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**NAWAC POULTRY SUB-COMMITTEE MEETING
HELD 30 AUGUST 2001**

PIANZ RESPONSE – INTERESTED PARTIES COMMENTS

This submission will argue that:

- (a) There are sufficient and significant differences in the New Zealand poultry industry, with management, housing, health, biosecurity and climate that allow us to have a significantly improved situation with regards to animal welfare than is reported elsewhere overseas. We hope to also demonstrate this to the NAWAC Poultry Sub-Committee during the farm visits.
- (b) Internationally a number of reviews have been done on the welfare of broiler chickens. In some of these the conclusions drawn are different in some way to the details in the discussion itself. We will highlight some of these inconsistencies with the European Commission Scientific Committee on Animal Health and Animal Welfare (SCAHAW) report on The Welfare of Chickens Kept for Meat Production.
- (c) Even though many of the authors in scientific publications discuss the multifactorial nature of the causes of welfare related conditions in broilers, most of the experimental work has not taken a multifactorial approach, but rather has looked at single or at the most two parameters. Thus if we look just at the results of the experimental work conducted in the literature we will be limiting the possible welfare outcomes available and limiting the efficiency of the industry. The Code, as part of its criteria must take into account 'Good Practice'. Unfortunately the limitations on experimental design mean that known industry good practice is overlooked or cannot be tested.
- (d) PIANZ has either addressed the concerns of the two major submissions to the 14th draft of the Broiler Welfare Code (SAFE and NZSPCA) or addressed some as invalid, and the Poultry Sub-committee Meeting and field visits will show that these concerns are indeed not valid.

1 Save Animals From Exploitation (SAFE) Response

1.1 Page 3 Point C

'That these proposed standards reflect existing industry farming practices based on farmer convenience and profitability, not animal welfare.'
PIANZ refutes this accusation.

The following papers from the scientific literature clearly demonstrate the impact on profitability the industry can face if welfare issues are seen and not addressed.

- Sullivan 1994 Poul. Sci. 73:879-882

'Estimated losses in US are \$US 80-120 million, representing mortality and downgrades.'
Hester 1994 Poultry Sci. 73:904-915

'Leg abnormalities among meat type birds have cost the poultry industry millions of dollars annually.'

- Buyse et al World Poultry Science Jn Vol 52 July 1996

'It is clear that the reduction in lameness due to intermittent light (ILT) schedules has both economic and welfare implications.'

- Classen 1992 Bone Biology and Skeletal Disorders

['Leg abnormalities are an important source of economic loss for poultry meat producers..'

- Riddell 1992 Bone Biology and Skeletal Disorders

'It is generally agreed that skeletal disorders in commercial poultry flocks are common and cause considerable economic loss for the poultry industry.'

- Tucker and Watkin

'Hock burn in broilers remains an issue of importance to the poultry industry in both economic and welfare terms.'

- Classen Management of Leg Disorders

'Leg disorders are an important source of economic loss for poultry meat producers.'

- Duncan et al British Poultry Science 1986 27: 109-114

'Financial loss incurred as a result of injury and premature death during transport is probably between 15 and 30 million pounds per annum. (Kettlewell 1985)'

R Bryan Jones (World Poultry Science Journal Vol 52 July 1996) believes that fear in poultry flocks is clearly undesirable from the birds and the farmer's viewpoint and its reduction is of major importance.

There are now numerous reports that both acute and chronic fear states can seriously harm welfare and performance.

It is clear from these statements that the industry has much to gain from the reduction of fear in poultry flocks.

Studies by Jones et al 1993 Hemsworth et al 1994 show that the birds' fear of humans accounted for 9 points of FCR. In New Zealand this is conservatively worth a profit or loss of 18 million dollars.

The poultry industry in New Zealand is dominated by a number of well-recognised and trusted brand names- Tegel, Inghams, Brinks. Because of the degree of branding the industry cant hide behind anonymity as other livestock industries can. Thus the industry is

acutely aware of any issues that could lead to a lack of trust in the brands and is therefore keen and committed to achieve public trust with animal welfare.

The above clearly illustrates from an economic perspective, that it doesn't pay the industry to neglect animal welfare in any way.

1.2 History

SAFE contends that there are hardly any differences in behaviour between the jungle fowl and the domestic chicken. (R Bryan Jones 1996) .

Chickens are generally frightened of large open areas and they are reluctant to enter them. Because domestic fowl are descended from Red Jungle fowl, whose natural habitat is dense rainforest, it has been suggested that chickens may feel exposed and vulnerable to attack by predators in open areas.

This of course would necessitate a rethink in how we should view free-range operations from a welfare perspective.

