Assessment protocol for sows and piglets

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Scope

- The protocol is applicable in a wide range of animal units, be they extensive or intensive.
- However, there are some measures which cannot be taken on sows that are housed in stalls.
- This housing system is not common anymore and will be banned from 1 January 2013 on for the major part of the pregnancy period or the full pregnancy period.
Legal aspects

- The protocols should only be applied to farming systems which operate within the applicable legal framework of the country.
- The protocols do not replace or supersede any existing farm assurance or legal standards.
- They provide an additional tool for the assessment of animal welfare using predominantly animal-based measures and as such can add valuable additional information to existing inspection programs.

5.1 Collection of data for sows and piglets on farm

<table>
<thead>
<tr>
<th>Welfare Category</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good feeding</td>
<td>Presence of prolonged hunger</td>
</tr>
<tr>
<td></td>
<td>Body condition score</td>
</tr>
<tr>
<td></td>
<td>Calves</td>
</tr>
<tr>
<td>Good health</td>
<td>Presence of disease</td>
</tr>
<tr>
<td></td>
<td>Presence of pain induced</td>
</tr>
<tr>
<td>Proper behavior</td>
<td>Presence of social interactions</td>
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<tr>
<td></td>
<td>Presence of negative social interactions</td>
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<tr>
<td></td>
<td>Presence of self-directed behaviors</td>
</tr>
<tr>
<td></td>
<td>Presence of positive social interactions</td>
</tr>
</tbody>
</table>

**GOOD FEEDING**

- Measure of the amount of subcutaneous fat that the sow has covering her bones
- Ensure that the sow is standing up
- The assessor has to evaluate the spine, hip and rib bones, considering how visible the bones are

- 30 pregnant sows (middle and late pregnancy)
- 10 lactation sows (around weaning)
It takes firm pressure with the palm of the hand of the assessor to feel the hip bones and backbone.

The hip bones and backbone are easily felt without any pressure on the palms.

The sow appears visually obese and it is impossible to feel the hip bones and backbone even by pushing down with a single finger.

The sow appears visually very thin, with hips and backbone very prominent.

1. Absence of prolonged hunger

Method description
The animal unit manager is asked about weaning management of the piglets (the average age of weaning is recorded).

This can be corroborated by the assessor during the course of the visit while assessing ten litters of different ages which are sampled for a variety of different animal-based measures; during this time the assessor may notice if weaning age is significantly different to that stated by the animal unit manager (because there may be a lack of older piglets).

Classification
Average age of weaning in days

2. Absence of prolonged thirst

Water supply
- The number of drinking places
- The functioning of the drinkers
  0 – The drinkers function correctly,
  2 – The drinker don’t function properly
- The cleanliness of drinkers: drinkers will be considered hygienic when without faeces and without mould
  0 – Clean
  2 – Dirty

There are more aspects (than functioning/working and hygiene) regarding information water supply which are recorded in Annex B.
### Bursitis

0 - no evidence of bursae.
1 - one or several small bursae on the same leg (1.5 - 2 cm diameter) or one large bursa (3.0 - 5.0 cm diameter)
2 - several large bursae, or one extremely large bursa (≥ 7 cm diameter), or any bursa that is eroded.

### SHOULDER SORES

Pressure lesions on the shoulders of sows which indicate reduced resting comfort.

- Ensure that the sow is standing up.
- Both shoulders should be visually examined.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>NO evidence of a shoulder lesion</td>
</tr>
<tr>
<td>1</td>
<td>Evidence of an old injury (scar tissue formed)</td>
</tr>
<tr>
<td></td>
<td>Recent injury which is healing</td>
</tr>
<tr>
<td></td>
<td>Reddening of the area without penetration of the tissue</td>
</tr>
<tr>
<td>2</td>
<td>An open wound / lesion</td>
</tr>
</tbody>
</table>

10 lactation sows (5 around time of weaning, 5 around farrowing).

