

Poultry Housing and Enclosures

Our topics for this week are:

- Comparisons of poultry housing and enclosures, including:
 - Conventional cages
 - Enriched housing
 - Barn or aviary
 - Free range

The American Veterinary Medical Association policy on Layer Hen Housing Systems states that “housing systems should provide for expression of important natural behaviors, protect hens from disease, injury, and predation, and promote food safety. Participation in a nationally recognized third-party audited welfare program is strongly advised.”

Poultry, excluding ratites (emus, ostriches) and waterfowl, are generally housed in floor housing, slats or wire mesh, or cage housing. Commercial chicken houses are cage housing because more chickens can be maintained with less land cost and labor involved. About 90% of layer hens in the U.S. are in cage systems, but there is a growing market trend toward cage-free eggs. International regulations have begun to restrict the use of cage housing on the basis that the confinement was extreme and beyond humane practices. Proponents of cage systems stress the protection from selected diseases, confinement of pecking injuries to only birds within the cage, and litter-free air quality.

Poultry housing quality should be based on the incidence of lameness, feather condition, frequency and severity of wounds, number of soiled birds, and ammonia levels. Housing should provide natural behaviors, reduce the risk of diseases, injuries, and attack by predators.

Conventional Cages

Conventional cages are wire cages about the size of a filing cabinet drawer, called a *battery cage*, in which 3 to 8 hens live, but cannot dust bathe, walk, perch, or forage. The arrangement of cages is similar to the cells in a battery. Each bird is allowed 67 sq in of space. In addition, they are prohibited or inhibited from flapping their wings, stretching their wings out, shaking their body, or wagging their tail. Some wire floors can cause foot damage. These have an economic advantage at the expense of prohibiting natural behavior and normal bone strength, plus causing stereotypic behaviors. Cage-free systems include sawdust covered floor, roosting area, and private nesting boxes.

Close confinement can be one cause for cannibalism, pecking injuries, and failure to eat or drink. Combs and wattles in chickens and snoods in turkeys are more at risk to be injured when in closer confinement or without environmental enrichment. The injuries can lead to being pecked by other birds. To eliminate that risk in close confinement operations, the comb is amputated (*dubbed*) and the two wattles are amputated (*dewattled*). In turkeys, the snood is amputated (*desnooded*).

Debeaking (partial amputation of the end of the beak is performed on all poultry being closely confined to help control cannibalism. One third of the upper beak is amputated in

broilers and one half of the upper beak is removed in turkeys. Debeaking will also prevent the bird from being able to perform natural foraging for food by pecking on the ground or on a floor surface.

Enriched or Furnished Housing

Enriched housing provides more room for behavior enrichment and may include perches, nest boxes, and scratch areas. Up to 60 birds may be housed together. Perching is a natural behavior for poultry and strengthens bones and muscles in their legs and feet. Perches strengthen leg bones, reduce pecking by more dominant hens, and reduce or eliminates breast blisters, which are caused by lying on bedding wet with urine. Litter permits the natural behavior of dust bathing and improved feather condition. It also provides an opportunity for foraging which reduces pecking injuries. Mortality is lowest in poultry housed in enriched housing.

Nesting is a natural behavior of laying hens. Nests can be individual nests or community nests for four hens. Individual nests for hens should be 1 ft square and 1 ft high. Nests should be positioned about 2 feet from the floor and have a landing board below the entrance to facilitate access to the nest. Partially covering the entrance to the nest by about 2/3 with a cloth flap will encourage birds to enter. Wire cages (1 X 2 inch, welded wire mesh) inside hen houses can be used in mild climates. Wire cages are typically 12 inches wide, 18 inches deep, and 16 inches high.

Barn or Aviary

Poultry barns are cage-free buildings where birds are kept on the floor with access to litter and nest boxes. An aviary is a barn with multi-tiered perches or platforms.

Free Range and Backyard Housing

Free range is used primarily for broilers/fryers and roaster chickens. It provides housing for protection from sun and wind with access to outdoor pen or pasture during the day.

Commercial free range operations require 1 acre of range for 400 to 500 pullets. Range rearing is for warm weather months. Protection from the sun and wind is provided with a skid shed with a slanted roof that is moved occasionally.

