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**TESTIMONY ON HOUSE BILL 131 HOUSE DRAFT 2
RELATING TO HEMP**

By
Clifton Otto, MD

House Committee on Finance
Representative Sylvia Luke, Chair
Representative Ty J.K. Cullen, Vice Chair

Wednesday, February 20, 2019; 2:00 PM
State Capitol, Conference Room 308

Thank you for the opportunity to provide testimony on this measure. Please consider the following comments related to this bill:

1 - The House committees that have already heard this bill still have not specifically addressed the scheduling status of Cannabidiol (CBD). This is an important issue, because without such clarification, CBD products that are flowing into our state cannot be properly regulated.

Part of the problem has to do with the proposed amendments to the definitions of marijuana and hemp:

SECTION 7. Section 712-1240, Hawaii Revised Statutes, is amended as follows:

1. By adding two new definitions to be appropriately inserted and to read:

"Hemp" shall have the same meaning as in section 329-1.

"Tetrahydrocannabinol" means tetrahydrocannabinol naturally contained in a plant of the genus Cannabis (cannabis plant), as well as synthetic equivalents of the substances contained in the plant, or in the resinous extractives of Cannabis, sp. or synthetic substances, derivatives, and their isomers with similar chemical structure and pharmacological activity to those substances contained in the plant, such as the following: Delta

1 cis or trans tetrahydrocannabinol, and their optical isomers; Delta 6 cis or trans tetrahydrocannabinol, and their optical isomers; and Delta 3,4 cis or trans-tetrahydrocannabinol, and its optical isomers (since nomenclature of these substances is not internationally standardized, compounds of these structures, regardless of numerical designation of atomic positions, are covered); provided that tetrahydrocannabinol shall exclude tetrahydrocannabinol in hemp."

2. By amending the definition of "marijuana" to read:

"Marijuana" means any part of the plant (genus) cannabis, whether growing or not, including the seeds and the resin, and every alkaloid, salt, derivative, preparation, compound, or mixture of the plant, its seeds or resin[, except that, as used herein, "marijuana"]. "Marijuana" does not include hemp, hashish, tetrahydrocannabinol, and any alkaloid, salt, derivative, preparation, compound, or mixture, whether natural or synthesized, of tetrahydrocannabinol."

SECTION 5. Section 329-1, Hawaii Revised Statutes, is amended as follows:

1. By adding a new definition to be appropriately inserted and to read:

"Hemp" means the plant Cannabis sativa L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta-9 tetrahydrocannabinol concentration of not more than 0.3 per cent on a dry weight basis."

2. By amending the definition of "marijuana" to read:

"Marijuana" means all parts of the plant (genus) Cannabis whether growing or not; the seeds thereof, the resin extracted from any part of the plant; and every compound, manufacture, salt, derivative, mixture, or preparation of the plant, its seeds, or resin. [It]

"Marijuana" does not include [the]:

(1) Hemp; or

(2) The mature stalks of the plant[7] (genus) Cannabis, fiber produced from the stalks, oil, or cake made from the seeds of the plant, any other compound, manufacture, salt, derivative, mixture, or preparation of the mature stalks (except

the resin extracted therefrom), fiber, oil, or cake, or the sterilized seed of the plant [~~which~~] that is incapable of germination."

Without knowing whether CBD is a tetrahydrocannabinol, it is impossible to determine whether CBD falls under the definition of tetrahydrocannabinols, and therefore whether CBD is still a Schedule I controlled substance.

Bills being considered by the Legislature that would place FDA-approved CBD products, such as Epidiolex, into state Schedule V, the least restrictive of our controlled substance schedules, also highlight the need to establish the scheduling status of non-FDA approved CBD in Hawaii.

While the current situation with CBD in Hawaii continues to put our residents at risk, states like California are starting to take action. In July of 2018, the [California Department of Public Health](#) issued a FAQ on Industrial Hemp and CBD in food products based on federal law, which clearly prohibits the use of hemp-derived CBD as a food additive or dietary supplement in that state.

New York's [Department of Health and Mental Hygiene](#) has also started prohibiting the addition of CBD to food products, a signal that other states are starting to recognize that regulation in this area is necessary in order to protect consumers and comply with federal law.

