

Pigs

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There are about 5 million pigs in the UK, of which 500,000 (10%) are used for breeding(1). Pigs are reared primarily for bacon, ham, pork and sausages. Over 70% of pigs in the UK are reared under very intensive conditions, being closely confined indoors for their entire lives(2).

Pigs are highly inquisitive, social, intelligent animals which originally lived in woodlands, foraging for nuts, seeds, roots and grubs. They will not soil their resting area and the myth that pigs are somehow dirty comes from their wallowing in wet mud. As pigs do not sweat they do this to cool down in hot weather (also protecting them from sunburn) and to rid themselves of pests and irritations.

Pig Production & Welfare

The most common breeds of pigs used are the British Landrace and Large white. The majority of pigs reared for meat in the UK are crossbreeds. For example, when a Landrace/Large White is bred with either a purebred Landrace or Large White this results in an increased number of stronger faster-growing piglets. Duroc crosses are used extensively in outdoor pig breeding units producing offspring more capable of coping with UK weather conditions in the winter and summer months(3).

Sows are first mated when they are 6-8 months old. Around 80-90% of sows in the UK are serviced by artificial insemination (AI). Pregnancy lasts approximately 4 months and a sow will give birth (farrow) to 5-25 piglets in a litter (averaging 10-12). Piglets are prematurely weaned after 2-4 weeks (weaning would naturally occur at 12-14 weeks) and a week later the sow will be serviced again. The average number of pigs reared per sow is 22 each year, though many sows rear more than this. Sows produce around 4-7 litters before they become exhausted and are slaughtered after 3-5 years for sausages, pork pies and other low-quality products. The natural lifespan of a pig is 10-15 years. Sows spend at least 2/3 of their lives in pregnancy.

Sow

There are 500,000 breeding sows in the UK. The majority of these are kept indoors. Until recently, sows were confined in Sow Stalls. These are barred stalls barely larger than the sow so she is unable to turn around. Sow Stalls are still commonly used outside the UK. They have concrete or slatted floors with no bedding. Intensive farming systems mean that pigs cannot display their natural tendencies and instead show unnatural behaviour such as tail biting, bar biting and head shaking. Government legislation passed in October 1991 led to the banning of all stalls and tethers in the UK from January 1999 and the use of tethers in Europe was banned in 2005. The UK imported 800,000 tons of pork from countries such as the Netherlands and Denmark in 2004. An EU-wide ban on sow stalls is to come fully into force by 1 January 2013(1).

Alternatives to stalls include keeping the sows indoors in groups where they are kept in enclosures and may have bedding. Increasing numbers of sows are being kept outdoors in less intensive systems due to welfare legislation. The Welfare of Farmed Animals (England) Regulations 2003 states that a pig should be able to turn around, stand up, lie down and rest without difficulty. This however does not apply when the sow is moved to a farrowing crate(1).

**Farrowing Crates**

A week before intensively kept sows give birth they are moved into farrowing crates, these metal crates are barely larger than the sow. The sow's movement is severely restricted, she is unable to turn around or suckle her piglets. Any attempt at movement means the sow will unavoidably rub herself against the crate bars causing sores, abrasions and swellings. Sows will remain in these crates for 3-4 weeks until the piglets are weaned. The strong instinct to build a nest (out of natural materials such as grass or straw) leaves the sows completely frustrated. Close confinement can cause muscle weakness, lameness and inflammatory swellings of the joints. Farrowing crates are used as it is claimed that piglets would be crushed by the sow lying on them. However, sows in farrowing crates are prevented from manoeuvring and lying down carefully so piglets are in danger of being crushed by the sow clumsily dropping down. Studies have found piglet mortality is no different between crated and un-crated systems.

Alternatives to the standard farrowing crate have been studied. The Ellipsoid Farrowing Crates allow the sow to turn around and give them more freedom to move. Studies have shown that sows turn approximately 40 times a day and the increase in movement did not cause a higher pig crushing rate than the standard farrowing crate. Behavioural observations showed that the Ellipsoid Farrowing crate permitted easier visual and tactile contact of sows with their young and also offered piglets better access to the sow's teats(4). The Werrabee Farrowing Pen has a sow and piglet (nest) area and non nest area. This provides twice the space of a standard farrowing crate(5). Attempts to reduce crate size lead to a sharp increase in piglet pre-weaning mortality. One study comparing behaviour and performance of lactating sows and piglets reared indoors and outdoors have shown that piglets spend more time walking and playing when housed outdoors(6).

