



KUSA

CBD & Hemp Therapeutic Applications

Hemp is part of the cannabaceae family, just as marijuana is. The difference between hemp and marijuana is the amount of THC in the plant. The differentiator, THC content, is measured at the dried weight of the plant and to be considered hemp it must contain 0.3% or less THC.¹ THC is the psychoactive cannabinoid that gives people the ‘stoned’ feeling. Hemp is also commonly referred to as industrial hemp and as a plant has been used for centuries as a textile. It was one of the first plants to be made into usable fiber over 10,000 years ago and the word canvas is derived from the word cannabis. Not only a fast growing plant, its uses range from textiles, to biofuel, to nutritional supplement, to medication. Henry Ford himself even designed a car whose components and fuel were made almost entirely of hemp².

FROM HEMP SEED	FROM HEMP OIL	FROM HEMP FIBER
Confections Beer Flour Feed Dietary Fiber Snacks Non-dairy Milk Baking Additive	Cooking Additive Salad Dressing Dietary Supplements Body Care Products Fuel Detergents Spreads Paint	Fabric Insulation Carpeting Paneling Pulp and Paper Recycling Additive Automobile Parts Animal Bedding and Mulch



Canadian Department of Agriculture and Agrifood (2007). Revised by MedicalJane.com (2015)

At KUSA we developed a hemp line of our infused lotions and hair care products. In our research for the hemp product line we discovered that not all hemp is created equal. There is hemp oil, hemp seed oil, domestically grown, foreign grown and sourced oils, and some is organically grown while the majority is not.

Here are the major differences:

Hemp Seed oil – Like sunflower and pumpkin seeds, hemp seeds are harvested and pressed into hemp seed oil. Hemp seed oil is typically used as a nutritional supplement, and has also found its way into other healthy lifestyle products.

Hemp Oil – Hemp oil is typically oil that is extracted from the whole plant using gasses or solvents to separate the oil from plant matter that is either organic or it’s not. KUSA uses USDA certified organic hemp in our products.

¹ https://www.jstor.org/stable/1220524?seq=1#page_scan_tab_contents

² <http://www.collective-evolution.com/2013/02/25/henry-ford-hemp-plastic-car-stronger/>

CBD oil, on the other hand, is an oil rich in **phytocannabinoids** that has a high content of **cannabidiol** (CBD), a natural component of hemp and other **cannabis plants**. Rather than being made from the seeds of the plant, however, it is made from the flowers, stalks and leaves³.

Why using domestic organic hemp plants is so important is that hemp is used as a 'mop crop' and is extremely effective at cleaning out toxins in soil. Those toxins ultimately end up in the cells of the plant so whatever is soaked up by the plant will stay there until it is extracted. A significant amount of hemp is grown in China where there are few safeguards as to what is used to grow the plant. Another reason we use domestic organically grown hemp is that we know where the plants are grown. We have visited the farm, talked with the owner, have seen the operation, looked at the fertilizer bottles, insured they are 100% organic, and have seen the comprehensive test results that validate the organic stamp. We are supremely confident in the source of the whole plant organic hemp oil we use in our products and the fact that the plants were not used as a 'mop crop' and grown somewhere without environmental safeguards. We also know for certain that our hemp was grown using organic methods as verified by the US Department of Agriculture.

³ <https://qcinfusion.com/the-difference-between-cbd-oil-cannabidiol-and-hemp-seed-oil/?age-verified=b299b60db6>

Topicals – the gateway to the endocannabinoid system

The Endocannabinoid system is found in mammals, birds fish and reptiles. Cannabinoid receptors, located throughout the body, are part of the Endocannabinoid system which is involved in a variety of physiological processes including appetite, pain-sensation, mood, and memory. Our products are formulated to deliver cannabinoids to the body to activate the Endocannabinoid system easily. If you can squeeze a bottle, you can the product within seconds of it arriving. You do not need to know the strain, you do not need a vaporizer or other equipment to begin enjoying the benefits.

The reasons we produce topicals are:

1. Ease of use. If you can push the disc top open and invert an 8 oz bottle, you can apply cannabinoids directly to the skin and get them in your body
2. It's safe. No cannabis plant (cannabis or hemp) has ever killed anyone in recorded history. There are no reported side effects.
3. Targeted application. Most people don't take a shower when they get their hands dirty. So taking other medications, prescription and over the counter, is like taking a shower if you have dirty hands. Along with the associated side effects, long term use of medications like ibuprofen and acetaminophen can cause kidney disease and intestinal bleeding⁴.



⁴ <http://www.webmd.com/drug-medication/news/20150302/does-long-term-acetaminophen-use-raise-health-risks#1>

The skin as a delivery mechanism

There is ~21 square feet of skin on an adult human body. That is a lot of real estate to use to deliver cannabinoids into the bloodstream with having to smoke or ingest any plant material. The skin is not created equal in terms of thickness or efficacy of absorption. The skin is thickest on the bottom of our feet and thinnest on our eyelids. When we think of effective absorption, generally speaking we work from the head down, with one exception. They are (ordered from most to least effective):

1. The scrotum. Sorry ladies, but the scrotum is the most absorbent skin on the human body. Many testosterone replacement patches are designed to be applied to the scrotum for maximum absorption as a result.
2. The head. As you may have noticed if you have ever bled from anywhere on your head, we bleed a lot when we get a head wound. We have lots of blood vessels and capillaries that feed blood to the brain which makes it an excellent part of the body to deliver cannabinoids
3. Armpit. The armpit is the next effective area of the body that is designed to absorb effectively
4. Back/torso. Golfers typically are sore in this area the first few games of a season. We are using and straining muscles we don't typically use and they get sore.
5. Palms. Our hands will absorb cannabinoids through the palm when you apply our products in addition to wherever you are applying them
6. Feet. Under the surface of the foot is where our thickest skin is, and as a result it is less responsive to absorption.

