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Market Feasibility Study

Jamaica/Canada Agricultural Business Venture

CIDA Inc. Project # K062267

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1.0 Executive Summary

Early in 2005, Nightingale Farms was approached by one of the major food retail chain stores in Canada to develop a plan to source agriculture produce from the Caribbean to supply the growing, and now significant, ethnic market food sector in Ontario. This request stemmed from the current business relationship of supplying local produce in Ontario, and from having full confidence that Nightingale Farms has the knowledge and experience to develop such a venture. Jamaica was identified as the Caribbean country of primary choice.

Preliminary investigations revealed that:

- Even though soil and climatic conditions were highly favourable to growing crops, the agriculture sector in Jamaica was highly fragmented and inefficient; they produced low quality products that were generally only for self consumption or for sale at local farmers markets;
- Most produce retailed at large Jamaican supermarkets and consumed at resort hotels was found to be imported and priced extremely high relative to North America; and
- Because of poor quality, availability, lack of packaging, and exporting quality controls, very little produce was found to be exported.

Based on this assessment, it was concluded that the key requirement to develop a reliable source for ethnic produce to be imported to North America would be to organize an integrated state-of-the-art growing and value added operation. This allows for utilization of sufficient economies of scale, supplying a high quality product concurrent to international standards with predictable volumes. In addition, it was felt that there was also a tremendous opportunity to tap into what appeared to be a rather undeveloped local market as well.

In consideration of the project risks and the high costs to develop this venture, Nightingale Farms applied to the Canadian International Development Agency (CIDA, Inc.) for assistance to perform a viability study and to develop relationships with potential business partners in the country. The market study, as presented in this report, is the first work sub-task of the viability study for the project.

Information compiled on the potential market for Jamaican produce is based on surveys and interviews that were carried out during the period from January to March, 2006. The study has been extremely instrumental in understanding more on the domestic market; the potential for exports, as well as determining which products have the highest profit potentials. The primary findings and conclusions of the study are follows:

- The domestic market is considered to be the largest potential and most profitable target with the least risk; in particular the major resort and hotel chains and grocery supermarkets, which currently import the majority of their produce. Imports for produce have been increasing rapidly each year, while domestic production declining. Efforts should therefore be first concentrated in this target market.

Second tier product could be sold to local farmers markets as well as the smaller grocery and roadside outlets.

- Local pricing for fruits and vegetables is considered to be extremely high when evaluating against comparable products from North America. Products sold in supermarkets, even though quality is sub-standard at times, are unaffordable and therefore purchased by only a small percentage of the total population. Although there would be a definite wholesale price advantage over imports, final retail end pricing most likely would not change unless new customers are attracted to increase volumes.
- Hotels, resorts, and supermarkets would prefer to purchase locally if a suitable high quality product could be delivered to international HACCP standards.
- Jamaicans, in general, consume relatively small amounts of fruits and vegetables which accounts for a higher than average incidence of various types of health problems and diseases compared to other countries. Even though this venture would make local produce more affordable to the general population, a major educational and advertising program would be required to change dietary habits, incorporating more produce. This would be a long term process with uncertainty of the degree of success.
- Developing sales with the local resort, hotel, and supermarket chain buyers will create relationships that will allow entrance to their facilities throughout the Caricom markets. These countries also import high quality and high priced produce from the USA, similar to Jamaica. There is also a potential for high profit potential due to import duty exemption between member countries as well as relatively low comparative transportation costs. Eleven Caricom countries were selected as part of the potential target Caricom market.
- Target export markets in Canada will predominantly include the three major supermarket chain stores, as well as the smaller independent stores in Ontario. The population in Ontario is of large ethnic diversity and includes consumers who prefer to sample diverse foods from outside countries and culture. Test marketing has been carried out for three Jamaican root crops and has proved to be extremely successful. Product that was shipped from Jamaica and put on store shelves in Toronto was sold in less than a day even though pricing was higher than similar product from other countries. It was found that consumers will pay a premium because of the distinctive Jamaican flavour and aroma, along with value-added components applied with recipes and labeling.
- Relationships created with the Canadian chain stores and other distributors will be used for ease of entrance into large market of the USA. The initial market that will be targeted is Miami due to close proximity and high proportion of ethnic population. The UK is also considered to be a good target market because of the large concentration of ethnic peoples.

Products that have been screened and considered for domestic and Caricom markets include strawberries, cantaloupe and tomatoes for major production potential; watermelon, sweet corn, cucumbers and sweet peppers for minor production. These products are of high demand in retail supermarkets and hotel and resort chains, and are more often imported because of poor local quality and availability.

Products considered for export to North America and the UK are considered specialty items to these targets. These would include yellow yams, scotch bonnet peppers, Jamaican sweet potato, dasheen, coco's edoes, and sorrel. Neese berries, star fruit and passion fruit, which have a well known exotic Jamaican flavour, are considered to have minor potential for export to Canada. Current exports for these proposed products are either very limited or not produced on a commercial basis with any sizable volumes.

The project will enjoy a tremendous competitive advantage:

- The prime advantages are lower pricing, shorter transportation distances, and increased freshness over Caricom and USA competitors who currently export to Jamaica;
- There is essentially no competition from domestic growers since farms are small scale and antiquated, therefore cannot supply a high quality or reliable product to upscale customers; and
- Markets in Canada and the United States, for ethnic based produce, are undeveloped for the average consumer.

The project will have a number of benefits including:

- Consistency and availability of a higher quality product suitable for upscale markets in Jamaica and export;
- Lower local prices by displacing imports which are subject to a high duty rate and lower production costs due to economies of scale, mechanization, and the application of high technologies;
- Longer shelf life, therefore lower losses and risk since product shipped is local;
- Local economic benefits including new job creation, income and expenditure spin-off effects, and reduced outgoing foreign exchange.

There are, however, a number of important barriers that need to be addressed including:

- Issues with security and larceny;
- Acquiring a large enough piece of land in one area to produce the large volumes required;
- Changing growers' historical cultural practices to reduce disease pressures;
- Finding and training experienced management staff to ensure that international standards will be maintained; and
- Organizing and training an association of Jamaican growers to supplement the volumes required for the project.

Potential sales were estimated from sample surveys that were dispersed throughout the large supermarkets and hotels and resorts in Jamaica and the Canadian grocery chain

stores. Based on these surveys a practical three year production schedule was determined by crop type and potential sales revenues calculated as shown in summary Table 1. Details by product type for domestic sales and export are presented in Table 2. Expected revenues are estimated to be in the range of CDN\$4 million per year with a growing operation consisting of 425 acres.

Table 1. Summary of Proposed Produce Production and Sales

	<u>Lbs</u>	<u>Acres</u>	<u>\$Cdn 000's</u>
Year 1	1,146,700	66	858.7
Year 2	3,061,500	182	2061.1
Year 3	6,991,000	425	4081.3

It is believed that the projected sales levels are attainable. Table 3 compares the projected production levels of the project to an estimate of the total potential market, consisting of the survey sample results to which is added an allowance to include the smaller domestic supermarkets, grocery stores, and hotels and resorts in Jamaica, all of the potential Caricom market, the independent retailers in Canada as well as potential ethnic produce sales to the USA and UK. Market share is shown to be less than 18 percent of the total potential market in terms of volume.

Net margins excluding overheads are considered to in the range of 40 percent of sales, which is considered to be sufficient for this project to succeed financially. A pilot project is being planned to test growing conditions and markets in Jamaica. Acreage planted will be 16.5 acres, and with double cropping, would yield approximately 196,000 lbs of produce.

During the course of the viability study, results of the market study will be updated on the basis of new information obtained. Revised volumes will be presented in the technical feasibility study and the business financial plan.

Table 2. Projected Production, Acreage and Sales Volumes for Operations

	Year1	Year 2	Year 3	Year 3	Price/	Year 3
	<u>Lbs</u>	<u>Lbs</u>	<u>lbs</u>	<u>acres</u>	<u>Lb</u>	<u>Revenue</u> <u>\$ Cdn</u> <u>000's</u>
<u>Domestic/Caricom</u>						
Tomatoes	100,000	200,000	600,000	30	0.55	330.0
Cantaloupes	80,000	240,000	640,000	40	0.40	256.0
Honeydew	62,500	187,500	500,000	40	0.50	250.0
Strawberries	20,000	50,000	100,000	10	2.50	250.0
Peppers - green	135,000	270,000	540,000	20	0.85	459.0
Peppers – red	54,000	135,000	270,000	10	1.00	270.0
Peppers - yellow	16,200	34,000	81,000	5	1.25	101.3
Cucumbers	100,000	200,000	400,000	20	0.70	280.0
Sweet corn	15,000	45,000	300,000	50	0.45	135.0
Broccoli	8,000	40,000	80,000	10	1.40	112.0
Cauliflower	18,000	90,000	180,000	10	0.50	90.0
Romaine	18,000	90,000	180,000	10	0.80	144.0
<u>Export to Canada</u>						
Yellow yams	100,000	400,000	800,000	40	0.45	360.0
Dasheen	80,000	200,000	400,000	20	0.45	180.0
Sweet potato	80,000	320,000	800,000	50	0.45	360.0
Coco's	80,000	200,000	400,000	20	0.45	180.0
Eddoes	100,000	200,000	400,000	20	0.45	180.0
Jamaican Pumpkin	80,000	160,000	320,000	20	0.45	144.0
Total	<u>1,146,700</u>	<u>3,061,500</u>	<u>6,991,000</u>	<u>425</u>		<u>\$4,081</u>

