

Export of Freeze Branding Equipment for use on Dairy Cattle

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Part One – Product Info:

Product Description:

The products that I will be exporting to Nepal is freeze branding equipment for use on dairy cattle as well as clinics ran by experienced Canadians to teach the Nepalese farmers to properly apply the freeze brand. Freeze branding is a way of permanently identifying cattle or other livestock (Pond & Pearson, 2006). The materials needed include: a copper brand that is “formed of material 3/8” wide and 1” thick” (Pond & Pearson, 2006), liquid nitrogen for chilling the brand and a Styrofoam cooler to keep the liquid nitrogen in during the time of freeze branding. By freeze branding a cow specifically for this report a “permanent brand composed of white hair after the super-cold iron kills the pigment-producing cells of the hair follicles”.

Process:

This brand is achieved by the following method: first the iron is chilled in the liquid nitrogen for about 20 minutes initially and then another 2 minutes after each time the brand is applied to the cattle, second the hair in the area that the brand is desired must be removed to make perfect contact with the skin, this is accomplished usually using clippers, the brand is then applied to the area for 3 minutes at the most (Pond & Pearson, 2006). This process should result in a brand that can be seen within 2-3 months and as studied by (Pond & Pearson, 2006): “83% of 136 yearling cattle had white haired readable brands within 6 months after branding.”



Example of freeze brand on cow (source: <http://1.bp.blogspot.com/-4PdQWwUTr6o/TdNGql6v8RI/AAAAAAAAASQ/youq2BMvnA/s1600/W818+Freeze+Brand.jpg>)



Example of copper brands used (source: <http://stockyardsupply.com/wp-content/uploads/2013/08/FreezeBrand.jpg>)

As mentioned above the equipment that is required would be a copper brand, liquid nitrogen, and a Styrofoam cooler for holding the liquid nitrogen, also required would be a tank for the long-term storage of liquid nitrogen.

Copper brands:

The copper brands will be supplied by Copper Works located in Pickering, Ontario at 695 Liverpool Road, phone number (905) 831-6434, contact Jim Smythe for sales inquiries. The brands will be worth approximately \$115 per brand depending on the complexity of the brand required, however: for this situation, the brands needed will be very simple and likely only 2 or 3 will be required per farmer or village.

Liquid nitrogen:

The liquid nitrogen will be prepared and packaged for shipping by Eastgen located at 7660 Mill Road, Guelph, ON, contact Scott Cornish _____ for sales inquiries. The liquid nitrogen will cost about \$5/L. Also, required for long term storage of the liquid nitrogen is a tank, this tank will be worth approximately \$1000, this will also be supplied by Eastgen.

Styrofoam coolers:

Styrofoam coolers are widely available at low cost, the best deal I have found from a Canadian company is at uline.ca 1-800-295-5510. The coolers will be worth anywhere from \$0.20-\$0.5 depending on the number of coolers that are bought at one time.

Market Opportunity:

This group of products has a large market in Nepal although for the most part it is still a niche product as it would only be dairy farmers purchasing and using it. The population that this product is being marketed to remains large as it was estimated in 2014 that there are approximately 500 000 dairy farmers in Nepal (Kumar, Thapa, Joshi, & Roy, 2016). However these products are a niche product as the majority of them are only going to be used by dairy farmers which would only make up about 2% of the total Nepalese population (Kumar, Thapa, Joshi, & Roy, 2016). The only products being promoted that would not be only a niche product would be the Styrofoam coolers as they could have many applications in both agriculture and even just everyday life in Nepal. As well the liquid nitrogen may have other applications depending on the handling of it such as semen storage and medical uses . Overall the freeze branding equipment would only have a small market in Nepal as it would just be the Dairy

farmers that the products would be useful for except for the Styrofoam coolers and liquid nitrogen.

Benefits to Canada:

If these products were to be sold to Nepalese dairy farmers there would be several small benefits to the Canadian economy. To start off the production of the copper brands requires the use of copper which would mean more copper would be needed than there was before the production of these brands. Although the extra copper being produced would be very insignificant compared to the total amount of copper that is mined in Canada however this could mean a job or two that someone has and every bit makes a difference. With the liquid nitrogen, the benefit to Canada will also largely depend on how much freeze branding is done by the Nepalese farmers but more employees would be needed to prepare and handle the liquid nitrogen if there were large amounts of liquid nitrogen needed in Nepal. The extra Styrofoam containers would likely not change much in the Canadian economy as they are easily produced and can be used many times so there would not be a repetitive need for them. For the most part the benefit to the Canadian economy that the actual products would provide would be very minimal but there would not be any negative effects that these products would have on the Canadian economy.

