

Exporting Raspberry Seeds to Nepal

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Introduction

Raspberries are a natural food source that can be grown in farms or in the wild. They are part of the rose family and are considered one of the healthiest foods in the world. With agriculture being Nepal's main source of income to its GDP, any introduction of a new product to help that sector would not only benefit the country as a whole, but would benefit the farmers and their families. With the global population constantly growing as well and Nepal's population projected to grow in the next couple of decades (*2015, Nepal Population*), any sort of addition to new food would be beneficial to the country in order to meet its nutritional needs.

PART 1: PRODUCT INFORMATION

Raspberries

As indicated earlier, raspberries are part of the rose family, the scientific genus called *Rubus*, and are considered one of the healthiest foods in the world (2016, *Raspberries, WHFoods*). Raspberry varieties grow wildly all across the world in temperate regions. There are over 200 species of raspberries, but many of those species can be placed into three basic groups if they are commercially grown. The categories are: red raspberries, purple raspberries and black raspberries (2016, *Raspberries: WHFoods*). The typical growing season for red raspberries is usually between the months of July and October, and they are therefore typically planted in the early spring or late winter for warm zones, as, unlike black raspberries, growing red raspberries in colder regions will produce higher yields. (2010, *Old Farmers Almanac*). They are rich in vitamin C, manganese and fiber, all of which, when consumed, lead to significant health benefits and an overall better lifestyle. Raspberries also contain antioxidants that help fight cancer, heart disease and they act as an anti-inflammatory. The main global producers of raspberries are Russia, Poland and the United States (2016, *February 9, Top 10 Raspberry Producing Countries*).

Labour and Inputs

Dr. Marvin Pitts of Cornell University has hailed the raspberry as being “a high-value crop due to their unique flavor, exacting climatic requirements, [and] high costs of production” (2013). Extracting the seeds themselves from the raspberry is also a labor-intensive process. Firstly, a food processor or other machine or tool is used to pummel the seeds into a pulp. Next, the berries are strained using an industrial strainer and then the excess juice in the strainer is washed out so only the pulp and seeds remain. Then, the individual would pressure wash the pulp, so it spreads out and dispenses through the strainer to isolate the seeds. After that process, a farmer must prepare the soil with fertilizer or manure and then plant the seeds away from wild

growing berries, in order to prevent the spread of pests and diseases. When planting the seeds, they must be three feet apart from each other in rows eight feet apart (2010, *Old Farmers Almanac*). When harvesting the raspberries, farmers would use machines like the Oxbo 9120 Raspberry Harvester (see figure 1). Machines such as the one produced by Oxbo have a side operated platform, which gives the operator full visibility and easy access to the crop. They have an orbiter picking system, encompassing two spinning rotators with forks on them, which gently shake the branches of the raspberry bush, causing the ripe berries to fall onto a conveyor belt and be put into a storage tank that is attached to the machine itself (2014, *Corporation, O. I, Oxbo 9120 Raspberry Harvester*). Nepalese farmers wouldn't have access to these types of heavy machinery, as Nepal is generally a poorer country than Canada, so most of the farming process would be done by hand and would take longer. However, the productivity of the machinery can be offset by the cheaper cost of labour in Nepal. A farm hand in Nepal makes around 4,500 NPR per year or around \$55 CDN (2015, *Pradhan*).

Benefits to Canada

The exporting of raspberry seeds and/or seedlings can play an important part in Canada's agricultural system, economic system and the agri-food sector as a whole. To start, if T&T Seeds exports this product to Nepal, they would receive money in return, which would eventually be returned into the country's economy and would, at least partially, contribute to the Gross Domestic Product. They could also experience job growth, which would be beneficial to unemployed Canadians and, with some of the suppliers that T&T Seeds uses being Canadian, it would also benefit those companies as they would be earning a profit off of this trade deal. Not only would our economy strengthen from this deal, but our relationship with the country Nepal

would as well. Trade relations between the two countries would improve and there would be a more solid and well-rounded relationship between the two countries themselves.

Cost of Product

Raspberry seeds can be very inexpensive when purchased online or from discount retailers. A pack of 40 seeds could cost an estimated \$5 minimum depending on the point of purchase (*Factory Supply Best Quality Raspberry Seeds, Alibaba*). Since the company that we are analyzing starts the growing process for the plants and sells them as seedlings, costs would be higher because there is more labour involved in caring for the plants in addition to the costs of required items such as fertilizer, containers, and water. According to the T&T website and mail order form, the red raspberry seedlings cost \$15.95 for five, \$29.95 for ten seedlings, \$82 for thirty seedlings and \$225 for one hundred seedlings. My suggestion to the Ministry of Agriculture in Nepal is to purchase these seedlings in bulk and then provide subsidies to the local farmers in Nepal to allow them to purchase them at a much lower price that they can afford.

