

# **AGR 1110 Canada Exports Project**

**Nylon Brushes**

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**Product:**

The Nylon brushes that are going to be exported to Nepal from Canada, are sold by Spectrum Nasco, which is a Canadian branch of the National Agriculture Supply Company. This company is located in Newmarket ON. The brushes are white, although they come in multiple colours, are 8 inches long with a 3 inch wide brush at the end (Spectrum Nasco, 2014). These brushes are made at Carlisle in the United States of America, at the Oklahoma City location (Carlisle, 2014).

**Costs:**

The cost for these brushes on Spectrum Nacso is \$14.25 CAN per brush, the labour in the United States of America is \$7.25 per hour at minimum wage; although the exact rate for the Carlisle company was not available. These brushes are sold by the dozen. This brings the price for an unit to \$171.00 CAN. Not including the shipping and handling prices. The company that will be used to transport this product over to Nepal will be the A1 Freight Forwarding Company, a Canadian company that ships all over Canada and worldwide. They have direct trips by plane to Kathmandu, Nepal. For 2 boxes to be flown over to Nepal, from Canada it will costs an additional \$254.78, and when compared to that of a shipping method on a freight boat it came to \$292.20, which would have only taken the product to India (A1 Freight Forwarding, 2014). The product would have then have had to be trucked into Nepal raising the cost even higher. Which is why the product will be flown. Making the total for 2 boxes, or 24 brushes to Nepal \$425.78, without any added increases for the Nepalese to make profit. As well the product to go into the country is duty free (ARGO, 2014).

**Uses:**

The Nylon brushes are used for the cleaning of milking equipment and machinery on the dairy farms in Nepal. Since industrial methods of cleaning are not widely available in Nepal, such as mechanical cleaning machines or high technological sanitation devices, the Nepalese need low tech products and methods to keep their milking equipment clean and free of bacteria. When milk contact surfaces are rarely chemically cleaned they are thus seldom free of bacteria (Clegg, 1962). There is evidence that when washing methods are implicated daily, bacteria clusters will remain at an acceptable bacteriological level (Plamer & Cowhig, 1968).

While there are other scouring devices that can be used to clean the surfaces of the equipment such as cloths or sponges, they may trap and hold bacteria since they are made to retain water. This making them an ideal breeding ground for all types of bacteria, and parasites. Whereas Nylon brushes do not hold water for an extended period and are therefore less likely to be the source of bacterial contamination.

**Benefits to Canada:**

The sale of this export to Nepal will benefit Canada in more ways than one. It will increase the sales at Spectrum Nasco, which will in turn increase the demand for this product at the Carlisle production center, increasing the trade of imports between Canada and the United States of America. Benefiting not only Canada's economy, but that of the United States. As well build a broader export relationship with Nepal. Finally the trucking company used is Canadian, so this export will also place money back into Canadian economy, and assist in the marketing for the shipping company, by making it a better known name in Nepal, therefore they potential of increased business is possible.

These brushes are produced year round, so they will be available for export year round, never leaving the Nepalese farmers without supply, or a dry spell where the product is unavailable. The brushes in use have no impact on the environment as they do not have any harsh chemicals in them that can result in a runoff, either into the water systems or the milk. These brushes are also very durable, therefore there is no need to constantly purchase more after a short period of time.

This product is required by a large population in Nepal, as many Nepalese make their income by farming. Since over 66% of the 27.8 million population work in agriculture, there are many potential buyers for the nylon brushes. With Nepal's agriculture contributing 39% of Nepal's total GDP, there are many rural farmers that are looking for a low tech product to assist them with cleaning on their farms (Department of Agriculture, 2014). Out of the total agriculture production in Nepal, 2.9% is of dairy farming and producers.

## **Nepal**

**Transportation:** The way the product will be transported over to Nepal will start at the Spectrum Nacso in Newmarket ON, the shipping company provides a service in which the products can be picked up at the location at which they are sold. It happens that the shipping company is also located in Newmarket ON, therefore it will be a closer distance and will cut down on the overall cost. From there it will be taken to the Toronto Airport, where it will then be flown out with A1 Freight Forwarding, and be taken directly to Kathmandu, Nepal (A1 Freight Forwarding). Once there it will be trucked to local hardware stores that sell similar agricultural items, such as the Bindabasini Hardware Store located in Chhitijnagar, Kathmandu (Google Maps, 2014). Although this can pose as a problem as many of the Nepalese dairy farmers live in rural parts of Nepal and do not necessarily have road access. Meaning that only farmers with access could purchase this product directly from the stores.

