LESSON 19: CULLING OF BIRDS FOR PROFITABLE POULTRY FARMING

STRUCTURE

- Culling – definition and benefits
- Characteristics of sick birds
- Sight culling and culling time
- Culling in growing period
- Culling in layer farm
- Summary

LEARNING OUTCOME

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

- Define culling and its benefits
- Identify sick and unproductive birds
- Eliminate unproductive birds from a flock
- Measure between present and past production performance

CULLING – DEFINITION AND BENEFITS

Culling refers to the identification and removal of the non-laying or low producing hens from a laying flock. Unless the birds are removed, they are suitable for marketing or home cooking. It would be more profitable to eliminate poor or non layers early in their life than to wait until later. But, a successful method of selecting high and low producing pullets before they start laying, beyond eliminating the weak, has not been definitely worked out. Birds of low vigour, slow maturing, should be culled during the growing period itself before they are shifted to the layer house. Removing the inferior birds reduces the cost of producing eggs, reduces the incidence of disease and increases the available space for high producing hens. Hens eat feed whether or not they are laying. Removing the cull birds will make more feed and space for more productive birds. It is a commercial practice that when the birds are shifted to the layer house, they are visually examined and birds which are weak and unthrifty are culled; this is probably referred to as “sight culling”.

CHARACTERISTICS OF SICK BIRDS

Sick or unthrifty birds will have:

- Short, narrow, emaciated (thin, weak) bodies,
- Small pale combs and wattles,
- Appearance of listless or droopy,
- Eating less feed,
- Drinking less water,
- Generally indicating poor health.

SIGHT CULLING AND CULLING TIME

Sight culling is removal of obviously undersized, under developed, weak, crippled or discarded birds which have very little chance of becoming good laying hens when being placed in the laying house. Any bird which has a permanent genetic or injury-produced deformity such as crossed beak, slipped wing, one or both eyes blind, or any leg deformity that can interfere with the bird's ability to mate or to reach feed, water or lay in the nest is removed. It is most economical to remove these birds from the flock as soon as they are noticed or identified.

Similarly, the sick or unthrifty birds will often have short, narrow, emaciated (thin, weak) bodies and appear listless or droopy**;** small pale combs and wattles generally indicate chronic poor health. These birds have to be removed from the flock as soon as possible to avoid disease problems that may spread to other birds.

Culling at night is recommended, since the birds are less likely to be frightened and reduce egg production. A flashlight with the lens covered with blue cellophane will make it easier to detect poor layers without disturbing the other birds. However, even after the pullets are housed in layer houses, some of them may be uneconomical due to poor production abilities. Such birds are identified by judging them at or after 26 to 28 weeks of age. Pullets can be judged for both present production as well as persistency of production; the latter popularly referred to as "past production".

CULLING DURING GROWING PERIOD

- Birds of low vigour and slow maturing should be culled during the growing period itself before they are shifted to the layer house.

- It is most economical to remove these birds from the flock as soon as they are noticed or identified.

CULLING IN LAYER FARM

- Identification and removal of the non-laying or low producing hens from a laying flock.
- It would be more profitable to eliminate poor or non-layers early in their life than to wait until later.
- Even after the pullets are housed in layer houses, some of them may be uneconomical due to poor production abilities.
- Such birds are identified by judging them at or after 26 to 28 weeks of age.

Present Production

Non-layers are the birds old enough to have produced eggs but have not yet started laying and poor layers are the pullet which have started laying but are producing fewer than expected number of eggs. Present production may be determined by examining the vent, pubic bones, comb, wattles and earlobes.

(i) **Comb and wattle**: A good layer will have more active and well developed ovary and hence more sex steroids are secreted which includes testosterone which is responsible for good development of combs and wattles.

(ii) **Eye**: Good layers tend to open their eyelids much more than poor and non- layers in order to receive more light stimulus required for egg production.

(iii) **Vent:** When the egg is being laid, there will be relaxation of the pubic bones to help passage of egg and oviposition. When it occurs frequently, as in case of good layers, the pubic bones remain relaxed. This relaxation causes the otherwise round vent (Cloaca) to become oblong. Added to this, during oviposition, there will be vaginal secretions to help passage and laying of egg which makes the vent moist. Therefore, vent of a laying hen is large, moist and dilated and tends to become oblong in shape. In case of non-layers, it will be small, contracted and dry.

(iv) **Distance between pubic bones:** In case of good layers, due to frequent relaxation of the pubic bones, they become more flexible, thinner and remained separated by a larger distance. In non-layers, the bone will be stout and very hard.

