UNIONE EUROPEA
Fondo Sociale Europeo

Ministero dell'Università e della Ricerca

PON RICERCA E INNOVAZIONE 2014 - 2020

UNIVERSITÀ DEGLI STUDI DI UDINE
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TABLE 2 – PhD Programme in FOOD AND HUMAN HEALTH

THE PhD PROGRAMME	
Administrative location	University of Udine - Department of Agricultural, Food, Environmental and Animal Sciences (DI4A) – via delle Scienze n. 206, 33100 Udine, ITALY (tel. +39 0432 558600)
Associated location	-
Location for training, teaching and research activity	Teaching and other training activities will take place primarily at the administrative programme location or in other locations of the University of Udine. The research program will be mainly developed, with reference to the assigned scholarship, at one of these locations: administrative location, enterprise.
Coordinator	Prof. Walter Baratta (walter.baratta@uniud.it)
Programme duration	3 years
Curriculum	-
Programme website	https://www.uniud.it/it/ateneo-uniud/ateneo-uniud-organizzazione/dipartimenti/di4a/didattica/Dottorato%20in%20Salute%20Umana/PhD%20School%20food%20and%20human%20health

ADMISSION REQUIREMENTS	
Required degree	Italian Laurea (before DM 509/99) or Italian Laurea Specialistica/Magistrale (ex DM 509/1999 and DM 270/04). Foreign degrees and titles: refer to art. 3 and 4 of the Call.
Knowledge of the following foreign language	English

DOCUMENTS AND QUALIFICATIONS TO BE ATTACHED TO THE APPLICATION FOR ADMISSION	
Compulsory documents (art. 5 of the Call)	1. Certification or self-certification (refer to art. 5 paragraph 5 of the Call) of the academic title needed for admission to the PhD programme and list of the exams (with grades) passed during the Italian first level (bachelor) and the Laurea Specialistica/Magistrale programmes, or during the Italian programmes before D.M. 509/99 or during the foreign academic programmes; 2. Curriculum vitae et studiorum, dated and signed; 3. Copy of a valid identity document (citizens of countries not belonging to the European Union a copy of a valid passport, comprehensive of the pages containing the holder's photo, personal details, passport number, date and place of issue, date of expiry); 4. A research project, dated and signed, developed in accordance with the description of the research topic of interest, which highlights the contribution that the applicant can offer to the development of the same topic (approximate limit 10,000 characters, spaces included, in English language).
Optional documents (art. 5 of the Call)	1. Master thesis ("Tesi di laurea") associated to the degree/title providing access to the PhD programme. Applicants who are not graduated on the expiration date of this Call can submit an extended abstract in place of the complete thesis, in Italian or English language signed by themselves and by their thesis Supervisor (approximate limit: 25,000 characters, spaces included); 2. Publications (max 2); 3. Letters of reference (max 2), from university professors, scientific researchers or other experts in the field (art. 6 of the Call).

SELECTION COMMITTEE	
Appointed members	Maria Cristina Nicoli – Full Professor – University of Udine Giuseppe Comi – Full Professor – University of Udine Lara Manzocco – Assiociate Professor – University of Udine
Substitute members	Carlo Ennio Michele Pucillo – Full Professor – University of Udine Michela Maifredi – Assistant Professor – University of Udine

ADMISSION

GENERAL COMPETITION (art. 8 of the Call for Applications)

	Positions available: 4					
Detailed description	***N.***	***Funding***	***Annual gross amount***	***Period abroad***	***Period in enterprise (indentified by the Univ. of Udine)***	***Research Topic***
Positions WITH SCHOLARSHIP: 4	**1**	National Operational Program (PON) Research and Innovation 2014-2020	€ 15.343,28	max 6 months optional	min 6 - max 12 months mandatory	1.1 Green Topic "Plant proteins for ready-to-drink beverages: technological

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	Positions available: 4					
		"Education and research for recovery – REACT-EU" (M.D. 1061/2021) and University of Udine				functionality, nutritional profile, sensory properties, and consumer acceptability" (PON RI 2014/2020 Axis IV Action IV.5)
	1	National Operational Program (PON) Research and Innovation 2014-2020 "Education and research for recovery – REACT-EU" (M.D. 1061/2021) and University of Udine	€ 15.343,28	-	min 6 - max 12 months mandatory	1.2 Green Topic "Application of an eco-sustainable technology: use of direct or photodynamic UV LED light for microbial decontamination processes in the food industry" (PON RI 2014/2020 Axis IV Action IV.5)
	1	National Operational Program (PON) Research and Innovation 2014-2020 "Education and research for recovery – REACT-EU" (M.D. 1061/2021) and University of Udine	€ 15.343,28	max 6 months optional	min 6 - max 12 months mandatory	1.3 Green Topic "Sustainable innovation for improving the quality of meat products in the Green Dean Era" (PON RI 2014/2020 Axis IV Action IV.5)
	1	National Operational Program (PON) Research and Innovation 2014-2020 "Education and research for recovery – REACT-EU" (M.D. 1061/2021) and University of Udine	€ 15.343,28	max 6 months optional	min 6 - max 12 months mandatory	1.4 Green Topic "Food and food bioactives fighting chronic inflammation" (PON RI 2014/2020 Axis IV Action IV.5)

