

**Submission to NAWAC on the Public Draft
Animal Welfare (Pigs) Code Of Welfare 2001**

May 2003

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Introduction

The SPCA is a not-for-profit organization established for the purpose of preventing cruelty to animals, whether these animals are farmed for the table, wild, or are kept as pets. The Animal Welfare (Pigs) Code of Welfare 2001 concerns farmed animals that are destined for the table. There are a number of farming practices currently permitted in the pork industry and also permitted in the Draft Code that constitute cruelty. This cruelty is not consistent with the Animal Welfare Act 1999 and for this reason the SPCA submits that a number of changes to the Draft Code are required in order to meet the spirit and letter of the Act. The SPCA welcomes the opportunity to make this submission.

There are a number of pork industry management changes that are coming into force in the European Union that improve the welfare of farmed pigs in member states. The EU commissioned an independent Scientific Veterinary Committee (SVC 1997) to gather scientific information on pig welfare and write a report. Article 6 of the Council Directive 91/630/EEC lays down the minimum standards for the protection of pigs for the EU and was recently amended following recommendations by the SVC.

At the very least, the New Zealand minimum standard for pork farming practice should be consistent with the requirements of the Animal Welfare Act 1999. There is also opportunity for New Zealand to have a higher standard than what is required by the Act, particularly if we wish to be a world leader in agricultural practice. We note that the NZ dairy industry makes much of our free range cattle when marketing their product in countries where feedlots are the norm.

The changes to the Draft Code submitted by the SPCA form an integrated whole and combine animal welfare requirements with improvements in environmental standards. In some cases the recommendations have a dual (or multiple) effect and purpose. For example, the requirement to provide bulk fibrous food in the diet (e.g. straw) serves the purpose of satisfying dietary requirements (satiation), which assists in improving behavioural conditions (providing for the foraging instinct), whilst providing for improved welfare (cushioning on joints and limbs for housed pigs), as well as lowering the emissions to air and water (producing an economic by-product in the form of nitrogen rich compost).

The changes that are proposed by the SPCA will require modifications in the quality of husbandry for some pig farmers, as a minimum standard. While some of these changes may require more financial input for those farmers in comparison with the status quo, we submit that the status quo (for some farmers) is in breach of the Animal Welfare Act and therefore is not a sustainable or legitimate situation.

The Animal Welfare Act (1999) is clear on a number of points that relate to the New Zealand pork industry. Section 4 of the Act requires animals to be able to display normal patterns of behaviour. This point is not under debate: it has been decided, the New Zealand public requires it, and now it needs to be enforced. Section 10 of the Act requires animals to be cared for in accordance with good practice and scientific knowledge. The following submission presents ample scientific evidence to support significant improvements in the husbandry of pigs.

Behaviour and Suffering

There is general agreement that higher animals such as pigs can feel the basic sensations of pain and pleasure. With this has come the realisation that pain feels the same whether it is a human or animal that is experiencing it, and infliction of pain upon any sentient creature is therefore intrinsically wrong (Singer 1990). While it is not always obvious what causes pain in animals, common sense and the argument from analogy would suggest that unless it can be proved otherwise, anything that is painful for humans must be assumed to be painful to animals. The MAF *Code of Recommendations and Minimum Standards for the Care and Use of Animals for Scientific Purposes* uses this approach, and stipulates that:

investigators must assume that animals experience pain in a manner similar to humans.

Decisions regarding the animals' welfare must be based on this assumption unless there is evidence to the contrary.

The presence of higher psychological states in animals is more controversial than the presence of pain. However, as our awareness of animal behaviour increases it has become apparent that mammals and birds, and possibly other animals are capable of advanced thought processes, together with beliefs and desires (Varner 1999; Griffin 2001). If this is the case, then it is reasonable to

assume that these animals can suffer from boredom, stress and frustration if they cannot meet their behavioural needs, and that this suffering is at least as important as physical pain.

Observations of animal behaviour when animals are kept under barren conditions bear this out. Animals in barren environments show repetitive and often destructive behaviour, which is also associated with mentally disturbed humans (Webster 1997). Sir Colin Spedding (2000) from the Farm Animal Welfare Council in the United Kingdom gave the opinion that the presence of stereotypes can mean that an animal is being driven insane.

In sows, repetitive behaviour such as chewing the bars of their cages (oral stereotypes) has been associated with lack of oral satisfaction (Lawrence and Terlouw 1993), and with keeping pigs in barren environments (Whittaker et al. 1998). Commercially reared sows are given restricted diets which fail to satisfy them. They are also unable to forage as a means of satisfying their feeding motivation (Lawrence and Terlouw 1993).

