The EU Reference Centre of Animal Welfare (EURCAW) was established in 2018 by the DG SANTE to support EU Member States on issues related to the pig welfare legislation. As part of its activities, EURCAW-Pigs organises meetings with inspectors and other officials from EU Member States (MS). The meetings are an opportunity for officials to ask technical questions related to e.g. Directives 98/58/EC and 2008/120/EC (on farm), Regulation (EC) No 1/2005 (transport), and Regulation (EC) No 1099/2009 (slaughter). These meetings are held with relatively small groups of officials and experts from the European centre, to give maximal attention to individual queries. They are held in different regions of Europe.

The Regional meeting North was the last one in a series of four in 2019 and 2020. Due to the current COVID-19 situation the meeting was organized online (MS Teams). In total, 8 delegates from the North European countries Sweden, Finland, Denmark, Estonia, Latvia, Lithuania, and on specific request Austria, participated. Furthermore, the meeting was attended by two delegates from DG SANTE and nine staff members of EURCAW-Pigs. The meeting started at 13:00 hours on the first day, and finished at 12:00 hours on the second day.

The meeting was chaired by Jan Tind Sørensen at Aarhus University, who organized the meeting on behalf of EURCAW-Pigs. He welcomed the participants and introduced the two-day programme. This was followed by a welcome by Kirsten Vornhagen from unit G2 of DG SANTE. She was pleased with the attendance of the Member States, and that the regional meeting could take place as a virtual one. She hoped for a good discussion and good exchange, and to hear about specific experiences to bring things forward.
The participants were also welcomed by Hans Spoolder, director and coordinator of EURCAW-Pigs. He introduced the aims and way of working of EURCAW-Pigs.

Discussion topics

The delegates participating in this meeting informed EURCAW-Pigs before the meeting which particular topic they wanted to be addressed. The topics could be selected from a list of eight welfare topics that EURCAW-Pigs is focussing on in its work programme. During the meeting, three of the proposed Welfare topics were discussed in detail. The proposers of the selected topics were asked to introduce their topic in a short presentation at the start of the meeting. Following these 'pitches', the topics were further discussed in subgroups, in which the topics changed every 20 minutes. For each topic, a different EURCAW-Pigs expert was invited to listen to the concerns, questions, personal experiences, and possible solutions added by the delegates. The expert was asked to understand the problem and solutions offered during the first day, and to prepare for a 'reply' to be presented on the second day.

The topics and experts were:

- Topic 1: Tail biting - Antonia Patt, animal welfare scientist, Friedrich Loeffler Institut (FLI), Germany.
- Topic 2: Farrowing housing and management – Lene Juul Pedersen, Professor in Animal Welfare and precision livestock farming, Aarhus University, Denmark.
- Topic 3: Sow group housing and mixing – Herman Vermeer, pig welfare scientist, Wageningen Livestock Research, The Netherlands.

Intermezzos

Following the discussions in the subgroups and before closure of day 1, two 'intermezzos' were provided by EURCAW-Pigs team members: on EURCAW-Pigs website www.eurcaw-pigs.eu (by Marko Ruis, Wageningen Livestock Research) and on demonstrators by Antje Schubbert (Friedrich Loeffler Institut (FLI)). "Seeing is believing": demonstration of good practices is an excellent way to disseminate knowledge, exchanging ideas, harmonize assessments, and change attitudes. EURCAW-Pigs aims to identify farms, transport companies and abattoirs that demonstrate good practices regarding animal welfare, in compliance with EU legislation. Demonstrators will be presented on the EURCAW-Pigs website and the delegates were invited to share examples and contacts.

Wrap-up three topics

Day 2 continued with the invited experts replying to the 3 topics introduced on the first day. They presented scientific knowledge, practical examples and their own thoughts on the topics. The following points were made or discussed during these feed-back sessions.

