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Analysis of Mycotoxins and Cannabinoids using HPLC in Cannabis Plants and Cannabis-Containing Products

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Abstract: The legalization of hemp under the 2018 Farm Bill brought new opportunities as well as challenges. The HPLC method allows the analyst to determine neutral and carboxylated forms of cannabinoids separately and allows flexibility in the ways of reporting composition. Similarly, classified crops are tested for Mycotoxins, including Aflatoxins and Ochratoxin A. This presentation describes a post-column derivatization method developed to analyze cannabinoids based on reactions with a Fast Blue Salt reagent under basic conditions. Detection at 475 nm was carried out using a UV/Vis detector. We present an easy and sensitive method to analyze Aflatoxins B1, B2, G1, G2, and Ochratoxin A in the cannabis plant and edible products. Mycotoxins remain isolated using immunoaffinity clean-up columns and analyzed with fluorescence detection. To increase the sensitivity of Aflatoxins B1 and G1, an in-line photochemical reactor is put in place before the detector. This method uses standard HPLC equipment and determines Mycotoxins at levels below the limits established by state regulations. Our recent work in cannabinoids separation is presented in edibles, plants, and beverages especially containing CBD and THC infused drinks. The effects are prominent in the selection of cannabinoid-containing products offered on the market.