

B Sc Vet Sci & A H
Level-1 & Semester-I
Course Title: Fundamental Poultry Science
Course Code: POSC 113

Poultry

The term poultry applies to a group of domesticated birds of several species having economic importance and which reproduce freely under care and management of man. The term includes a number of avian species such as chicken, pigeon, quail, turkey, guinea fowl, pea fowl, ostrich, pheasants, partridge and the water fowls are duck, goose and swan which are used either for meat, egg or for game or recreation purpose.

Poultry Science

Poultry science is a branch of animal science which studies about poultry, especially principal and practices involved in the production and marketing of poultry. It includes breeding, feeding, incubation, brooding, housing, disease prevention, poultry farm management and also marketing, processing, distribution of poultry and poultry-products.

Ornithology

The study area of birds which are not classed as poultry is known as Ornithology.

Why Poultry Farming?

1. Poultry meat and eggs are highly nutritive food.
2. Poultry and poultry products provide low cost protein.
3. Poultry farm requires minimum investment to start.
4. It ensures rapid return of profit.
5. Poultry farm requires small space. Multi-story building and cage rearing is possible.
6. Scope of other related industries, like - feed industry, hatchery industry, chicken and egg processing industry, poultry equipment industry, veterinary medicine industry etc.
7. Poultry farming in rural area has become a cottage industry.
8. It creates employment opportunities directly or indirectly.
9. Poultry farm provides a continuous source of income.
10. It stabilizes farm income.
11. Poultry farming as a tool of socio- economic transformation of rural people.
12. Marketing is not a problem.
13. Farm management is easy.
14. Availability of superior stock.
15. Most of the poultry feeds not commonly used for human.
16. Poultry manure used as bio-fertilizer, feed of fish and bio-gas (220g droppings/bird/day).

Importance of poultry

1. Poultry as food

Human body needs protein for its structural component. Source of protein may be plant and animal. Plant protein is incomplete due to deficiency of essential amino acids. But animal protein is complete. Poultry is a great source of protein. Poultry meat and egg is very nutritious food for all ages of peoples. Poultry meat contains less fat than red meat. Egg contains all essential nutrients that we need for growth, maintenance, lactation and reproduction. It is also a rich source of vitamins & minerals.

The people of USA consumed 110kg meat/head/year including 43kg chicken, 23kg beef and 65kg pork; whereas a Bangladeshi gets 45kg meat (DLS 2017) including 5kg chicken meat, but there is some controversy with the data. In India chicken meat consumption is 3.17kg/head/year (2012).

A healthy people need an egg every day. According to Indian Nutritional Advisory Council a man needs 200 eggs/year. FAO recommendation is minimum 104 eggs/year, but a Bangladeshi gets 103 eggs/year as compared to 400 eggs in Denmark, 340 eggs in USA and 250 in UK. But, per capita egg consumption in Indian is 57.8 (2013).

Demand, Supply and Deficit of Animal Products in BD: DLS 2018-19

Products	Minimum Requirement/Year	Supply/Year	Deficit
Meat	43.8 Kg (120g/day/head)	45.58Kg (124.9g/day/head)	Minimum Req. fulfilled
Egg	104Nos.	103.8Nos.	Minimum Req. fulfilled
Milk	90Liter (250 ml/day/head)	60.22 Liter (165 ml/day/head)	33%

Status of poultry meat: Acceptance of meat is also related to religious norms. Beef is prohibited to Hindu, pork to Muslim but chicken meat is acceptable to all community people.

Poultry products: Recent a wide range of dressed broiler and cut-parts have played an important role in achieving to continue growth of poultry market. Chicken meat and fried chicken uses as fast food and very popular to students. Many poultry products like chicken strips, crispy breast, crispy thigh, crispy drumstick, crispy and hot wings, spicy chicken, chicken paratha, chicken sausages, chicken samosa, chicken spring roll, chicken singara, chicken popcon, chicken cutlet, chicken nugget, chicken ball, chicken burger, scotch egg, frozen and dried yolk & albumen available in the Fast Food Shop and shopping mall.

2. Poultry farming as employment generation

About 6 to 7 million people engaged in this sector. Self employment and employment of youth is possible in poultry farming and its related industries like feed industry, hatchery industry, chicken and egg processing industry, poultry equipment industry, veterinary medicine industry etc.

3. Ecological Balance

Different poultry species eat natural insects, snails, flies, crop residues, vegetable etc. and maintain an environment friendly biodiversity. In this way scavenging poultry play an important role to produce organic meat.

4. Utilization of wastage food

Several wastage foods of human and by - products of cereal grains, oilseeds and pulse seeds which are not used as human food, have been using in poultry industry and thus helps to formulate economic ration.

5. Poultry as laboratory animals

Many poultry species have using as laboratory animal to conduct research experiment due to their availability, low cost and life cycle.

6. Use of poultry litter

It is a complete fertilizer. It contains higher nitrogen than cow dung. Cow dung Nitrogen is 0.25-0.30 % and litter is 2.5-3.0 %. Besides, it is used as fish feed. Its response is good in shrimp cultivation. Litter helps to grow phyto-plankton and zoo-plankton in water for fish. It can be used in crop field as organic manure and bio-gas can be produced from litter for domestic use.