Competition procedure and test schedule			
Evaluation of qualifications and oral examination. For the evaluation of applicants' attitude for scientific research and their their knowledge to develop the topic of interest, the Selection Committee can attribute up to 100 points to each applicant: max 30 points to the qualifications and max 70 points to the oral examination. Applicant is admitted to the interview if his/her qualifications receive at least 21 points. The oral examination is passed with at least 49 points. The applicant is eligible to the PhD programme if he/she passes the oral examination. Only for eligible applicants, the points attained in in the interview will be added to the points of the qualifications. Scholarships are assigned according to the provisions of art. 10 of the Call. **DATE FOR THE PUBLICATION OF THE ADMITTED APPLICANTS TO THE INTERVIEW: within November 5, 2021** **DATE FOR THE PUBLICATION OF THE FINAL RANKING LIST: within November 11, 2021**			
Foreign language that can be used for examination	Italian or English		
Evaluation Criteria of qualifications *During the preliminary meeting the Selection Committee may establish sub-criteria for the evaluation*	Curriculum vitae et studiorum		*10*
	Research project		*14*
	Scientific publications		*2*
	Thesis/Abstract		*2*
	Letters of reference		*2*
Oral examination	Part of the oral examination will be in English.		
Calendar of the oral examination	**Date**	**November 8, 2021**	
	Time	2:30 pm	
	How to conduct the examination	The oral examination will be held online (MS Teams)	
	Based on the number of applicants, the oral examination may take place in more than one day. Applicants must exhibit a valid ID.		

Research Topics Description
Research Topic 1.1: Plant proteins for ready-to-drink beverages: technological functionality, nutritional profile, sensory properties, and consumer acceptability The research targets the identification of alternative plant protein sources to be used in the beverage sector, by filling the knowledge gap about technological, nutritional, safety and environmental aspects as well as about their sensory properties, which currently represent the most important issue limiting their acceptability and wide diffusion on the market. The research will be organized in the following steps: 1. Development of a plant protein database (e.g. source, availability, possibility of extraction from food waste streams, cost, sustainability, composition, functional and sensory properties).

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2. Protein extraction from the most promising plant protein sources identified in phase 1.
3. Use of novel technologies to improve functional and nutritional properties of the selected proteins.
4. Process development for the preparation of beverages containing the selected plant proteins.
5. Study of environmental sustainability and consumer acceptability of the developed beverages.

Research Topic 1.2: Application of an eco-sustainable technology: use of direct or photodynamic UV LED light for microbial decontamination processes in the food industry

An alternative to chemical disinfectants for microbiological control in the food processing and storage environment can be provided by the using a technology that uses UV and / or visible LED light irradiation.

Ultraviolet light effectively reduces the microbial population in which direct exposure occurs, but recent studies suggest that visible light of suitable wavelength has similar effects. This technology will be studied against pathogenic or spoilage microorganisms of food interest to understand the light sensitivity of the single species.

In addition to the antimicrobial effect, LED technology combined with a selective use of wavelengths and exposure, has shown positive effects on maintaining food preservation, paving the way for new areas of application.

This research will concern the development of active systems with UV (or visible) LED technology based on specialized and optimized combinations for wavelength and operating conditions, to be applied for microbial disinfection treatments on surfaces in contact with food or on the food itself for the prolongation of the food shelf life.

These systems can be combined with photo-activated materials, able to guarantee a higher level of hygiene of air, surfaces, and food products.

The materials developed should meet the requirements of high antibacterial efficiency, biocompatibility, adequate lifetime as well as possess the technological characteristics necessary to be easily inserted and used inside household appliances or other devices in which contact with food is possible.

This research aims to develop the application of UV (or visible) LED light and photoactivable materials with antibacterial activity with low environmental impact to be used in household equipment or systems in which is necessary to control the bacterial contamination and in particular with the aim of better food preservation.

Research topic 1.3: Sustainable innovation for improving the quality of meat products in the Green Dean Era

The climate change neutrality and the sustainable development require a ground-breaking in food system organization, promoting healthy and environmentally friendly conditions. Cured meat products, more than other preparations, require radical changes. The project aims at promoting the shift towards meat product resilient systems, mindful of the inter relations between human and ecosystem health, supply chains, sustainability and food waste reduction. In particular, different aspects can be taken into consideration: the use of strains with bioprotective and probiotic properties to developed sustainable biotechnological strategies for the replacement or reduction of harmful additives in cured meat products; built a predictive model and define biomarkers to ensure authenticity and sustainability of innovative meat products; defined the connections between the functional properties of innovative products and the regulation on novel foods, also considering the aspects of labeling, including the rules for the use of nutrition and health claims.

Research topic 1.4: Food and food bioactives fighting chronic inflammation

The project aims to study the anti-inflammation effect of different fruit and vegetable derivatives. It is a matter of fact that technological interventions applied in fruit and vegetable processing can affect bioactive bioaccessibility and bioavailability. To this purpose, special attention to raw materials with high content of polyphenols and fiber will be paid. In addition, a wide number of technological interventions will be considered. The final aim of this study is to better understand the role of food processing in the fate and bio-accessibility of bioactives, which can exert a specific role against inflammation. This body of information will allow to design foods and nutraceuticals with tailored health promoting properties. The project requires a multidisciplinary approach able to integrate and merge knowledge ranging from food science and technology and immunology.