

OIE Animal Welfare and Pig Production Systems Standards

Criteria and measurables used to ensure good outcomes for implementation

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Outline of the presentation

- I. Chapter 7.13.
- II. Criteria for the welfare of pigs
- III. Recommendations
- IV. Concluding remarks



I. Chapter 7.13.

Scope:

This chapter addresses the welfare aspects of commercial domestic pig production systems. Captive wild pigs are not considered.

Commercial pig production systems:

1. Indoor systems
2. Outdoor systems
3. Combination systems

CHAPTER 7.13.

ANIMAL WELFARE AND PIG PRODUCTION SYSTEMS

Article 7.13.1.

Definitions

'Commercial pig production systems' means those systems in which the purpose of the operation includes some or all of the following: breeding, rearing and management of pigs (*Sus scrofa*) for the production and sale of pigs or pig meat.

For the purposes of this chapter, 'management' is defined at the farm management level and at the animal handler level. At the level of farm management, human resources management practices, including selection and training of handlers, and animal management practices, such as best practice in housing and husbandry and implementation of welfare protocols and audits, all have an impact on animal welfare. At the animal handler level this requires a range of well-developed husbandry skills and knowledge of how to care for animals.

For the purposes of this chapter, 'environmental enrichment' means increasing the complexity (e.g. foraging opportunities, social housing) of the animal's environment to foster the expression of normal behaviour, provide cognitive stimulation and reduce the expression of abnormal behaviour. The aim of providing enrichment should be to improve the physical and mental state of the animal.

For the purposes of this chapter 'stereotypy' is a repetitive behaviour induced by frustration, repeated attempts to cope or central nervous system dysfunction. It is expressed as a sequence of abnormal behaviours which appear to have no obvious purpose or function. Permanent dysfunction of the central nervous system in response to stressful conditions may mean that developed stereotypies may not resolve despite later changes to the environment or other treatments such as those relating to feeding levels or diet composition. Some stereotypies commonly observed in pigs include sham chewing, stone chewing, tongue rolling, teeth grinding, bar biting and floor licking.

For the purposes of this chapter 'apathy' means that the animal ceases to respond to stimuli that would normally elicit a response. Furthermore, apathetic behaviour has been described as an abnormal or maladaptive behaviour, indicated by reduced activity, lack of interest or concern (i.e. indifference) and lack of feeling or emotion (impassiveness).

For the purposes of this chapter 'agonistic behaviour' is a continuum of behaviours expressed in conflict situations, and includes offence, defence and submissive or escape components. The behaviours involved may include contact, such as biting and pushing, or non-contact, such as threats in the form of body postures and gestures. Aggressive behaviour (i.e. fighting) is a component of agonistic behaviour.

For the purposes of this chapter, 'play behaviour' is characterised by specific neuroendocrinological responses and the appearance of having fun. It is often prompted by novel or unpredictable stimuli, and is related to exploration. It functions to prepare animals for unexpected situations by increasing the versatility of movements and enhancing their ability to cope with unexpected stressful situations. Animals actively seek and create unexpected situations in play, deliberately relaxing their movements or putting themselves into disadvantageous positions.

Article 7.13.2.

Scope

This chapter addresses the welfare aspects of commercial domestic pig production systems. Captive wild pigs are not considered.

Article 7.13.2.

Commercial pig production systems

Commercial pig production systems include:

II. Criteria for the welfare of pigs (animal-based)

- #1. Behaviour**
- #2. Morbidity rates**
- #3. Mortality and culling rates**
- #4. Changes in body weight and body condition**
- #5. Reproductive efficiency**
- #6. Physical appearance**
- #7. Handling response**
- #8. Lameness**
- #9. Complications from common procedures**

#1. Behaviour

- ❑ Indicators of good animal welfare and health:
 - ✓ Play behaviour
 - ✓ Specific vocalisations



e.g. video play behaviour - nursery

#1. Behaviour

□ Indicators of animal welfare and health problem:

- ✓ Sudden immobility
- ✓ Escape attempts
- ✓ Changes in feed and water intake
- ✓ Altered locomotory behaviour or posture
- ✓ Altered lying time, postures and patterns
- ✓ Altered respiratory rate and panting
- ✓ Coughing, shivering and huddling
- ✓ High-pitched vocalisations and increased call rate
- ✓ Increased agonistic behaviour (including aggression)
- ✓ Stereotypic, apathetic or other abnormal behaviours

#1. Behaviour (stereotypy)

- ❑ Definition: ‘stereotypy’ is a repetitive behaviour induced by frustration, repeated attempts to cope or central nervous system dysfunction.
- ❑ Stereotypies commonly observed: sham chewing, stone chewing, tongue rolling, teeth grinding, bar biting and floor licking.



e.g. video stereotypy / sham chewing - gestation

#2. Morbidity rates

- ❑ Rates of infectious and metabolic diseases, lameness, peripartum and post-procedural complications, injury and other forms of morbidity, above recognised thresholds, may be direct or indirect indicators of *animal welfare* at the *herd* level.

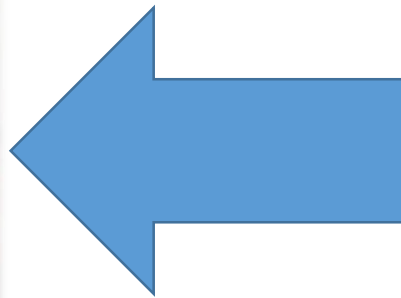


#2. Morbidity rates

- Understanding the aetiology of the disease or syndrome is important for detecting potential *animal welfare* problems.



tail biting



resources limited

#2. Morbidity rates

- Mastitis and metritis, leg and hoof problems, shoulder ulcers in sows, skin lesions, respiratory and digestive diseases, and reproductive diseases are also particularly important animal health problems for pigs.



leg problems



shoulder ulcers



skin lesions



reproductive diseases



digestive diseases

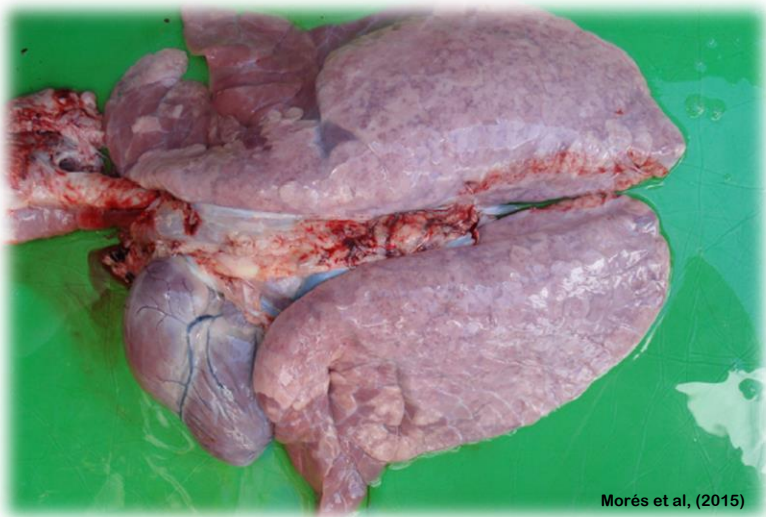
#2. Morbidity rates

- Scoring systems, such as for body condition, lameness and injuries, and information gathered at the *slaughterhouse/abattoir*, can provide additional information.

