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THE USE OF RFID TO MONITOR PIG HEALTH, PRODUCTIVITY AND WELLBEING

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The use of Radio Frequency Identification (RFID) to track pigs' feeding behaviour is a tool that shows promise in linking feeding information with the health and welfare of animals in intensive pig farming facilities. The ICT tool is still in the prototype development stage in Belgium. Similar tools have been developed for other livestock, such as Connecterra for dairy cows.

The use of RFID tags in monitoring allows collected data on the feeding behaviour of individual pigs to be used to track changes and detect health problems like lameness or an infection. The analysis of parameters, such as number and the duration of feedings, and a sudden change in behaviour, can be a symptom of an underlying health issue. For herd health, it is also important to track diseases or environment-related issues at an early stage.

In the case of the pig consuming less feed, this can also lead to reduced productivity. The system will help farmers to run the most efficient pig farm and to diagnose issues and find solutions.

Application scenario

Monitoring intensive livestock's health and performance through RFID sensors and tags. Herd management

Digital technologies

RFID (Radio Frequency Identification), information management systems and decision-support systems.

Socio-economic impact

- Social: decision-making and farm management skills, access to information, control, surveillance and transparency.
- Economic: performance, traceability, productivity and responsibility.
- Environmental: animal husbandry, health and well-being; risk management and prevention; reduced use of antimicrobial treatments.

More info:

https://www.ilvo.vlaanderen.be/language/en-US/NL/Pers-en-media/Alle-media/articleType/ArticleView/articleId/2779/Sensoren-kunnen-gezondheid-en-welzijn-varkens-monitoren.aspx

Since pig farmers in Flanders often manage large herds (>1 500 pigs on average) it is becoming more difficult to track the health of individual pigs. For this reason, the use of this type of tool is gaining in importance.

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Purpose of the tool

The purpose of this tool is to track individual pigs in new ways, and link feeding information with the health and welfare of pigs in intensive livestock facilities. Farms are getting bigger, with increased herd sizes per farm and with less personnel, so it is becoming more difficult to monitor the health of all pigs in a barn. One possible solution is to develop new tools to track the health of pigs on farms. This technology, using RFID, enables farmers to follow the behaviour of individual pigs and track their movements and feeding behaviour. Specialised software is used to analyse this information and to notify the farmer when a pig shows signs of sickness. This would improve the health of pigs, reduce the severity of sickness, and allow the farmer more time to focus on other tasks on the farm.

Description of the tool

The tool is still in a prototyping phase, with researchers working to improve it. The tool uses an electronic tag (RFID) attached to the pig, which activates a sensor when the pig goes to the feeding station. This enables the software to automatically validate feeding parameters in fattening pigs that use RFID feeding troughs.

The tool tracks this information and hence provides an early-warning system triggered by poor performance and health. In other words, through the pigs' behaviour, the software can notice issues with the health of individual pigs. Farmers on intensive livestock operations can use this technology to predict welfare-related issues and to improve the health of their herd. Especially on bigger farms, this is important because the tracking of individual pigs is no longer possible for the farmer. With the intensification of pig farming, this will become more important in the future. At the same time, it allows farmers to focus their attention on other important aspects of farm management.

Areas of socio-economic impacts

Social	Societal expectations for pig wellbeing and livestock management can be met using this technology. Improved detection of disease might also improve public health through the reduction of zoonotic disease. Better decision-making and farm management skills, access to information by farmers, control, surveillance and transparency. More time available for other farm activities.
Economic	Improved farm management, prevent economic losses and reduced labour costs; potential to improve yields and production efficiency and reduce inputs by preventing diseases. The reduction of labour needed on farming can also be seen as a negative impact, as it might lead to unemployment of farm labourers.
Environmental	Potential for reduced use of medicine and antibiotics through the early detection of disease; improved animal husbandry, health and wellbeing; prevention of environmental risk.