Table 3. Projected Market for Jamaica Grown Agriculture Produce

	<u>Extra- Population</u>	<u>Sales Volumes</u>	<u>Average Price</u>	<u>Sales Revenues</u>
	<u>Factor</u>	<u>lbs</u>	<u>\$Cdn/lb</u>	<u>\$Cdn 000's</u>
<u>Survey Extrapolations (based on current pricing)</u>				
Domestic Supermarkets (51)		2,814,060	1.48	4,173
Domestic Hotels/Resorts (50)		6,149,000	1.52	9,373
Canadian Supermarkets (3)		<u>8,429,000</u>	1.29	<u>10,837</u>
subtotal		17,392,060		24,383
<u>Estimated Other Potential Markets (based on current pricing)</u>				
Smaller Domestic Stores	40.0%	1,125,624	1.48	1,669
Smaller Domestic Hotels/Resorts	60.0%	3,689,400	1.52	5,624
Caricom Supermarkets	100.0%	3,939,684	1.48	5,842
Caricom Hotels. Resorts	100.0%	9,838,400	1.52	14,997
Canadian Independents	25.0%	2,107,250	1.29	2,709
USA/UK	10.0%	842,900	1.29	1,084
Total Estimated Market		38,935,318	1.45	56,308
<u>Projected Third Year Sales Volume</u> (based on discounted pricing)		<u>6,991,000</u>	0.58	<u>4,081</u>
Projected Market Share		<u>18.0%</u>		<u>7.2%</u>

2.0 Background

Nightingale Farms has operated in the agriculture produce business for over 55 years. Originating from a small family farm, the operation has expanded over three generations and now grows, packs, and ships over three million pounds of fresh produce annually. The company is one of Canada's largest local suppliers to Ontario food chain retailers, independents, Ontario Food Terminal brokers, and numerous retailers in the northern and southern USA states including Florida. It operates from its central, ultra-modern grading, packing, and cooling facility in La Salette, in southwestern Ontario. Over 1,000 acres of vegetables are planted and harvested each year.

Nightingale Farms has led the Ontario's vegetable farming industry in crop research; developing high technology methods of farming to improve product quality and to extend the local growing season. They have pioneered the use of plasti-culture technologies including plastic mulches, drip irrigation, low tunnels, crop covers, crop monitoring systems, and most recently the use of high tunnel shelters; all of which has provided a competitive advantage in its markets.

The Nightingale Farms organization employs over 200 seasonal workers, of which 150 are Jamaican migrant farm workers, for the past 25 years. They encompass excellent working relationships with the Jamaican Liaison located in Toronto, as well as with government officials and private sector contacts in Jamaica. They have also previously grown produce in Jamaica on a research project basis.

Early in 2005, Nightingale Farms was approached by one of the large food retailers to prepare a plan to develop a Jamaican based produce supply for its Canadian markets. This request stemmed from its current business relationship with Nightingale Farms for the supply of local produce, and from having full confidence that Nightingale Farms has the resources, experience and knowledge to set up, manage and operate such a venture.

Jamaica was identified as the Caribbean country of choice for a number of reasons ranging from its internationally known stature for a number of products, such as their Blue Mountain Coffee and Appleton Rum, as well as the desire to cater to the large ethnic population in Ontario. Market surveys indicate that most Caribbean people residing in Canada would buy a Jamaican sourced product in preference to products from any other Caribbean country. Jamaica also has a very favourable climate for growing produce year round and its air and sea freight transportation systems are well developed for serving export markets.

However, the Jamaican agriculture industry is highly fragmented with very small scale farms supplying mainly for self consumption and local farmers markets. Packaging and exporting quality controls, for the most part, are not organized for producing consistent high quality products with guaranteed volumes and, as a result, its exported produce does not carry a significant reputation. Because of poor quality and availability of local product, most of the produce retailed at the large Jamaican supermarkets and consumed at resort hotels is imported.

After two initial investigation trips to Jamaica and meetings with local government officials and potential business partners, Nightingale Farms concluded that there was a tremendous

opportunity to tap into an undeveloped market at the grass roots level both for produce to be sold in Jamaica, as well as for ethnic products to be sold in Canada and the USA. The key requirements would be to re-vamp and develop a large scale growing operation that would employ the latest technologies, as well as organize a value added facility for grading, packaging, cool storage, shipping, and distribution of high quality product.

In consideration of the project risks involved and the high costs to develop this venture, Nightingale Farms applied to the Canadian International Development Agency (CIDA Inc.) for assistance under the Industrial Aid Program. In November 2005, CIDA Inc. approved a cost sharing proposal with Nightingale Farms to support the development of a detailed viability study; to develop a fully integrated, state-of-the-art agricultural produce operation in Jamaica, and to develop relationships with potential business partners in the country.

The market study, as presented in this report, is the first work task that is undertaken as part of the viability study. The data and conclusions are based on surveys that were carried out during January to March 2006 and will be updated and presented later on in the technical feasibility studies and the business plan development work tasks of the viability study.

3.0 The Country

Jamaica is located in the Caribbean just south of Cuba. The country has a total area of 10,831 sq km. The climate is tropical and hot in nature, with the natural hazard of hurricanes, especially within the months of July until November. Terrain is of mostly mountains, with narrow, discontinuous costal plains running 1,022 km in total length. Land use is divided into 16.07 percent arable land, 10.16 percent permanent crops, and 73.77 percent other (2001).

Total population in the country is 2,731,832. GDP in 2005 was \$11.69 billion, with a real growth rate of 3.2 percent. GDP composition by sector is comprised of agriculture 4.9 percent, industry 33.8 percent, and services of 61.3 percent. Total labour force comprises of 1.2million people, split by occupation: agriculture 20.1 percent, industry 16.6 percent, and services 63.4 percent. Unemployment in the country is exceptionally high, with a rate of 11.5%. Inflation follows the same path, with a value of 14.9 percent. (2005)

4.0 Methodology

Based on preliminary investigations, sales of wholesale produce from this new venture are expected to be destined initially for the domestic Jamaican market including both large grocery chain stores and resorts/hotels. Once the project gains experience in the domestic market, it is expected that operations would expand to accommodate exports to the Caricom countries and then Canada, USA and the UK.

Based on this premise, the market study began with exploring the current consumption and production levels of agriculture products in Jamaica to get some insight on the supply and demand balances by product type and to determine the extent of product that is imported and exported. Numerous government officials, local entrepreneurs and potential business partners were interviewed to get a better appreciation of the produce markets and local constraints. Government statistics for Jamaica as well as the Caricom countries were also reviewed.

A local marketing consultant was sub-contracted to develop the market study methodology for the island, to formulate a questionnaire and to set up meetings with potential contacts. Interviews were conducted with four large resort hotels and six large scale supermarkets. These potential targets were asked of their current situations and concerns with the product they are distributing to date, as well as information on price, quantity, and quality of their current vegetable and fruit selection, including sources of supply. Data was collected on the total hotel and supermarket industry and also economic and demographic information in order to determine potential sales to nearby Caricom countries.

In the Canadian market, interviews were conducted with two major retail chain stores, collecting data on their current consumption levels of exotic produce in the Canadian market and expected future sales levels that could be achieved if suitable and consistent product were made available. Visits were also made to two independent grocery stores that specialized in carrying Caribbean based produce and discussions were held with four importer/wholesaler organizations that supply the independent grocery and retail niche market stores.

Information from the market surveys and interviews were compiled by product and extrapolated to get a sense as to what the total domestic and export market for Jamaican sourced product might support and ranked as to which products would be the most profitable to grow, package, and ship with the least amount of risk. Preliminary estimates were then made as to what a reasonable production level would be for the first three years of operation for a selected number of products. Potential sales revenues were then compiled and potential production costs developed to determine preliminary gross margins that would be further examined in the technical feasibility study and the business plan.

A schedule of interviews conducted in Jamaica, copies of interview presentation materials, and sample questionnaires are provided in the appendices. Details of the market assessment, market share, competitive aspects and potential sales and volumes or product are further developed in the sections below.

5.0 Potential Products

Potential products for local consumption as well as potential for export are first examined within the context of total demand for agriculture produce in Jamaica and the state of supply from the local agriculture sector.

Agriculture produce consumption in Jamaica was determined to have a healthy growth rate of 7.6 percent per annum for the five year period 1997 to 2001, which is more than double the growth rate in North America. During the same period, however, the country's total production of food, including primary export crops declined by 5.7 percent from USD\$843 million in 1997 to USD\$795 million in 2001. This trend of overall increasing consumption and declining local production is resulting in increasing importation of product, one of far superior quality than locally grown mainly because of fragmented, inefficient, and antiquated farming methods in the country.

There is therefore a tremendous potential to displace produce imports just by modernizing the agriculture growing, packaging, and shipping practices. These sales would primarily target the large chain store supermarkets and the hotel and resort sector. Lower price product combined with educational information on health benefits of having more fruits and vegetables in the normal Jamaican diet (Jamaicans comparatively consume very little produce) would also create a new and significant increase in current demand. Competitively priced, high quality produce grown in Jamaica would also readily sell to the Caricom markets where closer proximity and import duty exemption between its members could easily displace produce imported from the United States.

Internationally, exotic fruits and vegetables are becoming more popular as supplies are being developed and as more and more consumers are diversifying their eating habits. Large concentrations of ethnic Caribbean people in North America are also creating a demand for products that they consider a norm in their own countries and will pay a premium price to have the product available.

