

STSM Applicant: Sbatie Lama, Swedish university of Agricultural Sciences (SLU), Sweden

Period: 28th Feb – 24th March 2020

STSM topic: Proteomics on gluten protein, wheat flour and products extract

Host Institution: Wageningen UR, Plant Sciences Group, BU Bioscience, Netherlands

I am a PhD student and currently I am on my 2nd year. My PhD project is about studying effect of environmental variability on the composition and quality of wheat proteins with the emphasis on breadmaking quality. I have been using different tools such as SE-HPLC (Size exclusion – high performance liquid chromatography), NIT (near-infrared transmission) and Rheomix to quantify proteins from wheat genotypes grown in different environmental conditions and years. From the beginning of my PhD I was very interested to use tools of proteomics in the project and to gain better understanding in this subject area. This is when a colleague of mine informed me about the STSM calls on proteomics.

My overall purpose in STSM was to learn proteomic analysis of gluten proteins. Proteomics analysis had been done on Liquid Chromatography – Mass spectrometry (LC-MS). During my STSM I have learned preparing samples for LC-MS. I obtained general understanding of LC-MS, data base searching and data analysis using Perseus. I brought few protein samples from Sweden. I learned preparing my samples suitable for LC/MS analysis. More experiments were conducted on protein extractions using 4 different buffers. Proteins were extracted from bread, sourdough and flour samples provided in Wageningen.

I have done my STSM under the supervision of Dr. Twan America at Wageningen UR, Netherlands. Twan has very deep understanding of proteomics and he is a great teacher. It was a great pleasure to work under his supervision and I am looking forward to continue my work with him. All the researchers in Twan's group were very helpful and stuffs were friendly and welcoming. Whenever needed, everyone helped spontaneously. Furthermore, labs in Wageningen are well equipped with all the facilities to conduct all kinds of proteomics works. During my STSM I met Velitchka Gotcheva, another STSM candidate from Bulgaria, who became a very good friend in a short period of time.

Due to corona pandemic I couldn't stay as long as I was planning to stay at Wageningen. However, this short period of time was enough to get an overview of the proteomics world and to plan future work in the project.

I have greatly enjoyed my staying at Wageningen. I lived in Wageningen city center which was 20-25 minutes walking distance from the university area. There was a farmers market on every Wednesday and Saturday in the city center. A lot of fresh vegetables, fishes and cheeses were available in this farmers market. A visit to this market is highly recommended.

I am very thankful to COST Action network (CA18101 SOURDOMICS) for providing this opportunity to work at Wageningen. This mission not only provided me an overview of proteomics and LC/MS but it also gave me opportunity for future collaboration with Dr.

Twan America. I would highly recommend COST Action STSM to all the PhD students and young researchers.

I have attached here few photos of me working in the lab and data analysis room.



