Tear staining sensor (ILVO):
Automated computer-vision monitoring of tear staining at the slaughterhouse

aWISH
ANIMAL WELFARE INDICATORS AT THE SLAUGHTERHOUSE

ILVO is the Flemish Research Institute for Agriculture, Fisheries and Food.
Tear staining in pigs refers to the dark discolouration below the eyes and has been associated with different sources of chronic stress, including inadequate environmental conditions, physical stress and social stress. This makes tear staining a potentially valuable animal-based welfare indicator. However, conventional assessment is labour-intensive and thus difficult to apply at scale.

To address this limitation, a tear-staining sensor was developed to automatically assess tear staining at the individual-animal level using computer vision.

The sensor prototype was developed at the bleeding line of Pilot 2 and consists of a two-camera setup, with one camera focused on each side of the pig's face. A protective panel separates the hardware from the animals and helps shield the system from the demanding slaughterhouse environment.

Large-scale tear staining assessment could enable slaughterhouses to monitor welfare across farms and provide a basis for targeted feedback and corrective actions.

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Fig.1 – Sensor setup at the bleeding line



Fig.2 – Example of severe case of tear staining

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