Eco-Novel Food and Feed: LEAF Research Group IV

LEAF-Linking Landscape, Environment, Agricultur e and Food /DRAT- Departamento dos Recursos Naturai s, Ambiente e Território, Instituto Superior de Agronomia, Universidade de Lisboa, 1349-017 Lisbon, Portugal,

Phone: +351 21 365 3100; Fax: +351 21 365 319 5; <u>leaf@isa.ulisboa.pt;</u>

www.isa.ulisboa.pt/leaf LEAF coordinator- Helena Oliveira, Associate Professor, heloliveira@isa.ulisboa.pt

Research Group IV coordinator- Isabel de Sousa, Associate Professor, isabelsousa@isa.ulisboa.pt

Research Group IV presenter: Luisa Brito

The LEAF Research Center - LINKING LANDSCAPE, E NVIRONMENT, AGRICULTURE AND FOOD - is uniquely positioned to conduct studies on the whole Agro-Food Chain, dealing with main issues on a variety of scales, from cells and microorganisms to landscape design.

LEAF is committed to innovation, particularly for obtaining new economic, ecological and safe products and technologies that can be incorporated into the food supply chain, benefiting partners and society in general. The LEAF Research Center also promotes through six specific Thematic Lines a balanced combination of research on basic disciplines and applied sciences contributing to the high quality and sustainable Agro-Food value chain.

Within LEAF, there are four Research Groups. RESEARCH GROUP IV, ECO-NOVEL FOOD and FEED, is committed to the research and delivery of Novel, Healthier and Safer Food and Feed products with the use of functional compounds from underexplored food materials and by-products from the industry, by using efficient processing. Examples of developed novel food products, aiming a healthy diet required for human nutrition, are: foods enriched with fibers, antioxidants and natural sweeteners; gluten-free foods and structured lipids as human milk fat substitutes.

Our driving force is to translate the scientific knowled ge into industry-based projects, to incorporate innovation by the stakeholders. Four Research Areas compose this Research Group: Physical-Chemical Properties for Food and Feed; Quality & Function; Fo od Health; and Safety and Wine Science and Technology.

The R&D Units merged into LEAF give scientific support to several undergraduate and graduate courses of ISA - Universidade de Lisboa. LEAF research members are deeply involved in Education and Training of students. We regularly host students from other national and international institutions to conduct their Master a nd PhD Thesis Projects within the different Research Groups.



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- Dutra, V., Silva, A. C., Cabrita, P., Peres, C., Malcata, X., Brito, L. (2016). Lactobacillus plantarum LB95 impairs the virulence potential of Gram-positive and Gram-negative food-borne pathogens in HT-29 and Vero cell cultures. Journal of Medical Microbiology, 65(1): 28-35.
- Cabrita, P., Trigo, M.J., Ferreira, R.B., Brito, L. (2015). Differences in the expression of cold stress related genes and in the swarming motility among persistent and sporadic strains of *Listeria monocytogenes. Foodb orne Pathogens and Disease*, 12(7): 576-584.
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- Lourenço, A., de Las Heras, A., Sc ortti, M., Vazquez-Boland, J., Frank, J., Brito, L. (2013). Comparison of *Listeria* monocytogenes exoproteomes from biofilm and planktonic state: Lmo2504, a protein assoc iated with biofilms. *Applied* and Environmental Microbiology, 79(19): 6075-6082.



Luisa Brito, Assistant Profe ssor with habilitation at University of Lisbon, is coordinator of different co urses of the Degree in Biology and of the Master in Food Engineering. She has been supervisor of several undergraduate, master and doctoral theses, responsible for research projects and author or co-author of several national and international publications.

She develops research on p athogenic food-borne bacteria. Some of these studies involve proteomic, transcriptomic and phenotypic analysis of planktonic and biofilm cells. The use of lactic acid bacteria, with probiotic characteris tics, in the attenuation of the virulence of these pathogen s, is another area of research. This area is related with the development of new and healthier food based on the fermentation of underexplored fruit and vegetables materials, like commercial misshapen or u nder-sized items as well as by-products of fruit and vegetable lindustry, with high content in functional compounds.

Email: <u>lbrito@isa.ulisboa.pt</u>