

Evonik brings digitalization to the chicken farm

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- Evonik advances Precision Livestock Farming for poultry
- Big Data boosts food quality and reduces use of medications
- Economic advantages for producers

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Essen, Germany. The chicken farm of the future is fully digitalized. It uses intelligent sensors and integrated systems to generate optimal climate conditions. Animal health is continuously monitored: What does the clucking say about the mood in the barn? Is the flock's body temperature at a normal level? Are the animals eating and drinking enough? Sensors and microphones provide information, while specialized software analyzes the collected data. In the event of questions and problems, a support system comprising self-learning artificial intelligence components can help. Consumers get access to data as well: A wealth of important information creates transparency about animal farming, breeding and slaughtering.

It will most likely take some more time to establish these conditions, but the researchers and developers of Evonik have already started to work on the so-called Precision Livestock Farming (PLF) for poultry. The term stands for using digital technologies to employ knowledge and data in order to develop effective recommendations with verifiable benefits. Based on its analytical services for amino acids, Evonik already has many years of experience with digital business models in agriculture. "We are now linking our competency and innovation capacity in animal nutrition with modern digital technologies to create added value for customers and consumers," says Stefan Pelzer, the head of the Gut Health & Diagnostics innovation unit at Evonik.

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To this end, the company plans to dig deep into data – its own, those of scientific studies, and those of customers. The vision is this: The Evonik PLF system will give meat producers precise information about the current condition of the animals in a flock and their development. The necessary data will be recorded and evaluated automatically, with results conveniently available via an app on a smart phone, tablet or laptop. The system detects

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changes in important parameters in real time. The program provides daily recommendations for feeding and livestock management, with a primary focus on improving meat quality. “The combination of digital technologies and product innovations enables increased productivity. At the same time, it substantially reduces the use of antibiotic growth promoters, which still are frequently being mixed into the feed,” says Pelzer. “Our goal is to keep animals healthy and raise them without any unnecessary drugs.”

Animal health is a top priority for Evonik in product innovations. The Evonik scientists consider the chicken gut a decisive element. This is the location where feed is digested and where important immune functions are situated—many infectious diseases have their origin in the gut. To better understand the complex processes in the digestive system, Evonik has been working to develop a gut simulation model since late 2015 within the scope of the “Good Bacteria and Bioactives in Industry*” (GOBI) innovation alliance, which is funded by the German Federal Ministry of Education and Research. The model is intended to reflect the interactions between feed, the immune system and the intestinal flora and will enable the testing of feed additives such as probiotics.

Probiotics are living natural microorganisms that unfold their effect in the intestines. Their metabolic products have a positive impact on the composition of bacteria in the digestive system, strengthen the immune system, and boost the resilience and health of animals. The Evonik portfolio already includes a number of probiotics for animals such as GutCare® PY1, which was specifically developed for use with poultry.

In feeding studies involving GutCare® PY1 in chicken farms, it was possible to confirm the performance of the product. “That could make our probiotic an alternative to the prophylactic use of feed antibiotics,” says Pelzer. This is an important point since the World Health Organization sees a link between antibiotic growth promoters for the occurrence of increasingly resistant pathogens in humans that are difficult to fight.

Evonik researchers are also working to develop quick and simple test systems, which will allow for making an assessment about the health of poultry livestock. Evonik's goal is to warn poultry producers when an infection is about to arise based on these new tests so they can take suitable countermeasures at an early stage.



** The "Good Bacteria and Bioactives in Industry" (GOBI) innovation alliance, started in 2016 for a period of six years, is funded by the German Federal Ministry for Education and Research in the "Industrial bioeconomics"*

funding category under funding reference number 031B0074 A – C. The alliance focuses on the areas of nutrition and health. In addition to Evonik, the alliance comprises the biotech enterprise Organobalance and Bionorica SE.

About Evonik

Evonik is one of the world leaders in specialty chemicals. The focus on more specialty businesses, customer-orientated innovative prowess and a trustful and performance-oriented corporate culture form the heart of Evonik's corporate strategy. They are the lever for profitable growth and a sustained increase in the value of the company. Evonik benefits specifically from its customer proximity and leading market positions. Evonik is active in over 100 countries around the world with more than 35,000 employees. In fiscal 2016, the enterprise generated sales of around €12.7 billion and an operating profit (adjusted EBITDA) of about €2.165 billion.

About Nutrition & Care

The Nutrition & Care segment is led by Evonik Nutrition & Care GmbH and contributes to fulfilling basic human needs. That includes applications for everyday consumer goods as well as animal nutrition and health care. This segment employed about 7,500 employees, and generated sales of around €4.3 billion in 2016.

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