

BBH Indian Dairy Directory

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Introduction

It is thought that humankind's association with domesticated animals goes back to around history just about as long as our association with domesticated plants. We accept that we are responsible for the quality of life of animals in our care. We accept that the activities of human affect all the living things with which we share this planet. But we are slow to realize that as a result we have a duty of care for all living things.

Human Intervention

Farm animals have been undergoing human-managed selection ever since their original domestication. We breed animals for four principal reasons: as sources of usable products or services, for medical or scientific research, for aesthetic, cultural or ethical considerations and as pets. The first leads to animal husbandry and livestock breeds of domesticated species kept for food, fiber and their services such as transport and power.

The twentieth century marked a turning point in our relationship with other species from which there is no way back. The human population explosion led to widespread competition with other species for agricultural land, and many species became extinct or are now threatened with extinction primarily as a consequence of these activities.

The intervention of man in regulating behavior and environment of livestock so as to exploit the best potentials has led to an increase in the incidence of the reproductive disorder. Reproductive performance is one of the major factors that can affect productivity and profitability of farmers. Therefore, the main approach to increase their productivity is to improve reproductive traits of livestock. During the last decades many advanced techniques have been developed to improve reproductive performance of animals. Artificial insemination, superovulation, estrus synchronization, embryo transfer, in vitro fertilization were examples of these techniques. Recently, a specific nutrients that play an important role in growth, development, reproduction and immunity had been formulated in use for such improvement.

Trend change

Historical changes in the demand for livestock products have been largely driven by human population growth, income growth and urbanization and the production response in different livestock systems has been associated with science and technology as well as increases in animal numbers. The human population explosion led to widespread competition with other species for agricultural land, and many species became extinct or are now threatened with extinction primarily as a consequence of these activities

In the future, production will increasingly be affected by competition for natural resources, particularly land and water, competition between food and feed and by the need to operate in a carbon-constrained economy. Developments in breeding, nutrition and animal health will continue to contribute to increasing potential production and further efficiency and genetic gains. Livestock production is likely to be increasingly affected by carbon constraints and environmental and animal welfare legislation. Demand for livestock products in the future could be heavily moderated by socio-economic factors such as human health concerns and changing socio-cultural values. There is considerable uncertainty as to how these factors will play out in different regions of the world in the coming decades.

The Livestock Revolution is propelled by demand. People in developing countries are increasing their consumption from the very low levels of the past. Global food consumption patterns are undergoing change, especially in large parts of the developing world, where income growth and urbanization are leading both to increasing levels of overall food intake as well as changing composition of food consumption, with growing shares of high-value products and of food of animal origin in particular.

The rapid rise in aggregate consumption of meat and milk is propelled by millions of people with rising incomes diversifying from primarily starch-based diets into diets containing, initially small and then growing amounts of dairy and meat. The underlying forces driving these trends are set to continue, and the potential for increased demand remains vast in large 31 parts of the developing world.

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Table 01: Per capita consumption of livestock products (Excluding South Africa)

http://www.who.int/nutrition/topics/3_foodconsumption/en/index4.htm

| Region | Meat (kg per year) | | | Milk (kg per year) | | |
|---------------------------------|--------------------|-------------|-------|--------------------|-------------|-------|
| | 1964 - 1966 | 1997 - 1999 | 2030 | 1964 - 1966 | 1997 - 1999 | 2030 |
| World | 24.2 | 36.4 | 45.3 | 73.9 | 78.1 | 89.5 |
| Developing countries | 10.2 | 25.5 | 36.7 | 28 | 44.6 | 65.8 |
| Near East and North Africa | 11.9 | 21.2 | 35 | 68.6 | 72.3 | 89.9 |
| Sub-Saharan Africa ^a | 9.9 | 9.4 | 13.4 | 28.5 | 29.1 | 33.8 |
| Latin America and the Caribbean | 31.7 | 53.8 | 76.6 | 80.1 | 110.2 | 139.8 |
| East Asia | 8.7 | 37.7 | 58.5 | 3.6 | 10 | 17.8 |
| Asia | 3South .9 | 5.3 | 11.7 | 37 | 67.5 | 106.9 |
| Industrialized countries | 61.5 | 88.2 | 100.1 | 185.5 | 212.2 | 221 |
| Transition countries | 42.5 | 46.2 | 60.7 | 156.6 | 159.1 | 178.7 |

Growing consumption of dairy and other livestock products is bringing important nutritional benefits to large segments of the population of developing countries who are gaining access to these products. However the rapid growth in production and consumption of livestock products also implies risks to human and animal health, the environment and the economic viability of many poor smallholders.