The view that psychological as well as physical needs have to be met for animal welfare is something that is understood by the New Zealand public as a whole. As such it has been incorporated into the New Zealand Animal Welfare Act. Section 4c states that animals must have the “opportunity to display normal patterns of behaviour”, though section 73 does allow for this requirement to be bypassed under “exceptional circumstances”.

While the circumstances of farming could be deemed to be “exceptional” and allow some restriction of “normal behaviour”, there is no reason why the behavioural needs of the animal must be restricted to such an extent that their physical and mental health suffers as a result. It is our contention that the draft code of conduct does not go far enough in ensuring that the “physical, health and behavioural needs” of pigs are being met. This is especially the case when it comes to the confinement of pregnant sows to the dry sow stall, and of lactating sows to farrowing crates. In our submission we present evidence showing that this confinement severely compromises the welfare of the pig, and should be abolished under sections 10 and 29(a) of the Animal Welfare Act.

We also argue that pig farming cannot be given special status under Section 73 of the Act, because the changes could be made in the timeframe we specify without undue economic disruption to the industry. Specific changes and our justification are given below.

Minimum Standards

Minimum Standard No. 1. Feed and Water

Body scores referred to in (c), (d), and (e) should be 3 and not 2 in all cases as a body score of 2 is too low.

Additional new standard:

“(f) Breeding sows, gilts and boars must be provided on a daily basis with sufficient bulk fibrous food to reach satiation level.”

The feeding regime for sows is generally sufficient for maintenance but not enough to satisfy hunger. One of the concerns of politicians and the public in Australia is that the restricted diet fed to commercially reared pregnant pigs means they are constantly hungry (Barnett et al. 2001). This hunger can be alleviated by the provision of high fibre food such as sugar beet (Brouns et al. 1997; Whittaker et al. 1998). The provision of high fibre sugar-beet based feed also reduced oral stereotype behaviour and injuries due to vulva biting (Whittaker et al. 1999).

Minimum Standard No. 4. Indoors – Building and Maintenance

Modify (a) to read:

“All pig sheds must have sufficient artificial or natural light to enable inspection of animals at any time”.

Modify (b) to read

“Natural or artificial light of 40-80 lux must be provided for a minimum of 8 hours a day to mimic normal day light hours.”

Our standard is in line with European Commission requirements of 40 lux for a minimum of 8 hours a day in its amendment to Directive 91/630/EEC (2001). This requirement for lighting is the same as that recommended by the Scientific Veterinary Committee (SVC 1997). Based on a survey of the literature the SVC concluded that pigs prefer constant light to constant darkness, that they avoid strong light of over 110 lux or more, and that they prefer illumination during the day, for longer than that required for feeding.

Additional new standards:

(i) All pigs must have separate dunging and sleeping areas as from 2006.

A study of domestic pigs reared in a natural environment has shown that their behaviour did not differ markedly from that of wild pigs. One aspect of this behaviour was a preference for separate feeding and dunging areas. Pigs did not defecate closer than 5 m from their nesting area (Stolba and Wood-Gush 1989).

(j) Two thirds of the pen area must be of continuous solid floor from 2006.

(k) Pens must be designed to accommodate appropriate bedding material in all sleeping areas from 2006.

(l) Appropriate bedding/rooting material must be available to all pigs from 2006.

The rooting instinct in pigs appears to be separate from the feeding instinct. Even pigs who were well fed on commercial rations liked to spend about 20% of daylight hours searching for food when kept in a semi-natural enclosure (Wood-Gush et al. 1990). The provision of rooting material such as straw reduces stereotypical behaviour (Spooler et al. 1995; Whittaker et al. 1999; Kelly et al. 2000), and can reduce aggressive actions such as tail biting (Schröder-Petersen and Simonsen 2001). Preference tests have also shown that pigs prefer pens with straw or other bedding material to concrete pens for thermal and physical comfort (SVC 1997) and for rooting and foraging (Burne et al. 2001).

Minimum Standard No. 5. Indoors – Space

The amount of space needed for pigs to lie down comfortably is proportional to their length and width, which is proportional to the two thirds root of their body weight. The SVC (1997) calculated these requirements to be $0.047 \times (\text{weight in kg})^{2/3}$. The space requirements given in the draft code of conduct are lower than this minimum.

However, even allowing enough space for all pigs to lie down may be insufficient for welfare requirements to be met. According to research cited by the SVC (1997), sow performance improved steadily as the space allocation for pigs at an initial weight of 55kg was increased to 1.20m^2 . The growth rate of adult pigs improved when space allowance increased to 1.80m^2 .

