

# FAQs

## 1. What are the two major types of egg production?

Egg production is basically of two types:

- (i) **Specialized egg production** - which consists of separation of poultry for meat and egg production. In the egg producing plant, specialized employees oversee specific aspects related to egg production.
- (ii) **Integrated egg production** – this is the most advanced enterprise and involves the complete mechanization and automation of the egg production cycle including battery egg laying, temperature controls, scientific feeding and mechanized egg collection methods.

## 2. What are the different types of poultry enterprise?

Poultry enterprises may vary from basic backyard poultry practiced in many homes in the rural areas to keeping of mechanized and automated production plants. The various aspects of poultry production include production of eggs, meat (goat, cows etc), fish and poultry (i.e. chicken).

The different types of poultry enterprises include:

- a. Backyard poultry production
- b. Farm flock production
- c. Commercial poultry
- d. Specialized egg production
- e. Integrated egg production

## 3. List and explain the factors that affect egg production.

The following are the factors which majorly influence egg production:

- (i) **Breed** – The breed of the laying bird influences egg production. Management and feeding given to the birds, however, go a long way in determining the features of egg production.
- (ii) **Mortality rate** – Mortality rate may increase due to onset of disease, predation and even high temperature. The mortality rate of small chicks is about 4% and that of growers is about 15% and that of layers is about 12%.
- (iii) **Management factors** – Effective and eminent management skills are necessary in order to increase the productivity of the eggs.

#### **4. Explain in detail the egg production cycle.**

The typical egg production cycle lasts about 17 weeks. It involves several distinct phases such as:

##### **Phase 1: Small chicks or brooders**

This phase lasts from 0 to 2 months (0 to 8 weeks) during which small chicks are kept in facilities, also known as brooder houses. They are kept separately from the laying birds.

##### **Phase 2: Growers**

This particular phase lasts for a period of 3 months. It occurs from the ninth to the twentieth week of age. Growers may either be housed separately from small chicks or continue to be reared in brooder-cum-grower houses. It is important to provide appropriate care to the growers particularly between their 17th and 20<sup>th</sup> week of age as their reproductive organs develop during this period.

##### **Phase 3: Layers**

Growers are transferred from the grower house to the layer house when they are 18 weeks old to prepare for the laying cycle. Birds typically begin to lay for a period of 12 months starting when they are about 21 weeks old and lasting until they are about 72 weeks old.

#### **5. Write a note on production planning with reference to egg production.**

On an average, a bird tends to produce one egg per day. Also, not all birds start to lay exactly when they are 21 weeks of age. Planning is therefore necessary for egg production to be constant so as to cater to the market demand. In areas where the climate is hot and humid, commercial hybrid laying birds produce on an average between 180 to 200 eggs per year. In temperate climates birds can produce about 250 to 300 eggs per year.

Egg production rises rapidly and then begins to fall after 31 weeks of age. When less than 65% of the flock are laying eggs, it becomes uneconomical to retain birds. Feed costs and sales of culled birds for meat must be considered along with prices of eggs. In some cases, when egg prices are high it may be viable to delay the culling of birds until only 45% of the flock is laying eggs.

#### **6. Explain in detail the production phases of beef.**

The production phases of beef involve:

##### **(i) Feeding beef cattle**

Beef cattle, just like other ruminants possess a digestive system which is multi – compartmentalized that can digest fibrous materials easily. Beef cattle consume feeds that

range from high quality cereal grains such as corn, soybeans, wheat, barley, sorghum etc called concentrates to high and low quality fibrous feeds such as legumes, hay, grass, coastal Bermuda etc. It is because of the consumption of such high fibrous feed sources and by products, beef cattle provide a high quality, value added protein source for humans from lower quality feed resources.

## **(ii) Housing**

Housing systems for beef cattle in confinement feed lots vary. This depends on the climate, topography etc. They include total confinement buildings, open sheds and lots or open lots with wind breaks or shades. Beef cattle are hearty animals that tolerate a wide range of climatic conditions. Most buildings have open side walls and are naturally ventilated.

### **7. Write a note on production of pork.**

Before 1960s, most pork in the United States was raised in outside lots or on pasture systems. With the development of slotted floors and liquid manure handling equipment, it has become possible for producers to more easily care for a larger number of animals. Enclosed buildings overcame most weather problems, predators and has also minimized the potential pollution from outside lot runoff. It has also now become practical to farrow sows twice a year rather than doing it just once. This marked the beginning of intensive production schedules on relatively small areas as found throughout the world today. Pork production is an important component of the American agriculture and an important part of the American diet and way of life elsewhere also. 74,789 farms had pig sales in 2007 with major part of production concentrated in the Corn Belt states and in North Carolina. In 2012, there were 60,200 hog and pig operations.

Modern pork production is mostly done in enclosed buildings to protect animals from the weather and also from predators and also to minimize the spread of diseases. While larger operations naturally enable the farmers to significantly increase the efficiency of production by making use of less labor, it has on the other hand resulted in environmental challenges with larger amounts of manure being concentrated in a small area.

### **8. What is an AIAO system?**

Most swine today are raised in “all-in, all-out” (AIAO) systems, where each room or building is completely emptied and sanitized between groups of pigs. Each new group of pigs enters a freshly disinfected area and stays there for this phase of their life. The facility has a separate room for each group of pigs weaned. AIAO animals in each room are of a uniform age and size and are isolated from the rest to the maximal extent possible in order to decrease the possibility of spreading of diseases from older animals to younger ones.

