

Canadian Agrifoods Export to Nepal:

Scour Solution

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Part I: Product Information

Introduction of Product

Scour solution is a product used in Canada to help farmers treat bacterial enteritis which is also known as scours. With this product being exported to Nepal, it will be able to help the Nepalese farmers to control bacterial enteritis within their bovine herds. This product is an easy to use medication with a plunger included that dispenses 1mL of medication per pump. It should be administered to the animal's feed, drinking water or milk following the recommended dosages per kilogram on the side of the bottle. It should be given to the animal immediately once scours are noticed and medication should continue for 1-3 days. Scour solution should not be given to lactating dairy cattle, animals with urinary tract obstruction, pyloric obstruction or atony of the stomach or horses with glaucoma. This medication needs to be kept out of direct sunlight and stored between 15°C-25°C (Scour Solution (Canada) for Animal Use-Drugs.com, n.d.).

Health Information of the Product

Scour solution contains two active ingredients: Neomycin sulfate and Methscopolamine bromide. Neomycin sulfate aids to kill the bacterial enteritis causing the animal to scour while methscopolamine bromide helps to reduce the loss of fluids that is associated with scours.

Although this product works for bovine animals, both dairy cattle and beef cattle, it can also be used to treat dogs, horses, sheep, swine and veal. When administering this product to the animals, it is recommended that the animal should not be slaughtered for the use of edible products for: cattle- 30 days and sheep/swine- 14 days after the last treatment given (Scour solution (Canada) for Animal Use- drugs.com, n.d.).

Company

Scour solution is manufactured by Vétoquinol which is located in Lavaltrie, Quebec and another location in Edmonton, Alberta. Vétoquinol was established by Joseph Frechin in Lure, France back in the 1930's. This company is a family owned business and eventually was brought to Canada in the 1990's to be able to provide for the entire North American market. Their goal as a company is to make products that prevent and treat diseases for all animals (Vétoquinol, 2015).

As of December 31, 2011, Vétoquinol has around 1750 employees all distributed in 23 countries with 140 distributors. This facility is also located in Germany, Belgium, Austria, Brazil, and so many more countries (Vétoquinol, 2015).

Different Products from the Same Company

Vétoquinol manufactures and distributes a wide range of medications for different animals and different health reasons. Calf Lyte II and Calf Lyte II HE is a powder substance that is mixed with warm water to dissolve the powder and be administered to the calf orally. This medication helps with dehydration accompanied by scours, adds nutrition to new born calves with diarrhea, and aids with the electrolyte imbalance, and acidosis. However, Calf Lyte II is packaged in a 76 gram pouch while Calf Lyte II HE is packaged in a 185 gram pouch (Vétoquinol, 2015).

Electrolytes Concentrated, another Vétoquinol product, can be used in the treatment of cattle, pigs and chickens for symptoms of bacterial enteritis. This medication is made by mixing 60mL of electrolytes concentrated and 945mL of water to give approximately 1L. In cattle, the mixture should be prepared fresh every day and given to the animal 2 times a day for 5 days or

until the animal is eating properly again and the symptoms of diarrhea and dehydration disappear (Vétoquinol, 2015).

Electrolytes Plus is a multi-vitamin and electrolyte mixture that is water soluble for poultry, pigs, cattle, sheep, and horses. To help bovine herds heal from bacterial enteritis, Electrolytes Plus helps them to rehydrate and gain proper electrolyte balances. It can be administered to the animal by mixing a pouch of powder to the animal's drinking water (Vétoquinol, 2015).

