

Chairman Steve Lavagnino
Santa Barbara County Board of Supervisors
123 East Anapamu Street
Santa Barbara, CA 93101

Re: Federally Legalized Industrial Hemp

Dear Supervisor Lavagnino,

At the March 12, 2019 Board of Supervisors hearing in Santa Maria, Supervisor Hartman asked the important question of whether hemp (Cannabis containing 0.3% or less of THC) could be differentiated, by looks, from marijuana plants that contains THC levels making it not allowed to be called hemp. The answer from the speaker was no.

Technically, that was correct. However, there is much more to hemp than just its lack of THC. Industrial hemp is actually much different looking than the conventionally grown cannabis for recreational and medical use. See the attached booklet.

Cannabis hybrid strains of low THC and high CBD are being developed all the time. Potentially, what could be called hemp, could be grown that looks no differently than another plant next to it that could not be called hemp because of its THC level.

However, industrial hemp, the kind that could be the basis for the multitude of products available from it would not look like cannabis grown for the recreational/medical market. To better understand industrial hemp and its differences from marijuana, I prepared the attached booklet for my company's internal use. I offer it to you to help understand Hemp and its relationship to Marijuana. An understanding that will be necessary to work with in the coming move of our agricultural community to seriously consider industrial Hemp.

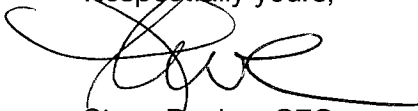
One important note must be made about Hemp and its levels of CBD is that it is mostly found in the flower of the plant. Allowing the flowering of the plant diminishes the quality of the other components of the plant that would otherwise be used for the myriad of products it can produce. So cultivators of Hemp would have to choose between quality Hemp products over CBD production by deciding whether to harvest before the Hemp plant flowers.

Also, in any event, field grown hemp, for CBD production, is not ideal from a quality control prospective. Indoor or greenhouse growing of high CBD level (Hemp) plants is the preferred method for quality control. So, that presents a conundrum in view of the present cannabis ordinance in our County.

With Hemp legalized nationally, and California poised to issue \$900 permits to grow cannabis, without the myriad regulations that 0.3% THC Cannabis plants require, what about land use permits for cultivators that may choose to grow hemp for the rapidly accelerating CBD/Medical market? Should they not be exempt from the County's Cannabis ordinance?

Looking forward to the debate.

Respectfully yours,



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Hemp & Marijuana

How are they different?

CANNABIS



SATIVA



INDICA



RUDERALIS



*A short overview of the Cannabis Sativa plant,
"HEMP"
its differences, history and its many uses.*

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**INDUSTRIAL OR COMMERCIAL HEMP LOOKS DIFFERENT
THAN CANNABIS GROWN FOR THE RECREATIONAL OR
MEDICAL MARIJUANA MARKET**



FIELD GROWN HEMP & GREENHOUSE GROWN MARIJUANA



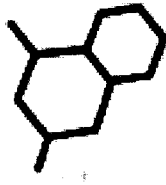
**Hemp being harvested in 18th
century Germany.**



Appearance

Marijuana looks different from hemp. When you observe their leaves, marijuana's shape tends to either be broad leafed, a tight bud, or look like a nugget with orange hairs. Hemp, on the other hand, has skinnier leaves that concentrate at the top of the plant stalk. Few branches or leaves exist below the top part of the plant.

When you observe the plants from afar, marijuana looks like a short fat bush. Hemp is typically skinnier and taller (up to 20 ft). At times, it almost looks like long ditchweed – hemp was actually found to grow among weeds in Nebraska. In general, when you compare a marijuana farm with those of industrial hemp, you'll notice how clearly very different from one another they are.



