

INTRODUCTION: Non-communicable diseases are a public health concern that results in several deaths each year. Diseases like, diabetes, hypertension, obesity, among others, continue to increase, being the majority of the cases associated with behavioural factors, such as poor dietary habits.

OBJECTIVES: This study aimed to evaluate the nutritional characteristics of sweet pastry products, available in the Portuguese market in 2023, through the comparison of the nutritional information with two front-of-pack schemes (traffic light and Nutri-Score) and with the recommendations from the Integrated Strategy for the Promotion of Healthy Eating (EIPAS).

METHODOLOGY: Information for 52 pastry products was collected, between January and February 2023, from the websites of supermarket chains available in Portugal. The data set included information concerning: ingredients list, traffic light, Nutri-Score, and nutrition declaration, among others. Products were grouped into 8 categories and some had subcategories.

RESULTS: None of the studied products were in line with EIPAS recommendations in terms of sugar and salt contents. According to Nutri-Score, 98% of the products were classified as C (8%), D (57%) or E (33%). For salt, 96% of the products are classified as amber (medium content) and none of the products as red (high content). However, more than half of the products were classified as red (high content) for fat (56%), saturated fatty acids (63%) and sugars (62%).

CONCLUSIONS: A considerable number of the studied sweet pastry products still have high amounts of saturated fatty acids and sugars. Therefore, it is of utmost importance to reformulate these products, not only envisaging to decrease its content on the harmful nutrients, but also increasing the content of nutrients linked with health benefits, like dietary fibre and unsaturated fatty acids.

PO71. FATTY ACIDS PROFILE OF MUFFINS AVAILABLE IN THE PORTUGUESE MARKET

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INTRODUCTION: Muffins are baked goods usually manufactured with flour, sugar and eggs, among other ingredients like fat, leavening agents and/or flavours. These are sweet bakery products highly appreciated due to its organoleptic features, but also for their convenience. However, besides some industry efforts to increase their nutritional quality, they still be perceived as a source of fat and sugar.

OBJECTIVES: Evaluation of the fatty acids profile of muffins from bakery stores and supermarkets, to deepen knowledge on the current situation of the Portuguese market and to identify future needs.

METHODOLOGY: Between June and August 2022, several types of muffins from the major supermarkets and bakery stores available in Lisbon were collected. In total, 8 composite samples of muffins were analysed. Fatty acids profile was determined by a transesterification method with a cold methanol solution of potassium hydroxide followed by gas chromatography analysis coupled to flame ionization detection.

RESULTS: Polyunsaturated fatty acids were the major ones for 50% of the analysed samples. Saturated fatty acids content varied between 9.5 and 67% of total fatty acids. Only 1 sample have monounsaturated fatty acids as the most abundant (63%). There were no considerable differences found with respect to the fatty acids profile among the muffins of bakery stores and supermarket chains.

CONCLUSIONS: Our findings suggest that there are still available muffins with high amounts of saturated fat, whose high intake can be a concern for public health. Moreover, the fact that muffins have a nutrition declaration (prepacked foods from supermarkets) does not means that these are healthier than the ones from bakery stores (without nutrition declaration). Therefore, it is important to continue to investigate these products, to contribute with scientific evidence that can be further used to enhance their nutritional quality, for example by

replacing the fat source.

PO72. DIFFERENCES BETWEEN HOUSEHOLD FOOD INSECURITY AND ASSOCIATED FACTORS IN PORTUGUESE CHILDREN

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INTRODUCTION: Household food insecurity can lead to negative health outcomes as is highly associated with poor food safety and nutritional deficiencies.

OBJECTIVES: This study aimed to evaluate household food insecurity in Portuguese children, according to their age and nutritional profile.

METHODOLOGY: A cross-sectional study (from November 2016 to April 2017) included 4737 Portuguese children with a mean age of 6.5±1.8 years from the three largest districts (Porto, Coimbra and Lisboa). The Food Insecurity Scale adapted and validated for the Portuguese population was applied to parents, among other instruments. The children's socio-economic status was categorized into low (<9 years of education), middle (10-12 years) and high socio-economic status (if the father had a university degree). Children were divided as preschool aged (3-6 yrs.) and school-aged (7-11 yrs.). Overweight and obesity were defined according to the WHO criteria (BMI z-score was >1 and >2, respectively). The significance level was 5% (P<0.05).

RESULTS: From the 4737 children, 13.2% were experiencing household food insecurity, with a higher prevalence in children with overweight/obesity (15.3%) than in children with normal weight (12.6%, P=0.02). Living in the centre of Portugal, i.e., in Coimbra was associated with increased risk of experiencing household food insecurity (OR=1.9; 95% CI 1.1-3.3) and children with a working father were less likely to experience HFI. In the adjusted model, the household food insecurity experienced by school children with overweight/obesity was still associated with father's low education level and having a working mother as in the crude model; the latter increased in 2.4 times the odds of HFI (95% CI 1.3-4.5).

CONCLUSIONS: Children with overweight/obesity are vulnerable to experience household food insecurity. Further investigation across different geographical areas of Portugal is needed.

PO73. FRONT-OF-PACK NUTRITIONAL LABELLING ON BEVERAGES: A CONSUMER PERSPECTIVE ANALYSIS

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INTRODUCTION: Flavoured bottled water market is rising. These products are part of the non-alcoholic beverages group, the second responsible for free sugars intake, associated with a higher incidence of chronic diseases. The demand has been shown for a harmonized front-of-pack nutritional labelling (FOP-NL) system because its application may increase the consumer understanding of nutritional information on labels. Therefore it is relevant to study the impact of its application on the flavoured bottled water category.

OBJECTIVES: Study consumer perception of FOP-NL applied to flavoured bottled water.

