NEOGIANT PROJECT ACHIEVES SIGNIFICANT ADVANCES IN ANIMAL HEALTH AND SUSTAINABILITY WITH POLYPHENOLIC EXTRACTS FROM WHITE GRAPES MARC

- *NEOGIANT drives the development of natural antimicrobial and antioxidant formulations to transform agricultural production, reducing reliance on antibiotics and combating antimicrobial resistance.*
- *Promising results in treating diseases such as mastitis and epidermitis and improving animal health, backed by rigorous evaluations.*

Madrid, Spain. 25 Jlu 2024– Over the course of three years, the NeoGiANT project has made great progress in the development and validation of natural formulations with antimicrobial and antioxidant properties derived from white grape marc. The NeoGiANT project, led by the University of Santiago de Compostela (USC), aims to transform the production of cattle, pigs, poultry and aquaculture in aspects of feeding, health and reproduction. Consequently, its main objective is to reduce the dependence on antibiotics in animal and aquaculture production, in order to combat antimicrobial resistance on farms.

Consortium members have developed a wide range of polyphenolic extracts throughout the project through meticulous physicochemical characterization and analytical profiling. These extracts have been shown to have promising potential for antimicrobial applications, particularly in formulations intended to combat bacterial infections in cattle such as mastitis or exudative epidermitis in pigs. Concentrated formulations have been shown to be more effective against target microorganisms, which establishes a solid basis for their use as effective treatments.

USC has made significant progress in the development of specific formulations for treating bovine and swine diseases. The in vitro tests of formulations for treating bovine mastitis have demonstrated powerful antimicrobial properties, which have been enhanced through concentration and ongoing evaluation. The final prototypes for bovine and swine are being evaluated in vivo by the Moredun Research Institute (MRI) and Veterinary Research Institute (VRI), respectively. These achievements represent significant progress towards NeoGiANT's goal of providing tailored treatments for specific diseases, ensuring stability and efficacy through rigorous stability evaluations and characterization studies.

In addition, a comprehensive database has been created to illustrate the efficacy of various extracts and formulations against a large battery of microorganisms with incidence in all animal groups studied (cattle, pigs, poultry and commercial aquaculture species: sea bass, turbot, trout and salmon), providing a fundamental framework for ongoing research.

The NeoGiANT consortium has also developed feeds supplemented with white grape marc extract and assessed their palatability and safety prior to large feeding studies to evaluate health, performance, and microbiological parameters. Preliminary results show beneficial effects on the immune system and gut health, while improvement on zootechnical performance is still under investigation.

Similarly, the NeoGiANT project has also reported promising preliminary results in several species using polyphenolic extracts, paving the way for future studies in animal reproductive biotechnology.

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In addition, the company producing the extracts, i-Grape Laboratory, has increased its production and plans to produce more than 1600 liters of extract by 2024. The implementation of advanced processing units, such as a solvent recovery system and a volatilization unit, demonstrates i-Grape's commitment to sustainable production practices. These improvements not only increase production efficiency, but also ensure safety and quality in the manufacture of extracts.

In conclusion, NeoGiANT continues to make progress in improving the health of dairy cows and piglets with mastitis or epidermitis, and in increasing the understanding of the effects of the extract as supplement in feed or drinking water on zootechnical performance microbiome and immune system in cattle, pigs and poultry and fish. The project is currently in a crucial phase of in vivo studies and statistical analysis of all data obtained. These efforts highlight NeoGiANT's commitment to improving animal health and reproductive technologies through innovative applications of polyphenolic extracts obtained from grape marc, the main waste product of wine production, thus establishing a solid foundation for future advances in agriculture and global sustainability.

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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), Asociación Española de Normalización (Spain), University of South Bohemia (Czech Republic), National Scientific and Technical Research Council (Argentina), Asociación Agraria de Jóvenes Agricultores (Spain), Anitom S.L (Belgium), i-Grape Laboratory S.L. (Spain), Contactica S.L (Spain), Nutrition Science (Belgium), CZ VACCINES (Spain), LIFEBIOENCAPSULATION SL (Spain), BIANOR BIOTECH (Spain), MAGAPOR S.L. (Spain).

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