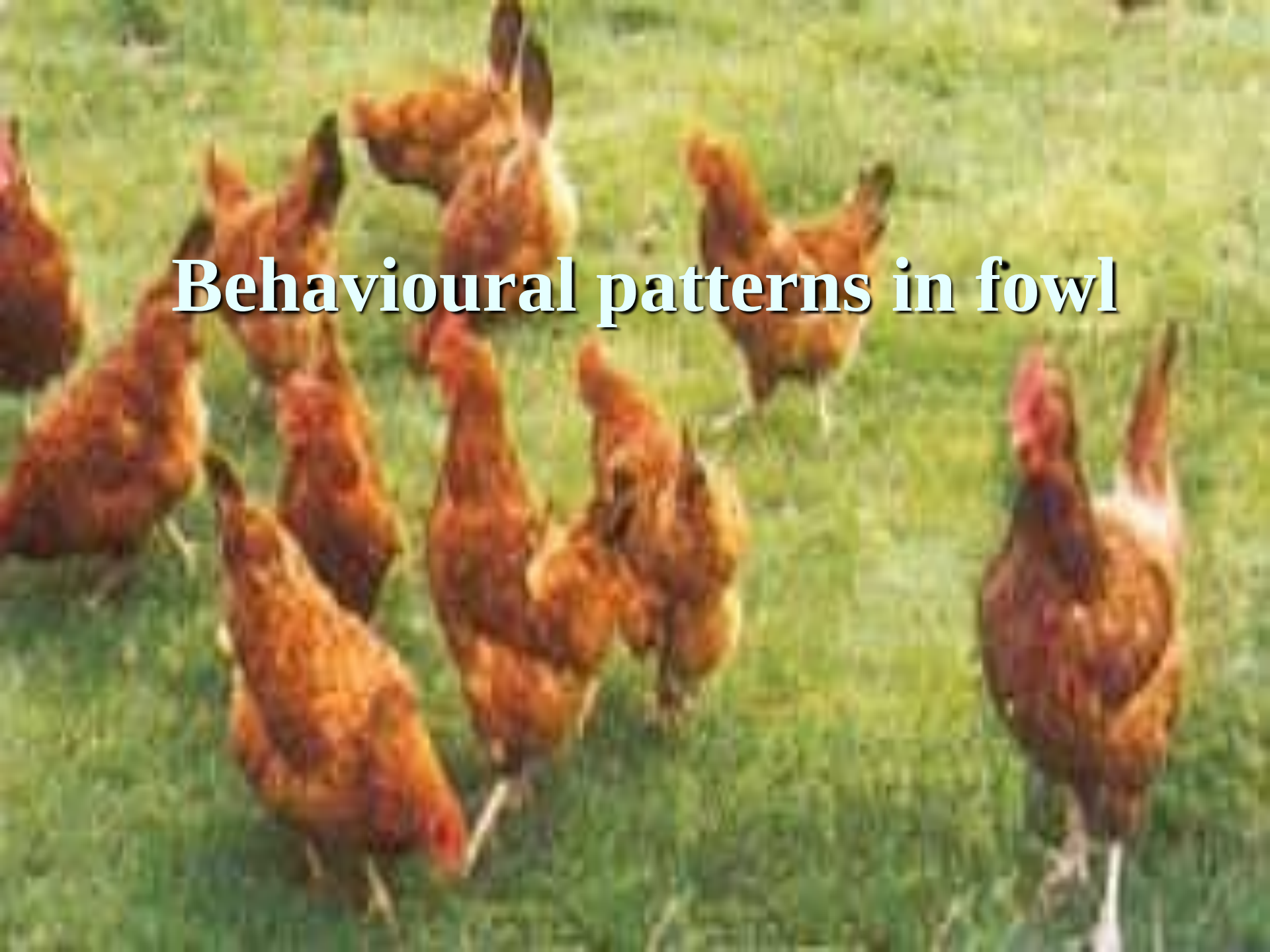

Behavioural patterns in fowl


Ingestive behavior

1-Feeding

- The main feeding behavioural patterns of fowl are :
- head shaking and bill-beating that serve directly to break up the food.
- Also, cleaning the bill and the head, which includes head scratching, bill wiping and bill scratching.
- Ground scratching often associates with feeding to make the food more accessible.

- Food running:

is a very striking feature of feeding behaviour.

The bird runs around with a large food object or living prey in its bill with continuous peeping.

