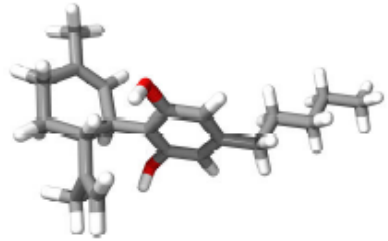
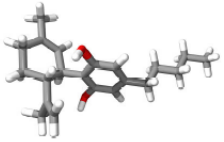
Heartland Hemp Company

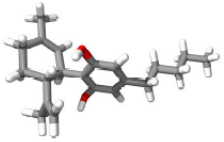


Heartland Hemp Company



Introduction

Heartland Hemp Company



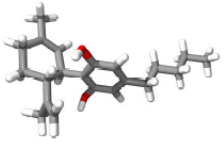
Heartland Hemp Company

- **Founded in December 2014 with focus on hemp-derived CBD products**
- **Developed nationwide and global network of hemp industry professionals**
- **Dedicated to the *re-introduction* and *re-emergence* of Hemp as a viable agricultural crop in Iowa**

- **Co-wrote and introduced House Bill 470 in 2015**
  - **Production, Marketing and Distribution of Industrial Hemp and Related Plant Materials**
  - **Never brought to committee vote**
  - **Died in first funnel**

- **Committed to working with Iowa farmers to re-introduce hemp as a commercial crop**
- **Developing relationships with farmers experienced in certified-seed growing**

Heartland Hemp Company

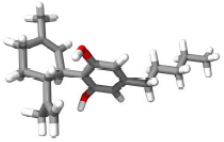


Boris Shcharansky

- Founder/CEO of Heartland Hemp Company in Des Moines, IA
- Entrepreneur and Hemp Advocate
- Eight years of direct business development experience across three start-ups
- Registered Lobbyist in Iowa
- Graduated: University of Pennsylvania, The Wharton School (Finance)

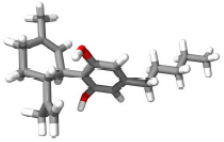
- Iowa Connection:
  - 27 years Iowa resident
  - Valley High School graduate, West Des Moines
  - Des Moines area business owner since 2004

Heartland Hemp Company



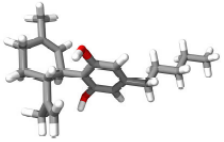
Hemp's History

HeArtland Hemp Company



- Eastern & Northern China Neolithic farming communities
- Evidence they cultivated hemp along the Wei & Yellow Rivers
- Archeologists recovered fiber & seed along Yellow & Yangtze River

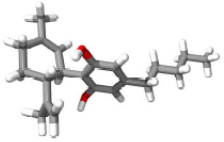
Heartland Hemp Company



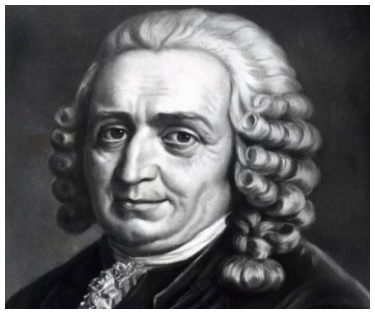
[Wrapping paper] with hemp fiber excavated from the [Han Tomb] of [Wu Di] (140-87 BC) at [Baqiao], Xi'An

Hemp shoe from China dating back to 100 CE

Heartland Hemp Company

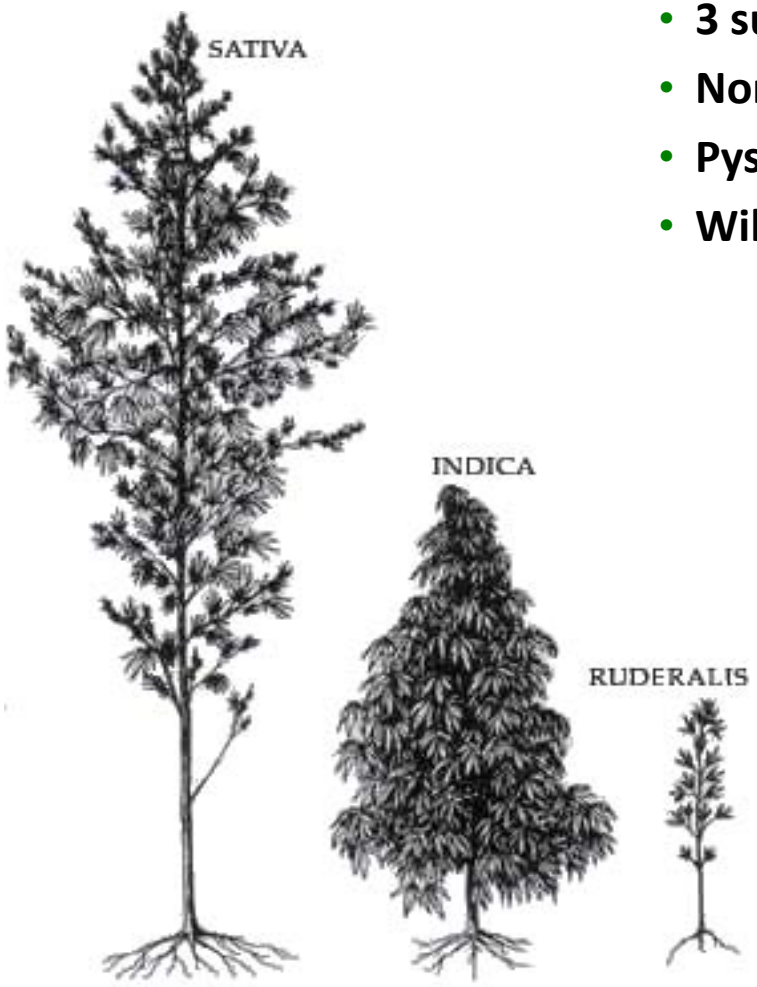


Taxonomy



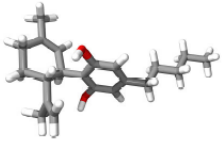
Carl Linnaeus - 1753

Jean Baptiste
de Lamarck - 1785



- 3 subspecies
- Non-drug, fiber & oilseed
- Pyschotropic, medicinal
- Wild, hybrids

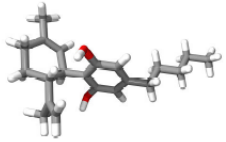
Heartland Hemp Company



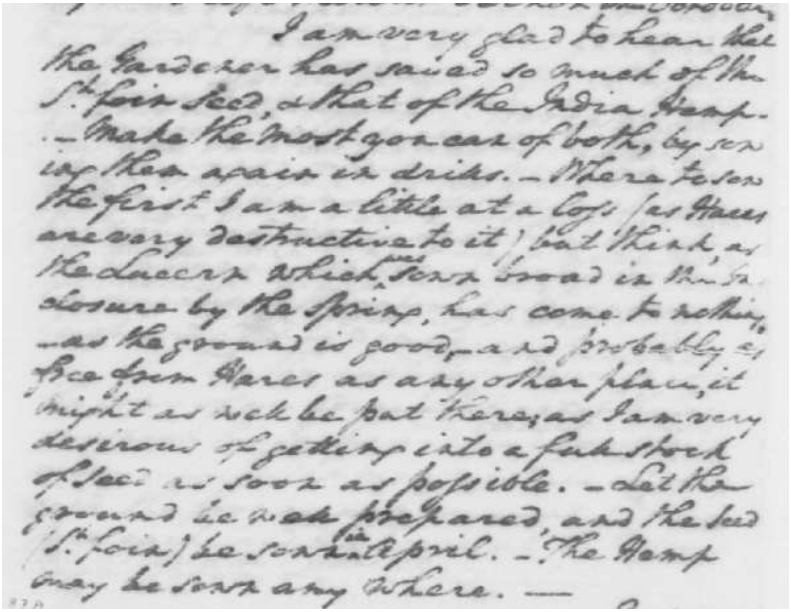
13 Colonies Depended on Hemp

- In 1619 the Crown ordered the colonists at Jamestown to grow hemp to meet demands for England's maritime ropes & cord.
- Hemp became more important to the colonies as New England's own shipping industry developed.
- Some colonies offered farmers "bounties" for growing it.
- Thomas Jefferson developed a device for processing hemp in 1815.
- Made, paper, clothing and heavy duty ropes

Heartland Hemp Company



Probably George Washington's most famous quote regarding hemp, came from one of his letters to his farm plantation field manager, William Pearce (Feb. 24, 1794)



I am very glad to hear that
the Gardener has saved so much of the
St. foin seed, & that of the India Hemp.
— Make the most you can of both, by sow
ing them again in drills. — Where to sow
the first I am a little at a loss (as Hares
are very destructive to it) but think, as
the Lucern which was sown broad in the In
closure by the Spring, has come to nothing,
— as the ground is good, — and probably as
free from Hares as any other place, it
might as well be put there; as I am very
desirous of getting into a full stock
of seed as soon as possible. — Let the
ground be well prepared, and the seed
(St. foin) be sown in April. — The Hemp
may be sown any where. —

"Mr. Pearce, on my farming plantation(s), I want you to make the most of Hemp and plant it everywhere on my farmlands that haven't been previously reserved for other things."

