TAILBITEADVICE

AN ICT-BASED REAL-TIME ADVISORY TOOL TO MINIMISE TAIL BITING IN FATTENING PIGS

TailBiteAdvice aims to research, develop and demonstrate an on-farm advisory tool for assisting the farmer in the reduction of tail biting by combining multiple remote detection algorithms for both tail biting and several adjustment parameters including enrichment engagement, aggression, feeding and drinking behaviour, and climate. Further, the project aims to identify and discuss opportunities and barriers to the implementation of this in combination with previously developed abattoir tool (TailCam® developed by DMRI) for automatic detection of tail lesions and tail length by including multiple actors across nationalities. Combined, the two tools will create a data-driven ICT-based approach to provide the farmer and other stakeholders with knowledge on how to prevent tail biting and as a result, lower the need for tail docking.

BACKGROUND

Tail biting represents a major welfare, economic and ethical challenge to modern day pig production and is a production issue of high priority within the European Commission1. The prevalence of tail biting is high despite tails being docked on 77% of EU farms. Tail biting is multifactorial and often related to the effect of boredom and multiple stressors (e.g. feed availability, thermal environment, and health status) on pig behaviour via the tipping-bucket concept. The range of potential causing factors mean it is difficult for the farmer to predict when an outbreak will occur and to determine why it has happened.

Monitoring the risks of tail biting and supporting farmers with suitable intervention strategies can be an important way to reduce the incidence and severity of tail biting at farm level. However, this is a hugely laborious task, as it requires continuous monitoring of the pigs' behaviour and their environment alongside expert judgement on what (and when) intervention is needed. The only state-of-the-art objective mean of monitoring tail biting in commercial herds is at abattoir level (e.g. with TailCam ®). However, this leaves little chance to the farmer to adjust his husbandry.

MAIN PROJECT ACTIVITIES

The project defines four core objectives to fulfil the overall aim:

- To optimise and integrate included detection algorithms.
- To investigate the relationship between included parameters and risk factors of tail biting.
- To demonstrate the developed decision support to in a commercially relevant environment
- To discuss and create opportunities, barriers and guidelines for implementing the decision support tool.

EXPECTED SOCIAL IMPACT

- Results can be used for animal welfare, less waste of animal life due to on-farm euthanasia and carcass condemnations at the abattoir, and lower use of antibiotics (with consequential benefits for antimicrobial resistance).
- Results can thus be an important instrument to support farmers' way towards a non-docking policy in EU.
- Results can provide consultants and inspectors with easy-access animal-based measures to be used in animal welfare auditing.
- Results can be used by retailers in the labelling of meat products and by farmers in benchmarking, which may improve production standards.

Keywords

- Precision Livestock Farming
- Domesticated pig
- Animal behaviour
- Computer vision
- Tail biting

Duration

01/02/2021 - 31/01/2024

TRL

Technology Readiness Level incoming 4, and outgoing 5-6

Consortium

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