

INTRODUCTION TO MILK

Dairy development in India

What is milk ?

Why milk is important ?

Why milk is so important for food engineers ?

Status of milk production and processing in India

Milk may be defined as the whole, fresh, clean lacteal secretion obtained by the complete milking of one or more healthy milch animals, excluding that obtained within 15 days before and 3 days after calving or such periods as may be necessary to render the milk practically colostrums free and containing the minimum prescribed percentage of milk fats and S-N-F.

(Milk in technical aspect is defined as the whole, normal, clean and fresh lacteal secretion obtained by milking a healthy animal 72 hours after calving.)

Importance of milk in national scenario

- Presently India is the largest producer of milk in the world with an annual milk production of over 120 million tons.
- India has about **three times** as many dairy animals as the USA, over 80 percent being kept in herds of 2 to 8 animals.
- **Annual milk yield per dairy animal in India is about one tenth of that achieved in the USA and about one fifth of the yield of a grass-fed New-Zealand dairy cow.**
- A peculiar feature in our country is the wide variation between regions in respect of consumption of milk.

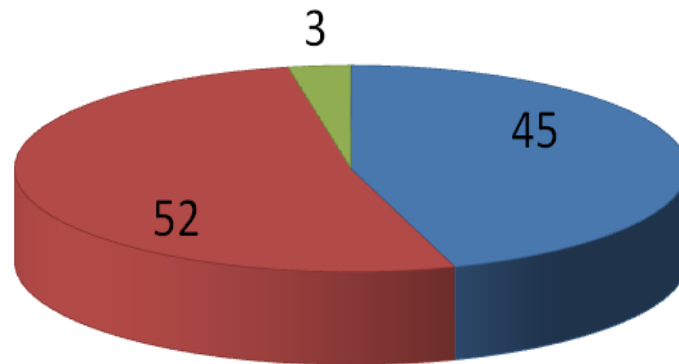
Milk Production in India

Year	Production (Million Tonnes)	Per capita avail. (g/day)
1991-92	55.7	178
1995-96	66.2	197
2000-01	80.6	220
2005-06	97.1	241
2006-07	100.9	246
2007-08	104.8	252
2008-09	108.5	258
2010-11	>120	281

Source: Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture, Govt. of India (May, 2010), Dr. S. Ayappan (Convocation address at OUAT on 28/07/2012)

