



Interview with the project's partner



LET'S GET TO KNOW CREA (COUNCIL FOR AGRICULTURAL RESEARCH AND ECONOMICS) BETTER!



GABRIELLA DI LENA

Please, describe a short bio of your professional background. Where are you from and what did you study?

I am researcher at the Council for Agricultural Research and Economics (CREA), Research Centre for Food and Nutrition (AN), in Rome. I graduated in Biological Sciences at the University La Sapienza in Rome and started my research activity studying in Italian and foreign laboratories the biotransformation of agri-food by-products by white-rot fungi, a topic still of large interest nowadays in a circular economy context. After postgraduation in Food Science and Technology at the University La Sapienza, I worked for more than 20 years at CREA-AN (until 2013 named National Research Institute for Food and Nutrition), at projects on food quality. More recently, in the prospect of future increasing global needs of sustainable food productions, I expanded my research activity with projects on novel and sustainable sources of nutrients and bioactive molecules. For this reason the EXCornsEED Project is a stimulating experience and a challenging step of my career.

Could you give us a hint what your organization is about and what is your connection with the research topics from the project?

CREA, the Council for Agricultural Research and Economics, is a public research organization entirely dedicated to the agri-food sector. It counts 12 Research Centres all over Italy that, with a multidisciplinary approach, take on the great challenges of this century regarding agricultural, forestry and fisheries productive systems. The production of healthy and safe food, meeting the nutritional needs of a growing world population and the utilization of biomass and wastes to produce energy and materials in a sustainable way are among CREA's missions.

The Research Centre for Food and Nutrition, where I am working, carries out studies on technological and nutritional valorization of agri-food products with particular focus on quality, functionality and food sustainability as well as studies on human nutrition, dietary surveys and educational campaigns. The Centre issues periodically the Italian Food Composition Tables and the Dietary Guidelines for Italians. In particular, the Research Group on Food Quality and Nutraceuticals participating to the EXCornsEED Project has specific expertise on the evaluation of the nutritional quality of food products and valorization of agri-food by-products and other sustainable biomass as sources of nutrients and bioactive compounds.

In this sense the goals of the EXCornsEED project are in tight connections with CREA's mission.

Could you clarify what is the role of CREA in EXCornsEED project?

CREA's role in the EXCornsEED project is to support any step of project implementation where a chemical characterization of the materials, from the side streams to the raw extracts and purified fractions obtained by technological partners, is needed. A detailed knowledge of the chemical profile of sidestreams and of purification fractions at laboratory, intermediate and pilot level, with particular regards to bioactive molecules, are important steps towards the identification of adequate valorization strategies. In the central and final part of the project we also collaborate with food companies part of the consortium at the formulation and chemical and nutritional evaluation of food products enriched with ingredients obtained by means of EXCornsEED's processes. Dissemination through scientific articles and congress participation are also part of our tasks.

Have you published any scientific article in the frame of the EXCornsEED project? If yes, could you tell us something about them?

We have published three papers in the frame of the EXCornsEED project until now. In these papers we report results of the activities conducted on the chemical characterization of the side streams object of the project: corn bioethanol sidestreams and rapeseed meal. These papers, contributed also by ENVIRAL and ICECHIM partners, highlight the potentialities of these side streams for valorization strategies that, with a circular economy approach, may lead to the creation of new cross-sector interconnections and new bio-based value chains.

Di Lena, G.; Ondrejčíková, P.; Sanchez Del Pulgar, J.; Cyprichová, V.; Ježovič, T.; Lucarini, M.; Lombardi Boccia, G.; Ferrari Nicoli, S.; Gabrielli, P.; Aguzzi, A.; Casini, I.; Caproni, R. 2020. Towards a Valorization of Corn Bioethanol Side Streams: Chemical Characterization of Post Fermentation Corn Oil and Thin Stillage. **Molecules**, 25 (15), 3549. DOI: 10.3390/molecules25153549.

Free text available at: <https://www.mdpi.com/1420-3049/25/15/3549>

Di Lena, G.; Sanchez Del Pulgar, J.; Lombardi-Boccia, G.; Casini, I.; Ferrari Nicoli, S. 2020. Corn Bioethanol Side Streams: A Potential Sustainable Source of Fat-Soluble Bioactive Molecules for High-Value Applications. **Foods**, 9 (12), art. no. 1788. DOI: 10.3390/foods9121788.

