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Introduction

Broiler is a young chicken of either sex, below eight weeks of age, weighing about 1.5-2 kg body weight with tender meat, pliable smooth textured skin and flexible breast bone cartilage.

Broiler production has a good potential not only for providing a highly nutritious food enriched with high quality proteins, vitamins and minerals, it also has a potential to generate employment both in rural and urban sectors. Some other advantages of broiler farming are :-

1. Broiler is the most efficient converter of feed.
2. Broiler farming produces quicker results and needs meager investment.
3. The fastest way to provide animal protein is through broiler farming.
4. Nutritive value of broiler meat is better than mutton and pork.

Selection of broiler chicks:-

The selection of commercial broiler stock can be the determining factor between profit and loss. Chicks must be genetically capable of fast growing into quality broilers; other-wise time, efforts and money will be wasted. Only specialized broiler strains of proven capabilities should be used. The average weight of day old chicks should be around 40 gms. The chicks should be purchased from reputed hatcheries that produce disease free chicks. The characteristics of good broiler chicks are-

1. Fast growth
2. Good livability
3. Good fleshing
4. Fast feathering
5. Uniformity in body weight
6. Ability to convert feed into meat efficiently

Housing:-

Housing serves two major functions for the poultry producers:-

1. It permits the organization and concentration of flock into a manageable unit.
2. It provides physical environment that is conducive to optimal poultry meat production.

A broiler house should provide clean, dry and comfortable surroundings for birds throughout the year. It should provide adequate accommodation, be reasonably cool in summer and sufficiently warm during winter but be free of drafts and at

the same time it should provide adequate supply of fresh air and light. Further it is necessary that house should provide protection to the birds from their natural enemies such as foxes, cats, jackals, rats, snakes, kites and crows etc.

The litter should be kept reasonably dry and provisions should be made to modify the air circulation as broilers grow, and fresh air should be circulated but the house should be free from drafts.

In brief it can be said that broiler are housed for:-

I. Comfort
II. Protection
III. Efficient production

Growth and feed conversion are very much related with floor space per bird. The more you crowd broilers, the poorer are results. However as floor space is reduced per bird, the returns per square meter of poultry house are increased. It needs experience to reduce floor space per bird depending upon the season of the year, growth rate of broilers and other environmental factors prevailing inside the poultry house.

Brooding temperature:-

It is difficult to recommend any brooding temperature applicable to all types of brooders during different seasons. Chicks should be fully feathered before supplementary heat is removed, a visual inspection of dispersal of chicks can give a very accurate indication of chick comfort from the temperature point of view. When the chicks are well dispersed, it speaks that they are comfortable. However, for the sake of guidance the following schedule should be followed during brooding.

Brooding Temperature

Age(weeks)	**Temperature(^{O}F)**
0-1	95
1-2	90
2-3	85
3-4	80
4-5	70
5-6	70

Note:-The temperature is measured 2.5 inch above the litter i.e. at the height of the chick at different corners of the brooding pen to have uniform warmth.

Lighting programme:-

The chicks should be provided continuous light till they are marketed. 60-Watt bulb will be sufficient for 200 Sq.ft. floor area during the first three weeks. After three weeks they may be put to low intensity of 30 watts per 200 Sq ft.

Ventilation:-

Proper ventilation of poultry house is important for supplying fresh air, removing moisture voided through excreta and respiration. Poor ventilation results in accumulation of carbon dioxide(Co_2), carbon monoxide(CO), and ammonia(NH_3).High concentration of these gases retards the growth rate of the chicks. However, there is little need of air movements through the brooder house during the ist few days. As the birds grow older, ventilation is also increased to full fill the need for fresh air and carry off the excessive moisture and harmful gases out of the house.

Humidity:-

Proper humidity inside the poultry house is very essential for optimum growth of the chicks. Approximately 40-50% RH is desirable in the brooder house. Less humidity results in dehydration and poor feathering of chick. The environment inside the house becomes dusty. A dusty environment results in irritation of the respiratory tissues and may predispose the birds to many respiratory ailments. High humidity results in wet litter and when the

litter becomes extremely wet, oocyst sporulation is increased and may be great enough to cause an increase in the incidence of coccidosis.

How to determine litter condition:-

To determine if the litter contains the correct amount of moisture, pick up a handful and squeeze it tightly; then open the hand. If the condition of litter is correct, crevices will form in the compressed material; it should not form a cohesive ball or fall away in a pile. Gauges are also available for determining the moisture percentage in the litter.

