INTRODUCTION: Acrylamide (AA) is a chemical compound that forms in carbohydrate-rich foods when they are cooked at high temperatures and low humidity, raising serious public health concerns. AA has been classified as a Group 2A carcinogen by the International Agency for Research on Cancer.

OBJECTIVES: The present study aims to validate a method to determine AA in cereals and cereal-based products and investigate its presence in different food items.

METHODOLOGY: Ultra-performance liquid chromatography coupled to mass spectrometry (UPLC-MS/MS) was used to detect and quantify AA.

RESULTS: The method performance was validated using international external quality control tests such as proficiency tests (FAPAS) and a certified reference material (ERM-BD272). Parameters such as linearity, limit of detection (LD), limit of quantification (LQ), precision, accuracy and uncertainty were evaluated. The LD and LQ were 0.40 µg/L and 1.22 µg/L, respectively, in compliance with Regulation (EU) 2017/2158. The calibration curve showed linearity with an R2 greater than 0.995. The method showed suitable recovery rates (92%-105%) and precision (RSD ≤ 13%), satisfactory participation in proficiency tests (Z-score: 0.69 for Crispbread and -0.93 for Biscuit) and compliant results for the ERM-BD272, demonstrating that the method is fit for purpose. The method was applied to commercially available products, including Maria biscuits, wheat bread, corn flakes, and baby biscuits collected in Lisbon, Portugal. All AA results of the evaluated samples are below the values legislated by the Commission Regulation (EU) 2017/2158.

CONCLUSIONS: Although the AA levels found comply with the limits established by the European Union, continuous monitoring of its occurrence is necessary, considering the remaining uncertainties about the long-term effects of this contaminant and the constant evolution of science, the change in products available on the market and the change in consumption patterns.

PO60. TOTAL PHENOLIC COMPOUNDS AND ANTIOXIDANT ACTIVITY OF OLIVE OILS FROM RIO GRANDE DO SUL, BRAZIL

Geisa Siqueira[1,2]; Geraldo Soares[3]; Joana C Lobo[1]; Edgar Pinto[4]; Olga Viegas[1,2]

[1] Faculty of Nutrition and Food Sciences, University of Porto

[2] LAQV/REQUIMTE, Associated Laboratory for Green Chemistry (LAQV) of the Network of Chemistry and Technology (REQUIMTE)

[3] Department of Botany, Institute of Biosciences, Federal University of Rio Grande do Sul

[4] REQUIMTE/LAQV, ESS, Polytechnic of Porto

INTRODUCTION: Extra-virgin olive oil (EVOO) is a staple in global cuisine and a key component of the Mediterranean diet, valued for its health benefits associated with oleic acid and antioxidants. Brazil relies heavily on imported olive oil, facing high prices, potential adulteration, and limited data on local oil quality. Olive oil production is expanding in southern Brazil, particularly in Rio Grande do Sul (RGS), but comprehensive characterization remains limited.

OBJECTIVES: This study aimed to assess the total phenolic content (TPC), antioxidant capacity, and oxidative stability of EVOO from RGS (n=6) and compare them with the most commercially available EVOO in Brazil, of the Iberian-origin (n=3).

METHODOLOGY: Nine different EVOOs were purchased in triplicate from markets in RGS. Standard quality parameters (free acidity, peroxide value, K232, K270, and ΔK) were determined according to Regulation (EU) No 2022/2105. TPC (mg gallic acid equivalents - GAE/kg) and antioxidant activity (DPPH inhibition, %) were measured by spectrophotometry. Oxidative stability was assessed using the Rancimat method.

RESULTS: All samples met EU quality standards. Statistically significant differences were observed for TPC, antioxidant activity, and oxidative stability, with Iberian EVOOs presenting lower values—TPC (76±15 *vs*. 147±24 mg GAE/kg), antioxidant activity (58.5±8.9 *vs*. 80.6±7.1 % [DPPH]), and oxidative stability (5.3±1.27 *vs*. 11.2±3.18 hours) for Iberian and RGS EVOOs, respectively. Several factors may contribute to the observed results, particularly storage time and conditions. Phenolic compounds degrade over time during storage. Given that the Iberian EVOOs were stored for a longer period (due to transport associated with the importation process), this may have led to a reduction in phenolic content and oxidative stability.

