

1998

The Hemp Controversy: Can Industrial Hemp Save Kentucky?

Susan David Dwyer
University of Kentucky

Follow this and additional works at: <https://uknowledge.uky.edu/klj>

 Part of the [Agriculture Law Commons](#)

Right click to open a feedback form in a new tab to let us know how this document benefits you.

Recommended Citation

Dwyer, Susan David (1998) "The Hemp Controversy: Can Industrial Hemp Save Kentucky?," *Kentucky Law Journal*: Vol. 86 : Iss. 4 , Article 12.

Available at: <https://uknowledge.uky.edu/klj/vol86/iss4/12>

This Note is brought to you for free and open access by the Law Journals at UKnowledge. It has been accepted for inclusion in Kentucky Law Journal by an authorized editor of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.

The Hemp Controversy: Can Industrial Hemp Save Kentucky?*

BY SUSAN DAVID DWYER**

INTRODUCTION

In the wake of litigation over the responsibility of tobacco companies for harm caused by cigarettes and in the face of increased public hostility toward smoking, Kentucky's tobacco farmers are apprehensive about the future.¹ While not all growers depend entirely on tobacco for their income, the potential shrinking of the tobacco market will have serious ramifications throughout the state.² Some farmers are turning to organic vegetable farming, or to corn and soybeans as alternative crops,³ but the potential of industrial hemp as an option remains uncertain. Touted by many as the answer to the tobacco farmer's quandary,⁴ industrial hemp remains an illegal crop under both federal⁵ and state⁶ law. Furthermore, it is

*The topic of this Note was originally suggested by Della M. Justice, a member of the 1996-97 editorial board of the *Kentucky Law Journal*.

**J.D. expected 1999, University of Kentucky

¹ See, e.g., Chad Carlton & Bill Estep, *Growing Uncertainty: Big Farmers, Tenants Face Greatest Risk*, LEXINGTON HERALD-LEADER (Lexington, Ky.), Sept. 21, 1997, at A1. For an in-depth investigation into the current concerns of Kentucky's tobacco farmers about their future, see *Tobacco Blues* (Café Sisters Productions 1997) (broadcast on KET, The Kentucky Network, Feb. 10, 1998). Some Kentucky farmers have filed suit in a Lexington, Kentucky federal district court demanding the right to grow and cultivate industrial hemp. See Joe Ward, *Kentucky Farmers Will Sue for Right to Grow Hemp*, THE COURIER-JOURNAL (Louisville, Ky.), May 15, 1998, at 1D.

² See Carlton & Estep, *supra* note 1.

³ See Chad Carlton, *Family Turning to Other Crops for Part of Income*, LEXINGTON HERALD-LEADER (Lexington, Ky.), Sept. 21, 1997, at A10; *Tobacco Blues*, *supra* note 1.

⁴ See, e.g., Allen G. Breed, *From Food to Fashion, Hemp Is in Demand*, THE COURIER-JOURNAL (Louisville, Ky.), May 20, 1997, at 1E.

⁵ See Comprehensive Drug Abuse Prevention and Control Act of 1970, 21 U.S.C. §§ 801-971 (1994).

⁶ See KY. REV. STAT. ANN. [hereinafter K.R.S.] § 218A.010-.350 (Michie 1997).

not entirely clear how large a market exists for industrial hemp and whether it would be a profitable crop for Kentucky farmers.⁷

This Note attempts to discern whether current laws should be changed to allow the cultivation of industrial hemp in Kentucky. It begins with a discussion of the agronomy of industrial hemp and its relationship to marijuana in Part I.⁸ Part II⁹ addresses the environmental benefits that hemp offers. The current state of world markets and production of industrial hemp, along with estimates of profitability of Kentucky-grown hemp, is detailed in Part III.¹⁰ Part IV¹¹ explores the long history of industrial hemp globally, in the United States, and in Kentucky where it was a staple crop for many years.¹² The current and potentially changing legal status of industrial hemp at the federal level, in Kentucky, and in other states is offered in Parts V, VI, and VII.¹³ Part VIII¹⁴ addresses the enforcement and public perception problems posed by legalizing industrial hemp given its ties to marijuana. Part IX concludes with a proposal for Kentucky as it explores possible futures for industrial hemp.

I. AGRICULTURE OF INDUSTRIAL HEMP

In botanical terms, hemp is known as *Cannabis sativa* L. It is widely considered the only species in the *Cannabis* genus, though many subspecies or varieties have been identified.¹⁵ Some of these subspecies are hemp plants

⁷ See generally Valerie L. Vantreese, *Industrial Hemp: Global Markets and Prices* (1997) (unpublished manuscript, University of Kentucky); see also *infra* Part IV. According to Andy Graves, president of the Kentucky Hemp Growers Cooperative Association, “hemp crops could net Kentucky farmers \$300 to \$350 an acre—somewhat less than tobacco, but well ahead of corn and soybeans.” Ward, *supra* note 1.

⁸ See *infra* notes 15-56 and accompanying text.

⁹ See *infra* notes 57-76 and accompanying text.

¹⁰ See *infra* notes 77-96 and accompanying text.

¹¹ See *infra* notes 97-142 and accompanying text.

¹² See James F. Hopkins, *A History of the Hemp Industry in Kentucky* (1951). “Hemp, grown by some of the earliest white settlers in the area, became one of the few commodities which might be depended upon for a cash income.” *Id.* at 4.

¹³ See *infra* notes 143-78, 179-222, 223-32, respectively, and accompanying text.

¹⁴ See *infra* notes 233-47 and accompanying text.

¹⁵ See JAMES M. DEMPSEY, *FIBER CROPS* 54-55 (1975); R.H. KIRBY, *VEGETABLE FIBRES* 46 (1963). Botanists originally posited that there were two species within the *Cannabis* genus: *Cannabis sativa*, which produced fiber, and *Cannabis indica*, which was the source of the narcotic. Today, botanists agree that

grown to produce narcotics, including marijuana,¹⁶ while others produce fiber or seed that can be used for industrial purposes.¹⁷

The narcotic effect of marijuana is a result of the tetrahydrocannabinols (“THC”) in cannabis,¹⁸ the most hallucinogenic of which is delta-9-THC.¹⁹ Marijuana has a higher THC content than industrial hemp, and nations that currently allow the cultivation of industrial hemp distinguish between hemp and marijuana on the basis of THC measurements.²⁰ The narcotic effects of hemp also can be measured as a ratio of THC content to non-psychoactive cannabinol (“CBD”).²¹ Low ratios, resulting from high levels of CBD, indicate that the plant will not produce a narcotic effect. In short, cannabis plants with elevated levels of CBD are useless for smoking.²²

Hemp is an adaptable and versatile plant, and its nature – whether it tends to have more THC or produce more fiber – and appearance depend on climate and cultivation techniques as well as the variety of seed used.²³ Hemp grown in temperate regions and relatively moist soil conditions produces more fiber.²⁴ Hemp plants intended for fiber production are planted close together, which encourages tall, fibrous stalks and few leaves.²⁵ Hemp grown in hot

Cannabis sativa is the only species. The plant that was known as *Cannabis indica* is now recognized as a subspecies or variety. See LESTER GRINSPOON, MARIHUANA RECONSIDERED 35 (1971).

¹⁶ See DEMPSEY, *supra* note 15, at 47-49.

¹⁷ See KIRBY, *supra* note 15, at 46-47

¹⁸ For a discussion of the investigation into marijuana’s chemistry, see GRINSPOON, *supra* note 15, at 42-54.

¹⁹ See David P. West, *Fiber Wars: The Extinction of Kentucky Hemp*, in HEMP TODAY 5, 45 (Ed Rosenthal ed., 1994) (citing a 1975 study of feral cannabis in Kansas).

²⁰ For example, the European Union (the economic block of European nations) allows the cultivation of hemp with 0.3% THC or less. Others have suggested that 0.5% would be an acceptable threshold. See *id.* at 43.

²¹ For example, 0.16% CBD produces a headache rather than a narcotic effect in anyone attempting to smoke hemp. See *id.*

²² See *id.*

²³ See *id.* As for the seed varieties, “[i]n 1991, Dutch hemp breeders released a hemp variety, ‘with virtually no narcotic potential.’ They said it was easy to select changes in THC concentration and that THC and fiber are under independent genetic control. ‘Fiber content and THC are not interrelated.’ Furthermore, they demonstrated that recognized fiber and herbal types clearly separate for percent THC.” *Id.* at 34 (quoting E.P.M. DeMeijer et al., *Characterization of Cannabis Accessions with Respect to Other Plant Characters*. 62 EUPHYTICA 187 (1992)).

²⁴ See *id.*

²⁵ See Andrew R. Graves, *Legalize Industrial Hemp?*, THE COURIER-JOURNAL (Louisville, Ky.), Feb. 16, 1997, at 7A (stating that hemp seed intended to produce fiber is planted four inches apart). Other sources note that seeding rates can vary

and/or dry climates tends to produce more resin, which is the most potent source of the plant's narcotic.²⁶ Hemp grown to produce narcotics is also planted farther apart than that grown for fiber, which encourages more leaves and flowers that produce the resin.²⁷

Hemp plants are usually dioecious – either male or female.²⁸ Both sexes germinate and grow at much the same rate.²⁹ The two differ little in appearance except for their flowers,³⁰ and if harvested at the proper time, they produce fiber of virtually identical quality.³¹ If grown for fiber and seed, the female plants are harvested several weeks after the male plants, which allows time for the seed to ripen.³² Monoecious strains, w

depending on the type of fiber the farmer wishes to produce and location. *See* DEMPSEY, *supra* note 15, at 65-66; KIRBY, *supra* note 15, at 51. Ideally, such close seeding produces very slender plants about six feet tall. However, where hemp is planted for seed production, another industrial use, rather than fiber production, plants can reach 16 feet. *See id.*

²⁶ *See* GRINSPOON, *supra* note 15, at 34-36. The resin produced by certain types of cannabis is the source of hashish or charas, a drug with considerably more potency than marijuana that is composed of the leaves from the plant. It is estimated that a typical joint of charas has one-fifth to one-eighth the potency of hashish. *See id.* at 41.

²⁷ *See id.* at 35.

²⁸ Individual hemp plants can develop both sex traits, or become monoecious, with both staminate and pistillate flowers. Under natural conditions, this occurs most often when the plant's exposure to daylight is limited. *See* DEMPSEY, *supra* note 15, at 56. Through breeding experiments, scientists have been able to produce a relatively stable line of monoecious hemp plants. *See* KIRBY, *supra* note 15, at 48-49. A monoecious crop may increase the production of fiber per acre and ease the difficulties of harvesting by allowing complete mechanization. *See* DEMPSEY, *supra* note 15, at 58.

²⁹ *See* GRINSPOON, *supra* note 15, at 35.

³⁰ *See* KIRBY, *supra* note 15, at 48 (noting that the only real difference between the male and female plants is in the flowers and the presence of seeds on the female).

