

# **ANIMAL WELFARE (BROILER CHICKENS: FULLY HOUSED) CODE OF WELFARE 2002 REPORT**

## **Introduction**

1. This report accompanies the draft Animal Welfare (Broiler Chickens: Fully Housed) Code of Welfare 2002 which has been developed by the National Animal Welfare Advisory Committee (NAWAC), pursuant to the Animal Welfare Act 1999 (the Act). The Act requires that when NAWAC recommends a code of welfare to the Minister of Agriculture (to issue it), the code must be accompanied by a report (Section 74). That report must note:
  - (a) The reasons for the committee's recommendation;
  - (b) The nature of any significant differences of opinion about the code, or any provision of it, that have been shown by the submissions;
  - (c) The nature of any significant differences of opinion about the code, or any provision of it, that have occurred within the committee.

The report notes that there were no significant differences of opinion between members of NAWAC on any issues or submissions – all decisions were made by consensus.

2. It should be noted that the Act does not define "significant differences". While there were a variety of different opinions expressed in the submissions, NAWAC did not consider that all differences were necessarily of a significant difference of opinion. NAWAC has taken the view that significant differences are either where there are a large number of submissions which are contrary to a minimum standard in the draft code or where a submission puts forward scientific justification for a different or alternative minimum standard. NAWAC notes that some individuals or organisations may disagree in their interpretation of the term significant differences.
3. The New Zealand broiler chicken industry produces about 69 million birds per year and about 94% of the industry is managed by a small number of large companies. This has resulted in an industry which has uniformly prescribed and applied standards, and which is very highly organised. The industry is described as a vertically integrated industry, which means that the same companies organise and control the entire production process, from importation of the grandparent stock into New Zealand to the slaughter and marketing of the final meat product.

4. The major welfare issues include leg and mobility disorders, ascites (fluid filled abdomen), sudden death syndrome and lack of behavioural complexity. Each of these conditions is influenced by a wide range of genetic, health, environmental, feeding and other management related factors. In addition, each health or welfare problem can influence the incidence of any or all of the other types of disorder (see Bagshaw and Matthews, 2001).
5. One key factor underlies most of the welfare issues: the fast growth rate of the broiler (due to intense genetic selection and nutrient supply). Many procedures have been developed to moderate the effects of fast growth on broiler health and welfare. Some of the most successful techniques reduce the rate of growth early in the rearing period, increase the level of locomotory activity and reduce the incidence of pathogens in the environment or incidence of diseases (see Bagshaw and Matthews, 2001).

### **Public Consultation**

6. The code was drafted by a writing group established by the Poultry Industry Association of New Zealand (PIANZ). NAWAC acknowledges the extensive effort by PIANZ that contributed to the development of the draft code. In addition, as required by the Act, the code was the subject of consultation with representatives of those most likely to be affected by it, which included animal welfare organisations (including the RNZSPCA), the New Zealand Veterinary Association and with the broiler industry via a series of industry workshops throughout New Zealand. The code went through at least 16 versions before it was presented to the NAWAC Poultry Subcommittee for its consideration. The Poultry Subcommittee is made up of representation from the RNZSPCA, the New Zealand Veterinary Association, the poultry industry and the Animal Behaviour and Welfare Research Centre. Following detailed discussion by the subcommittee the final draft was passed to NAWAC for its consideration.
7. Following an initial deliberation by NAWAC, to ensure that the code complied with the purposes of the Act, was clearly written and readily understood and that the code drafting group had consulted with representatives likely to be affected by it, the code was publicly notified on 1 November 2001, by public notices in the major newspapers of the four major centres, sent to all major public libraries and to specific interested parties (as required by section 71 of the Act). There were 160 written submissions received during the public consultation period. Of these, 89 submitters supported the draft code (including the minimum standards) and 71 submitters rejected it either wholly or in part. In addition there were 1422 Save Animals from Exploitation (SAFE) forms, which had been completed by submitters. These forms indicate a rejection of the draft code. A summary of the submissions is included as Appendix A.
8. NAWAC did not receive any oral submissions although the committee did meet with representatives of PIANZ during a site visit, at which three separate production facilities were inspected as well as a slaughter premises. A presentation was also made to the committee by Dr Lindsay Matthews, Director of the Animal Behaviour and Welfare Research Centre, AgResearch, member of the NAWAC Poultry Subcommittee, and also a former member of NAWAC. Dr Matthews reported on his recent attendance at the 6<sup>th</sup> European

