

## **THE ANALYSIS OF THE AMINO ACID VARIABILITY OF HONEY IN EDMONTON ALBERTA**

Understanding the properties and content of products of the natural world provides a basis for many beneficial discoveries. Honey is one such product. Honey is a widely used agricultural product and contributed \$65.9 million to the Alberta economy in 2017 (Alberta Agriculture and Forestry 2017). It contains many different components including sugars, vitamins, proteins, and enzymes. This project identifies the amino acid content of honey and records how it fluctuates from one year's floral season to the others. This will be done in order to profile the contents of North-Central Albertan honey. The long-term goal of this project is the eventual creation of a complete portfolio of all components of North-Central Albertan honey in and around Edmonton at any time of the floral season. Samples of honey were collected from hives located in Strathcona County at end of the summer in mid to late September in the years 2016, 2017, 2018, and 2020. These samples were run through ultraperformance liquid chromatography to measure the

concentration of amino acids. Fifteen amino acids were detected within the collected samples. The concentrations of amino acids were seen to greater vary between years, with some years having nearly double the concentration of a specific amino acids then the previous years. These multiple outcomes indicate that there are likely numerous variables affecting the amino acid composition of honey. Moving forward the natural decomposition of the amino acid within honey and yearly floral choice of honeybees will need to be further investigated.

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