

UNDERSTANDING THE CORRELATIONS BETWEEN HEAVY METALS AND MICROPLASTICS IN PLASTIC PACKAGED FOOD PRODUCTS. **Eliana Samara** and Nausheen Sadiq. Mount Royal University, Department of Chemistry and Physics, 4825 Mt Royal Gate SW, Calgary, AB, T3E 6k6, Canada. ([esama092@mtroyal.ca](mailto:esama092@mtroyal.ca))

North Americans have become highly dependent on processed and packaged food. The consumption of such foods may increase human exposure to microplastics (MP) [1]. Literature has shown that MPs adsorb toxins such as heavy metals, thereby increasing the health risk associated with MPs present in food [2]. This project examines heavy metals including aluminum, copper, and lead in plastic packaging used for fresh, raw, and canned food products. This research investigates correlations between various plastics, their color, and composition to better understand the relationship of microplastics at the elemental level. Samples were digested using microwave digestion and multi-elemental analysis was conducted using inductively coupled plasma- mass spectrometry (ICP-MS). The aim of the study is to have a deeper understanding of the risk associated with microplastics accumulation in the environment and in the human body. In addition, elemental fingerprinting will be investigated as a way to improve the identification of microplastics in the environment.

[1] S. Liu, J. Shi, J. Wang, Y. Dai, H. Li, J. Li, X. Liu, X. Chen, Z. Wang, & P. Zhang, *Front. Microbiol.*, 12 (2021) 652520-652534.

[2] Q. Chen, H. Zhao, Y. Liu, L. Jin, & R. Peng, *Toxics.*, 11(6) (2023) 490-510.