Feeding the World to 2020.

The report projects a worldwide consumption 65% of meat and 87% milk expansion in by year 2020. With 84% of that expansion will occur in developing countries.

Undernutrition, including inadequate levels of consumption of food of animal origin, remains a huge and persistent problem in the developing world. Dairy and other livestock products can make an important contribution to household food security and are especially important in meeting the micronutrient requirements of women and young children. Adding a small amount of animal-based foods to a plant-based diet can yield large improvements in maternal health and child development. Inadequate diets also hamper the mental and physical development of children and result in increased morbidity and mortality from infectious diseases. There are also significant economic costs in terms of reduced work performance and productivity in adults. Income growth can help improve nutrition. As incomes of the poor increase, they generally purchase more food with an improved dietary composition, including more food of animal origin. However, measures and programmes to ensure immediate access to better diets, including dairy and other animal products can make an indispensable contribution to assist poor people escape the undernourishment/undernutrition-poverty trap.

On the other hand, a growing number of countries, including developing countries, are experiencing an increasing incidence of obesity and diet-related non-communicable diseases, which impose heavy economic and health burdens on societies. Excessive consumption of high-fat products contributes to this problem, although other dietary and lifestyle choices also play a role.

Side effects

Continued growth in demand for and production of dairy (and other livestock) products and the associated structural changes in the sector have potential negative long-term implications in at least three other areas that require attention by policymakers. It implies increasing pressures on the world's natural resources as feed demand grows and livestock production is increasingly decoupled from the local natural-resource base. It has implications for both animal and human health as the increasing number and concentration of animals enhances the risk of spreading of diseases and the passage of disease agents between species. Finally, the social implications for smallholders, whose opportunities to supply new markets are constrained, pose serious challenges.

Global position of India

In the world, buffaloes have been contributing to about 12% of the world milk production and India is producing 60% of the world's buffalo milk. India ranks first in terms of milk production in the world with a production of 100 million tonnes and buffalo milk contributes to more than 50% of the total milk produced in India (GOI 2006). About 57% of world buffalo population is in India and a growth rate of 1.26 % per year is seen in this decade in India (Prasad et al 2010).

India is the world largest milk producer since 1998-99. According to estimates of the Central Statistical Organisation (CSO), milk accounted for 68% of the total value of output from livestock. In terms of value of output, milk is now the single largest agricultural commodity in India.

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Planning to double milk production up to 2020 from 121.5 million tons to 243million tons (Planning commission GOI 2007-2012).

| Table 02: India at current level. | |
|-----------------------------------------------------------------------------------------------|------------|
| World's second largest producer of fluid milk | 121.5MT*** |
| Bovine population | 23% |
| Total Cattle population 1.3b(World) India First position with numbers | 281700000 |
| Milk productivity per dairy cow in Mt per lactation | 1.31**** |
| Global third largest producer of cows milk after EU27 and US | 52.5Mt*** |
| Total buffalo population in India comparative to world first position with | 54.562% |
| Dairy breed growth rate | 1.48% |
| Share in Global milk production | 15% |
| Milk production growth | 4% |
| Milk /animal increase SAARC countries | 2.4% |
| Overall conception rate is approximately only in AI with hormone therapy. | 27-33% |
| Incorrect semen deposition in the female reproductive tract. | 30% |
| Milk/milk product export | 5.0Mt*** |
| Per capita availability of milk 2008-9(GOI Animal Husbandry and fisheries) | 258gm |
| Uttar Pradesh, Rajasthan, Punjab, Haryana, Gujarat and Maharashtra India's buffalo population | 60% |
| Heat Stress(Reduced milk/year) | 2660Cr |
| Financial loss(30%) due to FMD dairy | 30000Cr* |
| Financial Loss(52%) due to reproduction failure per yr India Cy2007 | 1680000cr |
| Salvaging of Male Buffalo Calves | 8.0MN** |
| Mortality ECB cows below 2.5 yr of age Karnataka state Cy 2007 | 49.10% |
| Mortality indigenous cows below 2.5 yrs of age Karnataka state Cy 2007 | 40.678% |
| Mortality buffaloe cow below 3 yrs age Karnataka state Cy 2007 | 64.24% |
| Mortality ECB cows below 2.5 yr of age C7 2007 | 45.086 % |
| Mortality indigenous cows below 2.5 yrs of age Cy 2007 | 37.22% |
| Mortality buffaloe cow below 3yrs age Cy 2007 | 60.68% |

- a) Sub-Group VII - Animal Health Services and Bio-security 11th five plan GOI;
 b) Planning Commission GOI 2007-12;
 c) Source : United States Department of Agriculture/Dairy 2011.
 d) Source: Dairy world market and trade USDA / FAS, July 20-08 Post analysis includes buffaloes based on DADF animal husbandry statistics 2006.

