

Plant proteins from agro-industrial residues: insights for food and other applications

Annalisa Tassoni

*Department of Biological, Geological and Environmental Sciences, University of Bologna, Italy
Via Irnerio 42, 40126 Bologna, Italy; annalisa.tassoni2@unibo.it*

Globally, a third of all food produced every year (~2.5 billion tons) is lost or wasted and ends up as co-products, residues and waste along the food chain (from field to fork to waste). On the other hand the projected global demand for proteins and other plant bioactives will be in 2030 well exceeding current production capacities, given the rising world population. Agro-industrial residual biomass, side streams and food production by-products may represent rich sources of valuable plant-based proteins for food, feed and other applications. Yet the potential routes for by-products' full exploitation are still at an early stage.

Based on the results of PROLIFIC and BIORICE European projects, examples will be given in relation to the extraction, assesment of biological activities and potential applications of plant proteins and small molecular weight peptides (<15 kDa) from different plant-based by-products.

UN Sustainable Development Goals (SDGs) n. 12, 13, 15

Short biography

1993: **Degree with honors in Biological Sciences** at the University of Bologna

1993-1997: **PhD in Cellular Biology and Physiology** at the University of Bologna.

1998-1999: **Marie Curie Training Grant** at the Dept. of Biotechnology and Plant Genetics, Horticulture Research International (Wellesbourne - Warwick, UK).

1998-2003: **Post-Doctoral Fellowships** at the University of Bologna.

2004: **Fulbright Research Fellowship**, Dept. of Plant Biology, Cornell University (Ithaca, NY, USA).

2004-2005: **L'Oreal Italia-UNESCO prize and Scholarship for Women and Science**

2005: **Researcher of General Botany** with tenure at the Dept. BES, University of Bologna.

2008: **Visiting researcher** at the Dept. of Plant Biology, Cornell University (Ithaca, NY, USA) with a Marco Polo Scholarship.

2009: **Best Young Researcher** as a member of the Permanent Platform for European Excellence Atomium Culture.

2019-to date: **Associate Professor of General Botany**, Dept. BIGEA, University of Bologna.

2008-to-date: **Head of the Research Group of Plant Biotechnology**, Laboratory of Biology and Biotechnology of Plants and Algae, Dept. BIGEA, University of Bologna.

2008 to-date: Supervisor of numerous Bachelor's, Master's, and Doctorate theses.

Actually lecturer of Plant Biology and Botany courses for 1st Cycle students

2017: National Scientific Abilitation for Full Professor.

Author of over 90 publications peer reviewed international papers and book chapters

Main international projects coordination and participation

2013-2015: **Coordinator of the European project FP7-Capacities BIORICE** "BIOTEchnology for the recovery of valuable peptides from industrial RICE by-products and production of added value ingredients for nutraceuticals, functional foods and cosmetics"

2016-2020. **Partner of the H2020 project NoAW** "No Agro-Waste: Innovative approaches to turn agricultural waste into ecological and economic assets"

2016-2020: **Partner of the H2020-BBI project AgriMax** "Agri & food waste valorisation co-ops based on flexible multi-feedstocks biorefinery processing technologies for new high added value applications"

2018-2022: **Scientific coordinator of the H2020-BBI project PROLIFIC** "Integrated cascades of processes for the extraction and valorisation of proteins and bioactive molecules from legumes, fungi and coffee agro-industrial side streams"

2022-2026: **partner and WP leader of the Horizon Europe project AGRILoop** "Pushing the frontier of circular agriculture by converting residues into novel economic, social and environmental opportunities"

2023-2026: **partner and WP leader of the H2020-PRIMA project CIPROMED** "Circular and inclusive utilization of alternative proteins in the Mediterranean value chains".