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1. ÍNDICE

E. EDITORIAL

Nesta edição da Acta Portuguesa de Nutrição damos à estampa o conjunto dos resumos das comunicações livres (orais e posters) e das palestras que constituíram o XVII Congresso de Nutrição e Alimentação da Associação Portuguesa de Nutrição, assim como do I Congresso Internacional de Nutrição e Alimentação.

Cerca de 1750 congressistas, mais de 70 oradores, dos quais 11 internacionais, mais de 30 comunicações científicas são números que demonstram o crescimento contínuo deste evento.

Este ano, sob o tema da Nutrição na Sociedade da Informação, foram debatidos inúmeros temas de grande interesse, nomeadamente no que diz respeito ao papel da Nutrição enquanto ciência e à responsabilidade dos profissionais que a praticam. Para este debate, o Congresso contou com especialistas nacionais e internacionais, que propiciaram excelente e participada discussão, fazendo assim cumprir o principal desígnio deste Congresso. Não menos importante, realçamos o fulgor demonstrado pelas inúmeras comunicações livres apresentadas, que espelham bem o desenvolvimento científico nesta área, desenvolvimento este que começa também a ter repercussões importantes ao nível das políticas de saúde em Portugal.

Esta edição da Acta Portuguesa de Nutrição traz também o final de uma época na sua ainda curta existência. Este é o último número com edição em papel, passando doravante a sua edição a ser totalmente eletrónica, mantendo a periodicidade de quatro números anuais. Pretende assim a Associação Portuguesa de Nutrição tornar a revista ainda mais moderna, em linha com a tendência de muitas publicações científicas atuais, mais ágil na interação com os seus autores e leitores. Fica também a Acta mais amiga do ambiente e com uma superior coerência entre todos os seus números. Estamos certos que o manuseio do papel, com a carga histórica que ainda lhe associamos, fará falta a alguns durante algum tempo. Mas o que não se pretende que mude é o nosso renovado compromisso com a ciência e com o rigor de que se reveste o seu processo de publicação. Essa é, cremos, a marca que mais indelevelmente perdurará no tempo, assim possamos continuar a contar quer com a excelência da atual coordenação editorial quer com a imprescindível colaboração de todos os que generosamente contribuem para as revisões dos artigos.

Nuno Borges
Diretor da Acta Portuguesa de Nutrição

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INTRODUCTION: The development of efficient collection and management systems of occurrence data on food and feed are important to monitor its safety, to support dietary exposure and risk assessments and to strengthen knowledge acquisition and dissemination, contributing to a higher level of protection of consumer's health. In this context, Portugal created the National Data Management System (NDMS) "*Alimentos* PT•ON•DATA" in order to gather, harmonize and electronically submit to the European Food Safety Authority (EFSA) data on contaminants, residues and food additives.

OBJECTIVES: To explore and further develop the NDMS for supporting national and international scientific risk assessments and planning more assertive monitoring activities and facilitate its execution.

METHODOLOGY: The NDMS was created and is being upgraded by a consortium coordinated by National Institute of Health Doutor Ricardo Jorge (INSA) and General Directorate of Food and Veterinary Affairs (DGAV). The system implemented the Standard Sample Description (SSD and SSD2) data models - and catalogues, the EFSA Guidance on Data Exchange (GDE) and the Food Classification System (FoodEx).

RESULTS: Currently Portugal has a system with functionalities to collect/upload, map, validate and store data from the official control of the food chain and to create XML files for electronic transmission. NDMS supports scientific assessments and data reports and enables future real-time execution of control plans.

From 2009 to 2016, 256 819 results were reported to EFSA using the NDMS, 66 764 of which in SSD format, mainly chemical contaminants, and 190 055 according to SSD2, primarily pesticide residues.

CONCLUSIONS: The NDMS allows a continuous semi-automated compilation, harmonization, utilization and submission of national occurrence data, contributing to the optimization and accuracy of the control plans and of the monitoring and risk assessment activities, aiming to enhance food and feed safety.

PO90. ACORN: A DEVALUED FOOD WITH HEALTH BENEFITS

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INTRODUCTION: Acorns are the fruits of *Quercus* trees. Acorn products have been playing a relevant role in the human diet across centuries, from ancient Native American Indians to modern Mediterranean countries. In some regions of Portugal, one of the most common uses of the acorn is the reduction of the fruit to flour to replace the conventional flour for bread production.

OBJECTIVES: This work aims to review the nutritional composition of the acorn and its nutraceutical properties with health benefits and to highlight the importance of promotion on acorn products.

METHODOLOGY: A bibliographic review was carried out in databases: Pubmed, ScienceDirect, Elsevier in Portuguese and English, using the words: acorn, acorn flour, acorn and nutraceutical, acorn and health. This research has been limited to the last 18 years.

