

Pig  
SIGNALS®

# PIG SIGNALS

LOOK, THINK AND ACT



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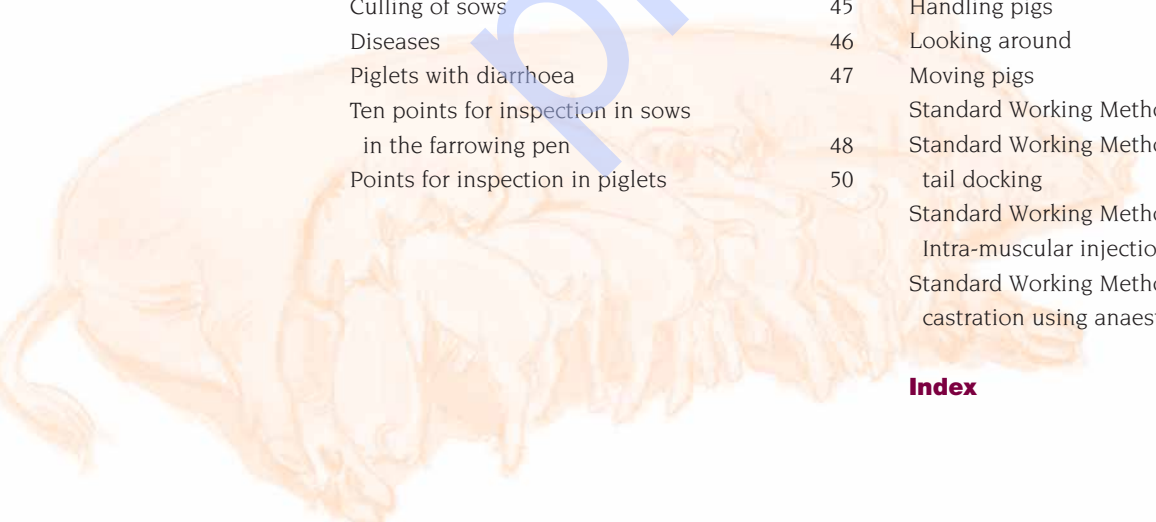
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**Focus on the pig**

Pig farming is all about pigs. Farm economics and good business practices are important but, if the livestock manager lacks good professional skills, no farm can be successful. This is also evident in practice, where successful farms are characterised by the outstanding care they give their livestock. The livestock managers on these farms all share the same attitude: the pigs always come first. At the same time, a good businessman or woman will ensure that the work is done efficiently, that working conditions are pleasant and that pens, materials and equipment are in good working order.

**You raise pigs with your eyes**

Some people have the gift of being able to observe and understand pigs, but most people have to learn how to observe and use pig signals. If they decide to become a pig manager, they must be able to observe and understand pigs. All pig managers are therefore faced with the challenge of acquiring more and more information from their pigs. And we all want to avoid 'farm blindness'; we must find our blind spots and eliminate them. You can do this only if you are open to new things and if you enjoy change. But you must also be critical, seek other people's opinions and keep asking yourself: are things going well or could they be even better?

**Dogs look up to us. Cats look down on us.**

**Pigs treat us as equals.**

*Winston Churchill*



### Learn to observe deliberately

Seeing more begins with observing your pigs deliberately, and this is where the book starts. Keep asking yourself questions and actually carry out the improvements needed. Like Sherlock Holmes, livestock managers must also ask questions to arrive at solutions. The three basic questions are:

1. What do I see?
2. Why has this happened?
3. What does this mean?

The final question, "what does this mean," brings you to the moment of truth. What should you do? Carry on as normal, or intervene? This question also helps you choose the best course of action and estimate the cost. Pig Signals® is about looking-thinking-acting.

### A practical book

*Pig Signals* is not just a book to read, it is a book to use. Read it as if you were a pig, sniffing and exploring. Pick a topic, think about a picture puzzle, or simply browse. The book is organised on two levels: the structure of the farm and the structure of the working week. In each case we determine whether the seven basic needs of the pig are met. These are the seven facets of the Pig Signals Diamond: feed-water-light-air-peace & quiet-space-health.