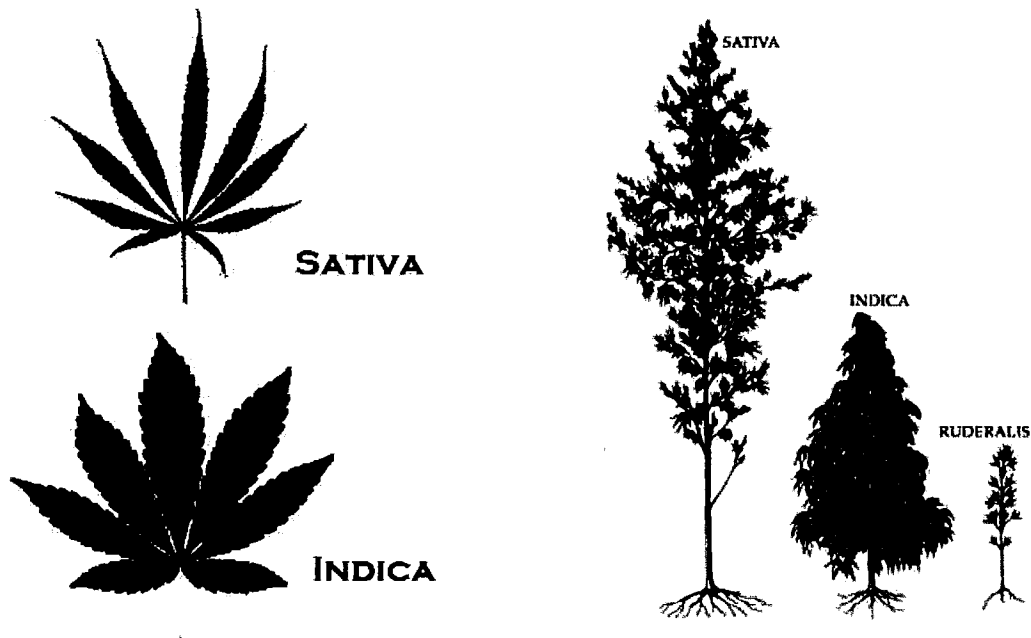
Chemical Makeup

The main difference between hemp and marijuana is in its chemical composition, specifically in the cannabinoid tetrahydrocannabinol (THC). THC is the chemical responsible for marijuana's psychoactive effects. An average batch of marijuana contains anywhere from 5-20% THC content. Some premium marijuana can have up to 25-30% THC. Hemp, on the other hand, has a max THC level of 0.3%, essentially making it impossible to feel any psychoactive effect or get a "high".

This threshold is heavily regulated in other countries that have legalized hemp. And, will be done so in the United States, now that hemp has been legalized here. Hence, growing hemp will be by permit. Hemp also has high cannabidiol (CBD) content that acts as THC's antagonist, essentially making the minimal amount of THC useless. However, some recent research is showing that certain levels of THC and other cannabinoids, along with CBD, can provide some therapeutic effect.

Cannabis Sativa VS Cannabis Indica

Differences explained in practical terms




Sativa strains are typically taller, loosely branched and have long, narrow leaves. They are usually grown outdoors and can reach heights of up to 20 feet. Sativa plants typically have higher concentration of CBD. ***Hemp is Cannabis Sativa.***

Indica strains are shorter, densely branched and have wider leaves. They are better suited for growing indoors. Indica plants contain higher THC.

