



# Danish Pig Producers and **Animal Welfare**

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# Introduction

Consumer interest in how our food is produced has risen significantly in recent years and, therefore, the need for transparency and information about all aspects of food production has increased. This is very much welcomed by Danish pig producers. An open dialogue with consumers is crucial for maintaining confidence in the Danish industry and its products. This brochure aims to provide a broad understanding of modern pig production in Denmark, including the importance of maintaining high standards of welfare in the raising and treatment of animals.

Danish producers export pork and bacon products to 140 countries around the world and observing high standards remains crucial to maintaining their market position. The achievement of high welfare standards is paramount throughout the whole production chain, on the farm, during transport and finally at the abattoir.

Continuing research and development remains a critical factor in delivery of high welfare outcomes. Danish producers currently invest around € 13 million per annum in research and development in the area of primary production, which more than matches the industry investment in other EU countries. Within these programmes, € 3 million per year is exclusively used for projects aimed at improving the welfare of pigs.

In addition, Denmark, a relatively small country, benefits from a unique form of research partnerships between pig producers, research institutions, veterinary professionals, public authorities

and private industry. This means that much of the research is closely linked to the practicalities of rearing pigs on a daily basis and the integrated structure of the pig industry ensures that all research results are rapidly disseminated and implemented.

# Danish welfare legislation and standards

Although Danish animal welfare legislation is linked to EU Directives, in many areas it exceeds these requirements. Some examples include the mandatory provision of showering systems for most categories of pigs and requirements for fixed or drained flooring rather than the more traditional type of fully slatted floor. In addition, there are specific requirements for hospital pens and vehicles for transporting pigs.

Pig welfare standards are based on a mix of statutory requirements and a number of independently monitored industry assurance schemes, which underpin high standards of animal husbandry in Denmark. New regulations and legislation are implemented rapidly at farm level due to the close partnership between public authorities and the industry, as well as an efficient information and advisory system.

The Danish Animal Protection Act is the responsibility of Denmark's Ministry of Justice, which works alongside advisory bodies such as the Ethical Council for Animals and the Council for Animal Protection Issues. These bodies recommend improvements or amendments to legislation affecting animal welfare.

## ***Denmark and pig welfare***

*Since 2000, any new or refurbished pig housing has had to be equipped with showering systems for pigs above 20 kg weight.*



# Facts about welfare legislation and standards

## Danish standards and industry requirements

- All units must have an independent audit at least every three years
- Pain relief must be administered prior to the castration of piglets within seven days of birth. Anaesthetic required for pigs castrated after seven days of birth
- Special requirements for handling pigs during transport and the equipping of transport vehicles
- Average weaning age is 32 days.

## Danish legislation

- Requirements for group housing of pregnant sows in all new or refurbished units since January 1999
- Requirements for rooting material of natural origin, such as wood, straw or chippings
- Requirements for showering systems in all new units for pigs above 20 kg since January 2000
- Requirements for solid or drained flooring
- No teeth clipping
- Restrictions on tail docking. It must be carried out within 2-4 days of birth and only half the tail may be removed
- Specific requirements for hospital pens
- Specific requirements for design of the covered creep area for piglets
- 5% of all units are subject to unannounced inspection by the authorities to ensure compliance with welfare legislation.

## Basic EU legislation

- Group housing of pregnant sows required from January 2013
- Space requirements for different categories of pigs
- Weaning of piglets no earlier than 21 days
- General rules for animal transport
- General rules for welfare at slaughter
- Tail docking is restricted and must be carried out within seven days of birth.



# Dialogue with animal welfare organisations

The Danish pig industry maintains an ongoing dialogue with the leading animal welfare organisations in the country. It is represented on the Ethical Council for Animals, along with other stakeholder groups, including Denmark's largest animal welfare organisation (The Danish Animal Welfare Society). The Council reports directly to the Danish Ministry of Justice which is responsible for Danish animal welfare legislation.

***Pig producer Per Bach Larsen represents the agricultural industry on the Ethical Council for Animals:***

*“Despite occasional disagreements, we can usually agree on long-term goals on animal welfare and find a reasonable path to achieving these. For my part, I acknowledge that there is still much work to be done to improve conditions for farmed animals. But my colleagues in the welfare lobby groups also recognise that we have come a very long way in recent years. Dialogue and common sense are probably what benefit the animals the most.”*

# Pig production

The rearing of healthy animals is the essence of pig production. Within a successful pig business, considerate treatment of the animals is a key factor in maintaining high health levels in the herd. Well cared for animals grow more quickly and therefore deliver improved profits to the producer.

