

Exporting of Rennet Tablets to Nepal

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The purpose of this report is to transport at a Canadian to the country of Nepal that is realistic, and that benefits both Canada and the Nepalese farmers.

Part 1

Rennet Tablets

Rennet tablets are small tablets that are used to coagulate milk by using enzymes in the cheese making process (Rawsterne, 2016). Rennet tablets are made from rennet, also known as chymosin, which is an enzyme that is extracted from calves' stomachs that assists the process of coagulating milk (n.a., 2008). Also, some rennet tablets can be made as vegetable rennet with a mold called *Mucor meihei* (Springbank Cheese Co., 2016). These tablets are approximately the same size as a Tums tablet, and generally come in sheets of ten tablets. Rennet tablets can be purchased in Canada from local cheese making companies, or online through cheese making companies such as Glengarry Cheesemaking and Springbank Cheese Company in Alberta (Springbank Cheese Co, 2016; Glengarry Cheesemaking, 2016). Also, rennet tablets can be purchased through amazon. The rennet tablets have a long shelf life, lasting for at least two years on a shelf if not opened (Springbank Cheese Co., 2016).

The process of making cheese with rennet tablets is fairly simple. All that is needed is about fifty litres of milk, a heat source and a large container to hold the variety of milk. For the milk, raw or processed milk will work, as well as any type of milk such as dairy, goat or buffalo milk. One rennet tablet needs to be set in fifty litres and the milk is to be heated to a boil and then reduced to a simmer for five minutes (n.a., 2008). Afterwards, place the tablet into the milk and slowly stir until the milk begins to curd. After curding process is done, drain the curds and cut the curds to release any extra liquid, then leave the cheese until a solid curd is formed (n.a., 2008). This process generally takes thirty minutes to complete.

Inputs Required

The inputs required for the cheese making process with the use of rennet tablets are milk, a large container to hold the milk, a heat source, a tool to stir with and minimal labour. The amount of

Items Needed for Cheese Production	
Milk	Heat source
Large Container	Strainer
Stirring Tool	

Table 1: Items Needed for Cheese Production

milk needed for one tablet of rennet is approximately fifty litres, but the milk can be straight from the utter (Springbank Cheese Co, 2016). Therefore, the container used should be able to contain at a minimum of 12.5 liters. It should be able to hold at least of 12.5 litres because that would allow the Nepalese farmer to split each tablet into quarters, allowing them to produce cheese more frequently and reduce the amount of storage space and time that would be needed after the completion of the cheese curds. Additionally, heat will be needed to quicken the process of the coagulation. This process could be used with a simple fire or if a small amount of cheese is being made, a heat lamp will also suffice (Berridge, 1952). All of these inputs should be easily attainable for a farmer in Nepal, with none of the required inputs being expensive or hard to obtain. In conclusion, the inputs for cheese making in Nepal are realistic for the Nepalese farmers to obtain and afford.

Health and Nutritional Information

The product that is used with rennet tablets is cheese. The majority of the cheese produced in Nepal will come as a result of either goat milk, or cow milk due to the mass number of both species. (Chapagain, 2016).

	Cheddar Cheese	Goat Cheese
Calories	403	364
Total Fat	33g	30g
Saturated Fat	21g	21g
Trans Fat	0g	0g

Cholesterol	105mg	79mg
Sodium	621mg	515mg
Vitamin A	20%	29%
Vitamin C	0%	0%
Calcium	72%	30%
Iron	4%	9%

Table 2: Nutritional Information About Cheddar and Goat Cheese

Generally, there are very few differences in the nutritional benefits between goat and cow milk. Looking at the general nutrition facts the only main difference between dairy and goat cheese is that there is a substantial amount more of calcium in dairy cheese. Despite dairy cheese having more calcium, which increases bone health (Flynn, 2007), goat cheese provides an option to those who are lactose intolerant and cannot consume dairy products (Gomes & Malcata, 1998).

Market Opportunity

There is a real market opportunity in Nepal for cheese making and the use of rennet tablets to assist the creation of the cheese. Nepal has three main milk producing animals including cattle, goats and buffalo. Overall, Nepal houses over seven million cattle, over five million buffalo and over nine and half million goats (Chapagain, 2016). This collection of over twenty-one million milk producing animals produces 1,622,000 metric tons of milk for the Nepalese people

Table 3: Number of Livestock in Nepal

Category	Numbers (Million)
Cattle	7.25
Buffaloes	5.13
Goat	9.52

(Chapagain, 2016). With this much milk production, Nepalese farmers can dedicate some of the milk produced to the cheese making process.

Another benefit to this market in Nepal is that it requires a limited amount of money to make cheese. Generally, the price of a single rennet tablet is between fifty cents and ninety-nine cents

(Springbank Cheese Company, 2016 and Rawsterne, 2016). This price is affordable for even a small farmer in Nepal since the average income for someone in Nepal is 881 CAD each year (Chapagain, 2016). An additional benefit to this market opportunity is that the process is not labour intensive to the point where children can make cheese using the rennet tablet system. All that is needed is a small amount of clean water, a large container containing milk, and a heat source. All of the labour that is involved is that the milk needs to be stirred throughout the process as the milk coagulates. In conclusion, with 1,622,000 metric tons of milk to use, an inexpensive price for the rennet tablet, and a small amount of labour; the product of a rennet tablet has a major market opportunity in Nepal.