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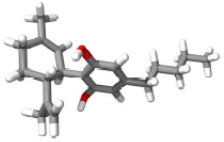

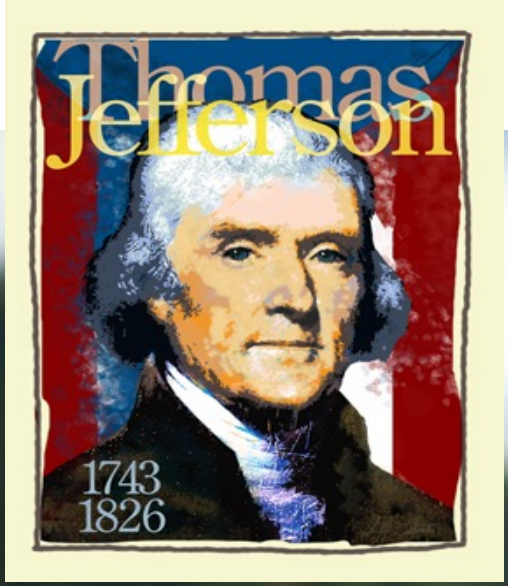

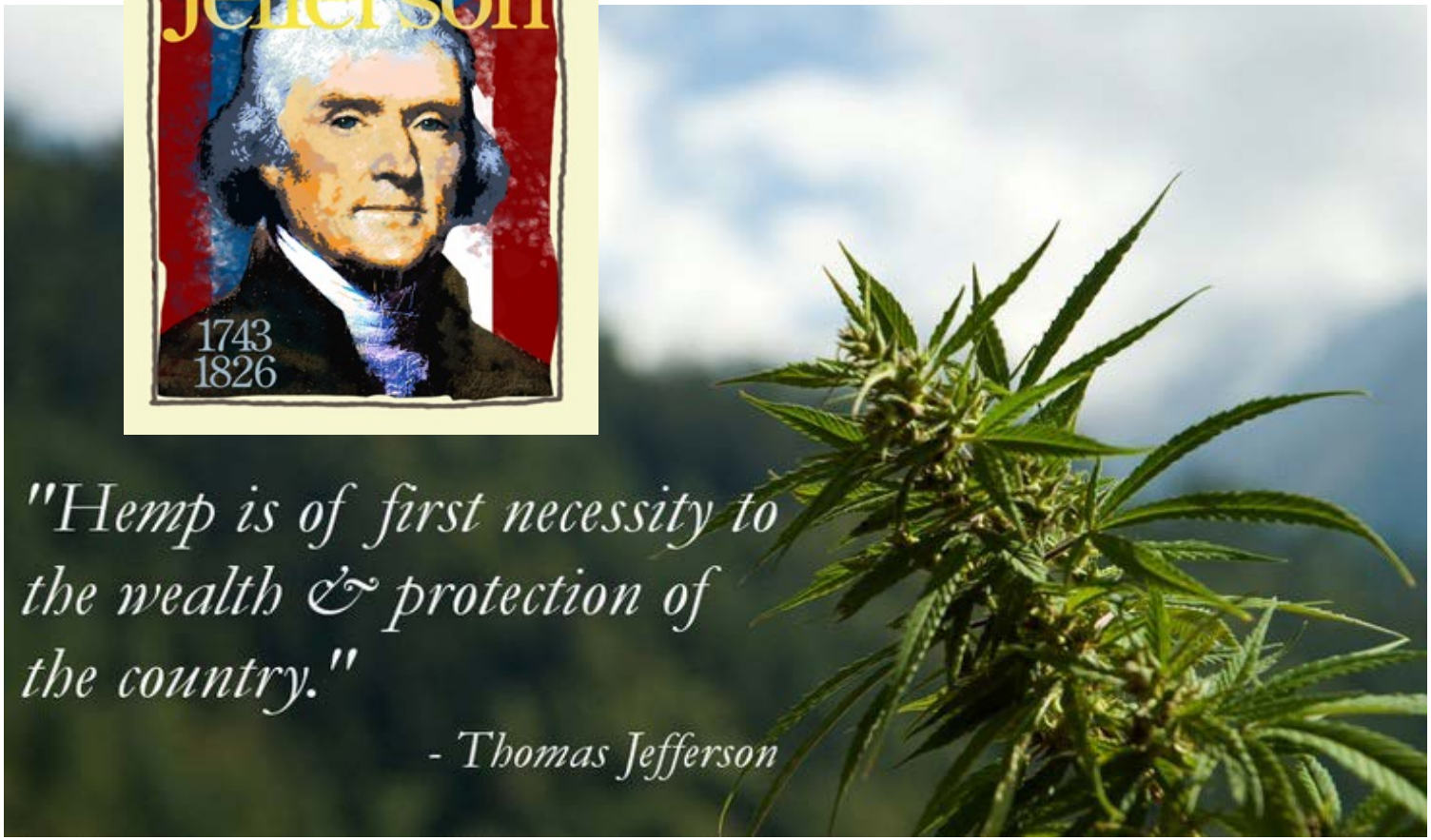

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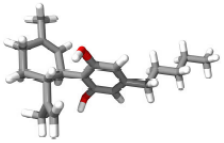
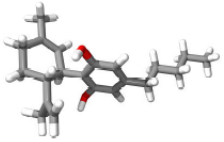


Kentucky: the Industry Center Late 1700's to late 1800's

- 1775 hemp was planted in Danville, Kentucky
- 1790, hemp fiber was first advertised for sale in local papers
- Kentucky became the industry center for the next 100 years
- 1811, there were almost 60 ropewalks in Kentucky
- Late 1850's, more than one-third of the 400 bagging, bale rope and cordage factories in America were in Kentucky

Heartland Hemp Company

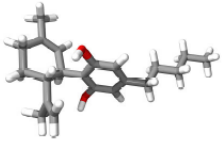


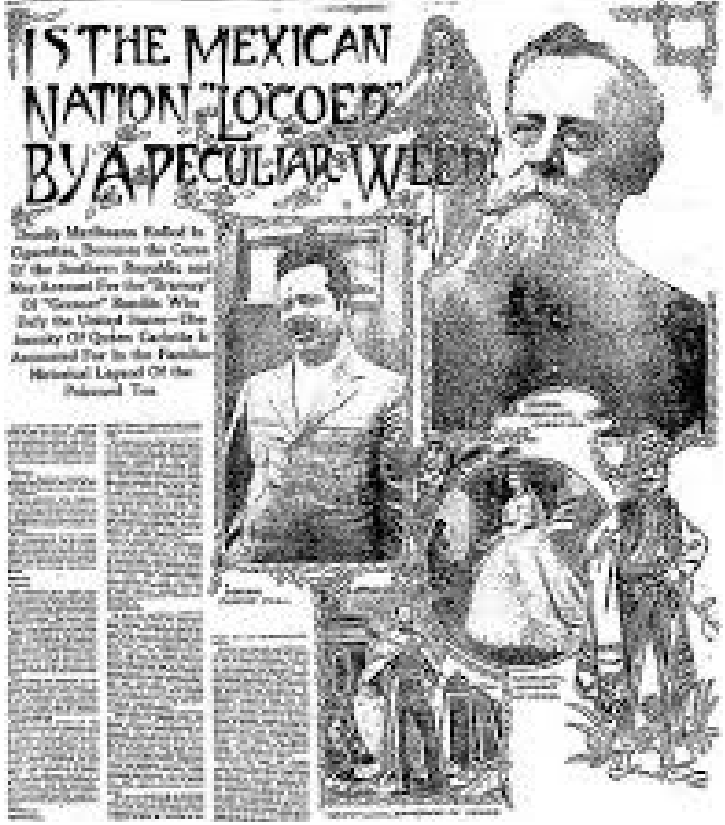
1890s and Impending Prohibition

The word “marijuana” or “marihuana” came in the late 1890s. The Founders knew the plant as “hemp”

