Exporting Climbing Black Pepper Ryan Schryver Section 103 Monday/8:30 AGR1110 Monday, November 24<sup>th</sup> 2014 Climbing Black Pepper

# **Part I - Product Information**

## **Product Description**

Climbing Black Pepper, also known as Piper Nigrum is a climbing vine that is very well known around the world for its pungent fruit, which is used as a spice all around the world (Tallapragada, 2012). The plant is a perennial that is described as a tall vine plant that has broad shiny green leaves and is arranged in all different directions (Encyclopedia Britannica, 2014). The vine can reach heights of up to ten meters tall growing up poles, walls and others tall



objects. The vine has flowers, which are grown in blossoms of about fifty and have berry like fruits that are approximately five millimeters in diameter and have a single seed in them. The fruits are a yellowish red colour at maturity but after boiling them for a short period of time,

Figure 1: Black peppercorn http://www.visitnepal.com/travelers\_guide/where\_is\_ne pal.php

they turn a dark brown or black colour (Encyclopedia Britannica, 2014). Figure 1

shows the black peppers after reaching maturity and after being boiled. Black peppers were originally cultivated all around Southeast Asia, where they first began trading with India and Europe, and later on with both Greece and Rome. As peppers became a popular spice many countries began both trading and growing them. The Venetians and Genoses were growing and selling the majority of pepper around the world in the middle ages. The pepper needs a large amount of rain to grow to its maximum with several hot days as well, while getting most of its day in the shade to grow (Encyclopedia Britannica, 2014).

## **Health and Nutritional Information**

Climbing Black Pepper has limited use in human medicine currently in the world but research is increasing on the plant. Pepper has been found to help with controlling brain tumor growth in animals, helping with cognitive brain functioning, helping with absorption, and improving gastrointestinal functionality but more research needs to be done on humans as all of the conditions have only been tested on animals, as testing it not safe enough to be done on humans (Nica-Badea, 2014). Pepper also has the ability to bio-transform the metabolite in the body, and lower the amount of food movement and absorption time while also speed up the metabolism of fats (Meghwal, 2013). Peppers used as spices in various foods can help to relieve gas and stomach chills, treat food poisoning, help with digestion, increase the bodies capability to fight against cancer, reduce or stop vomiting caused by hypothermia, and relieve the symptoms from cholera and dysentery (Goswami, 2012).

#### How Climbing Black Pepper is Grown/ Processed

Climbing black pepper will grow up the existing terrace walls that exist in the hilly regions of Nepal. Climbing pepper does not take up space on farming land. If the plant simply grows up the terrace walls that already occupy the hilly region of Nepal, they will take advantage of the unused space up the walls and provide a very cost effective food for families of Nepal.

The seeds can be planted early in the season and produce peppers by later in that year. Without any cost they will continue to grow every year after that without replanting them. The fact that these plants



Figure 2: Terraces on Mountain in Nepal http://flickrhivemind.net/Tags/farms,nepal/Interesting

climb, makes them easier to maintain because there can be harvested while people are standing instead of bending over like how most plants are harvested. The walls provide partial shade for the plants, which they need and also a place for the plants to grow up and gives them a structure to grow up. Figure 2 shows the terrace walls in Nepal that the plant will be growing up. Also the climate in Nepal has the warm temperatures and long growing seasons that are very suitable for growing the vines.

The fruits are a yellowish red colour at maturity but after boiling them for a short period of time, they turn a dark brown or black colour. After boiling them and drying them out for several days, the peppercorns can be ground up to make pepper which is the popular spice that is used worldwide (Encyclopedia Britannica, 2014).

#### Market Opportunity

The market opportunity of the plant is very good, because a very large amount of people consume pepper. People use pepper on almost anything because of its taste and how it enhances foods. Therefore, a large quantity is needed to support the population in Nepal and even if there is too much in the country then it can be exported to places like China and India. No advertisement is needed to promote the consumption of pepper since there is already a large portion of the population that consume it. This is important because advertisement costs money and time. The potential health benefits are also a positive aspect for the pepper as they make people want to consume it because of the fact that it could be very beneficial for their bodies.

