Cobb Outlook

Highlighting Cobb's progress towards genetic excellence

Shaping the Future of Bird Health and Genetic Progress with Technology

Advances in precision farming are creating new opportunities to monitor bird health and behavior at a scale never before possible. The use of sensors, RFIDs, imaging / computer vision (use of cameras, computer tomography (CT), spectral technologies, etc.), and automated data capture, enable more precise measurement of traits related to performance and feed intake, walking ability (gait), behavior, and other traits related animal welfare and health. AI models are being used to identify complex patterns across genomic, phenotypic and environmental, improving prediction accuracy and accelerating trait discovery.

Advanced tools allow researchers to monitor birds continuously and non-invasively, reducing the need for manual measurements and minimizing the potential for human error. These systems can generate large volumes of objective, real-time data while reducing labor requirements, providing a more complete understanding of how birds respond to their environment throughout the production cycle.

Combined with artificial intelligence, these data streams have the potential to detect early indicators of health challenges before clinical signs become apparent. Early warning systems can enable faster intervention, support better welfare outcomes, and provide valuable phenotypic information to strengthen genetic selection programs.



Next-Generation Tools for Health Monitoring and Genetic Improvement



Sensors

Sensors have long been used in poultry production to monitor environmental conditions, but advances in sensor technology are expanding their value far beyond temperature and humidity measurements. Modern sensors can continuously track a wide range of environmental and flock-level indicators, providing researchers and producers with a more complete picture of the conditions that influence bird health and welfare.

One of the key advantages of sensor technology is the ability to detect changes in the production environment as they occur. Real-time monitoring allows potential issues to be identified earlier, helping prevent conditions that could negatively affect bird health or performance. Continuous data collection also reduces reliance on manual measurements, improving efficiency while ensuring important information is captured consistently over time.

When combined with analytics platforms and other data sources, sensor technologies can help researchers better understand how environmental conditions influence health, welfare, and productivity. These insights support more informed management decisions and contribute to the development of breeding programs focused on robustness, resilience, and long-term flock health.



RFID

Radio Frequency Identification (RFID) technology is helping researchers gain a better understanding of individual bird behavior and health throughout the production cycle. By tracking birds over time, RFID systems provide continuous, objective data on movement, activity patterns, and resource use that would be difficult to collect through manual observation alone.

This individual-level monitoring allows researchers to identify changes in behavior that may indicate emerging health or welfare concerns. Reductions in activity, changes in movement patterns, or alterations in feeding and drinking behavior can serve as early indicators that a bird may require further attention. Detecting these changes sooner enables more timely investigation and intervention.

RFID also provides valuable insights into how birds interact with their environment and respond to different management practices. By linking behavioral data with health and performance outcomes, researchers can better understand the factors that contribute to welfare, resilience, and productivity, supporting both improved management strategies and future genetic selection efforts.

Radio Frequency Identification (RFID) technology offers opportunities to track individual birds throughout their lifecycle. Data from tracking birds over time allows researchers to link movement and activity with welfare indicators, such as health status, stress, or disease onset.

Automated Data Capture

As poultry operations generate increasing amounts of information, automated data capture is becoming an important tool for advancing animal health monitoring. By automatically collecting data from sensors, cameras, and environmental monitoring systems, researchers and producers can reduce the time and labor required for manual observations and recordkeeping.

Automation also improves data consistency and accuracy by minimizing human error and ensuring information is collected using standardized methods. This provides a more reliable foundation for evaluating flock health and identifying trends across time, environments, and genetic lines.

Imaging & Computer Vision

Imaging technologies are transforming how researchers monitor and evaluate poultry health. Using cameras combined with machine learning and computer vision, researchers can collect objective, continuous observations without the time and labor required for manual assessments.

Like other digital tools, imaging systems improve consistency by reducing the subjectivity that can exist between observers when evaluating traits such as mobility, behavior, feather condition, or flock activity. Automated image analysis can also process large populations of birds simultaneously, providing a more comprehensive view of flock health and welfare than traditional sampling methods.







Audio Monitoring

Researchers are also exploring audio monitoring systems that analyze flock vocalizations. Chickens produce different vocal patterns in response to normal social interactions, stress, discomfort, illness, or environmental disturbances. When combined with artificial intelligence, audio technologies may help detect changes in flock condition earlier, providing additional insights into bird welfare, health status, and management responses.

Robotics

The use of robotics in poultry production extends beyond labor savings to include welfare and health monitoring applications. Autonomous robots can stimulate flock movement throughout the day, encouraging activity that supports leg health and helps reduce management challenges such as floor eggs. As these systems move through the house, they can also collect data on bird behavior, activity patterns, and environmental conditions, creating new opportunities to monitor flock status and generate insights that support both management decisions and genetic improvement programs.

Continuing Progress

As precision technologies continue to evolve, they are creating new opportunities to understand the complex relationships between bird health, behavior, welfare, and performance. By collecting objective data continuously and at a scale not previously possible, new tools are expanding the range of traits that can be measured and evaluated. These advances will help researchers generate new insights, strengthen genetic selection programs, and support Cobb's ongoing commitment to developing healthy, resilient, and productive birds for customers around the world.