



EAAP

European Federation
of Animal Science



SENSOR PP

Sensor based **EN**vironmental **S**urveillance
and **O**bservation with **R**ealtime data in **P**ig and
Poultry houses

**Automated image analytics to reveal changes
in drinking and eating behavior after vaccination**

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De Temmerman³

AI4AS-EAAP Conference

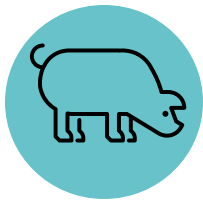
June 29th 2026

Ghent



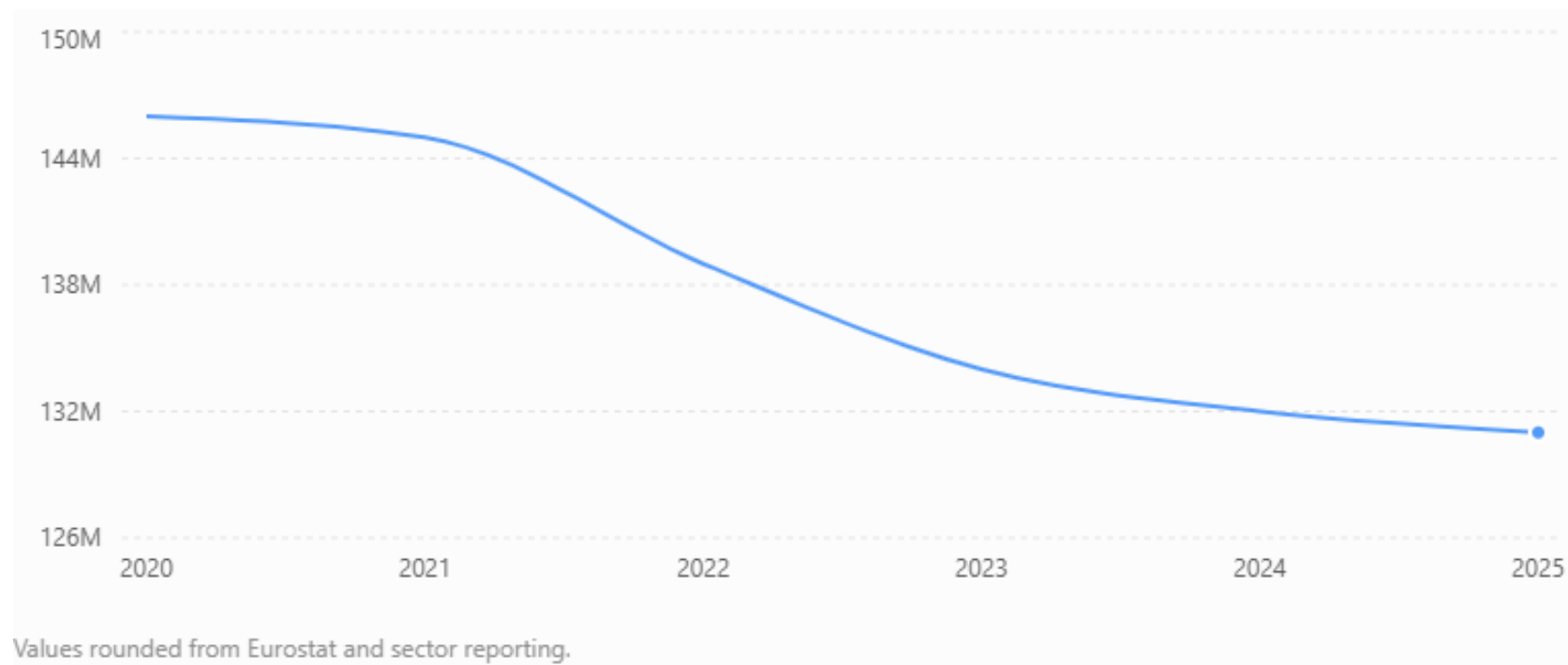
Co-funded by
the European Union

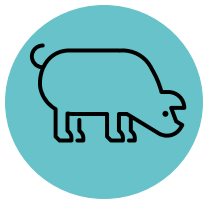




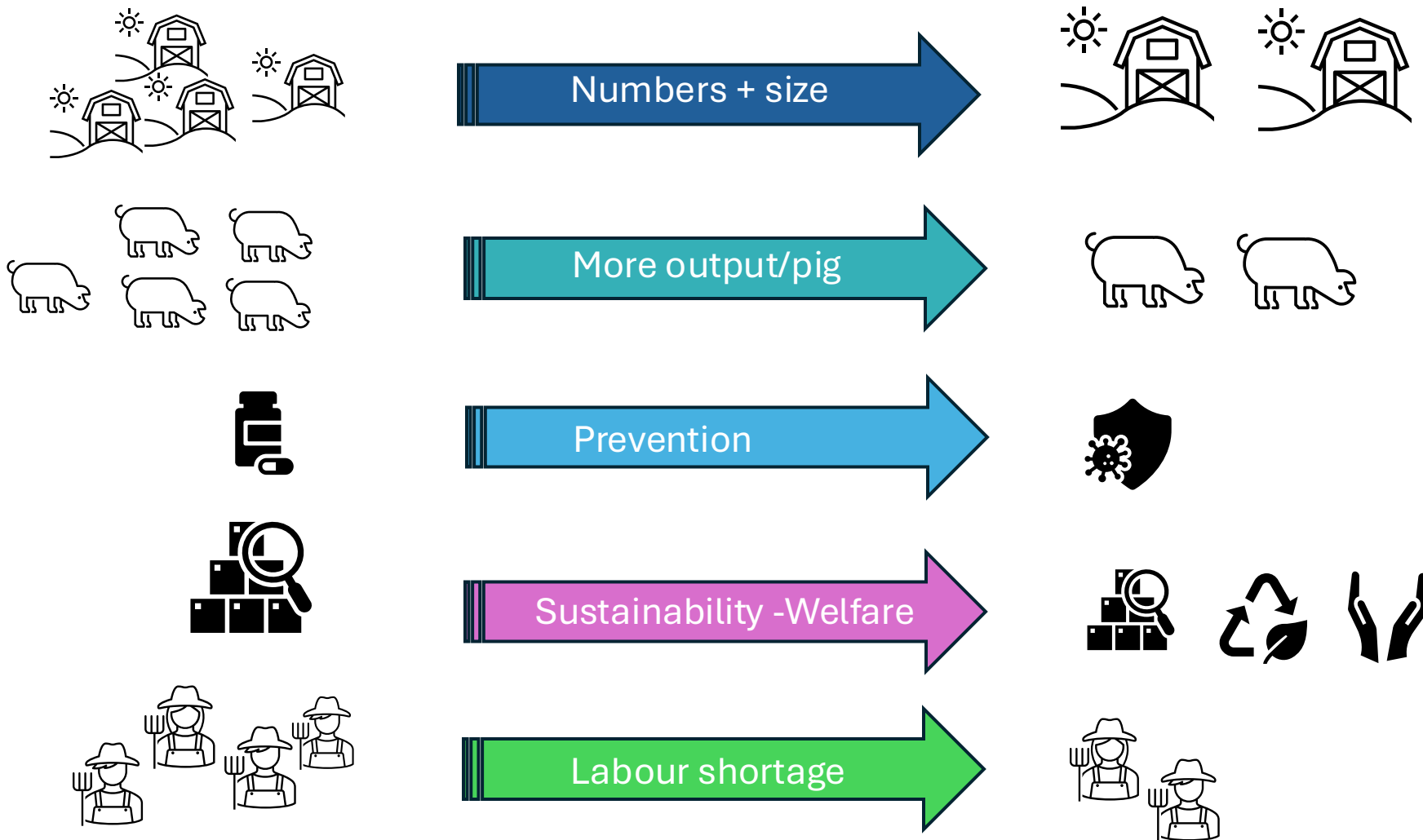
Introduction

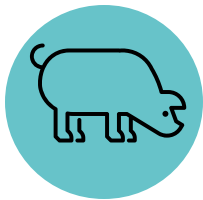
EU pig population trend



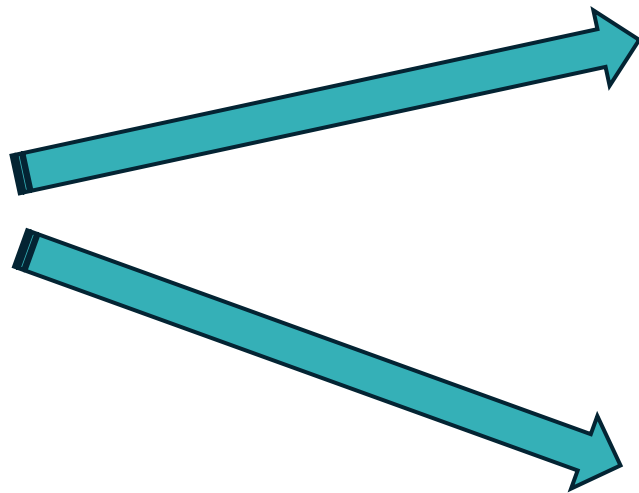
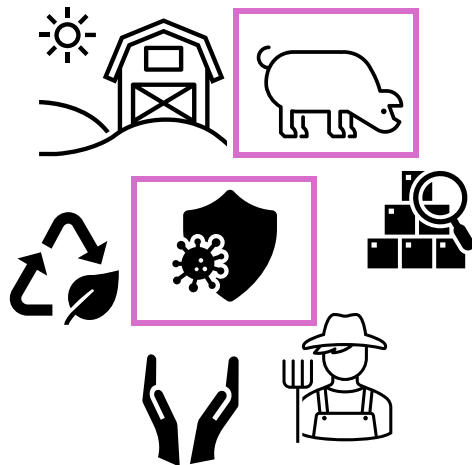


