

My STSM experience

STSM Applicant: Mishela Temkov, Department of Food Technology and Biotechnology, Faculty of Technology and Metallurgy, University of “Ss. Cyril and Methodius”, Skopje, North Macedonia

Period: 01st February – 29th February 2020

STSM topic: Endogenous enzymatic activity in different types of sourdough: Natural fermentation, backslopping and starter culture initiated sourdough

Host Institution: Puratos Group, Industrialaan 25 Zone Maalbeek, B-1702 Groot – Bijgaarden, Belgium

My STSM within the COST Action Sourdomics 18101 was realized in the Innovation Center in Puratos Group, Brussels, Belgium. It was executed over 1 month starting from February the 01st. On the proposed project, which was supervised by Dr. Fabienne Verte, I was working with a wonderful colleague from Salamanca, Spain, also a STSM applicant- Isabel García Izquierdo.

The purpose of this short term scientific stay was to analyze the enzymatic activities in different types of sourdough, fermented naturally or with different strains of starter culture, at different conditions and to make correlations between the structure and the chemical composition of the dough containing different types of sourdough compared with the blank bread (without sourdough). It is of great importance to explore the insights of the sourdough influence on the dough relaxation and the modification of the soluble and insoluble proteins. To avoid protein enzymatic degradation caused by the strains of the sourdough, researching the conditions where the enzymes are active and make an effect on the structure of the dough is essential. A correlation between the organic acids produced by the sourdough and the organic acids that are in the final product was also part of the aim of the project.

The area of my research is the enzyme kinetics and biological active compounds including proteins and this project was a great opportunity to see how the research is done in an innovation center where the knowledge is directly applied for creation of new products with enhanced functionality. There is no better place to learn new skills and to accumulated knowledge than from well trained, highly

skillful– the employees in this Research and Development Center led by creative minds – the heads of the Research Groups.

The team composed of Elien Verguldt and Ena Surdiacourt was very welcoming and helpful in explanation of the methods and procedures used for the research. Most of the analyses were performed on HPLC, and this experience was helpful to improve my abilities in working with this instrument. But the experience that I am most grateful and that I cannot acquire in any other lab is the mastering of bread making.

Puratos Group has large number of international interns which make the place joyful and interesting. All people that I met during my stay made the experience extraordinary.

Except the working experience, Brussels is a city that has a lot to offer, including: museums and art, culture, great food and unique beer experience. If somebody asks me what I will remember from this city, I would answer “the smell of the city on waffles and chocolate”

In the end, I want to thank the COST Action Sourdomics 18101 for giving me the opportunity to have this tremendous experience. I highly recommend COST short term missions to all researchers who want to develop and gain different skills.

I would like to thank the team of Fabienne Verte that made this experience to happen and also the COST team in my home institution Elena Velickova and Jana Simonovska.