Read *Pig Signals*, put it down, then pick it up again. Leave it on the kitchen table, beside your bed or somewhere else you have the occasional quiet moment to yourself.

### Pigs are fun!

*Anonymous*



# Pregnant sows and gilts



**If all goes well, little of any note happens during the three months, three weeks and three days of normal pig gestation. Pregnant animals engage in daily routines such as eating, drinking and defecating. They may receive the odd a vaccination. Due to these routines, there is a risk that the sows will be given too little attention, even though pregnancy is a very important time.**

*These sows are displaying natural use of their habitat. A nest to rest in, a toilet or latrine area and an area in which to eat and explore.*

## **Purpose of the farrowing house**

At the end of her pregnancy, the sow is ready to farrow and raise a healthy litter. This means that her condition, feed intake and health are all geared specifically to the gestation period. Her aim is to produce the largest possible number of vital piglets. By the daily monitoring of housing and care, you assure your sows' health, well-being and performance.

## **In the wild**

*Wild boar sows are pregnant for around 119 days and usually farrow once a year. Domestic pigs are pregnant for 114 days and farrow more than 2.2 times a year. Domestic sows are therefore pregnant for more than 250 days a year.*



## Animals that need attention and indicator animals

Risk groups allow you to identify the limits of care and housing. They are the first to show that specific matters require improvement. If the risk groups are doing well, then the other pigs will do well.

Gilts are a risk group for example, as are sows that have difficulty standing, lying down, remaining in a lying position and walking.

### Gilts

Gilts are given the worst places to lie and are regularly put in their place by older sows. A gilt gets less rest, even though she has a great deal to learn and is busy meeting the demands of her developing body. The greatest risks are hoof problems and poor physical development. And after this, another difficult time awaits her in the farrowing house.

*Introduce gilts (and older sows) to the larger group in small groups. Since the animals often know each other, this will enable them to form a subgroup. The larger the space and the number of pigs in the group, the easier it is to introduce new pigs. There is always a safe hiding place or a piece of neutral territory.*

### Agitation

Even for gilts, stress must be kept to a minimum, especially during vulnerable periods such as after insemination and around farrowing. At these times, shield the animals from contact with the unfamiliar and the unexpected if possible. Even better, introduce the gilts to group housing and the farrowing pen in advance. A separate gilt group also creates a safer environment.



### Look-think-act

#### How do you deal with poor mobility?

This sow is favouring her left hind foot and arching her back to distribute weight over the other three legs. She has an abscess on her right front knee, is lame and probably has been for a while.

The animal is still eating well, as demonstrated by her exploring behaviour, full belly, condition and her colour and sheen. But as she gains weight, she runs a high risk of developing pressure sores and becoming emaciated.

This sow belongs in a hospital pen on straw.



## Feed pigs with your eyes

### Early pregnancy

A pregnant sow must grow into ideal condition, after which her back fat must remain constant. During the first half of gestation, she uses the feed to improve her own condition. After that it all goes to nourish the piglets. The condition of the sow is the most important focus for feeding. And there is a second focus: piglet uniformity. Differences in birth weight are closely related to the nutrition of the piglet during the first month of pregnancy. The quality of the foetal membrane and navel cord, and the supply of nutrients from the uterus, play a role in this respect.

### Late pregnancy

The health of the sows and the average birth weight of the piglets are your aims and benchmarks during the final phase (last third) of pregnancy. During the last three weeks, the piglets nearly double in weight.

Ensure that the sow continues to eat and drink sufficiently; her dung should also remain soft. The composition of the feed can be checked in this way. Danger signs are excessive firmness of their udder before farrowing and, after farrowing, problems with poor lactation, poor eating and large numbers of sick sows.



### Monitoring feed intake

#### Are they getting enough?

Most feeding systems measure portions in litres, but the weight of the mixed feed varies. You should know the weight per litre of every shipment of feed to ensure that the animals get the right amount. Measure this by weighing a portion, or 10 litres of feed.

#### Are they all eating?

A note on the attention list, a feed trough that is not empty, a belly that is not full. These are the most important signals that a sow is not eating enough.