## **Prices:**

In the hardware stores the product will be sold at an upscaled price in order for the store owners to make a profit from the brushes. Since with the original cost and shipping 24 brushes comes to a total of \$425.78 CAN meaning that per brush it would come to a total of \$17.75 CAN, if the price was increase by \$3 CAN so the store owner could make profit as well. Thus the final price would be \$20.75, making the price NPR 1836.70. The minimum salary in Nepal is NPR 6,100 per month, therefore it would take a Nepalese earning the minimum income approximately 10 working days to earn the money to buy a nylon brush (Dave, 2013). Although the average monthly salary is NPR 31, 808, therefore Nepalese in these bracket would only take 5 working days to reach the amount needed to purchase a nylon brush (Salary Explorer, 2014).

This price point is a little out of reach for the typical Nepalese farmer, because although it would only take them 10 working days to reach this price, they still have to support their family, and buy their basic necessities to live while saving for this product. Which is why the nylon brush is an investment product that is intended to have more spent on it. In turn making better quality products from their farm, to be sold at an increased price, therefore making a larger profit in the long run.

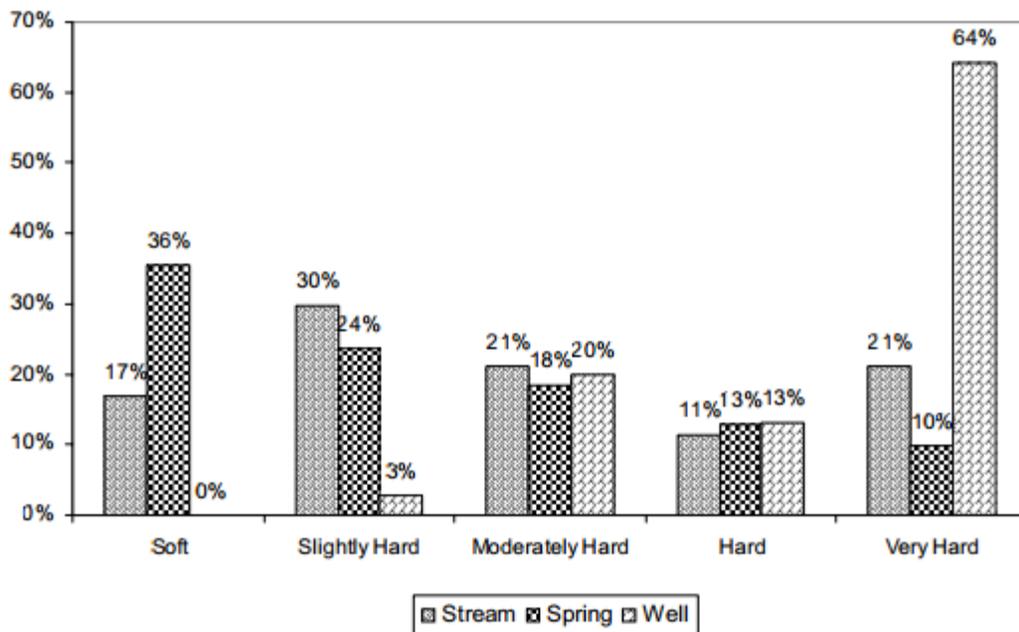
## **Disease Prevention:**

Since they brush is made out of nylon, and will reduce the bacterial amount that will form on the milking equipment, then the risk of disease will also decrease. Hepatitis is a common disease

across Nepal. It is transmitted through water and food consumption and use. If there is an inadequate water supply along with poor sanitation and hygiene the chance of getting Hepatitis is greater (WHO, 2014). There is also the chance of contracting E. coli in countries such as Nepal, since many pathogens enter the system at farm level, there needs to be an increase in the quality of sanitation at this point in the food production so that there is a lower chance of the E. coli spreading further through the chain. The only way to significantly reduce the incidence of food borne illnesses is to provide effective intervention strategies along the entire food chain. Most importantly starting from the source (Sigurdson). The requirements that are needed for bacteria to grow and prosper are a source of water, nutrients that can be found in the milk solids if left on the equipment, proper temperature, which is optimal in Nepal with their generally warm climate. Finally a lack of inhibitors such as sanitizers or chemical preservatives (Sigurdson).