Present status

The importance and future prospect of poultry industry is very emerging. Poultry rearing is an integral part of agribusiness in Bangladesh. Now it is one of the best income generating sources among other agro-industry. Poultry rearing is an old traditional subsidiary business to our rural people. The population of deshi chicken is about 130 million. Deshi chicken can not be reared in the poultry farm for its low productivity. For business purpose the grower should be reared exotic breed or hybrid.

Information of Poultry in Bangladesh:

Day old layer chick/Week = 8 Lakh/Week

Day old broiler chick/Week = 81 Lakh/Week

Chicken population = 26 crores

Duck = 5 crores

Egg production/year:1472 crores

Broiler production/year:40 crores

Native chicken contribution:30%

Commercial farm contribution:70%

Govt. poultry: One in every district

Central Poultry breeding farm: Mirpur

Central Duck breeding Farm: Narayangonj

Private poultry farms: 75 Thousand (Small size farm: Flock size up to 3000, Medium size farm: Flock size 3001 to 20,000)

Private hatcheries:130 (Leading not exceed 10)

Total investment in this sector: Above 25 thousand crore Taka

Foreign investment: 25% of total investment

Foreign company: Indian-7 (VH group, ACI-Godreg, Saguna,TATA, Amrit group etc); Thiland- CP, China-New Hope

Dependent people in this sector: About 6 million

Commercial feed mills: Above 100

GP farm: 8

PS farm: Above 100

Annual Growth: 20% (2000-2006), 15% at 2015-16

Future prospect: on following area

1. Demand of protein
2. Employment generation
3. Available of farm labor at low cost
4. Poverty reduction through farming
5. Scope of local and foreign investment
6. Scope of animal sci and vet education
7. Scope of poultry research
8. Scope of extension work of poultry
9. Demand of poultry technical personnel
10. Scope of related business

Commercial poultry production in Bangladesh, is conducted on an industrial scale and is growing tremendously in spite of recent difficulties like bird flu and feed cost, but is expected to make a significant contribution to the economic development of the country. Bangladesh government has given proper attention to the garments industry as prime foreign currency earner. On the other hand government also has declared poultry as a agro based industry. Enough land is essential to produce corp. Even a small unit of land needs to dig a fish pond. But, resource poor farmers can easily utilize homestead area for poultry production.

A few number Grand Parent Stock (GPS), many Parent Stock (PS) farms, feed mills, hatcheries, pharmaceutical industries, poultry

equipment and other poultry related industries has gained momentum in Bangladesh. But there is a huge gap exists between supply and demand of meat and eggs, so poultry or poultry related business in Bangladesh will be more profitable. Annual egg production of Bangladesh is about 1472 crores which is lower than demand. So, there is a bright future of poultry and its related industry in Bangladesh. Presently, the deshi bird yields on an average 45 to 50 eggs per year, while the modern hybrid is capable of laying 275 eggs. A native chicken becomes 1.0 kg at the age of one year, whereas a broiler chicken gains it at only 21days. This information indicates its scope such as poultry education, training, research, extension, business and employment generation in Bangladesh.

History of poultry Development in Bangladesh

Poultry is an integral part of agriculture in Bangladesh and poultry husbandry is our culture which is traditionally backyard type. Rural people keep poultry in scavenging system as a source of subsidiary income. Livestock and poultry are considered as a living bank and buffer against crop failure in Bangladesh. The villagers who can not afford to keep animals can easily maintain a small flock of poultry.

Chicken (*Gallus gallus*) originates from South East Asia (Guhl, 1962) and were domesticated 5000 years ago. In the early 1950s day-old chicks of White Leghorn and Rhode Island Red breeds were imported to India from America. Bangladesh Agricultural University (BAU) Poultry Farm, Mymensingh, firstly brought day old broiler chicks from Pakistan International Airlines (PIA) in 1968-69. During late 1980s, the department of livestock services (DLS), Bangladesh imported "Arbor Acres" broiler parent stock. At the same time Biman Bangladesh Airlines started a commercial poultry farm called Biman Poultry Complex by a contractual agreement with Shaver Poultry Breeding Farm of Canada. It can be noted here that Biman Poultry Complex is the pioneer of broiler business and till now it supplies day old broiler and layer chicks to small farmers (Pervin, 2004). Today Poultry has been recognized as a profitable enterprise and one of

the most popular incomes generating activity for the rural poor women and un-employed youths.

Leading poultry producing countries

It is important that poultry producers have a global perspective concerning poultry in order to know which countries are potential competitors and what is ahead.

Chicken

China
Former USSR
USA
Brazil
Japan
France
Poland
Mexico
India
UK
Bangladesh (?)

Duck

Vietnam
Poland
Indonesia
Thailand
USA
Brazil
China
Bangladesh (3 rd)
Egypt
Burma

Turkey

Former USSR
Canada
USA
Brazil
UK
Poland
Turkey
Yugoslavia
Madagascar
Bulgaria

Poultry meat consumption (Leading countries, Source USDA)

Country	Kilograms
USA	43.0
Saudi Arabia	28.1
Hong Kong	26.7
Kuwait	26.0
Canada	22.7
Spain	21.4

Broiler meat Export (Leading countries, Source USDA)

Country	Percentage (%) (1000 MT)
France	34
Brazil	26
Netherlands	21
USA	19

Global poultry meat production (Leading countries, Source USDA)

Country	Percentage (%)
USA	31.0
Former USSR	11.2
Brazil	6.1
Japan	5.2
Spain	3.3
Canada	2.4
Mexico	2.3
Hungary	1.5
EC	16.0
Rest world	21.0

