THE CLOSE CONFINEMENT OF IRISH SOWS

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report by

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Introduction

This report addresses the confinement of breeding sows in sow stalls or tethers, for pregnancy after pregnancy, on Irish farms. The sows remain confined indoors throughout their pregnancies, tethered by metal chains or penned in by metal bars, so that they are unable to turn round.

Stalls and tethers – what are they?

Sow stalls are narrow, metal-barred 'boxes', in which individual sows are kept during their pregnancy – 'veal crates' for pigs. The floor is usually made of concrete, with a slatted section at the rear. The stall is so narrow that it prevents the sow from turning round. The only exercise that the pregnant sow can take, during her four months confinement, is to stand up or lie down. If she lies down, she frequently has to do so in her own excrement, as slats are not an efficient means of drainage. There is no bedding, or material for the sows to root in.

Where tethers are used, the sow is restrained with a short, heavy, metal chain fixed at the front to a concrete wall, floor, or metal bar. The other end of the chain is attached to a heavy plastic-coated metal collar around the sow's neck. As with stalls, the effect is the same – movement of the animal is severely restricted. Again, there is no bedding.

A veterinary surgeon for one of the UK's largest pig practices, speaking about stalls and tethers, has said: "I do not care to see pigs confined in this way for weeks on end only able to stand up and lie down, unable to turn round and reduced to playing with a water drinker or chewing a metal bar through sheer boredom or frustration". [(1)]

The political and legislative environment

Under EU law, the tethering of breeding sows is now being phased out. This law dictates that from 1st January 1996, no new sow units can incorporate tethering, and all existing tether systems must be phased out by 31st December 2005. This applies to all EU countries, including the Republic of Ireland.

The EU law does not, however, ban the use of the equally inhumane system of sow stalls. These offer no improvement in welfare terms over sow tethering, and might be considered the obvious choice for pig producers when replacing tether systems. Animal welfare groups across the EU are strongly opposed to the continued use of sow stalls, and are calling for the EU ban on sow tethering to be extended so that sow stalls are also banned. This will force a move towards more humane rearing methods for breeding sows in the EU.

At present, the majority of breeding sows in the Republic of Ireland are tethered. With the EU ban on tethers imminent, Irish farmers will have to abandon this system. Rather than move to the equally inhumane system of sow stalls, the time is right for the farming industry in Ireland to make the move away from both stalls and tethers, lending Irish pork a vital 'welfare-friendly' competitive edge in the European market place.

With the EU-wide campaign by welfare groups for a ban on sow stalls as well as tethers, to move from tethers to stalls could easily spell financial disaster for Ireland's pig farmers, as it may only be a matter of time before stalls too are outlawed on welfare grounds.

Compassion in World Farming (CIWF) in the UK successfully campaigned for the implementation of UK legislation which bans both sow tethering and sow stalls after 1st January 1999. In the UK at present, more than half the population of breeding sows are kept successfully in group housing or free range systems.

The EU legislation banning sow tethering arose because of serious welfare problems associated with this system. In 1965, a landmark report on farm animal welfare, the Brambell Report, was published. The Brambell Committee was established by the UK Government to assess the evidence that confinement of farm animals causes undue suffering. Their report laid down minimum standards which should be adhered to, if farm animal welfare is to be protected. One of the recommendations in the report is that "an animal should at least have sufficient freedom of movement to be able without difficulty, to turn round, groom itself, get up, lie down and stretch its limbs". [(2)]

Subsequently, in 1976, Convention No. 87 of the Council of Europe established the following principles: "It is forbidden to cause unnecessary pain, suffering, wounds or damage to animals" and "Animals shall be kept according to their behavioural needs". [(3)]

In 1996, in Ireland, around 85-90% of breeding sows were confined during their pregnancies ('dry sows') by the use of tethers. This represents 153,000 to 162,000 sows from the Irish breeding sow population of approximately 180,000. [(4,5,6)] Of the remainder, some sows are also confined, untethered, in stalls.

The present report will describe confinement conditions for stalled or tethered sows, will outline scientific evidence showing that Irish sows are suffering in such conditions, and will examine alternatives to the close confinement of pregnant sows.

Irish sows – a brief life history

In Ireland, as in many other countries, a specific population of sows is reared and kept for breeding purposes. The function of these animals is to give birth to the maximum number of piglets which are then reared and slaughtered for meat.

The breeding sow is mated (or artificially inseminated) for the first time at around seven months of age. Pregnancy lasts for a little less than four months. Throughout their pregnancies, most Irish sows are confined in a sow stall or tether system.

