

PR1: 18-MONTH ADVANCEMENTS IN REDUCING THE USE OF ANTIBIOTICS IN FARMED ANIMALS BASED ON ANTIMICROBIAL AND ANTIOXIDANT PROPERTIES OF GRAPE EXTRACTS

NeoGiANT is an innovative project that offers new solutions based on the known potent natural antimicrobial and antioxidant activities of grape marc extracts, due to their arsenal of phytochemicals, in particular their phenolic compounds content, to produce enhanced feed, treatment products and natural sperm preservatives for livestock and aquaculture.

The **NeoGiANT** project, coordinated by the University of Santiago de Compostela (Spain), has made significant progress in its initiative aimed at reducing the reliance on antibiotics in animal husbandry. By using low-cost polyphenols extracted from white grape marc biomass the partners of the project will produce natural antimicrobial and antioxidant high value products. **NeoGiANT's** range of products covers animal feed, treatment solutions, and sperm extenders, that will satisfy the actual demand for more affordable natural functional products from alternative sources.

NeoGiANT's approach comprises sustainability at multiple levels: environmental (utilizing agri-food by-products and green technologies), economic (low-cost and zero-waste production process), and social (contributing to the development of local wine producers).

Over the course of the last 18 months, the project has made substantial progress:

A good number of extracts have been developed, optimized, and scaled up with different solvents, including detailed analysis of their polyphenolic profile. After *in vitro* assessment and characterization of antibacterial activity, solid feed ingredients, and a set of prototype formulations were designed, obtained, and tested for the treatment of major diseases in animal production. Also, the use of extracts for sperm preservation has been tested. Scale from lab to pilot-scale production was evaluated showing an improved performance when compared to lab-scale extracts.

In the following months, the work will continue with activities related to *in vivo* experiments in cattle, poultry, swine and aquaculture for assessment of the eubiotic activities of the extract formulations for feeding on small scale. Also, an evaluation of the resistance of the pathogenic strains investigated against the polyphenolic extract *in vitro*, after animal trials, will be done. Pilot experiments have been performed to test the shipment conditions of faecal samples as well as to try different bacterial growth media for the culture-based analysis.

Since the beginning of the project, the consortium has participated in several workshops and events alongside other European projects: 14 events or actions so far while joining 13 clustering activities with other EU projects and launching the first collection of Practical Abstracts in EPI-AGRI format. The search for specific stakeholders has also begun, and the knowledge transfer strategy in Latin America has already been designed. Two scientific publications have been published related to bioactive extraction from grape marc and antibiotic resistance, both available in the project webpage.

In accordance with the EU recommendations and support of Ukrainian researchers, the External Advisory Board composition has changed during the PR1 and two new consultants have joined.

NeoGiANT continues to lead in the development of sustainable, natural-based solutions for animal health and welfare, contributing to the global effort to reduce antibiotic use in farm animals while aligning with eco-friendly and "One Health" principles.

EUROPEAN FUNDING

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101036768. It belongs to the Green Deal, specifically to the call H2020-LC-GD-2020-4. The overall budget of the project is 9,332,246.49 €, with a contribution from the European Commission of 8,374,688.42 €.

PROJECT PARTNERS

8 industrial partners, 10 research institutions & universities and 2 non-profit organisations compose the equilibrated **NeoGiANT** consortium encompassing 8 European countries: Belgium, Czech Republic, Spain, Poland, Hungary, United Kingdom, Portugal and Germany, and 1 non-EU country: Argentina.

The partners are: University of Santiago de Compostela (coordinator) (Spain), Moredun Research Institute (United Kingdom), Institute of Agriculture and Food Biotechnology (Poland), Veterinary Research Institute (Czech Republic), Hungarian University of Agriculture and Life Sciences (Hungary), Freie Universität Berlin (Germany), University of Porto – Science Faculty (Portugal), University of La Laguna (Spain), Spanish Standardisation Body (Spain), University of South Bohemia (Czech Republic), National Scientific and Technical Research Council (Argentina), Agricultural Association of Young Farmers (Spain), Anitom S.L. (Belgium), i-Grape Laboratory S.L. (Spain), Contactica S.L. (Spain), Nutrition Science (Belgium), CZ Vaccines (Spain), LifeBioencapsulation S.L. (Spain), Bianor Biotech (Spain), Magapor S.L. (Spain).

FOR MORE INFORMATION

Marta Lores (Coordinator): marta.lores@usc.es

Ángela Carretero (Communication Manager): angela.carretero@contactica.es

LinkedIn: [NeoGiANT-h2020-project](#)

Twitter: [@NeoGiANT_H2020](#)

Website: <https://www.neogiant.eu/>