Maintenance behaviors

1- Eating Behavior:

Understanding feeding behavior of livestock helps the stock owner maximize the productivity of his animals despite the limitations imposed by the available feed. Feeding behavior of animals depends on the nature of their main feed source and it is therefore convenient to divide domestic livestock into ruminants (herbivores) and omnivores (pigs and poultry).

Poultry in free range forage mainly by scratching at the ground to expose small feed items such as seeds, fruits, herbage and invertebrates. Young birds usually eat a higher proportion of invertebrates than adults, possibly because they require a higher protein diet. Geese may consume large quantities of grass. Under natural conditions, domestic poultry spend a large proportion of their time foraging, with peaks of activity in the morning and the evening. Intensive production systems that prevent the birds from performing such behavior may result in behavior problems such as feather pecking.

2- Drinking Behavior

Water is essential for life and can be supplied to livestock as drinking water, water in feed and as metabolic water produced by oxidation of organic nutrients. Cattle that are deprived of water rapidly lose their appetite, and if they are subjected to extended period of inadequate water supply, their growth rate will suffer.

Factors affecting water requirements and feeding behavior of farm animals. Water requirements of livestock are affected by several factors which include: specie, physiological state of the animal, type of diet, dry matter intake, climatic conditions, water temperature and salinity.

Adult domestic fowls drink about 150–200 ml of water per day at normal ambient temperatures. Sometimes, birds suffer **overdrinking** which is a **stress-related behavior** that known as behavioral polydipsia or psychogenic overdrinking **that can be seen in**:

A. Housed in deprived (barren/cage) environments.

B. Food-deprived may also show increased drinking behavior. 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.

3- Movement

The word ‘movement’ is associated to freedom of movement which is reflected by the actual number of movements made by birds.

- **Factors affecting birds' movement behavior:**

a- Space allowance: battery cages most restrict freedom of movement.

b- Crowding: restricts movement behavior, 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 thermos-regulate by behavioral means will be decreased under crowded conditions.
- ✓ Mobility (locomotion) is directly affected by density: time spent in locomotion declined at higher densities.

- **The importance of movement:**

1- Movement of the bird strengthen bone like tibia and humerus bones are stronger in perch and deep litter systems compared with cages. Bone strength and structure **may also be improved in cages simply by** adding a perch.

2- Birds prefer to exhibit specific behavior patterns as wing flapping, flying, dust bathing …etc, **Restriction of movement causes** frustration, and physiological consequences.

4- Comfort Behaviors:

Many studies have shown that comfort behavior, such as stretching, wing-flapping, body shaking, and preening, are types of behavior which important for body maintenance and care of the feathers.

These behaviors **vary between rearing 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.

Some of comfort behaviors:

1- **Preening Behavior: 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 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.**

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**.

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**

Clinically healthy animals are expected to lie down at least once in a day, either to rest or sleep, which are necessary for restoration, metabolic recoveries and conservation of energy. Horses spend approximately 2.5 hours a day resting, mainly in a standing position (fixed stance). They hardly spend more than 30 minutes sleeping. Cattle spend about 5 hours a day in a drowsy or sitting position while ruminating and about one hour sleeping. They may also stand or lie without ruminating. Rest and sleep are affected by diet. Time of sleeping decreases with increase in percentage of roughage in the diet.

As with most birds, the main pattern of rest and sleep **is set by the light–dark cycle**. 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.