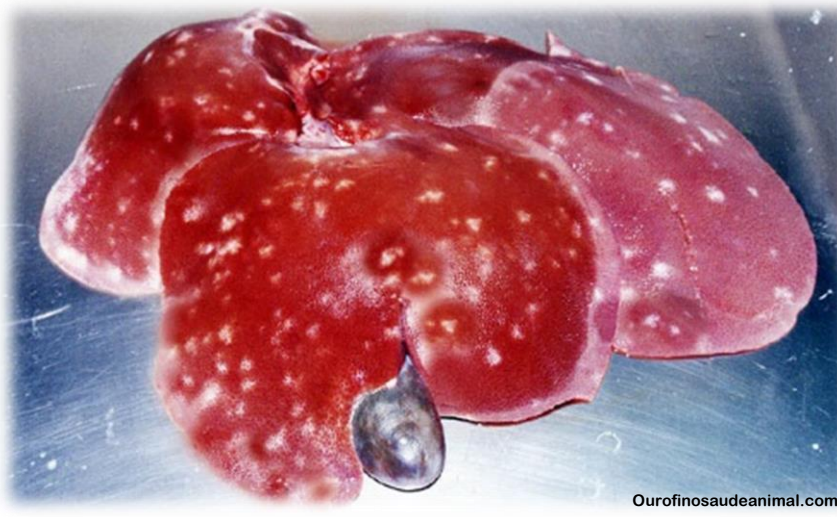


#2. Morbidity rates

- Both clinical and *post mortem* pathologic examination should be utilised as indicators of disease, injuries and other problems that may compromise *animal welfare*.



lungs (hepatization)



liver (white spots)



gut (altered)

Slaughterhouse - abattoir

#3. Mortality and culling rates

- ❑ Mortality and culling rates affect the length of productive life and, like morbidity rates, may be direct or indirect indicators of *animal welfare* at the *herd* level.
- ❑ Depending on the production system, estimates of mortality and culling rates can be obtained by analysing the causes of *death* and culling and their temporal and spatial patterns of occurrence.
- ❑ Mortality and culling rates, and their causes, when known, should be recorded regularly, e.g. daily, and used for monitoring e.g. monthly, annually.

#3. Mortality and culling rates

	Farm A	Farm B	Farm C
Number of sows	4.457	4.500	4.512
Mortality rate (%)	7,53%	8,5%	8,24%
Culling rate (%)	41,8%	41,30%	37,04%
Replace rate (%)	51,4%	56,6%	50,4%
Order parity	3,71	3,62	3,57
Total born	14,78	14,98	14,44
Piglets/sow/year	28,43	29,36	28,33

#3. Mortality and culling rates

	CAUSES OF MORTALITY												
month	1	2	3	4	5	6	7	8	9	10	11	12	Avg.
Locomotor disorders	24,1	43,2	29,7	16,7	0,0	15,1	21,2	11,1	34,4	12,5	16,1	26,5	22,2
Sudden death	27,6	13,5	10,8	6,7	21,7	36,4	12,1	14,8	12,5	29,2	29,0	26,7	19,7
Ulcers	24,1	10,8	16,2	26,7	4,3	3,0	0,0	3,7	3,1	4,2	0,0	5,8	8,6
Others cause	10,3	13,5	29,7	33,3	43,5	30,3	45,4	14,4	21,9	16,7	29,0	8,8	24,6

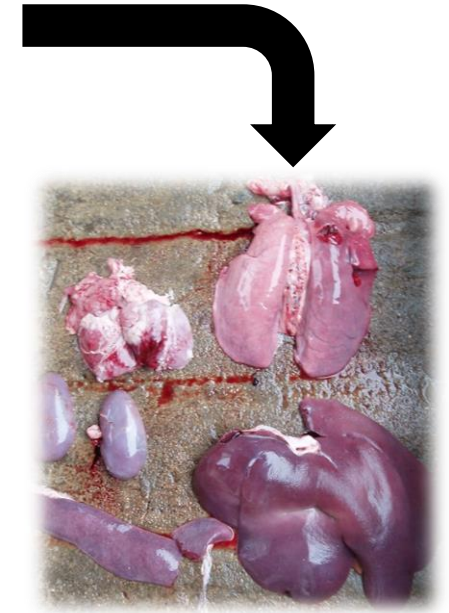
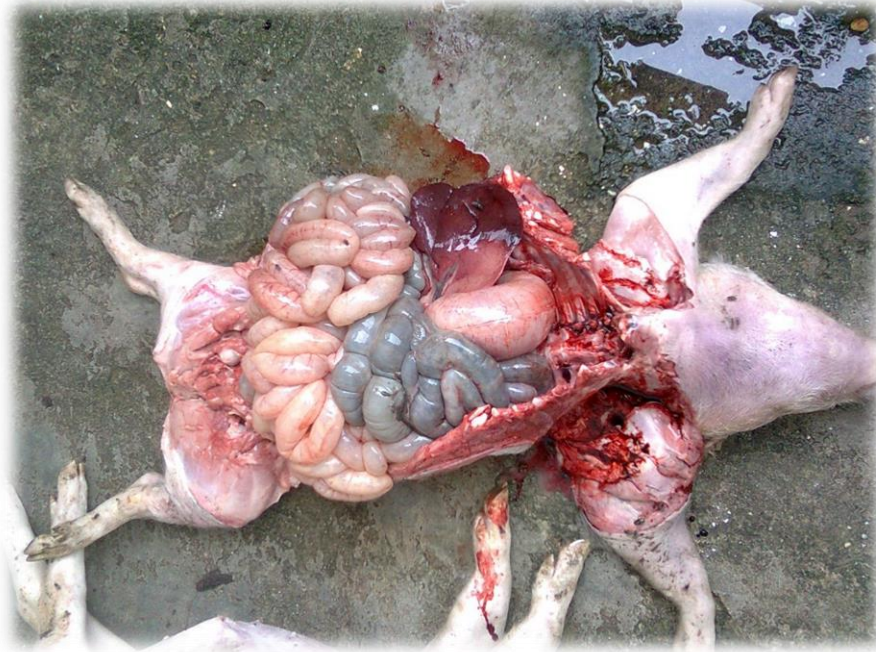
	CAUSES OF CULLING												
month	1	2	3	4	5	6	7	8	9	10	11	12	Avg.
Old age (%)	37,4	30,5	25,9	28,8	31,2	34,4	21,9	23,5	17,5	16,1	8,9	37,0	26,7
Metrites (%)	15,6	13,9	12,3	17,4	11,7	17,4	28,5	26,5	20,6	14,9	28,3	22,1	18,3
Low productive (%)	18,4	17,8	16,7	23,4	23,4	16,9	19,4	12,7	16,8	20,8	8,3	12,1	16,2

