

Industrial Hemp

Introduction and History

Industrial hemp (*Cannabis sativa*) is a fiber and oil seed crop used for a wide variety of products. Hemp fibers have been used to manufacture hundreds of products that include twine, paper, construction materials, carpeting, and clothing. Seeds have been used in making industrial oils, cosmetics, medicines, and food. This fiber crop also has potential as a cellulosic ethanol biofuel. Currently all hemp products sold in the U.S. are imported or manufactured from imported hemp.

Industrial hemp was widely grown in the United States from the Colonial Period until the mid-1800s. During that time Kentucky established itself as the leading hemp producer in the U.S. After the Civil War, hemp production declined in Kentucky, as well as in other areas of the country. Production temporarily resumed as part of the war effort during World War II. However, once the war was over, acreages dwindled until U.S. production ended in 1958.

Industrial hemp's relationship to marijuana was one of several factors that led to the demise of commercial production in the U.S. Hemp and marijuana are genetically different cultivars of the same plant species (*Cannabis sativa*) and are distinguished from one another based on their use and tetrahydrocannabinol (THC) levels. THC is the main hallucinogen that gives marijuana users their "high." While marijuana cultivars typically contain 3% to 15% THC by weight, cultivars for hemp production only contain trace amounts



INDUSTRIAL HEMP HARVEST IN THE 1940S

(less than 1%), reportedly below psychoactive levels. In turn, varieties grown for narcotic use produce poor quality fiber. Production practices for marijuana and hemp differ, with each aimed at maximizing the specific plant characteristics needed for their respective end uses. However, the two crops are so similar in appearance that they can only be distinguished with certainty by chemical analysis.

A renewed interest in commercial hemp as an alternative or supplementary crop began in the early 1990s. While industrial hemp has become a controversial issue across the country, there are those who would like to see the hemp industry return to the Commonwealth. As the pro-hemp movement has spread, a number of states have passed laws favoring its production, generally in connection with scientific, economic, and environmental research studies.

**Crop Diversification
& Biofuel Research
Education Center**

This profile was written in response to several inquiries directed to the Crop Diversification & Biofuel

Research & Education Center regarding hemp production in Kentucky. The following is a summary of the current status of industrial hemp at the national and state levels.

Federal Laws

The first federal law restricting hemp production was the Marihuana Tax Act of 1937. This measure placed all *Cannabis sativa* under federal regulation, requiring growers, importers, and processors of this crop to be registered and taxed. Industrial hemp production was further restricted when the Controlled Substance Act of 1970 categorized any product containing THC as a Schedule I drug, regardless of narcotic content level or use. As such, the cultivation of all *C. sativa*, including industrial hemp, is strictly regulated by the federal government. Hemp production now requires a permit from the Drug Enforcement Administration (DEA) in the Department of Justice. Permits are issued at the sole discretion of the DEA and require the applicant's adherence to strict security protocols.

A federal bill, The Industrial Hemp Farming Act of 2009 (HR 1866), was brought before Congress in April 2009. The bill proposes to amend the Controlled Substances Act to exclude industrial hemp varieties of *C. sativa* from the definition of marijuana. In addition, the licensing of hemp production would be placed into the hands of state governments and, thereby removed from federal regulation. The proposed law does not seek to change the illegal status of marijuana. The last reported action taken on HR 1866 was on May 26, 2009 when it was referred to the House Judiciary Subcommittee on Crime, Terrorism, and Homeland Security and to the House Energy and Commerce Committee for consideration.

State Laws

Kentucky state law echoes federal law by defining marijuana as "all parts of the plant *Cannabis* sp., whether growing or not; the seeds thereof; the resin extracted from any part of the plant; and every compound, manufacture, salt, derivative,

mixture, or preparation of the plant, its seeds or resin or any compound, mixture, or preparation which contains any quantity of these substances" (KRS 218A.010 paragraph 18). Industrial hemp is included in this definition, making it illegal to produce this crop in Kentucky for any purpose (KRS 218A.1423).