#### **Benefits to Canada**

The benefit to growing the seeds in Canada and bringing them to Nepal would be that it supports a Canadian company and will bring money to the company, create jobs, and money for

the Canadian economy. If Canada exports Pepper seeds to Nepal it will create a stronger trading relationship between the two countries, meaning there would be more trading that could happen in the future. This would further create even more jobs than already created, more money, and more opportunity for the Canadian economy. The exports would create a better social relationship between the two countries, which is a very positive thing for both Canada and Nepal. Canada has the opportunity to be a leader in teaching a less developed country how to increase efficiency and yield of their farms.

#### **Environmental Sustainability**

It is environmentally positive to grow Climbing Black Pepper in Canada because Canada has the technology and buildings to grow the seeds in large quantities. The Canadian agriculture sector is highly developed and has the ability to produce the seeds very effectively with very little emissions and negative effect on the environment. Furthermore, if the seeds are produced in Nepal they are far more difficult to produce because they do not have the controlled environments that Canada has the ability to get out of a greenhouse. The seeds are very small so growing them so far away from Nepal in Canada is not an influential factor because the shipping the seeds does not create a large ecological footprint compared to some larger items.

# Part II- Export Potential to Nepal

## **Brief Introduction to Nepal**

Nepal is one of the world's least developed countries and it is located between China and India (Shrestha, 1996). Figure 3 shows where Nepal is located in Asia. The country has a population of about 20 million people and they have a per capita income of about \$190. The country has a literacy rate of about forty percent and ninety percent of the population is involved in agriculture either directly or indirectly. The country in separated into 3 basic



regions, which are the Himalaya, mid hill region and the Terai region. The agricultural sector in the country is very undeveloped and there is lots of room for improvement in the country (Shrestha, 1996).

## **Cost of Product/Transportation**

There is very little cost involved in growing black pepper because one seed can go a long way in producing a lot of peppercorns. To start off, the cost of a thousand gram bag of seeds at Richters is \$50 dollars or \$8 dollars for a one hundred gram bag (Richters, 2014). The cost of a \$50 dollar bag is far too much to be profitable for any farmer in Nepal. Also a thousand gram bad is far too much seed for one farmer alone. On the other hand, if Canada exported \$8 dollar one hundred gram bags, then there is a much higher cost per gram compared to the larger one thousand dollar bag. To solve this problem, it would be much more cost effective to buy the one thousand gram bag of seed product because, the bag can be separated and sold to many different farmers in Nepal for a cheaper price. If each farmer grows one fifty grams of seed in a season, the one thousand gram bag can be divided twenty different ways and twenty farmers will be able

to use one large bag of seed. The cost per farmer would be \$2.5 dollars per fifty grams of seed plus shipping costs. The seed will be shipped by plane because the seeds are very small and can be put into a small package and can be sealed without costing a lot. The seeds will leave the warehouse in Toronto and be brought by a van or truck to the Toronto airport. From Pearson International airport, it will be brought to the Pokhara airport, which is already located in the Himalaya region, which is where the seeds are needed. From there they can be brought to the Real Seed Company to distribute the seeds to the farmers in the country. The major cost of shipping and distribution of the seeds can mainly be covered by the government funding that is being offered by the government which is fifty thousand or more and the remaining money from funding will be used to reduce the cost of the seeds themselves.

#### Storage/ Refrigeration From Post Harvest to Market

When storing the climbing black pepper after harvesting, they should be sealed in a container with a tight seal, in a dark cool, dry place, allowing minimal moisture to get into the peppers (Goswami, 2012). The whole peppers can be kept for a substantial amount of time without going bad. Once the pepper has been grinded up into a powder it can be kept for no longer then three months. Peppers can be kept frozen, to allow them to stay fresh for longer, but the pepper will loose a lot of its taste when kept frozen. When the pepper is grinded to use as a spice to be kept for later use or immediate use it should be grinded at a low temperature to keep as much flavor as possible (Goswami, 2012).

# **Company Information**

The company in Canada that will be exporting the seed is Richters Herb Specialists. The company is based out of Goodwood, Ontario and has been growing and selling herbs since 1969

(Richters, 2014). The company is very large and sells dried herb plants, seeds, books, and more. They sell more than nine hundred herbs, seeds, and plants. The company is known internationally for its herbs and will ship anywhere in the world (Richters, 2014). Richters Herbs is located at 357 Highway 47 Goodwood, ON LOC 1A0 Canada. Also they

can be contacted by phone at #1-905-640-6677.