- **In the 1890s, the first English-language newspaper opened in Mexico and, through the wire service, tales of marijuana-induced violence that were common in Mexican papers began to appear north of the border — helping to shape public perceptions that would later form the basis of prohibition.**

Heartland Hemp Company

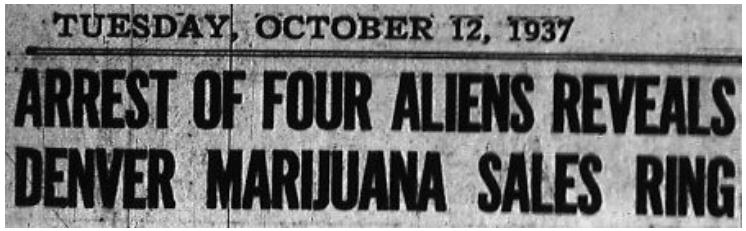




THE OGDEN STANDARD

IS THE MEXICAN NATION "LOCOED" BY A PECULIAR WEED?

Deadly Marihuana Rolled In Cigarettes, Becomes the Curse Of the Southern Republic and May Account For the "Bravery" Of "Greaser" Bandits Who Defy the United States—The Insanity Of Queen Carlotta Is Accounted For In the Familiar Historical Legend Of the Poisoned Tea.



TUESDAY, OCTOBER 12, 1937

ARREST OF FOUR ALIENS REVEALS DENVER MARIJUANA SALES RING

Drug Menace... MARIJUANA

How an Innocent-Looking Plant, a Roadside Weed In Many States, Presents A Grave Narcotic Problem

By WILLIAM WOLF

Some of the marijuana captured in a raid. The cigarettes often cost several dollars each

powerful narcotic effects when smoked. This probably occurred in Mexico.

Suddenly, the nation awoke to the fact that it had a major drug problem on its hands. Marijuana smoking, which was confined at first to Mexico and the Southwestern States, started to spread. And, worst of all, the plant from which the narcotic came not only could be grown anywhere, but actually was growing wild in many states!

Early this year, a house was raided in a small New Jersey town, and marijuana worth $6,000 was seized. The person arrested had in his possession a large quantity of the dried and prepared weed. He confessed that it was grown on a small plot of ground belonging to the house he rented.

The commercial production of marijuana is as simple as that—a field is planted and the weed grows. It needs no special preparation before being sold as a drug, other than drying the leaves and flowers. The only thing that led to this arrest was a quarrel with somebody who knew what the "patch of weeds" was and told police officials about the secret back-yard crop.

Federal authorities reported last fall at the end of the growing season that large acreages of *Cannabis sativa* were destroyed in Pennsylvania, New York, Ohio, California, and Georgia. At the same time, evidence of its widespread cultivation was contained in the additional report that, within a few days' time, investigations and seizures were made at points as widely separated as Rochester, N. Y., Fremont, Ohio, Sacramento, Calif., and Columbus, Ga.

Because it was circulated so generally in this nation's early history, marijuana now is a roadside weed in many sections of the country.

For that reason, Federal authorities regard it as a puzzling problem. Furthermore, over fifteen states failed to adopt the uniform narcotic-drugs act under which the Federal authorities could prosecute peddlers and growers of the weed. Some of these states only forbid the importation of marijuana; and, since it grows anywhere, such laws obviously are useless.

Where it is grown for sale as "dope," considerable ingenuity is expended in concealing the fields containing it. In the Ohio case reported by Federal officials, a large stand of Indian hemp was hidden by surrounding cornfields. That is a favorite trick of growers, to hide the marijuana with higher-growing crops.

The average citizen can help stamp out marijuana by reporting to the proper authorities any suspicious growth hidden by corn, alfalfa, or similar crops. The weed grows four to eight feet or more in height, has a sticky surface when touched, and gives off a strong narcotic odor. When grown for its fiber, it is cut before reaching full growth; but when intended for illegal uses, it is allowed to blossom, since it is the flowering tops, the leaves, and the small stems that are gathered and dried for smoking.

The plant has erect, branching, and angular stems, while the leaves are alternate and opposite on long, lax footstalks. The leaves have sawlike edges and may be odd or even in number, but usually about eight leaves are in one group.

What are the (Continued on page 119)

A patch of Indian hemp found growing in the side yard of a San Francisco home. The occupant of the house was arrested

HeArtland Hemp Company

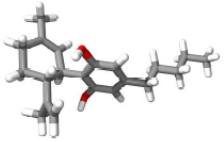
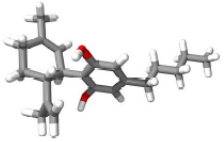


Photo: Hemmings.com

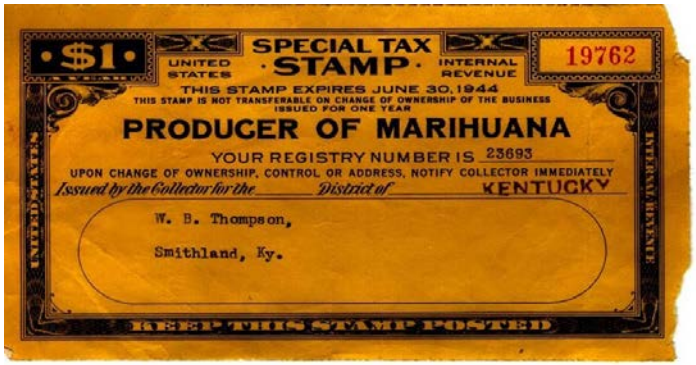
In the 1930's, Ford Motor Company operated a successful biomass fuel conversion plant using cellulose at Iron Mountain, Michigan. Ford engineers extracted methanol, charcoal fuel, tar, pitch ethyl-acetate and creosote from hemp. The same fundamental ingredients for industry were also being made from fossil fuels

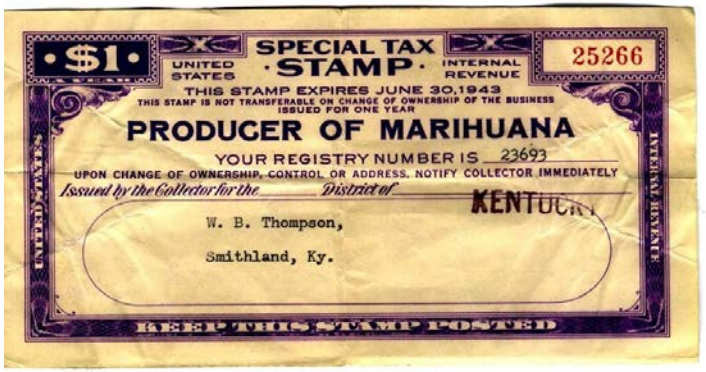
In 1941, Henry Ford famously, kicked the hemp bio-composite frame of a Ford car