#### What are they eating?

The dung gives an insight into the composition of the feed the sow is eating. This sow is eating a lot of straw. Performance, health and appetite also provide information. Feed composition means not only the amounts of nutrients, but also contaminants and spoilage.



## Activity peaks

Sows naturally eat at the same time and rest at the same time: in the morning. They usually drink after eating, when they can easily take six litres or more. Wild sows spend about 60% of their time rooting and eating when they are pregnant. These are diurnal animals, but easily switch to a night rhythm.

Depending on the feeding system, pregnant sows eat simultaneously or in turns. Every feeding leads to an activity peak. The same happens when a new feeding period begins at the feeding station.



*If sows eat simultaneously, they also drink simultaneously. The drinking water system must provide enough for all sows to drink adequately (2 l/min). If a sow has to wait too long, she may drink less water than is desirable.*

## Risk moment

The transition from gestation feed to lactation feed in the farrowing house is a time of risk. During this period, the intestines must remain filled. Make sure that the crude fibre source in the feed stays the same and that the sows eat and drink well.



## Satiation

Pigs begin sham chewing and bar biting if they are not satiated. Provide a few hundred grams of roughage, such as straw or pulp. Ensure that the pigs are satiated.



Pigs are satiated by chewing (straw), the sensation of fullness in their stomach and intestines (straw, pulp) and the digestive products of fibres (especially fatty acids).



## Look-think-act

### What does the white spot mean?

The white area can be caused by either pus or urine crystals. Pus indicates a bladder infection. Blood in the urine is also a symptom of bladder or kidney infection. Urine crystals are caused by bladder infection and by certain feeding errors or metabolic diseases.

The main cause of bladder infection is a shortage of drinking water. Other causes are infections after farrowing and insemination.



## The environment

A pig divides its environment into usage areas: a resting area, an eating area and a defecating area. The animal recognises these areas primarily by their smells. The usage areas are separated by paths. Pigs usually urinate where they defecate, but sometimes on the paths as well.

### Resting area

The resting area provides a comfortable lying area that is soft and with a pleasant climate, not too hot, not too cold, no draughts, no disturbances by other pigs. In nature, the rest areas are hidden deep in the undergrowth.



### Defecating area

The defecating area allows a pig to defecate without being disturbed. The smell of manure prompts the pigs to defecate. Defecation areas must be at least five and no more than fifteen meters from the feeding areas.

### Feeding area

At the feeding area, the pig can eat undisturbed. It is important that the animals cannot monopolise the food or take food from each other.

### Paths

The passageways are recognisable and can serve as paths. This means that there is sufficient space between lying, eating and defecating areas. It also means that the pigs can move about safely: with sufficient grip and without hazards from hard floor components that can damage their hooves.

*Heat is a problem for pregnant sows, certainly for those ready to farrow. Their natural cooling response is to take mud baths. Ventilation, insulation, high ceilings and protection from sun help to keep the pen cool. Adequate ventilation also assures dry floors.*



*These sows have their resting areas against the side walls. The defecation area is in the middle. Sows are lying near or in the defecation area. This indicates that the space is too small for the number of sows.*

### Lack of space in group housing

A large group of pigs divides itself into smaller groups of about four animals, which then adapt their habitats to each other. If you divide the pens up into small lying areas with clear paths and free areas for defecation, you steer the pigs in the desired direction. For example, one group should not defecate in another's resting area.