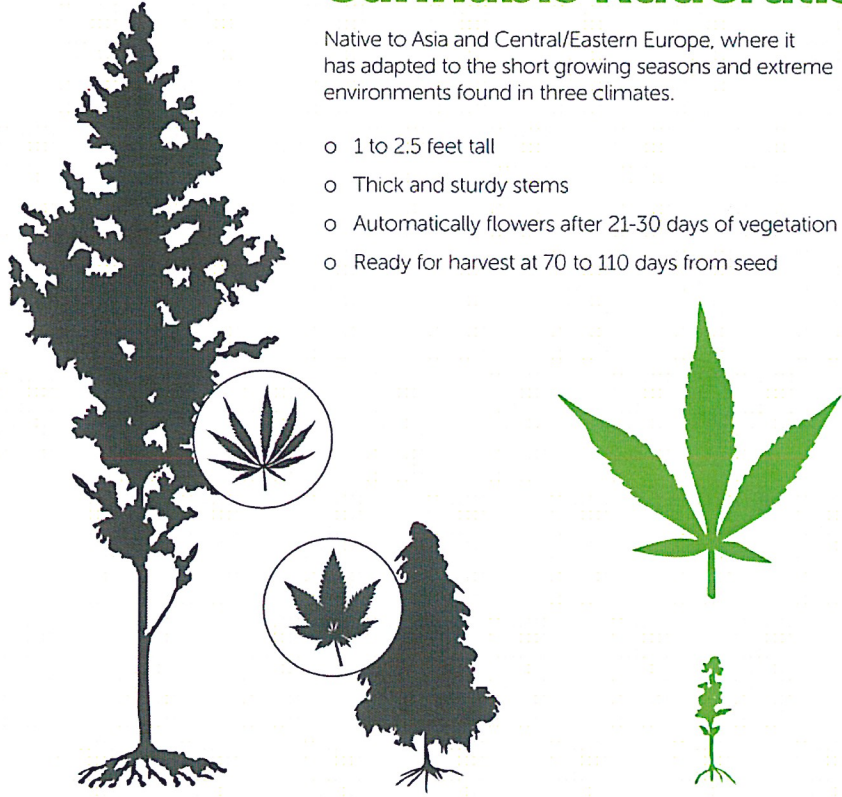
Many hybrids of these plants have been developed, so it is more important to examine the exact THC level of a plant rather than strictly categorizing them “sativa” or “indica”.

At this point, Cannabis **Ruderalis** deserves a short explanation:

 **Cannabis Ruderalis**

Native to Asia and Central/Eastern Europe, where it has adapted to the short growing seasons and extreme environments found in three climates.

- 1 to 2.5 feet tall
- Thick and sturdy stems
- Automatically flowers after 21-30 days of vegetation
- Ready for harvest at 70 to 110 days from seed



SATIVA INDICA RUDERALIS

Since **Ruderalis** does not use the lowering of the amount of daylight to trigger flowering, it is used by some outdoor growers to supplement their annual crop that otherwise depends on more than 12 hours of daylight to vegetate and then is triggered to flower when the available daylight drops

to 12 hours or below. This auto-flowering characteristic has been bred into some popular sativa/indica strains to allow for multiple crops outdoors.

Ruderalis is a naturally high CBD, low THC species, making it popular among medical cannabis users.

HYBRIDS

Through the cross breeding of Sativa, Indica and Ruderalis thousands of hybrid cannabis plants have been developed over the years. Hybridization is ongoing and creates new strains that become greatly popular based on their effects or lack thereof. At any given time, hundreds of different strains are available on the recreational and medical market. The most popular and reliable information on cannabis strains, and their effects, can be found at www.leafly.com .



Cultivation environment

The environment in which hemp and marijuana are grown is strikingly different. Hemp is typically grown closely together (as close as 4 inches apart) and is typically grown in large multi-acre plots. It can also grow in a variety of climates and its growth cycle is 108-120 days. Unlike hemp, recreational and medical marijuana requires a carefully controlled, warm, and humid atmosphere for proper growth. However, its growth cycle is only 60-90 days.

They are typically grown outdoors at 6 feet apart. And, in some greenhouse or indoor environments, marijuana is grown just 12-16 inches apart.

In outdoor cultivation of marijuana, ***if, somehow, it grows among, or close to, a hemp field, the hemp's pollen drift would ruin the marijuana crop by diluting its psychoactive cannabinoid.***

Therefore, the need for **greenhouse** or **indoor** growing of medical or recreational cannabis will only expand if Hemp growing is introduced to the list of agricultural products grown in the area.



Field Grown Hemp
















IN 1938, POPULAR MECHANICS MAGAZINE HAD AN ARTICLE ABOUT HOW HEMP COULD BE USED IN 25,000 DIFFERENT PRODUCTS...