³¹ *See id.* As for the timing of harvest, Kirby states that "[t]he plant should be harvested when the staminate plants are in flower. Where the crop is being grown for fibre [sic] only, both the male and female plants are harvested together

" *Id.* at 48. *But see* DEMPSEY, *supra* note 15, at 58 (stating that the male plants must be harvested earlier than the female since the males mature earlier).

³² *See* KIRBY, *supra* note 15, at 48.

flowers on one plant, can occur naturally and have also been developed under laboratory conditions in attempts to make hemp harvesting easier.³³

Hemp is planted in early spring, after the danger of extended frosts has passed.³⁴ Once hemp begins to grow, it requires very little care.³⁵ Fertilizers, especially those containing nitrogen, can help farmers achieve optimal fiber yields,³⁶ but little else is required. Unlike flax, hemp is naturally resistant to most pests and diseases³⁷ and actually acts as a deterrent to weeds.³⁸ Furthermore, unlike kenaf³⁹ and other fiber crops, hemp withstands most changes in temperature, making it suitable for growth in many areas.⁴⁰

While hemp can tolerate a variety of soil types, it does not do well in soils that are too wet, too dry, or too acidic. It tends to flourish in well-drained, moist soil that is not subject to harsh drought during the growing season. Hemp prefers a clay loam, and it is recommended that this be loose in

³³ See DEMPSEY, *supra* note 15, at 56. Monoecious plants would allow for simultaneous mechanical harvesting of all plants rather than the two-step harvesting of male and female plants that is sometimes required. See David W Walker, *Can Hemp Save Our Planet?*, HEMP TODAY 83, 87 (Ed Rosenthal ed., 1994). While Dr. Walker explains the harvesting dilemma, he seems to have reversed the usage of the terms "monoecious" and "dioecious," so the explanation given here is the exact opposite of that given by Walker. It would seem that this is simply an oversight on Walker's part. He cites DEMPSEY, *supra* note 15, in support of his statements, but misapplies Dempsey's use of the terms.

³⁴ See KIRBY, *supra* note 15, at 50.

³⁵ See DEMPSEY, *supra* note 15, at 66.

³⁶ See KIRBY, *supra* note 15, at 50. Other fertilizers are also helpful. These include chalk, gypsum, and potash manures; sodium nitrate; ammonium sulfate; and a mixture of the latter two with potassium sulfate. See *id.*

³⁷ See West, *supra* note 19, at 24.

³⁸ See Walker, *supra* note 33, at 106.

³⁹ Kenaf is a fiber crop that has been grown in the United States since the 1940s. It primarily produces pulp that can be used in paper products. Experimental crops have been tested in southern states, though the greatest success in terms of fiber yield has been seen in states with warmer climates than that of Kentucky: Florida, Texas, Louisiana, Oklahoma, and Mississippi. See Governor's Hemp and Related Fiber Crops Task Force, Report 43-53 (Sara McNulty ed., June 13, 1995) (presented to Governor Brereton C. Jones). Kenaf grown in Minnesota produced only 2.5 tons per acre while that grown in Texas has produced 15 tons per acre. See West, *supra* note 19, at 41.

⁴⁰ See KIRBY, *supra* note 15, at 50. *But see* West, *supra* note 19, at 15 (stating that the best fiber hemp was grown in temperate rather than southern climates).

texture, alkaline, and rich from decaying vegetation or alluvial deposit.⁴¹ The soil in the fields of Kentucky where hemp was grown is well-suited to the crop.⁴²

Because of its rapid growth, hemp is hard on the soil, leaving it drained of nutrients.⁴³ This effect can be counterbalanced through fertilization, crop rotations, and harvesting techniques. As mentioned above, nitrogen fertilizers can help produce high yields and leave the soil less depleted.⁴⁴ Fiber yields and soil quality can also be affected by crop rotation. Those crops that leave the most nitrogen in the soil have the most beneficial impact on the hemp yield.⁴⁵ Crop rotation is not strictly necessary if the refuse of the hemp crop following harvest is turned back into the soil.⁴⁶ This can be accomplished through dew retting, a process that leaves the hemp lying in the fields for some time after cutting so that it begins to break down and return nutrients to the soil.⁴⁷

⁴¹See Lyster E. Dewey, *Hemp*, YEARBOOK OF THE U.S. DEPARTMENT OF AGRICULTURE (1913), reprinted in HEMP TODAY 339, 354 (Ed Rosenthal ed., 1994).

⁴²*Id.* It is described as:

yellowish clay loam, often very dark as a result of decaying vegetable matter, and most of it overlying either Lexington or Cincinnati limestone.... The soil is deep, fertile, well supplied with humus, and its mechanical condition is such that it does not quickly dry out or become baked and hard. The land is rolling, affording good natural drainage.

Id.

⁴³See Walker, *supra* note 33, at 105. Hemp consumes large quantities of nitrogen, phosphorus, and potassium. See *id.*

⁴⁴See *supra* note 36 and accompanying text.

⁴⁵See DEMPSEY, *supra* note 15, at 57. Crops such as corn or cereals can also be used to follow hemp in a rotation to return nutrients to the soil. See *id.* at 58

⁴⁶See KIRBY, *supra* note 15, at 50.

⁴⁷See Walker, *supra* note 33, at 105. Retting is necessary to break down the hard stalk of the hemp plant after it has been cut so that the fiber inside the stalk can be removed. See ROWAN ROBINSON, THE GREAT BOOK OF HEMP 40 (1996). Retting can be accomplished in several ways. The most common is dew retting, where the stalks are spread in thin layers on the field for several weeks and turned a few times to ensure uniformity of retting. The moisture of the morning dew combines with bacteria, causing the plant to begin rotting. See DEMPSEY, *supra* note 15, at 71. The rotting softens the stalk to the point that the fiber and hurds can be removed from the stalk. (Hurds are the woody cores of the stalks that remain when the bark and fiber have been removed. See *id.* at 92.) Water retting is another option, more common in Europe and Asia than in the United States. See Walker, *supra* note 33, at 86. The principle is the same as dew retting, except that the cut

Although hemp demands little labor during its growing season, harvesting and processing the crop for fiber is a labor-intensive task, especially when male and female plants are being harvested separately. Breaking the stalks and removing the fiber and hurds after retting is difficult and tedious.⁴⁸ Since the days of Thomas Jefferson, mechanization has been hailed as the means to make hemp processing easier and more cost efficient.⁴⁹ Illustrative of the potential for mechanizing the cultivation of hemp is the machine invented by George W. Schlichten around 1916⁵⁰ that would remove both fiber and hurds from the hemp stalk without retting. The machine, a decorticator, produced fiber of exceptionally high quality⁵¹ and saved a large percentage of the hurds, which were used for paper-making.

Schlichten was not alone in his efforts to mechanize hemp. Many patents were issued over the years, but most of the inventions failed.⁵² According to letters preserved by one of his business connections, Schlichten's decorticator was remarkably successful in processing hemp.⁵³ Oddly, and for reasons unknown, the deal Schlichten had arranged for the production of his machine ceased to go forward, and Schlichten faded into obscurity.⁵⁴ No other decorticator since has been as effective as Schlichten's reportedly was.⁵⁵ The

hemp is placed in pools of water to rot rather than left on the field. *See id.* at 85-86; West, *supra* note 33, at 8. Snow retting is done in northern areas such as Sweden and Russia. *See* DEMPSEY, *supra* note 15, at 72. The essentials of the process are similar to dew retting but significantly slower, requiring months (until the snow melts) rather than weeks. *See* KIRBY, *supra* note 15, at 56; DEMPSEY, *supra* note 15, at 72.

⁴⁸ *See* Don Wirtshafter, *The Schlichten Papers*, HEMP TODAY 47 (Ed Rosenthal ed., 1994).

⁴⁹ *See* West, *supra* note 19, at 9.

⁵⁰ *See generally* Wirtshafter, *supra* note 48, at 47.

⁵¹ Schlichten's hemp fiber sold for a record price on the New York market in 1916, \$100 more per ton than any other fiber had ever brought. *See id.* at 48.

⁵² *See* West, *supra* note 19, at 9 (quoting a statement made by Charles Dodge of the U.S.D.A. Office of Fiber Investigations in 1896: "[N]early 300 patents have been issued in the United States for machines for breaking hemp, many of which have proved absolute failures.").

⁵³ *See Letter from Edward Chase about G.W. Schlichten*, HEMP TODAY 55 (Ed Rosenthal ed., 1994); Wirtshafter, *supra* note 48.

⁵⁴ *See* Wirtshafter, *supra* note 48, at 52.

⁵⁵ As testimony to the effectiveness of Schlichten's decorticator, Edward Chase reported to his boss Edward Scripps, the penny paper mogul: "I have seen a wonderful, yet simple, invention. I believe it will revolutionize many of the processes of feeding, clothing and supplying other wants of mankind." *Letter from*

design of his patented machine is on file with the United States Patent and Trademark Office, so it may be possible to recreate his invention, which was intended to revolutionize the hemp industry⁵⁶

II. ENVIRONMENTAL IMPACT OF HEMP

Hemp is touted by many as the plant that can save the planet.⁵⁷ Although no single crop can solve all the world's problems, hemp offers a number of environmentally friendly possibilities.⁵⁸ Hemp fiber and hurds can be used to manufacture paper, textiles, rope, board, and animal bedding.⁵⁹ Oil from hemp seeds can be used in place of petroleum and other fossil fuels as an energy source and in oil-based products such as paints and varnishes.⁶⁰ Seeds and oil can also be used as a source of food for humans and animals.⁶¹

However, hemp's environmental potential is greatest as a possible replacement for wood pulp in the paper and composite board industry. Paper can be made from both hemp fiber and hemp hurds.⁶² Like wood, hemp hurds and fiber are high in cellulose.⁶³ At the same time, hemp byproducts are lower in lignin than wood.⁶⁴ Removing the lignin from wood pulp through chemical washes is the step in the paper-making process that leads to extensive pollution. Logically, with less lignin to remove, hemp would cause less environmental damage than wood in making paper.⁶⁵ Furthermore, hemp is

Edward Chase about G.W. Schlichten, supra note 53, at 55. It was two weeks after this statement that Chase and his colleagues turned their backs on Schlichten. See Wirtshafter, supra note 48, at 52.

⁵⁶ See Wirtshafter, *supra* note 48, at 54.

⁵⁷ See JACK HERER, *HEMP AND THE MARIJUANA CONSPIRACY: THE EMPEROR WEARS NO CLOTHES* 12 (7th ed. 1991).

⁵⁸ See Walker, *supra* note 33, at 108.

⁵⁹ See Ed Rosenthal, *Hemp Realities*, *HEMP TODAY* 67, 71-76 (Ed Rosenthal ed., 1994) [hereinafter Rosenthal, *Hemp Realities*].

⁶⁰ See HERER, *supra* note 57, at 8.

