

**Export Potential of Automatic Milk Feeders to Assist Goat Farmers in Nepal**

Emily Franken

AGR1110

Tuesday December 1, 2015

## **Introduction:**

Nepal is a very poor third world country, still in the process of development. It is located in Southern Asia between China and India. The region experiences many altering climates due to the major terrain differences found throughout the country. The terrain is spread across a fairly small 143,000 square kilometers, with around 3% being covered by water and the remaining land ranging from nearly flat surfaces up to the Himalayas, a well renowned mountain range, which occupy approximately 75% of the area (Nepal, nd). Therefore the small portion of workable land that is left has to be efficient enough to sustain their population of approximately 28 million and growing. The Nepalese are hardworking people with 66% working in the agricultural industry (DOA Nepal, 2014). Working very hard for little pay, their currency is converted as 79.99 Nepalese Rupees (NRs) for every Canadian dollar (Google Finance, 2015). Agriculture is a key asset that allows Nepal to provide food and create careers that grow their economy.

Many people travel to Nepal for the popular Mount Everest, but what about to help out a fellow country? Seeing as Canada is already a well-developed and self-sustaining country, they can provide the help that the Nepalese people need. Canada is known globally for different aspects of their agriculture and has many resources that could assist in the development of Nepal. Therefore, Canada can help by selling resources and products to Nepal, at fair prices that will help them to develop into a prospering country.

Goats are an industry within agriculture that is a very convenient resource for Nepal. Goats are very small making it easier for housing, handling, and feeding. It takes a goat only 5 months to reproduce which generates income for the farmers at a fast rate. This fast rate is necessary because most are raised for meat, even though goats can benefit the Nepalese in more

ways such as milk or fiber. If Nepalese farmers can learn to adapt their farming techniques with new equipment, the goat industry in Nepal can develop a broader range of income.

## **Part I: Product Information**

### **i) Product**

For most everyday farmers, their top priority is not to feed the baby goats (kids) all day, every day. A highly efficient and reliable way to help the goat farmers of Nepal is to send them automatic kid feeders with milk replacer. This will allow the kids to have a consistent, regulated diet with free choice access and will ensure they are always content and never stressing over a lack of, or change in feed. With a large supply of kids, along with clean, healthy housing options, Nepal can easily sustain a successful goat industry.

Biotic Industries, a company located in the United States, is well known for their automatic feeders. They make many different kid feeders including the LAC-TEK model. The LAC-TEK feeder creates a constant supply of milk when needed in order to feed up to 60 kids. This particular model uses a simple method; it has a 25lb hopper located at the top of the machine and a 2.5 gallon water heater (Biotic Industries, Inc. 2015). It then dispenses the required amount of milk replacer into 1-2L of warm water, depending on the concentration of milk desired, and mixes it appropriately. There is a sensor near the bottom of the milk container that triggers more milk to be made when required. This allows the kids a consistent supply of warm fresh milk all day.

In order for the feeder to be useful for Nepal they need milk replacer. There are many Canadian companies that make milk replacer, which could be exported to Nepal. A milk replacer with high protein and fat content is required for optimum growth and development of the kids, while a low cost is still needed so the Nepalese can afford the product. The company Canadian Agri-blend is dedicated to a “high quality 100% all milk high protein and high fat milk replacer for kid goats” (Canadian Agri-Blend, nd). Therefore any well-developed milk replacer at a low price is best. Below is a comparison of a few companies that are viable options to export to Nepal.

**Table 1) Comparison of Milk Replacer of Different Brands**

Milk Replacer	Agri-Blend	Scheurwater	Grober	Mapleview
Protein (%)	22	22	22	23
Fat (%)	20	22	25	25
Price (CDN\$/25kg)	75	78	77	75

*(Information retried from: Frankhaven Dairy Goats, 2015)*

**ii) Benefits to Canada**

Sending over LAC-TEK automatic kid goat feeders is an effective way to help Canada’s economy grow as well. Even though the product is made from an American company, many of the resources used to make the machine are from Canada, as the United States “accounted for 92 percent of exports” (Industry Canada, nd.) of plastics from Canada. Approximately 90% of the

machine is made from plastic, which means that this is going to bring revenue into Canada through the oil sector. The United States production of these machines is in turn providing many Canadians with job opportunities.