Products considered for domestic and Caricom markets include strawberries, cantaloupe, and tomatoes for major production potential; watermelon, sweet corn, cucumbers, and sweet peppers for minor production. Products considered for export to North America and the UK includes: yellow yams, scotch bonnet peppers, Jamaican sweet potato, dasheen, coco's edoes, and sorrel. Neese berries, star fruit, and passion fruit, which have a well known exotic Jamaican flavour, are considered to have minor potential for export to Canada. Currently, none of these products are being produced in Jamaica on a commercial basis.

A subjective appraisal of potential agriculture products is provided in the table below and discussed in more detail in the following sections.

Table – Potential Agriculture Products and Return on Investment (ROI)

PRODUCTS	CURRENT PRODUCTION (tones)	CURRENT CONSUMPTION (tones)	COST OF PRODUCTION (\$JMD)	AVERAGE SELLING PRICE (\$JMD)	ROI	AREA
<u>Domestic/Caricom</u>						
Strawberries	LOW	LOW	MED	HIGH	HIGH	N/A
Cantaloupe	MED	MED	15.35 per kg (new entrant) 11.61 per kg (existing farmer)	MED	MED	Cross Keys / Manchester
Tomatoes	18,654	HIGH	29.01 per kg (new) 24.89 (existing)	70.15	HIGH	Mocho / Clarendon
Watermelons	8,350	HIGH	23.05 per kg (new) 15.07 per kg (existing)	40.05	MED	Littiz / St.Elizabeth
Sweet Corn	3	LOW	113.96 per kg (new) 91.89 per kg (existing) *using existing methods*	95.53	LOW HIGH (with new methods)	Old Harboury / St.Catherine
Cucumbers	13,713	MED	20.84 per kg (new) 15.79 per kg (existing)	30.43	LOW	Cross Keys / Manchester
Sweet Peppers	7,416	HIGH	32.58 per kg (new) 23.06 per kg (existing)	81.56	HIGH	Littiz / St.Elizabeth
<u>CANADA / US / UK</u>						
Yellow Yams	78,887	HIGH	39.96 per kg (new) 25.66 per kg (existing)	68.98	MED	Albert Town / Trelawney
Scotch Bonnet Peppers	HIGH	HIGH	44.55 per kg (new) 38.03 per kg (existing)	HIGH	HIGH	May Pen/Clarendon
Jamaican Sweet Potato	18,639	HIGH	12.27 per kg (new) 10.91 per kg (existing)	60.41	HIGH	Southfield / St.Elizabeth
Dasheen	9,750	MED	28.49 per kg (new) 23.60 (existing)	47.58	MED	Grange Hill / Westmoreland
Sorrell	598	MED	47.27 per kg (new) 39.46 (existing)	94.58	HIGH	Trinityville / St.Thomas

5.1 Domestic and Caricom Markets

Strawberries

Strawberries currently are not produced in Jamaica, but rather imported from California by water or air freight via Miami. Jamaica did try to develop, grow, and market strawberries at one time, but nothing major materialized because of growing problems due to different weather conditions and different cultural practices needed for growing in the tropics. Consumption of strawberries is also very low presently due to buyer resistance to extremely high prices as a result of extremely high import duties.

Potential profit level for this product if grown locally to international standards is considered to be exceptionally high. Currently hotels in Jamaica are paying as much as three to four times higher than domestic wholesale prices of similar product sold in the USA.

Strawberries produced locally could be well priced under the wholesale value of imports due to considerably lower transportation cost and no government import levies. Lowering of prices below current levels would make the product more affordable and in turn would increase overall demand for the product.

The varieties of strawberries imported are bred for increased shelf life, but at the expense of lower taste quality. A high quality local variety with good taste could also stimulate further demand for strawberries that are grown in Jamaica.

Cantaloupe

Production of cantaloupes in Jamaica is very fragmented due to poor grading schedules, post-harvesting, and poor cultural growing practices resulting in extremely low yields and poor quality. Prices are extremely high because of the lack of consistency of supply.

Poor cultural practices and over cropping, coupled with lack of experience and knowledge, has led to an abundance of diseases that inevitably destroy the majority of this crop two to three weeks before harvest. The main problem is a terminal disease condition known as a strain of 'Cuban Downy Mildew.' To compound this problem, most of the seed collected has been from infected plants that are not treated properly, therefore increasing disease pressure.

The consumption of cantaloupe is high in Jamaica and the Caricom. It is one of the most dominant fruit items on buffet lines in hotels and resorts, and is purchased regularly in grocery stores. The quality of Jamaican cantaloupe is lower than international standards, but has potential to increase to meet required levels. Potential profit levels are considered to be high, but much depends on crop yield.

Tomatoes

Tomato production in Jamaica is both common and fairly consistent. In 2004, total production reached 18,654 tones, a substantial decrease from 25,025 tones in 2003, but still considered to be a major product compared to other products grown domestically.

Tomatoes are used for a variety of purposes, from fresh in salads to processed for tomato sauces, and are in high demand at Jamaican hotels, restaurants, and resorts.

The quality of tomatoes grown domestically varies from supplier to supplier. The main quality problem that was concluded after interviews with purchasers was one of consistency. Tomatoes that were received from local farms were delivered in sub-standard containers and with poor uniformity of product. Grocery store chains had problems with cosmetic appearance, since much of the product delivered was considered to be second tier quality.

In 2004, average prices for tomatoes reached a ten year high of \$70.15 per kg, a substantial increase from \$45.63 in 2003. Cost of production for tomatoes is approximately \$23.00 for new farmers, and considered to provide a high return on investment.

Watermelon

Watermelon production has decreased since 2003; dropping from 14,134 tones to 8,350 tones in 2004. The problem is of consistency of supply and quality, similar to that of cantaloupes. Watermelon has long history in the country and is always considered a favorite to the Jamaican consumer. Watermelons are considered to be a common commodity for resorts and hotels to purchase for use in their buffet lines and dining areas. With proper methods applied to increase yield and consistency of supply, the demand for watermelon has a high potential to increase.

The quality of domestic watermelon is usually considered to be above average for taste and sweetness levels because of climate, but below standard in size and consistency. Prices have more than tripled since 1995. Cost of production, on average, is about half of the price level, creating a medium return on investment.

Cucumbers

Production of cucumbers domestically has remained stable over ten years amounting to 13,713 tones in 2004. The domestic consumer considers this product a daily commodity and can be found in all grocery stores, local markets, and in hotels and resorts. Fresh cucumbers are mostly displayed in the salad preparation area on buffet lines.

Domestic product has excellent taste but substandard appearance. Cucumbers found in the grocery stores are regularly odd-shaped and of various sizes. Selling prices for cucumbers have been increasing since 1995 with the average price in 2004 of \$30.43 per kg, doubling the 1995 price of \$15.83 per kg. Production costs are approximately \$20.00 per kg, producing a smaller return on investment.

Sweet Peppers

Domestic production of sweet peppers was 7,416 tones in 2004, a decrease from 9,226 tones in 2003. Consumption of this product is fairly constant throughout grocery store chains, and hotel and resort markets. They are used in many dishes; from garnishes to part of a main dish.

Consistent supply and quality is the major problem. Scheduling crops to be grown to coincide with supermarkets and hotel needs is not currently being done. The sizes of peppers grown domestically tend to be very small comparative to the average size; smaller than a small fist.

Average prices for sweet peppers have been escalating over the ten year period from \$50.57 in 1995 to \$81.56 per kg in 2004. Profit levels are considered to be high since production costs are approximately \$32.00 per kg.

Sweet Corn

There is very minimal production of sweet corn domestically due to inborn diseases and insect infestations. In 2004, total domestic sweet corn production equaled three tones and has never exceeded 18 tones in the past ten years.

Consumption of sweet corn is rather small due to the poor availability in grocery stores and hotel/resort areas. The quality of domestically grown sweet corn is also very poor due to the infestation of 'corn bore.' More often infected product with ends cut off, is sold at road side fruit stands and at local markets including the Coronation Market in Kingston. The potential profit margin for a high quality product is considered to be very high. In 2004, sweet corn sold domestically for approximately USD\$95.53 per kg, or JMD\$135 per cob if found in a retail location, JMD\$100 per cob at local markets and fruit stands.

5.2 Exports to Canada, USA and the UK

Yellow Yam

Production of this root crop is high domestically, though production has been declining steadily over the years (142,948 tones in 1995 to 78,887 tones in 2004). Yellow yams are considered to be a common everyday product in Jamaica and is found in most grocery stores country-wide. This product is now being introduced internationally. Nightingale Farms previously has shipped a small quantity of yellow yams to test market in Canada. The product sold in less time than it took to ship it overseas.

The quality of product is considered to be very high; problems only of consistency and packaging. Since crops are not irrigated, most farmers are forced to plant only when there is rain, making it difficult to maintain volume and price consistency. There is also virtually no mechanization used in the growing, harvesting, or packaging of these crops.

Average selling prices for yellow yams have increased continuously over the past ten years. The average price doubled in 2004 to CDN\$1.52 per pound from the 1995 average price. The cost to produce the crop is close to CDN\$1.00 to 1.25 per pound in the first year, dropping 20 to 25 percent in the future years once established.

Jamaican Sweet Potato

Domestic production of sweet potato is considerable, but has been slowly diminishing (30,560 tones in 1995 to 18,639 tones in 2004). Consumption is high domestically and there is considerable potential to volume introduce this product for sale in North America.

The major problem is consistency of supply and quality. The entire crop is harvested entirely by manual labour, which keeps the selling price extremely high. It is grown only when the growers have sufficient capital to plant a crop. Without normal scheduled plantings, there are often times when there is no supply available. Grading and packaging of this product needs to be improved to bring to international standards.