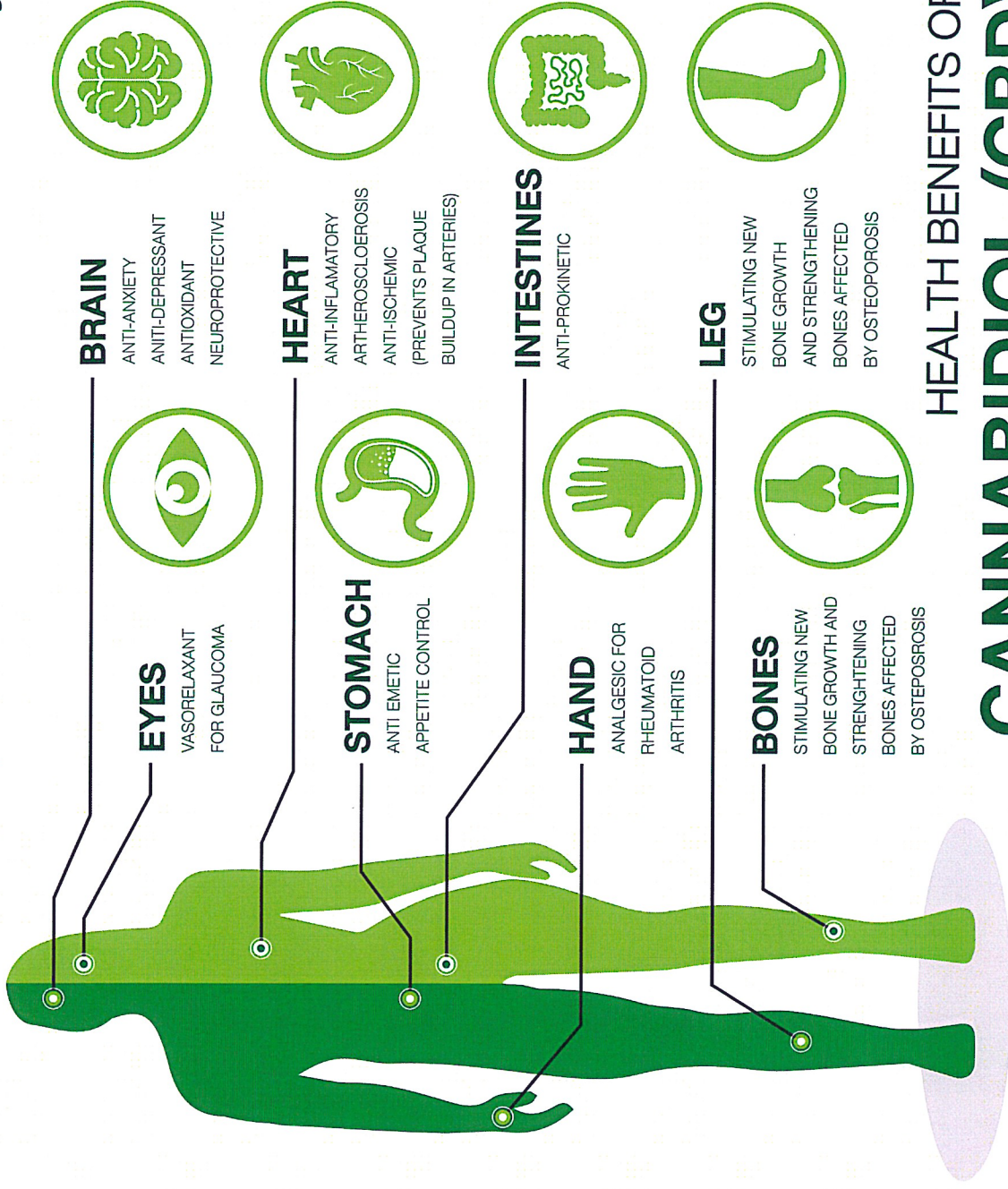


INDUSTRIAL HEMP

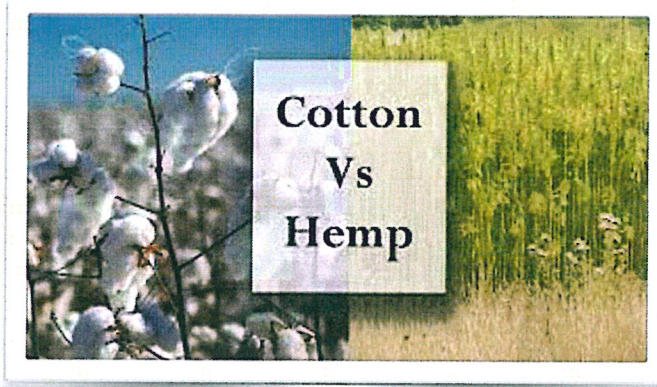
HEMP STALKS AND SEEDS USES

-  COOKING/SEASONING OIL
-  FLOUR
-  MILK/DAIRY
-  DIETARY SUPPLEMENT
-  BEER
-  BAKERY
-  BODY CARE PRODUCTS
-  ANIMAL FEED
-  GRANOLA
-  FUEL
-  MEDICINE
-  PROTEIN POWDER
-  PAINT
-  ORGANIC COMPOST
-  MULCH/COMPOST
-  TEXTILES
-  PAPER
-  FIBER BOARD
-  INSULATION
-  ANIMAL BEDDING
-  ROPE

Hemp CBD Wellness & Your Body



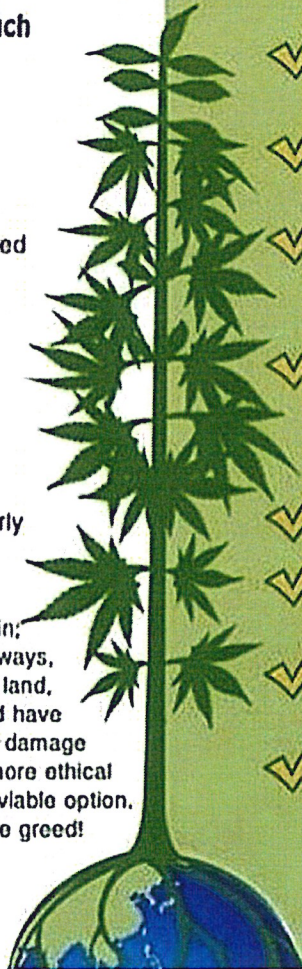
HEALTH BENEFITS OF
CANNABIDIOL (CBD)



Cotton vs Hemp

- Cotton needs **twice as much land** as Hemp
- Cotton needs **9.758L** to grow **1kg** of fibre
- Cotton **pollutes** the water and leaves the land scorched due to its high pesticide & herbicide needs
- Cotton accounts for **25% of all pesticide use** worldwide
- Organic cotton lessens the blow, although it is not nearly as **sustainable as Hemp**

With the planet in the state that its in; with global warming, polluted waterways, desertification and loss of farmable land, surely the governments of our world have talked about options in undoing the damage and proceeding development in a more ethical and environmental way. Hemp is a viable option. So why aren't we using it? Corporate greed! I'm over it! Are you? Wear hemp. choose hemp. Your dollar is your vote. People before profits!!



- ✓ Hemp produces **twice as much fibre** per acre
- ✓ Hemp only uses **2.123L** to grow **1kg** of fibre
- ✓ Hemp **returns up to 60% of the nutrients** to the soil when dried in the field
- ✓ Hemp can be grown on the **same land consecutively for 14 years** without soil depletion or yield reduction
- ✓ Hemp is a great rotation crop
- ✓ Hemp requires **no pesticides** and is a natural weed deterrent
- ✓ Hemp fibre is **4x more durable** than cotton
- ✓ Hemp can be relied on in a **drought induced famine** for its high protein seed

HISTORY OF HEMP

8,000 BCE: Traces of hemp have been found in modern day China and Taiwan. Evidence shows that hemp was used for pottery and food (seed & oil).