Product Processing

Given Canada's large agricultural sector, there are many companies that provide mail order seeds, plants and seedlings. These companies and their facilities are located all across Canada, whereas T&T Seeds is located in various areas of Manitoba.

The raspberry seedlings are processed at T&T Seeds' main facility in Headingley, Manitoba. In the summer of 1997, T&T Seeds relocated to a small acreage in Headingley and built a new 16,000 square foot warehouse for distribution purposes and storage. In addition to

that site, they have many greenhouses that store bedding plants (2016, *T&T Seeds Ltd*). For a summary of T&T Seeds, please refer to Figure 2

Environmental Sustainability

When grown properly and with the right tools, the farming of raspberries can be very environmentally friendly. When it comes to environmental sustainability and which country is best at making sure the growing of raspberries contributes to pollution the least, Nepal would be the better choice. In Canada, there would be fertilizers and other substances that have the ability to turn into runoff if the farms' crop systems are not properly setup and could negatively affect the pH of the surrounding soils, in addition to affecting the environmental surroundings of the farm, such as nearby streams and forests. When it comes to planting and harvesting, since Canadian farmers have easier access to heavy machinery that emit CO₂ and other greenhouse gases, farming raspberries in Canada could result in harmful pollutants being released into the atmosphere. Outside factors like income, environmental surroundings and farm structures and practices should also be considered when assessing environmental sustainability.

In the case of Nepal, most farmers have limited, if any, access to fertilizers, so the runoff problem would not be an issue. They also would not have access to the types of machinery that Canadian farmers have access to, so the greenhouse gas emissions would be kept to a minimum. Additionally, as there are already wild raspberries growing in Nepal, being able to grow them there would not appear to be an issue either, even though the majority of the Nepalese soil is low to medium in major nutrients, very low in organic matter and half of the soils are acidic in nature (2001, *Soil Fertility Decline in Nepal*). Despite these conditions, wild raspberries do grow in Nepal, indicating that the soil already has enough nutrients and properties to support the wild

raspberry plants to grow on their own. While yield may be lower because of the soil conditions, this crop can be grown.

Market Opportunity

The market opportunity for raspberries depends on the region of Nepal the farmer would be growing or selling in. Seeing as there is already a wildy growing species of raspberries growing in Nepal, the introduction of a new species could either be redundant or beneficial to the people of Nepal. One of the market possibilities where a new type of raspberry could be beneficial is in the wine industry. While the people of Nepal have been brewing alcohols since the beginning of ethnic civilizations, it was not long before more sophisticated drinks like beer, wine, vodka and whisky were produced in the country (*Wines made in Nepal*). A popular alcoholic drink in Nepal is called Hinwa, which is made from wild fruits like raspberries, barberry and saffron (*Wines made in Nepal*). Not only can the new type of raspberries be used for wine, but they can also be sold to be consumed as fruit. Having a new type of raspberry on the market gives farmers another option of raspberry to grow and it gives the consumers another choice when they want to buy raspberries. This new addition can contribute to the niche raspberry market and can give consumers another choice when picking fruit from local markets to make into jam; incorporate into a meal, or just eat straight up; farmers another choice when choosing to grow raspberries; and, in the brewers' case, can add a new type of raspberry to use in their products.

PART 2: EXPORT POTENTIAL TO NEPAL

Transportation logistics

There are two parts to the transportation logistics: The transportation of the raspberry seeds/seedlings to T&T Seeds and the exportation of the final product from T&T Seeds to Nepal. For the transportation of the raspberry seeds to T&T Seeds, it starts from one of their suppliers, who gets the raspberry seeds from local farmers. The suppliers then ship the product to T&T Seeds, who, when they receive them, start the growing process and care for the plants at their location. When those seeds become seedlings, they are ready to be sold. When the order comes in for a certain amount of the plants, depending on where the order comes from, T&T Seeds puts the seedlings into their refrigeration storage units the designated amount of time needed to prepare them for the journey (in order to put the seedlings into dormancy during the shipping process) and then they process and ship them off to their destination. The buyer then receives them and plants them. For transportation to Nepal, since T&T Seeds is shipping seedlings and not seeds, a faster mean of transportation would be required because of the limited time the plants can be dormant, so shipment by freight wouldn't work. Air transport would be the best option available in this situation. After comparing the costs of major shipping companies, Purolator offered fast air transport at a reasonable price of \$300 to \$400, depending on the weight of the package, within 5 business days.