GOOD HOUSING

NO evidence of a shoulder lesion

Evidence of an old injury (scar tissue formed)

Recent injury which is healing

Reddening of the area without penetration of the tissue

An open wound / lesion.
SHOULDER SORES

0 → NO evidence of a shoulder lesion

1 → Evidence of an old injury (scar tissue formed)
   ▶ Recent injury which is healing
   ▶ Reddening of the area without penetration of the tissue

2 → An open wound / lesion

GOOD HOUSING

MANURE ON THE BODY

AT INDIVIDUAL LEVEL:
From one side of the body

30 pregnant sows
   (early, mild- and late pregnancy)
10 lactation sows

0 < 10%

1 Between 10% and 30%

2 > 30%

GOOD HOUSING

MANURE ON THE BODY

AT PIGLETS/GROUP LEVEL:
From one side of the body

“with soiled body surface” =
>10% of the body with faeces

0

1 <50% of piglets in the litter
   have a soiled body surface

2 >50% of piglets in the litter
   have a soiled body surface

10 litters
4. Thermal comfort

**Panting**
- Best observed in resting animals
- Wait 10 min to allow animals to settle when first entering the room.
- The assessor must stay outside the pen.

Panting is breathing rapidly in short gasps carried out with the mouth.

**Sows/individual level:**
> 28 breaths per min
0 – No panting
2 – Evidence of panting

**Group level:**
> 55 breaths per min
0 – No pigs in the pen/group observed are panting
1 – Up to 20% of pigs in the pen observed are panting
2 – More than 20% of pigs in the pen observed are panting

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4. Thermal comfort

**Huddling:**
- Only observed in resting animals
- Wait 10 min to allow animals to settle.
- The assessor must stay outside the pen.

Huddling: when a pig is lying with more than half of its body in contact with another pig (i.e., virtually lying on top of another pig). It is not considered huddling when an individual is just side by side with another animal.

The proportion of animals showing the behaviour in relation to the number of resting pigs (hence not in relation to the total animals of the pen/group).

**Sows/individual level:**
0 – No huddling
2 – Huddling

**Piglets/group level:**
0 – No huddling behaviour observed
1 – Up to 20% of resting piglets in the litter display huddling behaviour
2 – More than 20% of resting piglets in the litter display huddling behaviour
5. Easy of movement

Space allowance

- The same pens/area where the groups of animals are assessed for health measures
- A sub-sample of pens for both pregnant and lactating sows is selected.
- The number of animals in each pen and the dimensions of the pen are recorded.
- Space allowance is calculated as the area provided to animals divided by the number of animals multiplied by their weight.

Classification

m²/sow

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Farrowing crates

Method description

The crate size is considered adequate when the sows have comfortable space for both standing and lying down.

Classification

Sows/individual level:

- 0 – Crate is adequate for the size of the sow
- 2 – Crate is inadequate for the size of the sow

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6. Absence of injuries

Lameness

- Is the inability to use one or more limbs in a normal manner.
- It can vary in severity from reduced mobility or inability to bear weight, to total recumbency.

Method description

- The assessor must assess the pig walking.
- Ensure that the pig has walked a certain distance before starting the assessment.
- Have a clear and unobstructed view of the moving animal.
- The sows are observed from the front, side and back, whilst ensuring that the assessor can approach to not further than 4 meters away.
Lameness

Sows: Individual level:
0 – Normal gait or difficulty in walking; still using all legs; swagger of caudal body while walking; shortened stride
1 – Severely lame, minimum weight-bearing on the affected limb
2 – No weight-bearing on the affected limb, or not able to walk

Piglets/group level:
0 – All piglets in the litter have a normal gait
1 – One piglet in the litter displays moderate lameness (difficulty in walking but still using all of its limbs)
2 – More than 1 piglet in the litter displays moderate lameness, or at least 1 piglet in the litter displays severe lameness (minimum weight bearing on the affected limb; no weight bearing on the affected limb; unable to walk)

Wounds on body

- The assessor shall maintain a distance of approximately 0.5 m from the animal at all times.
- Wounds on the body are visually assessed by inspecting one side of the sow’s body.
- Choose the side with the optimal view for observation.
- The tail zone is not considered here.

Superficial scratches: lesions (surface penetration of the epidermis)

Wounds: penetration of the muscle tissue.
Where scabs have formed, they will count as a single lesion if they form a continuous line.
Each zone will be considered separately according to this standardization:

- 4 or less scratches up to 5 cm in length will be considered as 1 lesion
- 2 parallel scratches with up to 0.5 cm space between them will be considered as 1 lesion
- Scratches that are bleeding will be considered as 1 lesion
- A small wound (less than 2 cm) will be considered as 1 lesion
- A bleeding wound between 2 and 5 cm, or a healed wound more than 5 cm will be considered as 5 lesions.
- A deep and open wound of 5 cm or more in length is given a score of 16 lesions.