Weng et al. (1998) monitored injury, aggression and time spent foraging when 6 sows were kept in a pen with a space allocation of 2.0, 2.4, 3.6 and 4.8m^2 per adult pig. Based on results from the study, the authors recommended a space requirement of between 2.4 and 3.6m^2 per sow. The lower limit of 2.4m^2 is given in the table below for adult pigs in groups. The areas for the other size classes are calculated proportionally to the two-third root of the body weight.

Space requirements for growing pigs

Groups of growing pigs:	up to 10kg	0.52m^2
	11-20kg	0.82m^2
	21-40kg	1.31m^2
	41-60kg	1.71m^2
	61-80kg	2.08m^2
	81-100kg	2.40m^2

Sow stalls should be banned from 2006 (see minimum standard no. 10). Individual housing can be allowed in cases where this is necessary for welfare requirements. Sows and pigs housed individually must be in visual and olfactory contact with other pigs, and must be provided at least

enough space to turn around. The following minimum space requirements must be adhered to for individually confined pigs.

Individual pens for pregnant sows	6.00m ²
Individual pens for lactating sows and litters	8.00m ²
Individual pens for boars	8.00m ²

Minimum Standard No. 7. Indoors – Air Quality

Number current paragraph as a) and include new standard:

b) Ammonia levels in pig housing must be kept below 7ppm.

Long term ammonia levels of as little as 9ppm can cause rhinitis in pigs (SVC 1997). Choice experiments have shown that pigs will spend significantly more time in unpolluted chambers than those containing even 10ppm of ammonia. The aversion to ammonia was not immediate but took about 30 minutes. The delay in response is thought to be because of the build up of a sense of malaise with long-term exposure (Jones et al. 1996). The measuring device for the concentration of ammonia was accurate only to within +/-2ppm at a measurement of 10ppm (ibid), so any measured concentration over 7ppm should be considered too high. Ammonia is detectable by the human nose at 5ppm (SVC 1997), so as a general rule if it can be smelt, the concentration is likely to be too high.

Minimum Standard No. 9. Farrowing

Include new standards:

(d) Sows must not be confined to farrowing crates as from 2006.

(e) Appropriately designed farrowing pens with bedding material and sufficient space (Table 6) must be used from 2006.

Sows have a strong instinct to make a nest before birth. This is inhibited if bedding material is not available. The strength of this instinct can be measured by the amount of work sows are prepared to do to gain access to bedding material (SVC 1997). If the instinct to make a nest is thwarted by confining sows in crates with no bedding, the results include acute stress, (SVC 1997; Jarvis et al. 2001), reduced interaction with piglets (SVC 1997) and increased restlessness (Marchant and Broom 1993; Jarvis et al. 2001).

Sows prefer crates in which they can turn around (SVC 1997), and pseudopregnant sows show a preference for straw pens, where they manipulate the straw in a way suggesting nest building is taking place (Burne et al. 2001). Sows kept in pens where they had room to turn around but no straw, showed increased restlessness while farrowing when compared with sows given straw (Thodberg et al. 1999).

Sows in crates have adapted themselves to some extent to their environment by their second pregnancy, but stress levels, as measured by plasma cortisol are still higher than in sows in pens with enough room to turn around, and with provision of straw for nest building (Jarvis et al. 2001).

In the interests of allowing normal patterns of behaviour (Section 10 of the Animal Welfare Act), bedding should be provided, and the sows should have enough space to turn around, if they are to be confined during farrowing.

It has often been stated that farrowing crates are necessary to reduce the mortality of piglets, who would otherwise be crushed by the sow lying on top of them. Prof. Roger Morris of Massey university for example states that the “housing systems used for sows at the time they give birth save the lives of large numbers of baby pigs, by more than halving the number which die young compared with what are talked about as “natural” systems of sow management”. Prof. Morris however gave no references for this conclusion.

A recent review on the reduction in piglet mortality describes the alleged benefit of sow stalls as “equivocal”. While some differences may be observed, Barnett et al. (2001) state that the reductions are hard to estimate. The SVC (1997) compared the mortality of piglets in Sweden, which has banned farrowing crates, with Denmark where they are still used

extensively. They found that the Swedish mortality figures were as low as the Danish ones and sometimes lower.

Switching from a farrowing crate system to one where the sow has room to turn around can cause an increase in mortality (SVC 1997) but it is unclear how much of this is due to the stock-keepers having to learn about the new system. The increased restlessness of sows in farrowing crates may even increase the risk of crushing piglets (Thodberg et al. 1999).

The causes of piglet mortality are multifactorial (Barnes et al. 2001), and the competency of the stock keepers could have a huge influence. It is our opinion therefore that improved training of the stock-keepers as already stipulated in section 19 of the draft code, together with better conditions for the sows, will lead to a situation which is better for the sows and the piglets.

