goods upon delivery.

8. All sales are final, should they meet the above specifications.

9. Executed in duplicate, the buyer and seller will each retain one copy of this contract.

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Nancy Toogood - Manager
AMS Food & Beverage Department

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Mark Bomford – Program Coordinator
Centre for Sustainable Food Systems at UBC Farm

** Contract modeled after Business Nation *Contract for Sale of Goods*

APPENDIX C –

Cost Analysis – Part I: Raw Data

Raw Data and estimations from the farm staff:

Area of squash beds – 600 row ft long x 5 ½ ft wide = 3300 ft^2 = 307 m^2
Area of cover crop rows – 600 row ft long x 2 ½ ft wide = 1500 ft^2 = 140 m^2
Crimson clover – 500g/100 m^2 = 5g/m^2
Buckwheat – 500g/40 m^2 = 12.5g/m^2
Area of 2005 winter squash beds – 2600 ft^2 = 240 m^2
Total 2005 winter squash revenue - $1600
Average sale price of 2005 winter squash - $1.35/lb
Harvest cost estimation – 15min labour/40lbs squash
Curing/storage cost estimation – 15 min labour/40lbs squash
Delivery cost estimation - $15 labour + $2 gas per delivery
* Labour costs are in calculations below

Values from farm invoices:

Paper mulch - $48/400 ft = $0.12/ft
Crimson clover - $4.85/kg
Buckwheat - $1.57/kg
Organic butternut squash seed –
Drip irrigation - $0.095/ft
Connection for irrigation - $1.21

APPENDIX D –

Cost Analysis – Part II: Calculations

Costs of growing, harvesting, and delivering butternut squash:

1. Tractor and labour costs for field preparation and cultivation -
$60/hr x 1.5 hrs = $90

2. Labour costs for the seeding of the squash -
May 30th, 2006 -
2 workers at $12/hr x 1 hr = $24
June 18th, 2006 -
4 workers at $12/hr x .75hr = $36
1 worker at $17.75/hr x .75 hrs = $13.31

3. Costs of mulching paper:
$0.12/ft x 600 ft = $72

4. Seed costs -
Crimson clover seed –
5g/m^2 x 140 m^2 = 700 g 700 g = 0.700 kg
0.700 kg x $4.85/kg = $3.40

Buckwheat seed–

12.5 g/ m^2 x 140 m^2 = 1750 g 1750 g = 1.750 kg

1.750 kg x $1.57/kg = $2.75

Organic butternut squash seed –

$56/bag x 2/3 bag = $37.33

5. Labour estimation for upkeep of the crop, mowing cover crop, etc. –

4hrs at $12/hr = $48

6. Irrigation costs for one squash bed –

Drip irrigation $0.095/ft x 150 ft = $14.25

1 connection = $1.21

7. Harvest cost estimation –

15 min/40lbs at $12/hr = $3/40lbs $3/40lbs = $3/18 kg

$3/18kg = $0.17/kg

8. Curing and storage costs –

15min/40lbs @ $12/hr = $0.17/kg

9. Delivery cost estimation –

($15 labour + $2 fuel)/delivery x # of deliveries =

10. Saleable winter squash grown in 2005 in kg/ m^2 –

$1600/$1.35/lb = 1185 lbs of winter squash grown on 240 m^2

1185 lbs = 538 kg

538 kg/240 m^2 = 2.24 kg/ m^2

11. Projected yield based on 2005 winter squash yields –

2.24 kg/ m^2 x 307 m^2 = 688 kg

The following <u>estimations</u> are for a yield of 600 kg to sell to the AMSFBD:

a) Total of items 1 through 6 = $342.25

b) Total of items 7 & 8 = $0.34/kg

c) $0.34/kg x 600 kg = $204

d) $204 + $342.25 (from item a) = $546.25

The total cost of growing butternut squash/kg –

$546.25/600 = $0.91/kg

Total cost of growing and delivering squash to AMSFBD –

$546.25 + ($17/delivery)(8 deliveries) = $682.25

$682.25/600 kg = $1.14/kg

At a cost of $1.14/kg and a retail price of $1.50/kg, profits for the farm are $0.36/kg or 32% of costs.

** Information obtained from: Mark Bomford (personal communication, July 4th & 20th, 2006), Tim Carter (personal communication, July 19th, 2006) and Greg Rekken (personal communication, July 20th, 2006)

APPENDIX E – Pizza Poster

Sustainability in Action!

New:
Butternut squash & rosemary pizza

UBC Students…

- Developed the recipe
- Grew the organic squash & rosemary
- Formed a contract between UBC Farm & Pie R Squared
- Made the pizza
- LOVE the pizza!

Sold exclusively @ Pie R Squared - UBC SUB

*Picture of butternut squash obtained from http://66.54.153.89/CSUag.ASP?WCI=Select_View2&WCE=CD;10437;4035;55;;;;;;&WCU=6/19/20047:08:24%20PM;TT;5;4;1