Individual sub-level:
- a – No visible skin injuries, or up to 4 lesions visible
- b – 5 to 10 lesions visible
- c – More than 10 lesions visible

Classification Individual level:
- 0 – All body regions with an individual score ’a’
- 1 – Any body region with an individual score ’b’ and/or a maximum of 1 body region with an individual score ’c’
- 2 – Two or more body regions with an individual score ’c’, or any body region with an individual score ’c’ that has 15 or more lesions in the region
Mortality

- 'Uncontrolled' death of animals (as distinct from culling/euthanasia).
- The animals may die from for example septicemia, respiratory disease, acute infection or dehydration.

The animal unit manager is asked about mortality management on the farm based on data collected from farm records.

Number of animals placed in house from previous animal unit (A)
Total number of animals which died and were found dead (but were not actively culled) during the last 12 months (M)

Calculate the percentage mortality using the following equation:
Percentage of mortality = (M/A) x 100

Health measure

Coughing, sneezing

Sows must be observed for a period of 5 minutes and the number of sows with prolonged coughing and sneezing recorded. A sow coughing or sneezing only once within the time period will not be recorded as having a coughing or sneezing problem.

Sows/individual level:
0 – No evidence of coughing or sneezing
2 – Evidence of coughing or sneezing

Piglets must be observed for a period of 5 minutes, during which the number of coughs and sneezing is recorded.

Piglets/group level: Number of coughs

Pumping (laboured breathing)

When the pig's breathing is heavy and laboured, and it is easy to see the chest rising and falling with each breath.

Sows and litters must be observed for a period of 5 minutes and the number of sows and piglets with laboured breathing recorded.

Sows/individual level:
0 – No evidence of laboured breathing
2 – Evidence of laboured breathing,

Piglets/group level:
0 – No pigs in the litter display evidence of laboured breathing
1 – One pig in the litter displays evidence of laboured breathing
2 – More than one pig in the litter is displaying evidence of laboured breathing
7. Absence of disease

**Rectal prolapse**

- When internal tissue extrudes from the rectum.
- Number of sows or piglets presenting prolapse (the first visible sign of a rectal prolapse is often blood on the faeces).

**Classification**

- **Sows/individual level:**
  - 0 – No evidence of prolapse
  - 2 – Evidence of prolapse

- **Piglets/group level:**
  - 0 – No piglets in the litter with prolapse
  - 2 – One or more piglets in the litter with prolapse

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6. Absence of diseases

**Scouring (enteric disorders)**

- When the faeces become more fluid in consistency than normal.
- Identify parts of the pen where the dung is fresh and visible. Scouring is considered to occur when the faeces become more fluid than normal.
- Assess if liquid manure is present in the pen.

**Classification**

- **Pen level:**
  - 0 – No evidence of scouring in the pen
  - 2 – Evidence of scouring in the pen

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**GOOD HEALTH**

**CONSTIPATION**

- Constipation – hard solid faeces
- The presence of hard and solid faeces, similar to rabbit droppings

- 10 lactation sows

- **No evidence of solid faeces**
- **Evidence of solid faeces**
METRITIS
Infection of the uterus which results in a vulval discharge

(1) late or non-hygienic insemination procedures can substantially increase the risk of metritis
(2) is often visible 1 to 2 days after farrowing

30 sows at service
10 lactation sows (within 2 days after farrowing)

0 → No evidence of vulva discharge
2 → Evidence of vulva discharge

MASTITIS
Condition affecting the udder of lactating sows (inflammation of the udder)
Has implications for milk synthesis and consequently piglet growth

10 lactation sows

0 → No evidence of mastitis
2 → Inflammation of the udder
**GOOD HEALTH**

**UTERINE PROLAPSE**

When part or all of the uterus extrudes from the vagina:

- 0: No evidence of uterine prolapse
- 2: Evidence of uterine prolapse

10 lactation sows (within 1 week after farrowing)

**GOOD HEALTH**

**LOCAL INFECTIONS**

Swellings and abscesses are caused by a variety of reasons including fighting, bite, injections, lacerations from rough flooring and housing...

- Sow is observed from the front, back and side
- Swellings and abscesses ≠ wounds on the body

- 0: NO visible swellings or abscesses
- 1: Some swelling visible but no evidence of infection
- 2: Any abscess that is open and exuding pus
- 3: Large unopened abscess (≥ 5 cm diameter)

30 gestation sows
10 lactation sows

**6. Absence of diseases**

**Health measure**

**Skin condition**

- Characteristic inflammation or discoloration of the skin.
- Visually inspection of each animal.
- Assess on side of the body.
- Consider the total area affected in relation to the rest of the body not affected.