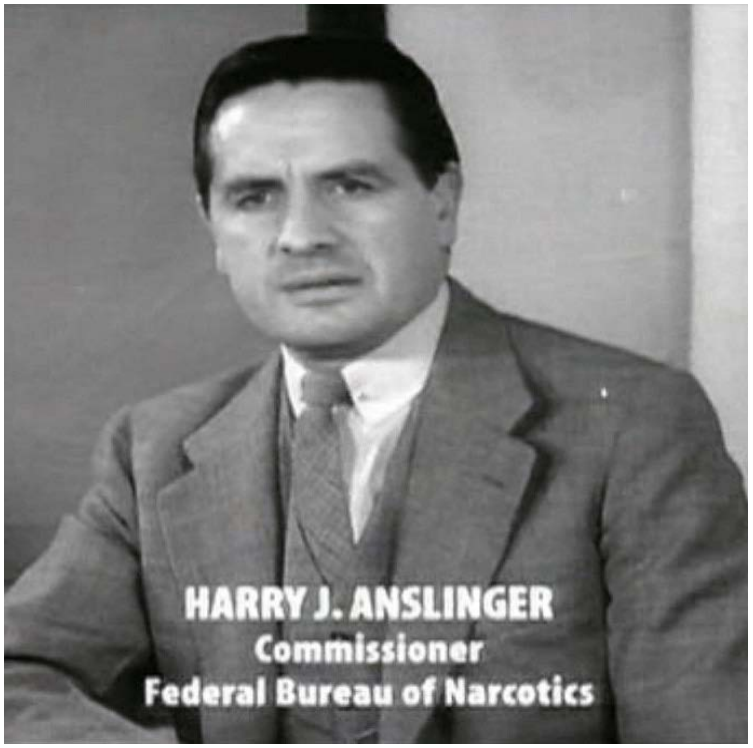
Heartland Hemp Company



1937 Marihuana Tax Act







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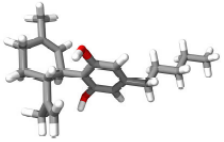
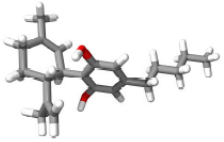
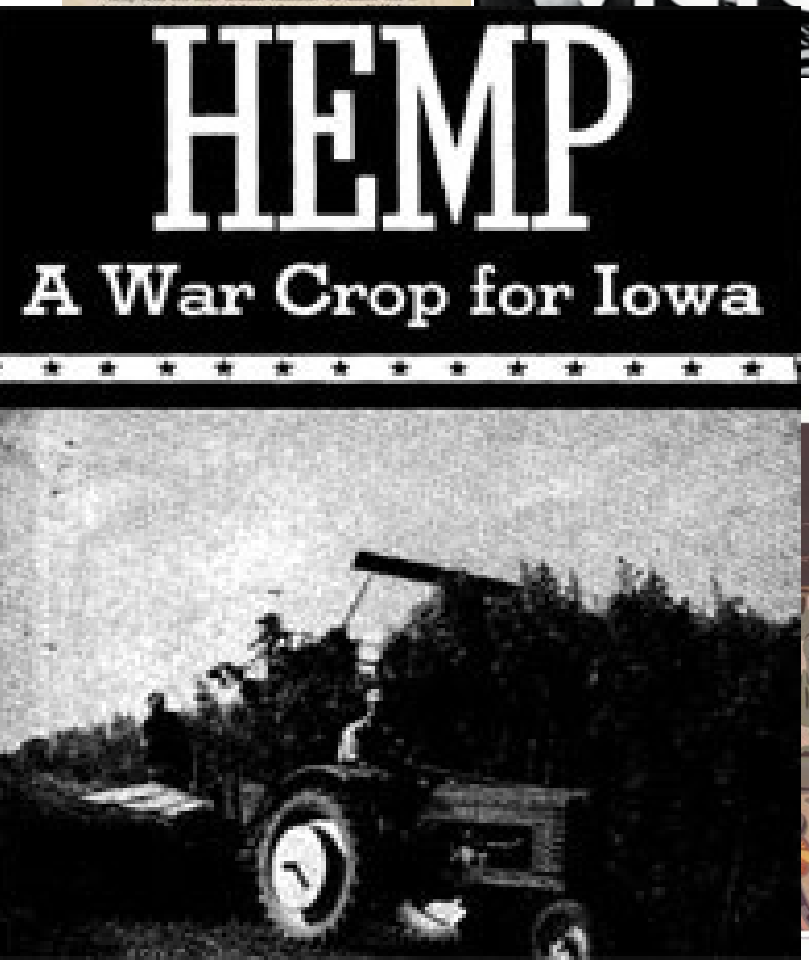
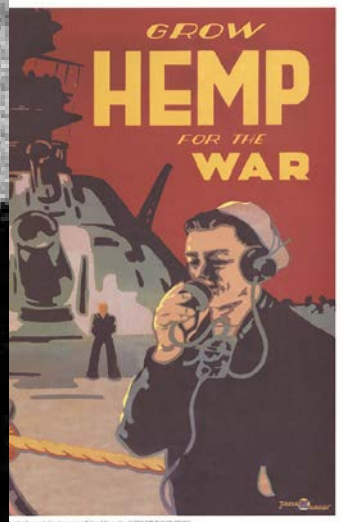


World War II

Heartland Hemp Company

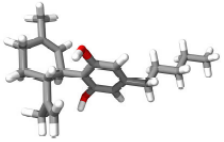






- When Philippines fell to Japanese forces in 1942 in World War II, the Department of Agriculture and the US Army urged farmers to grow hemp fiber cultivars. Tax stamps for cultivation of fiber hemp began to be issued to farmers. Without any change in the Marijuana Tax Act, 400,000 acres (1,600 km2) were cultivated with hemp between 1942 and 1945. The last commercial hemp fields were planted in Wisconsin in 1957.

Heartland Hemp Company



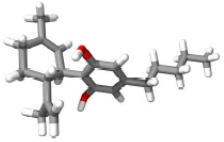
An Overview of *Cannabis Sativa*

- **Marijuana or Hemp?**
  - **Marijuana: Flowering tops of *Cannabis Sativa* concentrated with THC and known for their "high"**
    - **Still illegal in over 50% of US states for medical, with handful of recreational laws approved**
  - **Hemp: *Cannabis Sativa* with a THC concentration of not more than 0.3% on a dry weight basis**

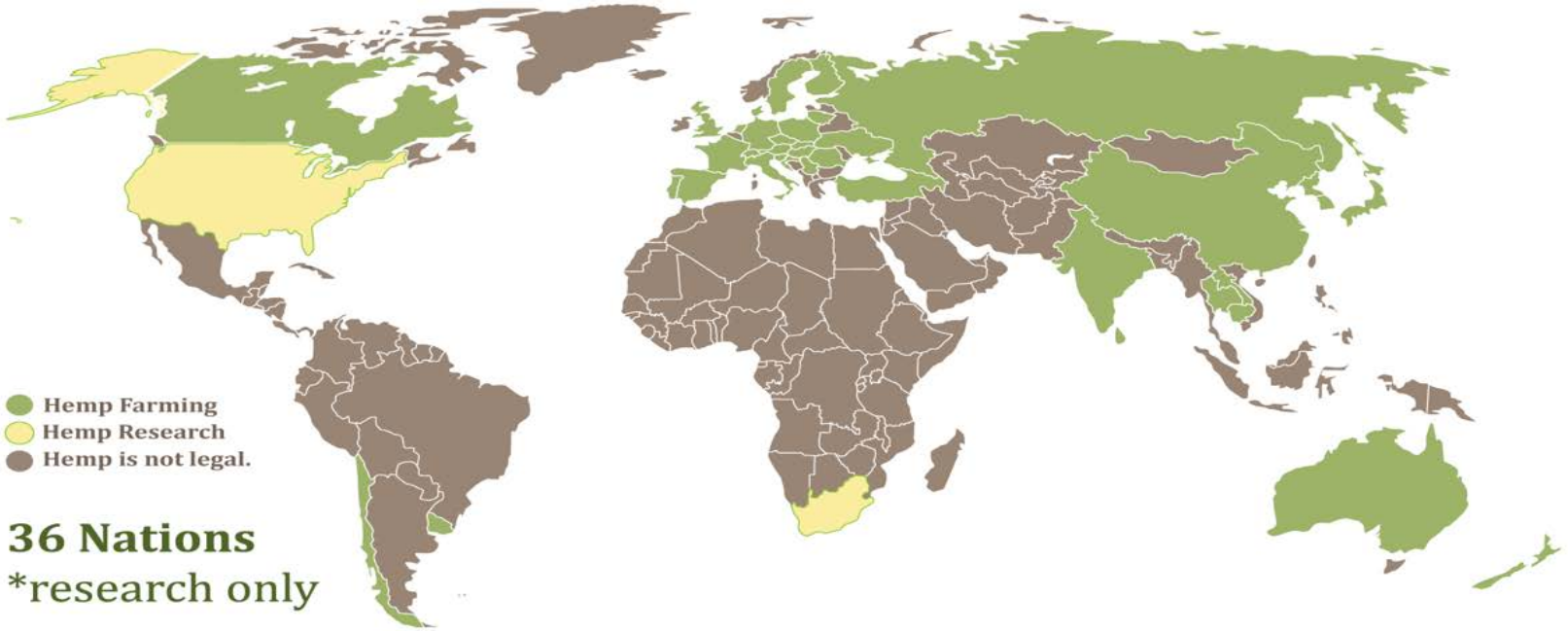
- **1970 – Nixon passes Controlled Substances Act**
  - **Any member of the *Cannabis Sativa L.* species of plants is prohibited from being grown in the United States**
  - **Industrial Hemp conflated with marijuana – DEA targets both**
    - **Wild hemp, or "ditch weed," left over from WWII is treated**
    - **90% of DEA plant eradication budget is directed towards this non-psychoactive hemp**

