

# Content vs. Label Claim: A Survey of CBD Content in Commercially Available Products

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# CBD Content vs. Product Label Claim

- ▶ Background: Bill J. Gurley.
- ▶ Pharmacist and Professor of Pharmaceutical Sciences
- ▶ Principal Scientist: National Center for Natural Products Research
- ▶ Member: *American Assoc. of Pharmaceutical Scientists*
- ▶ Member: *American Society for Clinical Pharmacology & Therapeutics*
- ▶ Editorial Board: *Clinical Pharmacology & Therapeutics*,  
*Phytomedicine*
- ▶ Advisory Board: *American Botanical Council*
- ▶ Actively researching the safety and efficacy of botanical dietary supplements for 23 years.



# CBD Content vs. Product Label Claim

- ▶ For conventional medications regulated by the FDA, product labels must accurately reflect the content of active ingredients within the container.
- ▶ For dietary supplements—especially botanical dietary supplements—regulated by the FDA under DSHEA, it is not uncommon for a product’s contents to differ markedly from its label claim.
- ▶ Content vs. label claim discrepancies are especially prevalent for dietary supplements marketed for “weight-loss,” “exercise performance enhancement,” and sexual performance enhancement.”
- ▶ Are CBD-containing products also subject to significant discrepancies between actual content and label claim?



# CBD Content vs. Product Label Claim

- ▶ A survey of CBD-containing products was conducted by investigators from the National Center for Natural Products Research (University of Mississippi) to compare CBD & THC content to label claims for CBD.
- ▶ 25 various CBD-containing products were purchased from retail vendors in the state of Mississippi and submitted for analysis by law enforcement (MBN).
- ▶ Product label claims ranged from “no label claim” to 1500 mg per container (500 mg per serving).
- ▶ Products were analyzed via GC/FID and mass spectrometry for CBD and THC content as well as the presence of synthetic cannabinoids.



# CBD Content vs. Product Label Claim

Product	CBD Label Claim	Total CBD	% Label Claim	THC > 0.3%	Synthet. Cannab.
1	350 mg	417 mg	119%		
2	300 mg	0.3 mg	0.1%		
3	No claim	10 mg	???		
4	500 mg	521 mg	104%	+++	
5	4-5 mg	0.5 mg	10%	+++ (45% THC)	
6	75 mg	22 mg	30%		
7	200 mg	44 mg	22%		
8	50 mg	1140 mg	2280%	+++	
9	No claim	134 mg	???		
10	25 mg	42 mg	168%		
11	No claim	0.02 mg	???		+++ 4-fluoro MDMB
12	100 mg	40 mg	40%		
13	500 mg	433	87%		



# CBD Content vs. Product Label Claim

Product	CBD Label Claim	Total CBD	% Label Claim	Synthet. Cannab.
14	75 mg	45 mg	60%	
15	75 mg	19 mg	25%	
16	75 mg	10 mg	13%	
17	No claim	ND	???	
18	25 mg	9 mg	32%	
19	100 mg	0.6 mg	0.6%	+++ 5-fluoro MDMB
20	500 mg	500 mg	100%	
21	200 mg	10 mg	5%	
22	No claim	10 mg	???	
23	No claim	17 mg/g	???	
24	No claim	ND	???	+++ 5-fluoro ADB
25	No claim	ND	???	+++ 5-fluoro ADB

ND = none detected



# Conclusions

- ▶ A small sampling of CBD products acquired from retailers in the state of Mississippi demonstrated marked variability in actual CBD content versus product label claims.
- ▶ Several products had no CBD, while others contained significantly more than label claims.
- ▶ One product contained only THC, while others exceeded the 0.3% limit on THC.
- ▶ Several vaping products contained no CBD, but were adulterated with synthetic cannabinoids.
- ▶ Clearly, many “CBD products” have little or no relation to any potential benefits of CBD itself, and pose a range of risks to consumers, from fraud to serious health dangers.
- ▶ The public demand and potential abuses in this unique market sector warrant special attention to regulation of such products, in terms of label claim restrictions, cGMP enforcement and monitoring for potential adulterants.