Benefits to Canada

Shipping rennet tablets to Nepal would benefit cheese making companies that sell rennet tablets, as well as simple cheese making recipes with basic instructions. Companies such as Springbank Cheese Company out of Calgary, Alberta would be one of the benefactors from exporting rennet tablets to Nepal (Springbank Cheese Company, 2016). Springbank Cheese Company would benefit because they sell both recipes that can be used by the Nepalese farmers, as well they sell rennet tablets in bulk as packages of one-hundred tablets (Springbank Cheese Company, 2016). The benefits that this company will experience is an increase in sales, as well as an international expansion opportunity since they are selling to a different country. This will create more revenue for the company overall, as well as make Springbank Cheese more popular internationally, creating even more revenue. In summary, the benefits to Canada for shipping rennet tablets to Nepal will be seen through the increased revenue and international expansion of Canadian cheese making companies such as Springbank Cheese.

Part 2- Export potential to Nepal

Introduction to Nepal

Nepal is small land-lock country that is located between the countries of China and India, and is broken into three different regions the mountain, terai, and hills regions (Chapagain, 2016). For

each region in Nepal there are different livestock management systems. In the mountains, herds have to migrate from place to place to avoid the cold winters in the mountains. In the hills, livestock graze throughout the day and return to the barn in the evening. In the terai, there are stall fed systems because there is better crop land in the terai region, so the Nepalese farmers keep the animals in the barn to use as much land as possible for crops (Chapagain, 2016).

Transportation

The transportation of rennet tablets will be most effective if transported by plane due to the light weight of the product. If the package of 100 rennet tablets is sent to Nepal by plane using Fedex, the least expensive cost is 133.95 CAD (Fedex, 2016). If the rennet tablets are sent in more of a bulk form, such as sending ten packages at once, the total shipping cost will become 370.42 CAD (Fedex, 2016). Both situations have the rennet tablets being shipped from Calgary, Alberta where the Springbank Cheese Company is located (Springbank Cheese Co., 2016). The only other shipping company that was found that will ship to Kathmandu, Nepal was DHL. DHL would not provide an accurate air freight quote, but DHL also recommended that a lighter package such as rennet tablets should be shipped by plane to provide the quickest and most cost effective shipping method. After the tablets are sent to Nepal, they will need to be sent to a local market where they can be distributed to the farmers across Nepal. The shipping from the marketplace in Nepal will not cost the farmer any extra money as Bhat-Bhateni Supermarket offers a free home delivering service (Bhat-Bhateni Supermarket, 2016). In conclusion, the transportation path that the rennet tablets will follow is starting in Calgary, Alberta, then the product will be shipped by plane to Kathmandu, Nepal where the rennet tablets will have to be distributed to the farmers by car.

Storage Issues

One major benefit about the use of rennet tablets is the shelf life of the product. Rennet tablets can sit on the shelf for several years (Springbank Cheese Co., 2016). This is a major benefit to the Nepalese farmers because they would not be able to use all ten tablets in the blister pack quickly, instead they can pace the use of the tablets. Additionally, this would assist markets in Nepal who could sell tablets individually, allowing them to ensure the product is still productive

when it has been sitting on a shelf for a long duration of time. Although the rennet tablets can last for several years on the shelf without a cool environment, the cheese that is produced cannot simply be stored on a shelf. Despite cheese becoming better tasting after it is being aged, the cheese needs to be stored properly in order to have this effect (Abdalla and Mohamed, 2009). If cheese is not stored in a cool environment, as the storage of cheese increases the browning of the cheese increases, which is an undesirable attribute of cheese production (Kristensen et al, 2001). Therefore, cheese needs to be stored in a refrigerated temperature, such as around 5 C, to reduce the amount of browning, and prologue the life of the cheese (Kristensen et al, 2001).

Cost Analysis

Overall, rennet tablets are inexpensive items costing between .5 CAD and .99 CAD when purchasing from Springbank Cheese in Calgary, Alberta (Springbank Cheese Co., 2016). The tablet alone costs about 62 Nepalese rupees, which is very affordable for even the poorest farmer. The shipping cost is the main concern when it comes to the cost analysis. The shipping of a package of 1000 rennet tablets from Calgary costs 370.42 CAD via Fedex air (Fedex, 2016). This comes to a price of .37 CAD per tablet to transport the tablets to Kathmandu, Nepal. This travel cost comes to 30.35 Nepalese rupees, and totaling a cost of 92.72 Nepalese rupees. This still makes rennet tablets affordable for the average farmer because the income for a Nepalese farmer is roughly 72275.19 Nepalese rupees each year.