  - **Agricultural Act of 2014 made hemp legal to grow in states that pass hemp legislation**

Heartland Hemp Company



2014 Hemp Farming & Research World Map



NORTH AMERICA
Canada
United States*

SOUTH AMERICA
Chile, Uruguay

AFRICA
South Africa*

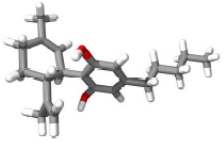
EUROPE
Austria, Croatia, Czech Republic, Denmark
Finland, France, Germany, Hungary, Italy, Lithuania,
Netherlands, Poland, Portugal, Romania, Slovakia,
Slovenia, Spain, Sweden, Switzerland, Turkey,
Ukraine, United Kingdom

ASIA
China, India, Japan, North Korea, South Korea, Russia, Thailand

OCEANIA
Australia, New Zealand

VH
Vote Hemp
www.VoteHemp.com

Heartland Hemp



Hemp Industries Association

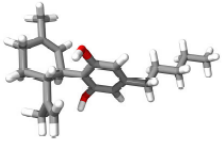
Founded 1998

HIA v. DEA

Drug Enforcement Administration, October 9, 2001, published a rule banning all hemp seed, hemp oil and foods without public notice or any compelling reason for doing so.

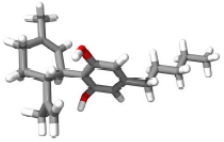
On February 6, 2004 the Ninth Circuit Court of Appeals issued a unanimous decision in favor of the HIA in which Judge Betty Fletcher wrote, "[T]hey (DEA) cannot regulate naturally-occurring THC not contained within or derived from marijuana-i.e. non-psychoactive hemp is not included in Schedule I. The DEA has no authority to regulate drugs that are not scheduled, and it has not followed procedures required to schedule a substance. The DEA's definition of "THC" contravenes the unambiguously expressed intent of Congress in the Controlled Substances Act (CSA) and cannot be upheld". On September 28, 2004 the HIA claimed victory after DEA declined to appeal to the Supreme Court of the United States the ruling from the Ninth Circuit Court of Appeals protecting the sale of hemp-containing foods. Industrial hemp remains legal for import and sale in the U.S., but U.S. farmers still are not permitted to grow it.