⁶¹ See Walker, *supra* note 33, at 88-91. Examples include: as an oilseed crop, as a protein source, as birdseed, and as a livestock feed. See *id.*

⁶² See *id.* at 91-92 (citing HERER, *supra* note 57).

⁶³ See *id.*

⁶⁴ See *id.* (citing HERER, *supra* note 57). Lignin is the material that hardens cell walls.

⁶⁵ See *id.* It is not entirely clear that the use of hemp hurds would lead to lower levels of pollution. Research has shown that hurds require significant chlorination to produce a paper of acceptable quality. See *id.*

an easily renewed resource. Replacing wood pulp with hemp would quickly reduce the number of trees felled for paper and ease deforestation problems.⁶⁶

Hemp hurds are also being used as a wood replacement in composite board. Boards are relatively easy to make: press chopped hurds into a mold, heat, and add a binder.⁶⁷ Boards of varying quality can be produced, the highest grade resulting from the use of finer pieces of hurd.⁶⁸ In the United States, hemp board is limited largely to specialty markets due to its high price. Since hemp is not grown domestically, the one mill in the United States that produces the boards must import its raw materials from overseas.⁶⁹ Hurds from hemp grown in Kentucky could easily have a competitive advantage over imported hurds due to transportation costs alone.

As a fiber for textiles, hemp is seen as an environmentally friendly alternative to cotton. Cotton is popular because it can be used for many purposes and spins easily. Unfortunately, cotton demands heavy irrigation, twenty-six percent of the world's pesticides, and more than seven percent of the fertilizer used annually.⁷⁰ As noted above, hemp demands few chemical aids beyond basic fertilization.

Hemp stalks have the potential to benefit the environment. They can be used as a fuel, in paints and sealants, in plastics and polymers, and as a lubricant.⁷¹ Hemp seed oil also can be used as a fuel.⁷² Unlike petroleum and other fossil fuels, hemp seed oil is renewable, and it produces less pollution when burned than do fossil fuels.⁷³

⁶⁶ For a suggestion that Oregon lumber companies should start considering hemp as an alternative, see Marty Bergoffen & Roger Lee Clark, *Hemp as an Alternative to Wood Fiber in Oregon*, 11 J. ENVTL. L. & LITIG. 119 (1996). On the other hand, it has been noted that paper mills rely on a year-round supply of lumber for wood pulp, whereas hemp would be available only once per year. Furthermore, hemp is bulkier than wood for the amount of cellulose retrievable. This means transportation and storage are problems that have not yet been addressed. See Walker, *supra* note 33, at 94-95. For an example of a mill using hemp to make tree-free paper, see the insert story on the Living Tree Paper Company in Eugene, Oregon, in ROBINSON, *supra* note 47, at 11.

⁶⁷ See Rosenthal, *Hemp Realities*, *supra* note 59, at 73.

⁶⁸ See *id.*

⁶⁹ See *id.* at 74.

⁷⁰ See ROBINSON, *supra* note 47, at 22.

⁷¹ See *id.* at 31.

⁷² See *id.* at 30-31.

⁷³ See *id.* at 31. As noted by one hemp expert, "[t]he critical issue here is not whether or not it is possible to produce energy this way, but whether other uses for the crop might be more profitable." *Id.*

Hemp is also helpful to farmers in growing other crops. Because hemp's resistance to weeds can help clear a field of unwanted growth, hemp is beneficial in a crop rotation, clearing fields for other crops that are more susceptible to weeds and pests.⁷⁴ In addition, if retting and breaking is done in the fields, hemp returns its nutrients to the soil when retted, leaving it rich for the next crop.⁷⁵

When the United States hemp industry died out in the mid-twentieth century, environmental concerns were few. Petroleum-based plastics were seen as the products of the future, and forests seemed endless. Forty years after the last commercial crop of hemp was grown in the United States, we are far more concerned about the impact that our production and use of goods has on the natural world. Deforestation, oil spills, pollution, and greenhouse gases trouble the consciences of many. We are at least marginally aware that we must find sustainable resources if we are to continue to live as we do. One commentator has noted that

[w]eaning out [sic] society from fossil fuels and pulpwood will require utilizing several plant species which are well-adapted to each specific production area. Hemp alone will not save the planet. But hemp, used in combination with many other plant species, such as sugarcane, sorghum, and flax, may play a vital role in saving our planet from catastrophe.⁷⁶

III. ECONOMICS OF INDUSTRIAL HEMP

Any efforts to reinstitute the cultivation of industrial hemp will be worthwhile only if hemp can be grown profitably. Looking at hemp production worldwide, the figures are not encouraging. A 1997 study done by Dr. Valerie L. Vantreesse, a professor of agricultural economics at the University of Kentucky, concluded that global markets for industrial hemp continue to shrink despite the fact that hemp is legally grown in many countries.⁷⁷ Markets that do exist are dominated by low-cost producers such as China, India, and the former Soviet Union. With markets decreasing, production of hemp fiber and seed is declining as well. Worldwide exports of hemp have fallen steadily since the 1960s. In 1960, over 400,000 metric tons

⁷⁴ See Walker, *supra* note 33, at 106-07.

⁷⁵ See *id.* at 105. Walker expresses concern that retting would not be done in the field but rather through mechanical and chemical process, eliminating hemp's contribution to the soil. See *id.* Means of recovering these nutrients may be available, however. See, e.g., Lynn Osburn & Judy Osburn, *A Response to Dr. Walker*, in *HEMP TODAY* 109, 120 (Ed Rosenthal ed., 1994).

⁷⁶ Walker, *supra* note 33, at 107-08.

⁷⁷ See generally Vantreesse, *supra* note 7

of hemp fiber were produced worldwide. In 1996, only 103,400 metric tons of hemp fiber were produced.⁷⁸

Furthermore, while the United States imports hemp, it is primarily in the form of value-added goods rather than raw fiber, oil, or seed.⁷⁹ Thus it would seem that there is no guaranteed market, even a domestic one, for raw hemp grown by American farmers. In addition to the lack of existing markets, farmers in the United States would face stiff price competition from overseas farmers. In European countries, hemp production is subsidized, lowering costs of production. Other hemp-producing countries are less industrialized and can use cheap labor to keep the costs of hemp production low and increase profits. American farmers would likely face a lack of subsidies and relatively expensive labor.⁸⁰ It is also difficult to predict the break-even point for American farmers. Prices of hemp fiber and seed have been volatile as new producers enter the market. Also, profit would be affected by the costs of licensing, inspections, and testing, the total of which is unknown.⁸¹

Infrastructure to support the hemp industry is also lacking. Not only does the United States have a dearth of hemp processing capabilities, but other countries are held back by old equipment and physical plants.⁸² Processing plants are few, and for those that do exist, costs involved in transporting raw hemp to the plant are very high. Equipment for harvesting hemp would need to be designed, built, and purchased. Start-up costs could prove to be prohibitively high, as early yields may be low and significant capital expenditures required.⁸³

While these issues of infrastructure along with Professor Vantreese's figures on hemp markets cast a pall on the economic potential of hemp, some writers present a more optimistic view of the situation.⁸⁴ Hemp production in eastern European countries has increased in recent years in response to demand from the West.⁸⁵ Much of this demand is coming from the United States, which has shifted from buying virtually no hemp fiber in 1990 to an industry with a retail value of at least \$15 million in the mid-1990s.⁸⁶ Furthermore, mills in the United States are currently importing raw hemp to

⁷⁸ *See id.* at 8.

⁷⁹ *See id.* at 1.

⁸⁰ *See id.*

⁸¹ *See id.* at 21.

⁸² *See* Rosenthal, *Hemp Realities*, *supra* note 59, at 70.

⁸³ *See id.*

⁸⁴ *See id.* ("Consumer demand for hemp products in the U.S. and West Europe preceded supply and this trend has continued.").

⁸⁵ *See id.*

⁸⁶ *See id.* at 72.

produce specialty papers and composite boards.⁸⁷ Production at these mills could expand drastically if hemp were available domestically, due to reduced costs of transportation alone.⁸⁸

In attempting to determine the economic viability of hemp in Kentucky, the Governor's Hemp and Related Fiber Crops Task Force, formed in 1994 by Governor Brereton Jones, contacted Kentucky-based producers of fabric, paper, seed and oil, and building materials.⁸⁹ Also included in the task force's report were letters from a dozen businesses currently using hemp in their products. These letters supported efforts to reinstitute the cultivation of hemp in Kentucky or promised investment in developing the hemp industry in the state.⁹⁰

Estimates of profitability of hemp grown in Kentucky, as in other parts of the United States, are difficult to formulate due to changing prices and a lack of relevant local data, but Vantreese and others have attempted to quantify the likely success of hemp.⁹¹ World prices for exports of raw hemp fiber and seed have gone up in recent years, making hemp more profitable.⁹² As previously noted, production costs also affect profitability and are more difficult to discern since the costs of licensing and control in the United States remain unknowable. Estimates for profitability in Canada indicate that both

⁸⁷ See *id.* at 74.

⁸⁸ See *id.*

⁸⁹ See Governor's Hemp and Related Fiber Crops Task Force, *supra* note 39. Manufacturers of finished textile products were particularly enthusiastic about the possibility of using hemp fiber, with about one-half expressing interest in hemp fabric. Manufacturers of seed by-products were interested in hemp seed production, and a firm offer for purchase of hemp seed resulted from the task force's work. The task force also concluded that manufacturers of furniture and construction materials would be responsive to production of hemp-based building materials if the hemp were locally grown and had lower transport costs. Of the four major industrial uses, only the paper manufacturers in Kentucky saw little use for hemp in their production, although one mill informed the task force that they could use hemp if they had the processing equipment.

⁹⁰ See *id.* at Appendix F. The Hempstead Company received a similar response to its efforts to cultivate hemp in California with the cooperation of the United States Department of Agriculture and the Drug Enforcement Administration. Before the already-planted crop was disallowed by the state of California, the Hempstead Company had contracted for sale of the entire harvest with three buyers, indicating real interest in raw hemp grown domestically. See Ed Rosenthal, *The Hempstead*, HEMP TODAY 257, 257-58 (Ed Rosenthal ed., 1994) [hereinafter Rosenthal, *The Hempstead*].

⁹¹ See Vantreese, *supra* note 7, at 20-30.