**Table 03: Anticipated Demand Supply Scenario of Different Dairy Production Systems in 2035
NDRI VISION 2030(2nd August, 2011)New Delhi**

| Dairy Production Systems | Milk supply (MT) (%) | Nutritional Demand (MT) | Economic Demand (MT) | Surplus/ Deficit (MT) |
|---------------------------------|-----------------------------|--------------------------------|-----------------------------|------------------------------|
| Buffalo production System | 111.890 (49.36) | 38.990 | 96.051 | +15.835 |
| Cow production system | 71.730(31.64) | 61.361 | 72.426 | -0.696 |
| Mixed production system | 43.070(19.00) | 34.604 | 62.703 | -19.633 |
| ALL India | 226.69 | 134.956 | 231.18 | -4.49 |

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Table 04: Dairy Development and cow culling global scenario:
Infertility, regardless of cause, is a major reason for culling animals.

Cows Culled with reasons (Rezgui 1996)

| Percentage of cows culled due to reproductive failure, low milk yield, other major reasons | | | | | | | | |
|--------------------------------------------------------------------------------------------|-----------|------|------|------|------|------|------|------|
| Culling | Lactation | | | | | | | |
| Reason | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Accidents | 4.8 | 0.6 | 2 | 0.6 | 1.3 | - | - | 1.8 |
| Disease | 10.5 | 6.1 | 5.5 | 7.8 | 3.8 | 10.1 | 11.8 | 7.9 |
| Low milk | 20.4 | 32 | 25.2 | 22.8 | 25.6 | 24.2 | 23.5 | 24.8 |
| Mastitis | 3.8 | 2.1 | 6.5 | 8.9 | 8.1 | 16.9 | 17.7 | 9.1 |
| Conformation | 5.3 | 3.2 | 3.5 | 4.4 | 5 | 1.1 | 11.7 | 4.8 |
| Reproductive failure | 40.7 | 45.2 | 49.1 | 48.3 | 48.8 | 42.1 | 23.8 | 42.5 |
| Metritis | 8.5 | 5.1 | 4.1 | 4.4 | 4.4 | 4.5 | 11.7 | 6.1 |
| Abortion | 2.8 | 5.2 | 3 | 1.1 | 1.9 | 1.1 | - | 2.6 |
| Others | 3.2 | 0.7 | 1.5 | 1.7 | 1.2 | - | - | 1.6 |
| Culling rate/lactation | 15.3 | 14.4 | 21.7 | 19.6 | 17.4 | 9.7 | 1.9 | 100 |

Approximately 70% of lactating dairy cows remain not pregnant following first postpartum artificial insemination (*Not remain pregnant, Andrew Fidler DVM April 30, 2009*).

Compassion in World Farming believes a significant factor is the massive global growth in meat production and consumption. As Oxfam's report points out, "higher incomes and increasing urbanization leads people to eat less grains and more meat, dairy, fish, fruit, and vegetables. Such a 'Western' diet uses far more scarce resources: land, water, atmospheric space." forecasts a food price rise of 70-90 percent by 2030 – and when the predicted effects of climate change are included, those price rises could double again.

There are many contributing factors behind this food crisis, which is already a tragic reality in poorer countries and a looming threat for wealthier ones. One of the scandals of our global food system is that nearly 1 billion people suffer from hunger and malnutrition.

Over 30 percent of global grains (including wheat and maize) and 90 percent of soya are used to feed farm animals, of whom the majority are in factory farms.

From above all details it is clear that once again we remember that struggle for existence and survival on the planet in between human and animals who shared the planet from their existence and domestication it has been seen and observed what so ever human achieved /developed never been for the benefit of survival are going towards the destroying the planet for personal gain as is seen from climatic change, soil erosion, deforestation, uncontrollable diseases and all type of pollutants are generated are against the natural decay processes made us to stay at our own will.

We must learn and develop the technology for to improve the immunity of mammals instead to fight against the diseases with available natural carbon source and mineral salts resources.

We have already formulated some of the products for ruminants in dairy and beef producers use that have already shown the excellent results for dysentery, bovine viral diarrhea, increased immunity towards FMD, improvement in fertility and reproduction and in the treatment of retained placenta.