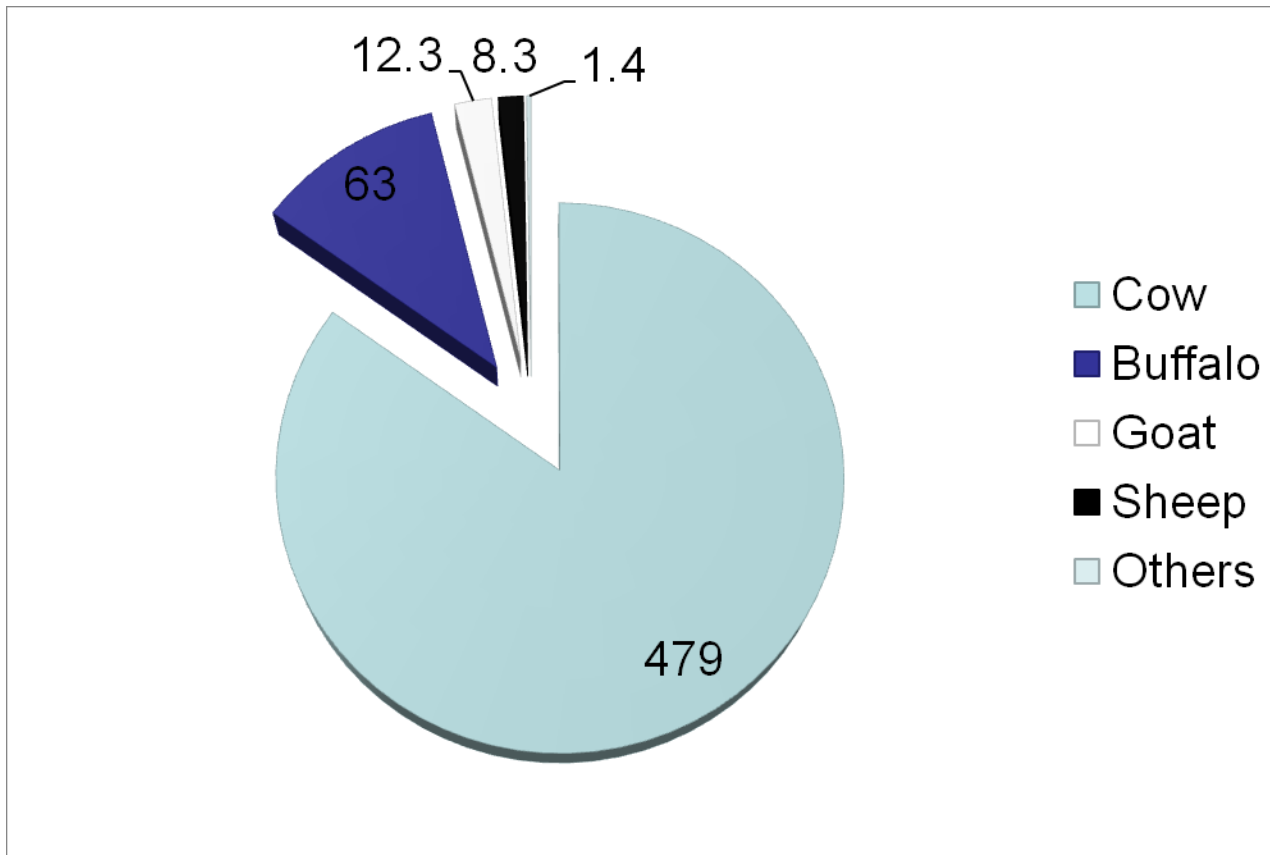
- In 2001-02 India became the world leader in milk production.
- Recommended value of milk consumption is 250-450 g.
(Minimum recommended by NIN is 80 to 310g/capita-day.
- Per-capita availability in India was only 114 g in 1975.
(Punjab: 600 g, Haryana: 550 g, Orissa: 43 g).

Species contribution in India (in %)



■ Cow ■ Buffalo ■ Goat

Species contribution in World (1999)



Total milk production in 1999: 564 million tonnes

Still there is scope of improvement in dairy sector

- Low milk yielding capacity of average Indian cow
- Shortage of feed and fodder
- Lack of organised milk production and collection, restricted transport facilities (especially refrigerated)
- Shortage of processing and marketing organizations
- Poor quality milk, wide spread adulteration and lack of quality consciousness among the majority of consumers have aggravated the situation.

World Top 10 Cow's Milk Producing Countries in 2008 (Tonnes)

	2006	2007	2008
USA	82,463,031	84,189,067	86,178,896
India	41,148,000	43,481,000	44,100,000*
China	32,257,300	35,574,326	35,853,665
Russian Federation	31,186,154	31,914,914	32,117,427
Germany	27,995,000	28,402,772	28,656,256
Brazil	26,185,564	26,944,064	27,752,000*
France	24,194,707	24,373,700	24,516,320
New Zealand	15,172,464	15,618,288	15,216,840
UK	14,316,000	14,023,000	13,719,000
Poland	11,982,393	12,096,005	12,425,300
World	558,826,488	571,403,458	578,450,488

Daily per capita milk consumption in some developing countries of the world (1995-96).

Country	Consumption, g
India	197
Bangladesh	71
Pakistan	245
Iraq	182
Iran	180
Israel	577
Japan	172

Milk quality parameters

Compositional

Chemical

Nutritional

Sensory

Cleanliness

Safety

Freshness

Natural

Biological

Wholesome

Animal welfare

Environmental

Ethical

Ecological



Consumer acceptance

Thank You