



Senate Committee on Agriculture and Environment
Sen. Mike Gabbard (Chair), Sen. Russell Ruderman (Co-chair)

Testimony for SB1335 – Relating to Hemp
Clifton Otto, MD - Comments
Public Hearing - Monday, February 4, 2019, 1:20 pm, Room 224

Thank you for considering the following comments regarding this bill:

1 - Please answer the following question before allowing this bill to pass through your committee: Is Cannabidiol (CBD) a tetrahydrocannabinol or a derivative of tetrahydrocannabinol ?

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

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

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

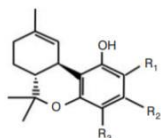
<https://pubchem.ncbi.nlm.nih.gov/compound/Dronabinol#section=Top>

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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 proposed definition of hemp requires clarification in order to prevent an interpretation that viable hemp seeds do not fall under this new definition:

Page 15, Line 10:

""Hemp" means the plant *Cannabis sativa* L. and any part of that plant, including the **viable** 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.

3 – There are cannabinioids that are very different in structure from THC and CBD, and which may not meet the definition of a tetrahydrocannabinol, but still need to be exempt from Schedule I because they naturally occur in hemp. Therefore, the term “cannabinoids” needs to be added to this section:

Page 17, Line 12:

provided that tetrahydrocannabinols under this subsection shall exclude tetrahydrocannabinols **and cannabinoids** in hemp;

4 – Hawaii’s current hemp pilot program was unwilling to address the marketing piece of the 2014 Federal Farm Bill. We are also dealing with a situation where CBD products from other states are flowing into our state without any regulation of safety and compliance with mainland state hemp law and the Agricultural Improvement Act of 2018. Therefore, the following provision needs to be added:

Page 23, Line 15:

SECTION 6. (a) The chairperson of the board of agriculture shall prepare and submit a proposed state plan to monitor and regulate hemp production in the State pursuant to section 297B of the Agricultural Marketing Act of 1946, as amended, **to include provisions for the marketing and regulation of locally produced and imported hemp products, including hemp crude extracts, distillates, and isolates, in order to protect consumer safety and insure compliance with the Agricultural Improvement Act of 2018**, to the federal Secretary of Agriculture within X days after the approval of this Act.

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