The main advantage is that disease spread can be better controlled, also animals are less stressed because they are housed with same age animals. Also, complete cleaning and disinfecting between groups is possible. The disadvantage is that space is less efficiently allocated, and that more space may be needed to allow rooms to be empty for cleaning between groups.

## **9. What is a two – site and three – site production system?**

A two-site system has breeding and gestation at one site and farrowing or nursery and grow finish pigs at a separate site. While in case of a three-site system, nursery is also placed at a separate site.

In the last couple of years, some producers have constructed “wean to finish” barns where pigs go immediately after weaning and stay there until they reach the market. This system combines the nursery and grow-to-finish phases of production. These barns provide substantially more space per pig than is needed initially, but provides the advantage of only moving pigs once during their lifetime. This reduces stress on the animals and saves labor since buildings are not cleaned until the hogs are marketed.

## **10. Explain freshwater aquaculture and breeding of peninsular carps by taking examples.**

**Freshwater aquaculture** - The giant prawn popularly known as ‘Scampi’ is migratory and completes its life cycle in both fresh water as well as in sea water. Seed production of this prawn species has been successfully done in freshwater prawn (*Macrobrachium rosenbergii*) by making use of underground saline water with necessary ionic amendments at Rohtak, Haryana.

Haryana, Rajasthan, Punjab and Uttar Pradesh have large areas of inland saline ground water reserves and hence this practice is expected to provide a major boost to prawn culture programmes of land-locked areas.

**Breeding of peninsular carps** - Seven sets of *Labeo fimbriatus* have been bred successfully using a portable hatchery at Bangalore, Karnataka. More than 0.1 million spawn were obtained. Sub – adults and fingerlings of *Puntius pulchellus* have been collected from the Western Ghats region and are being cultured under captivity and given artificial feed.

## **11. Write a note on Mahseer conservation initiative in Kumaon.**

A natural lake Shyamlat in Kumaon region was developed as a conservation site to breed the threatened Mahseer species, scientifically termed *Tor putitora*. Mahseer fingerlings that have been stocked for the first time have established themselves very well in the lake with 98% return in experimental netting. This will also help in promoting tourism in Shyamtal lake area.

## **12. Explain about kits and techniques available in aquaculture.**

### **(i) Latex agglutination kit for the detection of white spot virus**

Latex agglutination kit for detection of white spot virus in shrimps has been developed. This is an on-farm test with the aid of the rapid diagnostic kit which can be completed within 3-4 min. Latex agglutination kit along with the ELISA and dot-ELISA kits for the detection of pathogenic bacteria, viz. *Pseudomonas fluorescens*, *Aeromonas hydrophila*, *Vibrio alginolyticus* and *Edwardsiella ictaluri* of fish, were commercialized.

### **(ii) Wound healing, antineoplastic and antioxidant compounds from two marine crinotoxic fishes**

Crude mucus extract of *Arius dussumieri* and *Osteogobius militaris* exhibited toxicity when tested on mice. The crude mucus extract of *A. dussumieri* showed the highest toxicity @ of 0.30 ml and the mice died in 50 minutes, whereas in *O. militaris*, the toxic dose was 0.50 ml, which caused mortality in 80 minutes. Haemolytic assay conducted against chicken erythrocytes showed that the crude mucus extracts and partially purified fractions of both the fishes has haemolytic as well as oedematogenic activity.

### **(iii) Immune index of tiger shrimp**

Immune index has been developed to assess the health status of tiger shrimp, *Penaeus monodon*, based on the characteristics of its haemolymph. There was considerable variation in the haemocytosis count of the normal shrimps. During white spot syndrome virus (WSSV) infection, the haemocytosis counts dropped drastically. These observations have practical implication in the maintenance of broodstock.

## **13. Write a note on poultry production.**

Poultry production forms an integral and diverse component of agriculture in many parts of the world. While broiler chicken production is concentrated primarily in the southern and south eastern United States, turkey production occurs in the Corn Belt and in parts of North Carolina.

Modern poultry production occurs primarily in enclosed buildings to protect the birds from any weather harshness, predators and to reduce the spread of diseases from wild birds. This has enabled farmers to increase production efficiency while significantly bringing down the number of labour required.

Augmenting the production of chickens is an important objective in helping to meet the nutritional needs of the ever growing populations in the developing nations. These chickens tend to be prolific, easy to raise and their output can be generally expanded more rapidly and easily when compared to that of other livestock. Furthermore, they are adaptable to various climates and altitudes. Poultry raising can also be combined with other types of farming and enables the possibility to generate extra revenue to the farmers.

#### **14. What are the different types of poultry enterprise?**

Poultry enterprise is basically of three types:

- a. Backyard poultry – It is the production at the subsistence level of farming. Birds live free range and hatch their own eggs. Their diet is usually supplemented with crop waste and left overs of food. The labour involved with the backyard poultry production is part-time.
- b. Farm flock production – This type of production is much more specialized. Here, eggs are hatched in a separate location where the hatch and sexing of the birds are controlled.
- c. Commercial poultry farm – It involves full-time labour and is geared towards producing on a sufficient scale for the sale of both eggs as well as poultry meat.

#### **15. How is breeding of exotic carps carried out at high altitudes?**

The drawback in the breeding of grass carp and silver carp at high altitudes was due to the water temperature which effects maturation and embryonic development. From the experimental data it was evident that the maturity inducing hormone treatment with HCG at 250 – 300 IU and pituitary extract plus ovaprim in 3:1 ratio at 3 ml/kg coupled with insulation against low temperature by polyhouse covering of ponds, was effective enough in advancing the maturity inducing hormones and raising water temperature through polyhouse insulation at high altitude regions.