**Individual level:**

- 0: No evidence of skin inflammation or discoloration
- 1: More than 0, but less than 10% of the skin is inflamed, discoloured or spotted
- 2: More than 10% of the skin has an abnormal colour or texture
6. Absence of diseases

**Ruptures and hernias**

- Protrusion of a bodily structure or organ through the wall that normally contains it, resulting in a lump under the skin in the umbilical or inguinal area.

**Individual level:**
0 – No evidence of rupture or hernia
1 – Small rupture or hernia
2 – Very large rupture or hernia with a bleeding lesion which is touching the floor when the animal is standing up, or affecting its behaviour

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**GOOD HEALTH**

**NEUROLOGICAL DISORDERS**

Clinical signs of neurological disorders include muscle tremors, and in more severe cases, paddling of the limbs.

All the piglets in the litter must be observed for symptoms of neurological disorders.

10 litters (different ages)

**AT PEN LEVEL**

0 ➔ NO piglet in the litter with evidence of a neurological problem
1 ➔ 1 piglet in the litter with evidence of a neurological problem
2 ➔ >1 piglet in the litter with evidence of a neurological problem

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**GOOD HEALTH**

**SPLAY LEG**

Congenital abnormality causing slight or partial paralysis of the hind limbs in newborn piglets.

Resulting in an inability to stand and the hind limbs being spread (splayed) apart.

All the piglets in the litter must be visually examined for the presence of splay leg.

10 litters (different ages)

**AT PEN LEVEL**

0 ➔ NO piglet in the litter with splay leg
1 ➔ 1 piglet in the litter with splay leg
2 ➔ >1 piglet in the litter with splay leg
7. Absence of pain induced by management procedures

Nose ringing and tail docking (Sows)

Method description:
- The animal unit manager is asked about mutilation management for nose ringing and tail docking.
- The assessor records whether mutilations are carried out on farm and whether anaesthetic and analgesics are used during the procedure.

Classification
0 – No mutilations are performed
1 – Mutilations are carried out with use of anaesthetics
2 – Mutilations are carried out but without use of anaesthetics or analgesics

Castration, tail docking and teeth clipping

Method description: The animal unit manager is asked about mutilation management with regard to:
- Tail docking: What proportion of piglets are tail docked, at what age the procedure is performed, and whether anaesthetic and analgesics are used during the procedure
- Castration: What proportions of male piglets are castrated, at what age the procedure is carried out, and whether anaesthetic and analgesia are used during the procedure.
- What proportions of piglets have their teeth clipped or ground.

Classification
0 – No mutilations are performed
1 – Mutilations are carried out with use of anaesthetics
2 – Mutilations are carried out but without use of anaesthetics or analgesics

9. And 10. Expression of behaviours

- Observations should take place in the morning when the animals are more active.
- If animals are not fed ad libitum, observations are made outside the feeding period, at least one hour after the morning meal.
- Before starting the assessment:
  - Enter the room
  - Record the number of animals per pen/group
  - Ensure that all the animals are standing up.
  - 5 minutes later make the observations from the passageway.
SOCIAL AND EXPLORATORY BEHAVIOURS

APPROPRIATE BEHAVIOUR

SOCIAL AND EXPLORATORY BEHAVIOURS

1 POINT / FARM
Gestation sows allocated in pens

2'30''
2'30''
2'30''
2'30''
2'30''

40-60 animals / point

Gestation (pens)
If it is possible, try to include different stages of pregnancy

Small groups (<15 sows/pen) → 4 pens
Intermediate groups (15-40 sows/pen) → 2 pens
Large groups (>40 sows/pen) → 1 pen
Extremely large groups (>60 sows/pen) → segment

SOCIAL AND EXPLORATORY BEHAVIOURS

APPROPRIATE BEHAVIOUR

SOCIAL behaviours
“POSITIVE”
NEGATIVE

EXPLORATION Pen
“OTHERS” Material

APPROPRIATE BEHAVIOUR

STEREOTYPES

Repetitive and invariant motor acts, which provide no obvious gain or purpose for the animal

Sham chewing
Tongue rolling
Teeth grinding
Bar/trough/drinker biting
Floor licking
**APPROPRIATE BEHAVIOUR**

