

CLASS 27 : RAISED PLATFORM HOUSING – FLOOR SPACE REQUIREMENT – LITTER MANAGEMENT.

Latest developments in Housing and management of commercial Layer Farms.

New concepts in poultry house design and farm management are finding their way for improved flock performance through better environmental conditions and automation in feeding, drinking and related systems. All this ensures more comfort to birds leading to better production and higher profitability. Among the recent innovations which have been successfully adopted in the country including construction of elevated platform cage and environmentally controlled houses with automatic drinking and feeding systems for rearing layer birds. This integrated and latest approach to housing design, nutrition, management and disease control would eventually influence flock performance and profitability.

ALTERNATIVE HOUSING SYSTEMS

TRADITIONAL FREE RANGE :

In the past , free range was a general description indicating only that poultry was allowed to range over the fields. Today, free range is specific term and flocks were described as much meet the criteria listed below.

1. Birds should have continuous access to open runs and the ground to which they have access must be mainly covered with vegetation.
2. The entire area should be well fenced to keep out the predators.
3. Stocking density should be not greater than 1000 birds / ha. of available ground (1 hen / 10 m²)
4. A very high degree of management is required.

Semi-intensive –Modified free Range :

For these systems , as for free range with exception that the maximum outdoor stocking density should not be greater than 4000 hens / ha. of land available (1 hen / 2.5 m²)

DEEP LITTER

An egg producer who wants to market eggs with label “deep litter” must fulfil the following conditions. The maximum stocking density may not be less than 7 hens / m² of available floor space (1400 cm² / bird) with at least one third of this area are being covered

with litter material. A sufficient large part of the floor area should be available for the collection of droppings.

MODIFIED CAGES :

These cages offer the hen a more complex environment while retaining the advantages of small colony size, hygiene and economics of battery system. Birds area specifications are identical to battery cages. At least 450 cm² of cage area per bird and 10 cm / bird of trough space with an adequate water supply is essential.

Management problems associated with rearing birds in alternative systems have received critical attention and their 'Welfare friendly' status is frequently diminished as the project is translated from the experimental to the commercial situation. Alternative systems offer a degree of freedom to the birds, which the battery system fails to satisfy ; they also encourage a greater degree of conflict within the flock and the latter is not commensurate with 'GOOD' shell formation.

ELEVATED PLATFORM TYPE CAGE HOUSES FOR LAYERS.

The main purpose of poultry house is to provide comfortable and healthy environment to the birds. Ventilation is a major factor in producing good environment in poultry houses. It also a deciding influence on the flock performance, disease control and energy used. Ventilation system designed to create the proper flow of air in the shed to keep the birds healthy and protective. A good ventilation system in a house will:

- a. Provide adequate fresh air and oxygen for the birds, thus maintaining a uniform and healthy environment throughout the house.
- b. Provide the desired temperature and humidity – necessary for optimum performance and efficiency of the birds.
- c. control moisture and poisonous gases arising from the microbial fermentation in dropping / litter (ammonia etc.,)
- d. Maintain better conditions minimize incoming dust
- e. Dilute disease- causing organisms.
- f. Allow a large increase in the number of birds per house.

An essential requirement of any ventilation is to have a constant control of air movement in a poultry house. Air volume in summer months must be adequate and in correct direction to ensure uniform distribution throughout the poultry house.

Specification of elevated platform type cage house in layer farms:

01 Pillar height to lay platform

4.5- 6.0 feet depending on the capacity of the birds and soil type of that area.

02 Length of the house

Length can be at any length depending upon the capacity of the birds.

03 Breadth of the house

Breadth of the house is restricted to 30-330feet.

04 Height of the wire mesh

From the platform to overhang 8 to 10 feet.

05 Height of the house.

14 feet from platform to centre.

06 Arrangement of cages

2- M type cages triple deck in centre of the house + 2-L type cages in two sides.

3- M type cages triple deck, 4 birds / cages compartments.

07. Distance between cage arrangements (Pathway)

2.50 to 2.75 feet.

08. Feeder and drinker

Channel type feeder and waterers

09. Channel type and nipple drinkers

Automatic feeding system + nipple watering system.

