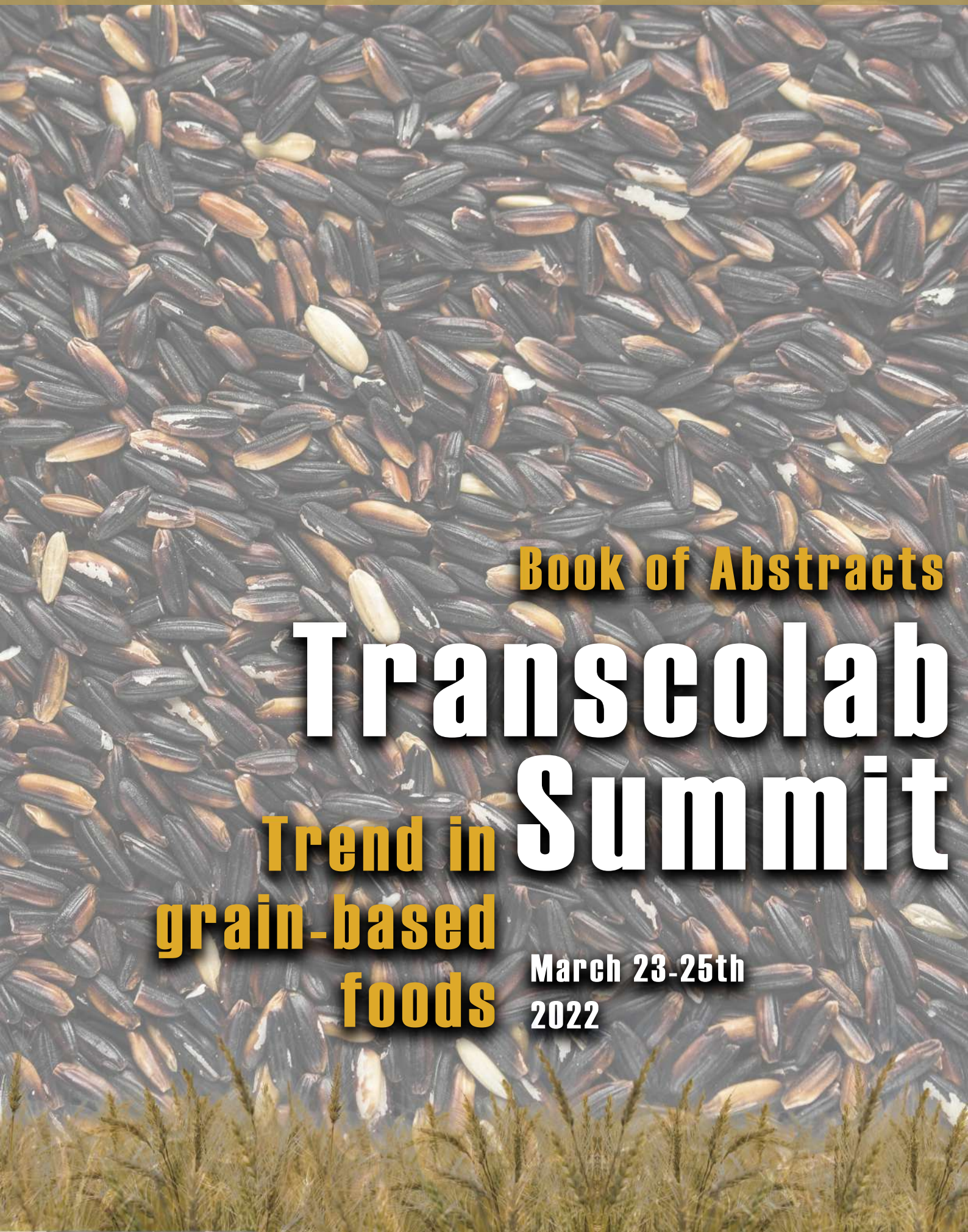

Book of Abstracts

Transcolab Summit

Trend in grain-based foods

March 23-25th 2022

Title

Trends in grain-based foods

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1° Trends in grain-based foods

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About

TRANSCOLAB is a European project that brings together universities, research centres, foundations, and companies from Castilla y León and Northern Portugal. This project intends to strengthen the connection between research institutions and companies, identifying the challenges and needs of the cereal industry and the existing scientific-technological capacities of the participating entities. It also aims to generate novel products, promote knowledge and innovation transfer, and develop a series of actions to promote innovative products and processes in the cereal sector, particularly in bakery and pastry.

Therefore, and because the project is coming to an end, the TRANSCOLAB partners organised an international congress, bringing together researchers and professionals to share innovative ideas in this field. The congress is divided into four different topics:

1. Past as key to the future (ancient grains, wholemeal products, and sourdoughs)
2. New Ingredients in grain-based products (Pseudocereals, pulses, and new flour sources)
3. Novel technologies, processes, and products
4. Sustainability and Circular economy.

The TRANSCOLAB SUMMIT team would like to thank you for your application to the congress, contributing to its success, with more than 170 registrations. The submitted works were received, processed, divided into two main categories (Oral Communications and Posters), and later distributed according to the aforementioned topics. In total, 34 Oral and 42 Panel Communications will be presented, joined by three Technical Communications and six plenary lectures. Moreover, the TRANSCOLAB SUMMIT will start with a Traditional and Innovative Bakery workshop, with 45 participants. On the SUMMIT's last day, we will have a discussion panel regarding "Myths and truths regarding cereal consumption". Once again, we would like to thank you all for attending our congress, and we hope to see you again at future research events.

The TRANSCOLAB SUMMIT team.

