LESSON 13: DUCK FARMING FOR EGGS AND MEAT

STRUCTURE

- Benefits of duck farming
- Purpose of duck farming
- Common duck breeds
- Inputs requirement
- Management
- Summary

LEARNING OUTCOME

After going through this lesson, you will be able to:

- Gather information on benefits and purpose of duck farming.
- Identify different breeds of ducks.
- Know about various duck farms.
- Study management tips of duck farming

BENEFITS OF DUCK FARMING

The duck rearing is more popular due to the following advantages:

- Availability of ponds and waterways. Chickens do not flourish in marshy wetland area, which are ideal for duck rearing.
- These watershed areas in addition to lakes and ponds provide algae, earthworms, fungi, insects, small fishes, snails, water weeds etc., as natural food for the ducks and reduce the feed cost.
- Ducks are prolific layers. Even native breeds with a high disease resistance can lay about 160-180 eggs in a year.
- Ducks also enrich the soil by their droppings while foraging.
- Duck eggs are 15-20 grams heavier than chicken eggs.
- Requires less care and attention in management.
- Comparatively, ducks are more resistant to diseases than chicken.
- Majority of ducks lays eggs before 9.00 A.M. which helps in easy egg collection as well as saves labour cost.
- Acts as biological vector and control many diseases by destroying snails.
- Suitable for mixed farming system such as duck-cum-fish farming.

PURPOSE OF DUCK FARMING

- A traditional activity among weaker sections of rural population.
- Kept for egg and meat production.
- Provides supplementary and steady income on daily basis.
- Solves rural unemployment.
- Ducks are prolific layers; native breed lay 160-180 eggs in a year

Advantages Supporting Duck Rearing

- Availability of ponds and waterways.
- Watershed areas provide algae, earthworms, fungi, insects, small fishes, snails, water weeds etc.
- These aquatic products will form natural food for ducks and thus reducing feed cost.
- Require less care and management.

Distribution of Duck Farming

The ducks occupy second place to chicken in population of eggs in the country as they are reared mainly for egg and meat purposes. Duck production is mostly concentrated in the eastern and southern states like Assam, Manipur, Tripura and West Bengal followed by Andhra Pradesh, Bihar, Jammu and Kashmir, Karnataka, Kerala, Orissa, Tamil Nadu, and Uttar Pradesh.

COMMON DUCK BREEDS

(i) Egg type

Khaki Campbell and Indian Runner are the common egg type ducks reared in India. Their description is as follows:

- **Khaki Campbell (Fig. 1):** This breed is developed in England by crossing Rouen, White Indian Runner and Mallard. Plumage colour is Khaki. The size of head of male is larger than female. Bills and shanks are black in colour. The body weight is light. Khaki Campbell duck lays 280 -300 eggs per bird per year (it can lay up to 365 eggs a year; an egg a day without a break). The standard weight of drake (male) and duck (female) is 2.2 to 2.4 Kg and 2.0 to 2.2 Kg, respectively.

Fig. 1: Khaki Campbell

- **Indian Runner:** Indian Runner is next to the Khaki Campbell duck in respect of egg production and native breed of Indonesia. The three standard varieties of Indian Runner are white, pencilled and fawn (Fig. 2). The body is broader in front and slightly tapering at back. The outstanding feature of this breed is its perpendicular carriage which gives a lean appearance with wedge-shaped bill. It lays 250-280 eggs per year per bird. The standard weight of drake and duck is 1.6 to 2.2 Kg and 1.4 to 2.0 Kg, respectively.

Fig. 2: Indian Runner

(ii) Meat type

Aylesbury, Muscovy and Pekin are the common meat type ducks reared in India. Their description is as follows:

- **Aylesbury:** It is a native bird of England and plumage of both sexes is white. The legs and feet are bright orange and bill is yellow in colour. This is considered as deluxe table bird because of its light bone and high percentage of creamy white flesh. The standard weight is around 4.5 Kg for Drake and 4.0 Kg for duck.
- **Muscovy (Fig. 3)*:*** It is originated in South America. There are no feathers on the face and the skin is bright red in colour with caruncles around the eyes. Drake has a knob on head which gives the appearance of a crest. Voice is not characteristic of sex. The

incubation period of eggs is 35 days. Muscovies, when crossed with other breeds, produce sterile ducks called “Mule ducks”. The standard weight of drake and duck is 4.5 Kg to 6.4 Kg and 2.2 to 3.1 Kg, respectively.

