

6. Perception of laying hen farmers, poultry veterinarians and poultry experts on sensor-based continuous monitoring of health and welfare of laying hens

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Traditionally, laying hen farmers monitor health, welfare and productivity of their flock based on feed and water intake of the birds, flock productive output, climate factors, and behavioural observations. Due to the growing number of birds per layer farm and the decreased availability of personnel with sufficient knowledge on poultry, it becomes increasingly difficult to safeguard and control bird health and welfare. Concurrently, there is a global trend towards more sustainable livestock farming with amongst others profitable and efficient animal production with a low ecological footprint. To keep up with these developments, farmers can benefit from state-of-the-art sensor technology, serving as artificial nose, ears and eyes that gather 24/7 data on flock health, welfare and productivity. This project aims to improve laying hen welfare by early stress detection based on continuous assessment of reliable, predictive (animal-based) indicators. As a first step, a qualitative, multi-stakeholder survey was prepared to determine current and future sensor use and automation in aviaries to support on-farm health and welfare assessment. Knowledgeable laying hen farmers, practicing poultry veterinarians and experienced poultry experts specialised in e.g. nutrition, genetics and welfare, all working in West-Europe and Canada, were selected for participation. Using a purposive heterogeneous sampling approach, maximum diversity was created among our homogenous candidate group. Participants completed an online questionnaire and participated in a semi-structured interview consisting of narrative questions and follow-up probing questions. The questionnaire aimed to identify several variables that could underly the answers given during the interview, such as sociodemographic characteristics. Laying hen farmers were additionally asked about farm management and housing characteristics, while poultry veterinarians and experts were asked about details on their profession and frequency of contact with the commercial poultry sector. During the interview, participants were encouraged to identify relevant health and welfare issues, including their causal stressors and predictive indicators, to describe current use of sensor (data) during health and welfare assessment and to describe their interest in future technologies. Qualitative content of the interviews is analysed, using an inductive coding approach and summarized per stakeholder. Quantitative analysis includes variable ranking and comparison between stakeholders, a binary logistic regression and a Fishers test. Preliminary results will be shown during the WIAS Annual Conference. Final results will be used during consecutive steps of the project.