Tail biting

"Even if we lived in a world of intact tails there will always be the risk of tail biting and the question how to prevent it." "It is a never ending effort". This was the conclusion of Antonia Patt, wrapping up the discussion on tail biting of day 1. Tail biting and how to control it is one of the major issues in pig farming, and several of the risk factors were addressed. Questions also exist on the definition of an intact and healthy pig tail and methods to record it; this was also replied to.

Main issues replied to:
1. What are the main risk factors for tail biting? It is recognized that tail biting is a multifactorial problem and according to Commission Recommendation (EU) 2016/336, six key factors should be checked when carrying out a risk assessment of the incidence of tail-biting based on animal and non-animal based indicators: Enrichment materials, cleanliness, thermal comfort & air quality, health status, competition and diet. This recommendation is not legally binding, but carries 'legal weight', and it was agreed by MS and pig sector.

It was emphasized in the meeting that these factors should receive attention from early rearing or even the farrowing period onwards. Early rearing conditions have an effect later on. You have to invest in ventilation, stocking density, enrichment, pen design etc. to optimize the basic conditions. Research indicates that a diversity in enrichment material in the farrowing unit (pre-weaning) could help to reduce the occurrence and/or severity of tail biting post-weaning. Moreover, previous research shows that optimized housing and management seems to have some promising effects. In a project in Germany several housing and management risk factors are optimized simultaneously aiming at giving farmers recommendations for farm specific optimizations. Other factors mentioned during the discussion that could contribute to the onset of tail biting were early weaning and noise (though not scientifically substantiated). There are also indications that the minimum legal floor area is a risk factor, as more space per pig also reduces tail biting. In accordance with the state of knowledge, it was concluded that anything that disturbs pigs might add to the problem of tail biting, thereby making it a multifactorial problem. Preventing tail biting is therefore a never ending effort. In any case,

farmers need to invest in spending time in the barn, making it a routine, to understand and develop an eye for what pigs need and to act quickly on what is observed.

2. What is an intact tail? For scoring of tail damage on farm, EURCAW-Pigs adopted a scoring method based on discussions in the Subgroup Pigs of the EU Platform on Animal Welfare. For this purpose, tails are classified as intact, or according to the level of injuries, as having minor or major wounds. For scoring of tail lesions at the abattoir, no routinely usable scheme/method is available yet. Automatic scoring of docked versus undocked tails could be a good solution to see any progress over time. An example of scoring of tail lesions and defining intact tails in undocked pigs at the abattoir was given from a scientific study (Valros et al. 2020). The authors of this study suggest that an intact enough tail is at least 75% of the average fully intact tail length (in the specific population) and has no signs of biting lesions. However, Antonia Patt concluded her presentation by emphasizing that all losses of the tail are a welfare issue for a pig. Peripheral nerves can be traced to the tip of the tail, indicating that the entire tail is sensitive.

For further reading, see EURCAW-Pig's webdossier 'Tail biting and tail docking'.

Farrowing housing and management

Lene Juul Pedersen addressed two main issues with regard to farrowing housing and management according to the discussions on day 1:

1. Large litter size increasingly is a problem: Genetic selection for large litters is an ongoing process aiming to increase the number of weaned piglets. As a consequence, litter size often outnumbers functional teats. Due to the unique nursing pattern of pigs, piglets born in large litters have difficulties in maintaining a stable teat order. An unstable teat order results in teat competition associated with teat lesions, starvation and skinny piglets, as well as facial lesions. How can sufficient food be ensured for all piglets? Strategies do deal with large litters include the use of nurse sows, rescue decks, and provision of milk supplements in drinking cups outside or inside the farrowing pen. However, these strategies do not provide perfect solutions, and it was recommended to keep an eye on the indicators. Welfare risks of fostered piglets and nurse sows include more teat fights and increased risk of lesions in fostered piglets, and lower growth rate in piglets fostered by a nurse sow. Rescue decks are related to welfare problems (e.g. abnormal behaviour), and it is questionable whether the practice complies with the EU Council Directive 2008/120/EC on weaning age, due to sow and piglets being separated earlier than stated as minimum weaning age.
Crate size may also be too small for larger sows and litter and this should be inspected. On one hand length of crate inside bars, and sows and piglets can be measured, on the other hand animal-based indicators, e.g. body lesions on sows, udder and teat lesions on sows, and facial and carpal joint lesions on piglets. These measures should be included in the checklist of the inspector.