Distribution in Nepal

Overall, after looking at sites like AGCanada and the Department of Agriculture, it was discovered that there were no permits or restrictions on exporting raspberries to Nepal, so the issue of physically shipping the product to Nepal wouldn't be a problem. When it comes to distributing the seeds in Nepal, there are a few choices in the distribution method. To the farmers that have internet access, Alibaba can be a helpful tool in the distribution process. It not only can

connect farmers to potential distributors, but it can make sure that the product gets shipped directly to them. To the farmers that don't have that luxury, according to Agriculture1.com, a B2B portal for the agricultural industry, there are 20 distributors, mainly located in the capital of Kathmandu, that can help distribute this product to those farmers (*Agriculture Supply Distributors in Nepal*). When the product gets shipped to Kathmandu, it can go to a processing or distribution plant there and can be picked up by local farmers. The farmers can then buy or pick up the raspberry plants and/or seeds when the order comes in from T&T Seeds from one of the distributors listed and go back to their farms to plant the seeds/seedlings. Another possibility to consider is to tap into and use Nepal's main grocery chain, Bhat Bhateni, to try to get the seeds/seedlings to the farmers.

Storage/Treatment of seeds and seedlings

The raspberry seeds don't go bad for at least a couple of years, so by any means of long-term transportation, the seeds won't go bad if they were to be transported for weeks and even months at a time. Raspberry seedlings are different, however. The way T&T Seeds ships seedlings and trees, is by pre-growing them and then storing them in a custom-built refrigeration system. They store the seedlings for a certain amount of time and then they ship them off to their destination, where the plant comes out of dormancy upon arrival. Given the fact that the seedlings are not being shipped to a nearby area, but are instead being exported halfway across the world, this would cause some problems for the cost of transportation and the transportation itself. Shipping seedlings around the world would be an issue because even with the artificial methods of refrigeration and fast means of transportation, there is still a risk that the seedlings could die on their way to their destination. This risk is greatly reduced if there is an express shipping method that can deliver the seedlings within a week to their destination. This is quite

doable, as most companies, like Purolator (within 5 business days), Fedex and UPS all offer express shipping methods that can get packages to their destination, including Nepal, within a few days. T&T Seeds also has the technology that can artificially make the plants dormant for long enough, so that they do not get damaged or die before they reach their destination.

Needs and benefits

Some benefits that this new introduction of red raspberries include are that it is a different kind of raspberry than the natively grown one. This offers the people of Nepal choice as to which type of raspberry they'd want to have. Having a different variety of raspberry also increases the quantity of them being produced, which means people have more access to this healthy fruit. Not only would it contribute to the consumers, but the farmers themselves would have increased self-sustainability while growing this plant. The red bounty raspberry seedlings that are being exported in this case are of a very hearty variety and produce medium sized, deep red fruits (2016, *Dunvegan gardens*). Self-sustainability is great, especially in these types of situations, but it can also have some drawbacks. Specifically, in Nepal in the late 1990's, there was a "green revolution". The "green revolution" had brought imported seeds, and chemical fertilizers and pesticides into agricultural communities, and this transformation was accelerating (2015, *Anderson*). Most of the farmers in Nepal do not have a lot of money, but the ones that did recognized that it was much easier going to a store, than to grow and cultivate seeds back home (2015, *Anderson*). The traditional methods of drying and storing seeds using crop rotation and inter-cropping were put at risk given that the vast variety and number of seeds had gone down. Instead of having 4-5 types of seeds, local farmers were relying on only two types of seeds. This can really hurt a farmer when you have all sorts of other variables, such as soil conditions, pests

and local weather (2015, Anderson). Given the farmers dependence on this new seed market, this could have disastrous effects in the future if anything were to happen to the crops and/or environment surrounding the farms. Having less types of seeds would make farmers more vulnerable if anything were to happen, such as if pests attack. Some varieties of plants may be resistant to the pests, but if you do not have that variety, it could be disastrous and a farmer could lose most of their crops if they only had one variety that was not resistant. Even though there is a benefit to introducing this new type of seed into the Nepalese market, the pros and cons must be weighed to see if it is to be an effective move. However, in this case, the pros can be seen to outweigh the cons, so shipping these raspberry seedlings would be an effective decision.

Environmental benefits

Seeing as raspberry plants soak up CO₂ and replace it with oxygen, this can help the greenhouse gas issue. Not only that, but if the farmer decided to use cover crops to protect the raspberry plants, that would also contribute to helping the CO₂ issue as well. Cover crops also help prevent erosion, so that choice can benefit farmers as well as the environment, seeing as Nepal has many hilly regions in it, allowing for cultivation on hillsides. Cover crops can hold the soil in place and reduce the erosion caused by wind and rain. Cover crops can also improve yields by enhancing soil quality, conserving soil moisture (which is important when growing raspberries), protecting water quality and cutting the need for fertilizers (2012, Nationwide).

