Press release

Evonik brings digitalization to the chicken farm

October 19, 2017

Scarlett Shi
Communications
Tel +86 21 6119-1000
Fax +86 21 6119-1116
scarlett.shi@evonik.com

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

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.

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 changes in important parameters in real time. The program provides daily

Evonik Industries AG
Rellinghauser Straße 1-11
45128 Essen
Germany
Phone +49 201 177-01
Fax +49 201 177-3475
www.evonik.com

Supervisory Board
Dr. Werner Müller, Chairman

Executive Board
Christian Kullmann, Chairman
Dr. Harald Schwager
Thomas Wessel
Ute Wolf

Registered Office is Essen
Register Court Essen Local Court
Commercial Registry B 19474

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. It addition to Evonik, the alliance comprises the biotech enterprise Organobalance and Bionorica SE.*

Company information
Evonik, the creative industrial group from Germany, is one of the world leaders in specialty chemicals. Profitable growth and a sustained increase in the value of the company form the heart of Evonik's corporate strategy. Its activities focus on the key megatrends health, nutrition, resource efficiency and globalization. Evonik benefits specifically from its innovative prowess and integrated technology platforms. 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.

Evonik's international activities are organized into six regions. The Asia Pacific North region consists of China, Taiwan, Japan & Korea, and is headquartered in Shanghai. Sales in Asia Pacific North reached 1,947 million euros in 2016. Evonik regards China as one of the driving forces of the global economy and we consequently endeavour to grow our business here. The company now employs about 3,000 employees and has in total of 10 production sites in China.

Disclaimer
In so far as forecasts or expectations are expressed in this press release or where our statements concern the future, these forecasts, expectations or statements may involve known or unknown risks and uncertainties. Actual results or developments may vary, depending on changes in the operating environment. Neither Evonik Industries AG nor its group companies assume an obligation to update the forecasts, expectations or statements contained in this release.