THE CAMERA IN THE STY MAKES PIGS FEEL GOOD

How the ALL-SMART-PIGS technology improves animal welfare

The project: Development and testing

The ALL-SMART-PIGS project aims to establish technologically improved living conditions for pigs, that optimise feeding, and enhance animal health, leading to increased growth and better meat quality.

The project is to develop a multi-sensor control technology for livestock farms. The barn will be turned into a film studio, including microphones and cameras. These will provide data on the lives of the pigs, leading to improvements in their living conditions. A better environment for the animals will lead to increased growth and improved meat quality, happier lives for pigs and farmers, and more transparency and a clean conscience for meat consumers.

The product: Technology to improve animal welfare

Up to now getting a full picture of livestock living conditions in the stys was a time-consuming exercise with many flaws delivering fragmented, non-objective results. The Smart Pig Farming Technology is a collection of sensors and algorithms. When installed in a sty and connected to a computer, the technology provides a clear picture of the animal's living conditions. With these improved controls livestock farmers can achieve better results. The sensors will assist farmers in optimising environments: climate, air quality, feed, space and materials can be quickly adapted because the animals are monitored 24 hours a day. Cameras, sound monitors, air quality meters, feed counters and weight sensors record data enabling farmers to determine livestock well-being. Software processes the data and delivers a daily report on the status of a herd. The data indicate if the temperature, air quality, humidity and ammonia concentration are the most appropriate ones. Feed quality is directly linked to observed weight gain and behaviour. The continuous weight measurement will enable farmers to accurately determine when pigs should be sent to the slaughterhouse. The collection of sensors will make a real difference—a win-win for both pigs and farmers—improving the acceptability and quality management of modern pig farms.

The end users: Farmers, feed providers, meat producers, retailers, consumers

Through having their needs satisfied as soon as they arise, animals perform better which leads to increased pay-offs for all stakeholders.

The farmer: better meat quality, animal welfare labels and improved growth rates that will save time and money for farm management.

The feed provider: the data delivered will help them to adapt and improve the composition of feed and the management of raw materials, which is crucial to food security challenges in times of food scarcity.

The abattoirs: animals will be delivered in their prime, enabling the provision of top quality products to the market.

The retailers: benefit from objective data and can create robust animal welfare and meat quality labels.

The consumers: will benefit from better quality meat and more transparency regarding the animals' living conditions.

Policy makers and agriculture legislation: ALL-SMART-PIGS delivers relevant real-time data on animal welfare from farms, including air quality parameters (in particular ammonia concentration) leading to improved respiratory health and traceability. Policy makers should take advantage of these new technologies so that health safety standards for farm workers and food safety standards can be improved. Consumers moreover get more evidence to make informed choices.

The inventors: SMEs, research and technology organisations

ALL-SMART-PIGS is a continuation of the groundbreaking project BrightAnimal where researchers analysed pig, poultry, dairy and aquaculture sectors and presented new technological solutions to improve the quality of animal farming. It became apparent very quickly that individual efforts were quite advanced, but that researchers and engineers never really implemented their inventions on real farms. For farmers the purchasing decision was too challenging since the available technologies were too fragmented and covered only certain aspects, making returns on investments were difficult to estimate. ALL-SMART-PIGS concentrates on creating a consistent product package measuring real-time data in order to deliver evidence for better and more informed choices for farmers. The product was co-created with farmers, feed providers and slaughterhouses in a Living Lab, ensuring future market acceptance.

Development stage: Pilot tests towards proof of concept

The project will deliver a proof of principle and the basis for a validated product package, including results from four real-farm installations in Hungary and Spain,serving as Living Labs. A cost-benefit analysis will be conducted to provide data to clients, detailing what return they can expect from purchasing this solution. Socioeconomic aspects will be included in the analysis, e.g. working hours, availability of staff, peers' perception, and environmental impact. Not developed so far: a commercialisation strategy for the product package, and an acquisition strategy for public or private investors.

Policy impact: Feed chain regulations

The optimisation of animal feed through the data delivered by the ALL-SMART-PIGS technology may influence food security policy and the related chain regulations towards a more efficient composition of feed and less feed waste.

Next steps: Out of the comfort zone of science into the business battlefield

ALL-SMART-PIGS is only beginning. Currently installations exist on the four test farms in Spain and in Hungary. Farms have finished testing the technology under the real commercial pig farming conditions, while gathering relevant socioeconomic data. This is a key moment, when the project moves out of its comfort zone of science to the battlefield of business. In 2014 the technology will be tested for eight months in the field with all stakeholders. There is an opportunity for integrating other technologies from SMART FARMING start-ups such as the sister project EU-PLF (www.eu-plf.com). The goal is to bring the real product to the market. Disseminating information on the benefits of these products in expert and professional media is key to successful market uptake.

ALL-SMART-PIGS

Project coordinator: Syntesa ApS
Contact: Dr. Heiner Lehr
Email: heiner@syntesa.eu
Website: www.all-smart-pigs.com