Now that the rennet tablets are in Nepal, the extra costs come from the cost of the milk used. This cost will defer for each farmer and which type of livestock they use. For example, farmers that use goats as their source of milk will have less cost than those who have buffalo or

	Cost (CAD)	Cost (Rupees)
Individual Rennet Tablet	0.56 CAD	45.81 Rupees
Shipping from Calgary to Nepal	0.37 CAD	30.27 Rupees
Total Cost to Kathmandu	0.93 CAD	76.08 Rupees

Table 4: Cost to Ship Rennet Tablets

cattle because of the mass amount of goats they can feed compared to a large animal such as cow or buffalo.

Needs and Benefits

Rennet tablets will produce more cheese products increasing the amount of food available for the Nepalese people. This is a major benefit to the country of Nepal because of the amount of malnutrition occurring in this developing country. Currently in Nepal, forty percent of the population currently does not consume enough calories each day (Osei et al, 2010). This statistic carries throughout many major consumption statistics in Nepal, demonstrating the current struggle Nepalese farmers are having at creating enough food for the country.

The benefits that the rennet tablets would bring to the country of Nepal would not only be that more food would be on the table, but more jobs could be created in the agriculture industry. Despite having seventy percent of the Nepalese population being involved in the agriculture industry, more jobs would be created to create the cheese at a potential commercial level (Devoka & Upadhyay, 2013).

Selling Strategy

The selling strategy for distributing rennet tablets to the Nepalese farmers would be to sell individual tablets to a single farmer, rather than attempting to sell the entire packet. This is a reasonable selling strategy because farmers only make about 881 CAD each year in Nepal, so making them commit to buying an approximate 10 CAD might be too substantial to commit at one time (Chapagain, 2016). Selling individual tablets through markets such as Bhat-Bhateni Supermarket, which is located in the capital of Nepal, Kathmandu (Bhat-Bhateni Supermarket, 2016). Having the tablets sold at a market will allow farmers to get the tablets themselves, or have them delivered to their door from a location in Nepal and not shipped straight from Canada. An additional benefit from sending the rennet tablets to a supermarket first is the removal of the major shipping cost from the individual farmer. If the Bhat-Bhateni Supermarket pays the major international shipping cost, it reduces the shipping cost for each individual farmer, having them all pay in as a group and not an individual. This process will work by having the Bhat-Bhateni Supermarket pay the initial shipping cost, and then each individual farmer help cover the costs of the market, benefitting both the market and farmer. In conclusion, the selling strategy for rennet

tablets in Nepal is to sell the tablets individually through a major market like the Bhat-Bhateni Supermarket instead of selling to the farmer directly.

Canadian or International Loans Required

For this product, no Canadian or International loans would be required because of how inexpensive the tablet is going to be. Each individual tablet only costs between 0.50 CAD and 0.99 CAD (Springbank Cheese Company, 2016 and Rawsterne, 2016). This product should be affordable for a Nepalese farmer to buy without government assistance, even with the shipping cost added. Therefore, no Canadian or International loans should be required for the distribution of Canadian rennet tablets to Nepal.

Competition

One major issue with transporting rennet tablets into Nepal is the amount of competition already in Nepal, and the major surrounding countries such as India and China. In Nepal, there are two cheese making companies Himal Farm, and Himalayan French Cheese (Himal Farm, 2016 and Himalayan French Cheese, 2015). Himalayan French Cheese uses vegetable rennet tablets to produce their cheese, which is the same type of rennet Springbank Cheese in Calgary, Alberta distributes (Himalayan French Cheese, 2015 and Springbank Cheese Company, 2016). Additionally, Himalayan French Cheese uses milk from both cows and yaks, which are a potential target markets if the tablets were distributed from Canada (Himalayan French Cheese, 2015). In addition to a cheese making market already in Nepal, there are major companies in China and India that can compete for the business in Nepal with the export of Canadian rennet tablets. For example, in China there are numerous companies such as Yokobio that sell rennet (Yokobio, 2014). The competitors in India include a company named Acres Wild who not only offer cheese as a product, but they offer cheese making courses to teach those in India the art of cheese making (Acres Wild, 2016).

Having competitors in Nepal, India and China is a huge concern for the exporting potential of rennet tablets from Canada. The reason this becomes a huge concern for the export opportunity because countries like Nepal, India and China can cut shipping cuts because of how

much closer they are located than Canada. India and China can transport the rennet products using trucks while Canada has to ship everything into Nepal by plane, or may have to send the products to India or China first, and then have a trucking company transport the product. Therefore, the competition for shipping rennet tablets to Nepal from Canada is very substantial because of the cheese making companies in Nepal and surrounding countries such as India and China.

Conclusion

Overall, the concept of shipping rennet tablets to Nepal from Canada may potentially benefit the Nepalese farmers as well as Canadian cheese making companies, but the idea is not reasonable because of the competition. Nepal currently has two companies that make cheese commercially and both companies use rennet tablets to produce this cheese. If Canadian companies begin to send rennet to Nepal, these companies could steal the business by selling the rennet tablets that they use and limit the potential business for companies such as Springbank Cheese. So a recommendation that would be made for Canadian exporters looking to send rennet tablets to Nepal is that this would be a fairly unsuccessful business endeavour because the competition in Nepal and the surrounding area is too stiff, and can provide the same product for a less expensive price.

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