

The world's most understood crop: industrial hemp and its economic benefits

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Ms. Bonner English 290 16 December 2011 The World's Most Understood Crop: Industrial Hemp and its Economic Benefits When most people hear the word hemp the first thing that comes to mind is marijuana. While hemp and marijuana are of the same plant species, *Cannabis Sativa*, they are different plants with their own chemical makeup. Hemp has been known as one of the world's greatest agricultural crops of all time with a wide variety of uses. Unfortunately the United States still sees hemp as drug and the manufacturing of hemp is still illegal today.

The United States is outlawing one of the most economically beneficial and functional crops of all times because of its cousin marijuana. Hemp was the world's greatest agricultural crop for more than 1000 years before Christ until 1883 AD (Herer). The manufacturing and cultivation of hemp has been used for thousands of products and many different industries including producing a majority of the world's fabric, fiber, oil, paper, and even food. The earliest known fabric was made of hemp around 8000 BC (Herer).

Ninety percent of all ships' sails from at least the fifth century BC until long after the invention of the steam engines in the mid- to late-19th century were made from hemp (Herer). Many of the ships' logs, maps, and charts were made on hemp paper from the time of Columbus to the early 1900s (Herer). In the first century AD, the Chinese found that hemp paper lasted 50 to 100 times longer than most preparations of papyrus and that it was 100 times easier and cheaper to make (Herer).

Eighty percent of all humankind's textiles and fabrics for clothes, tents, linens, rugs, drapes, quilts, bed sheets, towels and diapers were made

principally from cannabis fibers in much of the world until the 20th century (Herer). Presidents Washington and Jefferson both grew hemp and Americans were even legally bound to grow during the Colonial Era and Early Republic (Hemp Facts). With all these uses for hemp, from almost the beginning of the known world, why would hemp be illegal today? Marijuana and industrial hemp come from the same species of plant, *Cannabis Sativa*.

The species can yield two different plants, marijuana and industrial hemp. Comparing marijuana and industrial hemp is like comparing field corn and sweet corn. While they are both from the same species, the chemical makeup and final product is very different. Cannabis produces two major cannabinoids-THC (delta-9 tetrahydrocannabinol) and CBD (cannabidiol) (West, Hemp and Marijuana). THC is the one responsible for the psychoactive effect that you get from smoking marijuana. CBD, on the other hand, has been found to block the effect of THC in the nervous system (West, Hemp and Marijuana).

Marijuana usually contains 3 to 15 percent THC, while industrial hemp being grown normally contains less than 1 percent THC (Industrial Hemp in the United States). Many people believe that if industrial hemp was allowed to be grown that many people would still try and smoke it, but if one was to smoke industrial hemp, which is high in CBD and low in THC, it would actually counteract the THC and block the effect of a marijuana high. This shows that not only is hemp not marijuana but could possibly even be called “anti-marijuana. Even with this scientific information and the United States continues to outlaw the manufacturing of hemp. Other countries have

recognized the difference between marijuana and industrial hemp. Current hemp varieties being grown in Canada and Europe are certified to have THC levels below 0.3 percent (West, Hemp and Marijuana). The certification system was originally developed in Europe to allow for the commercialization of industrial hemp and takes into consideration the ratio of CBD to THC as well as the absolute percent THC (West, Hemp and Marijuana).

The original THC threshold was 0.8 percent. When varieties with lower levels of THC were developed by French breeders, the breeders were able to persuade the European Union to reduce the tolerance further (West, Hemp and Marijuana). In the United States, Cannabis with any measurable trace of THC is illegal, CBD concentration is not considered at all. The United States is outlawing this potentially economic beneficial crop with no just cause and they are completely overlooking all of its uses and benefits. The United States' laws have not always treated marijuana and hemp the same.