Product	Description	Warning	Price (CDN)	Price (Nepalese Rupees)
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Product	Description	Warning	Price (CDN)	Price (Nepalese Rupees)
Calf Lyte II	<ul style="list-style-type: none"> • Powder in a 76gram pouch • Dissolve in warm water • Administer orally • Repeat 2-3x daily or as necessary • Shake well before feeding • Discard if not used after 24 hours 	<ul style="list-style-type: none"> • If animal develops upper gastro-intestinal obstruction, do not use • Do not use in moribund animals 	24x76g=\$82.70+ tx	6617.99
Calf Lyte II HE	<ul style="list-style-type: none"> • Powder in a 185 gram pouch • Source of dextrose • Dissolve in warm water • Administer orally • Repeat 2-3x daily or as necessary • Shake well before feeding • Discard if not used after 24 hours 	<ul style="list-style-type: none"> • If animal develops upper gastro-intestinal obstruction, do not use • Do not use in moribund animals 	12x185g=\$73.20 + tx	5857.76
Electrolytes Concentrated	<ul style="list-style-type: none"> • 4L jug • Source of dextrose • Add to water according to body weight • Repeat 2x daily for 5 days • Prepare fresh • Discard unused portions 	<ul style="list-style-type: none"> • Animal may be incompatible with additives • Adverse reaction may occur, continue use 	4L=\$55.70+ tx	4457.34
Electrolytes Plus	<ul style="list-style-type: none"> • 400 gram pouch of powder • Add to animals drinking water • Prepare fresh • Treat for 5 days or until animal is eating again and dehydration effects disappear 	N/A	400g=\$11.10+ tx	888.27

Table 1: Comparing the different medications produced by the same manufacturer and comparing the price in Canada to Nepal

Comparing Different Products within Different Companies

In Canada, there are many different companies who make medications for all animals. Bimeda-MTC is a company located in Cambridge, Ontario since 1964 who sells all of their products world-wide. They make all kinds of medications for pigs, cattle, both beef and dairy as well as horses. Bimeda-MTC makes Electrolyte Infusion which is an intravenous electrolyte that helps to rehydrate calves and fix electrolyte disturbances and can be sold individually or in a case of 12 (Bimeda, 2015).

Can-Vet is located in Guelph, Ontario and was established in 1988. They are a Canadian veterinary pharmaceutical as well as an insecticide manufacturer. One product this company makes that is comparable to Scour Solution, is called Scour Plug. Scour Plug is distributed with 25 boluses per bottle and uses one of the same ingredients that Scour Solution uses, neomycin. This medication can be used on bovine calves and foals for diarrhea. It replaces electrolytes that have been lost while the animal has scours and helps to clear bacterial respiratory tract infections (CanVet, 2015).

Product	Company	Description	Warnings	Price (CDN)	Price (Nepalese Rupee)
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Product	Company	Description	Warnings	Price (CDN)	Price (Nepalese Rupee)
Electrolyte Infusion	Bimeda-MTC	<ul style="list-style-type: none"> • 1000mL bottle • Warm to body temperature before administering • Intravenous injection 	<ul style="list-style-type: none"> • If solution is not clear, do not use • Additives in the solution may be incompatible with the animal • Do not keep partially opened bottle 	1000mL= \$17.25+ tx	1380.41
Scour Plug	Can-Vet	<ul style="list-style-type: none"> • 25 boluses/bottle • Same ingredient as Scour Solution, neomycin • Replaces electrolytes 	N/A	25/bottle= \$25.75+ tx	2060.62

Table 2: a comparison between the different companies supplying different medications for bovine bacterial enteritis and looking at the price difference between Canada and Nepal.

Benefits to Canada

By exporting this product, it will be a great attribute to Canada because it will increase sales for the company meaning they will have to hire more workers to keep up with the demand of the product which intern will help to decrease the unemployment rate. Exporting products will not only decrease the unemployment rate but it will also strengthen the economy and be encouraged to grow while staying at a low-tax environment (Fast, 2013).

Contacts

Vétoquinol contacts from the export team:

Name	Position	Address	Phone/Fax	Email
Philippe Dubois	International Sales Manager	2000 Chemin Georges, Lavaltrie, Qc J5T 3S5	P: (450)-586-2252 F: (450)-586-4649	pdubois@vetoquinol.ca
Christine Caudrillier	International Sales Support Manager	2000 Chemin Georges, Lavaltrie, Qc J5T 3S5	P: (450)-586-2252 F: (450)-586-4649	ccaudrillier@vetoquinol.ca

Table 3: Vétoquinol contacts in Canada

Dairy Industry in Canada

In Canada, 98% of farms are family owned and operated with the vast majority found in Ontario and Quebec. On the average dairy farm, there will be about 73 cows milking who will give the highest-quality and safest product for consumers (Holstein Canada, 2015). As the years go on, there are fewer farms around but more cows per farm. As of 2005, the number of cows per farm has increased by 13% because of better nutrition, disease control and genetic advancements that have also lead to the increase of milk production from each cow (Canadian Dairy Commission, 2015). The dairy industry works under a supply management system which involves a planned domestic production, administered pricing and dairy product import controls. The milk produced in Canada is classified under two types of markets. The first market is called the fluid market which counts for 37% of the milk production. Table milk and fresh cream fall under this category. The second market is called the industrial market which is remaining 63% of milk production. Butter, cheese, yogurt, and ice cream are manufactured products that are classified as being an industrial market (Canadian Dairy Commission, 2015).