Grigor 1993 discusses the impact of domestication. 'It is rightly argued that domestication has been accompanied by increased docility. Domestication is a continuing genetic process aimed at modifying the animal behaviour, anatomy and physiology in order to suit mankind's specific needs.'

It is well known within the poultry industry that different behavioural traits can be associated with certain lines, particularly aggression.

The Welfare of Chickens kept for Meat Production (Broilers) Report of SCAHAW 21/3/2000 summarises the views of a Wood-Gush et al 1978 and McBride 1969), 'The behavioural changes that are apparent when comparing modern birds with older strains is in threshold of response rather than a change in behaviour per se'.

1.3 Page 8 Second Paragraph

SAFE quotes Turner 2000 who asserts that '.. in some respects welfare has even worsened', but provides no evidence to back that claim up.

Ross (see Appendix 9) have demonstrated an improvement in growth plate quality since selection for this trait.

Surveys within the scientific literature show huge variation in the level of welfare-related pathologies and mortality. PIANZ would therefore contest how one could present the argument that there has been no improvement in skeletal problems in broilers.

1.4 Page 8 'Production systems are substantially the same as overseas technologies'

PIANZ would argue that the New Zealand poultry industry is substantially different to the poultry industry overseas in a number of respects.

The disease situation in New Zealand is significantly different to that experienced overseas. New Zealand is free from Infectious Bursal Disease (IBD), whilst no other country in the world is. IBD is a major immunosuppressant, causing significant damage to the bursae of fabricius, as well as being able to cause disease in its own right.

Very few of New Zealand's broilers are vaccinated for any disease agent. In Europe and the US broilers are vaccinated routinely for Infectious Bronchitis (IB), Marek's Disease (MD), Newcastle disease (ND) and IBD. Australia routinely vaccinates for IBD, MD and IB. Multiple vaccinations are often necessary to control infections.

Avian Pneumovirus has not been recognised in New Zealand, but is widespread in Europe.

New Zealand broilers are free from mycoplasmal infections.

Disease has a major impact on bird welfare. Mireles has shown that bone strength decreases significantly after disease challenge. (Mireles et al 2001a,b; Mireles 2001). Some of the more hot (pathogenic) vaccines would have a similar effect.

Lack of continual disease challenge results in a more biologically robust broiler, which is far less susceptible to the severe welfare issues that may be seen elsewhere.

The New Zealand broiler industry has very high standards of biosecurity, arguably some of the highest in the world. Whilst some European countries have similar levels of biosecurity the rest of the world lags far behind.

The nutritional approach to broiler growing in New Zealand is substantially different with up to 10% lower energy and up to 10% higher protein levels than European feeds and with micronutrients on or above breeder recommendations. Enzymes are used routinely.

This translates into a leaner, healthier more robust bird.

In feed antibiotics used within New Zealand control subclinical and clinical necrotic enteritis and other bacterial gut conditions, which can have a significant impact on welfare by causing maldigestion, malabsorption and even mortality. Maldigestion and malabsorption will have a major influence on availability of macro and micronutrients necessary for health and welfare of broiler chickens.

The climatic conditions in New Zealand are not as extreme as in most other countries of the world. We see neither the extreme of hot weather or cold weather that make ventilation very difficult. Ventilation is essential in removing moisture and heat, controlling the level of airborne pathogens and removing the build-up of noxious gasses in the poultry shed.

Mortalities seen in New Zealand (between 3-3.5%) are lower than those seen overseas (Cobb Quarterly Review 2:2001)

France	5.9%
Denmark	5.0%
Netherlands	4.7%
UK	4.7%
US	5.0%

1.5 Page 10 Sections G/H

Under the Animal Products Act 1999 the poultry industry is required to have a Whole Flock Health Scheme (WFHS) registered. The WFHS is a supporting system required for risk management plans for poultry processors. The definition of the WFHS is detailed in

the Poultry RMP Working Group Generic RMP (see attached appendix 4); "a documented system of health surveillance and, where applicable, disease control or eradication (including nutritional diseases).

The critical limit for mortality currently in the draft document is 0.1% per day. The corrective action is the poultry grower notifying a livestock advisor who then will assess the flock and notify a veterinarian if required. The documentation required is detailed in the Generic WFHS document. In all cases where medication is used the use must be recorded in a precise way as outlined in the regulations under the Animal Products Act 1999.

The appropriate sections of the Generic WFHS are attached Appendix 4.

These requirements are all legal requirements under the Animal Products Act 1999 that the industry has to comply with.

1.6 Page 14 Stocking Densities

The issue of stocking density is complex and this should be treated in depth. This discussion occurs below. There are however some aspects of the SAFE submission that need some specific discussion.

