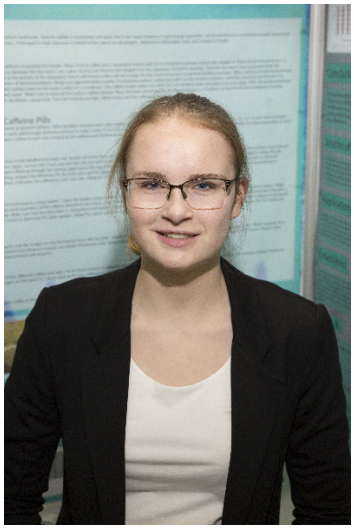
CWSF 2019 - Fredericton, New Brunswick



Daphne Thompson

Extraction of Caffeine and Quantification Using Thin Layer Chromatography

Challenge: Discovery
Category: Intermediate
Region: Southeast Alberta
City: Medicine Hat, AB
School: Seven Persons School

Abstract: An investigation for methods to recover alkaloids such as caffeine from plant material using a modified extraction technique with detection based on thin layer chromatography made quantitative using public domain image analysis software. Results were encouraging but recoveries of caffeine were variable indicating that the extraction technique needs to be standardized.

Biography

I am in Grade 9 at Seven Persons School, Alberta. Hobbies I enjoy doing include violin musical studies and snowboarding. My idea for my science fair came from my Science teacher, who suggested that analyzing the caffeine content of Tim Horton's coffee would be interesting. With my mentor we worked through the classic method for extracting caffeine but soon realized that we could expand the study to create a method for analyzing any alkaloid that could be extracted from plant material and made quantitative using image analysis software and thin layer chromatography. I think this could be applied to screening for other alkaloids as a rapid and inexpensive tool.