



## Modernising Mediterranean Flatbread

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**W**hat do *focaccia*, *ftira*, and *pita* bread have in common? If delicious or irresistible were some of the words that came into your mind, you're correct. But that's not why UM and a host of other partners are studying it.

Flatbread – one of the first processed foods made by man – has been a staple food in the Mediterranean area for centuries. Its first record dates from a 14,400-year-old hunter-gatherer site in the Black Desert in north-eastern Jordan. Interestingly enough, bread production based on wild cereals may have encouraged hunter-gatherers to cultivate cereals and thus contributed to the agricultural revolution in the Neolithic period.

Flatbread, traditionally made from flour, water, and salt, can be found across the Mediterranean. In Italy (*focaccia*), Malta (*ftira*), Greece (*pita*), Croatia (*lepinja*), Jordan (*taboon*), Portugal (*bolo-do-caco*), and Egypt (*baladi*), this culinary phenomenon reflects the unique bread traditions of each region. However, after all of these years, can these recipes be made healthier?

FLAT-BREAD-MINE has recently received over €2 million of EU funding in a PRIMA – Partnership for Research and Innovation in the Mediterranean Area – call to develop this type of research. The PRIMA programme is an Art.185 initiative supported and funded under Horizon 2020, the European Union's Framework Programme for Research and Innovation. This project, which encompasses several steps of flatbread production including food safety, sustainability, personalisation, and convenience, involves 18 partners from 10 different countries, with INRAE (National Research Institute for Agriculture, Food and the Environment) in Nantes, France serving as the leading institution. Dr Patricia Le Bail is the coordinator of the project. UM is a partner in this project through the participation of Prof. Vasilis Valdramidis, visiting associate professor at

the Department of Food Sciences and Nutrition, Faculty of Health Sciences, and Prof. Luciano Mule Stagno, the Director of the Institute for Sustainable Energy. 'We are combining the skills, knowledge, and expertise of numerous partners to deliver a product that addresses several concerns at the same time,' explains Christopher Magro, one of the Maltese researchers involved in the project.

'The UM focuses on food microbiology and food safety,' says Magro. 'We were responsible for identifying mould and bacterial contaminants present in the flour of every one of the countries participating in the project.' These contaminants can make the food unsafe for the consumer or reduce its shelf-life. 'It's a concern that poses significant challenges, even more so with the problem of climate change,' continues Magro, 'where a large increase of rain and temperature can create perfect conditions for fungi to grow and proliferate (forming mould).' Some moulds can produce harmful and invisible metabolites called mycotoxins that, according to the World Health Organization, harm human health.

Other partners are investing in specific steps of flatbread production, such as milling, baking, or manufacturing. As a consortium, all stakeholders are trying to improve the nutritional quality of the flatbread either by testing alternative ingredients (such as legume flours) or by trying to reduce its glycemic index. Nutritional values ensured, the project also aims to establish the most sustainable production process possible for obtaining safe, highly nutritional food at an affordable price.

Backed by a diverse international consortium, the FLAT-BREAD-MINE project seeks to transform the timeless tradition of Mediterranean flatbreads. Focusing on safety, sustainability, and nutrition, the collaborative efforts aim to forge a healthier, safer, and more delicious future for this ancient culinary staple. 