#3. Mortality and culling rates

□ Necropsy is useful in establishing the cause of *death*.



mortality



necropsy

#4. Changes in body weight and body condition

- ❑ In growing animals, body weight changes outside the expected growth rate, especially excessive sudden weight loss, are indicators of poor *animal welfare* and health.



#4. Changes in body weight and body condition

- ❑ Body condition outside an acceptable range or large variation amongst individual animals in the group may be an indicator of compromised *animal welfare* and health, and reproductive efficiency in mature animals.



#5. Reproductive efficiency

- Reproductive efficiency can be an indicator of *animal welfare* and health status. Poor reproductive efficiency, compared with the targets expected for a particular breed or hybrid, can indicate *animal welfare* problems.

Examples may include:

- ✓ low conception rates,
- ✓ high abortion rates,
- ✓ metritis and mastitis,
- ✓ small litter size (total born),
- ✓ low numbers born alive,
- ✓ high numbers of stillborns or mummies.

#5. Reproductive efficiency

	FARM A	FARM B	FARM C
Reproduction loss	6,53%	7,99%	6,42
Parity rate (%)	93,41%	91,98%	93,53
Abortion rate (%)	1,65%	1,54%	1,75
Metritis + mastites (%)	3,01%	4,85%	3,59
Total born	14,78	14,98	14,44
Born alive	13,26	13,71	13,13
Stillborns (%)	6,53%	4,80%	6,37%
Mummies (%)	3,71%	3,68%	2,68%

#6. Physical appearance

- Physical appearance may be an indicator of *animal welfare* and health. Attributes of physical appearance that may indicate compromised *animal welfare* include:
 - body condition outside an acceptable range,
 - presence of ectoparasites,
 - abnormal texture or hair loss,
 - excessive soiling with faeces,
 - skin discolouration, including sunburn,
 - swellings, injuries or lesions,
 - discharges (e.g. from nose or eyes, including tear staining),
 - feet and leg abnormalities,
 - abnormal posture (e.g. rounded back, head low),
 - emaciation or dehydration.

