

ULST Timisoara Multidisciplinary Conference on Sustainable Development 30-31 May 2024



## NUTRITIONAL EVALUATION OF SOME TYPES OF PRETZELS

Liana Maria Alda, Luisa Denisa Popovici, Despina Maria Bordean, Diana Moigrădean, Laura Rădulescu, Claudia Sîrbulescu, Simion Alda<sup>\*</sup>

University of Life Sciences "King Mihai I" from Timisoara, Romania \*corresponding author: simion\_alda@usvt.ro

**Abstract**: Pretzels are bakery products sprinkled with seeds or just salt on top.

The aim of this study is to evaluate the nutritional value of some different pretzels assortments. In order to achieve the objectives, 10 types of pretzels available on romanian market were purchased. To determine the mineral profile of pretzels samples we used X-Ray Fluorescence (XRF) method. The XRF analysis of the pretzels revealed that minerals contents ranged for potassium between 5306 ppm and 14706 ppm, for calcium between 983 ppm and 5321 ppm, for iron between 200 ppm and 304 ppm, for zinc between 26 ppm and 71 ppm and for copper between 11 ppm and 21 ppm. We can conclude that although they have a high energy value, the pretzels are still a good source of proteins and minerals (potassium, calcium and zinc).

## Introduction

Pretzels are bakery products sprinkled with seeds or just salt on top. The aim of this study is to evaluate the nutritional value of some different pretzels assortments. Material and method In order to achieve the objectives, 10 types of pretzels available on romanian market were purchased: with cheese, with potatoes, with cream and onion, with salt, with sesame, with white wine, with tomatoes and leeks, with red wine, with olives and tomatoes and with butter. Determination of samples mineral profiles was made by X-Ray Fluorescence using Hitachi X-MET8000 portable Spectrometer. The results are 

## Results and discussions

The energy value of the products is high, ranging between 340.9 kcal/100 g and 476 kcal/100 g. The nutritional parameters ranged between the following values: 13-22% lipids, 61-73% carbohydrates, 2.7-5.1% fibers and 5.3-11% proteins. The XRF analysis of the pretzels revealed that minerals contents ranged for potassium between 5306 ppm and 14706 ppm, for calcium between 983 ppm and 5321 ppm, for iron between 200 ppm and 304 ppm, for zinc between 26 ppm and 71 ppm and for copper between 11 ppm and 21 ppm.

## • Conclusions

We can conclude that although they have a high energy value, the pretzels are still a good source of proteins and

ale suii a	goou sour	ce or pr		
minerals (	(potassium,	calcium	and zin	C).

expressed in ppi	n (mg/kg	, ary weight J	•
------------------	----------	----------------	---