

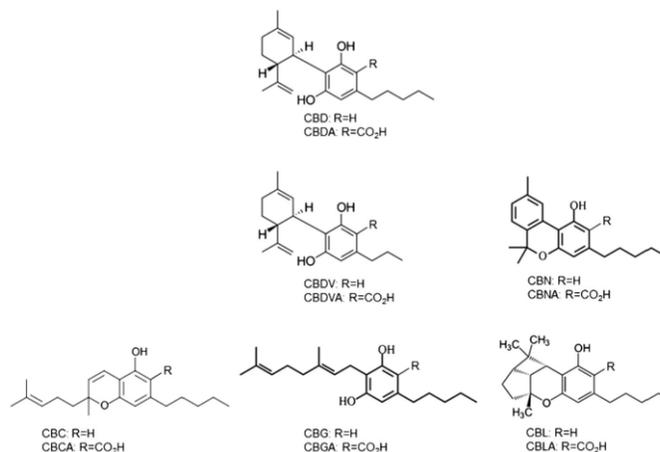


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Bioavailability of 'Cannabinoid Extracts' on *Cannabis sativa* By Healthy Hemp Research LLC for Fractal Growth LLC

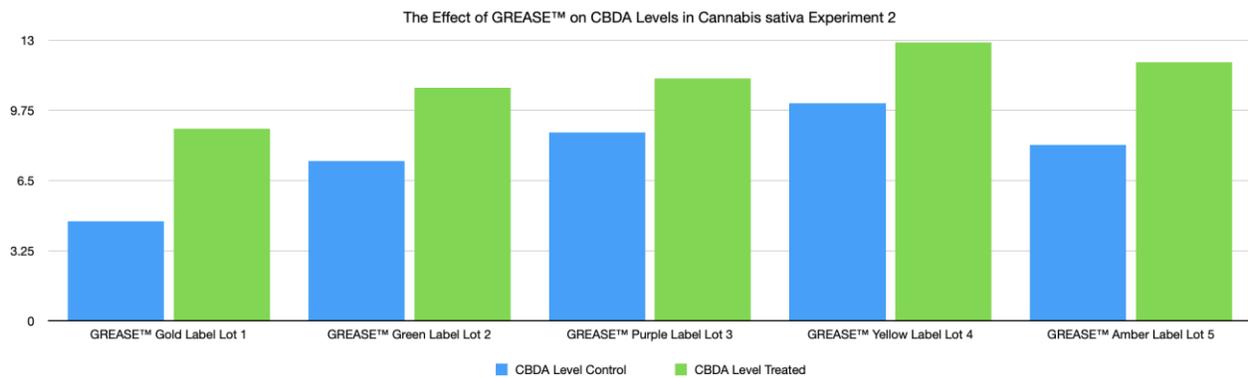
The bioavailability of 'Cannabinoid Extracts' in GREASE™ is proven by the increase in return of cannabinoid production. This increase is cited in our Experimental Review of GREASE™ and was taken from randomized experimental trials that were replicated in a different locations and times with different cultivars and it still showed similar result. There was no pesticidal action observed in the treatment plants versus the control group. Additionally, no SAR or hormonal response was observed at any time in the treated plants versus the control group. There was no change in growth characteristics including internodal size, shape, maturation time, or color.

Bioavailability of cannabinoid extracts is measured by a correlated increase in cannabinoid potency in the finished marketable portion of the plant when compared to the untreated control group. The logical conclusion is that the application of 'Cannabinoid Extracts' on *Cannabis sativa* is being absorbed into the plant and results in an increase in cannabinoid potency in the finished crop. The cannabinoid extracts are bioavailable through the leaves and the soil with bioabsorption. The cannabinoids are naturally absorbed into cannabis plants because they mimic the same polar structure of the plant resins. The cannabinoid extracts provide the building blocks for cannabinoid production harnessing the principles of biomimicry. The circulation of the cannabinoids become increased from the absorption of the administered cannabinoid extracts. There are over 60 types of documented cannabinoids. Please reference the following figure to see the unique chemical structure of seven of the most abundant individual cannabinoids.



(McRae 7382)

Cannabinoid profiles or the ratio of cannabinoids produced vary depending on the cultivar of *Cannabis sativa*, so it is beneficial to provide them with ‘Cannabinoid Extracts’ instead of individual isolated cannabinoids which would be limited in scope and less effective than providing multiple constituents. The natural full spectrum approach of ‘Cannabinoid Extracts’ increases the chance that the particular cultivar will respond to the absorption of these compounds in a way that is uniquely beneficial. This is reflected in the varying degrees of efficacy in the increases in cannabinoid test results in Experiment 2. For example, due to this fact there is not a uniform increase in potency across multiple cultivars. Please reference the graph of Experiment 2 below to see this change.



Product	Cannabis Subspecies	Control Test	CBDA Level Control	Treated Test	CBDA Level Treated
GREASE™ Gold Label Lot 1	Hybrid	146-44	4.6	146-60	8.89
GREASE™ Green Label Lot 2	Hemp	145-66	7.4	145-67	10.79
GREASE™ Purple Label Lot 3	Indica	145-70	8.74	145-64	11.23
GREASE™ Yellow Label Lot 4	Sativa	146-32	10.08	146-52	12.9
GREASE™ Amber Label Lot 5	Sativa	145-69	8.16	145-61	11.98



Certifying Scientist

/MichaelWalsh/
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