Heartland Hemp Company

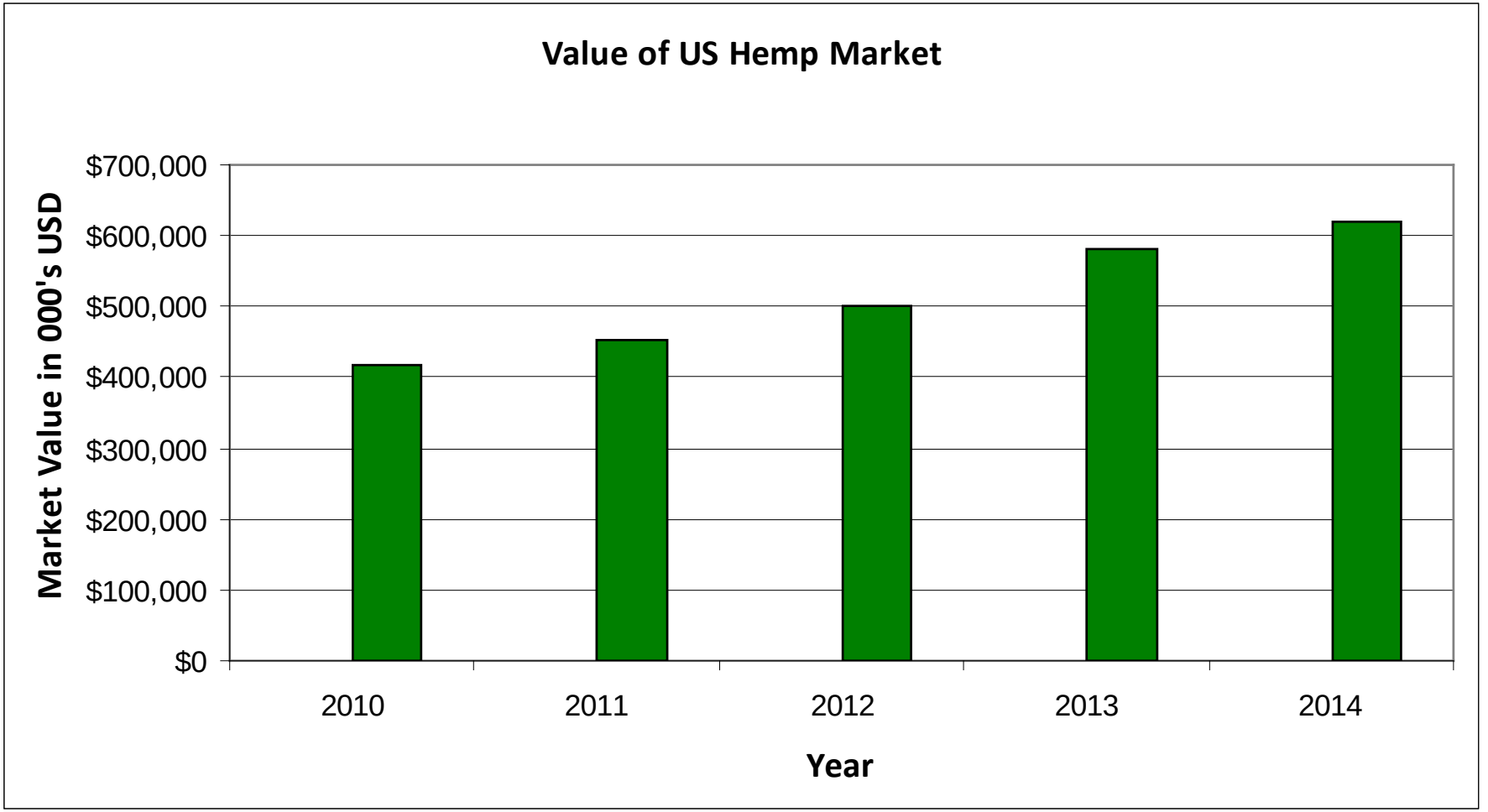


Hemp's Present

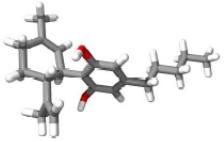
Heartland Hemp Company



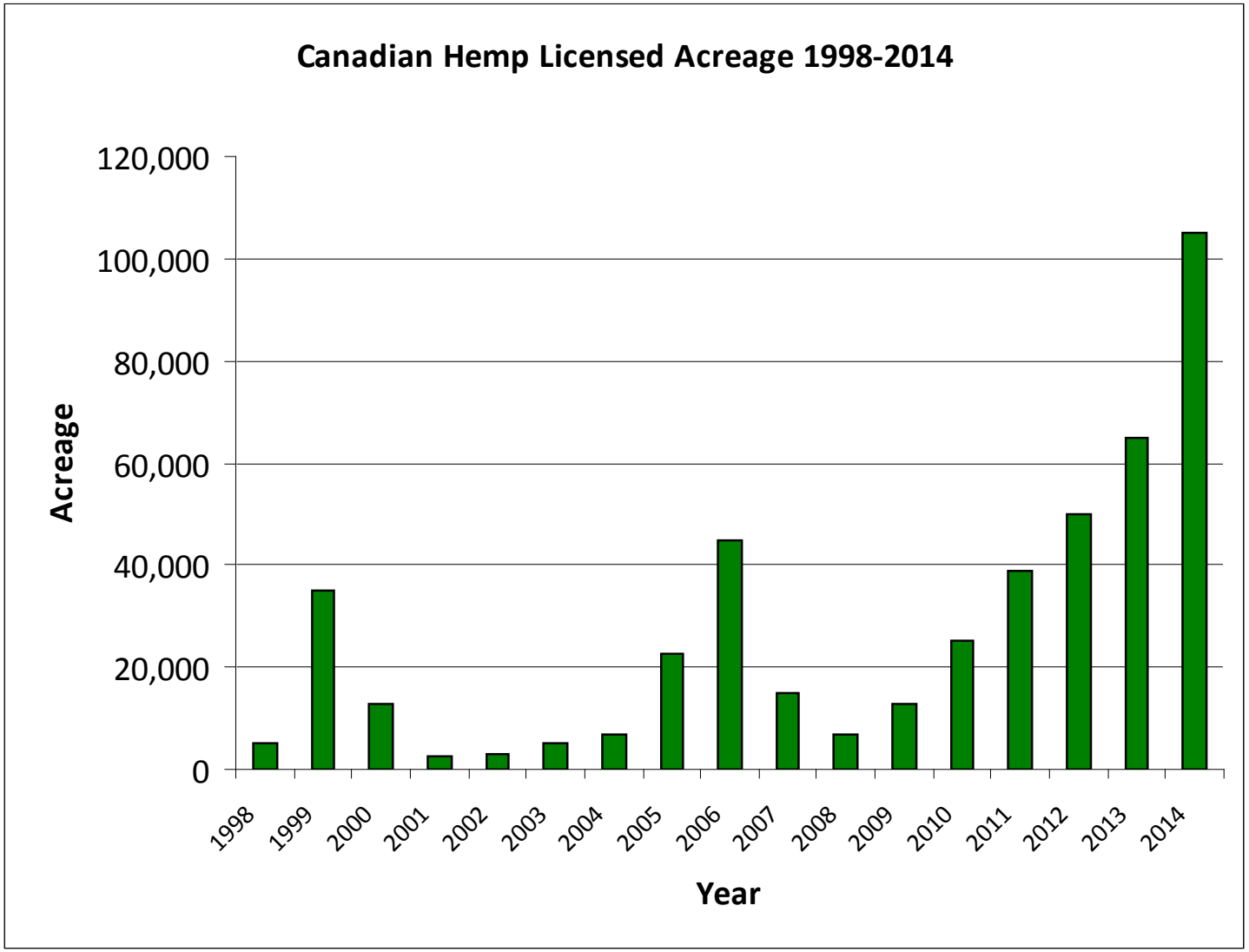
Annual Sales of Hemp Products in United States