Average prices for sweet potatoes have increased radically from 39.17 per kg in 2003 to \$60.41 per kg in 2004. Comparatively, production costs are only \$12.27 for a new farmer, and dropping near \$10.00 when farming this crop consecutively. The product has a high potential return on investment.

Because the supply consistency of Jamaican sweet potatoes is so erratic, from extreme lows to highs putting the pricing in a tail-spin, many wholesale importers in export countries have had to repackage Central American countries' sweet potatoes and label them from Jamaica in order to keep their customers happy. These wholesalers are actually content when this happens because the replacement products are usually 30 to 40% lower in price. More of this is now being done because of it being more lucrative than importing the real Jamaican products.

Jamaican sweet potatoes are seen selling for CDN \$2.95 per pound in the Canadian supermarkets alongside the local Honduras products and USA products at a price usually between CDN \$1.29 to 1.99 per pound. The lower price of other countries produce is understandable given that a standard Jamaican yield of sweet potatoes is 6,000 pounds per acre versus 12,000 to 18,000 per pound per acre in Honduras.

Dasheen

Production of dasheen has the same problems of all the other root crops. The entire crop is grown and harvested using manual hand labour and prices are high. There is no schedule of planting or irrigation. Planting dates are dependant on rainfall and funds on hand. Supply availability for export is also not predictable.

Consumption of dasheen is very high domestically and has good potential to for exporting internationally, as long as consistency of supply can be achieved. Quality of the product is high, but international packing requirements need to be addressed. Product labels would be attached to inform the consumer on how to use the product, and packaged sizes needed to be more uniform to adhere to international standards.

Average prices for dasheen have increased from \$16.60 in 1995 to \$47.58 per kg in 2004. If the problems with production yields can be addressed, this product can yield a very high profit return.

Scotch Bonnet Peppers

Scotch bonnet peppers are a very unique hot pepper that Jamaica is very well known for. Because of improper seed collection and breeding, the current strain has lost its true cup and tea saucer shape and form. Research is underway to once again redevelop a pure strain, making the product more identifiable in export markets.

Like other products in Jamaica, consistent supply and quality is a problem. Often growers plant without prior consideration of market demand, frequently leading to oversupply. Costs are extremely high because of manual labour intensity. Mechanization could lower production costs dramatically and provide a more competitively priced product.

Sorrell

Sorrell production in Jamaica has decreased over the last ten years (1,101 tones in 1995 to 598 tones in 2004). Consumption, however, remains high in international markets. Export quality is considered to be to international standards. Average prices for this product have constantly increased from \$46.27 per kg to \$94.58 per kg in 2004.

5.3 Product Benefits and Differentiation

Currently buyers of produce in Jamaica are receiving poor quality product that is below international standards. Supply is also not predictable or reliable. This is mainly due to antiquated growing techniques, grading, and storage techniques. Pictures of products currently found in grocery stores and hotels in Jamaica are found in the appendices.

Alternatively high cost product is imported at many large hotel resorts and supermarkets which cater to people who can afford to supplement these costs. Prices are extremely high because of long transportation distances and import levies.

The project will produce a number of benefits:

- Availability of a higher quality product suitable for high level markets in Jamaica and export to Caricom and North America. Nightingale Farms is well known for its quality and consistency of fruits and vegetables in North America. All products sold are to international standards, HACCP certified, and labeled with full traceability back to the original field plots.
- Lower local prices due to both displacement of imports which carry a duty rate of 25% to 50%, and economies of scale, mechanization, and the application of high technologies.
- Longer shelf life and lower losses since product shipped will be local rather than water or air freight from other off-island sources.
- Local economic benefits including the provision of new job opportunities, income spin-off effects, and local project expenditures.

6.0 Target Markets:

The major target markets identified include the large supermarkets and hotel and resort chains in Jamaica and the Caricom, and supermarket outlets in Canada, the USA, and the UK. Further in detail assessments are provided below.

6.1 Domestic Market

The hotel/resort chains and major supermarkets in Jamaica are considered to be the primary domestic target markets. Consistency, first tier quality, and new available products, along with proper distribution and servicing of accounts, will play a key factor. The secondary target will be the local markets where second tier quality will be sold.

Hotels and Resorts

The largest concentration of the resorts and hotels within the country are on the northern coastline from Negril, to Ocho Rios and include: 80 hotels in Negril, 76 in Ocho Rios, and 96 in Montego Bay. The largest 50 well know resorts and their locations are provided in the table below.

Table – Jamaica Large Scale Hotel/Resorts Target Markets

<u>Resort</u>	<u>Number</u>	<u>Description</u>
Breezes	9	Negril: <i>Hedonism II</i> <i>Negril Beach Villa</i> <i>Grand Lido Negril</i> Montego Bay: <i>Breezes Montego Bay</i> Trelawney: <i>Starfish Trelawney</i> <i>Grand Lido Braco</i> Runaway Bay: <i>Hedonism III</i> <i>Breezes Runaway Bay</i> Ocho Rios: <i>Rooms...On the Beach</i>
Beeches	3	Negril: <i>Beeches Negril Resort and Spa</i> <i>Beeches Sandy Bay</i> Ocho Rios: <i>Beeches Boscobel Resort & Golf Club</i>
Half Moon	1	Montego Bay: <i>Half Moon</i>
Ritz Carleton	1	Montego Bay: <i>Ritz Carleton Montego Bay</i>

Riu	3	Negril: <i>Riu Tropical Bay</i> <i>ClubHotel Riu Negril</i> Ocho Rios: <i>ClubHotel Riu Ocho Rios</i>
Sandals	7	Montego Bay: <i>Sandals Royal Caribbean</i> <i>Sandals Inn</i> <i>Sandals Montego Bay</i> Negril: <i>Sandals Negril</i> <i>Sandals Whitehouse</i> Ocho Rios: <i>Sandals Dunn's River Golf Resort and Spa</i> <i>Sandals Grande Ocho Rios Beach & Villa Resort</i>
Other Major Hotels	26	Various
	50	

The following is a consensus of general observations and concerns of the hotel/resort potential buyers:

- There is a large interest to purchase a high quality domestically grown product as long as it meets all international standards;
- Most product purchased is imported from the United States because the product is known to meet the resorts' standards and requirements;
- Problems with domestic product include: unreliable consistency of supply, inconsistent grading standards, improper storage, and transportation;
- Buyers generally purchase on a 'per week' contact basis, but suppliers would consider longer terms if trust can be established;
- The main concern that they have about Nightingale Farms farming in Jamaica is the issue of security and larceny.

With respect to quantities and pricing at one resort chains, it was noted that about 600 to 700 kg of tomatoes was purchased per week at a price of JMD\$88.00 to \$110.00 per kg. When available, on average approximately 10 kg per week of strawberries were purchased, paying JMD\$890.00 to \$1200.00. The amount would increase if there was better quality locally available. (*interview with Stephen Ueker – Half Moon, Montego Bay*)

Based on this information, it appears that there would be a demand for local product produced by Nightingale Farms Jamaica, as long as the quality is of international standard quality. All resort owners and food and beverage purchasers that were spoken to were also very interested in the proposed project. They were excited to finally have hope of purchasing domestic product and reducing the countries foreign exchange requirements for imports.

Supermarkets

The largest 51 supermarkets in Jamaica are provided in the table below.

Table – Jamaica – Potential Large Scale Supermarket Targets

<u>Supermarkets</u>	<u>No. of locations</u>	<u>Description/Notes</u>
Progressive Grocers	14	Group of 5 small supermarket chains: Sovereign Supermarket, John R. Wong, Super Value, Brooklyn Supermarket, and Shopper's Fair
Super Plus	21	Largest supermarket chain within Jamaica 1,500 employees, ranked 1 st among all Jamaican retailers in transactions, posted \$9b in gross sales (2004)
Hi Lo Food Stores	9	Member of the Grace Kennedy Group; one of the more established supermarkets in Jamaica; 9 stores located in the capital and major towns; caters to upper middle income class; 18 other retail & food trading divisions
Other Large Scale Stores	7	Various independents
	51	

From the data collected, the following concerns and comments were similar to the hotel/resort industry:

- Interest was high to purchase domestically grown product but only if international quality standards were met;
- The main problem that they have with domestic suppliers is inconsistent size. This is mainly because the majority of domestic farmers sells their crop by the pound and has not paid attention size. Product is also inconsistent in quality and delivery times;
- Domestic product must have increased shelf life and higher quality. Refrigeration from the field to packaging warehouse is required. HACCP approved product will be a requirement for purchases in the near future.

From these findings, we can conclude that the grocery stores are very interested in purchasing domestic product, as long as international standards are obtained. Every step of growing, harvesting, packaging, and distributing processes needs to be addressed to delivery to the standards required by the chains.

6.2 CARICOM Market

The Caribbean Community and Common Market (CARICOM), established by the Treaty of Chaguaramas, came into effect on August 1, 1973. There are 18 members including Jamaica, as well as 11 observer countries located in the area. Caricom aims at the integration of the economies of its members, creation of a common market, coordinating foreign policies, as well as functional cooperation in areas of social and human endeavors.

The prime advantageous of targeting these countries include duty-free trade among its members and short transportation distances allowing for lower costs and shorter transportation times. In addition, many of the hotel, resort, and supermarket chains in Jamaica also operate facilities on these other islands.

Five Caricom countries have been selected to be of interest for target produce markets and include:

- Antigua;
- Bahamas;
- Dominican Republic;
- St. Lucia, and;
- Turks and Caicos Islands

Comparative demographic and economic statistics are presented in the table below.