In recent years, much has been done to improve the comfort and the living environment for pigs. Danish housing systems have been designed with a view to meeting the pigs' natural needs as much as possible within an indoor environment. The animals must have access to straw or other materials of natural origin to satisfy their curiosity. Keeping pregnant sows in groups and the provision of more straw and rooting material has been a priority in recent years. Fully slatted flooring is no longer permitted in new installations and new fixed and drained flooring has been developed bearing the animals' comfort in mind. In addition, requirements for installation of showering systems in new housing systems have been in force since 2000 and there are more detailed requirements for hospital pens.

## **Pregnant sows**

Systems for 'loose-housing' of pregnant sows have been installed in all newly built or refurbished units since 1999, and around 70% of sows are already kept in groups during the main period of their pregnancy. It is expected that the use of traditional sow stalls will have ceased well in advance of the EU ban which comes into force in January 2013.

Many Danish producers use the facility allowed by both EU and Danish legislation to confine sows up to the first four weeks of pregnancy, in order to protect younger sows from aggressive behaviour from other members of the group during this potentially stressful period. In specialised production such as organic, outdoor or other special schemes, such as the Contract for UK Production, all sows are kept in groups throughout the entire period of pregnancy.

## **Farrowing**

Traditional farrowing pens, which prevent piglets from being crushed as the sow lies down, are still widely used in indoor pig production in all major pig producing countries. In Denmark, a major research programme is in progress to identify systems which allow the sow freedom of movement. In the latest year alone, € 450,000 was invested in the research and development of 'freedom farrowing' pens. Even so, the problem of loose farrowing sows crushing their piglets during the first few days remains. Current research, therefore, is focused on a solution to ensure that the welfare of new born piglets is not compromised in a less restrictive system. The Pig Research Centre, under the Danish Agriculture & Food Council, is working with various research institutions and animal welfare organisations as well as partners in other countries, to identify solutions which will deliver welfare benefits for both mother and her young in the daily environment of modern pig production.

## **Tail docking**

Health problems resulting from outbreaks of tail biting have been traditionally addressed by tail docking in the early days of the piglets' life. In Denmark, substantial resources are being invested in identifying strategies to prevent outbreaks taking place. Research has shown that regulating the temperature in the housing units, the design of the feeding facilities and access to rooting and manipulable materials are crucial to the prevention of tail biting. Other important factors are feed composition and the monitoring of aggressive pigs. In 2005, the Pig Research Centre published comprehensive guidelines concerning the prevention and management of tail biting.

## **Rooting and manipulable materials**

Under Danish legislation, pens must be provided with straw or other materials to satisfy the pigs' rooting and foraging requirements. In a more natural environment, pigs spend a large part of their time foraging for food and satisfying their insatiable curiosity by rooting. In indoor units, where food is easily accessible, pigs spend less time rooting, but still need to satisfy their natural curiosity. The challenge is to identify how much straw or other 'manipulable materials' are required to satisfy the pigs' needs and how it can easily be dispensed in the pens.

Since 2008, the Pig Research Centre has been looking into how the provision of straw, and the way in which it is cut and how often it is dispensed, can reduce potentially antisocial behaviour among pigs and provide a more sympathetic environment in which pigs can thrive. Together with a number of commercial partners, the Pig Research Centre is developing a range of automatic dispenser systems, which can provide the pigs with straw at different times

of day. The belief is that pigs will make better use of the materials if fresh straw is provided at more frequent intervals.

## **Veterinary agreements**

More than 90% of pig farmers have a formal Health Advisory Agreement with their local veterinarian, based on a monthly visit and formal reporting procedures. The visit report must be based on the farmer's and the vet's observations and specific registration of animal health and welfare factors, the use of medicines and compliance with the national action plan for reducing zoonoses. Pig producers demonstrating good farming practice are given the opportunity to reduce the frequency of visits. In addition, each pig producer must conduct his own welfare audit. The self-auditing programme is audited by a veterinarian who, in turn, is audited by the Danish authorities.

## **Independent control**

One third of all pig farms in Denmark are subject to an independent audit at least once every year in order to ensure that legislative and industry requirements are complied with. The independent third party audit examines feed, good husbandry practice, the use of veterinary medicine and the general production environment. For producers who supply pigs under special schemes such as the Contract for UK Production, there are annual independent audits to ensure that the agreed standards are fully met.

In addition, 5% of all Danish pig farms receive an unannounced visit from the District Veterinary Service each year as part of an official government control programme. These controls are carried out by chief veterinarians and controllers employed by the Danish Veterinary and Food Administration.



# Meet the farmer

Michael Møller and his wife Bettina run a large pig farm near Fjerritslev in picturesque Northern Jutland. The couple keep 2,300 sows, 3,500 finishers and 7,000 piglets. They also grow crops for pig feed on their 600 hectares (1,480 acres) of land, including wheat, rape, rye grass, barley and oats.

