

# **“DOING THINGS RIGHT – BIRD WELFARE”**

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Consideration of bird welfare is becoming increasingly important in all commercial poultry industries. There are many production and management practices that have come under scrutiny, including beak trimming, housing styles, forced molting, disposal of spent hens, euthanasia, and transportation.

The question to leaders in the poultry industry is: do we need to pay attention to these matters? Yes! Our society is becoming more and more aware of the issues surrounding the ethical treatment of animals, and if we truly want to satisfy our consumers, and to keep our markets open, livestock production must consider change as well. It is a given that increasing pressure from animal rights groups is causing change to occur. For example, McDonald's in the United States, which in the year 2000 purchased 1.5 billion eggs, now has an Animal Welfare Advisory Board, which requires that space allowances for egg laying birds be a minimum of 72 in<sup>2</sup> per bird. This board will also ban the withholding of food and water as used in for forced molting, and have implemented a gradual phasing out of “debeaking”. Wendy's and Burger King have followed suit. Following its US counterpart, Canadian McDonald's have made requests of their suppliers in 2002, that housing not be less than 72 in<sup>2</sup>. It has also stated that they do not support forced molting, and will be looking for reductions in the numbers of bruised broilers marketed.

## **BEAK TRIMMING**

Beak trimming has become a very controversial practice, particularly in Europe, where in a number of countries it is banned. It is important, however, to realize that the procedure does have both merits and disadvantages, and the final decision with regards to whether to use it or not, needs to be based on both.

Beak trimming was introduced partially for welfare reasons. While pecking amongst egg laying birds is normal, (e.g. exploratory or foraging pecking), feather pecking is considered to be a negative behavior. Severe feather pecking may lead to cannibalism, and it is not unheard of for flocks of laying

birds, particularly those housed in aviary type systems, to have high levels of mortality within a very short time period. Trimming the beaks of such birds reduces the incidence of feather pecking and of cannibalism. It can also reduce the stress placed on fully beaked birds (Struwe et al., 1992). Beak trimming is also used for economic reasons, since trimmed birds are more feed efficient, having equal performance at reduced cost.

There are many factors that can affect the stress response of birds to beak trimming. First and foremost, beak trimming must be well done and should only be performed by trained and conscientious operators. A poor job is a welfare concern, and should not be allowed to happen. Age at trimming is very important with regards to length of pain response (Hughes and Gentle, 1995). If trimmed before 10d of age, behavioral symptoms of pain disappear within the first week (Gentle et al., 1997). Birds trimmed at older ages, however, show behavioral symptoms of pain for longer periods of time (28d – Craig and Lee, 1990). This may be in response to nerve tissue forming neuromas in the beak, which fire spontaneously, causing pain.

Beak tissue is well innervated with nerve fibres, including mechanoreceptors, cold receptors and nociceptors (pain receptors). When this tissue is cut, there is immediate pain. When determining the merits of beak trimming as a management tool, it is very important to distinguish whether this pain is short term, or lasts throughout the life of the bird. How do we determine this? Welfare in trimmed birds should be measured by monitoring a wide number of parameters, and should include production, feed intake, body weight, beak healing, beak re-growth, feather cover, behavior, fear, and as many other responses as can be measured. The more parameters that are measured, the more complete will be the analysis.

It is important to realize that beak trimming is only one of a number of management tools that can be employed to help reduce cannibalism. Feeds can be changed to include more fibre or higher protein levels, although such changes may not be as effective as trimming (Choct and Hartini, 2003; Kjaer and Sorenson, 2002). Light control is another management tool. There is benefit in reducing light intensity, but balance here is the key since too low light intensity can lead to negative effects in both ocular health and productivity. Genetic selection is becoming an increasingly important tool, but the selected behavioral traits can be against such positive traits as health and production responses (Buitenhuis et al 2004, Rodenburg et al 2004). This implies that selection for specific behavioral traits may be difficult

(certainly not impossible) and may select against other critical traits in the egg-laying hen. Finally, it may be very difficult to develop a laying bird that possesses the ability to respond in the same way under a range of different management situations.

**SO, WHAT IS THE TAKE HOME MESSAGE? If you are going to use beak trimming as a management tool, DO IT RIGHT, and DO IT EARLY!!**

## **CAGING**

### **LAYING HENS**

There has been substantial work done in housing systems for laying hens. The majority of laying birds in North America are housed in battery cages. This is changing in many countries, and a total ban on battery cages is being planned in the EU for 2012.

Battery cages were introduced in the early 1920's for a number of reasons, some of which were for welfare purposes. Their advantages still include:

- small group numbers
- separation from fecal matter thus reducing disease
- ease of bird observance,
- economics.