Studies comparing the behaviour of sows housed indoors (farrowing crates) and outdoors in paddocks have shown that if the environment allows then pigs will spend hours making a nest to give birth to their young in(7). In comparison, confined sows with no access to material to build a nest spent a large part of their last hours prior to giving birth pawing, rooting, nosing and biting parts of the crate. Depriving sows of space and material to perform natural nesting has shown negative effects on behaviour. This includes abnormal behaviour and psychological stress, reduced piglet survival and the savaging of piglets. The Department for Environment Food and Rural Affairs (DEFRA) are funding research to develop and test commercially viable farrowing systems that do not closely confine the sow, but provide adequate protection to piglets.

After weaning, the majority of young pigs are reared in groups in small pens (batch pens) or metal cages. Those with slatted or perforated floors without bedding often cause injury to legs and feet. Under the Welfare of Farmed Animals Regulations (2003) the amount of unobstructed floor area available to each pig ranges from 0.15m² (10kg pig) to 1.00m² (pigs over 110kg) (1).

Pens are typically overcrowded, poorly lit and without bedding. Pigs can become bored and aggressive with tail-biting and excessive fighting occurring. Piglets therefore often have their teeth clipped and tails docked. Piglets are generally not castrated in the UK as they are slaughtered before sexual maturity. These procedures may be performed in the first few days after birth without a vet being present. The Welfare of Farmed Animals Regulations (2003) states that if the piglet is older than one week then these aforementioned procedures should be carried out under anaesthetic by a veterinary surgeon.

Pig breeding is a major industry, breeds being selected for rapid growth, high lean meat content and other economically desirable traits. The UK leads the world pig breeding industry with companies such as the Pig Improvement Company (PIC) and the National Pig Development Company (NPD).

Disease

Intensive farming methods have led to increased disease problems; these are particularly prevalent amongst piglets. Viral pneumonia, meningitis, swine vesicular disease, blue-ear disease, scours, infertility and diarrhoea are just some of the diseases that can affect pigs.

Porcine Reproductive and Respiratory Syndrome (PRRS) / Blue-ear Disease

This is caused by a virus and symptoms in sows include fever, abortion, premature birth, coughing and respiratory signs.

**Foot and Mouth**

This is an infectious disease caused by a virus (of which there are 7 types). The virus affects cloven-hoofed animals such as cattle, sheep, pigs, goats and deer. The disease is not normally fatal to adult animals but it does cause debilitation and loss of productivity for farmers (such as lameness). The virus causes a fever and the development of blisters, mostly in the mouth and on the feet. Animals contract the disease by either direct contact with an infected animal or contact with foodstuffs, etc. which have become contaminated by an infected animal. The UK last experienced the disease in 2001, with 2,030 confirmed cases of foot and mouth spread across the country. 0.4million pigs were culled as a result of this outbreak(1).

Classic Swine Fever (CSF)

This is a contagious disease caused by a virus. It was eradicated from Great Britain in 1996, since which there have been several outbreaks of the disease which were controlled by the slaughter of many pigs. The initial source of CSF virus appears to be from pigs eating infected pork or pork products derived from imports. Infected pigs may show little evidence of disease or can develop a fever and lose their appetite. Other possible signs include discolouration of the skin, diarrhoea, constipation, coughing and nervous signs.

Aujeszky's Disease

This disease can affect other species (not horses/humans), but it does mainly affect pigs. It is caused by a virus and was last recorded in Great Britain in 1989, although much more recently in Northern Ireland. The symptoms shown depend on the age of the pig and include both nervous and respiratory system problems with abortions and stillbirths in pregnant females. The number of fatalities is higher in younger pigs.

Lameness

Modern pigs have been selectively bred for fast growth which can lead to lameness and other leg problems, the pigs being unable to support their own rapid weight gain. Around 15% of pigs are estimated as suffering from lameness though this may be considerably higher in some herds. Mothering pigs have the added problem of coping with rapidly growing suckling piglets. This can cause the sow a loss of bodyweight and loss of bone tissue leading to hip or spinal bone fractures.

