W17 An Update on Analytical Approaches for Hemp/Marijuana Differentiation

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Learning Overview: After attending this presentation, attendees will understand the analytical schemes that are being employed to differentiate hemp from marijuana and will gain insight from laboratories that have implemented new methodology to address this issue.

Impact on the Forensic Science Community: This workshop will impact the forensic science community by providing additional insight regarding the use of various analytical schemes and the use of decision-point assays for the differentiation of hemp from marijuana across jurisdictions in federal, state, and private sector laboratories.

During this workshop, analytical approaches for the differentiation of hemp from marijuana will be presented. Following the passage of the Federal Farm Bill and the implementation of new methodology, laboratories will share their analytical findings and discuss various challenges associated with different approaches.

The pursuit of hemp as an agricultural commodity has placed a significant burden on laboratories that are now required to implement new methodology to address this issue. The 2018 Federal Farm Bill established a threshold of no more than 0.3% Δ9-Tetrahydrocannabinol (Δ9-THC) on a dry weigh basis for *Cannabis sativa L*. plants, derivatives, or extracts. The United States Drug Enforcement Administration was the first to deploy an analytical scheme that utilized an administrative threshold for the differentiation of hemp from marijuana in plant material. This approach, which has been successfully utilized and accepted in the courts in other forensic disciplines (e.g., toxicology drug screening) for decades, permits the use of a qualitative assay using a specified (legislative or administrative) threshold or decision-point.

During this workshop, operational laboratories will share their experience using various analytical approaches, ranging from decision-point assays (using various thresholds) to full quantitation. Focusing on the analysis of plant material, analytical schemes being deployed across the United States will be presented following a 2020 survey conducted by the Organization of Scientific Area Committees (OSAC) Seized Drugs Subcommittee. Federal, state, and private sector laboratories will share their experience and analytical findings following the deployment of new methodology. Strategies for implementation and analytical challenges will be addressed. The jurisdictional influences guiding the various approaches and their impact on the development of consensus-based standards for the identification and reporting of marijuana will be discussed.

Changes in implementation strategies to allow for future adaption to other matrices (e.g., oils/liquids) will be addressed. An overview of the National Institute of Standards and Technology (NIST) Cannabis Quality Assurance Program (CannaQAP), aimed at helping forensic laboratories demonstrate and improve measurement comparability and competence, will be provided. Findings and lessons learned from the first CannaQAP exercise will be discussed and the importance of interlaboratory comparisons and collaboration will be emphasized.

Hemp, Marijuana, Cannabis