Under natural conditions, the sow would wean her piglets when they are around three months old, but this is too slow for today's intensive farming systems, and piglets today are normally weaned at three or four **weeks** of age.

The sow is made pregnant again five to ten days after weaning.

In the highly commercial environment of intensive pig farming in Ireland, breeding sows are there to produce piglets, and as such they can spend nearly ten months of every year of their lives pregnant, usually confined by stalls or tethers. Clearly, the conditions under which pregnant breeding sows are kept will be vital to their welfare.

Stalls and tethers – the shortcomings

By confining sows for virtually all their adult lives with stalls or tethers, throughout repeated pregnancies, Ireland's pig farming industry is failing to provide adequate welfare for the sows in three key areas:

- the sows are exposed unnecessarily to physical discomfort;
- they may be exposed to an increased risk of pain, injury or disease;
- sows are prevented from fulfilling their normal behaviour requirements.

Exposure to physical discomfort

It is completely unnatural to cause pigs to stand or lie down on a concrete floor for repeated periods of up to four months. Under natural conditions, pigs normally inhabit the edges of woodlands, where the earth is moist and grassy, and is sometimes covered with a deep layer of dead leaves. They will use their sensitive snouts to dig in the earth for roots, seeds, nuts, grubs and berries. The anatomy of the pig has evolved to suit this environment.

Professor John Webster, Head of the Veterinary School at Bristol University, has noted that sows forced to lie on concrete can suffer from excessive heat loss, and from chronic physical discomfort, especially around the bony joints of the knees and hocks. Webster writes that: "I can think of absolutely nothing good to say about housing sows on concrete". [(7)]

It has also been found that the duration of farrowing is significantly shorter in loose-housed sows than in those which have been tethered, and in this case it has been suggested that it is lack of exercise which has, as might be expected, an adverse effect on the sow. [(8,9)] Reduced muscular development has been observed in stall-housed compared with group-housed sows. [(10)] Inability to exercise has also been associated with the reduced cardiovascular fitness found in stall-housed compared with group-housed sows. [(11)]

The inability of confined sows to turn round runs completely contrary to the recommendations of the landmark Brambell Report on farm animal welfare, published over 30 years ago. In this Report, it was clearly recognised that animals have a need at least to be able to turn round; by implication, this means that farmers have a duty to provide an environment in which the animals can do so.

Increased risk of pain, injury and disease

The confinement of sows by stalls and tethers has been found to be associated with increased levels of disease, injury, and therefore presumably also increased pain.

Urinary infections:

Urinary tract infections are more common in stalled and tethered sows than in sows which are not confined during pregnancy.

The low levels of activity seen in stall-housed and tethered sows seem to be associated with infrequent drinking. As a result, confined sows urinate less frequently than animals which are not closely confined. The consequent build-up of bacteria within the urinary tract leads to increased levels of infection. [(12)]

In addition, it is thought that closely confined sows are more prone to urinary infections as a result of having to lie, or sit, in their faeces. [(13,14)]

Leg injuries and lameness:

Confined sows are prone to leg injuries and lameness, for a variety of reasons.

There is evidence that confinement of sows in stalls is associated with weakened bones. The breaking strength of the leg bones of sows in stalls has been found to be only two-thirds that of group-housed sows. [15]

Sows in close confinement on concrete have a higher incidence of injuries to feet, inflammatory swellings of joints and abrasions to their skin than outdoor sows. [14]

Serious lameness is particularly prevalent in tether units. [16] This has long been associated with poor quality concrete flooring, [17] or with badly designed or maintained slatted floors. [18,19] However, it has also been suggested that confinement by stalls and tethers, and the associated lack of exercise, may inherently predispose sows to lameness. [9]

The injuries which result in lameness can have very serious consequences for the welfare of confined sows. If the injured tissue becomes infected, the infection may spread to damaged joints, set up a septic arthritis and cause severe, chronic pain. [14]

Latest figures show that cull rates for lameness may be as much as five times higher for stall housed sows than for sows outdoors. [20]

Obviously, injuries which result in lameness may be amenable to veterinary treatment, and therefore may not necessarily result in the development of more serious conditions. But large numbers of pregnant sows exist in close confinement in Ireland, and it will not always be possible to monitor closely the condition of all of these animals, and respond appropriately. Based on the scientific evidence referred to above, Compassion in World Farming believes that the welfare **potential** of stall and tether systems is inherently less than the welfare potential of indoor group housing and outdoor systems. As a result, animals are much more likely to suffer in systems of close confinement, given a particular level of stockmanship.