Part II: Export Potential to Nepal

Introduction to Nepal

Nepal is a small country located in South Asia between China and India. Nepal can be divided up into three regions; mountain, hill and terai (Nepal Tourism Board, 2015). The mountain region, also known as the Himalaya Region, is home to 15% of Nepal's land and is home to the world famous mountain, Mt Everest. Plant life and animals are very abundant in this region. In the hill region, the capital of Nepal, Kathmandu, lies within and contains 68% of the total land. It is most popular for its wild animal species and medicinal herbs. Finally, the terai region covers the rest of Nepal's land which is home to 48% of the Nepalese and has most of the agricultural farming land (Z-Index Media, 2015). They have cool summers and harsh winters in the north with subtropical summers and mild winters in the south. The population has over 31 million people with the number one language being Nepali and Hinduism being the top religion (The World Factbook, 2015).

Consumer

With Nepal's herds not increasing very rapidly, the farmers of Nepal would buy this product to keep their herds healthy and increase them in a timely manner. Scour solution will not be sold at retail stores but can be found at a veterinary hospital. This product is a 500mL bottle at the cost of \$22.09 plus tax in Canadian dollars and is 1763.60 Nepal rupees. Veterinary practices can order this product in bulk, which comes as a case of 12x500mL bottles, which will cost \$234.60 plus tax in Canadian dollars and 18,729.75 Nepal rupees (Vétoquinol, 2015). Scour solution is very safe to use by anyone but should be kept out of reach of children for safety purposes.

Products from Different Nations

Product	Location	Description	Price (CDN)	Price (Nepal Rupee)
Oxytetracycline HCl Powder 20%	China	yellow powder Dissolve in water 1kg/box or 25kg/drum	\$6.21	496.01
Vemedim	Vietnam	Powder liquid (needle) 100g/box or 1kg/box	N/A	N/A
Neomycin Sulphate	China	white powder 100g/bottle given orally	\$2.14	170.93
Coccidiosis	South Korea	oral liquid	N/A	N/A

Table 4: comparison of different products from different companies internationally

Benefits to Nepal

Scour Solution will benefit Nepal greatly because 30-40% of their calves within the first four days of life will develop scours, especially new born calves in the spring. With the percentage so high, it is said that calf scours are one of the major causes of livestock death in Nepal (Dorji, Roder, & Sjiu, 2005). By using scour solution, it will decrease the mortality rate of calves, helping the herd size to increase over time. When the herd size increases it will give the farmers an opportunity to meet the growing and high demand of processed and fresh dairy products.

Since 80% of the Nepal population consists of farmers, another benefit for Nepal would be giving them another option to choose from to cure bacterial enteritis in their herds.

Contacts

Name	Contact
Nepal Veterinary Association	977-1-446-7791
Himalayan Animal Rescue Trust	977-615-26451
Annapurna Vet Clinic and Pet Shop	977-1-446-9008
Kathmandu Veterinary Clinic	977-1-472-0266
Arohan Vet Pharma	977-1-427-3436
Himal Vet Center	977-984-136-3009

Table 5: Veterinarian contacts in Nepal**Dairy Industry in Nepal**

In Nepal, cows, buffalo and yaks are used for milk production, however, yaks give a lower milk yield. The Dairy Development Corporation, also known as DDC, is an organization that was established in 1969 under the Corporation act. DDC has come up with many milk supply schemes that will meet the demand for dairy products. Currently DDC has 36 milk collection districts throughout Nepal. There are 75 thousand families that help to make up 214 thousand liters a day working out to be 3 liters of milk per day from each farmer (Joshi and Bahadur, 2015).

Area	Number of milking cows	Number of milking buffalo	Total annual cow milk production (kg)	Total annual buffalo milk production (kg)	Annual milk production/milk animal (kg)	
					Cow	Buffalo
Hill	428,274	527,808	152,455	403,075	366	764
Mountain	98,087	70,433	32,027	48,908	327	694
Terai	258,579	222,679	112,138	212,957	434	956
Total	784,940	820,920	296,620	664,940	378	810

Table 6: Milking cow and buffalo populations including total milk production/year and yearly milk production/ animal (Joshi and Bahadur, 2015).

