

New EUROSTARS project approved: Improved phosphorus utilization and increased bone stability in pigs for better animal welfare and less environmental impact!

We are pleased to announce the start of the innovative project "Improved phosphorus utilization and increased bone stability in pigs" (PigBoneS) together with the Swiss company SUISAG, which offers genetics for responsible and successful pig farming, and the Research Institute for Farm Animal Biology (FBN) in Dummerstorf, which promotes application-oriented farm animal research. The project was approved as part of the Eureka Eurostars network program and started on June 1, 2024. The network program promotes cross-border innovation projects and is supported and funded by the BMBF in Germany and Innosuisse in Switzerland. Eurostars is part of the European Partnership for Innovative SMEs. The partnership is co-financed by the European Union via Horizon Europe.

The aim of the project is to select and breed pigs with optimized phosphorus utilization and at the same time increased bone stability. The latter is made possible by our non-invasive POROUS 3D ultrasound method, which ensures the precise measurement of bone density and stability. The identification of relevant genetic markers forms the basis for a new advanced breeding program that aims to achieve significant advances in animal health and the environmental impact of animal husbandry.

The project has many positive implications: Optimized phosphorus utilization can lead to better bone development and stability, which promotes overall animal welfare and growth. The POROUS method provides an important diagnostic basis for assessing bone health. Dr. Julia Eschenbrenner from POROUS comments: "We are very happy to start this project with two strong innovative partners. For POROUS, the project offers the opportunity to expand the scope of our technology. We look forward to making a contribution to animal welfare and environmental protection." Prof. Kay Raum's imaging, simulation and stimulation group at Charité Universitätsmedizin Berlin is also involved in carrying out microstructural analyses and numerical sound propagation simulations in the bone. The approach to improving pig health also effectively addresses the problem of leg weakness in fast-growing animals in modern housing systems.

In addition, more efficient phosphorus utilization reduces phosphorus excretion via manure and thus the environmental impact of animal husbandry. This underlines that nutrient efficiency, environmental protection and sustainable agricultural practices are linked. By focusing on improving phosphorus utilization, we are working towards more environmentally friendly and sustainable food production.

Furthermore, improved phosphorus utilization reduces the need for phosphorus additives in the feed, which lowers feed costs and thus increases the profitability of production. Dr. Martin Scheeder (SUISAG) explains that "sustainable animal husbandry therefore also makes a lot of economic sense." Dr. Reyer (FBN) adds that the Eureka project "strengthens animal health and the use of resources, reduces the environmental impact and is ethically relevant. This holistic approach sets new standards in pig farming for healthier animals and more sustainability!" Responsible, sustainable livestock farming is an indispensable part of today's agriculture and bioeconomy, as well as an important aspect of resource cycles. The

Eurostars project "Improved phosphorus utilization and increased bone stability in pigs" contributes to achieving these goals.