Minimum Standard No. 10. Dry Sow Stalls

In line with our campaign to have the sow stall completely phased out, we submit that this minimum standard should read as:

- a) Individual stalls to house sows and gilts must not be used from 2006.
- b) Sows may be confined to individual pens (see minimum standard 5) for the first four weeks after mating.
- c) The construction of or conversion to dry sow stalls is prohibited as from 1 May 2002.
- d) Aggression in group housing may be reduced through the use of individual feeding stalls with or without electronically controlled feeding systems
- e) Individual sow pens may be used after the first four weeks of pregnancy where justifiable health reasons exist.

Pigs prefer social interaction, and choice experiments have confirmed that they find dry sow stalls “aversive” (SVC 1997). Sows in stalls cannot exercise which results in weak bone structure and joint damage. Sows in stalls have a higher basal heart rate indicating a lack of physical fitness (Marchant et al. 1997), with all the accompanying health problems that can result.¹ This is recognised and acknowledged by the European Commission in 2001 with its decision in 2001 to revise the pig welfare Directive 91/630/EEC. In its amendments to the Directive it stated:

“Pigs should benefit from an environment corresponding to their needs for exercise and investigatory behaviour and that the welfare of pigs appears to be compromised by severe restrictions of space...Sows prefer to have social interactions with other pigs when provided with freedom of movement and environmental complexity. The current practice of keeping sows in continuous close confinement should therefore be prohibited...”

These health problems should in themselves be enough reason to phase out sow crates in the near future, but the worst aspect of crates is repetitive, compulsive behaviour, known as stereotypes. In pigs confined in stalls, this can take the form of continuous chewing, bar-biting, head weaving and tongue rolling. The SVC (1997) report that in “every detailed study” of sows in stalls, a “substantial level” of stereotypes have been found. In contrast, stereotypes are rare or absent where sows are reared in complex environments.

Barnett et al. (2001) review what is known about stereotypes and conclude that they are indicators of poor long term welfare. Webster (1997) and Spedding (2000) are much stronger in their belief that stereotypes are an indication of suffering (see introduction).

It is often stated that sow stalls are beneficial to pig welfare as they reduce bullying and aggression. Barnett et al., (2001) cite some cases where welfare was improved by housing pigs in stalls. Prof Roger Morris also provides this argument in his open letter to the New Zealand public. Similar arguments have been put forward by the Pork Industry Board.

¹ Cortisol levels in sows confined in stalls indicate increased stress. The levels were reduced if sows were given enough space to turn around. Sows in crates are also more aggressive to their neighbours (Barnett et al. 2001).

Arguments for animal welfare benefits associated with dry sow stalls usually cite the need for individual confinement as a necessary management option for pig farmers.

The welfare comparisons described above however are between pigs in group housing and pigs in stalls. The issue is therefore one of confinement, and in no way specifies that this confinement needs to be so extreme that the sow is unable to turn around. In its amendments to the pig welfare Directive 91/630/EEC the European Commission stated that “sows may be kept individually [during the first four weeks of pregnancy] provided they can turn around easily...”

The SPCA does not oppose short term individual confinement, if this is necessary for the welfare of individual pigs, but we do insist on standards of space and environmental enrichment. Should individual confinement be considered necessary for the first 4 weeks of pregnancy, this should be allowed to happen within an area that is large enough for the sow to turn around, with a separate sleeping and dunging area, and with appropriate bedding material. This satisfies the needs of the Pork Industry Board in seeking the option of individual confinement for the first 4 weeks of pregnancy as well as the expectations of the New Zealand public.

A Colmar Brunton public opinion poll published in December 2001 found that 86 per cent of those surveyed think the use of dry sow stalls in pig farming is unacceptable, and 87 per cent of those surveyed want them banned by 2006 at the latest. Only 5% of respondents believed the dry sow stall was acceptable, and 5% disagreed with a ban.

Improvements in group housing to reduce aggression also need to be considered. More than half of New Zealand pork producers find no need to use the dry sow stall and have developed other methods of pig husbandry (Gregory and Devine 1999). The causes of aggressive behaviour in pigs are multifactorial, but the following have been found to increase aggression, including tail and vulva biting.

- Mixing of unfamiliar pigs (Weary et al. 1999a; Turner et al. 2001).
- Overcrowding (SVC 1997; Weng et al. 1998; Schröder-Peterson and Simonson 2001).

- Lack of straw or other bedding material (Barnett et al. 2001; Schröder-Peterson and Simonson 2001).
- Lack of other environmental enrichment (Schröder-Peterson and Simonson 2001)
- Temperatures that are too hot or too cold (Schröder-Peterson and Simonson 2001)
- Inadequate ventilation (Schröder-Peterson and Simonson 2001).
- Hunger or inadequate nutrition (SVC 1997; Whittaker et al. 1999; Schröder-Peterson and Simonson 2001).
- Stress (Schröder-Peterson and Simonson 2001).