Symposium on Poultry Welfare held in Zollikofen, Switzerland in August 2001. At this conference the latest research on the welfare of broilers (and layer hens) was presented and discussed by researchers, animal welfare organisations and poultry industry representatives from the US, Europe, Australia and New Zealand. Dr Matthews also presented the findings of a review that was commissioned by MAF and which was carried out by himself and Dr C. Bagshaw on broiler welfare (Bagshaw and Matthews, 2001). The review surveyed the latest published research results and reported on research projects in progress internationally, so that they could be considered in the development of welfare practices for broiler chickens under New Zealand conditions. This report provided valuable information for NAWAC and it has been quoted extensively in this report. In addition the Report of the EU Commission's Scientific Committee on Animal Health and Animal Welfare (March 2000) on The Welfare of Chickens Kept for Meat Production (Broilers) provided extensive information particularly in the European context. It should be noted that there are no published studies of the incidence of welfare problems in the New Zealand broiler industry.

9. NAWAC met on a number of occasions to consider the code and the submissions received. That consideration took into account the expertise and experience of NAWAC members, in particular that of Dr Neville Gregory, an internationally recognised animal welfare researcher with considerable experience of the poultry industry.

### **Main issues raised by submissions**

10. One of the main issues is that the definition of 'welfare' differs between broiler producers and those who oppose the code and current practices. For the former group, broiler welfare is ensured by environmentally controlled conditions in sheds using advanced technology, high health status, good diet and broiler chickens keeping company with other broilers. The proof that broiler welfare is good is their superior health and productivity, and low mortality. The latter group believes that "genetically unnatural" chickens are kept in unnatural conditions that exacerbate welfare problems caused by selection for rapid growth rate, and that natural behaviours are denied. Bad welfare is demonstrated by indicators such as high ammonia levels, high incidence of lameness and pre-slaughter injury, and small chickens finding it difficult to reach feeders and drinkers.
11. Another central issue is the relative importance of good practice, scientific knowledge, available technology and public opinion in assessing the minimum standards (as specified in section 73(2)) compared to the feasibility, practicality, economics and adverse effects of recommending a transition to alternative systems as permitted by section 73(4). The Act does not define good practice, minimum standards or recommended best practice. Broiler producers point out that the code reflects the good management practices in the broiler industry. Producers also noted the large amount of capital investment in their production units. Others have pointed out that scientific knowledge and public opinion both nationally and internationally suggest that current practices, as reflected in the code, are inadequate (although it has been suggested that the New Zealand public is not familiar enough about broiler production systems to have an informed opinion).

12. Many believe that the code is designed to maintain current production systems and hence protect maximum profits, rather than safeguard the chickens' welfare. In the event of the code being accepted in its current form, it appears from the strength of some comments that the fine line between profit and loss needs to be made very clear to the public.
13. A few submitters were concerned that should we increase the costs of broiler production by changing the code, thereby increasing the price of chicken meat, importation of cheaper meat from countries that do not adhere to such high welfare standards would result. They point out that there is a precedent for this in Europe, as a consequence of a requirement to increase welfare standards in the broiler industry. It should be noted that currently, due to New Zealand's high avian health status imports of chicken meat is not permitted.
14. There was confusion by some submitters that broiler chickens are kept in cages (similarly to caged layers). No broiler chickens are kept in cages. The vast majority of broiler chickens in New Zealand (99.5%) are kept on litter in sheds, with the balance in alternative systems.
15. Many believe that NAWAC or the Government drafted the code. They suggest that it sets out to justify current practices, and that it capitulates to industry pressure. They believed that it is more like a production standard rather than a code of welfare.
16. No broiler producers stated that the standards are too high.
17. Some submitters confuse "organic" with high welfare, believing "organic" to be more humane and welfare friendly, and that it requires or always involves the use of free-range systems.
18. Many submissions encompassed both the broiler chicken and the pig codes, and stated general objections to intensive production systems, the use of cages and confinement – "battery farming" systems or "factory farming".
19. It was noted that some submissions were unclear on the legal status of minimum standards. Failure to comply with a minimum standard may lead to a prosecution under the Act. There is also a misunderstanding about the difference between minimum standards and recommended best practices (note that the Act does not define recommended best practice). In some instances the minimum standard will be the same as the recommended best practice since the minimum standard is the best practice e.g. stunning prior to slaughter. In some cases it is not currently possible to make the recommended best practice a minimum standard. It should be noted that the level of welfare achieved by meeting the minimum standard is acceptable for the purposes of the Act. It is also important to note that codes of welfare will also contain information of an informative nature and for education purposes.
20. **Specific Significant Differences**  
NAWAC has prepared an analysis of the submissions received and has made recommendations on them (see Appendix B). The following are the significant differences (as considered to be by NAWAC) between the draft code