Introduction





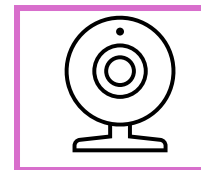
Introduction

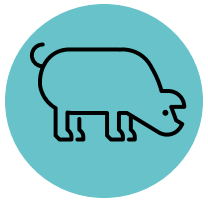


PLF



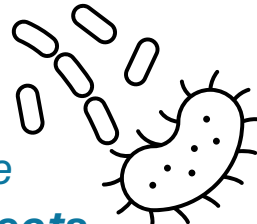
Automated
monitoring





Introduction

Immune response
Adjuvant effects
Normal defense

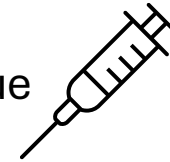


**Degree of vaccination
reactions**

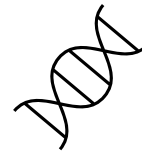
Vaccine handling & quality



Injection technique



Animal factors & stress

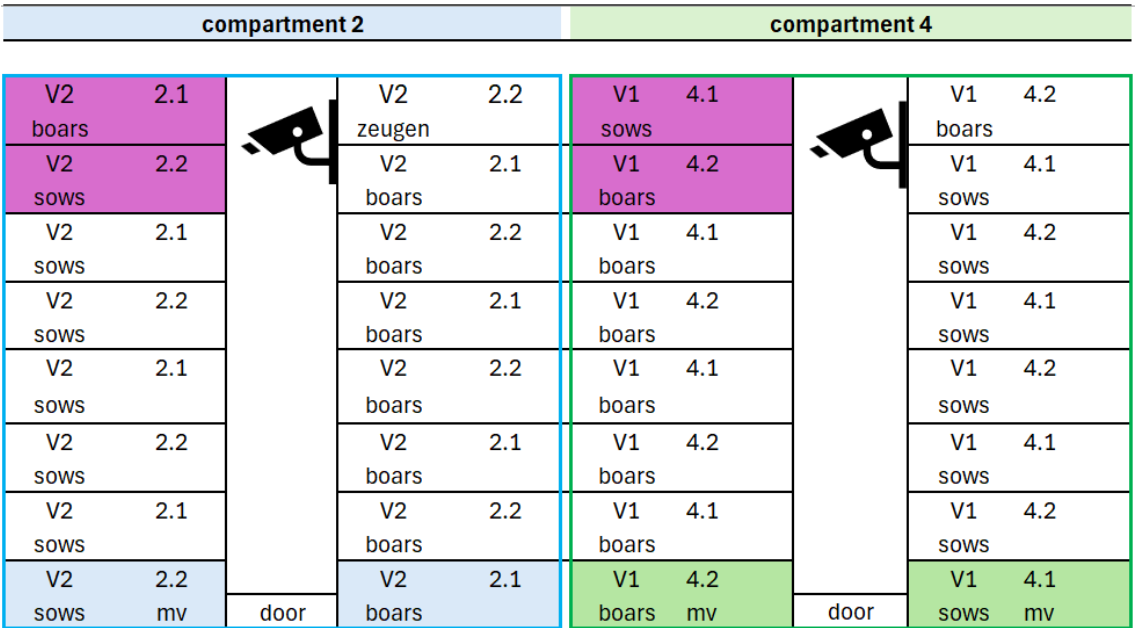




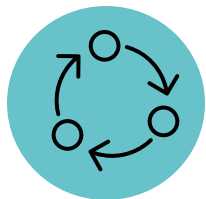