Table – Caricom Countries – Comparative Statistics

<u>Domestic:</u>	population	Population Growth Rate	island size sq km	GDP	GDP Real Growth	GDP - by sector	unemployment rate	inflation rate
Jamaica	2,731,832	0.71%	10,991	\$11.69billion	3.20%	agriculture: 4.9% industry: 33.8% services: 61.3%	11.50%	14.90%
<u>Caricom:</u>								
Antigua	68,722	0.57%	280	\$750 million	3%	tourism 60 % agriculture: 3.9% industry: 19.2% services: 76.8%	11%	0.40%
Bahamas	301,790	0.67%	13,940	\$5.9billion	3%	agriculture: 3% industry: 7% services: 90% (tourism 60%)	10.20%	1.20%
Dominican Republic	8,950,034	1.29%	48,730	\$17.7 billion	4.10%	agriculture: 10.7% industry: 31.5% services: 57.8%	17%	4.30%
St.Lucia	166,312	1.28%	616	\$866 million	3.30%	agriculture: 7%	20%	3%

industry: 20%
services: 73%

Turks & Caicos	20,556	2.90%	430	\$216 million	4.90%	N/A	10%	4%
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A list of the large chain hotels and resorts which also have facilities in Jamaica are provided in the table below.

Table – CARICOM Resorts and Hotels (Associated Members)

Breezes	4	Dominican Republic:
		<i>Breezes Punta Cana</i>
		<i>Breezes Puerto Plata</i>
		Bahamas:
		<i>Breezes Bahamas</i>
		Curacao:
		<i>Breezes Curacao</i>
Beeches	1	Turks & Caicos:
		<i>Beeches Turks & Caicos Resort and Spa</i>
Riu	9	Dominican Republic:
		Puerto Plata:
		<i>ClubHotel Riu Bachata</i>
		<i>ClubHotel Riu Mambo</i>
		<i>ClubHotel Riu Merengue</i>
		Punta Cana:
		<i>Hotel Riu Palace Macao</i>
		<i>ClubHotel Riu Bambu</i>
		<i>Hotel Melao</i>
		<i>Hotel Naiboa</i>
		<i>Hotel Riu Palace Punta Cana</i>
<i>Hotel Riu Taino</i>		
		Bahamas:
		<i>Bahamas Riu Paradise Island</i>
Sandals	5	Antigua:
		<i>Sandals Antigua Caribbean Village & Spa</i>
		Bahamas:
		<i>Sandals Royal Bahamian</i>
		St.Lucia:
		<i>Sandals Regency St.Lucia</i>
<i>Sandals Grande St.Lucia</i>		
		<i>Sandals Hacyon</i>

6.3 International Market

Ontario, Canada

The main target is the Ontario market includes resident Jamaicans, other related ethnicities, as well as the general Ontarian consumer. According to the 2001 Census, metropolitan Toronto has one of the highest proportions (44 percent) of foreign-born residents of all major urban centers in the world. The proportion is more than twice as high as the national average of 18 percent.

Toronto's ethnic population is also much diversified. About 11 percent of newcomers in the 1990s came from China, 10 percent from India, and 7 percent each from the Philippines and Hong Kong. Other top countries of origin included Sri Lanka, Pakistan, Jamaica, Iran, Poland and Guyana as shown in the table below.

Table - Population by Selected Ethnic Origin, Ontario, Canada

Total population	11,285,545
Ethnic origin	
Canadian	3,350,275
English	2,711,485
Chinese	518,550
East Indian	413,415
Jamaican	180,810
Greek	120,635
Spanish	103,110
American (USA)	86,855
Vietnamese	67,450

To obtain product preference data for ethnic foods, interviews were conducted at the retail store level with consumers through a direct approach using a questionnaire. Data was also collected on the types and volumes of produce that were imported from other countries by two large chain stores. Through consultative meetings with the produce managers a target market share was determined that could be supplied from Jamaica and the produce pricing required to source the supply.

Potential target markets in the supermarket industry in Canada and their locations are listed in the table below.

Table – Canadian Supermarket Chains and Independents

	No. of Locations	Description
<u>Ontario Supermarkets</u>		
Loblaws Canada	>1,000 in Canada	- Canada's largest food distributor and leading provider of general merchandise, products, and services - employ >130,000 part-time and full-time employees - sales 2005: \$27,801 m - Include: President's Choice, President's Choice Financial, Zehrs Markets, No Frills, Loblaws, Superstore, Independent, Atlantic Superstore, Provigo, and Maxi
Great Atlantic & Pacific Company	238 in Ontario	- Include: A&P, Dominion, Ultra Food & Drug, The Barn Markets and Food Basics - employ > 30,000 people in Ontario - owned & operated by Metro Inc - sales 2005: \$6,695.9 m
Sobey's	>1,300 in Canada	- Include: Sobey's, IGA, IGA Extra, and Price Chopper - employ > 75,000 employees - collectively generate > \$12b retail sales
<u>Wholesalers/Distributors</u>		
Bell City Brands	1	Brantford
Ontario Produce	1	Toronto
San Jay's	1	Scarborough
Jamwell Distribution	1	Scarborough

The major conclusions drawn from the data with respect to Jamaican sourced product are as follows:

- Food products from Jamaica have an preference advantage over foods from other Central American countries and Caribbean islands because of its unique taste and flavour;
- Prices and availability however are highly volatile and inconsistent;
- Packaging is not to international standard. Sometimes it is good, and but mostly it is not;
- Products must be retailed at 30 to 60 percent higher than similar products from other countries because of the higher cost.
- Higher volumes could be sold if prices were more comparable to other countries that grow the product. For example, Jamaican sweet potatoes have to retail at USD\$2.99 per pound versus USD\$0.99 to \$1.99 per pound of Louisiana, USA or Honduras imports;
- Jamaican pumpkins need to be improved for consistent sizing and colour. Possibly Costa Rica varieties could be grown in Jamaica;
- Exotic fruits should be targeted as well as root crops. If product could be brought in bulk and packaged, it would vastly improve quality and sales appeal;

- The normal Canadian consumer should be targeted. Tray packing, recipes, processing, labeling, plu codes, etc, are considered to be required;
- The major holidays including Caribbana, Independence day, Martin Luther King day, and Christmas should be targeted with large volumes of product; and
- Value-added marketing efforts are required for all products. Sizes must be kept consistent and methods need to be found to increase shelf life. A consistent standard, quality level and supply are required.

The large chain store buyers well understand the problems in developing a source of supply from Jamaica and are willing to work with Nightingale Farms. From this information it can be concluded that there is an excellent opportunity to expand Nightingale Farms Canadian seasonal operations into year round by importing products from Jamaica during the off growing season.

United States and the United Kingdom

The initial entrance point into the USA for trading with Jamaica will be through Miami. Miami has a high ethnic population and is considered to be an excellent target market for exporting specialty products. In Miami, Hispanics and African Americans comprise 57 percent of the local population. Currently the Hispanic population is just over 30 million in the USA, and is expected to reach 60 million by year 2025, or 17 percent of the total population. African Americans represent about 13% of the total population. Total population of the State of Florida is about 18 million.

Potential markets in the USA include the major supermarket chain stores. This market will be expanded when Canadian markets are established, with distribution initially through current Canadian channels. Once established, it will be desirable to export products to the UK which also has a high ethnic population.

7.0 Competitive Assessment

7.1 Products for Domestic and Caricom Markets

Total imports and exports of food products from Jamaica are presented in the table below.

Table Food Imports and Exports for Jamaica

IMPORTS AND TOTAL EXPORTS BY SECTIONS 2002 - 2005 (Preliminary Data 2002 – 2005)								
S.I.T.C. Sections	January - December		January - December		January - December		January - September	
	2002		2003		2004		2005	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
	(JS'000)	(JS'000)	(JS'000)	(JS'000)	(JS'000)	(JS'000)	(JS'000)	(JS'000)
All Sections	172,574,788	53,087,862	210,856,140	68,738,665	240,363,371	86,128,727	209,880,412	69,779,800
Food	23,161,980	9,934,555	27,997,530	12,501,322	32,288,507	15,088,478	26,993,527	10,342,315

Source: www.jsdnp.org.jm/jam8.html - Jamaica sustainable development network

Using the ratio of net imports (imports less re-exports) to domestic food production (excluding primary export crops) as a proxy for the relationship between imported and domestic food consumption, it can be concluded that Jamaica continues to fulfill a greater proportion of its consumption demand from imported products.

Domestic Competition

Domestic competition is considered to be of little prevalence to the outcome of this project. The majorities of the farms in Jamaica are of small scale and operate with small capital resources, thus making it difficult to invest in modern technologies. The target markets in Jamaica currently have major concerns with purchasing from domestic farmers.

Farms between 0 and 4.5 hectares (0-10 acres) of land make up 92 percent of all farm units and account for 36 percent of the national farm acreage. By sharp contrast, farms of 45.5 hectares (100 acres) and over accounted for less than 0.5 percent of all farm units yet they occupy 39 percent of the total acreage. Most of these large crops are strictly for export and include sugar cane, bananas, and coffee. The table below provides details on the distribution of farmers and acreage by farm size.