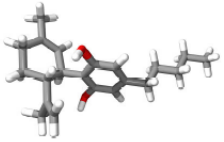
Heartland Hemp Company



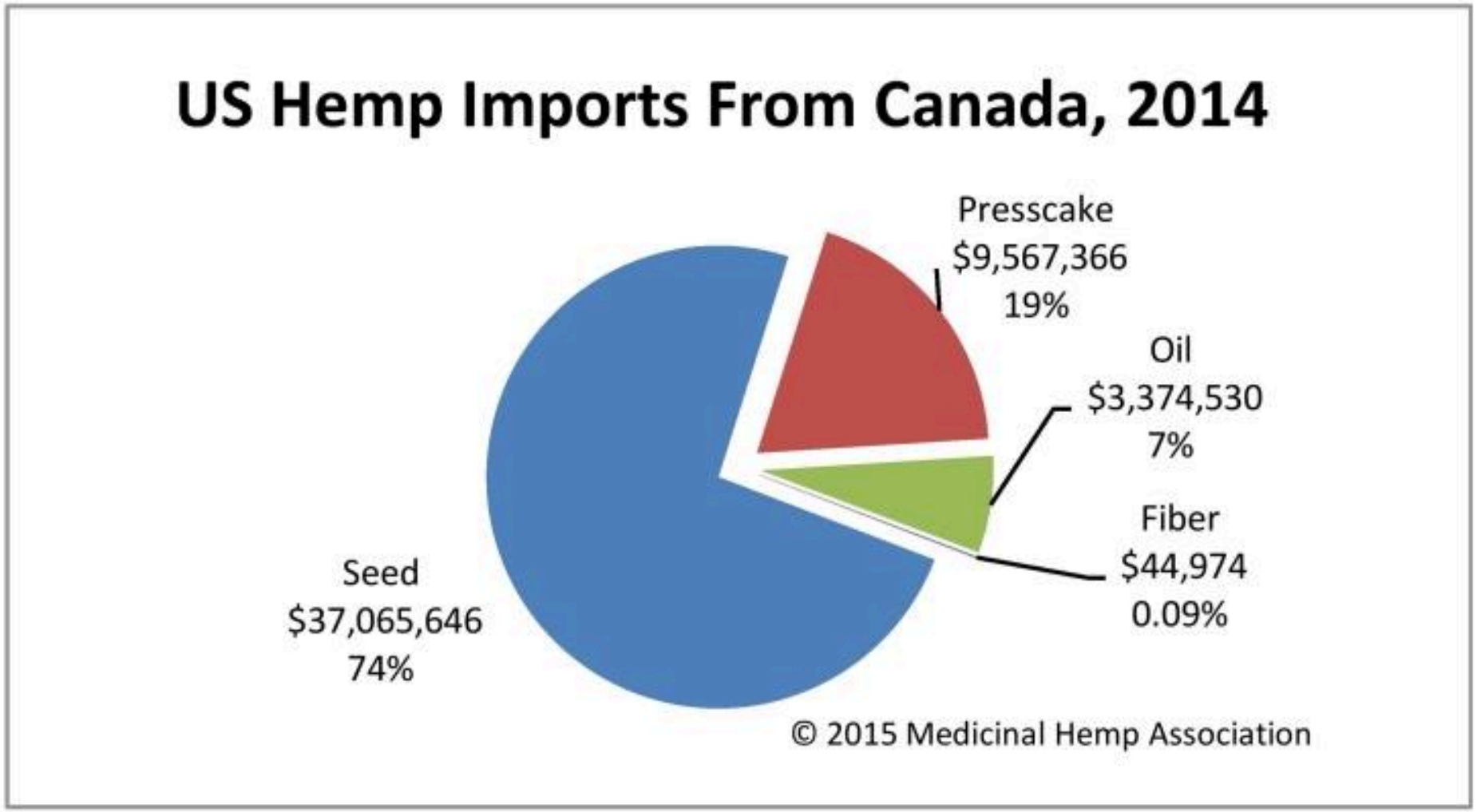
Farmed Hemp Acreage in Canada



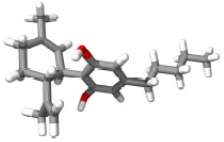
Heartland Hemp Company



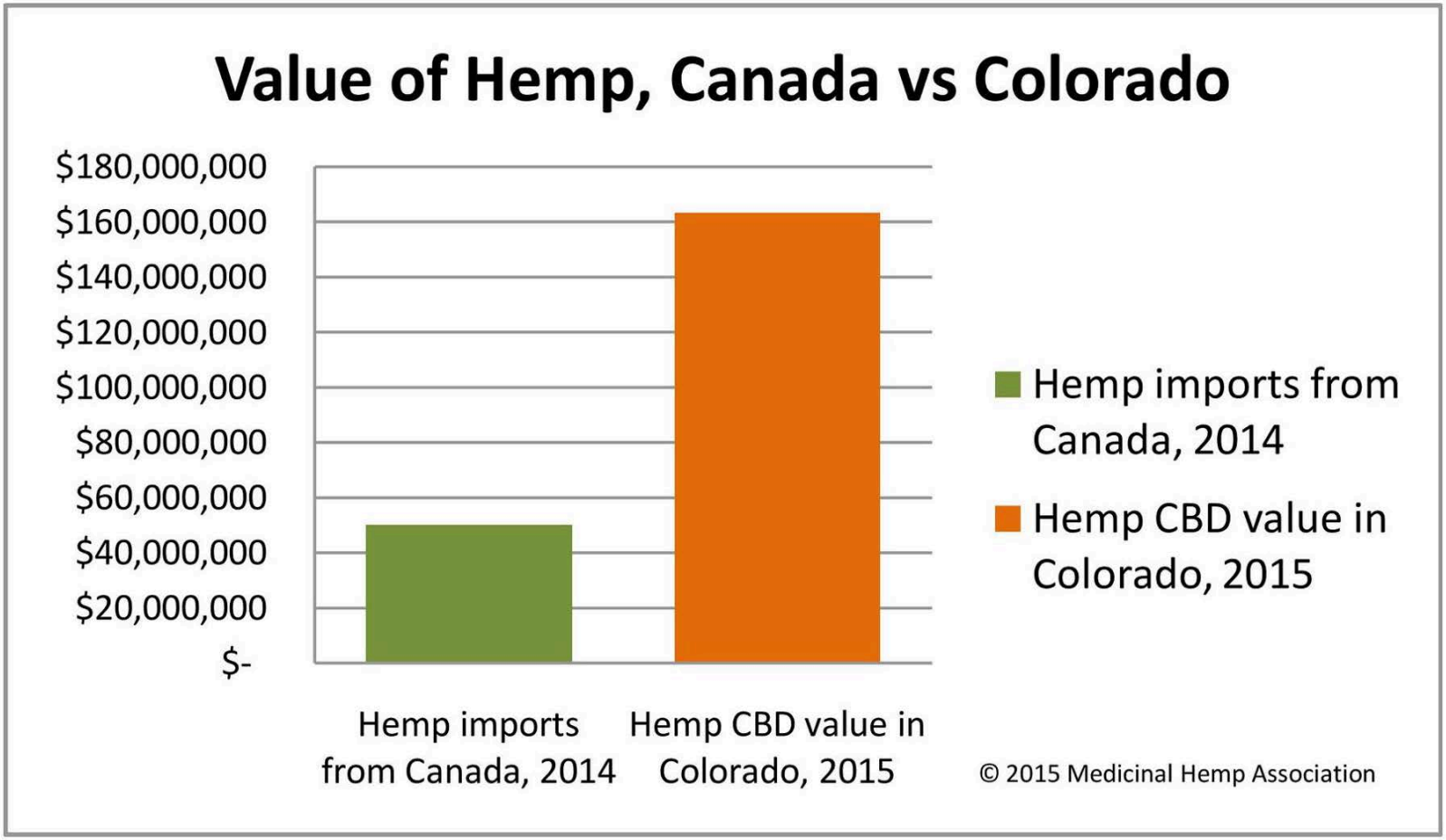
Breakdown of US Imports of Canadian Fiber Hemp



Heartland Hemp Company



Value of Colorado Hemp (CBD) vs. Canadian Fiber/Seed Hemp



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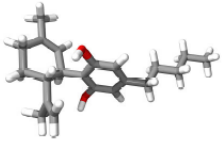
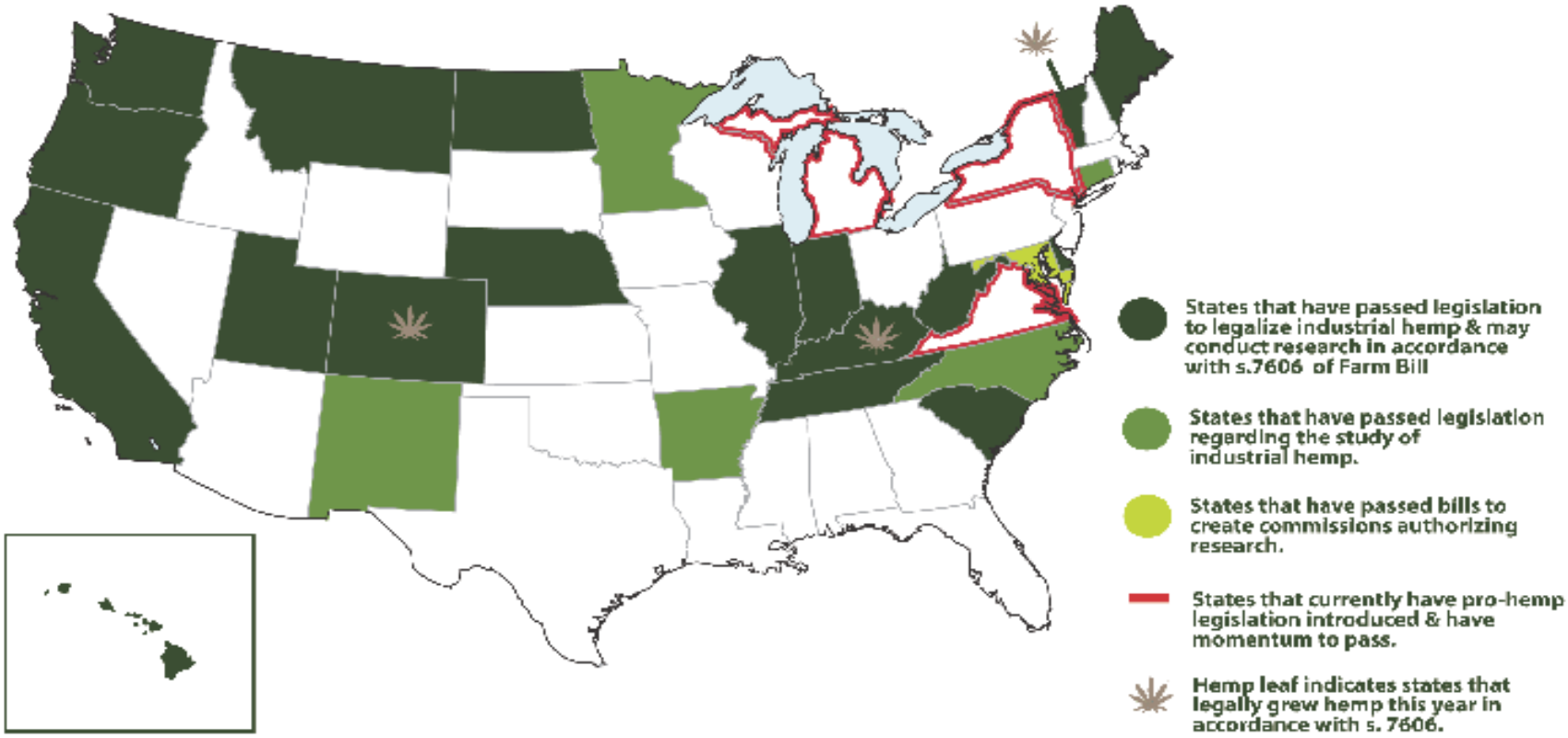


U.S. Hemp Legalization Status Map



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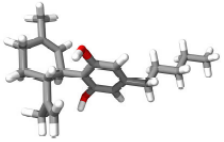
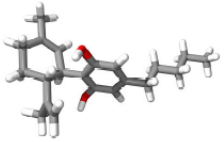


Hemp's Agronomy and Uses

Heartland Hemp Company



Farming/Agronomy Facts

- 90 - 120 growing days
- Germination between 2 - 5 days depending on warm or cold weather
- 100 plants/m2 for seed
- 200 + plants/m2 for fiber
- Nutrient quality similar to canola or winter wheat
- Little to no pesticides/herbicides needed
- Resilient during drought
- Once established little to no field maintenance
- Conventional equipment used, combine harvester with a draper or rigid style header
- Stable rotation with soybeans, perennial grasses, legumes, barley, alfalfa, red & sweet clover

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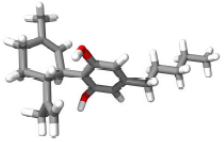
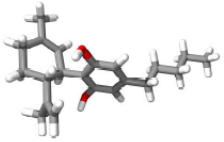


