The fact that gastrointestinal tract represents the first barrier found by ingested compounds, together with the realistic possibilities of their co-occurrence and reported toxicological interactions, demonstrates that interactions data should be considered to avoid biases in precise risk analysis.

PO22. ISOLATION OF SEVERAL BACTERIAL SPECIES FROM SEAFOOD AND THEIR INHIBITION BY DIFFERENT NATURAL EDIBLE COMPOUNDS

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Seafood is a great source of nutrients, indispensable to a healthy diet, ranging from proteins and fatty acids to vitamins and minerals. Due to their nutritional characteristics and composition, seafood products are highly perishable foods. The application of non-toxic, natural, and edible preservatives as a coating to extend the shelf life and inhibit bacterial proliferation of several foods has been a hot topic. This work aimed to perform the microbiological characterization of squids and shrimps' skewers during their shelf-life and to evaluate the susceptibility of isolated microorganisms to several natural edible compounds. One hundred bacterial isolates were identified through rRNA 16s sequencing resulting in the detection of several *Enterobacteriaceae* (*Serratia spp., Klebsiella spp., Hafnia spp., Rahnella spp.*, among others), *Pseudomonas spp*. and *Lactic Acid Bacteria (Lactococcus spp., Leuconostoc spp*. and *Weissella spp*.). No Escherichia coli or Listeria monocytogenes were detected on the analyzed samples. The antibacterial activity of Carvacrol, Olive Leaf Extract, Limonene, different Chitosans, Ethanolic Propolis Extracts, and Citrox® was evaluated by the agar diffusion method against the 100 isolates identified. Minimum inhibitory concentration was determined only for Citrox® (1.69% v/v) since only this compound could inhibit all the isolates. Although preliminary, this study showed evidence that Citrox® has the potential to be used as a natural preservative in these seafood products, improving food safety while reducing waste. However, further studies are required, such as the development of a Citrox®-based coating and its application on this matrix to validate its antimicrobial effect.

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PO23. DESENVOLVIMENTO GASTRONÓMICO DE BARRA DE CEREAIS E ABÓBORA: AVALIAÇÃO NUTRICIONAL E SENSORIAL

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INTRODUÇÃO: A utilização de produtos de baixo valor comercial e a sua valorização enquadra-se nos objetivos do desenvolvimento sustentável 2030 e é considerado uma das novas tendências da alimentação e agricultura para 2050 pela Organização para a Agricultura e Alimentação. A abóbora é um produto endógeno de baixo valor comercial e as barras de cereais são utilizadas como snack, fundamentalmente em refeições intermédias.

OBJETIVOS: Desenvolver uma barra de cereais utilizando abóbora e farinha de sementes de abóbora, realizar a sua avaliação nutricional e análise sensorial em estudantes de nutrição e de hotelaria.

METODOLOGIA: Foi desenvolvida uma barra de cereais à base de abóbora desidratada, aveia, mel, amêndoa, arroz tufado, água, nozes, arandos desidratados, farinha de semente de abóbora, açúcar mascavado e essência de baunilha. Foi realizada a avaliação nutricional da barra de cereais desenvolvida com recurso aos rótulos das matérias primas e tabela de composição dos alimentos portugueses. O produto final foi apreciado por um grupo de estudantes de nutrição e outro de hotelaria, tendo os mesmos classificado a barra quanto à aparência, cor, sabor, textura e cheiro, através de uma escala de likert de 1 a 5.

RESULTADOS: A barra de cereais apresenta um valor energético por 100g de 435kcal, 18,5g de proteína, 36,1g de hidratos de carbono, 15,5g dos quais açucares e 22,6g de lípidos. Quanto à análise sensorial, verificou-se uma avaliação positiva para todos os parâmetros avaliados, sendo esta superior por parte dos estudantes de nutrição.

CONCLUSÕES: A barra de cereais e abóbora desenvolvida parece ser uma alternativa interessante a outras barras de cereais disponíveis no mercado particularmente junto de públicos com um maior interesse pela alimentação saudável.

PO24. IMPACT OF PULSES CONSUMPTION ON HUMAN URINE METABOLOME: RESULTS OF AN 8-WEEK FOOD INTERVENTION

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INTRODUCTION: The current global trend to adopt more plant-based diets is expected to increase pulses intake in the near future, given their potential as eco-friendly nutrient-rich alternatives to animal-based protein food sources. Still, more comprehensive data, as well as higher quality food intervention trials are needed in order to fully understand the health benefits of such dietary shift. In this context, the use of beyond standard nutritional research tools, such as 1H Nuclear Magnetic Resonance (NMR) spectroscopy applied to biologic samples could be useful.

OBJECTIVES: Study the use of an untargeted 1H NMR metabolomic approach to investigate the urine metabolic fingerprint of an 8-week pulse-based food intervention.

METHODOLOGY: Non-vegetarian free-living healthy young adults were asked to replace a typical omnivorous lunch meal with a vegetarian pulse-based meal, 5 times per week, for 8 consecutive weeks. Weekly urine samples, including weeks 0 (baseline) and 8 were collected and analyzed using 1H NMR combined with multi- and univariate statistical analysis.

RESULTS: A total of 162 urine samples, from a group of 18 individuals (17 women and 1 man; 18-45 years) were collected and analyzed using 1H NMR. Around 52 different metabolites were detected. Results show high interindividual variability at baseline and across weeks. However, compared to baseline, mean variations could be observed for 7 main metabolite groups, with higher expression at week 7: amino acids, protein-related compounds, ketone bodies, TCA cycle intermediates, metabolites related to purines metabolism, intake biomarkers and others. Overall, metabolite variations found can be associated with biochemical pathways liked to (i) energy metabolism; (ii) gut microbiota activity; (iii) pulse intake biomarkers; and (iv) plant-based diet intake biomarkers.

CONCLUSIONS: 1H NMR was able to detect urinary metabolite variations caused by a vegetarian pulse-based food intervention providing relevant scientific insights. Further assessment of the biologic relevance of these results is needed.