In order for the machine to be able to operate, it is necessary that milk replacer is also sent to Nepal. All of the Companies listed in Table 1), except Grober, are Canadian, with all of their products being processed and manufactured in Canada. Exporting the milk replacer from any of those companies will be helping Canadian jobs. It will not only give jobs to the processors, manufacturers, and packagers work forces but also in the health inspection and transportation aspects of those companies as well. This will bring revenue to Canada and help with Canadian jobs therefore helping sustain the Canadian economy.

### **iii) Other Products**

Biotic Industries is always growing and developing, and even just recently came out with a new model called NURSO-TEK. NURSO-TEK uses the same idea as the LAC-TEK design except that it only feeds 40 kids instead of 60. This has the potential to be an even better option for Nepal than the LAC-TEK feeder since Nepal's goat herds are typically of smaller sizes than ones in Canada and the smaller feeder is a slightly cheaper option.

There are also options of other brands of automatic feeders. Most of these brands; DeLaval, Lely, etc. are from Europe, and due to none of them actually being Canadian owned or manufactured, will therefore not necessarily help the Canadian economy. These feeders could be sent to help Nepal but they would be more expensive options, with DeLaval costing over \$2000

while the Biotic Industries product only costs \$1534.30 (DeLaval, n.d). Therefore these other brands of the same feeder are not necessarily the best option to export to Nepal.

A different look on the same idea brings up the option of Milkbars, which are a product manufactured by Coburn Industries, a company located in the United States. The Milkbar benefits Canada just as the LAC-TEK product does through the oil industry. The Milkbar uses a different approach when feeding the milk replacer, one would have to make the milk replacer by hand then put it in the Milkbar, but there is only enough for one feeding so it would need to be done a minimum of three times a day for optimum benefits of the milk replacer (KidGrow, n.d.). Therefore, this alternative does not save as much time and does not have the same free choice milk benefit as the automatic feeders do. Although it does have the benefit of being a much cheaper option, costing \$111.15 CDN (Coburn, n.d.), which is a very important factor for a developing country such as Nepal.

## **Part II: Export Potential to Nepal**

### **i) Benefit to Nepal Farmers**

Automatic kid feeders are a useful option for Nepal, as the feeders are very efficient and reliable. They mix a small amount of milk at a time so that the feed is always fresh. This benefits the kids so the milk does not sit allowing bacteria to multiply, and so the milk remains warm. These standards held by the feeder encourage kids to drink regularly and help ensure they rarely get sick. This will help the farmer get the best out of their offspring's genetic potential and also save on vet bills (where applicable), medications, and potentially, loss of livestock.

The operation of the automatic kid feeder is simple and only requires you to hook up the machine to a constant water supply as well as electricity. The feeder heats the water in the machine so that the milk is always at an optimum temperature for the kids, and therefore does not need a hot water input. It takes very little time and effort to maintain and once you get the kids used to drinking from the machine, which takes about a week, the only remaining attention needed is to fill up the machine and monitor the kids, requiring about 15 minutes, twice a day. Since feeding by bottle would typically take about 3-5 minutes per kid this will save the farmer time and extra labor. The extra time can be spent on other farming tasks, or extra laborers around the farm could potentially have time for a part time job to acquire more income.

