
## 7TH PORTUGUESE YOUNG CHEMISTS MEETING

# BOOK OF ABSTRACTS

**19th – 21st May 2021**

**Bragança – Portugal**

| | |
|---|---|
| **Title** | Livro de Resumos do 7th Portuguese Young Chemists Meeting |
| **Authors** | Maria Inês Dias, Carla Pereira, José Pinela, Bruno Melgar |
| **Support** | Electronics |
| **Support detail** | PDF |
| **Edition** | 1st Edition |
| **Bar Code** |  |
| **Editor** | Sociedade Portuguesa de Química |
| **Country** | Portugal |
| **E-mail** | secretariado@spq.pt |
| **Editor prefix** | 978-989-97667 |

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# PLANT-BASED BEVERAGES AS SOURCES OF NUTRIENTS

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In the last years, consumers have been increasingly searching for healthy and differentiated foodstuffs with health benefits, demanding for innovation and safety in their daily diet. In this sense, vegetable beverages were developed, which in addition to exercising their function of nourishing, are also associated with health benefits, since these beverages have ingredients extracted from vegetables, oilseeds, cereals or pseudo-cereals. Thus, today, there is already a huge variety of plant-based beverages on the market, including soy, rice, corn, peanut, oat, almond, hazelnut and quinoa beverages [1,2]. Several scientific studies have proven the benefits of regular intake of oat beverage, such as lowering cholesterol levels [1]. The present work aims to study two oat-based beverages, recently developed, through the assessment of nutritional and physical-chemical characteristics, in order to be able to be incorporated in a balanced breakfast meal. Frulact group developed two hybrid beverages: 1 – beverage prepared with oats, almond, whey and coffee; 2 – beverage prepared with oats, almond, whey, cocoa, coffee and cinnamon. Both were enriched with potassium iodide, vitamins E, D3 and B9, according to the nutrient reference values (NRV). The nutritional characterization (moisture, fat, fibers, proteins, ash, carbohydrates and energy) was evaluated by the AOAC official procedures, free sugars and tocopherols were determined using liquid chromatography coupled to a refraction index (HPLC-RI) and fluorescence (HPLC-FL) detectors, respectively [3]. Fatty acids were determined by gas chromatography coupled to a flame ionization detector (GC-FID) and organic acids by ultra-fast liquid chromatography coupled to a diode-array detector (UPLC-DAD).

Both beverages presented a high percentage of moisture (around 80%), being the carbohydrates the predominant macronutrients (around 14 g/100 g fresh weight (fw)) followed by proteins (around 4 g/100 g fw). Regarding the other nutrients present in the beverages, higher values of fibers (0.94 g/100 g fw), ash (0.80 g/100 g fw) and lipids (0.92 g/100 g fw) were found in beverage 2, resulting in a higher energetic value (81 kcal/100 g fw). In both beverages, four free sugars (glucose, sucrose, maltose and trehalose) and four organic acids (oxalic, citric, succinic and fumaric acids) were identified, highlighting glucose (beverage 1: 2.6 g/100 g fw and beverage 2: 3.4 g/100 g fw) and succinic acid (beverage 1: 0.53 g/100 g fw and beverage 2: 0.34 g/100 g fw) as being in major contents, respectively. Regarding the lipophilic compounds, γ-tocopherol stands out among the other isoforms of vitamin E (beverage 1: 140 μg/100 g fw and beverage 2: 205 μg/100 g fw). Also, nineteen fatty acids were identified with oleic and linoleic acids being the major compounds (beverage 1: 45 % and 26 % and beverage 2: 42 % and 24 %, respectively).

The results obtained in this study allows to conclude that both beverages are a good source of nutrients and can be incorporated into a-healthy breakfast.

**References:**

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**Acknowledgements**: The authors are grateful to the Foundation for Science and Technology (FCT, Portugal) for financial support by national funds FCT/MCTES to CIMO (UIDB/00690/2020), and F. Fernandes PhD grant (SFRH/BD/145467/2019). L. Barros and A. Fernandes also thank the national funding by FCT, P.I. through the institutional scientific employment program-contract, and through the individual scientific employment program-contract for Sandrina A. Heleno (CEECIND/03040/2017). This work is funded by the European Regional Development Fund (ERDF) through the Competitiveness and Internationalization Operational Program (POCI), within the scope of Project Mobilizador MobFood (POCI-01-0247-FEDER-024524).