2,000 BCE – 800 BCE: Hindu sacred text Atharvaveda (Science of Charms) as “Sacred Grass”, one of the five sacred plants of India.

600 BCE: Hemp rope is found in southern Russia.

500 BCE: a jar of hemp seed and leaves were found in Berlin, Germany. Use of hemp continues to spread across northern Europe

200 BCE: Hemp rope is found in Greece.

100 BCE: China uses hemp to make paper. Hemp rope is found in Britain

570: A French Queen was buried in hemp clothing.

850: Vikings use hemp and spread it to Iceland.

900: Arabs adopt technology to make hemp paper.

1533: King Henry VIII, King of England, fines farmers if they do not raise hemp.

1549: Cannabis is introduced in South America (Brazil).

1616: Jamestown, first permanent English settlement in the Americas, grows hemp to make ropes, sails, and clothing.

1700s: American farmers in several colonies are required by law to grow hemp.

1776: The Declaration of Independence is drafted up on hemp paper.

1840: Abraham Lincoln uses hemp seed oil to fuel his household lamps.

1916: USDA publishes findings that show hemp produces 4X more paper per acre than trees.

1937: The Marijuana Tax Act placed a tax on all cannabis sales (including hemp), heavily discouraging the production of hemp.

1938: Popular Mechanics writes an article about how hemp could be used in 25,000 different products.

1942: Henry Ford builds an experimental car body made with hemp fiber, which is ten times stronger than steel.

1942: USDA initiates the “Hemp for Victory” program – this leads to more than 150,000 acres of hemp production.

1957: The last commercial hemp fields in the US were planted in Wisconsin.

1970: the Controlled Substances Act classified hemp as an illegal Schedule I drug, which imposed strict regulations on the cultivation of industrial hemp as well as marijuana

1998: The U.S. begins to import food-grade seed and oil.

2004: Ninth Circuit Court decision in Hemp Industries Association vs. DEA permanently protects sales of hemp foods and products in the U.S.

2007: The first hemp licenses in over 50 years are granted to two North Dakota farmers.

2014: President Obama signed the Farm Bill, which allowed research institutions to start piloting hemp farming.

2015: The Industrial Hemp Farming Act (H.R. 525 and S. 134) was introduced in the House and Senate. If passed, it would remove all federal restrictions on industrial hemp and legalize its cultivation.

2016: A Colorado farm has earned the Organic certification from USDA for its hemp.

2018: The Federal Farm Bill legalizes hemp nationwide.

SUMMARY

As Santa Barbara County has dipped its toe into the great Cannabis pool, with few, if any, cannabis cultivation sites yet permitted, it is important for the public and our policy makers to be informed on all things Cannabis. There is a real need to stay ahead of the curve on information about the cannabis boom.

With the legalization of Hemp (Cannabis Sativa) nationwide, and the coming national legalization of any species of Cannabis (Sativa, Indica & Ruderalis) containing levels of THC higher than 0.3%, the Cannabis plant is poised to revolutionize agriculture across the nation.

The demand for Hemp products (25K or more) will be a true agricultural revolution and provide thousands of good paying jobs across the nation. The re-legalization of Hemp is long overdue.

The knowledge of the medicinal value of cannabis is growing by leaps and bounds. The need for high-tech growing systems is critical to this area of cultivation. That means indoor or sealed greenhouses.

The beer and wine industry, as a recreational market, will have cannabis as a third component. Wine tasting rooms, upon full legalization of cannabis at THC levels greater than 0.3% will be offering fine strains of craft cannabis, in its various delivery forms, along with their vintage wines.

Santa Barbara County, as the 13th largest agricultural county in the state, will easily move up in this ranking with its embracement of cannabis. Many high paying jobs are already being created and much capital is being invested locally.

The sorting out of the many facets of this industry will come and it will ultimately be fully integrated into the agricultural family the County Comprehensive Plan demands to be protected and preserved.