Our shampoo and conditioner products are designed to get cannabinoids into the body daily on our heads. The lotions are designed to be applied where we are sore and need relief from pain and inflammation, giving you two different ways to get cannabinoids into your body.

To read testimonials from people who have purchased and use our products, please visit the testimonials section of our website: <https://kusaproducts.com/testimonials/>

CBD Oil vs Hemp oil

There is a TON of confusion all over the world about 'CBD Oil' vs Hemp Oil. There are 676,000 google search results for 'Buy CBD Oil' and 2.8M search results for the 'Best CBD Oil'. There are a number of companies looking to cash in on the CBD Oil craze because people are looking for ways to treat conditions they have, and even conditions their pets have using cannabinoids. As we explained earlier, not all hemp is created equal nor is CBD created equal.

Cannabidiol is what CBD stands for. It is a cannabinoid found in cannabis and hemp, just like THC is another cannabinoid found in both cannabis and hemp in different strengths. CBD is a single cannabinoid which has unique properties on its own, and when combined with other cannabinoids the 'entourage effect' kicks in and the cannabinoids working together deliver more positive effects on the body.

This is a KEY distinction to understand: a single cannabinoid like CBD is good, a full spectrum of cannabinoids is best. A scoop of ice cream in a dish is not a sundae. The entourage effect of the toppings makes a sundae.

CBD Oil is being marketed as a cure all and miracle serum. CBD is but one cannabinoid that delivers benefits to treat different conditions. It is also the legal one, provided that the CBD came from hemp. Most companies do not convey what else is in the bottle. CBD oil is thick, not very viscous, and has the consistency of molasses. Things like solvents (alcohol), glycerin or carrier oil – is it toxic? Am I allergic to something else in it? Did the CBD cannabinoid come from marijuana or hemp? Are there other cannabinoids in it? Is the number of milligrams verified by a third party? How do I know? The point here, is that just because it says CBD oil on the label means there is the CBD cannabinoid in it, and you need to find out what else is in it, insure you won't have an allergic reaction to it, or that what is in the bottle is CBD derived from hemp, and not hemp seed oil. Pay attention to what the carrier oil is. If you were to ingest straight hemp oil it would look like molasses or VERY thick maple syrup or honey. You'll need a syringe vs. an eyedropper to use straight hemp oil.

Added to the confusion of the actual product is the legality of CBD. Cannabidiol is one cannabinoid that is in both hemp and cannabis. They both contain CBD. Hemp is regulated under the US Department of Agriculture and marijuana is regulated under the Controlled Substances Act (CSA) by the Department of Justice. The question with the law is further confused by the Cole Memo from the Department of Justice.⁵ In the Cole Memo, there is only reference to marijuana, not hemp. The Cole Memo is a memo to provide guidance to Federal prosecutors under the Controlled Substances Act about where to focus their prosecution efforts, and it is clearly on marijuana. Not any particular cannabinoid, but the plant. It's also a memo and not an Act, it is not law, but guidance.

So when it comes to purchasing CBD products we suggest the following guidelines:

1. Make sure the CBD cannabinoid is derived from organically grown domestic hemp and not marijuana
2. Insure you know what else is in the product besides CBD, including carrier oils and other cannabinoids so you know if you are getting a broader or full spectrum of cannabinoids

⁵ <https://www.justice.gov/iso/opa/resources/3052013829132756857467.pdf>

3. Ask for test results. Full test results – pesticides, solvents, and potency – and get them from the farm to the finished product so you can see what’s in the oil

Know where your products come from. Know what’s in them. Ask for third party validation. Not every product follows these guidelines. At KUSA, even though it is not required we test our finished hemp products (in addition to the oil) to insure consistency, quality and safety. The integrity of our source material and plants is incredibly important to us, just as our finished products are. To insure the quality, we do our homework, perform on-site inspections and know who we are working with. You can buy KUSA products with the highest degree of confidence.



Summary

The benefits of using whole plant hemp and its derivatives, while not approved by the FDA to treat cure or prevent any disease, are well documented with over 17,000 pieces of research published to date on PubMed - <https://www.ncbi.nlm.nih.gov/pubmed/> which is a collection of biomedical literature containing over 27 million assets. This research combined with our own human trials has shown us that organic hemp and the cannabinoids contained within the plant are effective in treating pain and inflammation.

Topicals are a gateway application for getting cannabinoids into the body. You do not need to know strains, have paraphernalia, or other advanced knowledge to begin activating the endocannabinoid system in the human body. We have over 20 square feet of skin on our bodies on which to apply topicals and get the cannabinoid compounds into the body. That's a lot of space to introduce cannabinoids into the body without smoking anything.

Not all hemp is created equal. Seek out organic domestically grown hemp. Not hemp seed extract, whole plant hemp. Ask for the USDA certification.

To begin taking advantage of the benefits of this amazing plant, please visit <https://kusaproducts.com> and activate your endocannabinoid system with the highest quality products we can make.