The stress factor can be exacerbated if pigs are afraid of humans. The skill of the stock-keeper is a major factor in reducing stress (Hemsworth 2000). For this reason the SPCA applaud the recommendation that stock handlers should all be trained.

It should be noted that in one experiment the provision of straw actually increased aggression and vulva biting (Whittaker et al. 1999). Statistical analysis showed however that aggressiveness when sows were not feeding could be accounted for simply because the pigs were more active when given straw. The authors also noted that aggression during feeding could have been caused by food being hidden in the straw, with the result being a greater foraging time, more opportunity for interactions, and a perceived shortage of food, since the amount available was not immediately apparent.

These factors can be eliminated by the provision of individual feeding stalls in an indoor system. The cost of this system is quite high, but can be reduced by incorporating electronic feeding technology. Under this system a sensor on the sow monitors the amount of food given to each sow. (SVC 1997; Webster 1997).

The SPCA contends that aggression should be reduced to acceptable levels through improved husbandry methods. Food should be nutritionally adequate and extra fibre should be available to prevent feelings of hunger (minimum standard no. 1). Pigs should not be overcrowded (minimum standard no. 5), adequate ventilation should be provided (minimum standard no. 7), and rooting material must be available (minimum standard no. 4i). Stock handlers must all be trained according to minimum standard no. 19. If these provisions fail

to reduce aggression to such an extent that welfare is compromised, then the offending individuals can be housed individually in pens as an emergency measure.

Minimum Standard No. 13. Boars

Change b) and c) to read:

b) From 2003, boars must be housed in accommodation other than individual stalls.

c) From 2003, individual pens must only be used where justifiable health reasons exist.

Arguments for banning sow crates apply equally to boars.

Minimum Standard No. 14. Routine Procedures

We submit that the standard should read as follows:

a) Tail docking of pigs is prohibited.

Tail docking in pigs is practised to prevent them from biting each others' tails. Under conditions of overcrowding and stress the level of biting can intensify to such an extent that pigs seriously injure each other. In extreme cases infections from the injured tail can spread to the lungs (Schröder-Peterson and Simonson 2001).

Tail docking can prevent tail biting, but the procedure is far from painless. Both short term and long term pain are likely to result. Even new born piglets have sensory nerves in the tip of the tail, suggesting that docking causes short term pain. Lambs that have had their tails docked had elevated cortisol levels 24 hours after surgery, and abnormal walking behaviour indicating pain for up to 4 hours after the operation (Shutt et al. 1988; Lester et al. 1996).

In addition, the stumps of the tails can form bundles of peripheral nerve fibres (neuromata), indicative of chronic post-amputation pain (Schröder-Peterson and Simonson 2001). Pigs may therefore be suffering from long term pain in the stump throughout their life. In fact it is believed that one reason why tail docking is so successful in reducing tail biting, is

because the increased sensitivity of the stump to nibbling causes the amputee to take evasive action (SVC 1997; Schröder-Peterson and Simonson 2001).

Since tail biting, like other forms of aggression can be reduced by improvements in management (see above), it is our contention that it should be prevented in this way, or in extreme cases by individual housing, and not by tail docking. This approach is suggested by the SVC (1997).

b) Surgical castration is prohibited. Immunocastration is an acceptable alternative.

Under the proposed code, castration is allowed without anaesthetic or veterinary supervision for piglets under 7 days, presumably because it is believed that young animals are not as sensitive to pain. Taylor et al. (2001) however demonstrated that 3-day old piglets squealed as persistently as older piglets (10 and 17 days), and piglets of all age groups showed behaviour indicating pain for 22 hours after the operation. In 4-week old piglets, behaviour indicating pain has persisted for 2-3 days (SVC 1997).

Because of this, and because the sole purpose of castration is economic, the Scientific Veterinary Committee recommended that surgical castration not be performed. Taylor and Weary (2000) discovered that the most painful part of the castration operation is the severing of the spermatic cords. Castrated piglets squealed just as loudly when the spermatic cords were torn or cut with a scalpel. More care in the operation procedure is therefore unlikely to make much difference to pig welfare. The authors suggested that a non-surgical approach, or eliminating the need for castration would be a better approach than pain reduction.

c) Inserting nose rings is prohibited.

Inserting nose rings causes pain, but its main effect on welfare is that it prevents pigs from performing their instinctive rooting behaviour when housed outdoors (SVC 1997). It may also affect some other behaviour such as chewing (Barnett et al. 2001).

d) Clipping or grinding teeth is prohibited.