Figure 4: Richters company location https://www.richters.com/show.cgi?page=visit.html

The company in Nepal that will buy the pepper seeds from Richters is called the Real Seed Company. The company was founded in 2007 and specializes in the Himalaya region of Nepal which is where the climbing black pepper will be grown that is brought into Nepal so it is in the optimum location for a high amount of sales (Real Seed Company, 2014). The company can be contacted by email at <u>realseedco@gmail.com</u>.

#### **Marketing Strategy**

The Marketing strategy for the pepper seeds is very basic. The main thing that needs to be done is that people need to find out about the seeds in Nepal and they need to know that they

are a profitable investment for their farm. To help people find out about the seeds they will be promoted on the Real Seed Company website and also the Nepal Department of Agriculture website. In order for Nepalese leaders to list the product on their website, I will need to promote my produce to them and make them believe my product is a good idea. I could do this by making a personal phone call with one of the leaders in Agriculture in Nepal. Going to Nepal to promote the seeds personally would also be an effective way to introduce the product because many people do not have computers in Nepal. Once a single farmer finds out about the product then many other farmers will and then over time more and more people will tell each other and then a great number of the population will find out about the product. With the growing number of people in Nepal, limited land and growing poverty, the government is looking to increase food production and Climbing Black Pepper is an effective way to increase food production while not taking up a lot of space (Government of Nepal, 2014).

## **Benefits To Nepal**

There are several benefits to Nepal if Climbing Black pepper is exported from Canada. First of all, Canada has a very well developed agriculture sector so if one thing is exported to the country, there may be further trading that might happen and cause an increase in the quality of agriculture in Nepal. Nepal will also be able to take advantage of the relationship gain with Canada to grow and learn from the Canadian Agriculture system. For example, importing just Climbing Black pepper alone has the potential to have a huge influence on the Nepalese agriculture world. It may not only increase the quality of products used in Nepalese agriculture but it may also help to better the management practices that are used in the country. There is no

Nepalese person who will be hurt by the export of the pepper seeds because there is currently no black pepper being sold in the country.

One of the huge benefits of the plant is that it is a perennial, which means that it has the ability to grow back on its own every year (Encyclopedia Britannica, 2014). This means that once that farmer buys the crop and plants it, there is no further input cost of growing the plant because it will continue to grow back on its own year after year. This means that it is very cost effective because buying just one seed will provide food and additional produce for many years to follow.

Getting the seeds from Canada is better than getting them from places like China or India because the Canadian seeds have better genetics and have the ability to produce a much higher yield than seeds from other countries. Canadian companies have put more time and money into the genetics of the seeds so they have the ability to produce a better product for the same price. Furthermore, the shipping costs of the seeds from Canada are covered by the government funding, whereas the shipping costs of the products from other countries have shipping costs on top of the original cost making the seeds more expensive from other countries and Canada's price cheaper.

#### **Machinery Required**

There is very little machinery required to grow climbing black pepper. The plants can be planted by hand using a shovel in order to make the tiny holes that are needed to plant the seeds. Basic machinery would be a thing that farmers would already have for example a plow for tillage. Also things like water jugs would be needed during drier parts of the year but for the most part there is no machinery required to grow the black pepper just simple garden tools.

# **Environmental Benefits to Nepal**

Pepper plants have a positive environmental effect in Nepal because they have the ability to prevent soil erosion on hills. The plants have roots that grow into the soil which are important to hold the soil down. Especially in the hilly regions of Nepal, there is a big issue with soil erosion because when it rains the soil washes down the hills. Erosion rates on terraced fields are approximately 87 ton per hectare per year. This means that each year a lot of quality soil is washed away making it more and more difficult to grow a crop in these washed out areas (Lesschen, 2008). To prevent this, growing pepper on the edges of terrace walls will help to reduce erosion during all season because of the fact that they are perennials so the roots of the plant have the ability to hold the dirt down at all times of the year whereas most annuals die at the end of the year and then leave the soil prone to erosion (Encyclopedia Britannica, 2014). It can also be a good crop to cover the soil where the walls are because that is where the rainwater will fall off the walls when it rains, allowing the plants to take in the moisture they need. Soil and water are known as a very important resource in the mountain region of Nepal (Gardner and Gerrard, 2014).