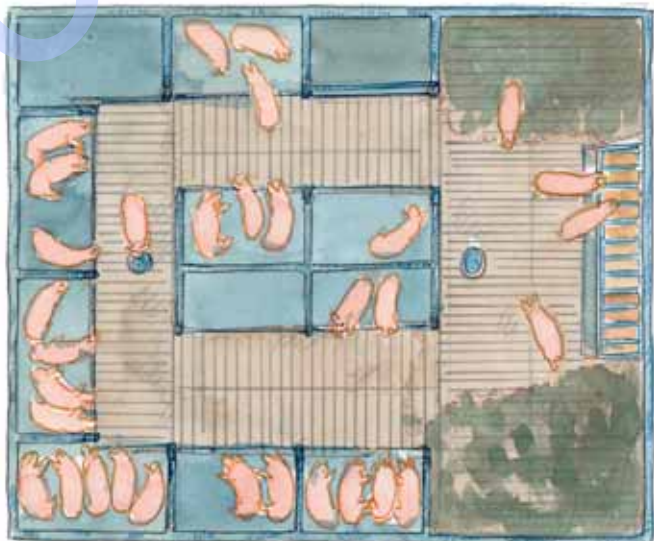
### Straw bedding

Groups form and specific lying areas develop on straw bedding as well, although at first glance the pigs appear to be lying randomly in the area. The animals have more or less fixed positions, move along fixed routes and have a fixed defecation area. The colours indicate how the pigs experience the spaces: lying areas (blue, green, red areas), walking routes to the defecation areas (arrows), and an area where all pigs display exploring behaviour (lavender).



### Slatted floor

This pen design directs the pigs to the desired use. Separate lying areas encourage the forming of groups. By closing off lying areas when the pen is not fully occupied, improper use can be prevented (such as defecation); it is difficult to reverse improper usage if the area is needed again as a lying area. Newcomers may initially be required to stay for a time in the defecation area. As soon as they are accepted, they take a place in a lying area. Pigs choose a defecation area where they can defecate quietly and without disturbance.





## Health

Regarding the health of pregnant sows, a small number of diseases and injuries cause most problems. The main diseases affecting this group are parvo, PRRS and influenza. And of course there are threats from more general diseases, such as swine erysipelas, gastrointestinal worms, mange – and in the past – Aujeszky's disease.

Many of these diseases are no longer a problem due to successful control programmes such as vaccination against parvo and erysipelas, and the elimination of Aujeszky's disease. Disorders such as mange, gastrointestinal worms and PRRS must be kept under control by means of continuous prevention and treatment. A brief lapse of attention can lead to serious problems (if these diseases appear on the farm, because both mange and PRRS should be eliminated).

### Main issues and side issues

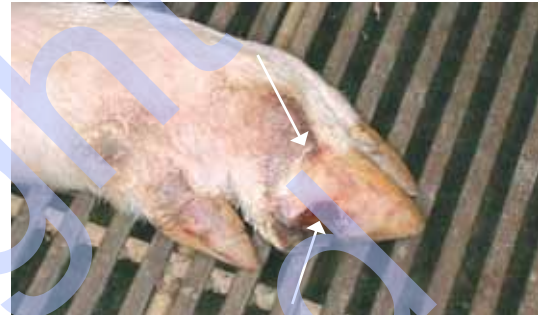
80% of the problems stem from 20% of the possible causes.



A typical example of a sick pig, where you can't immediately tell what is wrong. The clinical pictures of many diseases are very similar, so consult a vet periodically and have lab tests and post-mortems done.

## Injuries

Hoof problems are the second group of health risks. They occur if the load is heavier than the hoof can bear, for example if the animal moves abruptly when startled. The floor also plays a role in this respect. A slatted floor does not provide complete support, and the edge of a slat can cause a focused load on the hooves. Wet hooves become soft. They cannot support as much weight and are more easily penetrated by bacteria.



The preferential sites for hoof and coronary band injuries.



This sow may be lame or having difficulty in standing for other reasons. This is an indicator animal. She will be the first to notice if the floor is too slippery.



A pressure sore/abrasion caused by injury from the floor. The hock shows a callus with thickening of the skin.

### Good mobility

Because pigs in group housing move about, they develop strong muscles, bones, tendons and joints. Gilts must also be physically strong enough to hold their own in group housing. This requires roomy housing for gilts or a gradual transition via a gilt group.

### New additions pen

Keep newly-arrived gilts and boars in a quarantine pen for at least six weeks. Allow any viral diseases to run their course until the animals are no longer contagious. Let them become accustomed to the pathogens on the farm, for example by exposing them to the manure of older sows or a sow destined for culling. The new arrivals may become sick, which means that the design of the quarantine pen must meet stringent requirements.