METHODOLOGY: A cross-sectional observational design study was applied to a convenience sample. An online direct administration questionnaire was assigned with questions related to flavoured bottled water consumption habits, the FOP-NL systems, nutri-score (NS) and nutritional traffic light label (NTLL), and the sociodemographic data.

RESULTS: The sample consisted of 580 individuals, most of them female (77.8%), between 18 and 50 years old (83.6%), and higher educated (69.1%). About 86.6% of respondents considered consulting labels on beverages as relevant as other food products and 58.6% of respondents was chosen the NTLL as the best FOP-NL for beverages. This choice happens in greater proportion among individuals who consume flavored bottled water (59.4% vs 40.6%; $p=0.029$) and 68.9% of the respondents agree (partially/totally) that would stop consuming a beverage they usually consume when negatively classified by FOP-NL.

CONCLUSIONS: This study revealed the importance of beverage labelling and the preference for NTLL. There was a growing need to invest in reformulation, avoiding the trend, reported in this study, of leaving the consumption of beverages negatively classified by FOP-NL and ensuring the maintenance of consumer trust.

PO74. PASTA FORMULATED WITH A NOVEL INGREDIENT - COFFEE SILVERSKIN - IMPACT ON THE LIPID PROFILE

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Population growth and climate changes create several problems concerning food security. Therefore, it is urgent to find new ingredients to formulate novel foodstuffs which are more sustainable and present lower carbon footprints. Agri-food by-products are rich sources of bioactive compounds that could be used for this purpose. A main example is coffee silverskin. Silverskin is a thin adhering layer which is released from coffee beans during roasting. Large amounts of this waste are discarded every year, so finding new food applications for it could minimize its negative environmental impact.

The aim of this work was to add value to coffee silverskin by incorporating it into pasta. Two percentages were tested (7.5% and 10%) by partially substituting the wheat flour. However, the latter percentage was rejected due to granular texture and unpleasant flavour in a preliminary taste test. A control pasta was formulated only with wheat flour. Uncooked and cooked pasta samples were lyophilized prior to analysis.

The lipid fraction of silverskin and pasta samples included the determination of the total fat content (Soxhlet method), vitamin E (HPLC-DAD-FLD) and fatty acids (GC-FID) profiles.

Regarding the results, silverskin presented mostly α -tocopherol (25 mg/kg) and palmitic acid (25%). The incorporation of silverskin into pasta led to an increase in the total vitamin E content in comparison to the control pasta. However, part of the vitamin E content was lost during cooking. By-product incorporation also resulted in different fatty acid profiles. The sensory analysis revealed that consumers detected a slight astringency in the coffee silverskin pasta, which was not very favourable. Based on this, several strategies can be adopted in future studies, to optimize the formulation, such as a reduction on the silverskin percentage (e.g., 5%) or even the inclusion of spices to cloak that taste and increase consumer acceptability.

Overall, silverskin incorporation in pasta seems to be an asset for the food industry since it provides a novel ingredient which valorisation is sustainable and contributes to food security.

PO75. FAT COMPOSITION OF LOW-CARB BREADS FORMULATED WITH BY-PRODUCTS (AQUAFABA, PRICKLY-PEAR CLADODES AND COFFEE SILVERSKIN)

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In Portugal, according to the Portuguese Cardiology Foundation, nearly half of the population is overweight and around one million adults are obese. Several diets are now trending aiming to help in the weight loss process such as the low-carb diet characterized by a reduced intake of carbohydrates. Moreover, the number of consumers who follow plant-based food patterns is increasing. The same is happening with gluten-free diets. New food ingredients are also needed to contribute for food security purposes. By-products have high potential to be incorporated into foodstuffs due to their rich composition in bioactives.

Having all of this in consideration, this work aimed to produce novel gluten-free low-carb breads, using by-products as ingredients to answer to both sustainability and food security issues. The original recipe included eggs but to make it plant-based they were changed for aquafaba (chickpea cooking water) – bread A. Bread B was produced with aquafaba and prickly-pear cladodes, while bread C contained aquafaba, cladodes and coffee silverskin (coffee roasting industry by-product).

The breads' fat composition was analysed by determining the total fat content (Soxhlet method), fatty acids (GC-FID), and vitamin E (HPLC-DAD-FLD) profiles. The highest total fat content was obtained in bread A (34%), followed by bread B (32%) and lastly bread C (31%). The major fatty acids in all breads were oleic acid (34-36%), linoleic acid (18-20%), and lauric acid (19-21% provided by coconut oil). The major vitamin E isomer was γ -tocopherol (31-47 mg/kg), followed by α -tocopherol (25-55 mg/kg). The incorporation of cladodes and silverskin resulted in a decrease of the total vitamin E because they substituted other ingredients such as sunflower seeds.

In conclusion, these low-carb bread recipes have high potential because they are a more sustainable and economic recipe due to the incorporation of low-cost ingredients (agri-food by-products). Moreover, the use of these ingredients also contributes to circular economy and food security.

PO76. FONTES ALIMENTARES SUSTENTÁVEIS: PERFIL PROTEICO DO CHÍCHARO (*LATHYRUS SATIVUS* L.)

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INTRODUÇÃO: O chícharo (*Lathyrus sativus* L.) é uma leguminosa ainda pouco estudada, mas que apresenta inúmeros benefícios nutricionais, para a saúde e para o ambiente.

Considerando a importância da transformação para sistemas alimentares mais sustentáveis, torna-se emergente identificar os benefícios nutricionais de fontes alimentares alternativas que potenciem um consumo sustentável.

OBJETIVOS: Quantificar a proteína e caracterizar o perfil de aminoácidos de chícharo produzido em Portugal.

METODOLOGIA: O chícharo foi analisado em cru e após 12 horas de demolha,