Cost analysis

Given the facts listed above, there are many variables to take into account when talking about the cost of this product. As cited above, raspberry seeds can cost a minimum of \$5 depending on which supplier you get them from. For T&T Seeds though, the costs are more expensive because the company grows the seeds into seedlings for you. The red raspberry

seedlings at T&T Seeds cost \$15.95 for 5, \$29.95 for 10 seedlings, \$82 for 30 seedlings and \$225 for 100 seedlings. So let's say that 100 seedlings were to be shipped to Nepal. That's already \$225 for the seedlings themselves. When you include shipping, it depends on the type of method that you would use. If these were seeds, it would be more realistic and possible to ship these by truck and freight ship, but seeing as these are seedlings, as discussed previously, they need to be shipped via air transport. After researching for a relatively cheap company that would ship to Nepal, Purolator was the best option, offering to ship the product for between \$200 to \$400, depending on the weight of the package from T&T Seeds, within the span of 5 business days. This works out because given the fact that T&T Seeds can only artificially make them dormant for a certain amount of time, the five business day delivery estimate is in the right time slot for the seedlings to still be viable after travel. Also, instead of T&T Seeds spending their money to ship the product to Nepal, they could attempt to get a loan from either a major bank or the EDC (Export Development Canada) to help them with this international deal. EDC's mandate is to support and develop Canada's trade and the capacity of Canadian companies to participate in and respond to international business opportunities (2014, *EDC Corporate Mandate*). The cost to produce the seedlings is \$225 for 100, plus shipping, which is \$215.95 equals total cost to get them to Nepal, which is around \$440.95 (or \$36,070.46 NPR). Divide that by the 100 seedlings to get a price per seedling and it would cost the farmers \$4.41 CDN, or \$360.72 NPR. The distributors in Nepal will add on to the price in order to make a profit, but given these numbers and seeing these exporting strategies, it's highly possible that these can be shipped to Nepal with success. Although raspberry seeds would be cheaper instead of seedlings, using seedlings would shave off important time during the growing process for the farmers, a bonus for the Nepalese farmer.

Marketing

A way that this new type of raspberry can be marketed is by mentioning that it's an "exotic" product that is from outside of the country. Many times, when a foreign item is marketed to a certain type of crowd, it increases the chance of peaking people's curiosity. The fact that it's from Canada can have a positive impact on the seeds image because of Canada's history with raspberries. It can be mentioned that it comes from one of the top raspberry producing countries in the world, seeing as Canada is the tenth biggest producer of the fruit. This could influence not only farmers to start buying the seeds and seedlings, but it would influence the consumers, seeing as Canada's influence in the raspberry market is very well known, respected and can give a sense of the kind of quality people would expect from the plants and fruit. As mentioned before, a good place to sell this product would be at Nepal's main grocery chain, Bhat Bhateni. It is a chain in Nepal that serves 250,000 people daily and they have 12 stores located in Kathmandu. They also have over 1000 local and international suppliers (2016, *Bhat-Bhateni*). See figure 3 for a billboard advertisement example.

Conclusion

The exportation of raspberry seeds/seedlings to Nepal from Canada would be beneficial to both parties and would have a positive impact on not only the lives of the farmers and people of Nepal, but would benefit Canadians as well. Canada will gain employment, job growth and a stronger GDP, while Nepalese farmers and people will gain another source of nourishment and income. This plan is economically feasible for both Canadian producers and Nepalese farmers and it can be marketed towards farmers with ease and can yield successful results. This plan is a win-win situation and can help both parties in the long run. Raspberries are an important plant

and they have many great health benefits that can contribute to a longer and healthier life. Even with just one seed, the lives of people can be changed and can grow into a prosperous and happy one.

FIGURE 1



Source: Corporation, O. I. (2014) Oxbo 9120 Raspberry Harvester. Retrieved November 12, 2016

FIGURE 2 Source: (Manta: T&T Seeds Ltd) and (T&T Seeds Ltd)

Operating Name: T&T Seeds

Location Address: 7724 Roblin Blvd. Headingley, Manitoba R3C 3P6

TEL: 204-895-9962 **FAX:** 204-895-9967

Company Description

Country of Ownership	Canada
Year established	1946
Exporting	Seeds and Seedlings
Primary Industry	Mail order

Total Sales	1,257,600
Number of Employees	5

Source: (*Manta: T&T Seeds Ltd*) and (*T&T Seeds Ltd*)

FIGURE 3

**FROM CANADA
TO YOU**



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