⁹² See *id.* at 23-26.

average- and high-yield hemp would be more profitable than canola, corn, or wheat.⁹³ Vantreese suggests that similar figures may hold true for Kentucky. The Governor's Hemp and Related Fiber Crops Task Force presented figures showing that high-yield hemp would be less profitable than tobacco or tomatoes for processing, but potentially more profitable than wheat and soybeans together, soybeans alone, or corn.⁹⁴

New uses for hemp are continuously arising. Hemp clothing is making a comeback, and the possibilities for fiberboard, paper, and biodegradable oils are considerable.⁹⁵ As concern for the health of the environment increases, so too could the demand for hemp. For the last fifty years, the United States has failed to invest either money or time in research into, and development of, methods and tools to improve hemp production. It is difficult to predict what

⁹³ See *id.* at 29 (citing David Marcus, *Commercial Hemp Cultivation in Canada: An Economic Justification* (unpublished paper, University of Western Ontario)). The return on average-yield hemp was estimated at US \$73.49 per acre; for high-yield hemp, the figure was US \$141.65 per acre. Canola was estimated at US \$30.40 per acre, corn at US \$24.96 per acre (in Kentucky, returns on corn range from US \$56 to US \$136 per acre), and spring wheat at US \$5.00 per acre (winter wheat in Kentucky returns from US \$39 to US \$60 per acre). Low-yield hemp is estimated to have a return of only US \$5.33 per acre. These figures do not take into account licensing and other enforcement costs. See *id.*

⁹⁴ See Governor's Hemp and Related Fiber Crops Task Force, *supra* note 39, at 33; Vantreese, *supra* note 7, at 30. Profitability estimates vary depending on yields and whether the hemp is grown for seed or fiber production, but it is generally indicated that hemp cultivation in Kentucky could be profitable as long as enforcement costs are controlled. See Governor's Hemp and Related Fiber Crops Task Force, *supra* note 39, at 31.

⁹⁵ It is significant that when the Hempstead Company arranged to grow an acre of hemp in California, it easily found buyers willing to contract for the hemp before it was even planted. See Rosenthal, *The Hempstead*, *supra* note 90, at 258. Seeds bred for high yield have been lost, see West, *supra* note 19, at 43-46, and improvements in mechanical technology have not been pursued. The United States Department of Agriculture released a white paper in 1995 addressing alternative crops for small-scale tobacco producers. The paper indicated that lack of research into harvesting and processing methods was a major constraint on the development of viable hemp cultivation in the United States. Other constraining factors cited include crop yields, limited experimentation with uses for by-products, governmental regulation limiting cultivation even for research, and concerns about hemp as a niche fiber. See Vantreese, *supra* note 7, at 17 (citing Agricultural Research Service and Economic Research Service, United States Department of Agriculture, *Industrial Hemp and Other Alternatives for Small-Scale Tobacco Producers* (1995)).

could be accomplished if some effort were put into making hemp an economically viable crop, but given profitability estimates along with the recent increase in interest in and demand for hemp, the potential for success does exist.⁹⁶

IV HISTORY OF HEMP

Hemp has been used on a global scale for thousands of years.⁹⁷ Hemp is thought to have been the world's most cultivated crop and primary industry for nearly 3000 years until the late-nineteenth century⁹⁸

Thought to have originated in central Asia, hemp's cultivation spread throughout Asia and India, eventually reaching Europe.⁹⁹ By the sixteenth century, Henry VIII of England required that hemp be grown by English farmers.¹⁰⁰ The mandatory crop was needed to support the growing British navy and its incessant need for sails and rope.¹⁰¹ When British colonists came to the New World, they were required to grow the plant to help fulfill Britain's insatiable need.¹⁰² Russia was also a major supplier of hemp for

⁹⁶ See Rosenthal, *Hemp Realities*, *supra* note 59, at 71 ("Now, even as the old industry is drying up, new customers are buying more and more hemp. Capital investment is the main slowdown"). Hemp's potential is also apparent from the recent legalization of the crop in Canada. As of the spring of 1998, Canadian farmers are permitted to grow industrial hemp, though a license to do so is required. See Anne Dawson, *Hemp Now Legal Crop Starting this Spring*, TORONTO SUN, Feb. 27, 1998, at 21. This could have a tremendous impact on the hemp market in the United States and is likely to intensify demands for domestic legalization.

⁹⁷ It may well have been the fiber used to make the first woven fabric. See HERER, *supra* note 57, at 2.

⁹⁸ See *id.* Hemp was used to make 90% of all ships' sails, along with an estimated 80% of all other textiles in the world, until the 20th century. These textiles were used for everything from sheets and towels to the tarpaulins used to create the covered wagons of American pioneers. The original United States flag sewn by Betsy Ross is said to have been made of hemp fabric. See *id.* at 5-6. For centuries, nearly all books were printed on hemp paper, including the Gutenberg Bible. Other paper items such as currency, maps, and government documents were printed on hemp paper as well. Hemp paper was often made from the rags of hemp fabric resulting from worn-out sails, clothing, rope, and other items. See *id.* at 7

⁹⁹ See KIRBY, *supra* note 15, at 46.

¹⁰⁰ See GRINSPOON, *supra* note 15, at 11.

¹⁰¹ See *id.*

¹⁰² The founders of the colony at Jamestown ordered planting of hemp seed in 1619. Other laws making the cultivation of hemp mandatory were passed in the Massachusetts Bay Colony in 1631, in Connecticut the following year, and later in colonies around the Chesapeake Bay. In Virginia, criminal sentences were imposed on those who failed to grow hemp during times of shortage. See *id.*, HERER, *supra* note 57, at 1.

England's navy, and this source of the plant became a pivotal issue in the War of 1812 when Napoleon tried to cut the shipping lines between Russia and England.¹⁰³

Hemp's importance in America continued through the founding of the United States. Records show that George Washington and Thomas Jefferson both grew hemp, as did many of the plantations in the southern United States.¹⁰⁴ Kentucky became a leading producer of hemp in the nineteenth century, producing a strain of the plant that became known as Kentucky hemp.¹⁰⁵

Throughout this history, hemp was grown primarily for industrial uses, although the narcotic strains were apparently used for medicinal purposes.¹⁰⁶ It was not until the early twentieth century that marijuana use became a focal point for public concern. The outcry against marijuana use was directed at a perceived threat from immigrant and migrant Mexicans, African-Americans, and Asians who were thought to smoke the narcotic plant.¹⁰⁷ A significant media campaign was undertaken to rid the United States of this "devil's drug" via uniform legislation in the states, though in reality marijuana remained virtually unknown to most Americans.¹⁰⁸

This campaign against marijuana was supported by the Federal Bureau of Narcotics, headed by Harry Anslinger.¹⁰⁹ Some protagonists of industrial

¹⁰³ During Britain's war with France, Britain forced American ships to move hemp from St. Petersburg to London to defy Napoleon's interdiction of British shipping. Americans were not pleased with the British for pressing American ships and sailors into service, and this resulted in a desire for war with the British. The cry for war was further supported by the United States' conception of its manifest destiny in the Canadian (British-held) West and by a blossoming hemp industry in the United States, particularly Kentucky. *See* HERER, *supra* note 57, at 57-60.

¹⁰⁴ The 1850 census counted 8327 hemp farms of at least 2000 acres each. Most of them were located in the South where, as with cotton, slaves were used to support the labor-intensive crop. *See id.* at 1-2.

¹⁰⁵ *See* Bergoffen & Clark, *supra* note 66, at 121.

¹⁰⁶ Cannabis appeared in the U.S. Pharmacopoeia in the 19th and early twentieth century. *See* HERER, *supra* note 57, at 31. Its first appearance in such a guide occurred several thousand years ago. *See* GRINSPOON, *supra* note 15, at 1.

¹⁰⁷ *See* RICHARD J. BONNIE & CHARLES H. WHITEBREAD II, *THE MARIHUANA CONVICTION: A HISTORY OF MARIHUANA PROHIBITION IN THE UNITED STATES* 32-52 (1974).

¹⁰⁸ *See id.* at 92-117; GRINSPOON, *supra* note 15, at 323-25. As one author has noted in commenting on the response to the media blitz, "[v]iewed nationally, apathy was the norm." *See* BONNIE & WHITEBREAD, *supra* note 107, at 117.

¹⁰⁹ It has been suggested that the Federal Bureau of Narcotics turned to marijuana eradication to justify its own existence once opiate use began to decline.

hemp have portrayed Anslinger's battle against marijuana as including a conspiracy to undermine hemp production as well. To support this view, hemp supporters point out that in his push for uniform legislation eradicating narcotics, Anslinger enlisted the help of William Randolph Hearst and other newspaper publishers.¹¹⁰ Even with powerful supporters, Anslinger was only partly successful in getting states to pass uniform legislation.¹¹¹ Nonetheless,

See West, supra note 19, at 30 (citing D.T. COURTWRIGHT, DARK PARADISE: OPIATE ADDICTION IN AMERICA BEFORE 1940 (1982)). Whether one subscribes to this interpretation of events might depend on how one views marijuana – as a victim of too much attention or as an insidious problem finally getting the attention it deserves.

¹¹⁰ *See BONNIE & WHITEBREAD, supra* note 107, at 100-03. Although industrial hemp was not specifically targeted, Hearst, whose newspaper empire was backed by his many investments in forest land, may have had ulterior motives when he aided in the pursuit of uniform drug legislation. E. I. DuPont, whose new chemical products and plastics competed with products made from hemp, is also rumored to have supported the campaign against marijuana. Jack Herer, author of the popular book *The Emperor Wears No Clothes*, seems to be the source of this theory. His basis for seeing DuPont behind the Marihuana Tax Act is language in the chemical giant's annual report in 1937. In the report, the corporation lauded "the extent to which the revenue-raising power of government can be converted into an instrument for forcing acceptance of sudden new ideas of industrial and social reorganization." *West, supra* note 19, at 36 (quoting Annual Report of DuPont Chemical Co. (1937)). One hole in this conspiracy theory may be filled by the discoveries regarding George Schlichten's decorticator. Although there is little evidence to support the accusations made against Hearst and DuPont, the issue of timing left a large hole in the picture of conspiracy politics. The campaign against marijuana began 20 years before Congress passed the Marihuana Tax Act, at a time when processing hemp was difficult enough to rule out competition with wood pulp, synthetic fibers, and petroleum products. Hearst and DuPont would not likely have felt threatened enough by industrial hemp to wage a long and tireless campaign against marijuana in hopes of affecting the hemp industry as well. However, if powerful people knew of Schlichten's decorticator in 1916 and 1917, the scenario changes. With the decorticator in the picture, Hearst and DuPont may have been threatened by the potential of the hemp industry, perhaps even to the point of overseeing its undoing. Running up against such interests may also explain why Schlichten's machine suddenly stalled after enthusiastic support by an influential inventor and a newspaper magnate. *See Wirtshafter, supra* note 48, at 52-53.