RESULTS: From the information collected we can affirm that acorn flour has a high starch content (86-92%), high protein content (4-9%) and low fat (2-8%). The flour is also gluten-free. Acorns have significant amounts of vitamins A and E, iron minerals and unsaturated fatty acids. Furthermore, acorns are rich in antioxidants, tannins and phenolic compounds and have been reported to have a positive impact on controlling essential enzymes of type 2 diabetes disease, Alzheimer's disease and some types of cancer.

CONCLUSIONS: The incorporation of products based on acorn fruits, such as acorn flour, may be an excellent choice to improve the nutritional profile of some foods and gluten-free foods. Thus, an incentive to its consumption appears relevant assuming its gastronomic adequacy and its setting in the eating habits of the Portuguese.

PO91. SEA URCHIN ROE FROM PORTUGUESE NORTH COAST: MINERAL CONTENT AND CONTRIBUTION FOR DIETARY REFERENCE INTAKE

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INTRODUCTION: Portugal has a tradition on seafood consumption, and the demand towards sea urchin roe has recently increased, since is considered a delicacy, like caviar, and a valuable product. This species is mainly harvested from September to May in north coast.

OBJECTIVES: This work aimed to characterize the contents of some minerals in sea urchin roe harvested in three north coast areas and to evaluate its contribution to a dietary recommended intake (DRI).

METHODOLOGY: Commercial size (≥ 50 mm) sea urchin samplings were carried out at the start, middle and end of harvest season in three areas. Roe were removed according to the usual practice, pooled and freeze-dried. Minerals were quantified by using an energy dispersive X-ray fluorescence method.

RESULTS: In average the abundance (mg 100 g^{-1} wet weight) was Cl (206.5) >K (325.8) > Ca (20.6) > Br (3.3) > Zn (3.1) > Fe (1.5) > Sr (0.3) > Rb (0.1) > Cu (0.1). Season and harvested area had a significant effect ($p<0.05$) in all elements concentrations, except for Br, which content was affected only by season. Depending on season and harvesting area, the consumption of 50 g of roe may contribute up to 2, 4, 5, 14, 26 and 32 % of daily DRI for Ca, Cu, K, Cl, Fe and Zn, respectively.

CONCLUSIONS: This delicacy can constitute a good source of macro and microelements.

ACKNOWLEDGMENTS: The authors want to thank to INSEAFOOD colleagues who carried out the samplings. This work was supported by the research line INSEAFOOD within the Structured Program of R&D&I INNOVMAR – Innovation and Sustainability in the Management and Exploitation of Marine Resources (Reference NORTE-01-145-FEDER-000035) funded by the Northern Regional Operational Programme (NORTE2020) through the European Regional Development Fund (ERDF).

PO92. AVALIAÇÃO DA (*IN*)SATISFAÇÃO COM A IMAGEM CORPORAL EM ESTUDANTES DO ENSINO SECUNDÁRIO

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INTRODUÇÃO: A imagem corporal é um conceito transversal a toda humanidade, muito ligada à identidade pessoal. A Organização Mundial da Saúde (2000) tem vindo a denunciar desequilíbrios do comportamento alimentar muito conectados com a (*in*)satisfação com a sua imagem corporal.

OBJETIVOS: Avaliar o grau de (*in*)satisfação com a imagem corporal em estudantes do ensino secundário.

METODOLOGIA: Estudo observacional, analítico e transversal. Recorreu-se a uma amostra não probabilística constituída por 184 alunos, a frequentar o ensino secundário, aos quais foi aplicado um questionário que incluía o de Silhuetas de Collins (Collins, 1991; Simões, 2014).

RESULTADOS: Dos 184 alunos, 45,1% eram do sexo masculino e 54,9% do sexo feminino. Os rapazes apresentavam em média 16,6 anos +/- 1,09 anos e as raparigas tinham idade média de 16,62 +/- 0,88 anos. Através da análise do Índice de Massa Corporal (IMC), constatou-se que 81,93% dos rapazes e 85,15% das raparigas se encontravam numa situação de eutrofia. A aplicação do Questionário de Silhuetas de Collins revelou que 38% dos alunos em estudo estava satisfeito com a sua imagem corporal. Verificou-se ainda que a satisfação com a imagem corporal não estava significativamente associada ao sexo nem ao ano de escolaridade dos alunos, no entanto encontrava-se estatisticamente associada ao IMC (p= 0,006).

CONCLUSÕES: Os resultados revelaram valores elevados de insatisfação com a imagem corporal. Considerando que associada a esta insatisfação surgem habitualmente atitudes alimentares inadequadas, é fundamental a sua deteção precoce e uma intervenção multidisciplinar assertiva, de forma a promover uma alimentação saudável nas populações mais jovens.