CONCLUSIONS: These findings highlight the importance of chemical characterization and quality assessment of EVOOs available on the market. Further studies are needed to explore the impact of storage and processing conditions on EVOO composition.

PO61. AVALIAÇÃO DO CUMPRIMENTO DOS REQUISITOS LEGAIS EM SUPLEMENTOS ALIMENTARES COM ARROZ VERMELHO FERMENTADO

Cíntia Antunes[1]; Ana Sofia Mil-Homens[2]; João PM Lima[3-5]

[1] Escola Superior de Tecnologia e Saúde de Coimbra

[2] Autoridade de Segurança Alimentar e Económica

[3] H&TRC-Health & Technology Research Center, Coimbra Health School, Polytechnic University of Coimbra

[4] GreenUPorto – Sustainable Agrifood Production Research Centre

[5] SUScita – Research Group on Sustainability, Cities and Urban Intelligence

INTRODUÇÃO: A crescente procura e oferta de suplementos alimentares (SA), tornou impreterível a existência de uma harmonização na regulamentação, por parte da Comissão e do Parlamento Europeu e das Autoridades dos Estados-Membros. O arroz vermelho fermentado é um nutracêutico com propriedades hipolipídicas, frequentemente fabricado em Portugal.

OBJETIVOS: O objetivo principal foi analisar se os rótulos dos SA correspondiam aos requisitos estabelecidos pelo Decreto-Lei n.º 136/2005 e suas alterações, bem como outros regulamentos pertinentes.

METODOLOGIA: Análise de rótulos de SA recolhidos em diversos pontos de venda na cidade de Viseu, incluindo supermercados e parafarmácias, durante os meses de maio e junho de 2024. Os critérios de inclusão foram os SA conterem arroz Vermelho fermentado, e os critérios de exclusão foram produtos fora da área geográfica do estudo ou que não contêm o referido ingrediente.

RESULTADOS: Considerando os critérios definidos, foram considerados para a amostra 28 SA, recolhidos em 7 operadores económicos. Em geral foram encontrados 57,1% SA com inconformidades, sendo que a maior prevalência foi encontrada em supermercados, seguido de estabelecimentos especializados na venda de SA, parafarmácias e ervanárias. Destas inconformidades incluem-se 12,5% sobre a ausência de advertências obrigatórias sobre a ingestão diária máxima de monacolinas de arroz vermelho fermentado e 93,75% sobre a presença de imagens e alegações que podem induzir o consumidor a acreditar em benefícios de saúde não comprovados.

CONCLUSÕES: Face ao número de inconformidades observadas relativamente à legislação específica de SA conclui-se que há uma necessidade urgente de maior fiscalização e harmonização da regulamentação para garantir que os consumidores recebem informações precisas e seguras sobre os SA que consomem.

PO62. THE ASSOCIATION OF ANDROID/GYNOID FAT RATIO ESTIMATED BY DUAL-ENERGY X-RAY ABSORPTIOMETRY WITH GAIT SPEED IN ADULTS – THE NUTRIFUNCTION STUDY

António Magalhães[1]; Micaela Cunha-Rodrigues[1,2]; Rui Valdiviesso[1,3]; Rita S Guerra[2,4,5]; Joana Mendes[4,5]; Ana Sofia Sousa[4-6]; Ana Rita Sousa-Santos[7-9]; Cláudia Silva[4,5]; Alejandro Santos[1]; Nuno Borges[1,3]; Teresa F Amaral[1,2]

[1] Faculty of Nutrition and Food Sciences, University of Porto

[2] INEGI – Institute of Science and Innovation in Mechanical and Industrial Engineering, LAETA - Associate Laboratory for Energy, Transports and Aerospace