

BUFFALO MEAT INDUSTRY - AN OVERVIEW

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Buffaloes are domesticated by inhabitants of Indian Peninsula 5,000 years ago. In India the buffalo herd is mainly distributed in smallholder units and makes up for a third of the cattle population in the country and is responsible for more than 50% of all milk produced in the country.

Buffalo raising has been integrated with farming system and rural life in various parts of the country. The Asian buffalo represents 96% of the 162.3 million buffaloes of the world. Asian buffalo meat accounts for 92% of buffalo meat produced all over the world (Cruz, 2001). The buffalo population is mainly concentrated in South Asia, South China and S.E. Asia, (FAO, 1999). Out of these, India has 94.13 million buffaloes, Pakistan 21.21 million, China, 20.81 and Thailand 4 million (FAO, 2002). A positive growth in the number of buffalo has been noticed during the last two decades in these regions. The distribution of water buffaloes in the world has been presented in Table 1.

Table. 1 The World Distribution of Water Buffaloes (1998 statistics)

Region	Head	% of World Population
Asia	156,973,000	96.68
Africa	3,150,000	1.94
North America	5,000	—
South America	1,701,000	1.04
Europe	212,000	0.13
Total World	162,362,000	100.0

There is a substantial increase in the number of buffaloes slaughtered for meat purpose during the last decade. The details are shown in Table 2.

India exports frozen buffalo meat to more than 54 countries and the export of meat commenced in the year 1969. Export of Indian buffalo meat is rapidly increasing. The main markets for frozen boneless buffalo meat are the Philippines, Malaysia, U.A.E., Jordan, Iran, Lebanon, Saudi Arabia, Egypt, Senegal, Mauritius, Albania and CIS countries such as Armenia and Georgia.

The total export of buffalo meat from India was only 10,000 MT in 1984, 102,000 MT in 1993, and 200,000 MT in 1995. The recent figures are 243,355 MT in 2001-2002 and 297,897 MT in 2002-2003. The contribution of buffalo meat towards total world meat production is only 1.3% and the value of buffalo meat export in 2000-2001 is Rs. 13,750 million (Murthy and Devadasan, 2003). There is tremendous potential for the export of frozen buffalo meat from India. The quantities and the

total foreign exchange earnings from the export of frozen buffalo meat is on the rise. The value of buffalo meat produced and exported from India from 1997-2001 is as follows (Rs. in millions).

1997-1998	7,293.0
1998-1999	6,912.9
1999-2000	7,064.3
2000-2001	13,750.4

Production of deboned, deglanded frozen buffalo meat for export from India is a very regulated industry under the compulsory licensing of Agriculture and Processed Food Products Export Development Authority (APEDA), Minister of Commerce, Government of India that sets strict standards besides using its organisational infrastructure to ensure compliance of prescribed standards. APEDA constitutes a multi disciplinary expert panel for annual inspection of each export-oriented abattoir.

Table. 2 Number of Buffaloes Slaughtered / Prod. Animals Head (x 1,000)

	1989-1991	1999	2000	2001
World	16570	21780	22055	22349
Africa	1178	1580	1720	1750
Asia	15381	20188	20321	20588
Bangladesh	38	46	46	46
Cambodia	66	82	82	82
China	1640*	3668*	3606*	3706
India	8117	10220	10300	10340
Indonesia	204	235	218	218
Iran	65	71	80	80
Iraq	16	14	14	14
Laos	80	151	154	154
Malaysia	24*	22*	22	22
Myanmar	102	119	120	123
Nepal	452	580	585	585
Pakistan	3246	3900	4000	4100
Philippines	243*	371*	387*	391*
Sri Lanka	46	37	35	35
Thailand	547	225	215	215
Vietnam	411*	420*	430*	450

Number of buffaloes slaughtered (FAO, 2001). * Unofficial figures

World class, state of the art, integrated establishments incorporating mechanised abattoirs, which have been constructed are operated in accordance with the Codex Alimentarius Standards / OIE Zoo Sanitary Code directions, besides having HACCP and ISO accreditations. At present there are 10 integrated export oriented abattoirs in the country.