- SCAHAW 2000, does not make any recommendation on maximum density as the SAFE submission states.
- SAFE have been very selective in the references they have chosen to demonstrate their point of view.
- SAFE misquotes the paper of Dawkins and Hardie 1989.

The mean space that a single adult layer hen (not a broiler chicken) took to stand was 475.3 cm² (SAFE 600 cm²), and a mean space of 892.9 cm² (SAFE 1500-1800 cm²) for wing stretching.

The authors looked at a range of behaviours and their effects with increasing stocking density. The birds were adult layer hens in cages, with densities ranging from 450 cm²/bird to 3362 cm²/bird and individual hens on their own. Behaviours looked at were, ground scratching, standing, turning, wing stretching, wing flapping, feather ruffling and preening. The space used for feather ruffling, wing stretching, and wing flapping space did not change with increasing density; ground scratching, turning, and preening were still performed at the higher densities but in a lesser area, than individual animals. These were not broiler chickens. The question however has not been answered as to the impact on the individual bird's welfare, of having to perform a behavioural trait in a smaller area.

It is noted by SCAHAW (2000) in their review of broiler behaviour that activities such as wing stretching and wing flapping are only seen infrequently in broilers. They ask the question whether these behaviours are limited by density, however the observations made by Murphy and Preston were at 14 birds/m². No other papers looking at behavioural aspects mention these behaviours at all.

Using the space requirements in this paper as an argument for limiting density assumes that, all birds will want to do the same behaviour at the one time, assumes that it is a welfare issue if birds perform these behaviours in less space and assumes that broilers require the same space as layer hens in cages.

L7 Page 18 Lighting

SAFE feels that darkness should be equivalent to natural daylength. It is unclear whether SAFE feels that there should be a single dark period during the day equivalent to natural darkness or whether the dark periods during the day should be equivalent to the amount of dark period naturally occurring.

NZSPCA feels strongly in their submission that this should be the case.

It is interesting to note what broilers will choose in a light preference test (Savory and Duncan 1982). With a background of darkness and where birds were able to flick a switch for one or three minutes of light per response they chose lights for only 20% of the time. When allowed to switch lights both on and off, most birds chose to be illuminated for >80% of their time. With a background of light and three minutes of darkness per response they chose darkness for less than 1% of time. This is in conflict with calls for a more natural daylength. This shows that broilers have no clear preference for natural periods of darkness.

Having an eight-hour continual dark period can result in birds being significantly hungry on waking. This may cause stress in the birds and may cause the birds to damage each other as they try to crowd around feeders.

SAFE feels that a lighting intensity of 'no less than 20 lux' should be a minimum standard. Appendix 1 lists most of the appropriate references on broilers and the effect of lighting intensity. Generally there is an increasing level of activity with increasing light intensity, however one study by Newberry showed the reverse trend. It is interesting to note however that that increasing light intensity had no effect on leg pathologies, no effect on sudden death syndrome and an inconsistent effect on carcass quality (hock burn, breast blisters etc).

Newberry also feels that the influence of light on intensity is ambiguous (Newberry 1986). Siopes' conclusion of his experiments is that intensity on its own doesn't influence lameness. (Siopes 1983). Classen also concludes from the literature that there is no evidence that light intensity affects leg disabilities in poultry. (Classen 1992)

SAFE feels that brooding chicks should have a light intensity of 100 lux. There is no research to show that increasing light intensity to 100 lux benefits chick welfare in any way.

For a detailed discussion on the photoperiod effects of lighting patterns see below. (Section E Skeletal Disorders and Appendices 1 and 2).

1.8 Page 20

SAFE believes that there are insufficient provisions for individuals to be qualified in a manner that can properly diagnose and monitor health problems and disease during inspections.

SAFE is also concerned at no point is there reference to seeking a veterinary assessment or report on the health and condition of the birds.

These points are adequately covered in the WFHS. See discussion above Section 5- Page 10 Sections G/H. also see Appendix 4

1.9 Page 22 Catching and Loading

PIANZ agrees with the statements in the SAFE submission that catching by hand may result in low levels of injury if all catchers are careful conscientious and well supervised. (Berry et al 1990, Kettlewell and Turner 1985) . Hence inclusion in the codes of correct training and supervision of the catching teams, and the requirement of handling all birds with care.

1.10 Page 23 Loading Densities (in catching crates)

SAFE is opposed to the maximum stocking density of 66kg/m², and believes that welfare was not considered in proposing such densities

The following is a list of the crate stocking densities required in a number of overseas countries.

Council of Europe Recommendations concerning Domestic Fowls No recommendations on crate density.