So, it is chased by another chick which grab at the food whenever possible.

- **Development of pecking and swallowing of the food: -**
- Normal development of pecking and swallowing of the grains requires some pecking experience in the light.
- If there is no experience, this behaviour takes a longer time to be developed.

- Chicks at first peck and ingest both nutritive and non-nutritive substances.
- Selection is based on visual preferences and immediate gustatory and tactile cues.
- These preferences are modified by early experiences (as what the mother of companion feeds on) and by learning to associate the ingested substances with post-ingestion cues, which includes metabolic feedback with enhancement of pecking of the given substance and discomfort or malaise feedback with depressing of pecking.

- Feeding of fowls is not completely tied to the light-dark cycle.
- The physical properties of food can affect its feeding behaviour.
- For example, the greater the pile of food set before the bird, the more it eats.
- Also, chicks were found to peck at some colours more than others with the highest at the orange region of the spectrum followed by the blue region.

2-Drinking

- The newly hatched chick has to learn to drink.
- The drinking in inexperienced chicks can be elicited by a visual stimulus.

- Chick drinks by dipping its peak into the water and then raises its head up and keeps its peak in a vertical position so that the water passes through the oesophagus with the aid of the gravity.
- Drinking in chicks is controlled by the hypothalamus.
- The frequency of drinking varies with the time of the day and is associated with feeding


Comfort behaviour

- The comfort movements of birds are: -
- Stretching.
- Yawing.
- Preening.
- Dust bathing.
- Shaking.

- Stretching has two types: -
- Bilateral stretching: -

  where the wings are half opened and are stretched upward and forward.
- Unilateral stretching: -

  Where one wing only is fully stretched with the leg of the same side.

- Yawing may occur in conflict situations.
- The total time spent preening by adult fowls is 2-4% of the 24 hours.
- The frequency of preening varies with the time of the day and with the frequency of sleeping.

- Dust bathing is a highly social event in the fowl where the dust bathing bird is usually joined by others. During dust bathing, the bird may perform vertical wing shaking, scratching, lying on the side and head rubbing.

- Feather ruffling, head and tail shaking are another forms of comfort movements of birds.
- Sleep in fowl is partially independent of light where the light plays a subsidiary role in the activity rhythm of fowls.

Social behaviour

- Social behaviour of the fowl may begin before hatching.
- There is an auditory interaction between the unhatched chick and its mother.
- Peeping in the unhatched chick is recorded as early as the 7th day of incubation.
- Also, the unhatched chick responds to the light and the sound at the 17th – 18th day.

- After hatching, the social bonds are derived from many reinforcements obtained in the first few days after hatching as warmth, hormonal influences and presence or predators. Learning is another factor affecting the formation of such bonds.
- Calls play an important role in early socialization especially in relation to the hen. This relationship originates before hatching when the egg is pipped and continues for several days post-hatching.

Agonistic behaviour and peck order

- Agonistic behaviour of fowl includes attack, escape, avoidance and submissive behaviour.
- These patterns of activity vary in intensity and can be recognized by differences in posture and movements.
- Attack includes fighting, pecking and threatening.
- Negative reactions may be differentiated as submission, avoidance and escape.

- In submission, the bird bows or crouches and thus individual tend to keep away from a superior.
- Escape is marked by flight and it is the most intense negative reaction.

- Male fowls are more aggressive than the females.
- A mixed flock has two peck orders, each unisexual.
- Peck order dominance role include responsibilities (as fighting of predators) as well as periorities (as feeding rights, mating preferences…etc).
- Peck order in fowls is a linear form. In some groups, the peck order can be a complex one.

Factors affecting peck order

- **Appearance: -**

  as the comb size, losing and moulting as well as the body size.

- **Aggressiveness: -**

  where there is a relationship between the peck order and aggressiveness. There is a breed differences in aggressiveness.

- **Flock size and composition: -**

  affect the peck order of fowls.

- **Past experience: -**

  influences aggressiveness and hence dominance.

- **Hormonal effect: -**

  the testosterone hormone has a relation with the aggression and hence dominance or peck order. Also, thyroxin hormone has the same effect.

- **Genetic factors: -**

  where some breeds are more aggressive than others and consequently more dominant.


Sexual behaviour

- Chicks are polygamous where their social aspect of reproductive behaviour is more complex than in monogamous species. Coitus in chickens is preceded by various behaviour patterns known as displays or courting, which synchronize sexual activities of the males and females.