Michael has invested in new housing and all his pregnant sows are now kept in group systems. Solid floors have been installed to provide more comfortable resting areas, and the sows have access to straw to enable rooting behaviour. Michael has also installed a showering system to keep the pigs comfortable on hot summer days.

“My team and I are proud of the environment that we provide for our animals. Of course animal welfare is important – when our pigs are happy, we know we have done a good job,” says Michael.

Michael, whose farm employs 13 staff, is the fourth generation of a farming family that dates back to the establishment of the farm in 1882. He hopes that one of his sons will follow in his footsteps.



*“When our pigs are happy, we know we’ve done a good job.”*

# Transport

In Denmark, there are strict statutory requirements for the transport of animals, designed to ensure their comfort and protect them from injury and unnecessary suffering. Denmark has an exemplary record in continually improving transport standards, which have led to a position where pig mortality rates during transport are among the lowest in the world. Transport distances are also very short in Denmark. In fact, the journey time is less than three hours for 95% of all pigs transported to Danish abattoirs.

There have been major improvements in the handling of pigs during transportation from the farm to the abattoir, including improved loading facilities, ventilation on the lorries and use of non-slip flooring. Veterinarians at the abattoir check that each transport vehicle is properly equipped. The industry has also successfully removed more stress-susceptible animals from its breeding programme.

The abattoirs require drivers to receive special training before they are allowed to transport pigs. While training became

an EU requirement in 2008, it had already been a legal requirement in Denmark for ten years. All this has taken the mortality rate of Danish pigs during transport to a record low of 0.007%, significantly lower than any other major pig producing country.

Pigs from a single producer are normally all delivered to the same abattoir which ensures the shortest possible journey.

Pigs are transported in familiar groups from the farm, which helps to reduce stress during transport. The pigs usually remain in these groups right up to the time of stunning. Sick or injured animals are not allowed to be transported or, in certain cases, are transported separately.

Unique to Denmark is the mechanical ventilation system with which all transportation vehicles are equipped. Research into animal transport has led to separate requirements to ensure adequate ventilation, even when the vehicle is stationary. The ventilation system is of critical importance to the pigs' welfare and is undoubtedly a major factor behind the low mortality

## ***Pig Transport Manual***

*Danish pig hauliers are subject to stricter requirements than those laid down by EU Directives. The industry has also developed a 'Pig Transport Manual', summarising all the specific requirements of Danish legislation but also making recommendations where welfare standards should operate to a higher level.*

levels in Denmark. New transport vehicles are also equipped with sprinkling systems and offer permanent access to drinking water. Over half the vehicles are also equipped with rubber mats to reduce injury and, shortly, this will be extended to all vehicles.

In addition to the veterinary control on arrival at the abattoir, the transport of animals in Denmark is monitored by the police, with around 200 to 300 vehicle checks carried out each year. The police carry out these checks in close association with specialists from the Danish Food and Veterinary Administration.

### **Comfort during transport**

*With its fleet of 28 vehicles, Jysk Svinetransport transports more than 10,000 pigs around Denmark every day.*

*“We have recently invested in 12 new triple-decked vehicles with climate control facilities, ventilation and lighting – all controlled by the driver from his cab. I believe we are doing all we can to ensure that the pigs are comfortable during transport,” explains haulier Ole Jensen, Director of Jysk Svinetransport.*

*As a clear indication that the pigs are relaxed and comfortable during transport, Ole has noticed that the pigs are usually lying down and resting when they arrive at the abattoir.*

*Ole explains that the transport process involves more than just the journey itself: “Transport also includes careful loading at the farm and offloading at the abattoir. In fact, with the new vehicle design, there’s now little room for further improvement. We have comfortable vehicles with sufficient space for each pig and our drivers receive thorough training in transporting live animals,” says Ole.*





# The abattoir

Once pigs arrive at the abattoir, they are allowed to move freely out of the vehicle onto the offloading ramp, and continue their journey to the lairage facility. The offloading ramps are adjustable with non-slip flooring.

The pigs normally remain in the same groups as during transport. Familiarity with other animals around them reduces potential stress levels and makes handling easier. Reducing stress levels represents a duty of care for those handling the animals, but also has major benefits in respect of meat quality.

After offloading and veterinary inspection, the pigs are led into well ventilated lairaging pens with access to drinking water. The lairages are equipped with sprinklers to cool the pigs in hot weather. Normally, the pigs stay here for no more than one hour. If pigs stay at the abattoir overnight, they are fed, watered and properly tended.

The pigs are gently led from the lairage to the stunning chamber in groups of five to

eight animals, where they are painlessly stunned using carbon dioxide. The use of carbon dioxide stunning is based on recommendations by Danish animal scientists and extensive research has shown that, in a modern slaughterhouse environment, this method delivers clear welfare advantages over other systems.

