

SCIENCE TEXTS

Short Written Texts (Journals)

Weaver, S.A. and Morris, M.C. 'Science, Pigs, and Politics: A New Zealand Perspective on the Phase-Out of Sow Stalls'. *Journal of Agricultural & Environmental Ethics*, Volume 17, Issue 1 (2004). Extracts from pp. 54 & 55.



SCIENCE, PIGS, AND POLITICS: A NEW ZEALAND PERSPECTIVE ON THE PHASE-OUT OF SOW STALLS

BEHAVIOR AND SUFFERING

The presence of higher psychological states in animals is more controversial than the presence of physical pain. However, as our awareness of animal behavior increases it has become apparent that mammals and birds, and possibly other animals are capable of advanced thought processes (Dawkins, 1998; Varner, 1999; Griffin, 2001). If this is the case, then it is reasonable to assume that these animals can suffer from emotional disorders such as boredom, stress, and frustration if they cannot meet their behavioral needs, and that this suffering is detrimental to their welfare.

Observations of animal behavior when they are kept under barren conditions bear this out. Animals in a barren environment show repetitive and often destructive behavior, which is also associated with mentally disturbed humans (Webster, 1995). Spedding (2000) from the Farm Animal Welfare Council in the United Kingdom gave the opinion that the presence of stereotypies can mean that an animal is being driven insane.

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

NORMAL PATTERNS OF BEHAVIOUR

A study of domestic pigs reared in a wild environment has shown that their behavior did not differ markedly from that of wild pigs. One aspect of this behavior 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). Evidence suggests that the rooting instinct in pigs is distinct 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 has been observed to reduce stereotypical behavior (Spoolder et al., 1995; Whittaker et al., 1998; 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).

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The amount of space needed for pigs to lie down comfortably has been calculated to be proportional to their length and width, which is proportional to the two thirds root of their body weight, sometimes referred to as the “Spoodler formula” (see Spoodler et al., 2000). The space available in sow stalls is lower than this minimum. Crowding and limiting space has shown to have adverse effects on agonistic interactions (Ewbank and Bryant, 1972), although pigs housed individually have shown better growth rates than pigs kept in group housing (Gehlbach et al., 1966; Patterson, 1985; Petherick et al., 1989). Sow performance has been shown to improve steadily as the space allocation for pigs (at an initial weight of 55.5 kg) was increased to 1.20 m² (Brumm, 1996). The growth rate of adult pigs improved when space allowance increased to 1.80 m² (*ibid.*). 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 4.8 m² per adult pig. Based on results from the study, the authors recommended a space requirement of between 2.4, and 3.6 m² per sow.

Sows have a strong instinct to make a nest before birth. The ability of pigs to express 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 (Matthews and Ladewig, 1994). If the ability to make a nest is thwarted by confining sows in crates (where they cannot turn round) with no bedding, the results include acute stress, (Jarvis et al., 2001), increased frequencies of stereotyped movements (Cronin et al., 1996; Lammers and De Lange, 1986), 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).¹

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SOW STALLS

Pigs prefer social interaction, and choice experiments have confirmed that they find sow stalls “aversive” (SVC, 1997), where behavior that has been prevented (in stalls) is expressed to a high degree once they are free of such confinement. Phillips et al. (1992), showed that sows preferred wider than narrower stalls when given the choice. Sows in stalls cannot exercise, which results in weak bone structure and joint damage. Sows in stalls have also been shown to 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.²

In pigs confined in stalls, stereotypical behavior 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 stereotypies have been found. In contrast, stereotypies are rare or absent where sows are reared in complex environments.

In their review, Barnett et al. (2001), explored what is known about stereotypies and concluded that they are indicators of poor long term welfare. Webster (1995) and Spedding (2000) are much stronger in their argument that stereotypies are an indication of suffering. It has often been 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. The welfare comparisons described by Barnett et al. (op. cit.) however, are between pigs in group housing and pigs in individual confinement. The issue in this instance (and this is pivotal to the debate), therefore, is one of *confinement*. This need for occasional confinement in no way specifies that this confinement needs to be so extreme that the sow is unable to turn around.

The causes of aggressive behavior 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., 1999; 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).

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Extract from p. 63.



CONCLUSIONS

Often the same principles are argued but in a different language. We have shown that the phase-out of dry sow stalls in the pork industry in New Zealand (and no doubt in other countries where sow stalls are still used) can be supported scientifically. We have also provided evidence that it is economically feasible and reasonable. As for the moral justification – this argument will no doubt continue, but ultimately it must focus on whether society will allow intelligent social animals to be kept in such extreme confinement that they cannot turn around, and whether this moral price for cheap pork is something their conscience can afford.