¹¹¹ *See BONNIE & WHITEBREAD, supra* note 107, at 112-17

the media's damning of marijuana paid off in 1937 when Congress passed the Marihuana Tax Act of 1937 ("Marihuana Tax Act").¹¹²

The anti-marijuana campaign is not the only target of conspiracy charges from hemp supporters. The cotton and flax industries, and their interests as voiced by the United States Department of Agriculture ("U.S.D.A."), may also have exercised leverage to encourage the passage of the Marihuana Tax Act.¹¹³ Throughout the early twentieth century, the U.S.D.A. had supported hemp cultivation.¹¹⁴ By the early 1930s, however, power within the U.S.D.A. shifted as politicians from southern states developed a stronger voice in Washington. The Office of Fiber Investigations was changed to the Division of Cotton and Other Fibers. The hemp breeding program was stopped, and money was given to the cotton industry.¹¹⁵ Flax still had a powerful backer in the Flax Institute of America.¹¹⁶ Hemp, on the other hand, lacked such support, purportedly because its lack of problems as a crop meant no organization had ever before been needed to push its interests.¹¹⁷ The animosity of the flax industry toward the hemp industry is apparent in a 1943 press release from the managing director of the Flax and Fibre Institute of America. The press release decries the hemp industry as a cover for a "dope conspiracy" supported by the liberal New Deal government.¹¹⁸

Despite these accusations, not everyone was opposed to the cannabis plant. About the time the Marihuana Tax Act was passed in 1937, two articles were published in popular journals proclaiming new technologies for the cultivation of hemp and production of hemp products.¹¹⁹ According to a

¹¹² Marihuana Tax Act of 1937, ch. 553, 50 Stat. 551 (1937), *repealed by* Comprehensive Drug Abuse Prevention and Control Act of 1970, Pub. L. No. 91-513, § 1101(b)(3)(A), 84 Stat. 1236, 1292 (1970). The Marihuana Tax Act was originally codified at I.R.C. §§ 2590-2604, 3230-3238 (1939) and later recodified at I.R.C. §§ 4741-4776 (1954).

¹¹³ See West, *supra* note 19. Hemp competed with cotton and flax, especially the latter, for many decades.

¹¹⁴ See *id.* at 16, 20. The highlight of these efforts was a successful hemp breeding program, run by Lyster Dewey, which resulted in large increases in yields. Lyster Dewey was the author of the oft-cited article entitled *Hemp*, published in the 1913 Yearbook of the Department of Agriculture. See Dewey, *supra* note 41, at 339.

¹¹⁵ See West, *supra* note 19, at 28.

¹¹⁶ See *id.*

¹¹⁷ See *id.*

¹¹⁸ See *id.* at 37-38 for a reproduction of the press release.

¹¹⁹ See *New Billion Dollar Crop*, POPULAR MECHANICS, Feb. 1938, at 238-40, reprinted in HERER, *supra* note 57, at 14-16; *Flax and Hemp: From the Seed to the*

Popular Mechanics article, new technology was going to make hemp the nation's "new billion dollar crop."¹²⁰ This new technology was a machine, a decorticator similar to that invented by Schlichten twenty years earlier, that removed "the fiber-bearing cortex from the rest of the stalk, making hemp fiber available for use without a prohibitive amount of human labor."¹²¹ It was declared that with the decorticator, domestic hemp would replace imported hemp, flax, jute, and sisal used to make paper, linens, burlap, canvas, rope, and other products.¹²²

Projections for the "new billion dollar crop" were cut short by passage of the Marihuana Tax Act.¹²³ The statute was directed primarily at controlling the growth and trade of marijuana via a series of taxes levied on producers, dispensers, and users of marijuana.¹²⁴ Congress was extensively assured by

Loom, MECHANICAL ENGINEERING, Feb. 26, 1937, reprinted in HERER, *supra* note 57, at 17-18.

¹²⁰ *New Billion Dollar Crop*, *supra* note 119, at 238-39.

¹²¹ *Id.* at 238. Traditionally, hemp was cut and left in the fields for retting. Once retting had progressed, the hemp was fed through machines that separated the fiber from the stalk. This process was expensive and resulted in considerable loss of fiber and in low-quality fiber. The process hailed by *Popular Mechanics* involved cutting the hemp

with a slightly modified grain binder. [The hemp] is delivered to the [decorticator] where an automatic chain conveyor feeds it to the breaking arms at the rate of two or three tons per hour. The hurds are broken into fine pieces which drop into the hopper, from where they are delivered by blower to a baler or to truck or freight car for loose shipment. The fiber comes from the other end of the machine, ready for baling.

See id. at 240.

¹²² *See id.*

¹²³ Marihuana Tax Act of 1937, *supra* note 112.

¹²⁴ Manufacturers, importers, and growers of marijuana were subject to an annual registration tax. In addition, each transaction involving marijuana was taxed by the ounce. If such a transaction was made to a registered individual, the tax was \$1 per ounce. For growers, this meant that viable hemp seed, included within the definition of marijuana, was taxed at \$1 per ounce. Viable hemp seed could be purchased through licensed sellers. The transactional tax was \$100 per ounce if the transfer of marijuana was made to a person who did not pay the annual tax, except for a doctor-patient transfer. Since most people purchasing marijuana did not fall into any of the categories eligible for registration via the annual tax, most transactions were subject to the \$100-per-ounce transfer tax and hence deterred. Growers were protected from the high transaction costs through registration. Penalties were imposed for growing, importing, or manufacturing marijuana in violation of the Act - that is, without paying the annual tax. *See id.*, *see also*

witnesses from the Treasury Department and Federal Bureau of Narcotics that the Marihuana Tax Act would not affect hemp farmers.¹²⁵ They would automatically be allowed to continue to cultivate and profit from the non-narcotic version of the plant upon payment of a small fee (proposed at \$5, eventually reduced to \$1) to the Treasury Department.¹²⁶ This protection for hemp farmers rested in the Act's definition of "marijuana":

[A]ll 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; 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 therefrom), fiber, oil, or cake, or the sterilized seed of such plant which is incapable of germination.¹²⁷

Memorandum from David Halperin, Esq. to Ralph Nader 5 (Feb. 11, 1997) [hereinafter Halperin Memorandum].

¹²⁵ See *Taxation of Marihuana: Hearings on H.R. 6906 Before the Senate Comm. On Finance, 75th Cong., 1st Sess. (1937)*. At these hearings, Clinton Hester assured the Committee that "production and sale of hemp and its products for industrial purposes will not be adversely affected by this bill [T]he hemp producer will pay a small occupational tax but his fiber products will be entirely exempt from the provisions of the bill " *Id.* at 7 Hester further stated that manufacturers of seed by-products, such as oil, would also be protected from the measures taken in the bill, except for a small occupational tax and regulations governing purchase of hemp seed. Birdseed producers also had to pay the occupational tax, but were free from other regulations as long as their seed was sterile. See *id.* Hester's assertions were echoed by the testimony of Harry Anslinger, Chief of the Federal Bureau of Narcotics. See *id.* at 17

¹²⁶ See Marihuana Tax Act of 1937, *supra* note 112.

¹²⁷ *Id.* § 51(b). This same definition was adopted by the Comprehensive Drug Abuse Prevention and Control Act of 1970. See 21 U.S.C. § 802(16) (1994). Ballanco notes that THC was not identified as marijuana's narcotic-producing chemical until 1974, making it impossible to use the presence of THC as the distinction between marijuana and industrial hemp in either the 1937 Marihuana Tax Act or the Comprehensive Drug Abuse Prevention and Control Act of 1970. See Thomas J. Ballanco, *The Colorado Hemp Production Act of 1995. Farms and Forests Without Marijuana*, 66 U. COLO. L. REV. 1165, 1167 (1995). Cases decided since the discovery of THC have held that *Cannabis sativa* L. includes all cannabis plants containing THC. See, e.g., *United States v. Kelly*, 527 F.2d 961, 964 (9th Cir. 1976); *United States v. Walton*, 514 F.2d 201, 203 (D.C. Cir. 1975). These are

Despite the purported intentions of the Act's drafters,¹²⁸ the Marihuana Tax Act contributed to the decimation of the hemp industry. It is difficult to discern exactly what effect the law had on the hemp industry, but the administrative difficulties imposed by the Act and lack of competitiveness on the part of American farmers who had to pay taxes to grow hemp under the act did nothing to help the situation. Furthermore, the hostility toward marijuana embodied in the Marihuana Tax Act affected hemp as well. Industrial hemp was seen as an obstacle to the demonizing of marijuana and enforcement of drug laws.¹²⁹ In time, hemp became labeled as a "drug plant."¹³⁰ It has been speculated that this sort of hostility contributed to the decline in hemp cultivation.¹³¹

Hemp had a temporary resurgence during World War II, when the federal government implemented a huge campaign to encourage its cultivation to support the war effort. Before the war, the United States imported natural fibers from the Philippines.¹³² When the Japanese invaded the Philippines in 1941, exports to the United States were cut off.¹³³ Without this supply of fiber

cases dealing with marijuana rather than industrial hemp, however, so the ramifications of such a finding with regard to industrial hemp were not likely fully explored by the courts. However, this definition of *Cannabis sativa* L. would include industrial hemp, since it does contain THC, even though the quantities of THC found in industrial hemp are too low to produce any narcotic effect. See Halperin Memorandum, *supra* note 124, at 5-6.

¹²⁸ A 1936 Federal Bureau of Narcotics memo discusses the need to replace industrial hemp with other products or imported hemp in certain transactions in order to clear the way for federal law to criminalize marijuana. See West, *supra* note 19, at 30. At the very least, this calls into question the sincerity of the Bureau when it assured Congress that it did not intend to interfere with the hemp industry.

¹²⁹ See *id.*

¹³⁰ See *id.* at 33.

¹³¹ See Bergoffen & Clark, *supra* note 66, at n.25.

¹³² See U.S.D.A., *Transcript of the Film: Original USDA Hemp for Victory* (1942) [hereinafter *Hemp for Victory*], reprinted in HERER, *supra* note 57, at 104.

¹³³ See West, *supra* note 19, at 36; see also Ballanco, *supra* note 127, at 1171. The campaign was spearheaded by a short film produced by the Department of Agriculture describing hemp and explaining how it should be cultivated. The film stated that 36,000 acres of hemp were planted in 1942 at the government's request, with a goal of 50,000 acres for 1943. See *Hemp for Victory*, *supra* note 132. Every farmer was required to watch the film, sign that they had seen it, and receive a pamphlet detailing the cultivation techniques for hemp. See HERER, *supra* note 57, at 45. Farmers who agreed to grow hemp, and their sons, were exempted from military service. See *id.* Kentucky farmers participated in the hemp program, including teenagers who planted their own acres of hemp with the encouragement

from overseas, the United States had to produce its own. The federal government began its "Hemp for Victory" campaign, encouraging farmers to plant as much hemp as possible to produce fiber needed in support of the war.

Without any change in the Marihuana Tax Act, hemp production totaled sixty million pounds of hemp fiber in 1943 and 1944 combined.¹³⁴ Nonetheless, hemp production declined again after World War II.¹³⁵ Despite assurances to the contrary, the Federal Bureau of Narcotics was suspicious of the hemp industry when it announced in 1945 that any hemp transferred to a mill with a single leaf on it (later changed to 10% of the leaves) would be considered marijuana and taxed accordingly.¹³⁶ Such a move would have single-handedly eliminated the hemp industry.¹³⁷ Although Congress countered the Bureau by exempting affected transfers from the marijuana tax,¹³⁸ the attitude of the Bureau must have been evident to farmers.