In Nepal, goats are primarily used for meat, but if their kids didn't need their milk, their dual-purpose breed characteristic could be utilized. With the milk replacer the kids are on a regulated, high protein, high fat, diet for optimum growth and development (KidGrow, n.d.). The consistency of the feed is very important in the development of kids, especially at a young age, and even with regulated diets in the female goats (does) in Canada, their milk is never consistent (DeLaval, n.d.). The milk replacer ensures the consistency and will give the farmer larger goats at time of slaughter, equaling more meat and in turn more money per animal. Since the kids will not require the doe's milk, it can be harvested by the farmer for extra income.

The automatic feeder with milk replacer, in summary, allows Nepalese farmers to get the most out of the genetic potential of their livestock, which allows for larger animals. Larger animals for slaughter and the produced milk that can now be utilized, means more income for the farmer. But most importantly the farmer is saving on time, which is most valuable for the Nepalese farmers.

## **ii) Transportation**

In order for the milk feeders to get to Nepal from Canada they can be shipped by ocean or air freight. The cheapest option is to ship multiple units to get a discounted rate, so sending 10 of the milk feeders by ocean freight will be most economical. Air freight from Vancouver, BC to Kalkata, India is \$1693.15, while ocean freight is only \$658.40 (Quotes, n.d.). Once the freight lands in Kalkata it will cost an extra \$400 to truck it to Nepal. Therefore to ship 10 units of the milk feeders from Canada to Nepal it will cost \$1058.40, or \$102.84 per milk replacer unit.

## **iii) Negatives of Exporting this product**

The automatic feeder is potentially a great tool to help Nepalese farmers, but every potentially great idea comes with some drawbacks. The largest down fall with the automatic feeder is price. The price of the automatic feeder is \$1,534.30 Canadian, which is approximately 122,728.66 NRs. Since the entire annual income of a Nepalese goat farm was “70,000 NRs by selling goats” (Change in Life Due to Goat Farming, n.d.) it makes very little economic sense for a farmer of Nepal to invest in this product.

Even if the money for the machine was not an issue, not many Nepalese have access to a constant water supply or electricity, which is necessary for the function of the machine. Therefore, that would be an extra expense for a generator to power the machine, which would not fit in their budgets since Nepal has an “estimated average GDP per capita of US\$470” (Suwal, 2015). The constant water supply might also be difficult for farmers to get as “In some of the rural regions of Nepal communities still rely on getting their drinking water from tube



wells” (Suwal, 2015). Overall with the expense and inconvenient need of resources this product is not a good idea for Canada to export to Nepal.

#### **iv) Other Options for Nepal**

Looking at the figures, it is not realistic to send this product over to Nepal. Even if there were to be government grants, it is still highly unlikely that sending over the automatic milk replacer feeders would be a proper investment for the average farmer in Nepal, even if the farmer could manage to find a water and electricity source. However, sending over the milk replacer on its own might be a better option. This way the farmers are still getting all of the benefits of better kids, on a healthy diet designed for optimum growth and development, as well as also getting the extra milk from the does to be sold for extra income, but without the expensive cost of the machine.

Another option for the farmers of Nepal is to distribute the milk replacer to the kids in a timely fashion, instead of an automatic feeder they could be taking a pail or container of some sort and fastening nipples through the plastic at the bottom of the large container. Then have it positioned in a stationary location at a proper drinking height for the kids. The farmer could then make a large amount in the container and have it available for the kids all day. In order to maintain this being a healthy option, the farmers would have to buy acidified milk replacer. Acidified milk replacer allows the milk to sit out all day, in all different types of temperatures, and not harm the kid because the acid in the milk kills the bacteria that could grow in the milk throughout the day (Anderson, 2012).

Milk replacer could still have the potential to be a good investment for the goat farmers of Nepal. Milk replacer costs about \$75 for 25lbs from Canada, costing the Nepal farmer 5,999.25 NRs. But if a government program was set up to help offset some of the costs and they imported it from a closer country that could have cheaper products it would be very beneficial for the Nepalese goat farmers.