Porcine Stress Syndrome (PSS)

Other breeding has involved developing breeds that are less prone to stress. Porcine stress syndrome is attributed to a specific gene, called the halothane gene. PSS leads to pale, watery meat of low quality, poor appearance and shortened shelf life. Selective breeding has produced strains in which the halothane gene has been eliminated. These stress-free pigs have lower mortality (especially during transport to slaughter when many deaths can occur) and are said to produce higher quality meat.

Genetic Engineering/Breeding

Pig breeders have developed a sow with extra teats and larger litters by crossing a traditional British breed with the Chinese Meishan pig. Meishan sows have up to 18 teats and average 16 piglets per litter compared with 12 teats and 11 piglets for British breeds. They are very high in fat so not suited to the meat industry's requirements. Cross breeding has produced a hybrid, called the Manor Meishan, with the advantages of the Meishan but with lean meat content. The pig industry hopes this new breed will produce 30-40 piglets/year. Genetic engineering techniques are likely to become important for producing even more profitable pigs in the future. Transgenic pigs have been created which produce extra growth hormone so grow faster on less feed and produce very lean meat. Previous attempts have yielded pigs that were impotent, arthritic and barely able to stand. Pigs have also been produced with meat containing high levels of omega-3 fatty acids.

Slaughter

Pigs are usually slaughtered after 4-7 months. Pigs intended for pork are usually slaughtered 1-2 months younger than pigs for bacon. Around 9.5 million pigs (9,428,400) were slaughtered in the UK in 2008, (9,483,700 in 2007)(1). Pigs are stunned first then killed by being shackled and hoisted before having the blood vessels in their throat slit (sticking). The animal dies by being bled to death. Pigs are usually stunned electrically whereby an electric current is applied by means of two electrodes in the form of tongs. These are placed on either side of the brain, usually either side of the neck behind the ears so that sufficient current is passed through it. The current should induce a state



of immediate epilepsy (electroplectic shock) in the brain, during which time the animal is unconscious(8).

A survey of pig slaughtering procedures was carried out in the UK by Anil and McKinstry in 1993, Bristol University(9). The factors affecting slaughter included the placement of tongs on the animal, the average current strength passed through the animal's brain and also the length of time that the tongs are in place for. The survey showed that a significant percentage of the tong applications observed in the traditional stunning pen did not span the brain. This would result in animals not being stunned adequately and also lead to many pigs regaining consciousness during bleeding out or even before throat-slitting. Some pigs may be re-stunned due to the initial stunning failure and to suppress the spontaneous kicking to aid the hoisting and shackling of the animals. This also reduces the interval of the stunning-to-sticking and helps prevent the incidence of inadequate sticking as it is more difficult to stick a kicking/convulsing animal. Anil & McKinstry's Survey found variations in the methods and effectiveness of sticking. Sometimes the first attempt at sticking the stunned pigs on the shackle line did not always result in a rapid and profuse loss of blood with a second sticking attempt required for 2.3% of pigs. Some pigs showed signs of recovery during the bleed out. The results of a study carried out by Anil *et al* (2000) (10) showed that following head-only electrical stunning, a relatively long sticking wound by a thoracic cut (chest sticking) should result in humane slaughter and provide better welfare in slaughter pigs. Other factors which should be taken into account regarding the welfare of pigs at slaughter includes; operator error as a result of high throughput, tiredness, insufficient instructions, animal position and inadequate knives.

Some pigs may be stunned using carbon dioxide gas. This is less common in the UK but widely used in other countries such as Denmark. Approximately 1/3 of pigs in the UK are killed by this method(11). Pigs are passed through a well containing an atmosphere of carbon dioxide (70-90%) and air. The pigs are rendered unconscious due to the acidification of the cerebrospinal fluid upon inhalation of the carbon dioxide. This method eliminates the human element required in electric stunning but has been strongly criticised by scientists as inhumane, with pigs suffering from breathlessness and hyperventilation(11).

References & Useful Links

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11. Farm Animal Welfare Council. Report on the Welfare of Farmed Animals at Slaughter or Killing. Part 1: Red Meat Animals. June 2003.

Further Information - Any questions regarding this information sheet please contact Gilly Prime - Information and Research Officer gilly@vegsoc.org