

Water Buffalo Meat

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Introduction

Nepal is home to many domesticated livestock species such as the Water Buffalo (*Bubalus bubalis*). Water Buffalo is a domesticated bovine species that resides primarily in Nepal and South Asia, although it can be found in parts of the Mediterranean and North America, and is farmed for its milk and meat (3). This species originates from the same family as the more commonly known Cattle (*Bos taurus*), however, there are notable differences in farming, dairy and meat production, breeding, and nutritional aspects between the two species.

Farming and Production

Although Water Buffalo are farmed in some parts of North America, the farming practices differ greatly when compared to those in Nepal. There are an estimated 3362 Water Buffalo in Nepal, with over 70% being River Buffaloes (7). River Buffaloes are large in size and are bred specifically for milk yield and meat production, where as Swamp Buffalo are more stocky in size and are better suited towards draught power and labour (2). These animals are farmed mostly by small-scale producers in developing countries, who raise between 2 to 22 animals in mixed crop–livestock systems (1). Buffaloes are raised under an extensive system in the coastal areas where vast pasture land and enough green forage are available. Intensive farming practices do not exist in Nepal as there is not enough development and wealth in the country to contribute to the agriculture industry.

Geography

The production systems and locations vary greatly across the Agro-eco zones of Nepal. Buffalo are hearty and can thrive in diverse climates and settings which proves beneficial for

Nepalese citizens, as it offers them the ability to raise a herd almost anywhere in Nepal. In Southern Terai belt, inner Terai and mid-hill river valleys, buffaloes are mainly kept under stall feeding during seasons of crop cultivation and are allowed to graze freely in the crop fields whenever there are no growing crops (7). In the Himalayan foot hills, grazing of buffalo in the village pasture, forests and recently harvested crop fields is the more commonly used method. In the high hills and mountains, they are reared in migratory herds which are taken up to the high altitude of the alpine pasture (7).

Overhead Costs of Production

A significant benefit of raising Water Buffalo is that they are known to thrive on poor quality roughage and are able to convert it into high quality milk and meat. They are reported to have a 5% higher digestibility of crude fiber than cows and a 4-5% higher efficiency of utilization of metabolic energy for milk production (8). Another added benefit of producing these animals is that they are raised under non-intensive or semi-intensive conditions, therefore producers are able to rear their livestock primarily on cheaper forage and pasture. When considering that feeds for livestock accounts for 70% of the overhead cost associated with production, by minimizing the cost of feeding these animals, farmers are able to maximize their profits without having to significantly increase the price of their product for export.

Labour is the second largest output cost for farm owners. Since most of the farms run in Nepal are small-scale (between 2-20 animals), labour is not a financial burden as the farms are often able to be tended by one or two people. The women and girls in this culture generally look after milking the buffaloes while the men and boys are concerned with the farming and physical

labour aspect of farming and therefore the chief of the herd does not have to pay out large sums of money for labour (2).

Nutritional Benefits of Buffalo Meat

In addition to the more natural methods of rearing buffalo, there are added health benefits to consuming Water Buffalo meat over conventional beef. Since they are fed on primarily pasture, buffalo meat contains more iron and beta-carotene than beef. Buffalo meat also boasts 80% less saturated fat and 25% less cholesterol than beef and also contains a higher mineral content, making it a much healthier alternative to beef (9).

When analyzing the economics of buffalo meat, it is important to note that since there is a higher protein content in the meat compared to beef and less fat, the meat does not shrink when it cooks, and therefore the consumer is receiving more value in their purchase when consuming buffalo(9).

Economic Benefits for Nepal

Selling Buffalo meat on the global market would benefit the Nepalese economy by stimulating growth and generating income through job creation in the agriculture sector. Revenue from Buffalo meat sales would feed back into the local economy and help with the development of the country which could lead to further global trade expansion to cover more markets worldwide.

The biggest challenge for Nepalese farmers will be to ensure the quality and safety of their herd in order to protect their product and to keep global trade partners from withdrawing the

importation of their product. Any trace of disease could be detrimental to trade agreements and could cause Agri-Food Canada and the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA) to ban any further importation of the product. In order to prevent this from happening, biosecurity is a major preventative tool that must be taught, practiced and enforced at all farming locations.

Export Potential

As Water Buffalo meat is a delicacy it has great potential to be sold in a Canadian market. In the current year, 29 cases of Escherichia coli O157 (E. coli) in beef products were reported in Canada (5). Such disease can be spread through the improper cooking of beef and unpasteurized milk after animals are infected when slaughtered or processed (6). Considering the many health benefits of water buffalo, it can provide as a great alternative to individuals who do not consume beef for safety or health reasons. The price of Water Buffalo meat can vary anywhere between \$29.99 and \$149.00 excluding external costs, such as transportation and packaging. The cost of 2, 8oz burgers is approximately \$29.99 where a T-bone style steak is approximately \$69.99 (4). Despite an increase in average price between the products water buffalo meat carries with it a distinct number of health benefits, thus justifying the price difference for potential customers. In order to sell meat in a Canadian market, the provider must be a provincially licensed operator or a federally registered establishment (10). Potential food markets include:

1. Whole Foods
2. FreshCo
3. Loblaws

Conclusion

In conclusion, Water Buffalo meat should be considered a valuable meat product in Canadian Markets. Although there may be drawbacks to the product, further research and investment would considerably reduce any significant issues. After proper certification and exporting, both Nepal and Canada can expect numerous benefits from the mainstreaming of water buffalo products in food markets across Canada.

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