Male sexual behaviour

1- Courtship

- Males display courtship as waltzing, wing flapping, feather ruffling, head shaking, tail wagging, bill wiping and preening. Most of these patterns are temporarily connected to approach, avoidance and mating. Hens respond to that either by moving away or by crouching. Rarely, she responds aggressively.

- The cock mounts the female from the rear. Usually, he grasps her neck with his bill and then makes treading and finally lowers his cloaca to contact that of the hen. Many matings are incomplete because the male stops after mounting and treading.

2-Rreleasers for male mating behaviour

2-Releasers for male mating behaviour

- The head of the hen is important for arousal of sexual behaviour and it is more effective when prone than when erect.
- The body and tail presented together are also effective in arousing the male sexual behaviour but in a lesser degree than the body and head presented together.

- The head is very important in ensuring correct orientation of copulatory behaviour.
- The frequency of mating in fowls has a well-defined diurnal rhythm. Coitus is most frequent in late afternoon


Female Sexual behaviour

- The female initiates coitus by crouching to the male.
- Hens like cocks show a difference in the rate at which they copulate.
- The position of the hen in the peck-order appears to be very important in that matter where a negative correlation has been found between the social rank and the frequency of mating. I.e. hens of higher rank are mated less than their inferiors.

Parental behaviour

1- pre-laying and nesting behaviour

- Before laying an egg, the hen may perform an involved behaviour patterns.
- When the hen is about to lay the egg, she calls, which is given with the bill is opened. Then, she searches with the male for a nesting place as the hen enters and examines many sites for that purpose.
- The pre-laying behaviour in battery caged hens may be reduced to a number stereotyped movements.

2- Parental behaviour

- There is a genetic variation in the parental behaviour. Broodness can be induced by subjecting the hens to a dim place with baby chicks.
- High temperature and humidity also affects the broodness in breeds that classified as non-broody.

Displays and vocal communication

a- Displays

- **The waltz: -** Where one wing is dropped and the cock advances sideways or circles around his opponent with varying intensities. The wing may be fully or only slightly lowered. The neck may be extended or slightly retracted. It usually occurs before mating.
- **Tidbitting:** - Where the cock scratches and pecks at the ground giving food calls.

- **Feather ruffling: -** Where the neck is stretched with ruffling of its feather and shaking of the whole body. It usually occurs as a sign of agonistic behaviour.
- **Tail wagging and head shaking: -** It is a sign of fighting as the most vigorous form.
- **Circling: -** Where the cock walks around the other with exaggerated high steps, watching him all the time.

b- Vocal communication

- **Twitters: -** It is the pleasure call. It seems to be a response to a moderately intense sensory stimulation.
- **Peeps:** - It is the distress call. It seems to be a response to withdrawal of a normal stimulation.
- **Trills:** - It is a direct response to a sudden stimulation.
- **Shrieks:** - It is a response to a traumatically intense stimulation such as an electric shock or capture.


Behavioural disorders

Cannibalism

- **Causes: -**
- Deficiency of protein, salt, crude fiber and phosphorus.
- Crowdness.
- Prolapse of oviduct.
- Excessive light.
- Poor ventilation.
- High temperature.
- Low humidity.
- External parasites.
- Genetic factors.
- Increased number of males.

- **Prevention: -**
- Removal of the causes.
- Cut the tip portion of the beak (beak trimming).

Egg eating

- **Causes: -**

1. Laying of abnormal eggs.
2. Soft-shelled egg.
3. Ration deficiency in calcium and phosphorus.
4. Inadequate nesting facilities.
5. Failure to collect eggs frequently.

- **Prevention: -**

1. Removal of the causes.
2. Beak trimming.
3. Filling empty egg shells with unpleasant tasting substances.

Hysteria

Causes: -

- Over crowdness.
- Poor ventilation.
- Hot weather.
- Sudden noise.
- High level of dust in the poultry house.
- Excessive ammonia in the poultry house.
- Light flashing.

- **Prevention: -**

1. Removal of the causes.
2. Adding a small dose of tranquilizer every fourth day for three times in the water for drinking.
3. Additional amount of niacin in the diet is of value in quieting the birds.

Floor egg

- **Causes: -**
- Inadequate number of nests.
- Insufficient nesting materials.
- Presence of broody hens.
- **Prevention: -**
- Removal of the causes.
- Placing the nests in a darker part of the house.