### Loss of embryos

Avoid stress between day 4 and day 30 after insemination. Embryos can die easily in the first three to four weeks, and are then absorbed by the uterus wall. If five or fewer embryos remain, the pregnancy ends and the sow returns to oestrus. Embryos that die after day 50 are no longer reabsorbed. They become mummified or are aborted. Other reasons for abortion besides disease are disturbances caused by fighting at the trough, or rough handling by the stockman. Embryo loss shortly before the farrowing date leads to still-birth.



*Lameness in gilts is often related to jumping, startling and escaping. This may occur during oestrus and while fighting.*



*Parvo virus infection is an important cause of mummified piglets, but they can also be caused by other infections.*



### Look-think-act

#### What is happening here?

This low-ranking sow is obliged to lie in the defecation area. She is sham chewing. The small pen provides insufficient lying space, which soon leads to pressure sores. Moisture and urine soak the skin, causing pressure sores. The rough floor exacerbates this process. If a pig is lying in manure, it means she is too hot or lacks space.

## Inspections

Inspecting animals is essential if you want to detect problems early. Use checklists and write down the results. This stops you overlooking or forgetting things.

Sow inspections		
Signal	Immediate action	Follow-up action
Attention lists automatic feeder/feed intake	Inspect sows needing attention	
Active, alert?	Modify treatment plan	Take temperatures
Stands up easily?	Modify treatment plan	Severity, observe progression
Injuries?	Eliminate cause	Provide treatment
Too hot/too cold, behaviour	Eliminate cause	
Soiling	Eliminate cause	
Soft dung?	Modify rations	Check water intake
Abortion	Identify cause	Identify sow
Anything unusual?	Eliminate cause	Provide treatment
10% of the sows stand in a group	Remove disturbance, check feeding station	



*When inspecting individual sows, it is also useful to write down your observations. First of all, it ensures that others can carry on your work and, second, it helps in identifying exactly how specific disorders and treatments occurred.*



When evaluating herd signals, pay attention to smaller groups within the larger herd. If you see a number of pigs breathing rapidly, for example, this may be a signal to turn on the ventilation fan for more cooling.

<b>Herd</b>	<b>Which sows?</b>	<b>Cause?</b>
All animals are quiet.		
Are they all lying in the rest area?		
Are they all lying on their sides?		
Do they show warmth-seeking behaviour?		
Do they show cool-seeking behaviour?		
<b>Is the herd uniform in terms of:</b>	<b>average</b>	<b>deviation</b>
• condition/back fat		
• development		
• mobility		
• soiling		
• colour and sheen		
• injuries		
<i>Which animals stand out?</i>		
Can every pig walk around comfortably?		
Anything unusual?		

An example of a risk location in the Netherlands. With such a long water system, the stockman should regularly check the pressure at the most distant points of the water system, immediately after feeding when all sows are drinking. This is when all sows should be able to drink as much as they want.



<b>In the farrowing house</b>
Varying litters
Dead or mummified piglets
Sow farrows well
All piglets have full bellies
Sow eats well, udder is full and not hot, no fever (<39.5°C)

In the farrowing house it will become clear if the pregnant sow has been properly fed and cared for. Check this and use the findings to improve the situation.



# PIG SIGNALS

Look, think  
and act

**“Successful pig management is  
about doing the right thing  
at the right time.”**

Pigs are constantly giving out signals about their health, well-being, and performance. The art is to perceive these signals and to use them to monitor and improve the nutrition, care and housing of your animals.

Veterinary surgeons and pig enthusiasts Jan Hulsen and Kees Scheepens wrote *Pig Signals* based on their expertise and extensive experience with farmers and their pigs. They created this richly-illustrated book as an ideal practical guide and essential reference book.



It is important not to jump to conclusions, but to keep asking yourself three questions. What do I see? Why has this happened? What does this mean? For example, why is your sow defecating in a lying area? How did your piglet get that dry cough? Is the aggression shown by your grower-finishing pigs due to a struggle for dominance or a cold draught?



Using the knowledge from this book, you can take focused measures and improve your farm results. The *Pig Signals* Diamond will help you achieve this.

Animal-oriented pig farming means working carefully. A mistake made yesterday can lead to problems tomorrow. So do something about it today. But it all begins with your desire to improve. Only then can you look, think and act. Whether or not the information from *Pig Signals* will benefit your pigs is largely down to you!

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