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House Committee on Oversight and Accountability

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Chairwoman McClain, Ranking Member Congresswoman Porter, and esteemed members of the subcommittee, as the incoming president of the Kentucky Narcotic Officers Association and a professional law enforcement officer with over 40 years of experience, I am grateful for the opportunity to testify before your committee today.

My testimony today focuses on the absence of a federal regulatory structure to govern the marketing of CBD and other hemp derived products. Mr. Miller testified earlier that the collapse of hemp and CBD led many farmers and businesses to chemically convert CBD biomass into new, intoxicating compounds, most prominently delta-8 THC.

The passage of the U.S. Agricultural Improvement Act of 2018 and the deregulation of hemp did not specifically address delta-8 THC, but effectively legalized the sale of hemp-derived delta-8 THC products with no oversight. Its popularity has grown dramatically since 2020, gaining the attention of consumers and market stakeholders alike throughout the country. Delta-8 THC is considered the fastest-growing segments of hemp derivatives.

Hemp and marijuana are primarily the same plant. They are both from the same genus and species (*Cannabis sativa* L.) and often are not visually distinguishable. Each contain many cannabinoids – the two well-known compounds naturally produced in the cannabis plant are tetrahydrocannabinol (THC - both delta-8 and delta-9) and cannabidiol (CBD).

Mostly, the distinction between hemp and marijuana is the concentration of delta-9 THC in the two plants. Hemp, by definition, must contain no more than 0.3% delta-9 THC. Marijuana plants can usually contain anywhere from 5 to 30% delta-9 THC. It is this substance that produces the intoxicating effects or "high" from the marijuana plant.

Delta-8 THC is a natural occurring compound, that is present in minuscule amounts in hemp plants, reaching only about 1% (if even that) in mature hemp plants. Since this is the case, extracting delta-8 THC directly from hemp for the purpose of creating delta-8 THC products is impractical and inefficient. Rather, a chemical process is often used that converts CBD into delta-8 THC. CBD is a much more prevalent compound in the hemp plant, so the standard method of creating delta-8 THC involves extracting CBD from hemp and chemically converting it to delta-8 THC. Delta-8 THC has psychoactive and intoxicating

effects, like delta-9 THC, but law enforcement sometimes refers to delta-8 as delta-9's "baby brother or sibling", due to having about half of the intoxicating effects of delta-9.

There are two primary ways of extracting CBD from the hemp plant – solvent extraction and CO2 extraction. The CO2 extraction method uses carbon dioxide gas to extract cannabinoids from the hemp plant.

Solvent extraction, although cheaper, is a less preferred method as it requires butane, ethanol, propane, all of which usually leave a toxic residue in the extract. In addition, the compounds needed to convert CBD to delta-8 THC include highly caustic and poisonous acids and solvents. Using this process, the final delta-8 THC product may have potentially harmful by-products (contaminants) due to the chemicals used in the process. Furthermore, the production of delta-8 THC products may occur in uncontrolled or unsanitary settings, which may lead to the presence of unsafe contaminants or other potentially harmful substances. When reactions are run with these solvents or acids, there is a high risk of creating potentially dangerous byproducts. In addition, this conversion process isn't always 100% accurate, and producers often end up with a mixture of delta 8-THC, delta 9-THC, and other compounds or cannabinoids.

Recently, this was substantiated in the State of Kentucky, where a local sheriff's department made nine undercover purchases of delta-8 THC products at various retailers in their community. Of the nine products, six were vape devices and three were edibles. All the products were sent to an independent accredited laboratory for analysis. The potency profile analysis for those products was as follows:

- Six vape devices ranged in delta-9 THC toxicity from 27.1% to 74%
 - Delta-8 THC ranged in toxicity from 0.65% to 46%
- Three edible products for delta-9 THC toxicity were all 0.1%
 - Delta-8 THC ranged in toxicity from 0.1% to 0.46%

Once manufacturers/producers extract CBD from hemp and chemically convert it to Delta-8 THC, the substance is used to create the following products:

- Hemp flowers sprayed with Delta-8 THC
- Delta 8-THC diffused in carrier oils, usually flavored and come with a dropper allowing sublingual (under the tongue) consumption
- Edibles: delta 8-THC infused foods are popular on the market, such as gummies, caramels, saltwater taffy, chocolates, cookies, and brownies
- Soft gels: delta 8-THC inside a soft-shelled capsule
- Vape cartridges – vape cartridges feature delta-8 THC distillate (formed by distilling)
- Delta-8 Concentrates – pure highly concentrated delta-8 THC distillate

In many states, including Kentucky, most delta-8 THC products are sold through unregulated market sources like convenience stores, smoke shops, gas stations, and even can be ordered online. These products are not reliably tested and have been found to contain many impurities.