submitted for public consultation and submissions received. It should be noted that those submitters who supported the code did not express any significant differences with the draft code. Differences were only expressed by those submitters who rejected the code – either wholly or in part.

21. **Title**

Several submissions pointed out that there was insufficient information in the code about alternative production systems.

**NAWAC response:**

NAWAC agrees and has amended the name of the code from Animal Welfare (Broiler Chickens) Code of Welfare to Animal Welfare (Broiler Chickens: Fully Housed) Code of Welfare. NAWAC notes that since 99.5% of broiler chickens are produced in enclosed housing systems, the change in name should not unduly compromise producers or the welfare of chickens in alternative systems. NAWAC believes that either a separate code should be written or that further information should be provided that could be subsequently added to this code at a later date.

NAWAC has been advised by the Poultry Industry of New Zealand (PIANZ) that it welcomes this approach, and that it has convened an industry working group to draft an additional section on free-range production.

22. **Broiler Breeders**

A number of submissions noted that the code does not address the welfare of broiler breeders and that there are significant welfare issues concerning broiler breeders such as the restriction of food.

**NAWAC response:**

NAWAC agrees that the code only covers the welfare of broiler chickens in production units and recommends that a separate code be drafted to address the welfare of broiler breeders.

23. **Hatchery Management**

A number of submitters expressed the following concerns:

- Insufficient detail regarding procedures for euthanasing cull chicks and unhatched eggs, which could be detrimental to welfare.
- Chick culling should be abolished.
- The welfare aspects of euthanasia by gassing or by instantaneous fragmentation.
- Hatched chicks should be removed from the hatchers soon after hatching.

**NAWAC response**

While it may be unpalatable to some, euthanasia of cull chicks (and unhatched eggs) is necessary. It must be carried out effectively and quickly without causing distress to the chicks. Both gassing and instantaneous fragmentation are practised internationally and NAWAC believes that the two procedures are acceptable, when carried out properly. NAWAC agreed with many of the recommendations made in the submissions and has added these to the minimum standards.

NAWAC notes that it is impractical to remove hatched chicks from the hatchers on a frequent basis and it would also compromise the welfare of other chicks, due to temperature fluctuations caused by continual opening and closing of the hatchers. In addition NAWAC notes that the yolk sac provides nourishment for chicks following hatching. However a recommended best practice has been added which recommends a short time interval from hatching to the first drink or feed.

## 24. Feeding

Submissions included:

- Concerns that the height of the feeders and drinkers precluded smaller birds (i.e. runts) from obtaining food and therefore this contravened the Act (sections 4 and 10), in that the needs for proper and sufficient food and water, and the opportunity to display normal patterns of behaviour are satisfied.
- That due to the large numbers of birds in each shed it is not possible for the operator to ensure that all runts and culls can be regularly removed, without them suffering.
- That there should be food and water placed at ground level so that smaller birds can obtain access to it.
- That the feed requirements should be more clearly stated.
- Antibiotics in feed should be stopped.

### **NAWAC response:**

It is not possible to state absolute feed requirements due to individual variation between each bird. Consistent with the philosophy behind the Act, NAWAC has written the minimum standards to ensure that the outcome (i.e. adequate food must be given to ensure that birds maintain good health, meet physiological demands and that metabolic and nutritional disorders do not occur) is achieved. How each producer ensures this is left to the producer.