Free text available at: [Foods | Free Full-Text | Corn Bioethanol Side Streams: A Potential Sustainable Source of Fat-Soluble Bioactive Molecules for High-Value Applications \(mdpi.com\)](#)

Di Lena, G.; Sanchez del Pulgar, J.; Lucarini, M.; Durazzo, A.; Ondrejčíková, P.; Oancea, F.; Frincu, R.-M.; Aguzzi, A.; Ferrari Nicoli, S.; Casini, I.; Gabrielli, P.; Caproni, R.; Červeň, I.; Lombardi-Boccia, B. 2021. Valorization Potentials of Rapeseed Meal in a Biorefinery Perspective: Focus on Nutritional and Bioactive Components. **Molecules**, 26 (22), 6787.

Free text available at: <https://www.mdpi.com/1420-3049/26/22/6787>

Is CREA participating in others related EU-funded projects?

Yes, as a big research organization CREA is involved and leads several EU-funded projects (www.crea.gov.it).

Are other researchers participating to the EXCornsEED Project?

Certainly, this is a team work of the Research Group on Food Quality and Nutraceuticals of the Food and Nutrition Research Centre. The group is composed of about 10 people with different expertise, researchers and technicians. My colleagues researchers will now tell you something about them.



MASSIMO LUCARINI

Please, describe your professional background and research interest

I was awarded a master Degree in Industrial Chemistry "cum laude" at the University of Rome "La Sapienza", Italy (1992) and a PhD in Chemistry (University of Rome "La Sapienza"). I am working as researcher at CREA – Research Centre for Food and Nutrition. My research activity is mainly aimed at the evaluation of nutrient content, molecules with biological and anti-nutrient activity in foods and diets, studies of stability to technological treatments of food products using specific process markers. Particular interest is addressed to the evaluation of the nutritional quality of foods, the bioavailability of nutrients and bioactive components and their interaction with the food matrix (using in vitro models and cellular models), and to applications in the nutraceutical field; recent attention in the exploitation of waste from the agri-food industry, with a view to sustainable agri-food production. An integral part of my research is linked to institutional activity, including: Food Composition Tables, Dietary Guidelines for Healthy Eating, evaluation of fraud risk in the agri-food system. In relation to the production system, the effects of technological treatments on molecules of nutritional interest are also evaluated. I am also interested in using natural substances with strong antioxidant properties to improve the shelf-life of food products. My research activity is also aimed at the development of new analytical methods, the exchange of scientific information and the acquisition of new skills both at national and international level, through training courses, participation in congresses and seminars. The dissemination activity is carried out through the production of scientific articles, interviews released in national journals and broadcasting systems, creation of web pages, participation in congresses, educational and informative activities.





ALESSANDRA DURAZZO

Please, describe your professional background and research interest

I was awarded a Master's degree in Chemistry and Pharmaceutical Technology cum laude in 2003, a PhD in Horticulture in 2010. Since 2005, I am researcher at the CREA-Research Centre for Food and Nutrition. The core of my research is the study of chemical, nutritional and bioactive components of food, with particular regard to the wide spectrum of substances classes and their nutraceutical features. For several years, I have been involved in national and international research projects on evaluation of several factors (agronomic practices, processing, etc.) that affect food quality, the levels of bioactive molecules and the total antioxidant properties, as well as on their possible impact on the biological role played by bioactive components in human physiology. Particular attention is given to the study of alternative sources of nutraceutical compounds such as agro-food waste and the application of nanotechnologies on pharmaceutical and nutraceutical compounds. My research activities are addressed also towards the development, management and updating of Bioactive Compounds, Nutraceuticals and Dietary Supplements databases; particular attention is given towards the harmonization of analytical procedures and classification and codification of food supplements.



GINEVRA LOMBARDI-BOCCIA

Please, describe your professional background and research interest

I graduated in Biological Science at “Sapienza” University of Rome. I am Senior Researcher at the Food Science Laboratories of CREA-Research Center for Food and Nutrition (formerly INN-National Institute of Nutrition). I am co-author of more than 120 international peer-reviewed papers. I have experience as a Scientific Coordinator and co-leader of Research projects aimed at assessing the Nutritional Quality of food and diets and at the Sustainability and Innovation in food production. My research activity is mainly aimed to evaluate the nutritional quality of foods from different value chains studying their profile in nutrients and bioactive molecules and the role of plant secondary metabolites in food quality and their health promoting properties. Studies are also addressed at assessing the nutritional adequacy of the *Italian total diet* evaluating the daily intake of nutrients and bioactive molecules using population study approaches. *Current research activities* are aimed at recovering and valorizing value-added bioactive compounds (carotenoids, polyphenols, omega3 fatty acids, protein) from agro-industrial waste, by innovative and green extraction technologies, to develop products for food, nutraceutical and cosmeceutical sectors.

KEEP INFORMED

If you want to learn more about the EXCornsEED project or get in touch with one of the EXCornsEED partners, please visit the EXCornsEED website or follow the project on Twitter and LinkedIn.

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