Table - Distribution of Farmers and Acreage by Farm Size

Farm size (hectares)	Number of Farmers	Percentage of Farmers	Acreage	Percentage of Acreage
0.22 and under	22,227	14.31	1801.1	0.43
0.22 - < .45	18,459	11.88	4858.7	1.16
.45 - < .90	31,694	20.41	17,415.3	4.15
.90 - < 1.4	22,932	14.77	22670.1	5.40
1.4 - < 2.3	24,705	15.91	39,882.7	9.50
2.3 - < 4.5	22,595	14.55	65,510.0	15.62
4.5 - < 11.3	9,837	6.33	61,961.7	14.77
TOTAL	155,314	100.00	419,475	100.00

Source: Ministry of Agriculture, Jamaica.

Nightingale Farms will use new methods and technologies to keep to products to international standards, and will need to change buyer perception that buying local can be of good quality.

Caricom Competition

Major competitors within the Caricom members include Trinidad & Tobago, Guyana, Cuba, and Dominican Republic.

Between 1998 and 2000, USA share of imported food and beverages in Jamaica declined by two percentage points from 48 to 46 percent. At the same time, as a result of duty free entry, Jamaica's major Caricom trading partners (Guyana and Trinidad and Tobago) increased their relative contributions of Caricom export to Jamaica by 26 and 6 percent, respectively.

The project will have prime advantages of lower pricing and shorter transportation distances over Caricom competitors.

United States Competition

During 2001, imported food and beverage constituted an estimated 56.6 percent of Jamaica's total food and beverage consumption, an increase of 5.2 percent from 51.4 percent during 1997. The major competitors in Jamaica's food import market include the USA, Canada, UK, and New Zealand.

The USA is the primary supplier of food and beverage to Jamaica, accounting for approximately 49 percent of total food and beverage imported into Jamaica. Miami is the closest and most economical city of import.

Nightingale Farms prime advantage over international competitors will be price as well as fresher product due to shorter distances.

7.2 Products for Canada and United States

Domestic and Caricom Competition

In terms of domestic exports, Jamaica's farmers sold a considerable amount of yams out of the country, as well as mangos. Dasheen, sweet potato, and Jamaican pumpkins are also exported as shown in the table below.

Table – Value of Non Traditional Exports 1997-2001

	<i>(US\$'000)</i>				
COMMODITY	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>
Pumpkins	787	1036	1079	820	755
Dasheens	1170	1503	1496	808	1201
Sweet Potatoes	1456	1757	2058	1447	1677
Yams	11612	12925	12779	11810	14072
Mangoes	892	497	895	3395	3832

Source: Statistical Institute of Jamaica

Neither Jamaica nor Caricom members currently export certain types of specialty Caribbean produce (e.g. yellow yams and other root crops which are almost non-existent in supply in Canada). These types of produce are well sought after by ethnic populations and command a premium price because of their distinct flavours and aromas.

7.3 Existing and Proposed Barriers to Entry

There will be several barriers that will need to be overcome in setting a sustainable new venture in Jamaica and include:

- Security and larceny is a major issue. This is a third-world country and along with the title, comes the culture and crime associated. Security methods will need to be planned in advance, acting proactively.
- Difficulty of acquiring a large piece of land in one area to produce the large volumes required. Most farms are small with the occasional large one being owned by sugarcane export farmers.
- The need to change growers' historical cultural practices to reduce disease pressures is of prime importance.
- Finding experienced management and supervisors to ensure that international standards are maintained will be complicated.
- Establishing international quality, consistency, and price within the domestic market will be difficult. Local farmers will have to comply with this proposed standard, or in turn, will lose part of their market share.

8.0 Distribution Channels

Domestic

Current transportation means in Jamaica includes railways, highways, ports and harbors, and airports. Very little railway track is operational except that which is used to transport bauxite and is not an option. There are 35 airports dispersed around the country and five water ports, but are not considered a viable alternative because of either high cost or undesirable shipping schedules.

The best and most reliable form of transportation is considered to be refrigerated trucks on the highways throughout the country. The road system is adequate.

Caricom

Water freight is considered to be the most suitable means of distributing product to the Caricom countries. This is the most economical alternative because of the relatively short distance involved and comparatively low freight rates. Sea freight ports are located in Kingston and Montego Bay. Air freight would originate from either Norman Manley Airport in Kingston or Sangster Airport in Montego Bay.

International

Produce for test marketing and initial ordering will be conducted through the same distribution system that is currently being used by Agriventures (potential Jamaican partner) for export to Canada, USA, and the UK. Air freight at the moment is considered to be the most suitable for small quantities of root crop. Schedules and costing is being investigated for refrigerated sea transportation, either direct to Canada or via a sea port in the USA with overland transshipment.

Distribution in Canada will be done initially through using the warehousing, cool storage, shipping and transportation facilities of Nightingale Farms in LaSalette, Ontario, or Jamwell Distributors in Toronto.

9.0 Pricing Policy

The pricing policy will be developed taking into consideration both the costs of production as well as market pricing considerations and requirements to provide a reasonable return on invested capital.

The cost structure for the proposed products will include all fixed and variable costs from growing to distribution. Any returns received above the cost base would provide funds for expansion and if required, to 'wither out the storm' during low price periods which is often the case in global markets. Discounts would apply to large volume order levels.

Because of the large number unknowns at this time, an accurate and precise pricing policy is not practical. However, as shown in the tables below, a 20 to 30 percent reduction in the current level of wholesale prices should be sustainable level provided that there are sufficient volumes of product sold. The reduced price is based on examination of the potential gross margins that have been calculated in Section 12.0.

Projected Potential Pricing Strategy - Yearly Average (to move more volume)

DOMESTIC/ CARICOM: PRODUCTS	Supermarket Retail Price in Jamaica (per lb)		Local or Import Price (per lb)		Nightingale Farms Proposed Price (per lb)		% Decrease - Sales Price %
	Jmd	cdn	Jmd	cdn	jmd	cdn	
	Strawberries	615	12	424	8	320	
Cantaloupes	120	2.3	80	1.5	60	1.15	25
Tomatoes	180	3.6	120	2.4	80	1.6	33
Green peppers	195	3.9	120	2.4	80	1.6	33
Red peppers	380	7.6	250	5	200	4	20
Cucumbers	70	1.35	40	0.8	30	0.6	25
Sweet corn	180	3.6	120	2.4	80	1.6	33
Jamaican pumpkin	55	1.05	35	0.7	25	0.5	30
Honey dew	130	2.6	100	2	70	1.4	30
California broccoli	240	4.8	150	3	120	2.4	20

INTERNATIONAL:	jmd / lb	cdn / lb	Landed Canada /lb	Chain Store Retail Reduction Price /lb %
PRODUCTS				
Yellow Yams	25	0.5	1.5	17
Dasheen	25	0.5	1.5	17
Sweet potato	20	0.4	1.2	24
Jamaican pumpkin	20	0.4	1.2	24
Scotch bonnet	100	2	6	
Coconuts	30	0.6	1.8	
Neese berries				
Star fruit		(no consistency in pricing)		
Passion fruit				

10.0 Marketing and Promotion Strategy

Domestic

After assessing competing products and local current pricing, it appears that a large marketing effort will not be required to sell product domestically. Superior quality and lower prices will be prime variables that will capture buyer interest. .

The product will be graded, packaged, and stored to meet or exceed international standards. Initially banners will be displayed to advise customers of new and improved product and its availability. When the customer sees the product in grocery stores, the high quality and consistency will stand out.

Hotel and resort clientele will inevitably notice the change in quality and local taste in the fruits and vegetable display in the buffet area, resulting in an increase in interest, consumption, and inevitably, demand.

Caricom

In the Caricom, promotions will be done with the hotel and resort chains, as well as the grocery store chains targets that Nightingale Farms has developed relations with within the domestic market. Initially banners will be displayed to inform the customer of the product being offered and the international standards of quality that the product has been grown and delivered to.

Canada/USA

Nightingale Farms has already begun to export Jamaica product into Canada primarily for test marketing in the Ontario region. In 2005, three product lines (yellow yams, dasheen, and sweet potato) were brought into Loblaws stores in the Toronto area. Creative recipe labels were developed to market this new product. This test was a success and the product was quickly gobbled up. Photos are provided in the appendix.

Marketing for Jamaican product will be executed through value-added presentation techniques including the use of the previously tested product recipe labels and samples being offered within the stores to educate the new exotic fruit customer. Nightingale Farms will work with the chain stores and other independent grocery stores to create optimal displays. Ideally, a separate display area with bright colours will be used to attract attention. Nightingale Farms will work with chain store banner divisions creating weekly flyers for promoting ethnic produce.

The main holidays will be targeted heavily with volumes and discount pricing (Caribbana, Martin Luther King Day, Christmas, etc). After this is established, Nightingale Farms will continue to extend their markets into the United States and United Kingdom, using the same approach.

11.0 Projected Sales and Volume

Potential sales were estimated from sample surveys carried out for the large supermarkets and hotels and resorts in Jamaica and the Canadian chain stores. Results are presented in the tables below. From these surveys, an estimated three year production schedule was determined by crop type and potential sales revenues calculated as shown in table 11-4.

Results for the domestic supermarkets were based on a detailed survey of six businesses, then extrapolated to the 50 listed in the Jamaican directory. Similarly, data for the surveyed four resort hotels was extrapolated to determine a potential sales volume for the 51 listed major resorts. Results for the three large chain stores in Canada were based on interview data received from two of the chain stores.

It should be noted that these results represent only a portion of the total potential market. Excluded are the smaller domestic supermarkets, grocery stores, and hotels and resorts in Jamaica, all of the potential Caricom market, independent retailers in Canada as well as potential ethnic produce sales to the USA and UK. These are estimated in section 12.0.

Potential sales to the large domestic supermarkets are estimated to be just over CDN\$4 million per year, over \$9 million to the large resort and hotel chains, and over \$10 million per year for the Canadian chain store, or approximately \$22 million per year in total.

