

### Introduction

Cheese is one of the most popular fermented dairy foods, with an incredible diversity of varieties, 'Paški sir' cheeses produced for this research (n=18) were divided into three groups: (1) control shapes, textures, and flavors available locally and globally. Almost every country in the world group, cheeses produced with natural commercial rennet (Bioren, Christian Hansen, Denmark), and produces and consumes cheese, as it is a high-quality source of protein, fat and trace elements. commercial dairy cultures (Di Prox, Bioprox, France); (2) group 1, cheeses produced with 'Paški sir' is a Croatian variety of hard, distinctively flavored sheep milk cheese originating from the lyophilized indigenous lamb rennet and microencapsulated dairy cultures; (3) group 2, cheeses Adriatic island of Pag. It is generally regarded as the most famous of all artisan cheeses made in the produced with innovative microcapsules containing indigenous lamb rennet and dairy cultures. The country. A variety of flavour compounds have been identified in extracts of cheese, including acids, cheeses were sampled on the 60th day of the maturation process (n=18) and the volatile profile ketones, aldehydes, esters, sulfur compounds and lactones. The goal of this study was to determine was analyzed. the characteristic volatile compounds found in cheese from the Croatian island of Pag that has a protected designation of origin (PDO).



1 g of sample



# Volatile profile of 'Paški sir' cheese from island Pag

Luna Maslov Bandić<sup>1</sup>, Katarina Sopko Stracenski<sup>1</sup>, Fabijan Oštarić<sup>2</sup>, Nataša Mikulec<sup>2</sup> University of Zagreb, Faculty of Agriculture, <sup>1</sup>Department of Chemistry & <sup>2</sup>Department of Dairy Science, Svetošimunska 25, 10 000 Zagreb



**GC-MS** analyses

SPME extraction: PDMS/DVB/CAR fiber 45 min at 60°C

Volatile profiles of 'Paški sir' cheese

## **Cheese Samples**





Results A 47 volatile compounds, including 13 acids, 14 esters, 6 ketones, 5 alcohols, 4 aldehydes, and 5 miscellaneous chemicals were identified and quantified. Results revealed quantitative variations in various volatile components between the cheeses. Different production technique showed different profiles.

group2

group 1

control



GC-MS analysis (Shimadzu QP2020 NX) Carrier gas: Helium Detector temperature: 200°C Interface temperature: 250°C Column: ZB-WAX (30 m x 0.25x 0.25 um) Oven temperature: 40 °C for 2 min, then 4°C/min to 240 °C