Heartland Hemp Company Solution

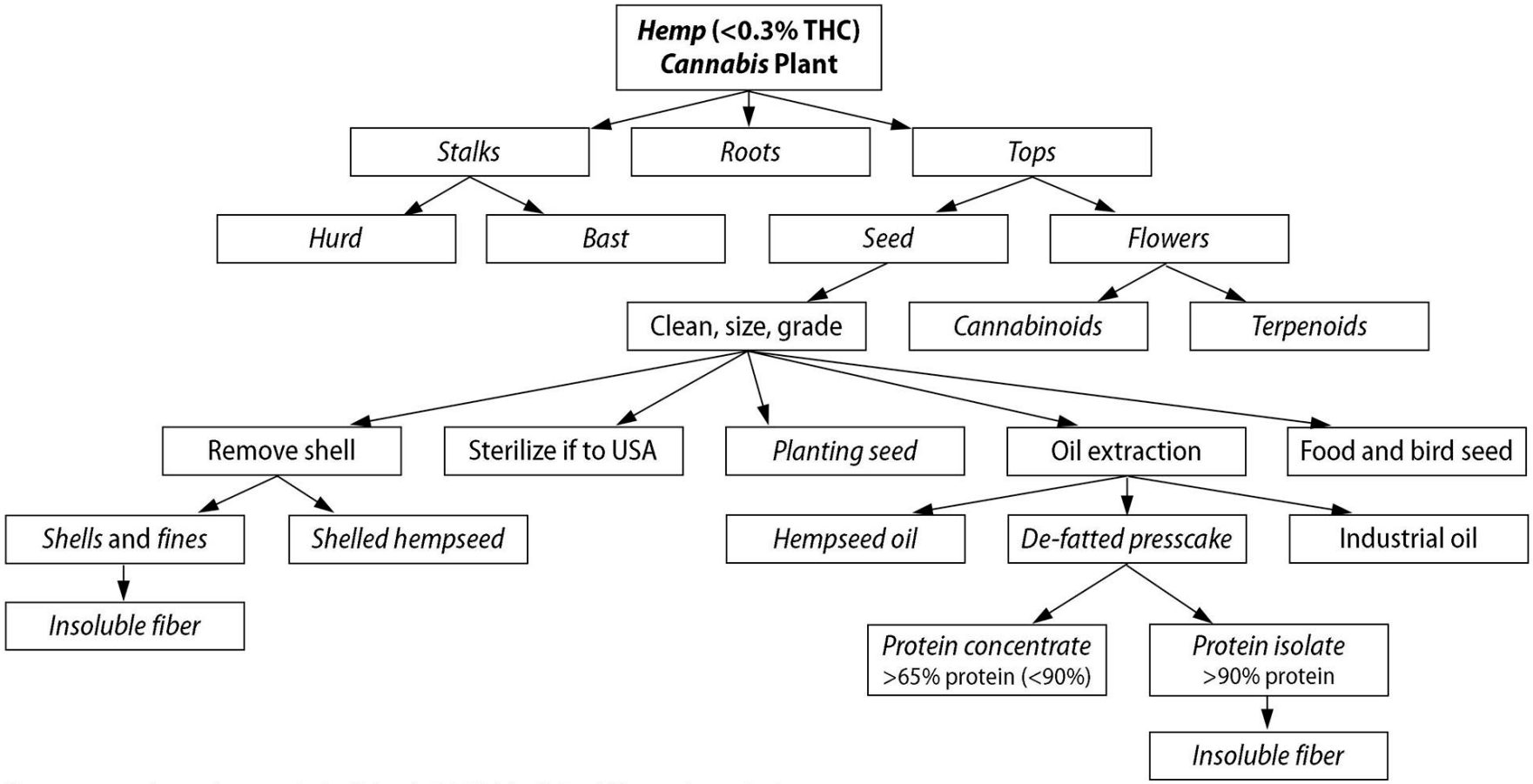
- Develop large-scale, vertically-integrated US-based industrial hemp program
- Develop relationships with local farmers to quickly grow from 100 to 5,000 acres in 5 years
- Establish local infrastructure for processing fibers, cellulose and oils
- Develop proprietary processing and extraction technologies for industrial hemp
  - ➢ License IP to others in the global hemp industry
  - ➢ Develop proprietary cultivars bred with Iowa topography, climate and growing conditions in mind
- Replace foreign-produced hemp solutions from national market

Heartland Hemp Company



Modern Uses of the Hemp Plant

Modern Primary Hemp Product Chain



Common and usual name is *italicized*. 2015 Medicinal Hemp Association

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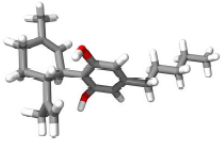
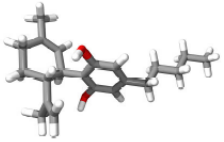


Hemp's Future

Heartland Hemp Company



Variety Trials – Need Farmer Support!

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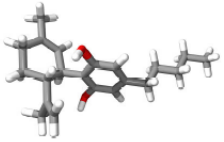

Processing Facilities & Dehull & Decortication Technologies

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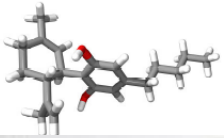

Hemp & Automotive Innovation

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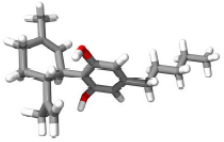
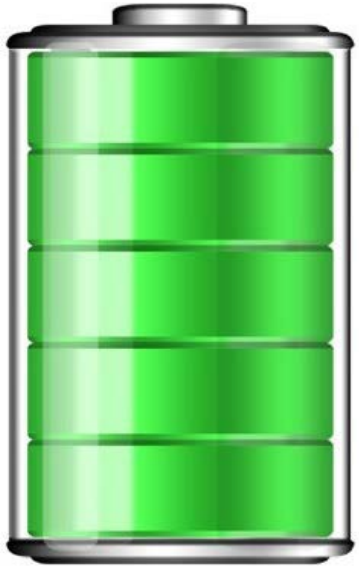
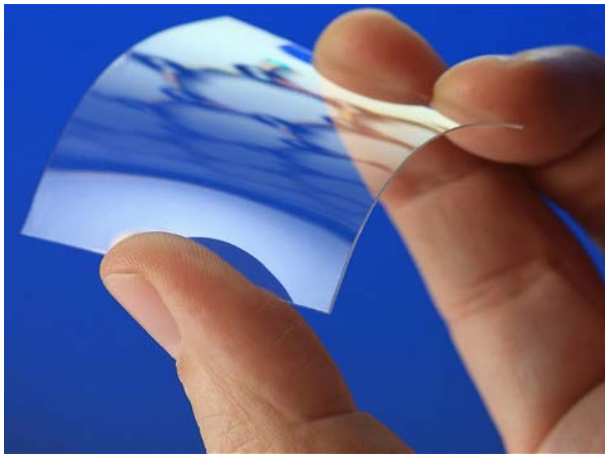


Hemp Is an Alternative to Graphene



A team of researchers led by David Mitlin at Clarkson University in New York have found a way to produce super-capacitors from an inexpensive hemp fiber left over from textile and building material construction that could pave the way for a mainstream super-capacitor.



The American Chemical Society Journal ranks the hemp based material “on par with or better than commercial graphene-based devices”. It says the hemp fiber’s properties work down to 0 C and display some of the best power-energy combinations reported in the literature for any carbon. Fully assembled, their energy density is 12 Wh/kg, which can be achieved at a charge time of less than six seconds.

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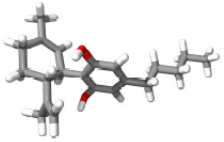
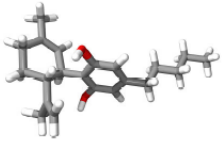
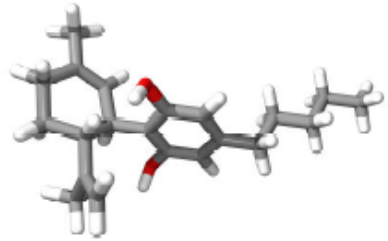


Next Steps?

- Farm Bureau Support Letters – We Need You!
- Contact your legislators, peers, neighbors, colleagues!
- 2016 Legislative Session
- Heartland Hemp Company website – www.heartlandhempco.com
  - Coming soon – Farmer Resource page

Heartland Hemp Company



Questions

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