Summary data for the proposed production schedule for the project is provided in table 11-4 below.

Table 11.4 – Summary of Proposed Production and Sales

	<u>lbs</u>	<u>acres</u>	<u>\$Cdn 000's</u>
Year 1	1,146,700	66	858.7
Year 2	3,061,500	182	2061.1
Year 3	6,991,000	425	4081.3

Table 11-1 – Produce Sales Volumes to Large Jamaican Supermarkets - 2004

PRODUCT	Average lbs/per week (based on 6 stores)	Average lbs/year	Average lbs/year (51 major stores)	Average Purchase Price per lb \$JMD	Sales Revenues \$Cdn 000's
Tomato - slicing (imported - local)	80	4,500	225,000	70 (\$Cdn 1.32)	297.2
Cucumber (Local)	200	10,000	500,000	40 \$Cdn 0.75)	377.4
Sweet Corn (imported)	90	504	252,000	100	475.5
Peppers - Green (imported - local)	200	10,000	510,000	100	962.3
Peppers - Red (imported -USA)	50	2,800	140,000	200	528.3
Peppers - Orange (imported - Canada)	30	1,600	85,000	300	481.1
Zucchini (Local)	40	2,200	110,000	60	124.5
Cantaloupes (imported - Canada)	80	4,400	220,000	50	207.5
Honeydew (imported - Canada)	50	2,800	140,000	60	158.5
Jamaican Pumpkin (local)	200	10,000	510,000	20	192.5
Strawberries (imported -USA)	10	560	28,560	300	161.7
Broccoli (imported -USA)	30	1,600	85,000	120	192.5
Cauliflower (imported -USA)	30	1,600	8,500	90	14.4
			<u>2,814,060</u>		<u>\$4,173</u>

Exchange rate: JMD\$53.00 to CDN\$1.00

Table 11-2 – Produce Sales Volumes to Large Jamaican Hotels/Resorts - 2004

PRODUCT	4 Major Hotels Surveyed		Estimated Quantity 50 Major Hotels	Estimated Yearly Average price/lb	Potential Sales Volume
	lbs /week	lbs/year	lbs	\$US	\$Cdn 000's
Tomato - slicing (imported)	300	15,600	780,000	1.60	1,468.2
Cucumber (Local & imported)	60	3,120	156,000	1.10	201.9
Peppers - Green (imported - local)	100	5,200	260,000	1.20	367.1
Peppers - Red (imported -USA)	30	1,560	78,000	2.40	220.2
Peppers - Yellow (imported - USA)	30	1,560	78,000	2.40	220.2
Zucchini (Local & imported)	30	1,560	78,000	1.40	128.5
Cantaloupes (imported - USA)	100	5,200	260,000	1.60	489.4
Honeydew (imported - USA)	400	20,800	1,040,000	1.60	1,957.6
Watermelon (local & Imported)	1200	62,400	3,120,000	1.00	3,670.6
Strawberries (imported -USA)	30 pts	1,560 pts 780 lbs	39,000	4.81	220.8
Broccoli (imported -USA)	40	2,080	104,000	2.00	244.7
Cauliflower (imported -USA)	60	3,120	156,000	1.00	183.5
			<u>6,149,000</u>		<u>\$9.373</u>

Table 11-3 – Potential Sales Volumes to Canadian Large Chain Stores

PRODUCT	lbs/week	lbs/year	Average Import/Year 3 major chains lbs	Average Wholesale price/lb \$Cdn	Annual Sales Volume \$Cdn 000's
Yellow Yams	13,500	702,000	2,106,000	1.50	3,159.0
Dasheen	6,000	312,000	936,000	1.70	1,591.2
Sweet Potato	10,000	520,000	1,560,000	1.60	2,496.0
Scotch Bonnet Peppers	400	20,800	62,400	5.80	361.9
Eddoes	11,250	585,000	1,755,000	0.80	1,404.0
Coco	11,250	585,000	1,755,000	0.80	1,404.0
Jamaican Pumpkins	800	41,600	124,800	0.70	87.4
Escallion	200	10,400	31,200	8.00	249.6
Cassava	400	20,800	62,400	0.50	31.2
Callaloo	200	10,400	31,200	1.50	46.8
	54,000		<u>8,424,000</u>		<u>\$10,831</u>

Surveyed 2 Major chains on Jamaican imports

Table 11-4 – Projected Production, Acreage and Sales Volumes for Operations

	Year1	Year 2	Year 3	Year 3	Price/	Year 3
	<u>lbs</u>	<u>lbs</u>	<u>lbs</u>	<u>Acres</u>	<u>Lb</u>	<u>Revenue</u>
					<u>Cdn</u>	<u>\$ Cdn</u>
						<u>000's</u>
<u>Domestic/Cariicom</u>						
Tomatoes	100,000	200,000	600,000	30	0.55	330.0
Cantaloupes	80,000	240,000	640,000	40	0.40	256.0
Honeydew	62,500	187,500	500,000	40	0.50	250.0
Strawberries	20,000	50,000	100,000	10	2.50	250.0
Peppers - green	135,000	270,000	540,000	20	0.85	459.0
Peppers - red	54,000	135,000	270,000	10	1.00	270.0
Peppers - yellow	16,200	34,000	81,000	5	1.25	101.3
Cucumbers	100,000	200,000	400,000	20	0.70	280.0
Sweet corn	15,000	45,000	300,000	50	0.45	135.0
Broccoli	8,000	40,000	80,000	10	1.40	112.0
Cauliflower	18,000	90,000	180,000	10	0.50	90.0
Romaine	18,000	90,000	180,000	10	0.80	144.0
<u>Export to Canada</u>						
Yellow yams	100,000	400,000	800,000	40	0.45	360.0
Dasheen	80,000	200,000	400,000	20	0.45	180.0
Sweet potato	80,000	320,000	800,000	50	0.45	360.0
Coco's	80,000	200,000	400,000	20	0.45	180.0
Eddoes	100,000	200,000	400,000	20	0.45	180.0
Jamaican Pumpkin	80,000	160,000	320,000	20	0.45	144.0
	<u>1,146,700</u>	<u>3,061,500</u>	<u>6,991,000</u>	<u>425</u>		<u>\$4,081</u>

	<u>Summary</u>		
	<u>Lbs</u>	<u>acres</u>	<u>\$000's</u>
Year 1	1,146,700	66	858.7
Year 2	3,061,500	182	2061.1
Year 3	6,991,000	425	4081.3

12.0 Market Share, Pilot Project, Profitability

Market Share

To get feel for the magnitude of the project within the global environment, surveyed data was extrapolated to include potential target markets, These include an allowance for the smaller supermarket and hotels in Jamaica, an amount that might be exported in the future to Caricom and an allowance for potential markets in the USA and the UK. The calculation is shown in the Table 12-1 below.

It is estimated that market share will be less than 18 percent in terms of volume of sales. With reduced product pricing, sales revenues might be in the range of 7 percent of the total potential market.

Pilot Project

Table 12-2 provides data on a pilot project that planned to test growing conditions and markets in Jamaica. Acreage planted will be 16.5 acres and with double cropping would yield 196,000 lbs of produce.

Profitability

Costs of production per acre for four crops were estimated and compared to projected revenue streams. It is estimated that gross margins are in the range of 40 percent before allowance of overheads, depreciation, financing costs and depreciation. These returns are higher than comparable returns for vegetable crops grown and marketed in Canada.

Table 12-1 – Estimation of Total Market and Market Share

	<u>Extra- Polation Factor</u>	<u>Sales Volumes Lbs</u>	<u>Average Price \$Cdn/lb</u>	<u>Sales Revenues \$Cdn 000's</u>
<u>Survey Extrapolations (based on current pricing)</u>				
Domestic Supermarkets (51)		2,814,060	1.48	4,173
Domestic Hotels/Resorts (50)		6,149,000	1.52	9,373
Canadian Supermarkets (3)		<u>8,429,000</u>	1.29	<u>10,837</u>
subtotal		17,392,060		24,383
<u>Estimated Other Potential Markets (based on current pricing)</u>				
Smaller Domestic Stores	40.0%	1,125,624	1.48	1,669
Smaller Domestic Hotels/Resorts	60.0%	3,689,400	1.52	5,624
Caricom Supermarkets	100.0%	3,939,684	1.48	5,842
Caricom Hotels, Resorts	100.0%	9,838,400	1.52	14,997
Canadian Independents	25.0%	2,107,250	1.29	2,709
USA/UK	10.0%	842,900	1.29	1,084
Total Estimated Market		38,935,318	1.45	56,308
<u>Projected Third Year Sales Volumes</u> (based on discounted pricing)		<u>6,991,000</u>	0.58	<u>4,081</u>
Projected Market Share		<u>18.0%</u>		<u>7.2%</u>

Table12-2 Pilot Project Projection for Local Production – Houndslow, St. Elizabeth

	ACRES	PLANTINGS	YIELDS PER ACRE	TOTAL YIELDS (lbs)	WEEKLY MARKETABLE PRODUCT (lbs)
Tomatoes- slicing	2.5	2	20,000	50,000	4,000
Sweet Peppers - green	2	2	20,000	40,000	3,300
Sweet peppers - red	1	2	15,000	15,000	1,250
Sweet Corn	5	5	6,000	30,000	3,750
Strawberries	1	2	10,000	10,000	1,000
Cauliflower	1	2	10,000	1,000	500
Broccoli	1	2	10,000	10,000	500
Romaine Lettuce	1	2	8,000	8,000	400
Cantaloupes	1	2	16,000	16,000	2,000
Honeydew	1	2	16,000	16,000	2,000
	16.5			196,000	

