

Some chicken's maintenance behaviors

1- Eating Behavior:

At hatching, chickens inherently know how to peck and they can pick up objects i.e. feed. However, they do not know how to discriminate between what they should or should not eat.

*Feeding chicks:

When the chicks are reared by a hen the chickens' feeding problems are greatly reduced because the hen shows them what to eat and what not to eat; she does this by example and vocal calls.

When the chicks are reared at poultry houses commercially, the owner must facilitate the reach of chicks to feed and feeders. The normal practice is to place paper on the floor of their accommodation and to sprinkle a small quantity of feed on that for the first 24 hours. The paper is usually removed after about 3 days. It is also a normal practice to place feed in large, shallow trays called scratch trays or **chick-type feeders** for the first 7 – 14 days.

2- Drinking Behaviour

Chicks dipping the beak into water results in them starting to drink earlier, presumably because they learn to recognize the water more quickly.

There is a close correlation both hourly and daily between food intake and water consumption, and both of them depend on ambient temperature. Adult domestic fowls drink about 150–200 ml of water per day at normal ambient temperatures.

*There is evidence that overdrinking can be a stress-related behaviour which is behavioural polydipsia or psychogenic overdrinking, a common problem in animals:

1- housed in deprived (barren) environments.

2- food-deprived may also show increased drinking behaviour. For example, food restricted broiler breeder hens supplied with ad libitum water will overdrink but because of the problems this causes with litter quality, the water supply to breeders is generally limited to only a few hours per day. This could, however, exacerbate the frustration caused by food restriction.

*Overdrinking cause problems as: wet litter and wet droppings in floor systems

3- Movement

The word 'movement' is associated to freedom of movement.

Factors affecting birds' movement behavior:

a- **Space allowance:** A medium hybrid hen, unconstrained and including the tail and other feathers, occupies between 475 and 600 cm² when at rest and more if active. This area is of course

affected by posture, but at space allowances of less than 475 cm², medium hybrid hens must frequently overlap or have their feathers compressed.

b- **Crowding:** it restricts movement behaviour, and extreme crowding may also be directly detrimental to welfare. For example:

- Birds use postural changes such as erecting their feathers or elevating their wings to dissipate heat, so their ability to thermoregulate by behavioural means will be decreased under crowded conditions.
- Mobility is directly affected by density: in a deep litter system studied over a range of stocking densities, time spent in locomotion declined at higher densities.
- Freedom of movement is reflected in the actual number of movements made by birds. The area occupied by hens has shown that conventional production system in battery cages most restrict freedom of movement.

***Movement of the bird effects on the bone strength**, so that tibia strength and humerus strength are better in percherries and deep litter systems compared with cages. Bone strength and structure **may also be improved in cages simply by** adding a perch, although not as much as in alternative systems.

Weak bones are more likely to be broken both within the system and when birds are removed for slaughter.

***Restriction of movement results in the prevention of specific behaviour patterns**, because these need more space than standing. Such **prevention may cause frustration**, and **physiological consequences**. For example, broilers are more motivated to move to adjacent areas if those areas contain resources such as preferred dust bathing substrates.

Studies were compared different systems found that hens took an average of:-

Movement behaviour type	Frequency/system
Steps/hour	72 steps/h in cages 208 steps/h in a perchery
Wing movements (wing flapping)	twice per hour in the perchery
Flying	completely absent in cages 0.4 times/h in the perchery

4- Comfort Behaviors:

Comfort behaviors **such as preening, wing flapping, feather ruffling and stretching**, are important for keeping the plumage well-groomed in both natural and artificial conditions.

These behaviors **vary between systems in** frequency, form, synchrony and function. This variation is primarily associated with stocking density and space allowance, because comfort behaviors require a large area to be performed. Constraints on comfort behaviors cause frustration and it related to welfare because they are functional in addition to increasing body comfort.

***Displacement activities** are activities shown clearly when the animal deprived from performing one of its natural behaviors will be substituted by hyper another behavior, and are interpreted as indicating frustration. **For example:** birds that are prevented from reaching food often preen themselves, but in a slightly faster, more incomplete manner than normal.

1- Preening Behavior

Preening is comfort behavior includes oiling of the feathers from the uropygial or preen gland (Birds have a single oil gland near the base of the tail, referred to as the preen gland). Birds pinch this gland with their beaks to extract a waxy oil, which they then apply as they preening (pass) their feathers through their beaks and/or foot. **Birds preen to maintain feather condition from brittleness and to help insulation and waterproofing.**

2- Dust bathing and water bathing:

Dust bathing is the act of rolling or moving around in the dirt to cleanse the skin and feathers of parasites, dead skin, and other skin irritants. **The behavior of bathing in either water (waterfowl) or dust (galliforms and ratites) helps birds to maintain their plumage condition.** These behaviors are different from the other comfort behaviors in that to be performed in their complete form **they require either loose material like sand; wood shavings; recycled paper; rice hulls; hay or water.** When given a choice of **dust bathing materials the fine substrates are better at penetrating the feathers.**

The importance of this behavior are **rids poultry of external parasites and aligns their feathers.** Failure to dust bath may to lead to frustration.

3- Roosting and perching behavior:

Roosting and perching is strong tendency for birds. Birds desire to roost or perch above the ground is an inherent **protective mechanism** against ground predators. They usually use them for night-time roosting and resting during the day.

The advantages of perching are:

- 1- **Reduce the number of floor eggs**
- 2- **Permits a significant increase in the number of birds** that will comfortably occupy the house.
- 3- **Provides a place of escape** from harassment from pen-mates during periods of light.
- 4- **Can be used to commercially as** 1) strain-gauged perches are used to weigh birds automatically to obtain flock performance data. 2) Chickens will use water-cooled perches during periods of hot weather to help regulate body temperature, which has the potential to decrease heat stress and thereby decrease mortality and improve carcass quality.

4- **Rest and Sleep**

The main pattern of rest and sleep **is set by the light–dark cycle**. As with most birds, poultry are generally inactive at night and **this diurnal rhythm is strengthened** in enclosed houses with a completely dark night, compared with systems with natural lighting and more gradual dawn and dusk. It is **weakened**, in light regimes that use continuous light or simply a dim phase rather than complete darkness, and disrupted even more by intermittent lighting programs without a well-defined night. These kinds of lighting regimes are common for rearing broiler chickens. **One consequence of such disruption on the birds is abnormal eye development**. Chickens reared under continuous light are also **more fearful** than those provided with a period of darkness each day.