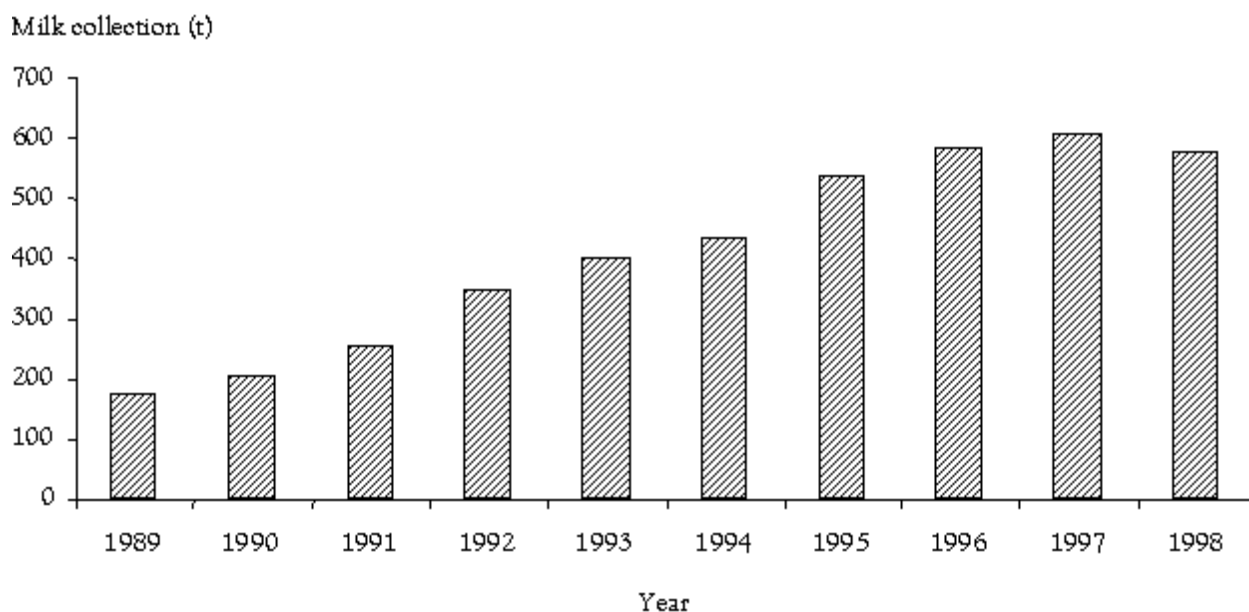


Chart 1: Increasing milk collection when DDC became in effect and tried different milk supply schemes to meet the demand of dairy products (Joshi and Bahadur, 2015).

Transportation

In order for Scour Solution to get to Nepal, we will transport it to the Toronto Pearson International Airport, Mississauga, and fly it to the airport in Kathmandu. Packaging a box of 12x500mL of Scour Solution weighs approximately 6kg. The FedEx truck will pick the medication up from the manufacturer in Lavaltrie, Quebec and take it to the Toronto Pearson International Airport, Mississauga. The transportation cost to have scour solution transported by FedEx Economy is \$47.12 for the case of 12x500mL weighing at about 6kg. For just one bottle of scour solution, 500mL, being transported by FedEx Economy to the Toronto Pearson International Airport would cost \$34.94 weighing around 0.5kg (FedEx, 2015).

From the airport, the product will be flown by FedEx International Priority to Tribhuvan International Airport in Kathmandu, Nepal. For a case of 12x500mL of Scour Solution, it will

cost \$472.65 to be flown from Mississauga, Ontario Canada to Kathmandu, Nepal while one bottle will cost \$173.49 (FedEx, 2015).

Once the plane has landed in Tribhuvan International Airport in Kathmandu, Nepal, Scour solution will then be loaded on to a truck to be taken to the different veterinary clinics to be sold to farmers with bacterial enteritis issues.