Piglets' teeth are clipped to prevent them from biting each other and from injuring the sow. Clipping or grinding exposes the dentine which is innervated, so a high level of pain is likely. A recent survey showed that the effectiveness of tooth clipping is exaggerated. Where piglets' teeth were not clipped or ground, injuries to sows were non-existent, and injuries to other piglets were only superficial (Brown et al. 1996, cited SVC 1997). The SVC (1997) conclude that "it seems unlikely that the causing of pain in every tooth of every piglet can be justified by the relatively minor advantages which occur as a consequence of this practice".

e) Ear notching is prohibited.

This can involve cutting quite large portions of the ear. The SVC (1997) recommend that electronic monitoring devices be used instead.

Minimum Standard No. 15. Movement

Number current paragraph as a) and include new standard:

b) Electric prodders must not be used on pigs.

If pigs are handled roughly, they could become more frightened of their human handlers. This could lead to increased stress and aggression (Hemsworth 2000). The effect on the handler should also be considered. Handlers should be trained to treat their charges with respect, and allowing rough treatment may desensitise the handlers.

Page 31: Recommended best practice of providing rooting material should be minimum standard.

See discussion on minimum standard no. 4.

Page 31: Recommended best practice of separating pigs with ear or tail bites and to provide treatment if necessary should be minimum standard.

See discussion on minimum standard nos. 5 and 10.

Page 32: Minimum standard on weaning required:

- a) Piglets must not be weaned under 5kg of body weight.
- b) Piglets must not be weaned below four weeks of age.

Under natural conditions, feral piglets are weaned about 3 months after birth. In order to increase production, this period is reduced to 4 weeks in most European production systems, but can be as little as 2 weeks in North America (SVC 1997). Recent behavioural studies have shown however that piglets reared at ages of less than 4 weeks show more crying and belly nosing than older piglets, a sign of more stress (Weary et al. 1999b; Worobec et al. 1999). Piglets reared at 7 and 14 days also showed more escape behaviour, less interest in their environment and less interaction with neighbours (Worobec et al. 1999).

Minimum Standard No. 17. Inspections

Recommended best practice to be part of minimum standard

Other Minimum Standards Required

No hormone growth promotants or antibiotic growth promotants must be used.

It is well known that the fast growth rate of broiler chickens can cause crippling deformities, which come about because the birds are too heavy to support themselves (Singer 1990). According to the weight control information network of the US National Institute of Health, overly obese humans can also suffer from joint disorders caused by too much weight on the joints. While there is no reason to suppose that overly heavy pigs will suffer in the same way, the possibility must be considered, and the pigs should be given the benefit of the doubt.

Reviewing Scientific Grounds For Sow Stalls

In a recent review of welfare issues for sows in relation to housing, Barnett et al. (2000) made numerous claims in favour of the use of sow stalls on the basis of what they described as the functioning-based (homeostasis) approach. The authors relied solely on anatomical and physiological data such as cortisol concentration, immune response and production efficiency. Underlying this is an assumption that mental states can be reduced to physiology.

This is an erroneous assumption for several reasons. Firstly, a number of factors can produce identical physiological indicators. The stress hormone cortisol for example is released in response to stress and physical pain but also to pleasurable excitement (Fisher 1998). Secondly, not all instances of psychological suffering are associated with stress. It is generally regarded that for humans, too little stress is just as harmful as too much, and for the pigs in sow stalls the problem would appear to be boredom as much as stress. Thirdly, there is not always a correlation between physical health and mental states. There are many people who may be physically healthy but desperately unhappy, and many others who achieve happiness in spite of health handicaps.

The limitations of the physiological approach are acknowledged by workers in the field of animal welfare, who use other indicators of adverse mental states, such as behavioural problems. These can be compared with what is known about abnormal human behaviour, and extrapolated to other species on the basis of the argument from analogy (also a valid scientific method). Webster (1997) and Spedding (2000) both conclude that stereotypes are an indication of mental suffering on this basis. Sneddon et al. (2000) concluded that barren environments cause mental deterioration in pigs by investigating their cognitive abilities. Barnett et al. (2001) cite an experiment which showed that sows in stalls are less responsive to external stimuli, but dismissed this finding in their later discussion on stalls.

The argument from analogy therefore provides extensive evidence for the adverse effects of sow stalls, but another strong argument is simple common sense. This has often been ignored or sneered at by biological scientists (Rollin 1998), but it has always been effectively used to make sense of the world around us, and should be regarded as a legitimate means of finding truth. In fact, as was first pointed out by the philosopher David Hume, scientific enquiry itself relies on a common sense assumption that cannot be proved deductively, namely that future observations resemble past ones.

