

## INTERNATIONAL COLLABORATION HELPING TO REDUCE ANTIBIOTIC USE IN FARMED ANIMALS

**After more than four years of in-depth research and international collaboration, the European NeoGiANT project, funded under the Horizon 2020 programme, was successfully completed in March 2026. Coordinated by the Spanish Universidad de Santiago de Compostela, the project brought together 19 research organisations, universities, industry partners, and non-profit organisations from eight European countries and Argentina.**

NeoGiANT addressed one of the major global challenges in both human and veterinary medicine — the growing problem of antimicrobial resistance. Inappropriate and excessive use of antibiotics in farmed animals poses a significant risk not only to animal health, but also to human populations. The project therefore sought sustainable solutions based on the principles of the circular economy and the “One Health” concept, which interconnects the health of humans, animals, and the environment.

As suggested by the project title “The power of grape extracts: antimicrobial and antioxidant properties to prevent the use of antibiotics in farmed animals,” the research focused on the use of bioactive compounds derived from grape marc—a by-product of winemaking—and their application in livestock and aquaculture. A key role was played by polyphenols, a heterogeneous group of chemical compounds that includes, for example, tannins, lignans, and flavonoids.

The individual consortium partners contributed to different stages of the project implementation. The technological part focused on developing methods for isolating polyphenols from grape marc, aiming to maximise yield while preserving their biological activity. Their antibacterial and immunomodulatory effects were subsequently evaluated. Significant attention was also paid to safety, in particular monitoring the presence of contaminants such as mycotoxins and pesticides, as well as assessing potential in vitro cytotoxicity.

The practical application of the project results focused on three main areas: the development of therapeutic products for the treatment of bovine mastitis, exudative epidermitis in piglets, and bacterial diseases in fish; the formulation of feed additives, for example for piglets during weaning; and the use of natural compounds as a substitute for antibiotics in semen extenders for artificial insemination.

“NeoGiANT has shown that natural bioactive substances can represent an effective and environmentally friendly alternative to commonly used antibiotics and synthetic preservatives. The project results confirm that modern agriculture can be innovative, cost-effective, and sustainable at the same time,” said Martin Faldyna, a representative of the research team at the VRI.

His colleague Katarína Matiašková added: “In addition to demonstrating a direct antibacterial effect in the treatment of exudative epidermitis in piglets, the results obtained with the feed additive for piglets were also particularly noteworthy, as it significantly influenced the composition of the gut microbiota. The course of post-weaning diarrhoea in these animals was less severe than in the control group.”

Martin Faldyna concluded: “I hope that in the future we will be able to continue our collaboration within this consortium framework.”

For more information about the project, please see <https://www.neogiant.eu/>