**STEREOTYPIES**

- In the morning. Avoid period around feeding
- 40 gestation sows (early, mid and late pregnancy)
- Well balanced by the housing system (stalls vs pens)
- Each sow should be observed for a period of 15 seconds
- 1 minute
- (0) no stereotyped behavior
- (2) stereotyped behavior
- If > 50% time is performing stereotyped behavior

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**APPROPRIATE BEHAVIOUR**

**HUMAN ANIMAL RELATIONSHIP**

- Assess the response of sows’ fear during a human approach test
- In the morning. Avoid period around feeding
- 20 gestation sows (10 early gestation; 10 late gestation)
- Well-balanced by housing system (stalls vs pens)

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**APPROPRIATE BEHAVIOUR**

**HUMAN ANIMAL RELATIONSHIP**

**STALLS**

- Before starting: walk up and down in front of the sows alerting them to the presence of the assessor. The sows should be standing up

**PENS**

- Before starting: Enter the pen and walk slowly around the perimeter of the pen. The sows should be standing up

- During the test: sow moves away from the assessor due to interruption or distraction (e.g. if another sow interferes with the assessment), follow the subject to another location and continue with the test.
**HUMAN ANIMAL RELATIONSHIP**

**STALLS and PENS: How to perform the HAR test?**

**STAGE 1**
Select the sow and move to the “start” position (<0.5m and slightly to the right hand side of the sow)

**STAGE 2**
Slowly move from the “start” position towards the sow in a diagonal direction, looking at the sow without staring.
Once at the head end of the sow, crouch down in front of her.

**STAGE 3**
Reach out and attempt to touch the sow between the ears

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**MEASURING HAR**

**INDIVIDUAL Level**

**HAR (3 POINTS SCALE)**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Good welfare</td>
</tr>
<tr>
<td>1</td>
<td>Poor welfare</td>
</tr>
</tbody>
</table>

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**CLASSIFICATION (PENS and STALLS)**

Whilst you are at the start position (STAGE 1):
a) Sow withdraws and remains withdrawn (SCORE 2)
b) Sow withdraws initially but then approaches (SCORE 1)
* Sow doesn’t withdraw for 10 seconds (proceed to stage 2)

When you crouch down in front of the sow (STAGE 2):
c) Sow withdraws and remains withdrawn (SCORE 2)
d) Sow withdraws initially but then approaches (SCORE 1)
* Sow doesn’t withdraw for 10 seconds (proceed to stage 3)

When you attempt to touch the sow (STAGE 3):
e) Sow withdraws when you attempt to touch her and stays withdrawn (SCORE 1)
f) Sow withdraws when you attempt to touch her, but then approaches (SCORE 0)
g) Sow allows you to touch her between the ears without any withdrawal response (SCORE 0)
Qualitative behaviour assessment

12. Positive emotional state

(QBA) considers the expressive quality of how animals behave and interact with each other and the environment i.e. their ‘body language’.

Select between one and eight observation points (depending on the size and structure of the farm) that together cover the different areas of the farm.

Decide the order to visit these observation points, wait a few minutes to allow the animals to return to undisturbed behaviour.

Watch the animals that can be seen well from that point and observe the expressive quality of their activity at group level. It is likely that the animals will initially be disturbed, but their response to this can be included in the assessment.

Total observation time shall not exceed 20 minutes, and so the time taken at each observation point depends on the number of points selected for a farm:

<table>
<thead>
<tr>
<th>Number of observation points</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation per observation point in minutes</td>
<td>10</td>
<td>9.5</td>
<td>9</td>
<td>8.5</td>
<td>8</td>
<td>7.5</td>
<td>7</td>
<td>6.5</td>
</tr>
</tbody>
</table>

When observation at all selected points has been completed, find a quiet spot and score the 20 descriptors using the visual analogue scale (VAS).

Scoring is not done during observation, and that only one integrative assessment is made per farm.
12. Positive emotional state

**VAS**

- To score each term, draw a line across the 125 mm scale at the appropriate point.
- The measure for that term is the distance in millimetres from the minimum point to the point where the line crosses the scale. Do not skip any term.
- Left 'minimum' and right 'maximum' point.
- 'Minimum': the expressive quality indicated by the term is entirely absent in any of the animals you have seen.
- 'Maximum': the expressive quality is dominant across all observed animals.
- It is possible to give more than one term a maximum score; animals could for example be both entirely calm and content.

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Thank you for your attention

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