If science is to be used for the determination of farming practices in the pork industry, all relevant science needs to be taken into consideration, and not simply the form of science that most suits those commercial stakeholders who stand to lose money if changes are made to industry standards. Furthermore, science (in all its diversity) is simply one discourse in the broader arena of debate concerning the welfare of pigs.

This debate cannot be reduced to science alone (acknowledged by Barnett et al. 2001), but is ultimately a moral and legal debate centred around the issue: *should humans be permitted to force intelligent, and curious animals to live in conditions where they are kept in solitary confinement, unable to turn around, in situations of darkness, without rooting materials, and ultimately where they are unable to express normal patterns of behaviour?* The SPCA uses science and moral argument to conclude unequivocally that such treatment of pigs amounts to abuse and cruelty and must be stopped.

Animal Welfare Act

The Animal Welfare Act (1999) states that animals must be allowed to “display normal patterns of behaviour” (Section 4(c)). Section 10 of the Act requires that the physical, health, and behavioural needs of the animal are met in accordance with good practice and scientific knowledge. The scientific evidence presented above strongly suggests that welfare is compromised when pigs are kept in sow stalls, where they are clearly unable to express normal patterns of behaviour, and are therefore housed in stalls in breach of the Act. The issue at hand is how to enforce this law.

We note that Section 73 (3) of the Animal Welfare Act (1999) states that the National Animal Welfare Advisory Committee (NAWAC) may, *in exceptional circumstances*, recommend minimum standards and recommendations for best practice that do not fully meet the obligations of Section 10. The crux of this debate over the use of sow stalls centres on whether any exceptional circumstances exist that would allow Section 73 to be invoked.

We note that Section 73 (4) of the Act points out that if NAWAC wishes to make any exemptions under Section 73 (3), it must have regard to-

- (a) the feasibility and practicality of effecting a transition from current practices to new practices and any adverse effects that may result from such a transition...[and]
- (c) the economic effects of any transition from current practices to new practices.

The question now rests on whether a transition to a minimum standard that did not permit the use of sow stalls would be feasible and practicable. A recent survey of larger New Zealand pig farms revealed that only 67% of sows are kept in farrowing crates, 32% in sow stalls (for most of their pregnancy), and 49% are kept in sow stalls at some stage of the pregnancy. Only 29% of sows are kept in both sow stalls and farrowing crates. Fifty seven percent of farmers manage to produce pork without using the sow stall at all (Gregory and Devine 1999). This is a clear demonstration that a transition is feasible and practicable, as at least some of these farmers have undertaken this transition voluntarily.

The next question focuses on the economic effects of such a transition to banning the sow stall. In a brochure entitled “the welfare of pigs in New Zealand: The facts”, the New Zealand Pork Industry Board state that the result of an immediate ban on sow stalls would be that “the farmers involved would go out of business”, and that “New Zealand would have to import more pork from countries where legislated animal welfare standards are lower”. Neither of these statements is backed up by any economic data supporting their assertions.

In the first place, the survey by Gregory and Devine (1999) showed that 57% of New Zealand farmers already run a competitive business without the need for sow crates or farrowing crates. These farmers do not receive any more for their meat than farmers who use sow stalls, nor do they receive any compensation or incentives from the Government. It is a fact of note that the New Zealand Pork Board claims that only 29% of pig farmers use dry sow stalls and that 44% of New Zealand sows are confined in these stalls.

Economic data from EEC countries suggests that production cost increases will be minor. An economic simulation model of a Dutch farm, described by the SVC (1997) revealed that converting a farm from stalls to group housing with a space of 2.5 square metres per pig, changing from farrowing crates to individual pens for lactating sows, and the provision of 300g of straw per sow per day, would add about 3.5% to the production cost. If the farrowing crates were not altered, the extra cost is 0.8%. Production cost is also only a small proportion of the cost to the consumer, once

transport and distributors' mark-up prices are added. Compassion for World Farming (CIWF 2000) conducted a detailed analysis of economic data from France, Netherlands, Denmark and the United Kingdom, and came to the conclusion that the extra cost of providing group housing with straw is 1.5-1.8p per kilogram of pig meat. If this cost is passed on to the consumer, the additional cost would be a mere 36-95p per year.

Labelling

It could still be argued that even a small price rise would result in consumers switching to other forms of meat, or to buying pork from importers who have few animal welfare restrictions. One strategy to circumvent this problem would be establishment of a labelling regime that required both country of origin and method of farming practice to be displayed on the retail product. This would give consumers the opportunity to make an informed purchasing choice.

A Colmar Brunton public opinion poll published in December 2001 asked respondents the following question: "Do you think the practice of keeping pigs in sow stalls is acceptable or unacceptable?". Out of 500 respondents, 87% believe that sow stalls should be phased out by 2006. This is a significant proportion of the existing and potential market that is likely to respond positively to a marketing effort designed to encourage discerning consumers to choose welfare-friendly pork products.