09. Side mesh.

Chain link 2 inch x 2 inch

ADVANTAGES IN ELEVATED TYPE CAGE HOUSES IN LAYER FARMS.

- i. Hens reared in elevated type cage houses attained 50 % egg production earlier than other systems.
- ii. Bird reared in elevated type cage houses resulted in higher hen-housed and hen-day production.

- iii. Eggs collected from elevated cages houses had better shape index, Haugh unit and yolk colour scores.

ENVIRONMENTALLY CONTROLLED LAYER HOUSES.

An environmentally controlled layer house is one which inside conditions is maintained as close as possible to the bird's optimum requirements. The house is closed and insulated and trusts on artificial ventilation and air movement. The structural make up is similar to that of elevated platform layer houses. Large number of layers may be accommodated in these houses.

In the environmentally controlled layer houses air is mechanically moved inside, the width of the house greater and is 40' making it more economical to construct. To provide working comfort the side height of the house at the eaves should be 8'. To minimize heat gain in summer and heat loss in winter the ceiling must be fully insulated and it should be wash proof. Care must be taken to see that there is no air leak in the roof. Double walled plastic curtains along the side walls with which arrangements to open or close are to be provided. The curtain should have an overlap of 3"- 4" over the side wall to prevent leakage of air. The floor should be of concrete or watertight stone slabs.

ADVANTAGES OF ENVIRONMENTALLY CONTROLLED LAYER HOUSES.

- a. Number layers can be accommodated.
- b. Less labour and more efficient working atmosphere.
- c. Less feed wastage and more feed efficiency.
- d. Less fuel cost in turn less cost of production.
- e. Less cost of medication and more livability.
- f. Higher egg production and more profitability.
- g. Cleaner egg production.

FUTURE PROSPECTS IN MODERN POULTRY HOUSING AND MANAGEMENT.

The above innovations have improved the poultry house environment and permit increased density thereby housing a large number of birds in the same house. With introduction of various devices to control environment in poultry houses, it would not be long before microprocessors would be used to monitor temperature, humidity, noxious gases, and consumption of water, feed and the light. Also devices to collect eggs, computed record keeping would expedite these processes.

28. Care and management of layers.

Layer Management: From the point of lay to one year it is called laying period.

When first egg laid – Pullet – pullet egg.

Floor space	: 2 sq.ft.
Feeder space	: 4 sq.ft.
Water space	: 2 sq.ft.
Nest space	: 1 box for 5 birds
Litter Depth	: 6 box for 5 birds.

Feeding : Layer mash is fed during this period - 18% protein. Daily ration is decided and issued two to three times in a day. This helps in lesser feed wastage and better balancing.

Choice feeding of calcium : Calcium is supplied to the birds in feed. Supply of calcium in the feed assures a more uniform intake of calcium by all the birds.

For hens in very high egg production and in high environmental temperature supplementation of extra calcium is necessary. This is given in the form of shell grit. 5-10 Kgs./100birds/Month.

Lighting : Layer birds has to be kept with a period of at least 16 hours a day. Twelve hours of day light is supplemented with additional 4 hours night lighting. It is introduced as step up programme.

20 th week	6-6 ½ PM	5.30 – 6.00 AM
21 st week	6-7 PM	5 - 6 PM
22 nd week	6-7.30 PM	5 – 6 AM
23 rd week	6 – 8.00 PM	5 – 6 AM
24 th week	6 – 8.30 PM	5 – 6 AM
25 th week	6 –9.00 PM	5 – 6 AM

Light stimulates anterior pituitary gland through brain and the liberation of F.S.H. helps the follicles to mature.

A forty watts bulb at a height of 7 feet with 100 feet distance from another, will provide the required intensity of light for 100 sq.ft. area.

General guidelines :

1. Provide balanced feed.
2. Use clean wholesome water
3. Never reduce the light during laying period
4. Supplement vitamins to relieve stress
5. Deworm once in 45 days.
6. Litter to be raked up once a week
7. Add Lime at 5-10 Kg/100 sq.ft. to keep them dry.
8. Cull-the unproductive birds/then and there.

Vaccination - refer disease

Culling

Cage layer fatigue

Calcium feeding.