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511 piglets 510 piglets

- Registration activity with cameras 3d before until 3d after vaccination
- Weight registration by pen



- Weight registration by pen

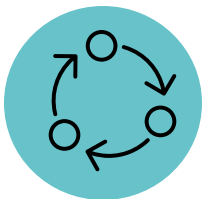


Materials & methods



- Mobile set-up
- Wi-Fi/4G connectivity HD 160° camera
- Per camera: 2 pens visualized
- Roxell feeders
- 20 second videos
- Pictures every 10 minutes

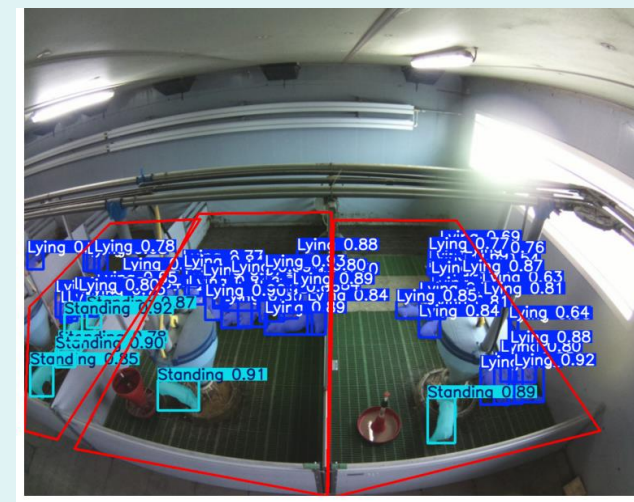
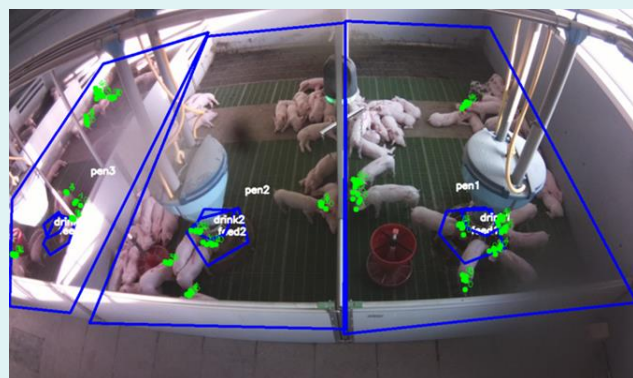
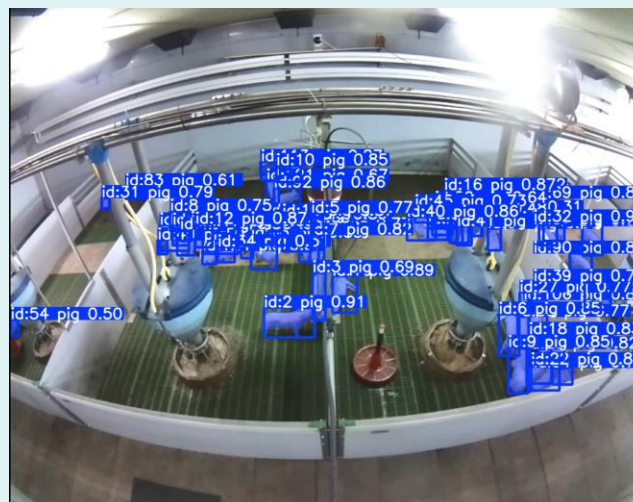