**v)       Contacts to Distribute to Nepal**

Nepal has many agricultural programs made available to help farmers learn so that they can develop and potentially improve their farming habits. A major contributor to the expansion and development of goat herds in Nepal is thanks to the Department of Livestock services of Nepal. They put on conferences for Nepalese goat farmers to come together to talk about different challenges, goals, and improvements to the goat industry. Their last conference was “Sustainable Goat Enterprises for Food Security and Economic Growth in Nepal” (DLS, 2015). In order for the entire population of Nepalese goat farmers to get the facts and knowledge on the export idea it can be discussed at their conferences. DLS takes submissions for their conferences if you contact [goatworkshop@gmail.com](mailto:goatworkshop@gmail.com) (DLS, 2015). The best opportunity to get the farmers of Nepal educated about the import is to discuss it at the conference as this conference will be their opportunity to learn about the potential benefits as well as raise any concerns that they may have moving forward. It will also help educate them on a different idea of farming which may broaden their mind set when it comes to agriculture and allow them the chance to develop new techniques on their own.

### **Final Thoughts:**

Nepal needs a lot of help to develop from the poverty deprived country into a self-sustaining country. Canada being a well-developed country can export goods to Nepal to assist in their agricultural development. As Nepal's agriculture industry grows and develops it will help them slowly develop their potential to expand into a thriving country. Goats are a very important part of Nepal's agriculture because of their multi-purpose use and small convenient size. To help their goat industry develop Canada can export products such as milk replacer, since automatic milk feeders might not be the best export to Nepal. The idea of sending over milk replacer is a much better option. Goat farmers of Nepal are still in the midst of growing and learning new techniques of how to farm. With the help of our exports they will be at a much better state to begin on a new development stage to a sustainable future.

## References:

- 50 Amazing Facts about Nepal. (n.d.). Retrieved November 20, 2015, from <http://www.worktheworld.co.uk/infographics/50-amazing-facts-about-nepal>
- Anderson, N. (2012). Infosheet. Free-Access Feeding of Acidified Milk Setting Up the System Using Formic Acid.
- Biotic Industries, Inc. (n.d.). Retrieved October 24, 2015, from <https://biotic.com/products.php?cat=7>
- Cattle Feed Supplements - Agri-Melc Milk Replacer. (n.d.). Retrieved October 19, 2015, from <http://www.canadianagriblend.com/agrimelc.htm#Kid>
- Change in Life Due to Goat Farming. (n.d.). Success Stories. Retrieved November 23, 2015.
- Coburn. (n.d.). Nurseries for Lambs/Goats. Retrieved November 20, 2015, from [http://www.coburn.com/img/product/description/LiteratureSheets/MBLamb\\_Goat.pdf](http://www.coburn.com/img/product/description/LiteratureSheets/MBLamb_Goat.pdf)
- DeLaval (n.d.) Retrieved November 20, 2015, from <http://www.delaval.ca/Global/PDF/Sheep-Goat-Catalogue-optimized.pdf>
- DOA Nepal. (2014). Department of agriculture nepal. Retrieved from <http://www.doanepal.gov.np/>
- Franken, E. (2015) Ed Franken, Owner, Frankhaven Dairy Goats, Teeswater Ontario. Personal Communication (17 November, 2015).
- KidGro - Kid milk replacer. (n.d.). Retrieved November 22, 2015, from <http://www.grobernutrition.com/kid/kid-gro/>
- Nepal | history - geography. (n.d.). Retrieved November 17, 2015, from <http://www.britannica.com/place/Nepal>
- OMAFRA. (2014). Ontario food exports. Retrieved from <http://www.omafra.gov.on.ca/english/food/staff/export.htm>
- Quotes. (n.d.). Retrieved October 20, 2015, from <http://www.a1freightforwarding.com/quote/booking.php?quoteID=147053&CargoType=Commercial cargo>
- Trade. (n.d.). Retrieved October 20, 2015, from <https://www.ic.gc.ca/eic/site/plastics-plastiques.nsf/eng/pl01383.html>