According to the FDA, they have received 104 reports of adverse events of individuals who consumed delta-8 THC products between December 1, 2020, and February 28, 2022. Of these adverse event reports: 77% involved adults, 8% involved pediatric patients less than 18 years of age, and 15% did not report age - 55% required intervention (e.g., evaluation by emergency medical services) or hospital admission; 66% described adverse events after ingestion of delta-8 THC-containing food products (e.g., brownies, gummies). Adverse events included, but were not limited to hallucinations, vomiting, tremor, anxiety, dizziness, confusion, and loss of consciousness.

In addressing these issues, Congress and regulators may choose to work with the U.S. Hemp Authority, the hemp industry's self-regulatory organization. In the absence of FDA regulations, the U.S. Hemp Authority encourages manufacturers who participate in the program to use best practices and high standards in preparing their products. The standards based largely on the FDA's regulatory regime concerning dietary supplements and food and beverage additives, is enforced by third-party auditors. However, self-regulation is not sufficient; federal regulation is necessary to ensure that all products on the marketplace maintain the highest safety standards.

These products and their abuse have become a concern for law enforcement in many instances. Assuming these products remain legal, the optimal approach is following the lead of Kentucky, whose General Assembly this year passed legislation unanimously to strictly regulate these products and keep them out of the hands of minors. Here are things that Congress, law enforcement and state legislators can do right now to address some of the complex issues surrounding these substances:

- Enact legislation regulating the manufacturing, sale and distribution of products containing a hemp-derived cannabinoid – including the licensing of retailers
- Enact legislation establishing testing requirements of all products containing hemp-derived cannabinoids and create rules specifying/pass/fail action levels for safety and toxicity with respect to such testing
- Establish child safety packaging and labeling requirements, along with “restrictions against advertising which may appeal to minors”
- Better regulate the hemp industry, so products contain only the legal limit of 0.3% or less of a concentration of THC
- Mandatory reporting to a government entity when ingestion of these substances led to an adverse reaction (law enforcement believes these events are under reported)
- Understand that individuals can exhibit the effects of being under the influence of marijuana from products not marketed as such.
- Seek state or federal funding for forensic lab infrastructure that could assist and help with the development of improved hemp and marijuana differentiation methods.

- Training for law enforcement officers concerning these substances and navigating the possible implications of arresting and prosecuting individuals under the influence.

In closing, I want to thank the Committee for examining this important topic and I look forward to your questions.

1. Nachnani, R., Raup-Konsavage, W.M. & Vrana, K.E. The Rise and Risk of Delta-8 THC (Delta-8-Tetrahydrocannabinol). *Curr Addict Rep* **9**, 622–629 (2022). <https://doi.org/10.1007/s40429-022-00456-1>
2. Kruger, J.S., Kruger, D.J. Delta-8-THC: Delta-9-THC's nicer younger sibling? *J Cannabis Res* **4**, 4 (2022). <https://doi.org/10.1186/s42238-021-00115-8>
3. Bradley, E.K., Hoots, B.E., Bradley, E.S. *et al.* Unintentional ingestion of putative delta-8 tetrahydrocannabinol by two youth requiring critical care: a case report. *J Cannabis Res* **5**, 9 (2023). <https://doi.org/10.1186/s42238-023-00176-x>
4. Walter B. Wilson; Aaron A. Urbas, Ph.D.; Frances Scott, Ph.D., "Study Reveals Inaccurate Labeling of Marijuana as Hemp," October 17, 2022, [nij.ojp.gov](https://nij.ojp.gov/topics/articles/study-reveals-inaccurate-labeling-marijuana-hemp): <https://nij.ojp.gov/topics/articles/study-reveals-inaccurate-labeling-marijuana-hemp>