

Milk Pasteurization Equipment

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Introduction

This report discusses the prospects of exporting milk pasteurization equipment to Nepal. This would be a good product to send to Nepal because there are many farmers that have cows in Nepal but they have no way to pasteurize the milk that they collect from their cows. Milk is an important part of everyone's diet but it can also be dangerous if it is not pasteurized. Raw milk can contain dangerous bacteria such as Salmonella, E.coli, and Listeria (U.S Food and Drug Administration, 2014). It has been proven that when pasteurizing milk it does not lose any of its nutrient value. These harmful bacteria can affect anyone who is drinking the unpasteurized milk but affects older and younger people the most (U.S Food and Drug Administration, 2014). Milk pasteurization is a process in which milk is heated to a certain temperature and then cooled. This is done to eliminate any bacteria that could be in the raw milk. It is important to pasteurize you milk before you drink it so that you do not consume any of these harmful bacteria. Pasteurized milk has a longer shelf life which would allow farmers to sell their milk to more people and longer distances in Nepal.

Part I – Product Info

The company Tetra Pak makes a milk pasteurizer that is called Tetra Plex M Plate Heat Exchanger (Tetra Pak, unknown date). This product is very compact and economical. This product can run for a very long time which will decrease the amount of labour and maximize the amount of milk that is produced by the equipment. This product is also very energy efficient, therefore this will decrease the running costs of the pasteurization equipment and also minimize the environmental impact. The Tetra Plex M Plate Heat Exchanger has a very reliable design so the product will not break easily and repairs and maintenance costs are low. The function of this

product is for pasteurizing milk products, it can also be used for general heating or cooling of different beverages (Tetra Pak, unknown date). This product requires energy so it maybe difficult to run in the rural areas of Nepal because it may be difficult to get electricity to the milk pasteurization equipment.

Machinery Required and Cost

The Tetra Plex M Plate Heat Exchange is quite expensive, the milk pasteurization equipment can be custom designed depending on exactly what is required the customer these products can range anywhere between \$10,000 to \$30,000 in Canadian (Bohner Don, 2014). The price of the one that would be sent to Nepal would have to be as cheap as possible so therefore they would be custom made to be as close to \$10,000 as possible to make it as affordable as possible.

Distributor for the Company

There is a distributor for this product located in Quebec and is called Qualtech Inc. They put together the pasteurizers using Tetra Pak's plate heat exchanger systems (Bohner, 2014). After the product is made it can be sent from the distributor to Nepal so that it can be sold to the people of Nepal.

History of The Company

The company Tetra Pak was established by Ruben Rausing in Sweden in 1951 but has offices all over the world (Tetra Pak, unknown date). There is an office in Canada in Toronto Ontario. Tetra Pak is the world's leading food processing and packaging solution company (Tetra Pak, unknown date). Some important dates for the company were in 1982, 1983, 1985, 1987 and 1993. In 1982 Tetra Pak introduced a new way of printing; they developed a new

method for offset printing (Tetra Pak, unknown date). In 1983 the company founder passed away on August 10 (Tetra Pak, unknown date). Also in 1983 a school was opened for technical training for Tetra Pak staff and the school has about 600 students every year (Tetra Pak, unknown date). In 1985 Tetra Pak opened two factories one factory was in Argentina and the other was in Canada, the factories were for packaging materials (Tetra Pak, unknown date). In 1987 two more plants were opened for the production of packaging material resulting in Tetra Pak having their machines in 100 markets (Tetra Pak, unknown date). On January 1, 1993 the Tetra Pak Company formed the Tetra Laval Group (Tetra Pak, unknown date). The group included four industry groups called Tetra Pak, Tetra Laval Food, Alfa Laval and Alfa Laval Agri. Tetra Pak's total production was over 60 billion units that year (Tetra Pak, unknown date). There are many more things that have happened throughout Tetra Pak's history but these are a few of the important events that have happened.

Benefits to Canada

This product can benefit the Canadian economy since the product will be purchased through the Canadian office thereby increasing Canadian sales and exports and providing Canadian jobs in the Canada offices. The disadvantage of this product is the cost to ship the equipment to Nepal as well as the cost of the initial set up for the Nepalese. The Canadian office will have to send experienced technicians to train the farmers in the set up and use of the equipment. Also there is no knowing for sure if the Tetra Plex M Plate Heat Exchanger will sell well in Nepal so you will lose money if the product does not sell well.

