

Agata Michalska

2nd Year of Doctoral School

Discipline: Food technology and human nutrition

As a Doctoral School participant, I had the pleasure of completing an international research internship from March 8, 2025, to April 8, 2025, at the University of South Bohemia in České Budějovice, at the Faculty of Agriculture and Technology, in the Department of Food Biotechnologies and Quality of Agricultural Products, under the supervision of Ing. Jan Bedrníček, Ph.D., a specialist in the analysis of bioactive compounds in food.



The aim of the internship was to develop analytical and research competencies in the use of chromatographic techniques coupled with mass spectrometry, with particular emphasis on sample preparation, optimization of separation conditions, adjustment of detection parameters, and interpretation of obtained results.

During the internship, I carried out the following tasks:

- preparation of research material and optimization of metabolite isolation processes,
- chromatographic analysis of samples (HPLC) along with optimization of analytical methods,
- optimization of detection parameters using mass spectrometry (MS),
- processing and interpretation of the obtained analytical data.





Additionally, I actively participated in seminars, the academic life of the host institution, and research projects conducted by the supervisor's team.

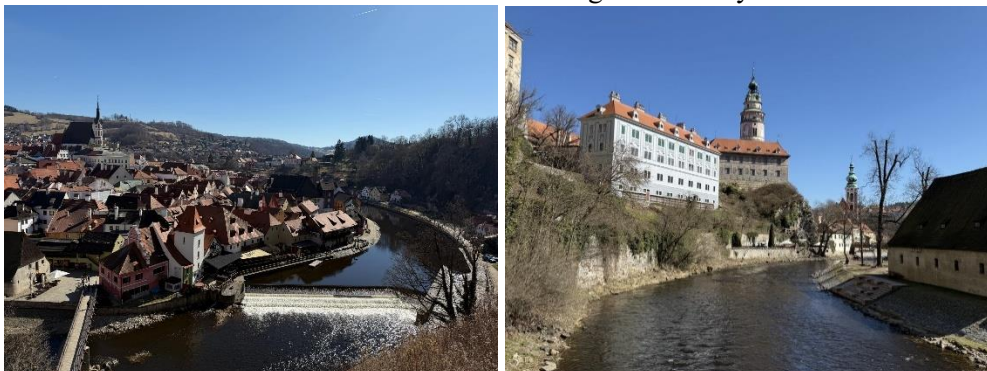
Throughout the internship, I significantly expanded my knowledge in analytical chemistry and food biotechnology. I gained practical skills in operating liquid chromatographs and mass spectrometers, learned to design analytical conditions, and interpret results regarding the qualitative and quantitative composition of analyzed samples. I also became familiar with modern techniques for the isolation and analysis of metabolites. The competencies acquired during the internship will directly contribute to the successful completion of my doctoral dissertation and the development of future research projects.

During my stay in the Czech Republic, I also had the opportunity to explore the local culture, traditions, and historical landmarks of the region. I visited the historic center of České Budějovice, known for one of the largest squares in Europe, surrounded by beautiful Renaissance townhouses and the Baroque Town Hall. The city is crossed by the Vltava River, giving it a unique character and creating picturesque spots ideal for walks. Walking along the riverbanks, I admired the charm of the city and its historic architecture.



A particularly memorable experience was visiting Český Krumlov — a picturesque town listed as a UNESCO World Heritage Site. There, I explored the monumental castle complex, one of the largest and best-preserved in Europe. Strolling through the historic courtyards, castle gardens, and narrow

medieval streets allowed me to better understand the region's history and rich cultural heritage.



Another extraordinary place I visited was Hluboká Castle. This neo-Gothic castle, inspired by England's Windsor Castle, impresses with its architectural details and beautiful gardens. Its majestic structure and meticulously designed interiors left a great impression on me, and the visit deepened my understanding of the historical heritage of South Bohemia.



Visiting these places not only enriched my cultural experience but also provided deeper insights into the historical and social context in which academic institutions in the Czech Republic operate.



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