WATO (Welfare of Animals Transport Order - UK) directive 95/29

Poultry <1.6kg	50.55 kg/m ²
Poultry >1.6kg but <3kg	62.5 kg/m ²
Poultry >3kg but <5kg	86.9kg/m ²
Poultry >5kg	95kg/m ²

Australian Model Code of Practice for the Welfare of Animals – Broilers

Hot and humid weather	55kg/m ²
Other times	60kg/m ²

Previous New Zealand codes

Poultry <1.6kg	57.14kg/m ²
Poultry 1-3kg	66.6kg/m ²
Poultry 3-5kg	90.9kg/m ²
Poultry >5kg	95.23kg/m ²

SCAHAW (2000) doesn't include crate density in any of its discussions, conclusions or recommendations.

The crate density has been reduced considerably from the previous voluntary codes (now down to 65kg/m²).

PIANZ believes that the crate density within the codes is well within what the rest of the world allows and is not a welfare issue.

1.11 Page 23 Transport Containers

SAFE believes the crate height should be no less than 30 cm. They also assert that broilers need 60 cm to stand. As you will see when viewing the birds this is not correct at all.

No other code that PIANZ could access specifies crate height.

PIANZ would view birds standing in crates as a welfare issue. Significantly less damage will be caused to the birds if they are sitting during transport rather than standing. This is one situation where being anthropomorphic helps. Are we more or less stable when being transported (e.g. by train) when seated or standing.

1.12 Page 23 Unloading and Shackling

PIANZ believes that the committee will be able to judge for themselves how much 'violent struggling and wing flapping' occurs when they view the processing facility.

1.13 Page 25 Consumer Market

McDonalds and other customers are auditing NZ suppliers of chicken product for welfare standards. Thus again the NZ poultry companies have reason to be serious about welfare. Therefore the New Zealand poultry industry has a moral and economic necessity to meet welfare standards.

1.14 Page 25 Free-Range and Organic Production Systems

SAFE quote the mortality figures for "label Rouge" as 0.25% per week, compared to 1% per week for conventional broiler production. "Label Rouge" birds have a minimum slaughter age of 81 days. Thus if birds are slaughtered at that minimum age the total mortality would be a minimum of 2.89%.

The attached mortality graphs (Appendix 7 and 8) represent mortality from two production regions in New Zealand. The average mortality ranges in one region is about 3.5% with the average mortality in the other region averaging about 3.25% for the last few years. Mortality in New Zealand is total wastage including both birds that die and birds that are culled. PIANZ is not convinced that the extra total mortality seen in the intensive production systems in use in New Zealand is a significant welfare issue.

A recent report from the Ethical Council for Domestic Animals of The Danish Ministry of Agriculture on free range systems casts doubt on the benefits if these systems for welfare compared with conventional systems (layer hens). The death rate reported is three to four times that of conventional systems. Poor quality foods, illness, lack of medicines, feather picking, cannibalism, and stress contribute to a death rate of 16%. NCCWR Vol37 No.27

**Royal New Zealand Society for Prevention of Cruelty to Animals
(RNZSPCA) Response**

2.1 Minimum Standard 6 Stocking Densities

See discussion below on stocking density.

2.2 Minimum Standard 7 Lighting

For a general discussion of lighting see below. Also refer to the discussion above in the SAFE response, section 7- Page 18 Lighting.

The RNZSPCA feel that light intensity at a minimum of 20 lux will increase activity. There are other ways of increasing activity that are more effective. See below.

2.3 Catching and Loading

See the comments above re SAFE submission.

2.4 Minimum Standard 16

See the comments above re SAFE submission.

2.5 Antibiotics

RNZSPCA (and SAFE) questions the prophylactic use of antibiotics in poultry feeds. The current situation in New Zealand is that it is legal to use antibiotics prophylactically to control necrotic enteritis, an intestinal infection due to a bacterium called *Clostridia perfringens*.

Practical experience has shown that without the use of these antibiotics mortality due to necrotic enteritis will occur at a significant level. One commercial poultry company reports two incidences of clinical necrotic enteritis when using natural antibiotic replacers, with mortalities reaching up to 300 broilers per day before being controlled by the use of therapeutic antibiotics. (Marks 2001). A less acute form of this condition is also seen in New Zealand. (Jones 2001). This is called cholangeohepatitis

Thus from a welfare perspective the use of these products is warranted and encouraged.

Mireles has shown that in-feed antibiotics play a crucial role in limiting the negative effects of the acute phase inflammatory reaction in poultry. Using an *E coli* LPS (lipopolysaccharide - a cell wall component) to mimic infection Mireles showed that without antibiotics the loss in tibial bone strength was around 8% after three days. It is interesting to also note that even in the absence of the LPS challenge the use of antibiotics also had a positive effect on tibial bone strength., being 13% above the controls. The mechanism of action is believed to be a modulation of the immune system. (Mireles et al a,b; Mireles 2001)