Part II- Export Potential to Specific Importing Nation

Needs and Benefits to Nepal

Many of the farmers in Nepal have dairy cattle, but they do not have an efficient way to pasteurize the milk. If the farmers had an efficient way to pasteurize the milk that they collect from the cows it would benefit the Nepalese farmers greatly. If the milk collected from the cows is not pasteurized it could put the people that are drinking it at risk because of the possibility of contamination with pathogenic bacteria (LeJeune and Rajala-schultz, 2009). Pasteurization is the most efficient way of decreasing the risks of these pathogenic bacteria and increasing the safety of the milk being consumed by the people of Nepal (LeJeune and Rajala-schultz, 2009). The Tetra Plex M Plate Heat Exchanger would also benefit the Nepalese people because the milk will last longer after it is pasteurized therefore they can store it and it will also make it easier to get it to different markets so the farmers can sell more milk. A product that would help the Nepalese to pasteurize the milk they collect efficiently would be the Tetra Plex M Plate Heat Exchanger. The pasteurization of milk could lead to the growth of other dairy based products in Nepal such as cheese, yogurts, cream, and butter. Milk is a very nutritious food and with the use of pasteurization the shelf life of milk is greatly increased which will increase the availability of this nutritious natural resource to the people of Nepal.

There are many benefits for Nepal to import this product but with benefits there are also negatives to consider. One drawback for this product is that it is expensive, but more than one farmer can get together and purchase one and share the product. This will make the product more affordable for the Nepalese dairy farmers who want to buy this product. Another disadvantage for this product is the time and cost to train qualified people to run the equipment and the availability of parts for repair and maintenance.

Transportation Logistics

The milk pasteurization equipment will be a difficult product to ship to Nepal. The Tetra Plex Plate Heat Exchanger is a big product so it will be expensive to ship to Nepal. I think that the easiest way to ship the milk pasteurization equipment to Nepal is by putting the product on a plane and sending it to Nepal. The cost to ship this product to Nepal is going to be around \$8,000 in Canadian dollars. The company that would do that shipping is called DHL international. The milk pasteurization equipment would leave from the distributor that is located in Quebec and land in the city of Katmandu located in Nepal. The transportation costs are broken down into three categories. The three categories are express worldwide doc which is about \$7200, fuel surcharges which is about \$750 and overweight piece which is \$50 the cost are also broken down in Table 1. With the transportation costs the Tetra Plex M Plate Heat Exchanger is going to cost around \$18,000 in Canadian. I believe that flying is the best way to get this product to Nepal because otherwise you would have to transport it by truck or train and then load it on to a boat and ship it to India and then have to load the product back onto a truck or train to get it into Nepal which would take a long time and be a lot of work. Even if you were to ship it this way it would not be that much cheaper and there is a higher chance that something will go wrong (such as damage or loss of the product) when so many people have to handle the product before it even gets to Nepal.

Table 1: Breakdown of Shipping costs

Shipping Categories	Price (Cad\$)
Express Worldwide Doc	7,200
Fuel Surcharges	750
Overweight Piece	50
Total Shipping costs	8,000

Marketing Strategy

Due to the significant upfront costs this product would be a very hard product to sell to the Nepalese farmers. There would have to be a very good marketing strategy in place before this product were to get to Nepal and to make sure that there was even enough people interested that it would be worth the money to make and then ship to Nepal. There would have to be people in Nepal that knew how the product worked and were able to go to the farmers that may be interested in this product and talk about the product and the benefits of having this product. Since the price of this product is so high the people selling the product would have to convince a whole community that this is a good product to buy. The product would have to be bought by the community not just one or two farmers because it is just too expensive. The goal of the people advertising this product would be to convince the community that this product would be a good product that would benefit their community and every family that lives there. The manufacturer could offer low or interest free loans to the Nepalese farmers to purchase the equipment to make the product more affordable. Even though this product is expensive making it a hard product to sell, this product could be very beneficial not just to Nepal's farmers but to all the people of Nepal. If they had a way to pasteurize their milk they would have much safer milk to drink that could reach a larger distribution of the population thereby increasing the availability of nutritional food to the people that live there.

Import and export Documentation

There are certain steps that need to be taken when a company is exporting goods to another country. The first thing that needs to be done is get a business number that is given out by the Canada Revenue Agency for an import/ export account (Government of Canada, 2014).

The product that is being exported must be able to be exported from Canada because certain goods cannot be exported from Canada (Government of Canada, 2014). There may be restrictions or regulations on the product that is being exported that are determined by the CBSA and also there could be restriction or regulations for the export of the produced determined by other government departments (Government of Canada, 2014). The company needs to figure out if an export declaration is required Table 2 shows what documents are need for exporting different products. The Tetra Plex M Plate Heat Exchanger appears to be a non-restricted good. It is being ship to Nepal and it is over \$2,000 Canadian so therefore is would need an export declaration to be exported.