## **Canadian Government Funding to Start Project**

To start out the project to export black peppers to Nepal, the Government of Canada is offering people to apply for government funding. They have three hundred and forty one million dollars available for both business and projects to start up in the next five years (Government of Canada). The Government of Canada is offering funding called 'AgriMarketing' that can allow you to receive fifty thousand for your business. The loan will help pay for shipping, and

packaging costs of the climbing black pepper seeds. The money will also be used to ensure all procedures and products are safe and up to the Canadian standards. With these steps being done there is an opportunity to receive one hundred thousand dollars from the government for funding (Government of Canada, 2014).

# **Conclusion**

To conclude this product will be very beneficial for both Nepal and Canada. Canada will gain a better economic relationship with Nepal and gain a better trading relationship with them. Nepal will gain further trading relations with Canada, which might lead to further growth for the Nepalese agriculture. Climbing black pepper does not occupy any addition space on Nepalese farms because it grows up the existing walls where nothing else grows. It is a very positive investment for farmers because it is a perennial plant that grows back each and every year so farmers do not need to invest more money each year. It is heavily consumed so there is a large market for the peppercorns. The price is affordable and the cost of the transportation will be covered by the government funding that will be obtained. There is no machinery required to grow the black pepper. It is an all around good product to export.

# **References**

- Gardner, R.A.M., and A.J. Gerrard. 2003. "Runoff and Soil Erosion on Cultivated Rainfed Terraces in the Middle Hills of Nepal." *Applied Geography* 23(1): 23–45. http://www.sciencedirect.com/science/article/pii/S0143622802000693 (September 23, 2014).
- Lesschen, J. P., L. H. Cammeraat, and T. Nieman. 2008. "Erosion and Terrace Failure due to Agricultural Land Abandonment in a Semi-Arid Environment." *Earth Surface Processes and Landforms* 33(10): 1574–84. http://doi.wiley.com/10.1002/esp.1676 (November 23, 2014).
- Meghwal, Murlidhar, and T K Goswami. 2013. "Piper Nigrum and Piperine: An Update." *Phytotherapy research : PTR* 27(8): 1121–30.

http://www.ncbi.nlm.nih.gov/pubmed/23625885 (November 22, 2014).

- Meghwal, Murlidhar, and TK Goswani. 2012. Chemical Composition, Nutritional, Medicinal And Functional Properties of Black Pepper: A Review. http://omicsonline.org/scientificreports/2155-9600-SR172.pdf (November 23, 2014).
- Nica-Badea, Delia. 2014. "Separation, Identification and Estimation of Piperine as Major Constituent from Black Pepper, by Thin Layer Chromatography Coupled with GC-MS." *REVISTA DE CHIMIE* 65(6): 730–33.
  - http://apps.webofknowledge.com/full\_record.do?product=UA&search\_mode=GeneralSearc h&qid=14&SID=4FZoyjB22dTAuPdsbaC&excludeEventConfig=ExcludeIfFromFullRecPa ge&page=1&doc=24 (October 7, 2014).

Seshachala, Usha, and Padmavathi Tallapragada. 2012. "PHOSPHATE SOLUBILIZERS FROM THE RHIZOSPHERE OF Piper Nigrum L. IN KARNATAKA, INDIA." *CHILEAN JOURNAL OF AGRICULTURAL RESEARCH* 72(3): 397–403.

http://apps.webofknowledge.com/full\_record.do?product=UA&search\_mode=Refine&qid= 2&SID=2EtPRAHqMusvHKBnmLy&excludeEventConfig=ExcludeIfFromFullRecPage&p age=1&doc=1# (October 7, 2014).

- Shrestha, S. K. (1996). Country Report: Nepal. Proc. 3rd Asian Apic. Assoc., Ha Noi, Vietnam, 216.
- "AgriMarketing Program Canada Business Network." 2014. http://canadabusiness.ca/eng/program/4178/ (November 23, 2014).

"Black Pepper (plant) -- Encyclopedia Britannica." 2014. http://www.britannica.com/EBchecked/topic/68144/black-pepper (October 7, 2014).

"Department of Agriculture." 2014. http://www.doanepal.gov.np/ (November 23, 2014).

"Richters Herbs - Medicinal, Culinary, Aromatic - Plants & Seeds." 2014. https://www.richters.com/ (October 7, 2014).

"The Real Seed Company." 2014.

https://www.therealseedcompany.com/products.php?product\_id=29 (November 23, 2014).