**Partnership Products:**

This is why in conjunction with the nylon brushes a chlorinated alkaline disinfectant should be used. One that can be used with all the conditions that are on the Nepalese farms. One of the biggest obstacles that need to be accounted for in Nepal is that most farmers only have access to hard water sources. When tested by the *Statistical Models and Water Quality Characterization of Source Water in Nepal*, 270 water samples from different intake sources of Nepal, it was concluded that well waters were the hardest with more than 60% of the samples reaching a hardness above 180mg/L, and spring and stream water showed only 10% and 20% in the same range, as seen in the figure below (Shrestha & Shrestha, 2011).



**Figure (Shrestha & Shrestha, 2011).**

Effective cleaning of milking equipment begins with analysis of the water supply for mineral content of hardness, and the choosing of a cleaning compound that is compatible with that water. In areas that water hardness exceeds 10 grams per gallon, it may be necessary to increase detergent concentration (Jones, 2009). The alkaline cleaners usually contain basic alkaline, phosphates, wetting

agents, and chelating agents. They will dissolve milk fats, proteins, and carbohydrates, and loosen and suspend other solid particles so that they can be removed by a brushing action (Jones, 2009). Therefore the cleaners recommended to use in Nepal should be easy to use, as they will not have access to high tech machinery or the instructional education needed in order to use such machines. The detergent should also be fully stable, capable of reliable bacterial action, adaptable to a wide variety of conditions, the equipment it is being used on and with, and the materials that it is interacting with (CP Industry, 2014). It also needs to be compatible with manual washing techniques as those are the ones that will be practiced in the Nepalese dairy farms. Finally the alkaline detergent needs to be suitable for use in hard water areas as stated before, most water supply in Nepal is hard water (Biocel, 2014).

Product	Characteristics	Recommended	Made In
Multi San from Biocel Ltd	<ul style="list-style-type: none"> <li><input type="checkbox"/> Alkaline chlorine liquid milking plant/tank detergent sterilizer</li> <li><input type="checkbox"/> Suitable for hot and cold water washing</li> <li><input type="checkbox"/> Suitable for use in hard/ soft water areas</li> <li><input type="checkbox"/> Low foaming formulation</li> <li><input type="checkbox"/> Can be used with manual washing systems</li> </ul>	Yes, as it is the most beneficial and fitted to the needs of the farmers in Nepal.	Ireland
Chlor Soak from CP Industries	<ul style="list-style-type: none"> <li>• Easy to use</li> <li><input type="checkbox"/> Fully stable</li> <li><input type="checkbox"/> Capable of reliable bactericidal action</li> <li><input type="checkbox"/> Adaptable to wide variety of conditions, equipment and materials</li> <li><input type="checkbox"/> Completely effective in control of all mold problems</li> <li><input type="checkbox"/> Bacteria destroyed on contact and a sustained</li> </ul>	Yes, this product would meet the needs of the farmers, with added guaranty of bacterial control, and lasting strength.	Canada

	bactericidal action is retained throughout the life of the		
PAK-20 Alkaline-Active –Chlorine Sanitizing Detergent For Milking Systems	Did not list the characteristics of this product.	The reason it is included along with the first two, is its location. Although this could be a suitable detergent for the use of Nepalese dairy farmers.	Turkey

By strictly analyzing the characteristics of the three, the MultiSan and Chlor Soak would both be suitable for the cleaning of the milking and dairy equipment on the dairy farms in Nepal. Although prices were not able to be attained as you needed to actually purchase the item to see the price. It is reasonable to speculate that they would cost upwards to the high hundreds, after shipping to Nepal with original costs.

**Profitability:**

The use of the detergent with the nylon brushes could be very beneficial to the Nepalese, industry’s obligation to meet that request. As all consumers have choice and if the dairy industry does not meet their needs, they will buy other products, for instance they will import more milk and milk products from India (Johnson, 2000). This is why a good milking routine is the key factor in the production of quality milk. When using the right routine on a dairy operation , the farms should be able to milk cows faster, get more milk, have better milk quality, and in turn be more profitable (Johnson, 2000). If the Nepalese milk quality is low their milk will be less profitable as the consumers prefer higher quality milk. Part of the quality is the conditions it is produced in. Better sanitation means lower bacterial count, hence better quality milk product for

the farmers to sell. Thus better quality means more profitable product. Therefore with better systems in place the farmers can produce higher quality milk to increase their overall income. Moreover, they can be able to afford more equipment and necessities for their farms and families.