PO93. ACORN: A FRUIT WITH APPLICATIONS IN THE FOOD INDUSTRY

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INTRODUCTION: Acorns are rich in starch, essential amino acids, fatty acids, vitamins, minerals and polyphenols. As a gluten-free product, acorn floor is raising interest by celiac consumers as a substitute for other gluten-rich flours. Its characteristic composition is responsible for some nutraceutical proprieties related to diabetes, Alzheimer and cancer diseases. However, in Portugal, it is estimated that about 55% of acorns are wasted, which amounts to around 13.3 million euros.

OBJECTIVES: To provide an overview of the applications of the functional properties of acorn and by-products of interest to the food industry, as well as highlight some of the current uses of the acorn in it.

METHODOLOGY: A bibliographic review was carried out in databases: Pubmed, ScienceDirect, Elsevier, Scientific Repositories of Open Access of Portugal in Portuguese and English, using the words: acorn, acorn flour, acorn and nutraceutical, acorn and food industry, acorn applications. Another source of information was used like some companies websites. This research has been limited to the year 2000 to 2018.

RESULTS: Isolated acorn polysaccharide have shown a prebiotic potential, good Lipid Absorption Capacity, Water Holding Capacity and Antioxidant Activity. Acorn has been reported as a substantial source of nutrients for the food industry, mainly in the form of spread creams, alcoholic drinks, hot beverages, edible oils, bread and traditional pastry products.

CONCLUSIONS: This way, acorns have attractive properties for the food industry, and its incorporation can improve the nutritional and rheological characteristics of some food products. The inclusion of acorns into food products can also be seen as a factor of innovation and competitiveness in the food sector.

PO94. ZOO CHEMICALS INTERACTION WITH PHYSICAL ACTIVITY

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INTRODUCTION: Nowadays, it has been noticed a rising interest in products that have on their constitution components with several benefits towards human health. Functional foods are a perfect example of this products, because not only they play an important role in physiological activity but also represent a basic form of nutrition to our body. There is a type of functional food denominated zoo chemicals, which are foods of animal origin that recently have been associated with potential benefits for the human metabolism, due to their chemical properties.

OBJECTIVES: This study intends to identify the relationship between zoo chemicals and physical performance.

METHODOLOGY: It was conducted a review process, recurring to scientific databases using the terms: "zoo chemicals", "physical exercise", "mitochondrial activity" and "functional foods" and select the most relevant articles found.

RESULTS: Some of the constituents present in zoo chemical products are conjugated linoleic acid (CLA) found in beef and lamb; fatty acids and omega3 founded in fish oils and essential nutrients as L-carnitine, coenzyme Q10, alipoic acid, choline and taurine.

These specific substances have a great influence on the cardiac and mitochondrial activities, being, in this way, important in the physical performance of an athlete. Literature also indicates that exercise makes the body use oxygen more efficiently, increasing exercise tolerance, improving mitochondrial function along with muscle metabolism, volume and performance.

CONCLUSIONS: Even though, there aren´t many articles showing the interaction between zoo chemicals and physical performance, it seems to be observed a positive relation among them.

PO95. MINERALS CONTENT IN FOOD SUPPLEMENTS: LABEL DOSES SURVEY

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INTRODUCTION: Food supplements (FS) are widely consumed by the public, often without the advice of a health professional or follow-up by a nutritionist. Many of these FS have in their composition various minerals. Minerals are quintessential to maintain several biochemical and physiological functions in human body at low concentrations, but excessive intake may lead to adverse/toxic effects.

OBJECTIVES: The aim of this study was to compare daily doses of minerals mentioned in FS labels with the recommended daily allowances (RDA) defined by European Union Directive.

METHODOLOGY: A total of 185 FS sold in Portuguese pharmacies, supermarkets or health shops and on the internet were examined for indicated daily intake and dosage of 14 minerals (Ca, Cl, Cr, Cui, Fe, F, I, K, Mg, Mn, Mo, P, Se and Zn). Selection criteria included: oral solid pharmaceutical forms for adults, containing any of the 14 minerals in its composition, as stated in the label, regardless of the purpose of its use.

RESULTS: Label doses of Cr, Se and Zn were above recommended RDA in more than 50% of the studied FS. Daily doses of Mn, Mo and Cu were ≥ RDA in more than 30% of FS. It is noteworthy that Mn and Mo doses are 10-folds higher than RDA in some products.

CONCLUSIONS: Considering the doses of some minerals far above the recommended RDA, it is pertinent to review the daily doses present in FS to assure the safety of these products. In order to safeguard the health of FS consumers, authors consider that these products should be under the same quality control of drug products.

PO96. *E-BOOK* "CEREAIS INTEGRAIS: INTEGRA-TE NA SAÚDE!": FERRAMENTA *ONLINE* DE SUPORTE À ALIMENTAÇÃO SAUDÁVEL

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