Behavioural deprivation

Under natural conditions, pigs can spend more than half the daytime in rooting, foraging and exploratory behaviour. There is widespread scientific evidence that stall housed and tethered sows develop increased levels of **stereotypic behaviour**, in response to the closely confined and barren conditions of stalls and tethers (**stereotypic behaviour** is highly repetitive behaviour, performed for no apparent purpose).

However, before sows begin to display such behaviour, they first display two other responses to confinement:

The 'escape reaction':

This response is exhibited by sows on their initial confinement. It has been described by a researcher investigating the effects of confinement as follows: "... the sows threw themselves violently backwards, straining against the tether ... Sows thrashed their heads about as they twisted and turned in their struggle to free themselves. Often loud screams were emitted and occasionally individuals crashed bodily against the side bars of the tether stall. This sometimes resulted in the sows collapsing to the floor". [21]

Inactivity:

The 'escape reaction' appears to be followed by several days of inactivity and unresponsiveness. Typically, the sows can be observed sitting or standing, with half or fully closed eyes, head hanging, and leaning against the side bars of the stall. [22]

During this period, tethered sows have been found to have elevated levels of serum cortisol, a physiological indicator of a stress reaction in the tethered animals. [23]

The development of stereotypies:

Following the initial 'escape reaction', and the subsequent period of inactivity, tethered or stall confined sows begin to display stereotypic behaviour. Typical stereotypies displayed by confined sows are attempts to root in the concrete floor, chewing the tether chain, and biting the metal bars of the stall.

Stall housed and tethered sows develop increased levels of stereotypic behaviour, compared with group housed sows. Researchers have found that the proportion of sows developing stereotypic behaviour is more than 25% higher for stall housed sows than for group-housed animals. Stall housed animals show similar levels of stereotypies to tethered animals. [24]

It is thought that the development of stereotypies represents, at least in part, an attempt by confined sows to adapt to the stress resulting from the behavioural deprivation imposed by their barren and confined environment. The intensity of the stereotypic behaviour, together with physiological evidence of elevated corticosteroid levels, according to Barnett et al, "can probably be taken as evidence of chronic stress". [25] It has further been suggested that this indicates that the distress experienced by the sow is severe. [26]

Further research also found an increase of around 50% in corticosteroid levels in response to tethered housing (compared with group housing) which was considered to be "evidence of a chronic stress response of a magnitude sufficient to suggest a risk to welfare". [27]

Elevated levels of corticosteroids are known to be associated sometimes with impaired immune systems. Certainly, sows tethered during pregnancy have been shown to produce lowered antibody titres in response to vaccination with an E. coli antigen. [28]

Aggression:

Concern is sometimes expressed about the levels of aggression between sows which might be encountered in alternatives to stall or tether systems.

In a proper, like-with-like scientific comparison, it has been found that tethering is associated with **increased** levels of aggression, compared with group housing; tethered sows are more likely to retaliate if attacked, compared with group housed animals, which are more likely to withdraw if attacked. [28]

In addition, there is greater scope for 'managing down' levels of aggression in groups of sows. Aggression can be minimised by avoiding highly 'dynamic' groups – for instance by changing no more than 10% of animals in a group each week. [29] Also, aggression is lower

in large rather than small groups of animals; [30] it has been recommended that sows should be kept in groups of more than 4 animals in order to minimise aggression. [31]

This suggests that care needs to be taken in moving animals which had previously been tethered into a group-housed system, but that with proper management and stockmanship, sows will be less aggressive in group housing than in systems of close confinement.

Confinement – the first 35 days

In the face of legislation to ban sow stalls and tethers in the UK from 1st January 1999, certain sections of the UK industry have been seeking exceptions, in particular to allow sow stalls to continue to be used for the first 35 days of pregnancy.

CIWF believes that it is not acceptable to attempt to weaken a ban on close confinement systems, for the following reasons:

- It would be much more difficult to police a regulation which was implemented in this way, than it would be to enforce a straightforward ban.

- In response to a request from the UK farming industry to the UK Government's advisory group, the Farm Animal Welfare Council, to investigate further the supposed benefits of close confinement of sows for the first 35 days of pregnancy, Angela Browning, the Government's junior agriculture minister, replied: "claims of welfare advantages for sows confined to sow stalls for the first 35 days of pregnancy have not been supported by scientific evidence". [32]

This is consistent with the UK Government's Formal Response to the Farm Animal Welfare Council's Assessment of Pig Production Systems, which stated that: "the keeping of sows in stalls, with or without tethers, imposes an undesirable welfare burden on the animals". [33]

Alternatives, and costs

The main alternatives to close confinement of pregnant sows using sow stalls and tethers are:

- indoor group housing; and
- outdoor free range systems.