Since the 1960's with the rise in influence of animal rights groups, the focus has been placed on the negative aspects of battery cages. The major criticisms include:

- barren environment
- limited exercise
- small space allowance.

In countries where laws prohibit the use of battery cages, a number of alternate housing systems have been used. These systems are aviaries or percherries, and on paper, they appear to provide good balance between welfare considerations and economics. They include an enriched environment, i.e. large spaces for exercise, and equipment for behavioral enactment, such as nesting. However, the large group numbers that are often found in these systems may also lead to behavioral problems. For example,

there is evidence in both brown and white stocks of hens, that if cannibalism should begin, it often spreads quickly through the flock and large numbers of mortality occur within a short period of time. Confounding this issue is the fact that in many countries where these systems are used, beak trimming is also banned thereby increasing the likelihood for cannibalism to occur. Other problems that occur in these systems may include disease, floor eggs, and economic disadvantages.

A new type of caging system, known generally as “enriched cages” is now being studied. But in countries where cages are prohibited, the use of “enriched cages” will not be used, unless the welfare laws change. Enriched cages are similar in shape to battery cages, but have a number of additions or “enhancements”. These cages allow more floor space per bird, include perches for behavioral enrichment (which favor an improvement in bone strength likely affecting cage layer fatigue incidence), nest boxes for nesting behavior (the lack of which in battery cages appears to be the most stressful in birds housed in batter cages), and possibly dust-bathing facilities (although there is still controversy as to whether this is a bird “want” or a bird “need”). It is important to realize that the enriched cage is not simply a battery cage with added equipment. There must be much thought given as to what equipment is to be used. For example, perches are very important, and work by Tauson et al (1992) has shown that perch size, width, shape, and material can have a dramatic affect on birds. Nest boxes need to be of a specific design or birds will lay increasing amounts of floor eggs. Currently, a number of commercial companies are testing enriched cages in commercial situations. While again these cages appear to be the answer, problems have arisen, and include increases in cracked eggs, and poorer feed efficiency.

Are we ready to ban battery cages and switch to other housing systems? The answer to that is NO! There has not yet been developed a perfect housing system, and each one, including battery cages, has advantages and disadvantages. Until we understand more about housing of hens, management choices such as increasing floor space may be a good start to improving welfare.

## **OTHER BIRD STRAINS**

Cages for other bird strains are available. For example, cages for broiler breeders are used on a commercial farm in Saskatchewan. Broiler cages are

also available and used to a small degree in Europe. Unfortunately, there is virtually no scientific studies to examine the effects of these cages on productivity, welfare or behavior. This is an area that should be examined extensively. From a personal experience, broiler breeder cages can work very effectively, and in a well-managed system, appear to have exceptional air quality control and ease of bird observance over floor/slat systems.

While little scientific work has been done to look at these systems, housing birds in cages brings with it unanswered questions. For example, exercise is limited as compared to traditional housing systems. Reduction in exercise can result in bone deformities and/or lameness, which are certainly welfare concerns, and they may also affect productivity. Foot health may depend on cage floor types, and again, lameness may result. Behaviorally, smaller group numbers may be a benefit, but escape routes are limited and welfare may be compromised.

## **CONCLUSION**

Improving welfare for poultry species is only going to become more important in the future. The interest and concern by consumers in the ethical treatment of food animals continues to grow. As agriculturalists, we need to be aware of the choices that are available, but science needs to be an integral part of any decision that we make regarding changes to management systems.

## **REFERENCES**

Buitenhuis, A. J., T. B. Rodenburg, P. H. Wissink, J. Visscher, P. Hoene, H. Bovenhuis, B. J. Ducro and J. J. van der Poel, 2004. *Poultry Science* 83:1077-1082.

Choct, M. and S. Hartini, 2004. *Recent Advances in Animal Nutrition in Australia* 14:157-162.

Craig, J. V. and H. Y Lee, 1990. *Applied Animal Behavior Science* 25:107-123.

Gentle, M. J., B. O. Hughes, A. Fox and D. Waddington, 1997. *British Poultry Science* 38:453-463.

Hughes, B. O. and M. J. Gentle, 1995. *World's Poultry Science Journal* 51:51-61.

Kjaer, J. B. and P. Sorensen, 2002. *Applied Animal Behaviour Science* 76:21-39.

Rodenburg, T. B., A. J. Buitenhuis, B. Ask, K. A. Uitdehaag, P. Hoene, J. J. van der Poel and H. Bovenhuis, 2003. *Poultry Science* 82:861-867.

Struwe, F. J., E. W. Gleaves, J. H. Douglas and P. L. Bond, 1992. *Poultry Science* 71:70-75.

Tauson, R., L. Jansson and P. Abrahamsson, 1992. Swedish University of Agricultural Sciences Department of Animal Nutrition and Management Report 209 ISSN 0347-9838.