Fig. 3: Muscovy Duck

- **Pekin:** It is originated in China and its white variety is most popular for meat purpose. It has creamy white plumage, yellow flesh, long, broad and deep body with bills and legs deep orange in colour. The white Pekin (Fig. 4) attains 2.2 to 2.5 Kg body weight in 7 weeks of age with a feed conversion ratio of 1:1.26-3.0 Kg. It lays around 160 eggs per bird per year. The standard weight of drake and duck is 4.5 and 3.6 Kg, respectively.

Fig. 4: White Peckin

Improved Variety of Duck by CARI

MOTI (NATIVE MEAT TYPE)

- Body Weight 6th wk:1300 g
- Mature Body Weight: Male: 3300 g; Female: 2100 g
- Age at sexual maturity: 30-35 weeks
- Egg Production: 50-60 eggs per year
- Egg Weight: 60-70 g
- FCR at 6 weeks: 2.75

Khaki (Native Egg Type)

- Body Weight 6th week: 950 g
- Mature Body Weight: Male: 1500 g; Female: 1200 g
- Age at sexual maturity: 18-20 weeks
- Egg Prod 220-230 eggs/year
- Egg Weight: 65-70 g
- FCR at 6 weeks: 3.28

Khaki Campbell (Native Egg Type)

- Body Weight @ 6th week:1050 g
- Mature body weight: Male: 1600 g; Female: 1350 g
- Age at sexual maturity: 19-20 weeks
- Egg Production: 240-260 eggs per year
- Egg Weight: 60-68 g

White Pekin (Meat Type)

- Body Weight @ 6th week: 1850 g
- Mature body weight: Male: 2900 g; Female: 2500 g
- Age at sexual maturity: 22-24 weeks
- Egg prod.: 150-180 eggs/year
- Egg Weight: 75-85 g
- FCR at 6 weeks: 2.10

INPUTS REQUIRED

- Finance
- Land
- Electricity
- Water
- Building/Houses
- Ducklings/Brooders
- Cages
- Feeders
- Waterers
- Feed
- Medicines

- Vaccines
- Transportation
- Manpower
- Know-how
- Shelter for staff
- Security
- Store House/Freeze

MANAGEMENT

Housing

Ducks excrete more water in their faeces. Therefore, it is very difficult to manage them on litter. Hence, slatted floor is preferred so that manure can be washed and floor can be dried. On concrete flooring, welded wire (1.25 cm x 1.25 cm of 8 gauge) can be fixed leaving a gap of 10 cm. After brooding (4 weeks), they are reared on welded wire (2.5 cm x 2.5 cm of 8 gauge). Where swimming facility can be provided, pond (usually made of concrete) dimensions can be 0.9 m wide, 20 to 30 cm deep and the length depending on the number of birds. Floor, feeder and drinker space requirements of duck and geese are tabulated below:

Space requirements of Ducks and Geese

Age	Ducks	Geese
Floor space (m^2/bird)		
Brooder (Hover) space	0.003	0.0035
0-4 weeks	0.072	0.135
4-8 weeks	0.135	0.180
8-12 weeks	0.180	0.270
>12 weeks	0.270	0.450
Adult	0.450-0.540	0.720
Feeder space (cm/bird)		
0-1 week	5.0	5.0
1-2 weeks	5.0	6.25
2-4 weeks	6.25	7.5
4-8 weeks	6.25	10.0
>8 weeks	7.5	12.5
Adult	12.5	15.0
Drinker space (cm/bird)		
0-1 week	1.75	1.75
1-4 weeks	1.75	2.5
4-8 weeks	1.75	2.5
>8 weeks	2.0	3.0
Adult	2.5	3.5
Source: Wilson *et. al.*, 1997		

You can easily calculate dimensions of a house depending on the number and age of ducks with the floor space requirement from the above table. Similarly, you can estimate the number and size of feeders and drinkers required. Arrangement of feeders and drinkers is also similar to chicken.

Feeding

Ducks prefer pellets because they can easily eat them. Pellet size generally used is 0.3 cm for starter ration and 0.5 cm for other categories. For meat-type ducks, Starter, Grower and Finisher rations are given during first 2 weeks, 3 to 6 weeks and 7^{th} week to market, respectively. For egg-type ducks, Starter, grower and layer rations are offered similar to that of chicken. Layer ration is provided one month prior to the expected onset of lay. Feed restriction is also similar to chicken. The FCR in meat-type ducks is around 3.0. Ducklings are most susceptible to Aflatoxicosis and hence it is extremely important to make sure that the feed does not contain aflatoxin. It is for this reason that groundnut cake is generally not used in duck ration. Requirements of some of the important nutrient for ducks at different ages are tabulated below:

Nutrient requirements of ducks

Nutrient	0-2 weeks	3-7 weeks	Breeding
Metabolizable energy, kcal/kg	2900	3000	2900
Crude Protein, %	22	16	15
Lysine, %	0.90	0.65	0.60
Methionine, %	0.40	0.30	0.27
Calcium, %	0.65	0.60	2.75
Phosphorus, non-phytin, %	0.40	0.30	-
Sodium, %	0.15		
Vitamin A, IU/kg	2500		4000
Vitamin D_3, ICU/kg	400		900
Vitamin E, mg/kg	10		
Riboflavin, mg/kg	4		

Management

Brooding is similar to chicken and ducklings do not require swimming water. If swimming is provided to the ducks, care has to be taken to regularly clean and disinfect the pond. Otherwise, stagnant water can cause diseases instead of giving comfort to ducks. However, if

land is not a limitation, ducks can be reared in semi-intensive system with a night shelter. Water is a very important necessity for ducks. They cannot tolerate thirst; if ducks are exposed to heat for a long time and given cold water, it can cause death due to shock. They cannot tolerate direct sunshine soon after feeding as well. Water consumption of ducks depends on age. At 1, 4 and 8 weeks of age, they consume water at the rate of 28, 120 and 330 ml/duck/day, respectively.

(i) Debilling

This is similar to beak-trimming in chicken. Pecking generally begins around three weeks of age when the adult plumage begins to grow. Trimming the bill is stressful and probably causes some pain. After trimming, lower bill will be left longer than the upper one. Trimming can be done at the hatchery by cutting and cauterizing the nail of the upper bill with an electric beak trimmer. But, handling each duckling (newly hatched chick) is more stressful, bill will be quite small and it may re-grow. Hence, it may not be accurate. Therefore, trimming is done at 7 to 21 days of age; but usually performed at 4 weeks of age by using electrical beak -trimmer. The upper bill is cut at the mid-point of the nail. This procedure can be done with an electric beak-trimmer or very sharp straight scissors. At the same time, if nails are very big and sharp, they can be trimmed to reduce scratching of pen mates or risk of injury to workers.

(ii) Egg production

Ducks during lay can be housed in cages similar to chicken. But, the height at which feed and water are arranged is suitably reduced. Ducks do not drink from nipples. Therefore, watering channel is fixed all along the width of the cage in front above the feeding channel with a gap of 10 cm for feeding. Dimensions of the cage are the same as chicken. Due to high moisture content in faeces, high rise houses are preferable. Otherwise, concrete flooring can be laid and it has to be washed and drained every day. In management of laying-type birds, you learnt that growing birds are feed restricted. In the same way, it is desirable that ducks should be at least seven months old when they start laying eggs to avoid small eggs. For this purpose, a photoperiod of 14 hours per day is provided 3 weeks prior to the expected date of lay. Type, location and arrangement of bulbs are similar to that of chicken. Egg-type ducks reach more than 90% production within 5 weeks. Most of the eggs are laid before 7 am and hence are collected at around 7 am. Eggs are preferably washed soon after laying, fumigated and stored. For obtaining hatching eggs, 6 to 8 ducks per drake is recommended and hatching eggs are collected one month after the drakes are allowed with their mates. Nests must be

clean to ensure duck eggs free from *Salmonella* which is most common with duck eggs. Number of nests required is, 30% of the number of ducks.

(iii) Incubation and hatching

Incubation of eggs is similar to chicken excepting that a relative humidity of 75% is required throughout the period and total incubation period is 28 days. Eggs are transferred from setter into the hatcher on 25th day. If the eggs are held for more than one week before setting, they have to be turned daily.

SUMMARY

- Ducks are reared for hatching eggs, day-old chicks, table eggs and meat purposes.
- Egg type ducks are Khaki Campbell and Indian Runner
- Meat type ducks are Aylesbury, Muscovy and Pekin
- Duck farming very common to poor section of rural masses.
- Duck manure is a good to fish culture.

WEB RESOURCES

http://ecoursesonline.iasri.res.in/mod/page/view.php?id=57647

http://cpdosrbng.kar.nic.in/DUCK%20FARMING%20GUIDE.pdf

http://www.krishisewa.com/articles/livestock/414-duck-farming.html

https://www.indiaagronet.com/indiaagronet/poultry_management/CONTENTS/duck.htm

http://www.elearnvet.net/moodle/file.php/32/Articulate/11.Brooding_and_rearing_practices_for_Ducks/player.html

https://www.youtube.com/watch?v=Jci_-zvUW8E

https://www.youtube.com/watch?v=i-22fcPkXrw

https://www.youtube.com/watch?v=bgJW92oiQAw

https://www.youtube.com/watch?v=L68j5JhpK_w

https://www.youtube.com/watch?v=7DltodRjx3k