Monitoring the welfare of broilers using bioacoustics

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Introduction to Good Practice

Broilers use vocalization as a form of expression to communicate in various situations, such as warnings, alarms, territoriality, stress, fear, satisfaction, hunger, among others. The analysis of variations in the frequency and patterns of these vocalizations allows us to make an accurate assessment of the animals' health and welfare.

This innovative practice uses bioacoustics to obtain quantitative measurements of broiler stress in a non-invasive manner, avoiding any human intervention. The system consists of a microphone installed above the broilers' heads to capture their vocalizations and send the data to a processor mounted on a wall. This processor eliminates background noise that does not originate from the animals, ensuring a clean and accurate capture of their sound emissions.

Challenges of Good Practice

This Good Practice addresses the challenge of improving the assessment of broilers' welfare. Through the continuous analysis of vocalization records, which are automatically updated every 15 minutes on the control panel, changes in vocalizations associated with health and welfare issues in broilers can be detected.

In addition to monitoring vocalizations in real time, the poultry farmer has the flexibility to customize which data is displayed. The system allows the comparisons of records between different buildings, which facilitates the detection of differential elements that may cause stressful situations (e.g., type of lighting, inadequate ventilation, ambient temperature). This enables the poultry farmer to identify and correct potential welfare issues affecting the animals. Comparison can also be made between different growing cycles, taking into account factors such as the season of the year, the origins of the chicks, among other variables.

Microphone in a farm with broilers (provided by Cealvet)

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Benefits

- It does not require modifications to existing installations, which makes its implementation simple and adaptable to various production environments.

- This technique does not interfere with the management routines established in the barn.

- It enables the immediate detection of changes in the condition of broilers, allowing for a prompt response to situations that may impact their welfare.

- Training for personnel using the system, as well as maintenance of the physical system and the computer platform, is provided by the supplying company, ensuring optimal operation and continuous updates.

Microphone in an empty farm and processor installed on a wall of the farm (provided by Cealvet)

Graph extracted from the bibliography srticle that relates environmental noise to broilers vocalizations
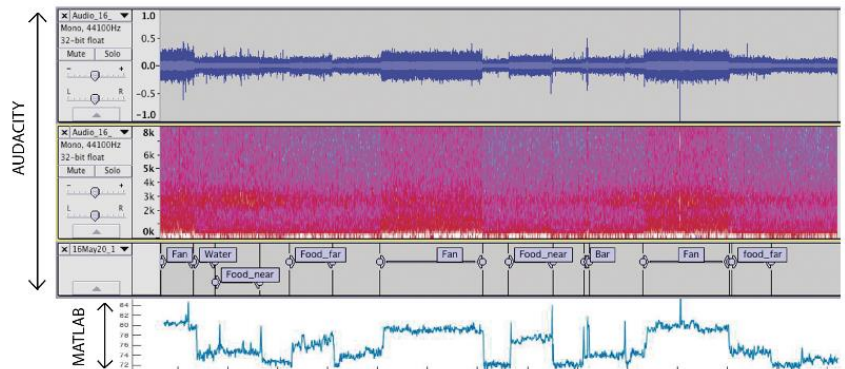
Additional information

The company providing the system offers it as a rental service to producers, who have access to both real-time and historical data at all times. This access is tailored to the specific needs of each farm, allowing for more efficient management adapted to the specific conditions of each farm. This model provides producers with powerful tools to continuously enhance the welfare conditions of the animals and optimize production.

The sound capture system and the computer system that enable recording and analysis have been developed by a company specialized in the animal health and nutrition sector, with a specific focus on animal welfare. This company also operates in a complementary manner in the field of bioacoustics, applying technologies to monitor animal welfare in chicks both in hatcheries and during the transport of broilers.

Bibliography

Preliminary Acoustic Analysis of Farm Management Noise and Its Impact on Broiler Welfare

Research and Development - CEALVET

Interview wth con Tesa Panisello (CEO de CEALVET SLu) - CEALVET

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