The more discerning end of the consumer market is also likely to be the more affluent segment, and this would suit the targeting of a niche market for NZ pork. Slightly higher prices will be able to be met by a market that can afford the product.

International Trade

Some might argue that by banning the sow stall in New Zealand but still importing pork that has been produced using sow stalls is unfair on New Zealand pork producers who would have to meet higher and more costly welfare standards than their foreign competitors. This argument has been used in the forest industry against calls for higher standards of forestry practice involving native timbers, under the premise that by doing so we are simply shifting the geography of the problem rather than solving the problem. This would be true if there were no alternatives and if there were no

international conventions capable of affecting the conduct of producers of international traded products.

International trade is commonly affected by restrictions arising out of local regulations and international agreements. The CITES agreement, for example, bans international trade in endangered species. According to the European Commission, animal welfare stands at the crossroads of economic, ethical, animal health, food production and legal issues. The Commission commented on the WTO implications of regulations in pork farming practices in June 2000.²

The EC propose a combination of a number of actions to address this issue:

- (1) the development of multilateral agreements
- (2) appropriate labelling rules, and
- (3) to exempt compensation of additional costs to meet animal welfare standards from reduction commitments.

If New Zealand were to ban the sow stall it would be able to work with European Union member states (like the UK, Sweden, and the Netherlands) that have imposed significant animal welfare restrictions on sow housing. This would situate New Zealand in a position of leadership in the international community on animal welfare issues in agriculture, and help improve the living conditions of sows world wide. Furthermore, if New Zealand were to work with other nations that are committed to improving the welfare of sows, there is a higher chance that WTO changes will be made. In terms of long term strategy, this would be good for NZ pork producers, and particularly those that choose to explore export opportunities.

The production of welfare friendly pork presents an opportunity for New Zealand pork producers to target top end niche markets in Europe where the demand for safe and welfare friendly meat products is at an all time high (particularly in the wake of the recent food scares associated with BSE and Foot and Mouth disease). An innovative and enterprising approach to this situation could see the Pork Industry Board exploring export market opportunities. Such exploration is likely to be encouraged and perhaps supported in some way by a government seeking to inspire domestic

² “Communication From The Commission To The Council And The European Parliament on the welfare of intensively kept pigs in particularly [sic] taking into account the welfare of sows reared in varying degrees of confinement and in groups. Brussels, 16.01.2001, COM(2001) 20 final, 2001/0021 (CNS).”

industries to take advantage of the hard won NZ reputation for producing quality export products. Our ability to differentiate in the European market is already high with our clean-green image. In addition to this there is ample opportunity to explore the export opportunities for NZ grown organic free-range pork.

Efficiency and Transitional Funding

There may be pork producers who are still using the sow stall and who are unable to sustain their competitiveness in the industry if they are compelled to shift to farming practices that do not use the sow stall. If this is the case, a question arises as to the efficiency of these producers and whether they should be in the industry at all. By means of analogy, if a factory owner was unable to survive financially without the use of child or slave labour, then that factory owner should perhaps think of shifting to another industry or go out of business. It is not the responsibility of the New Zealand public to lower its standards of animal welfare or employment conditions for the sake of businesses that are inefficient and unable to behave in a fashion that the community regards as responsible. This is particularly true for industries where higher (acceptable) standards are the norm for over half of the industry.

There are also likely to be pork producers who are efficient and who could cope with a phase out of dry sow stalls, but who have recently invested sow stall housing facilities. A rapid phase-out could be unfair to these producers who have made lawful (recent) investments. Dry sow stall facilities have a limited life. If depreciation is taken into account, then those producers who have invested in dry sow stalls some years ago will have realised much if not all of their investment, particularly those who have stalls that are nearing the end of their productive life. Such producers should not qualify for any transitional funding assistance as they will be needing to reinvest in new facilities anyway. The degree of any transitional funding granted to producers should be a function of how recently new sow stall housing facilities were installed, and the duration of the transition period.

Conclusion

The complete phase out of sow stalls is feasible, practicable and equitable, and will enable Section 10 of the Animal Welfare Act to be enforced as required by the New Zealand public. This submission has provided scientific evidence to substantiate the case for a total ban of the dry sow

stall in New Zealand. We submit that this ban should take effect in 2006. This submission has provided scientific evidence to support a standard of good practice involving group housing, with provision for individual confinement (where necessary and with minimum space and environment standards) for housed pigs. There are no grounds for invoking Section 73 of the Animal Welfare Act to prevent a complete ban of sow stalls, although there may be grounds for the provision of transitional funding for some pork producers who have recently invested in new sow stall housing facilities.

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