Insert picture of butternut squash pizza

Insert picture of Pie R Squared Sign

APPENDIX F –

Websites to Update with Pizza Information

ORGANIZATION	WEBSITE & PROPOSED CHANGES
Pie R Squared	http://www.ams.ubc.ca/content.cfm?ID=52 - add a bright, eye-catching icon/bubble, etc. advertising the new pizza that promotes UBC sustainability - in the text, add a paragraph explaining how PRS is contributing to UBC Sustainability through by offering a new roasted butternut squash and rosemary pizza made with ingredients grown at UBC
Sprouts Co-op	http://www.ams.ubc.ca/clubs/nfc/?page=store - advertise other ways that consumers can support the UBC Farm and buy local organic foods by trying out the new pizza at PRS
University of British Columbia: Campus Sustainability Office	http://www.sustain.ubc.ca/ - add a bright, eye-catching icon/bubble, etc. advertising the new PRS pizza that promotes UBC sustainability - add educational information for Imagine UBC MUG leaders to share with new UBC students regarding the new PRS pizza and how it fits in with UBC sustainability initiatives both through faculty and student work
Centre for Sustainable Food Systems At UBC Farm	http://www.landfood.ubc.ca/ubcfarm/ - add a bright, eye-catching icon/bubble, etc. advertising the new pizza made with fresh UBC Farm ingredients
University of British Columbia: Food System Project	http://www.landfood.ubc.ca/courses/agsc/450/project/ - update project website to include a section for student project ideas that have been implemented - insert a small ad for the pizza - explain how the pizza idea was developed and put into action by AGSC 450 students and how the pizza fits into the larger Food System Project as well as UBC sustainability
University of British Columbia: Student Environment Centre	http://www.ams.ubc.ca/student_life/resource_groups/sec/index.html - add a bright, eye-catching icon/bubble, etc. advertising the new PRS pizza that promotes UBC sustainability - include a small educational blurb on how this pizza helps to improve the environment i.e. lower fuel emissions to get the ingredients off the farm and to AMSFBD, squash and rosemary grown organically, etc.
University of British Columbia: Social, Ecological, Economic Development Studies (SEEDS)	http://www.sustain.ubc.ca/seeds.html - update project report page to include the PRS pizza project - add a bright, eye-catching icon/bubble, etc. advertising the new PRS pizza that promotes UBC sustainability, while generating a profit for the UBC Farm through the sale of organically grown produce

APPENDIX G –

CONTRACT FOR SALE OF GOODS

THIS AGREEMENT, made and entered into this 20th day of July, 2006, by and between **Centre for Sustainable Food Systems at UBC Farm**, the Seller and **AMS Food & Beverage Department**, the Buyer:

1. The seller hereby undertakes to transfer and deliver to the buyer the following described goods:

Shipment A–
- 35 kg butternut squash
- 300 g fresh rosemary

Shipment B–
- 70 kg butternut squash
- 600 g fresh rosemary

2. The seller agrees to deliver the above Shipment A, in the specified quantities, on Tuesday mornings between the hours of 6:30 am and 10:30 am beginning on September 5th, 2006, for a period of 4 consecutive weeks, ending on September 25th, 2006.

3. The seller agrees to deliver the above Shipment B, in the specified quantities, on Tuesday mornings between the hours of 6:30 am and 10:30 am beginning on October 2nd, 2006, for a period of 4 consecutive weeks, ending on October 23rd, 2006.

4. The buyer hereby undertakes to accept the goods during the above times and pay for them in accordance with the terms of the contract.

5. The seller agrees to include an invoice with every delivery of the goods, detailing the exact quantities sold, and the resulting costs based on the following prices:
   - Butternut squash @ $1.50/kg
   - Fresh rosemary @ $20.00/kg

6. The buyer shall make payment for the goods every net 30 days by cheque made payable to *UBC Farm*.

7. The seller warrants that the butternut squash will be clean and cured in a light bleach solution at the time of delivery and the rosemary will be picked fresh the morning of delivery.

8. The seller warrants that the goods will be free from any visible damage that would compromise their use. The buyer has the right to examine the goods upon delivery.

9. All sales are final, should they meet the above specifications.

10. Executed in duplicate, the buyer and seller will each retain one copy of this contract.

Mark Bomford - *Program Coordinator*
Centre for Sustainable Food Systems at UBC Farm

Nancy Toogood – *Manager*
AMS Food & Beverage Department

APPENDIX H – Email from Mark Bomford

From: bomford@gmail.com [mailto:bomford@gmail.com] On Behalf Of Mark Bomford
Sent: July 25, 2006 12:36 PM
To: Jessica Fuller
Cc: Nancy Toogood; Tim Carter; jianhuic; Amy Frye; Liska Richer; greg rekken
Subject: Re: butternut squash costs

Hi Jessica,

Thank you for all the work that you have put into the butternut squash pizza project. It's not an easy task to try and make good estimates on data that was never recorded in any detail but you've come up with some good stuff.

After taking a closer look at the butternut crop and in discussions with Tim and Jian, however, I don't want to enter into this contract for 2006, as by our best estimates, we won't have the capacity to meet its terms. I don't want to commit to something if we can't follow through with it in a semi-professional way.

There's a few things at work here. First of all, Greg's departure has meant a major mid-season transition here. There have been a few critical weeks where the field work got way ahead of us. The overgrown alley crops in the butternut squash are one example of this - even if we get them under control, it's a major setback in both anticipated yield and delayed harvest date. I don't think we'll have anything at all for early September.

Second, the other winter squash plantings (i.e. destined for Saturday markets) are way down from last year. We likely will be short on meeting this demand at the markets, where we are able to sell for double what we would be selling to the AMS for. It sounds callous, but when you're already losing money on something - it's hard to justify losing more!

Again, good work on the analysis that shows we'd cover our variable costs for the crop selling at $1.50/kg. Our fixed costs (overhead) are still not covered by what remains on this, though, so I don't think 2006 is our year to be pulling this project off.

This in no way diminishes my support in principle for the project and entering into a similar agreement in the future - but I think that saying "no" will result in a smaller disappointment than if we said "yes!"

Thanks,

Mark