However, in 1994, in response to renewed interest in industrial hemp, then-Governor Brereton Jones established a special task force to investigate the potential of fiber crops in Kentucky. The Governor's Hemp and Related Fiber Crops Task Force mainly examined hemp, although kenaf and flax were also included in their study. Crop history, agronomic aspects of fiber crops, legal issues, and potential markets were examined. The Task Force concluded that the legal restrictions on hemp were a significant barrier to the research and development of a Kentucky hemp industry.

Subsequently, economic studies were conducted by the Center for Business and Research at the University of Kentucky (1998) and the University of Kentucky Department of Agricultural Economics (1997-2001).

A resolution (HJR 121) requesting the DEA alter its stand on industrial hemp and allow state-regulated industrial hemp production died in the Kentucky Senate in 2000. The same year, a bill relating to industrial hemp research (HB 855) was introduced to the Legislature, but the session ended with no action. However, a similar bill was proposed in 2001 (HB 100) and was passed into law in June 2001. This Act (KRS 260.850 to 260.869) created an industrial hemp research program to be administered by the KDA working in cooperation with a selected Kentucky university or universities. The Kentucky Industrial Hemp Commission was established to monitor the program and to make recommendations to the Governor. In addition, HB 100 states that Kentucky will adopt the federal rules and regulations regarding industrial hemp, including any changes that might occur in

the future. Therefore, amendments or changes to the current federal law will automatically take effect in Kentucky.

Kentucky SB 131 was introduced in 2009 to create additional sections of KRS Chapter 260. This bill set forth licensing and regulatory requirements for those wanting to grow or process industrial hemp in Kentucky. The bill, which was referred to the Senate Agriculture Committee in February 2009, died in committee.

DEA Permits

A number of other states besides Kentucky have passed laws permitting some aspect of hemp production. However, even with favorable state laws, potential growers, including researchers, must obtain a DEA manufacturer's permit to produce hemp. DEA application requirements include a nonrefundable fee, FBI background checks, and extensive documentation. In addition, the applicant must be able to demonstrate that effective security protocol will be in place at the production site. These normally include security fencing around the planting, a 24-hour monitoring system, controlled access, and possibly around-the-clock armed guard(s).

Hawaii has the distinction of being the first and only state to ever receive a DEA permit for the production of hemp. The small ¼-acre University of Hawaii research plot was surrounded with a 12-foot chain link fence topped with razor wire and monitored with a 24-hour security system and infrared surveillance. The permit was issued in 1999 and has since expired.

Summary

While current federal law does not technically prohibit industrial hemp production, it is illegal to grow this crop without a government-issued

permit. As of 2001, an amendment to Kentucky state law has paved the way for limited state university research trials. However, strict federal regulations and the high cost of complying with DEA security requirements currently make hemp production prohibitive, even at the research level.

Selected Resources

On the Internet

- Kentucky Legislature: Kentucky Revised Statutes
<http://www.lrc.ky.gov/statrev/frontpg.htm>
- Kentucky Legislature: SB131 (2009)
<http://www.lrc.ky.gov/record/09RS/SB131.htm>
- Hemp: A New Crop with New Uses for North America (Purdue University, 2002)
<http://www.hort.purdue.edu/newcrop/ncnu02/v5-284.html>
- HR 1866: Industrial Hemp Farming Act of 2009 (Govtrack.us, 2009)
<http://www.govtrack.us/congress/bill.xpd?bill=h111-1866>
- Industrial Hemp (AgMRC, 2011)
http://www.agmrc.org/commodities__products/fiber/industrial_hemp.cfm
- Industrial Hemp in the United States: Status and Market Potential (USDA, 2000)
<http://www.ers.usda.gov/publications/ages001e/>
- Industrial Hemp Profile (AgMRC, 2008)
http://www.agmrc.org/commodities__products/fiber/industrial_hemp_profile.cfm

In print

- *A History of the Hemp Industry in Kentucky*. James F. Hopkins. 1998. University Press of Kentucky: Lexington, KY. 244 pp.
- *Report to the Governor's Hemp and Related Fiber Crops Task Force*. Sara McNulty, ed. Commonwealth of Kentucky. 1995. 223 pp.

Reviewed by Dave Spalding Extension Associate (Issued 2009)

Photo courtesy of USDA Farmers' Bulletin No. 1935 (1943)

October 2009

For additional information, contact your local [County Extension](#) agent