NAWAC also notes that due to the young age of broiler chickens much of the behavioural repertoire of adult birds may not have developed. NAWAC recommends that New Zealand research into whether current maximum stocking densities significantly affect their behavioural repertoire should be initiated.

Ensuring food and water is available at ground level by lowering feeders and drinkers would lead to faecal contamination, restriction of movement of birds, spillage of water onto the litter and there would be the same amount of competition from other birds.

NAWAC has addressed this issue by the addition of a new minimum standard that runts and culls that cannot access food and water must be removed during the daily inspections, and either euthanased or raised separately. NAWAC is satisfied that it is possible to carry out inspections in each flock to ensure that runts and culls can be removed.

With respect to the use of antibiotics NAWAC notes the following:

- Antibiotics must only be administered in accordance with the registration conditions, manufacturer's instructions or professional advice.
- The use of antibiotics does not appear to be a negative animal welfare issue and may assist in the maintenance of good broiler welfare.
- Prophylactic antibiotic use is beneficial in that it allows for optimal growth but not "overgrowth".
- When antibiotics are used, conditions such as leg disorders and ascites can still occur.
- Antibiotics can be used to effectively prevent infections which can lead to gastro-intestinal or some leg disorders e.g. femoral head necrosis.
- That New Zealand society is debating the implications of this practice for food safety and human health.
- That New Zealand based research into the use of antibiotics should be initiated e.g. welfare effects of rapid growth.

## 25. Stocking Densities

A large number of submissions were received on this issue. Concerns raised in the submissions included:

- That there was insufficient space for the birds to express natural behaviours such as walking, wing stretching, and to escape from aggressive birds.
- That high stocking densities compromise welfare due to overcrowding and spread of disease, as indicated by leg disorders, breast blisters, hockburn, chronic dermatitis.

### **NAWAC response:**

NAWAC notes the following:

- That higher stocking densities are associated with a greater risk to broiler welfare.
- That the maximum stocking density currently practised and proposed in the draft code lies within the range of stocking densities practised in other countries with a significant commercial poultry industry.
- The maximum stocking density (when expressed in kg per sq.m) is only for a short period at the end of the grow-out period. In some instances a proportion of the birds will be removed for processing earlier, which effectively reduces the stocking density.
- The maximum stocking density appears to be consistent with an acceptable level of welfare with an apparent low level of problems in New Zealand systems.
- The maximum can only be exceeded in unforeseen circumstances such as industrial stoppages, processing plant delays and natural disasters but only for short periods and only if the health and welfare of the birds can be maintained.
- Dr Lindsay Matthews noted in his report that stocking density is one of the most controversial topics when considering broiler welfare. While there has been considerable research on variations in stocking density and its effects on broiler productivity, health and behaviour, there is very little consistency in the results between studies for each of the various welfare parameters investigated. Dr Matthews states that the most plausible reason is that stocking density per se is unlikely to be the main underlying

reason influencing production, health and behaviour. It is more likely that factors such as litter quality, and air and litter temperature are more important determinants of performance and health.

- There are no published studies of the incidence of welfare problems in the New Zealand broiler industry.
- However New Zealand's unique poultry health status gives cause to believe that results of overseas research may not be directly applicable to New Zealand production systems.
- Dr Matthews points out that since New Zealand is free of some avian diseases (which are world-wide), particularly Infectious Bursal Disease, which is a strong immunosuppressant and has a role in the cause of leg disorders, and New Zealand commonly uses lighting regimes reported to be beneficial for leg development, it would be surprising if the incidence of leg abnormalities and associated conditions (e.g. contact dermatitis) was not lower in New Zealand than elsewhere.
- Details of welfare standards and performance in the New Zealand broiler industry are required so that they can be placed in an international context and also used as a benchmark in the evaluation of alternative management strategies, should they be required.
- That a recommended best practice has been added that where problems occur the stocking density should subsequently be substantially reduced until such time that the problems are rectified.

Based on the current information available NAWAC believes that the maximum stocking densities should remain as currently practised and as proposed by the code, with the addition of the recommended best practice as noted above. Given the lack of New Zealand based research, NAWAC encourages the undertaking of such research. NAWAC will review the maximum stocking density within five years to take into account new international and New Zealand research.