How to improve feed conversion ratio(FCR)

1.Use of enzyme(s):

The young bird in its early life lacks enzymes needed for maximum utilization of different nutrients. Poultry do not produce enzymes like cellulose, hemi-cellulase, β-glucunase which are required for digestion of cell wall of plant material. Thus dietary addition of these enzymes will be of practical importance in improving feed value of low energy and high fibre feeds. These enzymes degrade the cellulose, hemi-cellulose and β-glucans thus increasing the availability of carbohydrates.

2. Use of pro-biotics:

Probiotic is nothing but a culture of specific living micro-organisms primarily *Lactobacillus* species. The *Lactobacillus* bacteria is essential for life and accelerates the life impetus, so it is given the name "probiotic" as against the name "antibiotic" which kills or inhibits the life.

The dietary use of probiotics has gained popularity because of their beneficial effects on growth rate and feed conversion efficiency. Pro-biotics by regulating or enhancing the microbial environment allow the establishment of beneficial micro-flora, reduce digestive upsets, improve feed utilization and increase bird performance. There are also reports that probiotics help in the digestion of crude fibre by poultry.

3. Reducing feed wastage:

- When feeders are filled full , 30% of feed is wasted.
- When feeders are two-third full, 10% feed is wasted.
- When feeders are half full, 3% feed is wasted.
- When feeders are one-third full, 1% feed is wasted.

4. Restricted feeding:

Limiting the feeding hours from second week of age results in the improved feed conversion ratio and also reduces the incidence of ascites among broilers especially during winter.

Ways for disease prevention:-

Although the exact programme will and should vary according to the specific conditions existing on each individual poultry farm the basic principle will remain the same. With this in mind, the following programme of disease prevention and parasite control may prove useful to broiler farmers to run the farm on scientific lines:-

1. Get clean stock:

Clean stock simplifies the problem of disease control by reducing the number and severity of problems that are present when the flock is established. Disease free stock is best assured by purchasing stock from breeders who have continuously participated in organized disease control programmes and Random Sample Tests.

2. Avoid bringing infection in:

Visitors should be kept out of poultry houses; such equipments as trucks, shipping

crates and chick boxes should be restricted from the stand -point of area; and rats, mice and birds should be controlled.

3. Health cover:

Prevention is always better than cure. For majority of diseases effective potent vaccines are available. Vaccination should be carried out according to diseases prevailing in the area.

Immunization is not the only way to control and prevent diseases. Many disease sanitation procedures and isolation measures are relatively more effective. When disease out-breaks, specific drugs should be used to control it. With some diseases, such as Coccidiosis, while immunization is possible, most operators find that drug medication can prevent problems with less demand on management skill.

In general vaccination should be attempted when the following criteria are met:-

- The cost of vaccine and the stress on the birds are appreciably less than the cost of other means of control.
- The chances of occurrence of the disease are so great as to make the risk of not vaccinating too hazardous.

Vaccination schedule

S.No.	Age of the bird	Name of the vaccine	Route of administration
1.	0 day	MD Vaccine	S/C injection (done at hatchery)
2.	6^{th}-7^{th} day	RD vaccine(F_1 strain)	Eye drop/nasal drop
3.	15^{th}-16^{th} day	Live intermediate IBD vaccine	Through drinking water
4.	28^{th}-30^{th} day	RD vaccine (LaSota);R_2B	Through drinking water

4. Recognize disease early:

The best way to recognize the trouble when it is about to strike is through record keeping. A slump in feed and water consumption is usually one of the best early indicators. Thus, it pays to keep daily records of feed, water consumption and mortality. Any major changes from day to day or over a period of time, may mean that a disease is present in flock.

Also a caretaker should devote a certain time each day for the purpose of observing the flock. He should note the bird's actions, how they are eating and drinking and whether there are any unusual sounds; any sneezing or rattling.

5. Dispose off carcass properly:

Sanitary disposal of dead birds is becoming an increasing problem, particularly in large commercial operations. Satisfactory dead bird disposal helps to control diseases, flies and odours. The two most commonly accepted methods of dead bird disposal are the use of a disposal pit and incinerator.

6. Cleaning, dis-infection and rest to poultry house:

Periodically, all poultry buildings should be vacated, thoroughly cleaned, and disinfected. This is the most effective way to prevent the development of disease cycles. To break up the life cycle of germs naturally, sufficient rest of 2-3 week must be given to houses after cleaning and dis-infection. Immediate housing of new birds without adequate rest will transmit organisms to next lot of birds.

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