Trends in grain-based foods

SUSTAINABLE INGREDIENTS, PROCESSES AND PRODUCTS

MARCH 25TH, MORNING

9:00-12:30 SECTION 3: NOVEL TECHNOLOGIES, PROCESSES, AND PRODUCTS
CHAIRS: MARIA INÊS DIAS AND CARLA PEREIRA

09:00-9:30 PLENARY SESSION 5: MARIO MARTÍNEZ

9:30-11:10 ORAL SESSION 5

9:30-9:40 RICARDO N. PEREIRA
"ELECTRIC FIELDS - A PROMISING TECHNOLOGY TOWARDS SUSTAINABLE PROCESSING OF GRAIN-BASED FOODS"

9:40-9:50 ERIKA N. VEGA
"EXTRUDED FORMULATIONS BASED ON RICE AND CHICKPEA: DIETARY FIBER AND OLIGOSACCHARIDES"

9:50-10:00 LIEGE PASCOALINO
"BREAD FREEZING AS A NEW ALTERNATIVE TO CONSUMPTION"

10:00-10:10 CAROLA CAPPA
"STUDY OF THE TURBO-TECHNOLOGY POTENTIAL IN THE PRODUCTION OF GLUTEN-FREE INGREDIENTS AND POTATO-BASED PASTA"

10:10-10:20 ÁNGEL L. GUTIÉRREZ
"APPLICATION OF SHORT-TIME HIGH HYDROSTATIC PRESSURE TREATMENTS TO WHOLE BUCKWHEAT GRAINS TO MODULATE THE FUNCTIONAL PROPERTIES OF THE RESULTING FLOURS"

10:20-10:30 ANTONIO J. VELA
"PHYSICAL MODIFICATION OF RICE FLOUR VIA ULTRASONICATION. INFLUENCE OF TREATMENT TIME AND TEMPERATURE"

10:30-10:40 NATALIA P. VIDAL
"IMPROVING THE NUTRITIONAL VALUE OF COLD-PRESSED OILSEED CAKES THROUGH EXTRUSION COOKING"

10:40-10:50 COSTANZA CECCANTI
"ENRICHMENT OF FRESH EGG PASTA WITH ANTIOXIDANT EXTRACTS OBTAINED FROM WILD ITALIAN PLANTAGO CORONOPUS L. AND CHICORIUM INTYBUS L. AND QUALITY CHARACTERISATION OF THE FRESH END PRODUCT"

10:50-11:00 ROSALIA LOPEZ-RUIZ
"NEW INGREDIENTS IN THE PREPARATION OF COOKIES TO MITIGATE ACRYLAMIDE CONTENT"

11:00-11:10 MIRIAM HERNANDEZ-JIMENEZ
"APPLICABILITY OF NEAR INFRARED SPECTROSCOPY ON WHEAT FLOUR SUPPLEMENTED WITH LENTIL FLOUR"

11:10-11:30 COFFEE BREAK AND POSTER SESSION

Poster Communication

Past as key to the future (ancient grains, wholemeal products, and sourdoughs)

New Ingredients in grain-based products (Pseudocereals, pulses, and new flour sources)

EVALUATION OF THE POTENTIAL OF MEDICINAL PLANT EXTRACTS FOR THE DEVELOPMENT OF NEW BAKERY PRODUCTS

Marta Barral-Martinez[1], Lucia Cassani[1,2], Maria Carpena[1], Paula Garcia-Oliveira[1,2], Aurora Silva[1,3], Fatima Barroso[3], Tiane C. Finimundy[2], Jesus Simal-Gandara[1], Miguel A. Prieto[1,2,*] and Lillian Barros [2*]

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Medicinal plants have been traditionally used throughout time as therapeutic treatments. These plants possess different compounds with antioxidant, anti-inflammatory and antimicrobial properties of industrial interest. In particular, the plants *Achillea millefolium* L., *Arnica montana* L., *Calendula of icinalis* L., *Chamaemelum nobile* L. All. and *Taraxacum of icinale* F.H. Wigg. belonging to the Asteraceae family, have shown relevant applications including food preparation, dyes, cosmetics, and traditional remedies, although their consumption is currently decreasing [1]. However, the extracts of this type of plants are mostly applied by the food industry as preservatives, due to their antioxidant and antimicrobial properties that prevent food spoilage and microbial growth, preserving the organoleptic characteristics of various products, such as meat, dairy products, or bakery products [2]. The aim of this study was to develop new ingredients derived from these plants, which may be of interest to the food industry, more specifically in bakery. For this, a study of their main bioactivities of interest such as antioxidant and antimicrobial capacity was carried out. The results obtained for antioxidant activity, through the thiobarbituric acid reactive substances (TBARS) assay, indicated that the extracts of *A. millefolium* showed exceptional activity, with an EC_{50} value of 0.013 mg/mL whereas the extracts of *A. montana*, *C. nobile* and *C. of icinalis* showed similar EC_{50} values (0.2, 0.2 and 0.25 mg/mL, respectively). On the other hand, *A. montana* extract showed the highest antibacterial and antifungal effects, with minimum bactericidal and fungicidal concentrations ranging from 0.25-0.5 mg/mL and 0.5-1 mg/mL, respectively. Overall, this study provides scientific evidence for the evaluation of the potential of medicinal plant extracts for the development of new bakery products.

References

[1] Garcia-Oliveira, P.; Fraga-Corral, M.; Pereira, A.G.; Lourenço-Lopes, C.; Jimenez-Lopez, C.; Prieto,M.A.; Simal-Gandara, J.*Food Chem.* **2020**, *330*.

[2] Dupas, C.; Métoyer, B.; El Hatmi, H.; Adt, I.; Mahgoub, S.A.; Dumas, E. *Food Res. Int.* **2020**, *130*.

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