## 26. Lighting

A number of submissions indicated misunderstanding about the lighting patterns used in the broiler industry and there is a belief that chickens are subjected to "unnatural" light patterns and that the minimum light levels proposed in the draft code did not allow sufficient light for the birds to see. There were also concerns that the light levels were too low to ensure that any sick birds, or runts or culls would be identified, and therefore compromise their welfare.

### **NAWAC response:**

- Is satisfied that the minimum levels of light meet the purpose of the Act, and that the minimum levels for inspection are sufficient to be able to adequately inspect all birds.
- Also notes the possible confusion about lux and watts and has included a definition in the glossary.
- Has included further information about the types of lighting patterns used.
- Notes that the industry uses lighting regimes (intermittent or modified lighting patterns) which are reported to be beneficial to broiler welfare, in

particular those designed to reduce leg abnormalities and associated conditions.

## 27. Ventilation

A number of submitters expressed concern about ammonia levels and wished to see the maximum level of ammonia reduced from 25ppm to 10ppm.

### **NAWAC response:**

- Ammonia is a potential major issue in broiler management.
- The proposed minimum standard has been amended to require immediate action to be taken when levels reach 25ppm, to reduce to levels which do not cause eye and nasal irritation in people, and to reduce ammonia levels to below 25ppm.
- A new recommended best practice has been added recommending that ammonia levels should not consistently exceed those levels that can be detected by smell.
- Since ammonia is less dense than air the actual concentration at chick level is likely to be lower when the maximum of 25ppm is detected.

## 28. Litter Management

A number of submissions highlighted the importance of litter quality with regard to broiler welfare. Submitters suggested that the proposed recommended best practice of changing the litter after each batch should be a minimum standard.

### **NAWAC response:**

- Maintaining the quality of litter is essential for maintaining the welfare of the birds.
- Poor litter quality can influence several different aspects of broiler welfare (e.g. incidence of ascites and contact dermatitis, respiratory problems, thermal stress and probably activity levels).
- Agrees that the recommended best practice of changing the litter after each batch should be a minimum standard and has amended the draft code.
- That NAWAC has accepted the maximum stocking density of 38 kg/sq.m on the understanding that litter would be changed between each batch, given that litter management is so critical.
- Acknowledges that from time to time, litter material may be difficult to obtain, but NAWAC believes that since litter quality is critical, producers would have to obtain alternative litter material in such circumstances, to ensure the welfare of the birds.
- Notes that the minimum standards regarding dryness reflect the recommendations of the European Commission Scientific Committee on Animal Health and Animal Welfare: The Welfare of Chickens Kept for Meat Production (Broilers) 2000.

**Conclusions and Recommendation:**

29. NAWAC has considered all the points raised in the submissions made during the public consultation process, and has provided its response (see Appendix B).
30. NAWAC notes that New Zealand's high poultry health status gives cause to believe that results of overseas research into leg disorders may not be fully applicable to New Zealand production systems.
31. In addition, New Zealand production systems use regular litter replacement and lighting regimes, which help to prevent the incidence of leg disorders.
32. There are no published studies of the incidence of welfare problems in the New Zealand broiler industry.
33. Details of welfare standards and performance in the New Zealand broiler industry are required so that they can be placed in an international context and also used as a benchmark in the evaluation of alternative management strategies, should they be required.
34. NAWAC encourages New Zealand based research relevant to this code (in particular stocking densities) to be carried out and intends to review this within five years.
35. NAWAC is satisfied that the code takes into account good practice, scientific knowledge and available technology.
36. NAWAC is satisfied that the proposed standards are the minimum necessary to ensure that the purposes of the Act will be met and that the recommendations for best practice are appropriate.
37. NAWAC recommends to the Minister of Agriculture that he issue the Animal Welfare (Broiler Chickens: Fully Housed) Code of Welfare.



Professor David J Mellor  
Chairman, NAWAC

**References:**

European Commission Report of the Scientific Committee on Animal Health and Animal Welfare: The Welfare of Chickens Kept for Meat Production (Broilers) 2000. European Commission Health and Consumer Protection Directorate-General. SANCO.B.3/AH/R15/2000

Bagshaw, C.S. and Matthews, L.R. (2001). Broiler Welfare - a review of latest research and projects in progress internationally. Client report. Prepared by MAF Policy.