The [Food and Drug Administration](#) (FDA) is very clear about the status of CBD and THC as food additives or dietary supplements:

"Under the FD&C Act, it's illegal to introduce drug ingredients like these into the food supply, or to market them as dietary supplements. This is a requirement that we apply across the board to food products that contain substances that are active ingredients in any drug."

Therefore, the question remains:

Is Cannabidiol (CBD) a tetrahydrocannabinol or a derivative of a tetrahydrocannabinol ?

[HRS 329-14. Schedule I.](#) (a) The controlled substances listed in this section are included in Schedule I.

(g) Any of the following cannabinoids, their salts, isomers, and salts of isomers, unless specifically excepted, whenever the existence of these salts, isomers, and salts of isomers is possible within the specific chemical designation:

"An Accepted Medical Use Supporter"

(1) Tetrahydrocannabinols; meaning tetrahydrocannabinols naturally contained in a plant of the genus Cannabis (cannabis plant), as well as synthetic equivalents of the substances contained in the plant, or in the resinous extractives of Cannabis, sp. or synthetic substances, **derivatives**, and their isomers with similar chemical structure and pharmacological activity to those substances contained in the plant, such as the following: Delta 1 cis or trans tetrahydrocannabinol, and their optical isomers; Delta 6 cis or trans tetrahydrocannabinol, and their optical isomers; and Delta 3,4 cis or trans tetrahydrocannabinol, and its optical isomers (since nomenclature of these substances is not internationally standardized, compounds of these structures, regardless of numerical designation of atomic positions, are covered);

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6154432/pdf/can.2018.0030.pdf>

Delta-8-THC (Delta-6-THC):

<https://pubchem.ncbi.nlm.nih.gov/compound/2977#section=Top>

Delta-9 THC (Delta-1-THC):

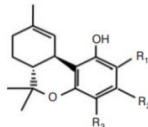
<https://pubchem.ncbi.nlm.nih.gov/compound/Dronabinol#section=Top>

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TABLE 1. Cannabinoids of the Δ^9 -*trans*-tetrahydrocannabinol Type (Turner et al. 1980)

Cannabinoid	Abbreviation	R ₁	R ₂	R ₃
Δ^9 - <i>trans</i> -tetrahydrocannabinolic acid A	Δ^9 -THCA	COOH	C ₅ H ₁₁	H
Δ^9 - <i>trans</i> -tetrahydrocannabinolic acid B	Δ^9 -THCA	H	C ₅ H ₁₁	COOH
Δ^9 - <i>trans</i> -tetrahydrocannabinol	Δ^9 -THC	H	C ₅ H ₁₁	H
Δ^9 - <i>trans</i> -tetrahydrocannabinolic acid-C ₄		COOH or H	C ₄ H ₉	H or COOH
Δ^9 - <i>trans</i> -tetrahydrocannabinol-C ₄	Δ^9 -THC-C ₄	H	C ₄ H ₉	H
Δ^9 - <i>trans</i> -tetrahydrocannabivarinic acid		COOH	C ₃ H ₇	H
Δ^9 - <i>trans</i> -tetrahydrocannabivarin	Δ^9 -THCV	H	C ₃ H ₇	H
Δ^9 - <i>trans</i> -tetrahydrocannabiorcolic acid		COOH or H	CH ₃	H or COOH
Δ^9 - <i>trans</i> -tetrahydrocannabiorcol	Δ^9 -THC-C ₁	H	CH ₃	H

FIGURE 3. Cannabinoids of the Δ^9 -THC type. The most widespread cannabinoids are the phenolic Δ^9 -THC with 21 carbon atoms and a C₅ side chain (R₂ = C₅H₁₁) and its two corresponding carboxylic acids A and B (see Table 1).



<https://cannabis-med.org/data/pdf/2003-01-1.pdf>

2 – The outdoor cultivation of hemp in Hawaii will inevitably mean that the dispersion of male hemp pollen will be widespread wherever hemp is being cultivated. Potential [cross pollination](#) could [severely restrict](#) the ability of patients and dispensaries to produce high quality outdoor cannabis flowers, which will only increase the costs of medical use production and further reduce patient access.

This is something the Legislature will need to address in order to protect our patients and Hawaii's Medical Use of Cannabis Program. One solution would be to restrict hemp cultivation to at least 10 miles away from any dispensary cultivation facility or patient collective.