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## USE OF CANNABIS SP. ROOT AS A SORPTIVE PHASE FOR THE QUANTIFICATION OF CANNABINOIDS IN MEDICINAL OILS

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GALETTI; Isabela Nucci <sup>1</sup>, SILVA; Luisa Raspini e<sup>2</sup>, MARCHIONI; Camila<sup>3</sup>

### RESUMO

**Introduction:** Phytocannabinoids in *Cannabis* sp. are responsible for its therapeutic potential, among these compounds are cannabidiol (CBD) and  $\Delta^9$ -tetrahydrocannabinol ( $\Delta^9$ -THC). Given the distinct effects of both, quantifying cannabinoids in *Cannabis* sp. based products is essential to ensure product efficacy and patient safety. Also, forensic agencies will need to carry out the cannabinoids dosage to comply with the new regulations. **Objective:** Develop and validate an method for the quantification of cannabinoids using dispersive solid-phase extraction (d-SPE), employing the *Cannabis* sp. root as a natural sorbent, followed by analysis by high-performance liquid chromatography coupled with a diode-array detector (HPLC-DAD). **Method:** The detection was by HPLC-DAD with a C18 column, an injection volume of 20  $\mu$ L, a mobile phase with 10% Milli-Q water and 90% acetonitrile, a flow rate of 0.8 mL/min and run time was 15 minutes. The sample preparation method evaluated was d-SPE, which consists of using ground and sieved root (30 mg) in direct contact with the oil sample (60 mg), after centrifugation, the supernatant is discarded and the desorption solvent is added. **Results:** The developed technique showed a detection limit of 19  $\mu$ g/mL and limit of quantification (LOQ) was 20  $\mu$ g/mL for both analytes. Linearity (20-100  $\mu$ g/mL) was confirmed with R values of 0.995 for CBD and 0.994 for  $\Delta^9$ -THC. The method demonstrates accuracy (0.2 to 12.8%), except for the  $\Delta^9$ -THC LOQ. No chromatography carryover was observed, and stability was confirmed. The applicability of the method was evaluated in real samples of medicinal oils containing the analytes of interest, the results obtained showed high variability when compared to the values on the label (-86 to 127%). **Conclusion:** d-SPE-HPLC-DAD proved to be an appropriate and innovative technique for quantification of cannabinoids, it can be applied in forensic and quality control contexts.

**PALAVRAS-CHAVE:** cannabis root, sample preparation, medicinal cannabis oils, natural sorbent, phytocannabinoids

<sup>1</sup> UFSC, isabelagaletti28@gmail.com

<sup>2</sup> UFSC, luisaraspp@gmail.com

<sup>3</sup> UFSC, camila.marchioni@ufsc.br

<sup>1</sup> UFSC, isabelagaletti28@gmail.com  
<sup>2</sup> UFSC, luisaraspp@gmail.com  
<sup>3</sup> UFSC, camila.marchioni@ufsc.br