Animal welfare and factory farms

Animal welfare is an issue of ethical obligation as much as one of science. It is an ethical concept to which science brings relevant data.[11] In the 1970s, the Farm Animal Welfare Council (FAWC) of Britain stated that "the welfare of an animal includes its physical and mental state and we consider good animal welfare implies both fitness and a sense of well being. Any animal kept by man, must at least be protected from unnecessary suffering".[2] Five Freedoms were outlined.

Five Freedoms

1. *Freedom from hunger and thirst* through access to fresh water and a diet to maintain complete health and energy.
2. *Freedom from discomfort* through the provision of an appropriate environment including shelter and a comfortable place to rest.
3. *Freedom from pain, injury or disease* through prevention, rapid diagnosis and treatment.
4. *Freedom to express normal behavior* through the provision of adequate space, proper facilities and ability to be with animals of the same kind.
5. *Freedom from fear and distress* through conditions and treatment that avoid mental suffering.

Animal welfare has also been described in the context of three equally balanced, related principles.[3] Emphasis on any one principle alone will lead to de-emphasis of the others.

- *Basic health and functioning* – animals should have freedom from disease and injury and should have food, water and shelter.
- *Affective states* – refers to emotions and feelings experienced by the animal such as pleasant or unpleasant.
- *Naturalness* – animals should be able to perform their natural behaviors. There should be natural elements in their environment as well as respect for the "nature" of the animals themselves.

In contrast, a report of the Council for Agricultural Science and Technology (CAST)[4], first published by US agricultural scientists in the 1980s, states that what animals are owed and the extent to which we owe them is whatever it takes to get them to create profit. A productive animal enjoys positive welfare and a non-productive animal enjoys poor welfare. Animals are considered well off if they have food, water and shelter.[1] These opposing views of animal welfare mirror the difference in the lives of animals on small family farms compared to the lives of animals on today's intensive factory farms.

Intensive Factory Farms vs. Small Family Farms

In response to increases in both the population and the consumption of meat products, the US livestock industry has intensified according to a productionist model emphasizing efficiency.[5] Intensive factory farms have replaced small family farms, the relationship between the farmer

and the animals has changed, and the emphasis has shifted from the five freedoms and balanced principles outlined above to one of productivity.

Confinement of large numbers of animals indoors is one hallmark of the factory farm. Indoor housing has eliminated some problems animals may experience when housed outdoors such as extreme weather and attacks by predators, yet intense confinement has created animal welfare problems. Inadequate ventilation, which leads to high levels of dust and the accumulation of irritating gases from the build-up of manure make it difficult to breathe. If the electrical supply is interrupted, the level of heat can build quickly. Concrete and metal flooring can cause slippery conditions, uncomfortable resting places and put stress on hooves and joints causing lameness.[6] This paper reviews the conditions under which selected animals are raised and slaughtered as part of the factory farm business of today.

Poultry

Poultry production is the most highly intensified of all the agricultural industries.[6] The barnyard hen that once provided both the eggs and the meat for the table does not exist on the factory farm. Chickens are raised to be laying hens or broilers in close confinement.

Laying Hens and Confinement Cages

Factory egg farming consists of endless rows of cages (called battery cages) located in long sheds where tens of thousands of hens may be housed in one shed in cages of 3 to 10 hens each.[7] "An egg laying hen requires 290 square inches to flap her wings, yet each bird is allocated an average of only 52 square inches–smaller than a single sheet of paper-in which she sleeps, eats, lays eggs, drinks and defecates."[8] The cages are so small the hens cannot stretch their wings, walk, peck, or scratch the ground. Under these conditions, the hens are prevented from performing natural behaviors such as perching, dust bathing, and laying their eggs in a nest. Inactivity causes claws to grow long and, in some cases, to become permanently entwined in the wire mesh flooring. The slope of the cage floor, designed to allow eggs to roll into a trough for collection, places pressure on the hen's toes causing damage.[7] Feather loss is common from hens rubbing against the sides of the cage.[8]

The stress of crowding and confinement can lead hens to feather peck one another. To prevent this situation, the front third of the beak is removed (called "debeaking" or "beak trimming"). Part of the toes may also be removed so the hens cannot scratch one another. Both processes are performed without anesthesia.[6,9]

To increase egg production in individual hens, food is withheld for a period of 8 to 12 days after the end of the first laying cycle to force molting.[6] This leads to another cycle of egg laying. Once the hen is considered spent, she is killed.

About 1/3 of flocks in the US egg laying industry are affected by "caged layer fatigue." The condition is caused by the continuing demand for calcium for eggshell production, which leaves bones brittle and muscles depleted of calcium. The result is that birds may be unable to stand and reach food and water. This condition occurs in caged birds only and is caused by lack of exercise and exacerbated by crowding.[9]

Male chicks hatched as part of the breeding process for laying hens are considered a by-product of the industry and killed within 24 hours using gas or by placing them alive in a high speed grinding machine.[6] The European Union Council of Agriculture Ministers has banned conventional battery cages beginning in 2012 due to concern about the welfare of the hens.[8]

Broilers

Broiler chickens are raised in windowless sheds where as many as 50,000 birds are quickly fattened over a period of 3 to 12 weeks and sent to slaughter when they reach a market weight of 4 pounds. With nowhere to rest, except on feces-laden litter, the birds may develop breast blisters, hock burns or other skin problems.

