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Industrial Hemp: The Future of Sustainability

Imagine a single plant that can produce thousands of items, such as paints, varnishes, car parts, paper, wood and plastic substitutes, food, clothing, cosmetics, and so much more. This crop has the potential to replace soybeans, cotton, and even forests, and is a renewable, reusable, recyclable, and environmentally friendly crop! It grows well in many types of soil, and grows particularly fast and is durable. This crop is industrial hemp. What was once America's most valuable and profitable crop exists no more. The production of industrial hemp should be legalized in the United States due its many economic, social, and environmental benefits.

There is a common misconception between industrial hemp and marijuana, which limits its future of expansion because both are illegal in the United States. First, there must be a distinction made between industrial hemp and marijuana. These two plants are often lumped into the same category, and therefore, give hemp a poor reputation. Industrial hemp comes from any entirely different seed than marijuana. Although is still comes from the *cannabis sativa* family, hemp contains a very small amount of THC, which is the prominent psychoactive chemical in marijuana. At a rate of around .5 of a percent, this amount is so small it produces no intoxicating effects when inhaled. Marijuana contains anywhere from 3-20% of THC. Industrial hemp and marijuana are

grown differently as well. Hemp is grown with narrow row spacing, and branching and flowering of plants is discouraged. Marijuana plants are spaced widely apart to encourage flowering and branching. The branches of the marijuana plant are like a Christmas tree (West 1). Even though these plants are from the same family, industrial hemp has thousands of useful possibilities which should not be ignored.

One way that hemp is a superior product is because it would decrease consumption of forests. The inner woody core portion of the stem contains the hurd, which is used for paper and building materials (McVicar 1). Paper products made from the short fibers of hemp can be used to make delicate papers like fine stationery and tissue paper (Roulac 25). Paper made from industrial hemp does not wither or yellow; therefore, it lasts a very long time. Many bibles are made from industrial hemp due to its longevity (NAIHC 1). The longer fibers of hemp are used to make cardboard and packaging products. The long fibers of hemp can be recycled easier than wood-based paper (Roulac 25). Therefore, the US would not have to cut down as many trees and would create multiple jobs in factories. This would create job opportunities for the public which would help boost the economy.

Industrial hemp can reduce the quantity of forests necessary for consumption because it contains stronger and longer fibers. Not only is hemp better than wood in *quality*, but also in *quantity*. Hemp produces “3-8 tons of fiber per acre...four times what an average forest can yield” (HAIHC 3). Trees take an average of 50-500 years to mature so they can be harvested, whereas hemp matures completely in only 100-150 *days*! (Roulac 18). . This reduced consumption of trees would help preserve wildlife habitat, increase oxygen production, and reduces global warming.

Not only is industrial hemp used to make various types of paper, but it is also strong enough to make many construction products, such as fiber board, studs, beams, and posts. “The outer portion of the hemp stem contains strong and long bast fibers which provide the strength and quality attributed to the crop” (McVicar 1). When hemp fibers are blended together, it creates a fiberglass-like material that is both lighter and stronger than steel. It can even be used in making circuit boards (cite). Henry Ford experimented with hemp materials to manufacture car parts and actually *fuel* automobiles.

Hemp oils can be made to replace diesel fuel, which would reduce the demand for oil. According to the Department of Energy, “the hydrocarbons in hemp can be processed into a wide range of biomass fuel sources, from fuel pellets to liquid fuels and gas” (What 2). This would drastically decrease the United States support on fossil fuel energy, and capitalize on something that would be better for the environment because hemp can grow so quickly and produces so few gaseous chemical emissions.

I doubt any form of biomass could come close being a total replacement for fossil fuel energy, at the rate we are presently using the latter. I believe something like 95% of the U.S. land surface would have to be covered with corn fields to produce enough ethanol to meet U.S. energy needs (Albert Bartlett). Probably this would be true for hemp also.

Because hemp fibers are longer and stronger than that of cotton or wood, they produce higher quality products. Cotton is a crop that is very susceptible to pests, and, therefore, is in need of many pesticides. Over 50% of the world’s pesticides are sprayed on cotton. Hemp rarely needs pesticides and herbicides are never necessary, because it grows so fast and is very durable. According to the North American Industrial Hemp Council, “fabrics made with at least one-half hemp block the sun’s UV rays more effectively than other products” (2). This provides benefits to consumers because of the

quality. Unlike cotton, which tends to pill and loses its softness after multiple washings, industrial hemp actually becomes softer.

Not only has industrial hemp proven to be valuable in all the manufacturing industries of wood, paper, and construction parts, but it is also a healthy and delicious source of food. The grain contains the edible oil used for cosmetics, fuel, and cooking. According to Parkland Industrial Hemp Growers Co-op Ltd, the seeds and oils are excellent sources for essential fatty acids. At a level of 81%, hemp seed oil is the best source of polyunsaturated essential omega-3 and omega-6 fatty acids. These acids provide numerous benefits—they help stabilize the immune system and fight cholesterol in the blood. Recognizing these benefits, in the early 20th century, pharmaceutical company Eli Lilly used hemp extracts in a variety of medicines until it was banned in 1937 (Roulac 29). It is also nature's most complete source of protein. It also contains gamma linoleic acid (GLA), which is very nutritious and also found in breast milk. The omega and GLA acids are essential in healthy skin, hair, and eyes. This proves that hemp has many possibilities that the United States should recognize.

With all the positive effects of industrial hemp, it is a wonder why the production was ever banned in the United States. Hemp was the largest agricultural crop until after the Civil War. Around this time, in 1820, Eli Whitney introduced the cotton gin, and the cotton industry began making a lot of money in the South, and eventually took over the hemp industry. It was not until after the 1930's when new technology that emerged which greatly reduced hemp's production costs, putting it in rivalry with cotton.

Due to hemp being related to marijuana, "a massive misinformation campaign was launched, mostly funded (sometimes secretly) by those within the cotton industry."

They depicted hemp as an equal to marijuana, although the two are completely different. This is the time when hemp became illegal and “Reefer Madness” took over the United States. The government issued the 1937 Marijuana Tax Act, which combined industrial hemp and marijuana in the same category, despite their differences and hemp’s many benefits (Questions 2).

The main reason the US keeps the production of industrial hemp illegal is the theory that hemp production would lead to increased marijuana production.

Would this be because the similarity in plant appearances would make it too easy to conceal marijuana in hemp fields?

However, for many countries that grow hemp, like France, Great Britain, and Canada to name a few, have very strict laws that hemp growers must abide by. If they fail to comply to these regulations, then their farms are shut down. There is no reason why the production should be illegal in the United States, and there should be more effort to make industrial hemp a main part of the manufacturing industry.

Large-scale growing of hemp for industrial use would raise a fundamental land-use issue: will there be a worldwide shortage of fertile agricultural land for food production in the not too distant future?

Since hemp can be grown in most climates, specifically the Midwestern part of the US, it would provide a valuable opportunity for the struggling farming and manufacturing industry. Not only will the US have the strength of the technology industry, but also profit from the agricultural and manufacturing industry. This would create much-needed jobs for many, many people and strengthen the economy. Employment opportunities would blossom, and the government could export some of the hemp products made in factories.

I had not known about the historical uses of hemp and its potential for the future. A good topic choice!

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