The Danish Veterinary Services supervise offloading, lairaging and the stunning facilities.

### **Research into animal behaviour**

*“The Danish industry applies our knowledge of animal behaviour, allowing pigs to move of their own free will,” explains Leif Lykke, a scientist at the Danish Meat Research Institute and an expert in animal behaviour. Leif proudly recalls the five years he spent developing the new group stunning system, now operating in most Danish abattoirs and in many other countries.*

*He discovered that, for example, pigs prefer to walk slightly uphill and their instinct tends to resist walking downhill. The system also utilises the fact that pigs prefer to move towards light rather than dark. And being gregarious animals, they prefer to move side-by-side rather than in a line.*

*“My job is not a desk job. As I spent at least half of my working hours in the ‘field’ working with live pigs, I understand their natural behaviour. All of my work developing systems start from this basic knowledge,” he says.*

*Leif shares his expertise with the wider industry through his training courses in animal behaviour for veterinary staff, hauliers and abattoir personnel at the Danish Meat Research Institute.*







# Education and training

The integrated structure of the Danish co-operative systems allows a uniform approach to the delivery of high welfare standards. Education and training lie at the core.

Basic training for a farmer requires nearly four years of formal education. Farmers owning more than 30 hectares (74 acres) must obtain a 'Green Certificate' which requires a further six months of study. All training programmes include modules on animal welfare, relevant legislation and good farming practice. Farmers in Denmark must guarantee that all stockmen and other farm personnel have received the appropriate training. In addition, farmers

and their stockmen must attend a certified course in veterinary medicine before they may treat sick animals.

At the abattoirs, all those working with live animals must attend a basic course in best practice in their handling.

## **Denmark and pig welfare**

*The integrated structure of the Danish co-operative system allows a uniform approach to the delivery of high welfare standards. Education and training lie at the heart of the system.*



# Research

The extent of investment by the Danish pig industry in pig production research is unmatched by its EU partners. The overall objective of the research programme co-ordinated by the Pig Research Centre is to develop new technologies covering many aspects of pig production, such as housing systems, feeding strategies and reduction of environmental impact. The organisation also has a responsibility to ensure that all new knowledge is properly communicated to all its pig producer members.

All research and development is conducted in close partnership with research institutions, veterinary professionals, public authorities and private industry.

Every year, the Pig Research Centre organises and hosts one of the world's largest national pig conferences, with an attendance of over 2,000, represented by pig producers and a wide range of industry stakeholders. The conference provides a platform for the presentation of the key research findings from work undertaken during the previous year.

The annual budget for pig welfare research has increased from just € 300,000 in the early 1980's to € 3 million today. Much of the research is funded from the levy paid by all Danish pig producers. The result is a dynamic and well funded research environment where new ideas and new technologies can be tested in a real world situation.

Research and development will continue to be at the core of future strategy with focus on specific areas. Research projects, funded by the industry through the Pig Research Centre, are currently being carried out among 200 herds across Denmark. Below are some examples of the current research projects:

- Improvements to sow welfare
- Development of new farrowing systems
- Prevention of tail biting
- Development of alternatives to castration
- Better provision of rooting and manipulable materials.

## **Dissemination of research results**

The latest research results are regularly published on the Danish Pig Research Centre website [www.vsp.lf.dk](http://www.vsp.lf.dk). This information is increasingly used by local pig consultants and veterinarians, who ensure that producers remain updated on information relevant to them.





*A new farrowing system for use in indoor production, where the sow can move freely and the piglets are not exposed to injury or crushing when the mother lies down. The research partners are the Pig Research Centre, Dyrenes Beskyttelse (Denmark's leading animal welfare organisation), university research establishments and a number of commercial equipment suppliers.*



# Facts about the Danish pig industry

## Pig Farming

- There are around 5,000 pig farms in Denmark with an overall population of 12.7 million pigs
- Today, pig production is concentrated on fewer but larger and more specialised farms
- Three quarters of Danish pig production takes place in Jutland.

## Pig Meat Industry

- Around 19 million pigs are slaughtered annually in Denmark
- Over 8 million live pigs are sent for export, including piglets
- Production of pig meat in Denmark totals around 1.9 million tonnes, of which 1.8 million tonnes is exported
- Pig meat exports have a value of around € 3.6 billion.

- Pig meat exports accounts for 50% of all agricultural exports and 4.9% of all goods and services exported from Denmark
- Denmark exports to 140 countries
- The largest markets for Danish pig meat in volume are Germany, UK, Poland, China, Japan, Russia and Sweden
- Around 48,000 people are employed in the Danish pig industry overall, including primary production, processing and associated industries.





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