Consumer preference for white meat has encouraged raising birds with large breasts. As a result, the birds can become top heavy leading them to fall over and suddenly die (called "Acute Death Syndrome" or "Flip-Over Syndrome").[9] Fast growth in broilers can also be associated with health problems such as ascites (pulmonary hypertension).[6]

Veal

Veal production is considered by many to be the cruelest of all the confinement systems. Young calves are separated from their mothers and placed in wooden crates (called confinement stalls) where they spend 18 to 20 weeks before slaughter. The space is barely larger than the calf, who is also tied at the neck or has his head positioned between parallel bars to further restrict movement. The calf is fed a diet of "milk replacer," a liquid mixture of dried milk products, starch, fat, sugar, antibiotics and other additives. The diet is purposely iron deficient to induce a subclinical anemia to make the flesh as white as possible. Roughage is not permitted in the diet as it could darken the meat. The limited size of the crate assures the animal cannot lick his own hair, urine or feces in an attempt to satisfy his desire for iron.[9]

Swine

Sows (pregnant hogs) are kept in metal bar gestation stalls, known as crates for their entire 4-month gestation period. The small size of the crate does not permit the sow to exercise or turn around. Bedding material is not provided and the sow is forced to stand or lie on a floor made of concrete or slats. The slats allow for manure to fall to the floor below, for easier removal. About a week before the piglets are due, the sow is moved to a narrow "farrowing crate." The crate permits her to stand and lie down, but not turn around. The purpose is to allow her to eat and drink only while keeping her teats exposed for the piglets to nurse.[9]

In a natural environment, sows spend up to 75% of their time rooting in the dirt, foraging and exploring, but confinement prevents these behaviors. The resulting stress leads some animals to demonstrate meaningless repetitive motions, called stereotypies, such as moving their head from side to side.[7]

The diet of the sow is restricted to rations of concentrated feed that provide their nutritional requirements, but lack the bulk required to satisfy hunger. Confinement eliminates the ability to satisfy hunger by seeking additional food. The European Union has banned the use of gestation stalls by 2013 as part of their commitment to animal welfare and sustainable agriculture. (7)

Cattle

Beef Cattle

Cattle raised for beef stay with their mothers and are pasture fed until the age of 3 to 4 months when they are transported to a Confined Animal Feeding Operation (CAFO). There they are fed a high-energy grain diet for 4 to 6 months prior to being slaughtered. Stress from crowding and an unnatural diet adversely affect health. Liver abscesses can occur because the digestive tract is geared toward a diet of roughage and not a steady diet of grain and growth stimulants. Cattle raised for beef may be subjected to de-horning, branding and castration without anesthesia.[9]

Dairy Cows

Most milk produced in the US comes from cows in intensive confinement, commonly tethered to a stall. Increasingly popular are dry lots composed of dirt or concrete lots, devoid of vegetation and often without shade. Partial tail "docking" (amputation) is common practice. Ostensibly performed for the purpose of cleanliness, docking is actually performed to make it easier for workers to milk the cows.[6,9] Docking the tail eliminates the ability of the cow to switch away flies and bugs.

Slaughterhouses

In 1958, Congress passed the Humane Slaughter Act (HSA) and broadened it in 1978 to include regulatory oversight by the United States Department of Agriculture (USDA). One of the most important provisions of the Act is "the requirement that all animals be rendered unconscious with just *one* application of an effective stunning device by a trained person *before* being shackled and hoisted up on the line." When inspectors observe violations, they are required to stop the line until the violation is corrected. Because "down time" leads to loss of money, it is assumed the slaughterhouse will comply. Penalties, however, do not exist for violations, thus the threat of financial loss may supersede concern for animal welfare. Stories exist of violations uncorrected and conditions such as the use of electrical prods, animals dragged through the race (chute) to slaughter, inadequate stunning due to high production quotas, rapid line speeds and animals shackled and hung on the line and skinned while conscious.[9]

Auditing of slaughterhouse practices by some large restaurant chains has begun to lead to change. One study has demonstrated that the degree of stress experienced by cattle can be assessed by measuring the level of vocalization when moving through the chute to slaughter.[11] When cattle are stressed, vocalization increases. Cattle may vocalize and refuse to move forward when they see people up ahead are moving into a dark area, have a sense they are going over a cliff, feel air moving against their face or see shiny objects. When animals balk, workers use electric prods to move them forward. Eliminating the environmental stimuli that cause the animals to balk reduces the need for prods and reduces vocalization.

Alternatives to Factory Farming

The World Society for the Protection of Animals (WSPA) is an excellent resource on animal welfare issues and alternatives to factory farming.[11] Also available are standards for the raising of broilers, laying hens, beef cattle, dairy cattle, pigs and sheep.[12] General industry guidelines are compared to standards for the following certifications:

- Certified Organic (U.S. Department of Agriculture)
- Certified Humane (Humane Farm Animal Care)

- American Humane Certified (American Humane Association)
- Animal Welfare Approved (Animal Welfare Institute) – this is the most stringent of
- the certifications.

Summary

In summary, animal welfare is viewed by some as both a scientific and an ethical issue, while others feel that animal welfare exists if only food, water and shelter are available and the animal is productive. While debate exists about whether the conditions animals experience under factory farming raise ethical or welfare concerns, Emory's commitment to sustainability supports the Five Freedoms.

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