Another possible benefit that could be created would be clinics on freeze branding ran in Nepal. For these clinics, experienced Canadians would travel to Nepal and demonstrate how to properly freeze brand. There would be a fee charged to the farmers who attended this clinic which is a possible economic benefit to Canada. Although it would take a large amount of Farmers to make this both affordable for the Nepalese and viable for the Canadians going to do these clinics, I think there is a large opportunity here economically for individual Canadians

Part 2- Export potential to Nepal:

Introduction to Nepal and Nepalese Dairy farming:

Nepal is a small Asian land locked country located between India and China. There are three regions: the northern mountainous Himalayas region, middle hill region and southern grassland region called the Terai region (Kumar, Thapa, Joshi, & Roy, 2016). The population of Canada is about 36 million and Nepal is 26 million but Canada is much larger than Nepal (unstats.un.org, 2016)(statscan.gc.ca, 2016). Another large difference between Canada and Nepal is the GDP's of each country as Canada's is about 1500 billion USD higher than Nepal's (unstats.un.org, 2016)(statscan.gc.ca, 2016) . Agriculture is the main employer as it employs

about 65% of the work force and agriculture makes up about 1/3 of the GDP for Nepal. The dairy industry in Nepal is one of the largest parts of the agricultural sector as it accounts for “2/3 of the livestock GDP” (Kumar, Thapa, Joshi, & Roy, 2016). Although dairy farming is such a large part of agriculture in Nepal it is still very low in production compared to Canada as a cow in Nepal will produce an average of 432 kg of milk a year whereas a cow in Canada will produce an average of 8176 kg milk in a year. There is obviously a great opportunity to improve the dairy industry in Nepal.

Who will be purchasing this product:

As mentioned above the dairy industry in Nepal has a lot of room for improvement. It is these farmers that will be purchasing the freeze branding equipment to improve their production. There are about 500 000 dairy farmers in Nepal most of these farmers only have about 4 to 6 cows although larger commercial operations are beginning to exist (Kumar, Thapa, Joshi, & Roy, 2016). To conclude, although the dairy farmers and the dairy sector are such a large part of Nepalese agriculture the dairy industry there is still much smaller than Canada's.

Transportation Logistics:

The equipment will be shipped to Nepal via air transport by A1 Freight Forwarding Inc. Maple, ON. Equipment will be transported using skids and containers which will travel from Toronto to Kathmandu the capitol city of Nepal. From there the equipment will need to be distributed differently depending on the circumstance of the receiving party. It will cost approximately \$2000 per container which would translate to about \$20 per farmer in terms of what 1 farmer would need to be able to freeze brand as large amounts of equipment can be fit in one container for shipment. With all other costs of ground shipping in Canada and Nepal the most it would be per farmer to get the equipment to them would be \$100 if the shipping is done at a time when other farmers are getting the equipment so that all shipments are full to ensure the best price per unit.

Needs and benefits to Nepal:

There are endless amounts of positive results from the use of freeze branding for identification and most of these results fit many of the needs Nepal has in it's dairy sector. First and most important is the fact that it is permanent identification that has been proven to produce distinguishable brands that can be seen from good distances (Pond & Pearson, 2006). These

distinguishable brands will lead to easy identification for farmers which in turn will lead to better quality milk, higher producing cows, and more efficient farming which all leads to more profitability for the farmer. There is also a chance for an improvement in the tourism sector for Nepal that comes along with all the benefits already discussed.

First is the benefits to the farmer, as discussed earlier in the paper I addressed the low production of dairy sector in Nepal compared to Canada and the ability they have to improve their productivity. The quality of milk and amount of milk produced by a cow will be improved by identification because if a certain cow can be distinguished from the rest then it is easier to make future breeding decision for the farmer as he/she will know whether a certain bull should be used in the future or not since he knows what the progeny of that bull has done. It is not just a shot in the dark at breeding decisions now for the farmers as they can decipher between the good or bad traits that certain bulls or females have. This ability to now distinguish could be even further exploited and data could be collected to make future decisions all through Nepal. These possibilities will lead to greater production by the cows and greater quality milk. Another added benefit of identification is the extra efficiency that the farmer will have now as it will be much easier to process, vaccinate and generally manage the cattle since they will be distinguished. All of these benefits will in turn lead to greater profits for the farmer.

The last benefit that the identification will provide is a boost to the tourism sector. This may not be a straight link however there is a lot of tourism in Nepal due to their mountains and scenery. These tourists come looking for quality food such as cheeses and yogurts. With the improvement, in quality of milk that identification will provide: higher quality cheeses and yogurts that can be sold to the tourists and will potentially attract more tourists. This could result in a large boost to the tourism sector.

Costs:

The factors that will be applied to the cost of this product are: the cost of the: copper brands, Styrofoam coolers, liquid nitrogen, liquid nitrogen containers, and the cost of shipping. The overall cost of the one-time charges which would include the brands, cooler and the liquid nitrogen container and the shipping of products would be about \$1250. This would not include the continuous charges of the liquid nitrogen which is \$5/L, about 5L would be needed every time branding is done. Therefore, the costs would vary depending on the size of farm and the frequency at which new animals will need to be branded.

Final Analysis:

The exportation of freeze branding equipment has its limitations but I feel that I could have a positive impact on the dairy sector while being an affordable option for farmers if done properly. The current cost of the equipment would be too high for farmer in Nepal that only have dairy farms consisting of 4-6 cows (Kumar, Thapa, Joshi, & Roy, 2016). The \$1250 + bill would be much too high to justify the use. This problem could be combatted with possible Nepal government programs aiming to make their dairy industry better. Another way that this problem could be fixed is if farmers in communities were to form a co-op of sort that would allow many farmers to share the equipment resulting a much lower cost, for example if 10 farmers were to join together that would cut the one time cost for the farmers to \$125 each which would be much more affordable and the cost would be far outweighed by the benefits that have already been laid out. It would also be beneficial for the government of Nepal to help to fund as it could lead to many great things for the country and its economy. In conclusion, the exportation of freeze branding equipment would be viable for the Nepalese farmers and government if done in a proper way the makes it affordable as it will lead to a better dairy industry and a better tourism sector.

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