Almost 95% of the meat exported from India is in the form of deboned and deglanded frozen buffalo meat. The major groups are Allanasons Ltd., Hind Agro Ltd., and Alkabeer Exports. Allanasons Ltd is the leader and the group has established its operations in the year 1965. The group has pioneered in processing and export of frozen halal buffalo meat from India, since the year 1969. For several years there was only one world class integrated abattoir and meat processing unit called Frigorifico Allana Limited situated in Aurangabad. In the last few years, large capacities to process frozen, deboned and deglanded buffalo meat have been established in India to cater to the increasing requirements, thus more world class plants were commissioned including four by the Allana Group.

Table. 3 Proximate Composition of Buffalo Meat and Beef (USDA 1991)

Characteristics	Buffalo	Bovine
• Calories, kcal	131.00	289.00
• Proteins (N x 6.25)	26.83	24.07
• Total fat (g)	1.80	20.69
• Fatty acids		
- Saturated (g)	0.60	8.13
- Monosaturated (g)	0.53	9.06
- Polysaturated (g)	0.36	0.77
- Cholesterol (mg)	61.00	90.00
• Minerals		
- Total (mg)		
Calcium, Iron, Magnesium, Phosphorus, Potassium, Sodium, Zinc, Copper and Manganese	641.80	583.70
• Vitamins		
- Ascorbic acid, Thiamine, Riboflavin, Niacin, Pantothenic acid, Vit. B6, Folic acid and Vit. B12	20.95	18.52

The important diseases influencing the international trade of meat and meat products are Foot and Mouth Disease (FMD), Bovine Spongiform Encephalopathy (BSE) and Rinderpest. India is free from BSE and also from rinderpest. BSE has never been reported in buffaloes. This fact is an added advantage to India in the international meat market. However, FMD continues to be reported in many parts of the country. The government of India and various state governments have undertaken programmes such as the FMD-CP and ASCAD (Assistance to States for Control of Animal Diseases), for control and eventual eradication of FMD in the country.

Even though FMD is present in some parts of India, the production and processing of buffalo meat in accordance with the Office International des Epizooties (OIE) guidelines makes the deboned and deglanded frozen buffalo meat a risk-free product. No country in any part of the world has ever reported FMD or any other disease outbreak due to such importation of meat and meat products from India.

The track record of meat exports from India during the last

35 years is excellent. Unfortunately, this has not been appreciated fully. The veterinary authorities of various importing countries should acknowledge this fact.

Buffalo meat is leaner compared to beef with less cholesterol, more iron and protein. Comparison of proximate composition of buffalo meat and beef is presented in Table 3.

Merits of Indian Buffalo Meat

- The livestock in India is reared on green pastures and agricultural crop residues.
- There is no practice of using hormones, antibiotics or any other chemicals to promote growth and fattening of livestock as they are not primarily reared for meat.
- The Indian livestock is free from the dreaded BSE which has never been reported in buffaloes.
- The Indian Buffalo meat is 93% chemically lean.
- Indian meat is free from radioactive materials.
- Indian frozen buffalo meat is competitively priced.
- The products are well accepted by the buyers and the consumers of over 54 countries.

Buffalo meat is darker in color than beef because of more myoglobin and is with less intramuscular fat. Fat in buffalo is white unlike in beef. Huerta and Leidenz et.al. (2000), compared beef carcasses with that of water buffaloes. In comparison to zebu cattle, water buffaloes produce carcasses with better finish in terms of fat cover, distribution and back fat thickness, which tend to exhibit better marbling, exhibits slightly more advanced skeletal and muscle maturity and maintains a more creamy white fat color across all slaughter ages.

The future of Indian buffalo meat export is bright. However, there are some constraints to the further development of the industry, primarily due to non-tariff trade barriers and unscientific Sanitary and Phytosanitary (SPS) requirements and conditions being imposed on Indian meat exports. Even though, the number of FMD outbreaks is very low compared to the large number of livestock population in the country, the eradication of the disease is also important in further improving the export. Another important aspect of improving the export situation is the rearing of male buffalo calves, which is being totally neglected by farmers in most parts of the country. A separate programme for rearing the male buffaloes in the country by the government / private agencies would be very helpful in promoting the industry.

In order to increase the production and export of frozen buffalo meat and meat products from India, infrastructure has to be further strengthened and additional new plants should be established to augment the existing capacity.

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