The 1937 Marijuana Tax Act outlawed marijuana. The 1937 Marihuana Tax Act defined marijuana as: "(A) All parts of the plant *Cannabis sativa* L. , whether growing or not; the seeds thereof; the resin extracted from any such plant; and every compound, manufacture, salt, derivative, mixture, or preparation of such plant, its seeds, or resin; but shall not include the mature stalks of such plant, fiber produced from such stalks, oil or cake made from the seeds of such plant, any other compound, manufacture salt, derivative, mixture, or preparation of such mature stalks (except the resin extracted there from), fiber, oil, or cake, or the sterilized seed of such plant which is incapable of germination. " The Act outlawed marijuana and punished people

who grew it, without infringing on the rights of hemp growers. The act did not make hemp illegal but simply just put a tax on hemp. Dr. Andrew Wright, an agronomist with the University of Wisconsin's Agriculture Experiment Station and steward of the Wisconsin hemp industry during the first half of the twentieth century, wrote in 1918, " There are three fairly distinct types of hemp: that grown for fiber, that for birdseed and oil, and that for drugs. (West, Hemp and Marijuana). This shows that even in the early 1900s, we knew and understood there being a difference between hemp and marijuana. However, in 1970, the Comprehensive Drug Abuse Prevention and Control Act repealed the Marihuana Tax Act and instead changed its definition: " The term 'marihuana' means all parts of the plant *Cannabis sativa* (L.), whether growing or not, the seeds thereof, the resin extracted from any part of such plant; and every compound, manufacture, salt, derivative, mixture, or preparation of such plant, its seeds or resin; . . . " The key difference in this provision was that the 1937 Act used a system of taxation that allowed the government to punish the marijuana growers without punishing hemp growers. The 1970 Act abolished the taxation approach and effectively made all *Cannabis* cultivation illegal (West, Hemp and Marijuana). This act lumped marijuana and hemp into the same category. Why did the United States change their definition of the word and make hemp illegal? Why the United States changed its mind and decided to make hemp illegal is not really clear.

There are not any definite answers. It could be that they realized that they couldn't tax it anymore, the war on drugs, or that people that were growing hemp were abusing their rights and also growing marijuana. It is up for anyone to speculate on. The only thing that is clear by hemp being illegal is

that the United States is ignoring the economic benefits and uses of one of the most functional crops of all times. Hemp has been used for a wide variety of products for almost 3000 years.

Overall, hemp is the strongest, most durable, and longest lasting natural soft fiber on the planet, which makes its fabric longer lasting, tougher, cheaper, cooler, and more absorbent than cotton (Herer). Hemp seed can be pressed into a healthy oil, which contains the highest amount of essential fatty acids of all plants. The byproduct of the pressed hemp seeds can be baked into cakes, breads, and casseroles and contains high quality protein (Hemp Facts). Another use for hemp is that it can be made into fuel.

Hemp is the Earth's number one biomass resource, capable of producing 10 tons of biomass per acre in only four months (Hemp Facts). This biomass can be converted into methane, methanol, or gasoline at a cost very similar to the cost petroleum (Hemp Facts). It can also produce 10 times more methanol than corn (Hemp Facts). Since hemp is a natural plant, the use of hemp as a fuel makes it better for the environment. It does not add to global warming. Not only is hemp as a fuel better for the environment, but using hemp fiber for paper is also better for the environment.

One acre of hemp produces as much fiber as 4.1 acres of trees (Herer). While trees cut down to make paper usually take about 50 years to grow, hemp is ready to be harvested in about 120 days (Hemp Facts). Since hemp takes less time to be ready to be harvested and it can produce more fiber per acre, hemp could possibly be the answer to the deforestation problem. Only eight out of about one hundred known pests cause problem to the plant

so hemp is normally grown without herbicides, fungicides, or pesticides (Hemp Facts).

Hemp is also a natural weed suppressor due to the fast growth of the canopy causing a blockage of the sun that does not allow for the weeds to grow (Hemp Facts). All of these things make hemp a cheaper, more environmentally friendly crop. Hemp has been one of the most widely used crops, all around the world, for more than 3000 years. With hems thousands of uses, it could possibly save our country in this time of deficit. However, the United States still refuses to recognize it has being a potential economically beneficial crop because of a plant of the same species.

Works Cited " Hemp Facts. " HempUSA. org. HempUSA. org, 1 June 2009. Web. 27 Nov. 2011. Web Herer, Jack. " The Forgotten History of Hemp. " Earth Island Journal 5. 4 (1990): 35. EBSCOhost. Web. 12 Nov. 2011. Web Industrial Hemp in the United States: Status and Market Potential. Rep. no. AGES-ERSAGES001. Ers. usda. gov, Jan. 2000. Web. 25 Nov. 2011. Web West, David P. Hemp and Marijuana: Myths and Realities. Prescott, Wisconsin: North American Industrial Hemp Council, 27 Feb. 1998. PDF.