The main cost components of pig production are:

- feed costs;
- labour costs; and
- capital costs (for example, buildings and equipment).

The cost of moving to indoor group housing:

There is no evidence of significant differences in feed costs between close confinement systems and indoor group housing. [34] Feed costs make up by far the biggest proportion of the total costs of pig production.

Labour costs are said not to have a significant influence on overall cost differences between alternative indoor pig production systems; labour costs vary as much between farms using similar systems as between those using different methods of production. [35]

With regard to capital costs, in a statement to the UK Parliament, the Parliamentary Secretary to the Minister of Agriculture said: "The capital costs of buildings and equipment for sow stalls and alternative housing systems are considered to be broadly equal". [36] In both cases, the total capital investment has a limited lifespan, and housing would need to be replaced anyway over a period of some years. Moving from a close confinement system to an alternative at the due replacement time means that no additional cost would be incurred.

Bedding:

Of course, indoor group housing systems that provide good welfare require that adequate bedding is made available, to improve floor comfort and allow greater opportunity for expression of the pigs' natural exploratory behaviour. [37]

As might be expected, recent research has shown that pigs thrive better, both in terms of welfare **and** productivity, in environments where bedding is provided, compared with barren systems. [38]

If straw is in short supply as a bedding material, a range of strategies can be adopted:

- Straw may be provided in a controlled rather than an *ad libitum* way. Studies have found that 200g straw per pig per day, dispensed from a Straw-Flow® system, is sufficient to allow pigs to perform their natural patterns of behaviour such as foraging and exploration. [39]

- Alternatives to straw can be used. Wood-shavings have been found to be an acceptable bedding material for pigs. [40, 41] Shredded newspaper has also been used, and has been found to offer similar welfare benefits to straw. [42]

Outdoor systems:

Information on feed costs for indoor and outdoor systems is contradictory, but there appears not to be a significant difference. One study has found marginally higher feed costs for indoor as opposed to outdoor pigs, [43] whereas another study found the reverse. [35]

Labour costs per sow are lower for outdoor systems than for indoor systems. One study has recommended staffing levels of one person per 150 outdoor sows compared with one person per 100 indoor sows. [44] Another study found labour costs per sow to be 15% lower for outdoor sows than for those kept indoors. [43]

As might be expected, studies have found that capital costs per sow for outdoor systems are very much lower than for indoor systems. [35, 44]

Taking all costs into consideration, it has been estimated that in the UK, outdoor production is 4% more cost efficient than indoor tethering for dry sows in terms of cost per kg of piglets reared. [35]

In the Republic of Ireland, consideration will need to be given to local climate and soil-type in deciding whether to move from close-confinement systems to indoor group housing, or instead to outdoor systems.

The situation has been summarised as follows: "The inescapable conclusion is that introducing welfare regulations banning the use of tethers or close confinement stalls for dry sows would not significantly affect the direct costs of the production of pigmeat". [34]

SUMMARY AND CONCLUSIONS

Around 85-90% of breeding sows in Ireland spend most of their lives tethered in one place by heavy metal chains, unable even to turn round. Of the remainder, some sows are also confined, untethered, in stalls.

This is completely contrary to increasing scientific recognition of the physical and behavioural needs of breeding sows.

Vets, scientists and politicians have all voiced criticisms of the close confinement of pregnant sows by stalls and tethers.

The close confinement of pregnant sows runs contrary to the conditions into which the animals have evolved, behaviourally and anatomically, over many thousands of years.

Not surprisingly, therefore, scientists have found that sows held in stalls and tethers can suffer from the following conditions:

- chronic physical discomfort;
- excessive heat loss;
- increased susceptibility to urinary tract infections;
- reduced bone strength;
- lameness;
- inflammation of joints;
- skin abrasions;
- trauma on confinement;
- chronic stress, as measured by key physiological indicators;
- highly repetitive, abnormal stereotypic behaviour.

These conditions occur for sows held in stalls, as well as for tethered sows.

There is no evidence that Irish farmers will incur a significant capital, labour or feed cost penalty by operating alternative systems to stalls or tethers, such as indoor group housing or outdoor systems.

If straw is in short supply as a bedding material, a Straw-Flow® system can be implemented to regulate the amount of straw used. Wood-shavings and shredded newspapers have also been used as alternative bedding materials.

CIWF believes that the confinement of pregnant sows by stalls or tethers represents a major abuse of the animals' welfare.

CIWF calls on the government of the Republic of Ireland to introduce measures, as a matter of urgency, to extend the current phase-out of tether systems for breeding sows to include stall systems also in the phase-out.

All close confinement of Irish sows, whether by stalls or tethers, should be banned by the end of 2005.

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