When the Rens Hemp Company ceased operations in 1958, it was the last hemp grower in the United States.¹³⁹ Although Rens had no complaints about problems caused to government enforcement efforts, brief industrial hemp ventures in Illinois and Minnesota reported aggressive measures from federal agents that factored into the failure of the attempts to grow hemp.¹⁴⁰ Competition from synthetic products must also be factored into the lack of successful hemp farming after World War II.¹⁴¹ In short, "[w]ith no government agency promoting hemp, but one suppressing it, and no alternative uses being explored although recognized uses for hemp were

of 4-H. *See id.*, ROBINSON, *supra* note 47, at 163.

¹³⁴ *See* West, *supra* note 19, at 36 (citing A.L. Ash, *Hemp: Production and Utilization*, 2 ECON. BOT. 158 (1948)).

¹³⁵ *See* Ballanco, *supra* note 127, at 1171 (citing Richard L. Miller, *Hemp as a Crop for Missouri Farmer: Markets, Economics, Cultivation, Law* 38-41 (Summer 1991) (on file with the University of Colorado Law Review)).

¹³⁶ *See* Miller, *supra* note 135.

¹³⁷ Harry Anslinger, Chief of the Narcotics Bureaus, estimated that hemp would be taxed at approximately \$32,000 per ton. *See id.*

¹³⁸ *See* Amendments Relating to Marihuana, ch. 81, § 10(a), 60 Stat. 38, 40 (1945), *repealed by* Comprehensive Drug Abuse Prevention and Control Act of 1970, Pub. L. No. 91-513., § 1101(b)(3)(A), 84 Stat. 1236, 1292 (1970).

¹³⁹ *See* West, *supra* note 19, at 41-42.

¹⁴⁰ *See* Halperin Memorandum, *supra* note 124, at 10.

¹⁴¹ *See generally* Frank Vinluan, *The Trouble with Hemp*, GOVERNING MAG., Oct. 1996, at 43.

given to undeveloped southern species [of fiber crops under U.S.D.A. programs], the industry languished and died.¹⁴²

V HEMP'S LEGAL STATUS TODAY – FEDERAL

In 1961, only a few years after the final demise of the hemp industry in the United States, Congress ratified the United Nations Single Convention on Narcotic Drugs.¹⁴³ This international treaty, effective in the United States as of 1967, defines marijuana as a Schedule I narcotic, the most heavily controlled category of drugs. Nevertheless, the treaty explicitly exempts industrial hemp from coverage, saving the global hemp industry from demise.¹⁴⁴ This treaty is binding on the United States and should prevent any further attempts by Congress or the states to restrict cultivation of industrial hemp.

While Congress has made no explicit attempts to hinder production of industrial hemp, it has removed the mechanisms for registering growers and processors that had existed since 1937. This came about with the passage of the Comprehensive Drug Abuse Prevention and Control Act of 1970.¹⁴⁵ The 1970 Act retained the definition of marijuana used in the Marihuana Tax Act,¹⁴⁶ which did not include industrial hemp, but dismantled the taxation and registration scheme of the Marihuana Tax Act that provided hemp farmers the means to exempt themselves from marijuana's taxation.¹⁴⁷ The 1970 Act explicitly made all cultivation and sale of marijuana illegal, effectively outlawing industrial hemp along the way by removing registration procedures. With the federal structure of licensing procedures now removed, the states would seem to have the authority to regulate the cultivation and

¹⁴² West, *supra* note 19, at 42.

¹⁴³ Single Convention on Narcotic Drugs, Mar. 30, 1961, 18 U.S.T. 1408, 520 U.N.T.S. 204.

¹⁴⁴ The treaty protects "cultivation of the cannabis plant exclusively for industrial purposes (fibre and seed) or horticultural purposes." *Id.* at 18 U.S.T. 1421.

¹⁴⁵ 21 U.S.C. §§ 801-971 (1994).

¹⁴⁶ *See id.* § 802(16). In accordance with the Single Convention on Narcotic Drugs, marijuana is listed as a Schedule I substance in the 1970 Act. *See id.* § 812(c). Language explicitly stating that Congress intended the Act to comply with the Single Convention on Narcotic Drugs is also relevant to the question of Congress's intent towards industrial hemp, since it was exempted by the United Nations treaty. *See id.* §§ 801(7), 811(d)(1).

¹⁴⁷ *See* Comprehensive Drug Abuse Prevention and Control Act of 1970, Pub. L. No. 91-513, § 1101(b)(3)(A), 84 Stat. 1236, 1292.

processing of industrial hemp and encourage the renaissance of the industry if they so desire.

If a state chooses to establish its own regulatory or licensing scheme for hemp growers, it will have to confront a daunting obstacle, the federal Drug Enforcement Administration ("DEA").¹⁴⁸ The DEA is responsible for enforcement of restrictions on controlled substances, including marijuana, and has been hostile to attempts to revive industrial hemp cultivation.¹⁴⁹ In fact, the DEA asserts "zero tolerance" for any substance containing any amount of THC.¹⁵⁰ Since industrial hemp does contain minimal levels of THC, the DEA's zero-THC policy is an outright refusal to recognize a distinction between hemp and marijuana. Hence, hemp is as much a target of the war on drugs as marijuana.

This failure to distinguish between the two crops is inconsistent with congressional intent as seen in the legislative history to the Marihuana Tax Act, where the current definition of marijuana was first used.¹⁵¹ Further, there is nothing in President Nixon's 1973 Reorganization Plan establishing the DEA that expands its power beyond that held by the Federal Bureau of Narcotics.¹⁵² Nor has there been any executive, legislative, or judicial action expanding the definition of marijuana. Federal courts have discussed the

¹⁴⁸ The Drug Enforcement Administration (DEA) replaced the Federal Bureau of Narcotics in 1973 under President Nixon. *See* Reorg. Plan. No. 2 of 1973, 28 CFR 1, § 0.100 (1973), *reprinted in* 5 U.S.C. app. at 1563 (1994), *and in* 87 Stat. 1091, *as amended by* Pub L. No. 93-253 § 1, Mar. 16, 1974, 88 Stat. 50. The DEA is an agency within the Department of Justice, while the Narcotics Bureau was under the Treasury Department. This difference is an indication of the change in function from the old agency to the new. *See* Halperin Memorandum, *supra* note 124, at 12.

¹⁴⁹ When a bill to license hemp cultivation was proposed in the Colorado senate, the senator sponsoring the bill received a letter from a local DEA agent. The letter stated that industrial hemp was "no more than a shallow ruse" for legalization of marijuana and that planting industrial hemp violated federal law, which would be vigorously enforced by the DEA. *See* Halperin Memorandum, *supra* note 124, at 14 (citing letter from Phillip W. Perry, Special Agent in Charge, DEA Rocky Mountain Division, to Sen. Lloyd Casey, Senator, Colorado State Senate (Feb. 16, 1995)).

¹⁵⁰ Bergoffen & Clark, *supra* note 66, at 134 n.113.

¹⁵¹ *See* Ballanco, *supra* note 127, at 1170-71. For a discussion of the legislative history of the definition of marijuana, *see supra* notes 123-27 and accompanying text.

¹⁵² *See* Reorg. Plan. No. 2 of 1973, 28 CFR 1, §0.100 (1973), *reprinted in* 5 U.S.C. app. at 1563 (1994), *and in* 87 Stat. 1091, *as amended by* Pub L. No. 93-253 § 1, Mar. 16, 1974, 88 Stat. 50; *see also* Ballanco, *supra* note 127, at 1172-73.

definition for purposes of determining its meaning within the drug context,¹⁵³ but as far as industrial hemp is concerned, the meaning intended in 1937 is still in effect.¹⁵⁴

It has been posited that this conclusion leads to one of two results. One is that the DEA has no authority to include industrial hemp in its marijuana enforcement activities.¹⁵⁵ Congress has done nothing to change the definition of marijuana to include industrial hemp, and indeed has passed laws ratifying the 1937 exclusion of industrial hemp.¹⁵⁶ Thus action by the DEA that criminalizes industrial hemp “seems to exceed that agency’s delegated authority under the *ultra vires* doctrine.”¹⁵⁷ As a result, the actions of the DEA regarding industrial hemp are illegal and can be challenged by those adversely affected.¹⁵⁸

The second possible conclusion, as expressed by Ballanco in his discussion of Colorado’s Hemp Production Act of 1995, is that

[i]f Congress did somehow delegate authority to the D.E.A. to include commercial hemp crops in the definition of marijuana, then that agency’s [current] position represents a reversal of policy in existence since 1957 (when the [Federal Bureau of Narcotics] knew that the Rens Hemp Company was growing hemp in Wisconsin) and, in effect, creates law. This reversal should impose the notice and comment requirements of

¹⁵³ See Ballanco, *supra* note 127, at 1173 (citing *United States v Gagnon*, 635 F.2d 766, 770 (10th Cir. 1980); *United States v Kelly*, 527 F.2d 961, 964 (9th Cir. 1976); *United States v Walton*, 514 F.2d 201, 203 (D.C. Cir. 1975)).

¹⁵⁴ See *id.*

¹⁵⁵ See Bergoffen & Clark, *supra* note 66, at 134 n.114.

¹⁵⁶ See, e.g., 21 U.S.C. § 802(16) (1984) (defining marijuana).

¹⁵⁷ See Ballanco, *supra* note 127, at 1173. The *ultra vires* doctrine as applied to agencies has been explained as follows: “Administrative agencies derive their power and authority from other sources. They are agents of those principals and cannot act beyond the intended grant of authority. From this we derive a basic concept that an agency cannot act outside its delegated authority.” C. KOCH, JR., 1 ADMINISTRATIVE LAW AND PRACTICE § 1.22 (1985). Further, “agency action is illegal if it is not expressly or impliedly authorized by the legislature.” ARTHUR EARL BONSFIELD & MICHAEL ASIMOV, STATE AND FEDERAL ADMINISTRATIVE LAW § 7.2 (1989).

¹⁵⁸ See BONSFIELD & ASIMOV, *supra* note 157, § 7.2. While the DEA’s actions could be challenged, a court might find that Congress’s inaction since 1970, while the DEA has pursued its current approach to industrial hemp, implies authorization through acquiescence. This would likely be weighed against the clarity of the original intention to exclude industrial hemp from the definition of marijuana, as well as other factors. See *id.*

section 553 of the Administrative Procedure Act, with which the D.E.A. did not comply.¹⁵⁹

In fact, a regulation passed by the DEA in 1997 stated, "Any term contained in this part [regarding their authority and administrative procedures] shall have the definition set forth in section 102 of the [Comprehensive Drug Abuse Prevention and Control] Act (21 U.S.C. 802) or part 1300 of this chapter."¹⁶⁰ Since no alternative definition appears in part 1300 of chapter 21 of the Code of Federal Regulations, the DEA seems to have endorsed the definition of marijuana promulgated by Congress, making its zero-THC policy inconsistent with its own regulations. The lack of legal justification for the DEA's inclusion of industrial hemp within the definition of marijuana theoretically clears the way for states to authorize systems allowing for hemp cultivation, but in reality, standing up to the DEA may demand more than legal subtleties, at least in the short term.