Company	Quantity	Transportation	Destination	Weight	Price
FedEx	12x500mL	FedEx Economy Truck	Lavaltrie, Quebec to Toronto Pearson International Airport, Mississauga	6kg	\$47.12
		FedEx International Priority Plane	Toronto Pearson International Airport, Mississauga to Tribhuvan International Airport, Kathmandu, Nepal	6kg	\$472.65
Total (CDN)					\$519.77
FedEx	1x500mL	FedEx Economy Truck	Lavaltrie, Quebec to Toronto Pearson International Airport, Mississauga	0.5kg	\$34.94
		FedEx International Priority Plane	Toronto Pearson International Airport, Mississauga to Tribhuvan International Airport, Kathmandu, Nepal	0.5kg	\$173.49
Total (CDN)					\$208.43

Table 7: comparing prices between shipping a case of 12x500mL and 1x500mL from the manufacturer to Toronto Pearson International Airport to Tribhuvan International Airport.

Trade between Canada and Nepal

Since 1965, Canada and Nepal have established a relationship together that included a development assistance program that ran from 1968 to 2013. Canada first entered Nepal in 1952 when it joined the Colombo plan. Canada invested about \$470 million (Canadian) over the last four decades. By joining the CIDA (Canadian International Development Agency) program, Canada has been able to help with small and large projects in Nepal to start building organizations and institutions to start development. Examples include; national airlines, water and energy, land survey departments, district governments, local community groups, bar association, health workers, farmer cooperatives, and finally human rights alliances (Government of Canada, 2014).

Between Canada and Nepal, they have a two-way trade ranging from \$15-\$23 million per year. Canada exports around \$7 million to Nepal which includes goods such as aerospace, machineries, paper and paper board, vegetables, optical instruments and appliances. Nepal exports around \$11 million to Canada and includes goods like garments, textile and apparels (Government of Canada, 2014).

Unknowns and Future Studies

Future studies for this report would require to keep costs up to date as well as ensuring the products are still being made in Canada from the same manufacture. If this product was chosen to be sent to Nepal, contacting veterinary hospitals to see if they would be interested in importing this product into their business and then selling it to farmers in Nepal. Also, contacting some farmers of Nepal would be beneficial before actions take place to give them information on the product and to ensure it would be something they would buy to increase herd size, herd health and decrease mortality rates in calves.

Some information for this report was unfortunately not found. Prices for exporting scour solution from Canada to Nepal when comparing products from different nations was unable to be added and documentations to be able to export the product from Canada and import it to Nepal was not acknowledgeable.

Recommendations

It is recommended that Canadians try to make a product that is just as effective as Scour solution but is either in a smaller quantity or more cost efficient for the average Nepalese farmer to afford. Currently the average Nepalese farmer makes 6100 rupees a month and with this product it would cost them 1763.73 Nepali rupees, over a third of their monthly income (The Longest Way Home, 2013).

Since most of Nepal has a part in agriculture, this product would be very beneficial to them! Scour Solution is highly recommended to Nepal to better their herds, decrease bovine deaths, have high quality dairy products both fresh and processed, and meet the high, growing demand for dairy products.

Conclusion

In conclusion, Scour Solution is a very effect drug that will do great things for the dairy industry in Nepal. It is very easy to use by anyone and is harm free to have. This product doesn't require needles or boluses, it is as simple as putting it in the milk, water or feed of the animal to kill bacteria enteritis that is causing the animal to become ill. Even though this drug is very useful in bovine dairy animals, it also helps beef cattle, dogs, horses, sheep, swine and veal, making it effective and versatile (Vétoquinol, 2015).

This product is very expensive for the Nepalese farmer to afford, however, there are many other options for them to consider. Vétoquinol makes other medications to help with

bacterial enteritis that are cheaper but would require more time management and labour. From exporting this product, it will provide a higher demand meaning more jobs will become available which will decrease the unemployment rate here in Canada.

This product does cost \$22.09 plus tax per bottle which works out to be 1763.73 Nepali rupees. Transportation costs on top of that are \$208.43 Canadian for just one bottle of Scour Solutions to be picked up from the company, taken to the airport and flown to Kathmandu, Nepal.

Finally, Canada and Nepal have a good relation to one another since 1965. Canada has helped Nepal for many years by being an important role in small and large projects including to help build national airlines, water and energy, land survey departments, district governments, local community groups, bar association, health workers, farmer cooperatives, and finally human rights alliances (Government of Canada, 2014). With this they have started to develop Nepal and will continue to do so in many years to come.

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