Table 2:

Exporting Goods from Canada Documentation Requirements for Exporters

Type of Goods	United States Destinations (includes Puerto Rico and U.S. Virgin Islands)	All Other Destinations (includes goods moving through the United States to foreign destinations)
Restricted goods, i.e. controlled, regulated and prohibited goods (regardless of value).	<ul style="list-style-type: none"> • Permit, certificate, or licence; • Documents required by other government departments (if applicable); • Export declaration is not required. 	<ul style="list-style-type: none"> • Permit, certificate, or licence; • Documents required by other government departments (if applicable); • Export declaration
Non-restricted goods.	Export declaration is not required.	<ul style="list-style-type: none"> • Export declaration (for commercial goods valued at CAN\$2,000 or more).

Received from: <http://www.cbsa-asfc.gc.ca/export/guide-eng.html>

To be able to import a product into Nepal there are many documents that are needed. There are also many steps that need to be taken depending on what and where the company is importing the product. The Tetra Plex M Plate Heat Exchanger that is being imported to Nepal from

Canada would have to have all of the necessary documents so when the product gets to the border of Nepal it will be able to be imported. When the product reaches Nepal the importer or Custom Agency (CA) will take the documents to the customs in Nepal. The documents that are needed are a Nepal Customs import declaration, a letter of authority, a bill of lading, an invoice, a packing list, a certificate of origin, a certificate of insurance, original CTD and many more (SME toolkit Nepal, 2002).

Regional and Global Competition

There are many different companies all around the world that sell milk pasteurization equipment. Therefore there would be lots of competition for this product, currently there is no company shipping milk pasteurization equipment to Nepal. Many of the milk pasteurization equipment that is available is all on the more expensive side. One of the cheaper companies is called Hamby Dairy supply they are located in the United States (Hamby Dairy Supply, 2011). They have a milk pasteurizer that is \$539.88, which is much cheaper than the milk pasteurizer from Tetra Pak(Hamby Dairy Supply, 2011). The milk pasteurizer from Hamby Dairy Supply is much smaller and only hold only 3 gallons of milk at a time but most farmers would not need a piece of equipment like the Tetra Plex M Plate Heat Exchanger(Hamby Dairy Supply, 2011).There are also a couple of companies in China that make milk pasteurization equipment. It would be much cheaper to ship these milk pasteurizers to Nepal then it would be to ship the Tetra Plex M Plate Heat Exchanger to Nepal from Canada. Also the price of these products are cheaper then the products in Canada because it costs more for labour in Canada than it does in China to produce the milk pasteurizers. One company that is located in China that produces a milk pasteurizers is called Zhengzhou Qixin Machine. This company has a smaller milk

pasteurizer that can range from \$3000-7000 in US dollars (Alibaba, 2014). This product would have a much lower shipping cost than a product from Canada or the United States (Alibaba, 2014). Also this product is smaller and probably more practical than the Tetra Plex M Plate Heat Exchanger. Therefore there would be many competitors for this product if it would be shipped to Nepal.

Future Studies That Are Required

There is still lots of research that needs to be done before this product would be ready to be sent to Nepal. Some topics that still need to be researched and analysed more are looking at potential buyers in Nepal for this product, trade and subsidy barriers as well as looking into government or international loans or grants to help get this project rolling. Also there needs to be more research done on marketing and what marketing strategies would work best in Nepal because some marketing strategies that work really well here may not work as well in Nepal due to the different lifestyle and requirements of consumers in Nepal. There should also be future studies done on the competition and how to come up with a cheaper, smaller and simpler milk pasteurizer so that the Nepalese farmers would have a better chance of affording it and therefore it would have a better success rate for sales in Nepal. There is still a lot of information that is unknown and would need further studies before the Tetra Plex M Plate Heat Exchanger would be ready to be shipped and sold to the people of Nepal.

Conclusion

There are many things to consider when determining if the Tetra Plex M Plate Heat Exchanger would be a good product to ship to Nepal. There are many benefits in sending this product to Nepal. Also, if this product was cheaper that it would have a very good chance at being a very good product to ship to Nepal. Even though this product would be beneficial for the Nepalese farmers there is just no way for them to be able to afford this product at this point in time even if a whole community was to purchase this product it would still be very expensive. This product is a bit too big and a smaller and simpler milk pasteurizer may sell a lot better with the Nepalese people and be much cheaper. Unfortunately there is not any smaller milk pasteurizers that are made in Canada. This product would also cost the company a lot of money to ship to which would minimize the number of units that could be sold. Hence, it may not be profitable for to the company to ship the Tetra Plex M Plate Heat Exchanger to Nepal. Overall at the time the Tetra Plex M Plate Heat Exchanger would not be a very realistic product to ship to Nepal because of the price, its size and it would not sell well in Nepal.

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