### **Investment:**

Although the investment of buying the nylon brushes by individual smallholder farmers there is the possibility that cooperatives may be beneficial for grouping together to purchase multiple brushes that could be distributed to the farms in that those cooperative villages that are in most need of a cleaning device. Increasing the overall income for the village, with their higher quality milk products, and in turn could purchase alkaline detergent as it comes in 10L to 100L drums. It is an expensive product, but as a coop they could purchase a 25L drum to start, and then individual dairy farmers could purchase smaller amounts of the solution, making it a better availability to the farmers.

### **Marketing:**

To get the word out about these brushes so that the farmers can start using them to better their farming practices a market strategy should be implemented in Nepal to promote this product. Signs should be placed in the stores where the brushes are available, as well there should be posters placed in the rural villages so that the farmers who cannot go into the city frequently can also be aware of the product's availability. As well when purchased by a farmer in a village with multiple farmers in the area, the word of mouth method could be implemented. Since not a lot of the rural farmers in Nepal have access to internet or advanced technology the use of social media would not be as realistic as a strategy in Nepal as it would be in countries such as Canada. Therefore the simplistic methods of marketing would be the most beneficial to the country.

### **Canadian Loans:**

Since the start up costs may be high, as this is a new product from Canada being imported to Nepal, the Nepalese government may need a way to initially purchase the item. The company Export Development Canada provides foreign buyers with the funds necessary to finance the purchase of Canadian goods or services. They will provide loans directly to them or through another financial institution, such as one of their own banks. These loans can be provided to foreign companies purchasing capital goods which are typically financed over at least two years. As well, any foreign buyer of Canadian goods can inquire about their financing services, there are no qualifications needed to apply for this service (EDC, 2014). Since the loan service allows a two year time frame to pay back the loan, the Nepalese will have time to sell and market the product in order to repay the loan. Payments can also be set up, so they do not have to sell a lump sum of money to pay at one time, they may split up the payments, making it easier on the Nepalese store owner, or investor to pay the loan back.

### **Competition Products:**

With any product that is being exported to a country there are competition products that may be cheaper, or better quality. There is one brush available on Alibaba that is made in China, therefore the shipping costs would be lower, and it would be easier to implement into Nepal. There are also two nylon brushes found on Amazon that are found in Canada, this would be a competition export item from Canada if it were sold in Nepal. Listed in the chart below are the brushes with their prices and characteristics.

Brush	Characteristics	Price	From
<b>Original Product:</b> C05961NY All White Nylon Brush	Outlasts many fiber brushes. Rugged plastic block. 100% stiff white crimped nylon bristles. Bristles can't soak up bacteria. Power grip handle, designed for dairy sanitation. 8 inches long	CAN \$14.25	Spectrum-Nasco.ca Canada
Soft grip iron handle PP fiber scrub Nylon fiber scrub brush	Minimum order amount is 5000, this could pose as a problem for the Nepalese. As that many would cost minimum U.S. \$2500	U.S. \$0.50-0.70	Alibaba.com made in the China Mainland
Magnolia Brush 455-10DN 10in Nylon Brush W-55-Hdl 2F02A1D	Wood handle that may trap water and become a breeding ground for bacteria	CAN \$32.00 The brush other brush planning on being exported is only \$14.25 CAN	Amazon.ca Canada
Tough-1 Nylon Rice Root Wash- Down Brush	Hand grip brush, that could possible pose as a threat to the export of the original product, as it is cheaper.	CAN \$5.16	Amazon.ca Canada

### Benefits:

These brushes would overall benefit to the country of Nepal, as they would help prevent disease when used properly with the right detergent, improving the health of the Nepalese people. The use of these brushes could increase the profitability of the milk products produced in Nepal, as they would be of a higher quality. As well the nylon brushes are low tech, therefore anyone can use them, no training or qualifications needed. To broaden the market for these brushes, they can have expanded uses beyond dairy farming. Nylon brushes could be used to clean the whole barn, bringing the sanitation and cleanliness of the overall farm up, preventing bacterial growth not only on the milking equipment, but the whole barn. They can also be used for the cleaning and preparation of vegetables, specifically root vegetables. Thus cleaning the soil and manure off more thoroughly and preventing spread of disease that may have been in the soil. Finally they may be used to clean items such as boots, should the farmer have any (Valleybrush, 2013). Cleaning the boots would prevent the soil and manure of the field from being tracked into the living quarters, and would reduce the amount of pathogens that the family would be intact with daily.

In conclusion these Nylon brushes would benefit Nepal, although there are some issues with the prices and the initial startup of the product, once implemented into the country on farms this product could overall increase the productivity, quality, and sanitation of the farms. Hence the economy could truly benefit from the export potential of the nylon brushes.

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