Small flocks can be kept in a backyard housing. Chickens are highly social. At least 3 should be housed together. A minimum of 2 to 3 sq ft per chicken is needed in a coop. Backyard coops should provide predator-proof fencing, straw bedding, a roost or elevated slatted floor, perches, nest boxes, and accessibility to dirt for dust bathing. At least 2 nesting boxes should be provided for 4 to 5 hens. The interior should be easy to clean. Supplemental heating may be necessary in winter.

Runs should have a roof to protect chickens from wild bird's droppings and predators. They should provide space that is at least 4 sq ft/chicken. Small laying flocks and turkeys often have roosts or perches. Roosts may be built over wire and dropping pits or they may be over a dropping board which requires periodic cleaning. Roosts can injure the breasts of broilers/fryers, roasters, or capons and heavy-weight breed turkeys and should not be used for these birds.

Roosts are used for sleeping. A roost in a chicken coop should be as high as possible but still allows head room for the chicken. Roosts provide an area for birds to group without piling on each other. Roosting keeps birds off the ground and out of their feces.

Poultry with outdoor access have to be secured away from attacks by dogs, cats, coyotes,

skunks, weasels, foxes, owls, and raccoons, especially at night. Hawks are daytime predators of poultry. An electric wire a few inches above the ground or mesh fence extending below the ground level can help protect against predators that cannot fly. Buried mesh fencing should be curved toward the outside of the enclosure and backfilled with rocks or stone. Mesh should be attached by screws and washers, not staples. Raccoons can pull staples out.

Other Poultry

Turkeys

Turkey poults up to 8 weeks of age each need 1 square foot of floor space in brooder houses. From 8 to 12 weeks of age, they should have 2 square foot for each bird. Adult turkeys should have at least 3 square feet for hens to at least 5 square feet for toms.

Light-weight breed turkeys can be kept on wire or slatted porches. Heavy-weight breed turkeys will injure their breasts and feet and should be raised in paved or gravel yards. Community nests for 5 birds is acceptable.

Ducks

By 7 weeks of age, ducklings should have 2.5 square feet and adult ducks need 6 square feet per bird in indoor confinement and less (3 square feet per bird) in a yard. Housing should be divided for every 3 ducks to reduce fighting.

Geese

Geese need 5 square feet per goose if in housing with access to a yard. The yard should provide up to 40 square feet per goose. Community nests for 3 to 5 breeders is sufficient.

Although adult geese can protect themselves against predators smaller than a coyote, goose eggs and goslings are susceptible to attack by raccoons and skunks and should be kept in 6 ft high fine mesh fencing to keep out predators.

Ratites

Pairs or trios of ratites require about 1 acre of enclosure. Mesh, woven wire, 2 X 4 inch fencing, at least 5 ft high is recommended. Electrified (hot) wires should be on the outside bottom of the fence to keep predators out.

High tensile wire at least 6 ft high is also safe and effective if a minimum of 15 strands of wire is used starting with 4 inches off the ground and every 4 inches for 4 feet and then every 8 inches for the top 2 feet. Electrified wires should be placed outside the fence to discourage predators from entering. Since feathers are poor conductors of electricity, hot wires have relatively little effect on poultry.

Chain link is not advisable because it can result in caught toe injuries. Neighboring groups should be visible. Alleyways between ratite pens are beneficial in moving birds to different pens. Three-sided sheds should be provided for protection from weather extremes; however, ratites do not seek shelter often after they are more than 6-months-old.

Now, let's recap the key points to remember from today's episode:

- **Housing systems, even for poultry, should permit expressions of natural**

behaviors

- **Battery cages prevent expressions of many natural behaviors**
- **Mortality rates are lowest for poultry in enriched housing**
- **Predators and wild bird diseases are risks for poultry in free range enclosures**

More information on animal handling is available in my book, *Animal Handling and Physical Restraint* published by CRC Press. It is also available on Amazon and from many other fine book supply sources.

Additional information is available at www.betteranimalhandling.com

Don't forget serious injury or death can result from handling and restraining some animals. Safe and effective handling and restraint requires experience and continual practice. Acquisition of the needed skills should be under the supervision of an experienced animal handler.