NOTE****

Staggered planting to achieve a consistent supply

Table 12-3 Cost of Production and Estimated Gross Margin per Acre

		JMD	CROPS
Land Rent/year		8000	Tomato, cucumber,
Fertilizer	Base	6000	Cantaloupes, Peppers,
	Drip	5000	strawberries, Jamaican
Land Preparation		8000	Pumpkins
Set-up Drip		1500	
Plastic 1.8 rolls		20000	
Drip and Connectors (1st time set-up)		35000	** Strawberries - add 60,000 plants (231,500 JMD - 4,452 CDN)
Lay Plastic		2500	
Seeds and Plants		40000	** peppers - add 30,000 plants
Labour to plant		2000	(201,500 JMD - 3,875 CDN)
Maintain crop plastic		2000	
Weeding		5000	
Insecticide - 2 x		3000	
Fungicide - 5 x		8000	
Labour – spray		6000	
Supervisor Labour		20000	
		172000	CDN \$ 3308

EXPECTED REVENUES AND GROSS MARGIN - \$CDN

	TOMATOES 1,000 - 20lb cases	CANTALOUPE 500 x 40lb cases	STRAWBERRY 10,000 lbs	PEPPERS 800 x 25lb cases
Expected Quantity	20,000 lbs	20,000 lbs	10,000 lbs	20,000 lbs
Expected Sale price	.75/lb cdn 18.75/case	.50/lb cdn 20.00/case	10,000lb @ 1.50	20,000 lbs @ .70 20.00/case cdn
Sales per acre	\$ 15,000	\$ 10,000	\$ 15,000	\$ 14,000
Less: 15% to sales distributor	2250	1500	2250	2100
Less: Grading and packing	1,000 x \$3/ctn 3000	500 x \$3/ctn 1500	2000	800 x \$3/ctn 2400
Less: Growing Cost	3307	3307	4452	3875
Expected Net Margin/acre	Before overheads 6443	3693	6298	5625

Projected sales/lb	\$ 0.75	\$ 0.50	\$ 1.50	\$ 0.70
Cost/lb to grow	\$ 0.43	\$ 0.32	\$ 0.88	\$ 0.19
Net Margin/lb	\$ 0.32	\$ 0.19	\$ 0.62	\$ 0.27
Profit % of Sales	42.7%	38.0%	41.3%	38.6%

Appendices

Appendix - Schedule of Interviews in Jamaica, 2006

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
22	23	24		19	20	21
RIU HOTEL NEGRIL	MONTEGO BAY 11:00AM SUPERCLUBS NADINE WRIGHT 1:00PM PANACHE TRADING BREWERY ROBERT JOSEPHS 3:00PM RITZ CARLTON MAY WIGGAN	10:00-1:30PM TENTATIVE SANDALS ROYAL WARREN TOOLSIE 2:00PM HALF MOON STEPHEN UEKER		KINGSTON ARRIVE IN JAMAICA 2:30PM MEETING WITH AGRIVENTURES 6:00PM SING CHIN PROGRESSIVE GROUP	KINGSTON 10:00AM MTNG WITH VERSAIR MR. BLAIR COURTLEIGH 12:00 NOON KEVIN HENDRIX SUPER+ WAYNE CHEN 4:00PM	RIU HOTEL NEGRIL



Progressive Grocers



Stephen Ueker – Half Moon, Montego Bay



Kevin Hendrix – Courtleigh Hotel, Kingston



Robert Josephs - Panache Trading Brewery

Appendix – Sample Questionnaire, Supermarkets

PRODUCE QUESTIONNAIRE

Name: _____

Date: _____

Position: _____

Appointment Time: _____

Phone#: _____

1. If the quality and taste equals and/or exceeds the present supplies you receive, would you be interested in supporting our products grown in Jamaica?

Yes _____ No _____

2. What products would you be interested in?

	Interested?	volume Required	previously?	from?	approx volume acquired	approx price	Why import...
Cantaloupes		_____		_____	_____	_____	_____
Watermelons		_____		_____	_____	_____	_____
Strawberries		_____		_____	_____	_____	_____
Slicing Tomatoes		_____		_____	_____	_____	_____
Slicing Cucumbers		_____		_____	_____	_____	_____
Zucchini		_____		_____	_____	_____	_____
Escallion (onions)		_____		_____	_____	_____	_____
Mangos		_____		_____	_____	_____	_____
Gimbulin (star fruit)		_____		_____	_____	_____	_____
Scotch Bonnet Peppers		_____		_____	_____	_____	_____
Red Peppers		_____		_____	_____	_____	_____
Green Peppers		_____		_____	_____	_____	_____
Yellow Peppers		_____		_____	_____	_____	_____
Sorrell		_____		_____	_____	_____	_____
Yams		_____		_____	_____	_____	_____
Sweet Potatoes		_____		_____	_____	_____	_____
Neese Berries		_____		_____	_____	_____	_____

Other:

	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____

3. Delivery Information

Weekly delivery S S M T W T F

Bi-weekly delivery S S M T W T F

Receiving Hours

4. Please give us your comments and concerns on how we can do a better job.

1) Do you purchase local produce direct from the:

Grower

Larger wholesaler

2) Do you purchase local produce

Under contract with a price

Whatever the market is for that week

3) Do you purchase imported product

Directly

Through an importer on the island

Directly through a US broker

4) What is the average percentage of duties that you have to pay on importing?

Tomatoes	_____	%
Strawberries	_____	%
Peppers	_____	%
Cantaloupes	_____	%
Cauliflower	_____	%
Broccoli	_____	%

5) If our company was to grow for you - where would the main delivery be?

Individual stores

Central Warehouse

6) What concerns would you like us to address?

What crops would you like to see us grown in order of preference?

7)

1 _____

2 _____

3 _____

4 _____

5 _____

All stores - (how many) Produce purchases January 1, 2005 through December 31, 2005
Or one individual store?

Current Purchases (in Kg's) with Average monthly price/kg

	JANUARY		FEBRUARY		MARCH	
	Kg Used	Avg Price	Kg Used	Avg Price	Kg Used	Avg Price
Tomatoes-local						
Imported						
Cantaloupes-local						
Imported						
Honeydew-local						
Imported						
Strawberries-import						
Cucumber						
Green pepper – import						
Green pepper – local						
Red Peppers – import						
Sweet corn						
Cauliflower						
Zucchini						
Broccoli						

Appendix – Sample Questionnaire, Hotels and Resorts

1) The numbers requested will be for, (multiple would be better)

One Hotel

Multiple, with an average - how many? _____

2) What is the average number of guests per hotel per day average? _____

3) What percentage of guests would be (best guess will do)

_____	%	Canadian
_____	%	American
_____	%	South American
_____	%	European
_____	%	Local
_____	%	Other Caribbean countries

4) **** See Attached****

5) If the cost, availability and service of fruits and vegetables was as good compared to resorts in North America - by what % do you see purchase volumes going up on:

_____	%	Strawberries
_____	%	Cantaloupes
_____	%	Tomatoes
_____	%	Honeydew Melons
_____	%	Cucumbers
_____	%	Asparagus
_____	%	Hot peppers
_____	%	Zucchini
_____	%	Broccoli
_____	%	Cauliflower
_____	%	Sweet peppers - green
_____	%	Sweet peppers - red and yellow
_____	%	Sweet corn
_____	%	Sweet potatoes
_____	%	Irish potatoes

_____ %	Other - list:	_____
_____ %		_____
_____ %		_____
_____ %		_____

6) What problems can you identify that you have with respect to produce for your hotels?

7) Is there anything that you would like to see?

8) If we can prove to you and your chain that this project is worthwhile, will your company be in a position to look at investing in the growers by way of seed, fertilizer, etc... for a contract in return to supply your needs and to grow with you?

<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
<input type="checkbox"/>	Cannot say until more information is presented		

9) The range of difficulty in sourcing produce locally:

<input type="checkbox"/>	Extremely difficult	<input type="checkbox"/>	Easy
<input type="checkbox"/>	Difficult	<input type="checkbox"/>	Extremely easy
<input type="checkbox"/>	Reasonable		

10) The range of difficulty in sourcing imported produce:

<input type="checkbox"/>	Extremely difficult	<input type="checkbox"/>	Easy
<input type="checkbox"/>	Difficult	<input type="checkbox"/>	Extremely easy
<input type="checkbox"/>	Reasonable		

4) **Current Usage (in Kg's)**

Average Price per month - 2005

	JANUARY		FEBRUARY		MARCH	
	Avg Price	Usage-kg	Avg Price	Usage-kg	Avg Price	Usage-kg
Tomatoes						
Cantaloupes						
Honeydew						
Strawberries						
Watermelon						
Cucumber						
Asparagus						
Pepper – green						
Pepper – yellow						
Pepper - red						
Sweet corn						
Hot Peppers						
Zucchini						
Other:						

Appendix – Photographs of Nightingale Farms; LaSalette, Ontario



Entrance Sign to Nightingale Farms, Canada



Arial View of the Home Farm –LaSalette, Ontario



Nightingale Farms Crew – July 2004

Appendix – Photographs of Test Marketing Yellow Yams, Canada



Appendix – Pictures of Products Currently Found in Jamaica Grocery Stores/Hotels



Cucumbers



Green Peppers



Sweet Corn with 'Corn Bore' Disease



Tomatoes



Carrots



Jamaican Pumpkin