Materials & methods

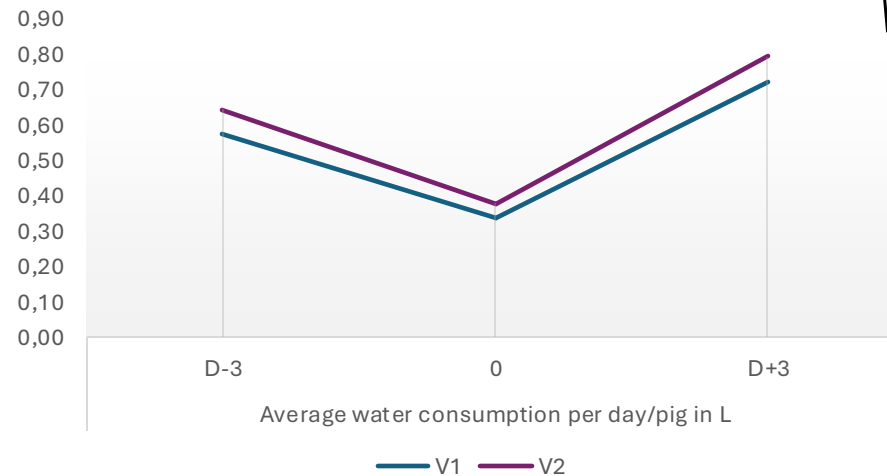
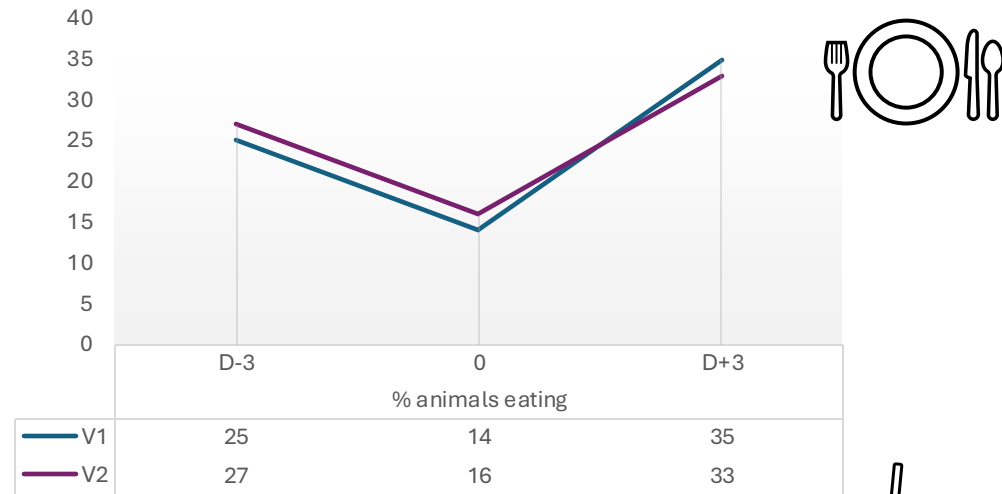
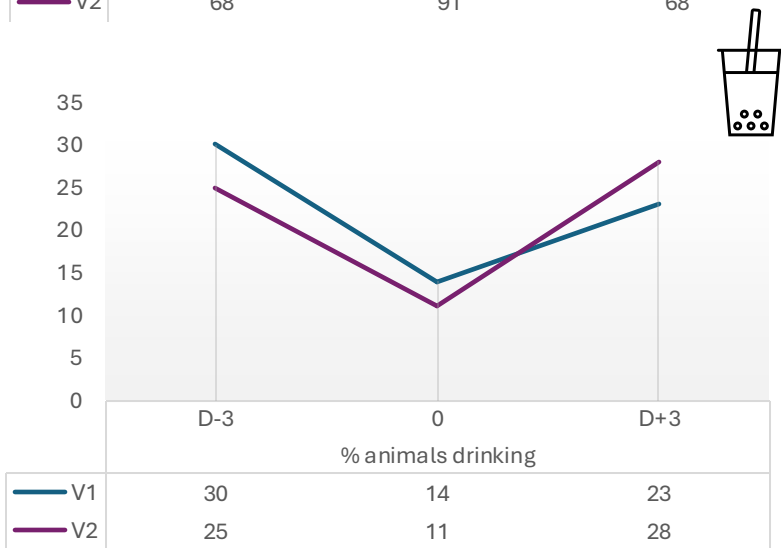
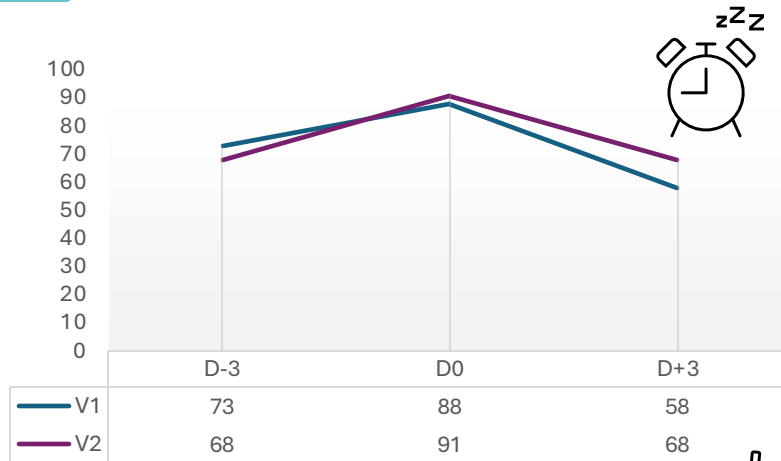
Training of 3 AI-models

- YOLOv11 animal segmentation model
- a pig behavior segmentation model
- ViTPose 24-keypoint model





Results





Discussion

Temporary loss of appetite and lethargy shown for both vaccines

No clear differences for any of the safety parameters

Computer vision can objectively quantify vaccine reactions in the field

Challenges to overcome ViTPose model

- Keypoints to be defined for every stable
- Head recognition -> sometimes no head visible when pigs are eating
- Visibility of all animals/obstructions in the pen
- Positioning of the camera under an angle

THANK YOU!



EN_CO
SOFTWARE

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ILVO
Flanders Research Institute for
Agriculture, Fisheries and Food

SYN
van data naar optimale diergezondheid

SENSOR-PP newsletter



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