While the DEA does not have the power to redefine marijuana, it does have the power to reschedule controlled substances. The 1970 Act gave the Attorney General the power to reschedule or deschedule a substance if it has been inappropriately scheduled.¹⁶¹ This power has been delegated to the DEA.¹⁶² The DEA can initiate proceedings to reschedule a drug *sua sponte* or upon the request of the Department of Health and Human Services or any other interested party. During any consideration of a petition, the DEA does its own investigation as well as requesting findings and recommendations from Health and Human Services. If Health and Human Services recommends that the substance be descheduled completely (rather than rescheduled), the recommendation is binding on the DEA.¹⁶³ Realistically, "given the concerns about marijuana enforcement, it is highly unlikely [that] HHS could be persuaded to recommend complete abandonment of controls on industrial hemp."¹⁶⁴

When the DEA makes a rescheduling or descheduling decision, it uses several factors which do not include economic benefits of the substance in question.¹⁶⁵ Thus the economic potential of industrial hemp cannot be

¹⁵⁹ See Ballanco, *supra* note 127, at 1173 (citations omitted).

¹⁶⁰ 21 C.F.R. § 1308.02 (1997).

¹⁶¹ See 21 U.S.C. § 811(a)(1) - (2) (1994).

¹⁶² See Drug Enforcement Administration, 28 C.F.R. § 0.100(b) (1996).

¹⁶³ See 21 U.S.C. § 811(b) (1994) ("[I]f the Secretary recommends that a drug or other substance need not be controlled, the Attorney General shall not control the drug or other substance.").

¹⁶⁴ Halperin Memorandum, *supra* note 124, at 12.

¹⁶⁵ See 21 U.S.C. § 811(c).

considered by the DEA as a reason to loosen its controls. A final order by the DEA can be reviewed by the federal circuit courts, where the DEA's findings of facts will be conclusive if supported by substantial evidence.¹⁶⁶ Again, economic impact is not likely to be taken into account, increasing the burden on any petitioner attempting to ease the controls on hemp.

Potential growers can seek permits to grow industrial hemp from the DEA, but permits have been very few in number, limited almost entirely to research plots.¹⁶⁷ While the DEA seems to limit its permits to research plots, it requires that applicants seek registration as a "manufacturer of marijuana" (referring to both marijuana and industrial hemp)¹⁶⁸ rather than as a researcher.¹⁶⁹ The measures required to receive a permit as a manufacturer are considerable and costly,¹⁷⁰ creating a significant deterrent to anyone interested in growing experimental industrial hemp.¹⁷¹

¹⁶⁶ See *id.* § 877

¹⁶⁷ See Halperin Memorandum, *supra* note 124, at 13 (citing THE REGISTER (Des Moines, Ia.), Apr. 18, 1996, at 1).

¹⁶⁸ See Letter from James M. Sheahan, Chief, Registration Unit, Office of Diversion Control, Drug Enforcement Administration, to M. Scott Smith, College of Agriculture, University of Kentucky (Feb. 28, 1995), *reprinted in* Governor's Hemp and Related Fiber Crops Task Force, *supra* note 39, at Appendix B.

¹⁶⁹ See 21 U.S.C. § 823(a).

¹⁷⁰ In determining whether to grant a permit to a manufacturer, the DEA considers several criteria:

(1) maintenance of effective controls against diversion of particular controlled substances and any controlled substance in schedule I or II compounded therefrom into other than legitimate medical, scientific, research, or industrial channels, by limiting the importation and bulk manufacture of such controlled substances to a number of establishments which can produce an adequate and uninterrupted supply of these substances under adequately competitive conditions for legitimate medical, scientific, research, and industrial purposes;

(2) compliance with applicable State and local law;

(3) promotion of technical advances in the art of manufacturing these substances and the development of new substances;

(4) prior conviction record of applicant under Federal and State laws relating to the manufacture, distribution, or dispensing of such substances;

(5) past experience in the manufacture of controlled substances, and the existence in the establishment of effective control against diversion; and

(6) such other factors as may be relevant to and consistent with the public health and safety

Id.

¹⁷¹ See Memorandum to Billy Joe Miles, Chair, Governor's Hemp and Related Fiber Crops Task Force, from M. Scott Smith, College of Agriculture, University

The 1994 commercial undertaking of the Hempstead Company in California on land leased from the United States Department of Agriculture was a recent exception to the DEA's reluctance to grant permits.¹⁷² The Hempstead Company received a permit and planted a half-acre of hemp seed imported from France, with pre-arranged plans for processing and sale of the fiber for textiles and hurds for paper. When the push for use of marijuana for medicinal purposes hit the press in July of 1994, the industrial hemp crop came under suspicion. The crop was destroyed by the state of California because it contained minute amounts of THC, and complete absence of the chemical was required for legality under state law.¹⁷³

As an alternative to petitioning the DEA for descheduling or seeking a license to cultivate hemp, the federal law could be changed by executive order.¹⁷⁴ In support of this option, it has been noted that executive orders have "taken on more of a legislative character" in recent years.¹⁷⁵ Executive orders are valid only if the President has specifically been granted authority to act by statute or the Constitution. To legalize industrial hemp, the President would have to rely on power conferred on him by the 1970 Comprehensive Drug Abuse Prevention and Control Act and on his constitutional authority over the Attorney General.¹⁷⁶ This is possible, especially in light of a 1994 executive order listing hemp as an important crop for defense preparedness,¹⁷⁷ but not likely. Given the public perception of the relationship between hemp and marijuana, any President would find it politically difficult to use his power to legalize hemp. Public understanding of the differences between the two plants and interest by farmers would have to increase drastically before any President could be convinced to make such a move.

This same political issue stymies congressional action in favor of industrial hemp. No United States representative or senator would find it easy to be the one who opened the door to hemp, as long as the spectre of marijuana is present. Congress has displayed much more interest in

of Kentucky (Feb. 16, 1995), *reprinted in* Governor's Hemp and Related Fiber Crops Task Force, *supra* note 39, at Appendix B.

¹⁷² See Rosenthal, *The Hempstead*, *supra* note 90, at 257.

¹⁷³ See *id.* at 257-59.

¹⁷⁴ See Bergoffen & Clark, *supra* note 66, at 139.

¹⁷⁵ *Id.*

¹⁷⁶ See *id.*

¹⁷⁷ See Exec. Order No. 12,919, 59 Fed. Reg. 29,525, 29,532 (1994); see also Bergoffen & Clark, *supra* note 66, at 139.

eradicating anything that resembles drugs than in drawing lines between legitimate and illegitimate substances.¹⁷⁸

VI. HEMP'S LEGAL STATUS TODAY – KENTUCKY

Kentucky passed its first laws prohibiting marijuana in 1934.¹⁷⁹ In 1972, following the federal act of 1970, Kentucky amended its laws dealing with controlled substances.¹⁸⁰ These laws set up a scheduling system similar to that at the federal level.¹⁸¹ Marijuana is listed as a Schedule I controlled substance in Kentucky.¹⁸²

The definition of marijuana originally adopted in Kentucky was the same as that used by Congress in the 1937 and 1970 statutes.¹⁸³ This definition distinguished between marijuana and industrial hemp. In 1992, however, the Kentucky General Assembly changed the definition of marijuana, removing this distinction. As now defined, marijuana includes:

all parts of the plant *Cannabis sativa* L., 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.¹⁸⁴

This definition was declared unconstitutional by the Lee District Court (Lee County, Kentucky) following the arrest of actor Woody Harrelson on charges of planting hemp seeds during the summer of 1996.¹⁸⁵

¹⁷⁸ See Bergoffen & Clark, *supra* note 66, at 140.

¹⁷⁹ See BONNIE & WHITEBREAD, *supra* note 107, at 115.

¹⁸⁰ See K.R.S. §§ 218A.010-.350 (Michie 1996).

¹⁸¹ See *id.*

¹⁸² See *id.* § 218A.050(3).

¹⁸³ See *id.* § 218A.010(9) (Michie 1992); *supra* note 127 and accompanying text.

¹⁸⁴ K.R.S. § 218A.010(9) (Michie 1996). Before 1992, the definition of marijuana included the following statement:

It does not include the mature stalks of the plant, fiber produced from the stalks, oil or cake made from the seeds of the plant, any other compound, manufacture, salt, derivative, mixture, or preparation of the mature stalks (except the resin extracted therefrom), fiber, oil, or cake, or the sterilized seed of the plant which is incapable of germination.

Id.

¹⁸⁵ Commonwealth v. Harrelson, No. 96-M-00161 (Lee Dist. Ct., Jan. 23, 1997) *aff'd*, No. 97-XX-00001 [sic] (Lee Cir. Ct. July 8, 1997), *review granted*, No. 97

Harrelson's defense rested on three arguments.¹⁸⁶ The first claim was that the 1992 change in the definition of marijuana was an absolute and arbitrary exercise of legislative power, disallowed under the Kentucky Constitution.¹⁸⁷ Under this section, lawmaking bodies cannot exercise their power arbitrarily. As the court stated in *Wells v. Board of Education of Mercer County*, "[i]f [an] action taken rests upon reasons so unsubstantial or the consequences are so unjust as to work a hardship, judicial power may be interposed to protect the rights of persons adversely affected."¹⁸⁸ Harrelson's brief to the district court pointed out that *Kentucky Milk Marketing v. Kroger Co.*¹⁸⁹ further settled the judicial interpretation of section 2.¹⁹⁰ In *Kentucky Milk Marketing*, the Supreme Court struck down the Kentucky Milk Marketing Law,¹⁹¹ which required minimum mark-ups on milk products, as "an arbitrary exercise of power by the General Assembly over the lives and property of free men."¹⁹²

Harrelson's argument that the change in marijuana's definition was an arbitrary exercise of legislative power was supported by trial testimony. Witnesses testified about the character of hemp and marijuana plants, the ability to distinguish them for enforcement purposes, and potential markets for hemp. While there was disagreement in the testimony, it was not established that industrial hemp, as opposed to marijuana, would be harmful to Kentucky.¹⁹³ Given this record and the lack of any legislative

CA-1887 (Ky. Ct. App., Sept. 23, 1997).

¹⁸⁶ See Brief Addressing Constitutionality of K.R.S. § 218A.010(12), Commonwealth v. Harrelson, No. 96-M-00161 (Lee Dist. Ct., Dec. 20, 1996) [hereinafter Brief Addressing Constitutionality].