#6. Physical appearance



abnormal texture or hair loss



excessive soiling with faeces



skin discoloration



swellings, injuries or lesions



emaciation or dehydration

#7. Handling response

- ❑ Improper handling or lack of human contact can result in fear and distress in pigs. Fear of humans may be an indicator of poor *animal welfare*. Indicators may include:
 - ✓ evidence of poor human-animal relationship, such as marked avoidance of handlers and abnormal or excessive vocalisation when being moved or when *animal handlers* interact with pigs,
 - ✓ animals slipping or falling during handling,

#7. Handling response



fear of humans



no fear of humans

#7. Handling response

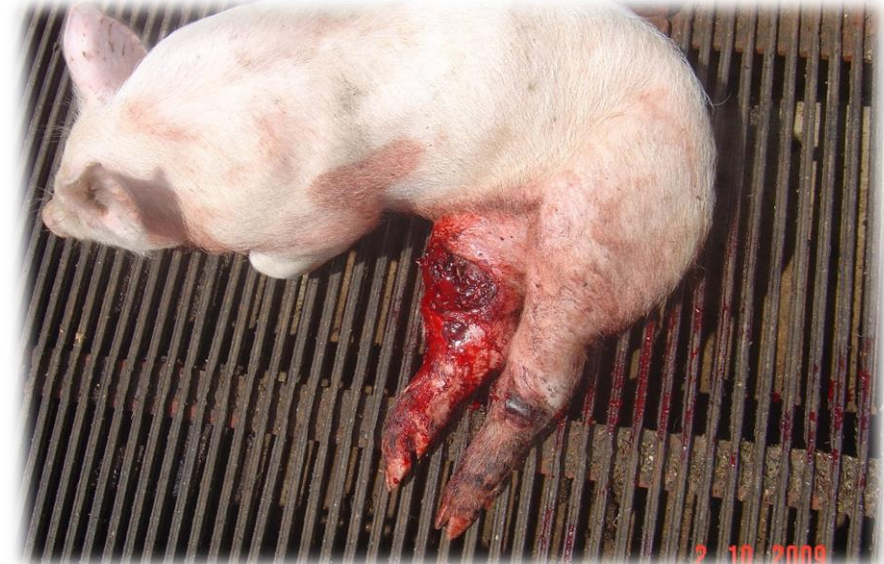
- ✓ injuries sustained during handling, such as bruising, lacerations and fractures.



bruising



lacerations



fractures

Image: Mauro Pozzobon,

#8. Lameness

- ❑ Pigs are susceptible to a variety of infectious and non-infectious musculoskeletal disorders. These disorders may cause lameness and abnormalities. Pigs that are lame or have gait abnormalities may have difficulty reaching feed and water and may experience pain and distress.
- ❑ Musculoskeletal problems have many causes, including genetic, nutrition, sanitation, floor quality, and other environmental and management factors.
- ❑ There are several gait scoring systems available.

#8. Lameness



lameness - gestation



lameness – growing/finishing

#9. Complications from common procedures

- ❑ Some painful or potentially painful procedures such as surgical castration, tail docking, teeth clipping or grinding, tusk trimming, identification, nose ringing and hoof care are performed in pigs to facilitate management, meet market or environmental requirements and improve human safety or safeguard *animal welfare*.
- ❑ However, if these procedures are not performed properly, *animal welfare* and health can be unnecessarily compromised.

#9. Complications from common procedures

Indicators of problems associated with these procedures could include:

- ✓ post-procedure infection and swelling,
- ✓ post-procedure lameness,
- ✓ behaviour indicating pain, fear, distress or suffering,
- ✓ increased morbidity, mortality and culling rates,
- ✓ reduced feed and water intake,
- ✓ post procedure body condition and weight loss.

#9. Complications from common procedures

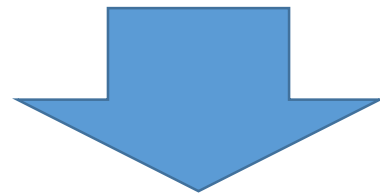


III. Recommendations

**Articles 7.13.6. to 7.13. 27.
Provide recommendations for measures applied to pigs**



Ensuring good welfare of pigs



**Each recommendation in Article 7.13.6. to 7.13.24. includes a list of relevant animal based criteria.
(This does not exclude other criteria being used where or when appropriate)**

IV. Concluding remarks

- ❑ Users of the standard should select the most appropriate animal-based measures for their farming system...
- ❑ Outcomes can be measured by an assessment of individuals or animal groups...
- ❑ Competent Authorities should collect all data relevant for the users to set target and threshold values.





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