Judging present production

Particulars	Good layer	Poor layer	Non-layer
Comb	Large, red, warm	Small, less warm, shrunken	Underdeveloped
Eyes	Big, bright and active	Comparatively smaller and less active	Appears dull and inactive
Vent	Oblong, moist and pink	Less oblong, may be moist and pink	Round, dry and has a yellow ring
Distance between two pubic bones	At least three fingers	Less than 3 fingers	Maximum one finger
Distance between tip of the breastbone and pubic bones	At least four fingers, the region being soft and pliable	Less than 4 fingers, not very soft	Hardly two fingers, very hard and rubbery

One finger is approximately 1.25 to 1.5 cm

(v) **Distance between tip of the breastbone and pubic bones:** This is a measure of abdominal capacity. Good layers consume more feed than poor or non-layers. They will also have well developed ovary and oviduct (about 20 times as large as the same organs of a non-productive hen). Hence, there will be some structural change in the skeletal system to accommodate these changes. In addition, due to constant pressure of the viscera (organs) and the weight of egg in the oviduct, the abdominal muscles become flabby (loose) in case of good layers. Capacity to produce eggs is shown by the depth or distance from the front of the keel to the centre of the back, the space between the end of the keel and the pubic bones, the width and length of the back, and by the width and length of the keel. A depth of 4 to 5 fingers from the end of the keel to the pubic bones is associated with good rate of production, while a depth of 2 or 3 fingers indicates fair to poor production.

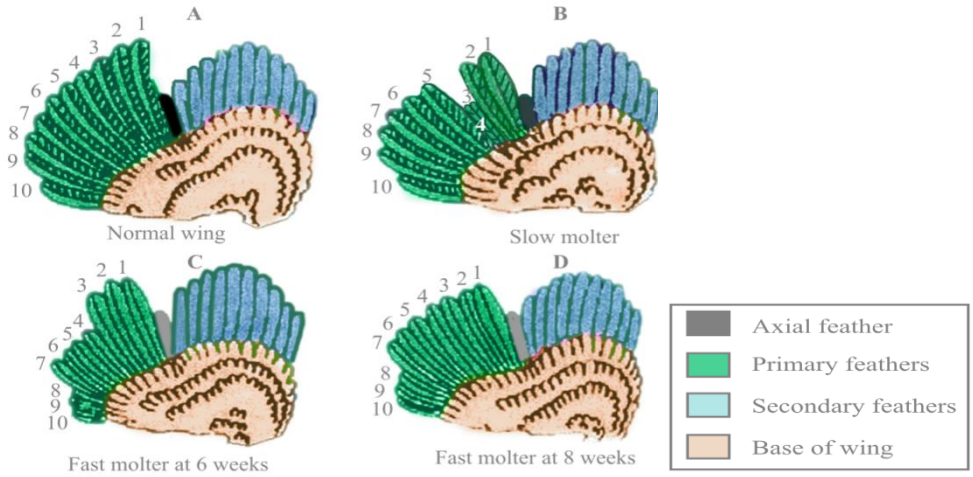
Persistency of Production

The persistency of production (Past Production) of a laying hen can be measured by the following parameters:

(i) Moulting: Persistence of production is measured by the condition of the plumage. As long as the hen lays regularly, she usually retains her old feathers, But, if for any reason other than sickness or broodiness, she stops laying, the feathers begin to drop and this condition is called as ‘moulting’. Hens referred to as “late moulters” will lay for 12 to 14 months before moulting, while others, referred to as “early moulters” may begin to moult after only a few

months in production. Late moulters are generally the better laying hens and early moulters are generally poor layers.

The order in which birds lose their feathers is fairly definite. The feathers are lost from the head first followed in order by the neck, breast, body, wings and tail.



(ii) Pigmentation: Xanthophylls, the yellow pigment responsible for yolk colour will be present in various parts of the body *viz.* round the vent, earlobes, eyelids, beaks, shanks etc. Before the birds begin to lay (Non-layers), the pigment is replenished regularly by the feed the birds eat. But, when the birds begin to produce eggs, the xanthophylls will be taken for yolk colouration and hence, the tissue from where the xanthophyll is oxidized does not get the pigment; and therefore, they get discoloured or bleached or de-pigmented.

It can also be noted that non-layers are characterized by presence of yellowish colour round the vent whereas both poor and good layers will definitely have bleached vent.

The order of bleaching of pigments is presented in Table given below.

Order of bleaching of pigments

Tissue bleached	**Number of eggs**
Vent	When first egg is laid
Eyelids	6-8
Earlobes	9-10
Beaks	11-35
Underside of foot	66
Front of shanks	95
Back of shanks	159
Top of toes	175
Hock joint	180

SUMMARY

- Culling refers to the identification and removal of the non-laying or low producing hens from a laying flock.
- Culling is always related with profitability of poultry farm.
- Birds of low vigour and slow maturing should be culled during the growing period itself before they are shifted to the layer house.
- Measurement of present and past egg production is very much important for culling.

WEB RESOURCES

http://ecoursesonline.iasri.res.in/mod/page/view.php?id=61104

http://www.elearnvet.net/moodle/course/view.php?id=32 (Topic 9 Moulting)

https://www.slideshare.net/gurramsrinivas39/judging-of-poultry

http://agritech.tnau.ac.in/animal_husbandry/ani_chik_grower&layer%20mgt.html

https://www.youtube.com/watch?v=Jv-biAVwmjc