

**Centennial Honors College**  
**Thomas E. Helm Undergraduate Research Day 2024**

**ABSTRACT**

Major: Forensic Chemistry

Poster

Faculty Mentor(s): Ligu Song

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**Quantification of  $\Delta$ 9-Tetrahydrocannabinol (THC) among Nineteen Cannabinoids in  
Lucky Leaf Hemp Cigarettes by Liquid Chromatography Ultraviolet Detection**

**Erin Johnson**

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A liquid chromatography ultraviolet detection (LC-UV) method was developed for the quantification of  $\Delta$ 9-THC among 19 cannabinoids in lucky leaf hemp cigarettes. The quantification was achieved using external standard calibration between 0.02 and 25  $\mu\text{g/mL}$ . The limits of quantitation (LOQ) were determined to be 0.04%  $\Delta$ 9-THC in hemp cigarettes. To recover  $\Delta$ 9-THC, a sample was combined with methanol to prepare a 25 mg/mL mixture. After ultrasonication, centrifugation and filtration, the extract was serially diluted to 50  $\mu\text{g/mL}$  and analyzed by LC-UV. The measurement had a relative standard deviation (RSD) of 4.5% in triplicate. The method is not interfered by other cannabinoids present in hemp cigarettes.