Water Buffalo Milk Soap

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History Of The Water Buffalo

The water buffalo (*Bubalus bubalis*) is thought to have originated in Southern Asia. There are two classifications of water buffalo: river buffalo and swamp buffalo. River buffalo make up 70% of the water buffalo population (FAOSTAT) (1) and are raised mostly for milk production whereas swamp buffalo are considered "draught animals" and tend to be used for help in cultivation practices or for meat production. These buffalo have only recently become domesticated. They are generally very easy to care for and don't take much human labour. Buffalo are vegetarians and will only eat grasses along with a few other basic crops (2). Water buffalo are currently an endangered species living in tropical or subtropical areas with a good amount of rain and swamps, however there are several zones in which they are protected including Nepal, India and Thailand. Generally in Nepal, men are the ones who will take care of livestock as women care for other planted crops (3).

Water Buffalo Milk

Water buffalo milk is a great source of nutrients and is becoming more widely consumed. In Nepal, large portions of households will grow cash crops while 45% of these famers also sell buffalo milk as a form of income (4). Nepal also has a total of 836,500 dairy buffalo, which contributes to just over 50% of the nations milk production (5). Even though men have a great

role in taking care of the livestock, there are great possibilities for integrating women into the buffalo production especially in the milking process. Buffalo milk is much higher in fat and fatty acids, protein, caseins and many other nutrients compared to any other milk consumed today. The fat in this milk contains a high amount of triglycerides, which are short-chain unsaturated fatty acids (6) and can be quite beneficial to human health. Water buffalo milk is also much higher in vitamins and minerals when compared with cow's milk. These minerals include almost double the amount of calcium, phosphorus, magnesium, vitamin A and vitamin C (2). Since water buffalo milk is high in nutrients, it is a much better option to incorporate into the diet especially in areas with a high level of poverty. Milk from the water buffalo can also be used in different products and is commonly used in different types of cheese production.

Water Buffalo Milk In Soap

Due to the fact that water buffalo milk is high in many nutrients it can also be beneficial to incorporate the milk into soaps and other beauty products. The milk from water buffalo contains a high amount of fats and proteins that help to make skin feel much more nourished and moisturized. Another component in the milk is glycerin, which helps make the soap more nourishing and softening for the skin (7). Typically in soaps, different types of plant oil are used such as coconut oil or olive oil because of their high fatty acid profile. Since water buffalo milk also has a high fatty acid profile it can have the exact same nourishing effects on skin.

Soap Making Process

Soap making can be quite an industrial practice, which at times involves large heavy-duty machinery, however for handcrafted soaps only basic utensils are needed. Materials needed

include a large steel pot and other utensils for mixing the ingredients together and that is all that are needed (8). The soap making process is important and needs to be paid a decent amount of attention for certain steps. This process is not very labour intensive. Although soap is made into a commercial business, handmade soap containing animal fats has been proven to be better for the skin since it does not contain as many harmful chemicals such as sodium silicate which can be harmful to the skin (7). In the soap-making process, lye (Sodium Hydroxide) is combined with a fluid; in this case the buffalo milk which is then added to a combination of melted tallow (animal fat) and other plant oils (8). The combination of the fat or oil with the lye creates a chemical reaction called "saponification" (7) which is important as it creates soap and glycerin.

During production, some constraints may be encountered such as materials to be used in production. The main difficulty would be finding products that are inexpensive and ready to use such as oils and especially lye however there is no substitute for lye as it is the chemical compound that creates the reaction to for the soap (9).

Export Potential

The export of Nepalese water buffalo soap to places in the western society could have a great potential especially with corporations that have a Fair Trade system such as the Body Shop and their "Community Trade Programme". The Body Shop would be one of the largest potentials for the soap as they tend to bring in a lot of foreign exports and sell several of these products between $10-$40CAD.

The Body Shop is a large cosmetic corporation that tends to use many ingredients that have been imported in their products and in return, they help to support the communities during the

production of the item. In some cases the Body Shop has even supplied natural ingredients and materials for the workers to use in the product.

The Community Trade Program that this corporation uses is a system that allows the exporter to make a profit off of their products that are being exported. Along with the community making a profit, this program ensures that the suppliers' community is guaranteed a living wage (10).

Two other export potentials include Aveda and Lush, which are two companies who encourage the use of natural materials in their products. Aveda is also a company which tends to use much more natural products as opposed to chemical products. Aveda has also been purchasing paper from Nepal for their holiday gift sets, which has employed nearly 5,500 people. Lush is another corporation that uses all natural ingredients in each one of their products and avoids the addition of chemicals while each product is hand made and materials are hand selected.

The following is contact information for the 3 head offices listed above:

1. **The Body Shop**
   55 York St
   Toronto Ontario M5J 1R7, Canada
   Phone: 416-441-4189
2. **Aveda**
   462 Cristina St N
   Sarnia, Ontario N7T 5W4, Canada
   Phone: 519-344-9808
3. **Lush**
   8365 Ontario Street (at 67th),
   Vancouver BC V5X 3E8, Canada
   Phone: 604-639-5874

References

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(2) Lind, O., Svennersten-Sjauna, K., & Bruckmaier, R. M.Efficient dairy buffalo production.

(3) Degen et al., 2007

(4) Brown, S., & Shrestha, B. (2000). Market-driven land-use dynamics in the middle mountains of Nepal. Journal of Environmental Management, 59(3), 217-225.

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(7) Warra, A. A. (2013). A report on soap making in Nigeria using indigenous technology and raw materials. African Journal of Pure and Applied, 7(4), 139-145.

(8) Personal communication Brenda Reid, owner of "The Crayon Crew" thecrayoncrew@xplornet.ca

(9) Eisenherg, P. H. (1958). United States Patent o, 3–6.

(10) International Trade Centre (ITC). (2012). The north american market for natural products.