2. Change to pens for loose sows as a solution to space limitations in crates: Problems with small crate size may be large and challenge sow welfare; older sows are particularly at risk due to their larger size. Pens for loose-housed sows provide them with more space, freedom to move and with the opportunity to nest build and to perform behavioural thermoregulation. Well-designed pens are at least 6-7 m2 with division of space into functional zones, opportunities to provide functional nest materials and design features to increase piglet viability and thus protect them from being crushed. Member States may have different experience with piglet

mortality in loose housing pens. Increased mortality may lead to the promotion of 3 day crating in modified farrowing crates. Other countries with longer experience in loose housing do not find higher piglet mortalities with loose-housed sows, but causal factors of differences are not identified. Factors that contribute to differing results may be: litter size, experience of sow and caretaker, pen size in combination with litter size, use of foster sows, and prevalence of lame and/or diseased sows. Specifically, the use of nurse sows was discussed within this context. In loose housing also nurse sows are used, and it seems that more needs to be done for the sow to accept the piglets. One suggestion was to enclose the sow for easier acceptance of the piglets.
In several Nordic Member States, loose housing for sows is either obligatory or promoted; this means there is a tendency to move away from crates. Also, strengthened inspections are seen in some countries, e.g. of the sow's body condition and shoulder sores/ulcers, and farmers are encouraged to react as early as possible. This also includes to give guidance for farmers to take size of sows into account; when having pens of different sizes, larger sows can be put in larger pens.

Information on the topic is also available on the Centre's website, e.g. in the dossier 'Farrowing housing and management'.

Sow group housing and mixing

Herman Vermeer started his presentation with the statement: "The challenge is to understand pigs, from that we can design the system." Aspects being discussed and known to contribute to optimization of the group housing system and management include:
1. Sufficient free space for sows to pass each other, e.g. in systems with feeding stalls where it is aimed to have a good ratio between stall width and space between rows, or between row and wall. Research shows that farrowing rate increases with increasing width between two rows of stalls. More space is also positive for sows' performance: research results show a decreased number of skin lesions and a lower culling percentage of sows with increasing living space.
2. Mixing without problems: consequences of aggression can be minimized by 4-5m² space, dry and good quality floor to prevent slipping, falling and lameness. Mixing at weaning is positive to prevent aggression after service. Preferably, sows are kept in static groups where they are mixed only once during gestation, and return to their previous group following lactation.
3. A feeding system in which a sow can eat safely: this is necessary to provide every sow with her nutritional needs. Trough feeding (dry or liquid) and floor feeding can result in high levels of competition with negative effects on welfare and production. In Free Access Stalls groups should be sorted on parity, body condition and pregnancy stage. Flexible fences between groups give the necessary flexibility. Ideally, competition around feeding is prevented, e.g. by locking doors of Free Access Stalls. Individual feeding or sorting options are preferred.
4. Provision of roughage in the trough, on the floor or from a rack results in increased satiety and much more quiet sows. Offering both fibrous ingredients in the diet and ad libitum access to roughage is most effective.
5. Working in an accurate, consequent and structured way is crucial in all systems.

For further reading, see dossier 'Group-housing and mixing of sows' on the Centre's website, and the EUWelNet 'Factsheets on Group housing of sows'.

Closing and evaluation

The basic format of the meeting with an open discussion and much interaction was well received. It may be a good idea to have a wider audience with more Member States in future meetings. On the other hand, small groups better facilitate open discussions. Whenever possible, physical meetings are preferred over virtual meetings. Complementary virtual meetings and webinars are of added value. The website was evaluated as very informative and useful.

Jan Tind Sørensen closed the workshop at 12:00h

EURCAW-Pigs
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