¹⁸⁷ See *id.* at 11-14. According to section 2 of the Kentucky Constitution, "[a]bsolute and arbitrary power over the lives, liberty and property of freemen exists nowhere in a republic, not even in the largest majority." KY. CONST. § 2. This language has been interpreted by the highest Kentucky court as a limit on the power of the state legislature or any other political body within the state. See *Sanitation Dist. No. 1 v. City of Louisville*, 213 S.W.2d 995, 1000 (Ky. 1948) (invalidating as arbitrary an act making municipalities that annex sanitation districts liable for the prior debts of the district).

¹⁸⁸ *Wells v. Board of Educ. of Mercer County*, 289 S.W.2d 492, 494 (Ky. 1956) (upholding as not arbitrary a decision by the county's board of education to close a local school).

¹⁸⁹ *Kentucky Milk Marketing v. Kroger Co.*, 691 S.W.2d 893 (Ky. 1985).

¹⁹⁰ Brief Addressing Constitutionality of K.R.S. § 218A.010(12), at 12, Commonwealth v. Harrelson, No. 96-M-00161 (Lee Dist. Ct., Dec. 19, 1996).

¹⁹¹ K.R.S. §§ 260.675-.700 (Michie 1996).

¹⁹² *Kentucky Milk Marketing*, 691 S.W.2d at 900.

¹⁹³ See Brief Addressing Constitutionality, *supra* note 190, at 4-9.

history regarding the change in the definition, Harrelson asserted that "the Commonwealth has not produced a plausible reason why industrial hemp was made illegal in Kentucky in 1992. It is clear that the General Assembly arbitrarily reached this decision with no basis in fact."¹⁹⁴

According to Harrelson's second argument, the new definition is constitutionally defective because it is overly broad.¹⁹⁵ This argument is drawn from *Commonwealth v. Foley*,¹⁹⁶ in which the Kentucky Supreme Court stated that "[a] challenge to a statute on the basis that it is overbroad is essentially an argument that in an effort to control impermissible conduct, the statute also prohibits conduct which is constitutionally permissible."¹⁹⁷ Under the current definition of marijuana, cultivating industrial hemp is not distinguished from cultivating marijuana. Thus the statute envelops an otherwise legal and useful substance in its attempts to target an illegal substance and is defective as a result. In its reply brief, the Commonwealth pointed out that growing hemp is not a constitutionally protected right as required in *Foley*, but this point was not addressed by Harrelson or by the court.¹⁹⁸

In a separate motion to dismiss, Harrelson also presented the argument that the statute was void because of its vagueness regarding what activities were prohibited.¹⁹⁹ The motion notes that both Kentucky and the United States require clarity and precision in criminal statutes,²⁰⁰ and argues that the change in definition leaves Kentucky's citizens unsure as to what action will be legal. This last argument was rejected while the first and second were relied on by the judge in declaring the changed definition unconstitutional.²⁰¹

¹⁹⁴ *Id.* at 14.

¹⁹⁵ *See id.* at 14-15.

¹⁹⁶ *Commonwealth v. Foley*, 798 S.W.2d 947 (Ky. 1990).

¹⁹⁷ *Id.* at 952 (quoting *Commonwealth v. Ashcraft*, 691 S.W.2d 229, 232 (Ky. 1985)).

¹⁹⁸ *See* Commonwealth's Brief, at 8, *Commonwealth v. Harrelson*, No. 96-M-00161 (Lee Dist. Ct., Nov. 22, 1996).

¹⁹⁹ *See* Motion to Dismiss, at 7, *Commonwealth v. Harrelson*, No. 96-M-00161 (Lee Dist. Ct., Oct. 23, 1996).

²⁰⁰ *See id.* The motion to dismiss cites *Kolender v. Lawson*, 461 U.S. 352 (1983), and *Harden v. Commonwealth*, 573 S.W.2d 657 (Ky. 1978), in support of the requirement of clarity and precision.

²⁰¹ *See* Judgment, *Commonwealth v. Harrelson*, No. 96-M-00161 (Lee Dist. Ct., Jan. 23, 1996), *aff'd.*, No. 97-XX-00001 (Lee Cir. Ct., July 8, 1997), *review granted*, No. 97-CA-1887 (Ky. Ct. App., Sept. 23, 1997).

Discretionary review of this decision has been granted by Kentucky Court of Appeals.²⁰²

The debate over Woody Harrelson's case and the district court's decision leave several unanswered questions. The first of these is whether the change in the statute makes any difference in regard to Harrelson's actions.²⁰³ Harrelson planted four fertile hemp seeds. It is not clear that the definition used until 1992 would have made this action any less illegal than it is under the current definition. The 1992 definition was the same as that used by the federal government in both the 1937 Marihuana Tax Act²⁰⁴ and the Comprehensive Drug Abuse Prevention and Control Act of 1970.²⁰⁵ This definition of marijuana has been interpreted to include fertile hemp seeds since its inception in 1937.²⁰⁶ Thus, even if the earlier Kentucky definition were in place, Harrelson's actions presumably would be illegal given the common interpretation of that definition.

Another issue not addressed by Harrelson is preemption. The Commonwealth argued in its brief²⁰⁷ that the question of the constitutionality of the statute was irrelevant, due to preemption of state law by the federal regulation of marijuana.²⁰⁸ Preemption can occur in a

²⁰² See *Commonwealth v. Harrelson*, No. 97-CA-1887 (Ky Ct. App., Sept. 23, 1997).

²⁰³ See Halperin Memorandum, *supra* note 124, at n.4.

²⁰⁴ Marihuana Tax Act of 1937, *supra* note 112.

²⁰⁵ 21 U.S.C. § 802(16) (1994); see *supra* notes 127, 146 and accompanying text.

²⁰⁶ See Halperin Memorandum, *supra* note 124, at 1-2 ("Notwithstanding the many assurances in the legislative history that the Marihuana Tax Act would not burden the hemp industry, hemp cultivation - by means of fertile seeds - was always within the definition of 'marihuana' and thus subject to taxation under the Act, and that taxation imposed at least some burden on hemp growers. [T]he 1970 Act replaced the tax approach with the scheduling approach, thus, for hemp growers, outlawing what had previously only been burdened."). *Id.* at 2. *But see* Bergoffen & Clark, *supra* note 66, at 134 (concluding that both viable hemp seed and sterilized seed are excluded from the definition of marijuana since products "made from the 'seeds of the plant,' not just from sterilized seeds," are excluded). Starting in 1937, viable seeds, unlike other industrial hemp products, were taxed and regulated. This would seem to indicate that the viable seeds were at least more suspect than the fiber, oil, or sterilized seed.

²⁰⁷ It seems that the court requested briefs addressing the issues presented in Harrelson's motion to dismiss. See Commonwealth's Brief, *Commonwealth v. Harrelson*, No. 96-M-00161, at 1 (Lee Dist. Ct. Nov. 22, 1996).

²⁰⁸ See *id.* at 8.

number of ways, including the situation in which state law frustrates the objective of federal law.²⁰⁹ “[W]here state law stands as an obstacle to the accomplishment of the full purposes and objectives of Congress,” preemption can be found.²¹⁰ In the case of Kentucky’s definition of marijuana, removing the exemption for industrial hemp arguably brings the state statute into conflict with the federal definition and frustrates Congress’s expressed intent to protect hemp growers.²¹¹

The Commonwealth put forth this argument because federal law includes viable hemp seeds in its definition of marijuana, and, as the law is currently enforced by the DEA, marijuana is a Schedule I drug regardless of minimal THC content.²¹² Viable hemp seeds contain traces of THC and, since they are not included in the exemption of mature stalks from the definition of marijuana, count as marijuana under federal law.²¹³ Finding preemption would thus result in a victory for the Commonwealth regardless of the constitutionality of Kentucky’s statute.

A finding of preemption might have greater effects not favorable to the Commonwealth’s position. While the fertile seeds planted by Harrelson would remain subject to regulation, other parts of the hemp plant would be acceptable under the federal exemption. By arguing preemption, the Commonwealth may win the battle with Harrelson based on nuances of statutory interpretation but lose the war, since federal law as written views industrial hemp as a legal crop.

Restrictions on industrial hemp were an issue in Kentucky well before Woody Harrelson arrived in Lee County. In 1994, then-Governor Brereton

²⁰⁹ See Richard C. Ausness, *Federal Preemption of State Products Liability Doctrines*, 44 S.C. L. REV. 187, 198 (1993).

²¹⁰ *Silkwood v. Kerr-McGee Corp.*, 464 U.S. 238, 248 (1984) (citing *Hines v. Davidowitz*, 312 U.S. 52, 67 (1941)).

²¹¹ See 21 U.S.C. § 802(16) (1994). This intent was explicit in 1937 when the federal definition was originally introduced, and the definition has not been changed despite Congress’s opportunity to do so in 1970 when the new controlled substances law was passed.

²¹² See *id.* § 812(c).

²¹³ *But see* Bergoffen & Clark, *supra* note 66, at 134 (suggesting that viable seeds are included in exemption). According to the DEA, however, THC levels even in the parts of the plant exempted by the definition count. See *supra* text accompanying note 173. Arguably, because the federal definition of marijuana exempts mature stalks and other parts of the plant related to the hemp industry, the zero-THC standard used by the DEA should not apply to those parts of the plant exempted from the definition of marijuana.

C. Jones, by executive order, established a task force to study hemp and related fiber crops as alternatives to tobacco.²¹⁴ The work of the task force was dealt a blow when Kentucky's Attorney General issued an opinion stating that under the 1992 definition of marijuana, it would be illegal to allow any cultivation of hemp, even as a research project sponsored by the University of Kentucky.²¹⁵ The report issued by the task force in 1995 was pessimistic about the potential of hemp as an alternative crop in Kentucky, citing enforcement issues and a lack of world markets as major obstacles to success.²¹⁶

The report was criticized by several members of the task force for being one-sided.²¹⁷ These members were more inclined to favor attempts to cultivate hemp and pointed out that they had no input in the report. The task force met only twice and the report was written almost entirely by an appointee of the task force's chairman. Members of the task force were not asked for their views and were expected to sign off on the report as presented at the second meeting.²¹⁸ In light of this, the report of the task force, while not wholly inaccurate, should perhaps be viewed with a certain amount of caution.

In the same year the task force presented its report to the governor, the University of Kentucky Survey Research Center published a survey

²¹⁴ See Exec. Order No. 94-1121, *reprinted in* Governor's Hemp and Related Fiber Crops Task Force, *supra* note 39, at Appendix A. The task force met twice, once at the outset and once to approve the report. See *Prospects for Growing Hemp Remain Cloudy*, THE COURIER-JOURNAL (Louisville, Ky.), Apr. 8, 1996, at 2B.

²¹⁵ See Letter from Chris Gorman, Attorney General, and Ross T. Carter, Director, Division of Civil and Environmental Law, to Jerry W. Lovitt, Commissioner, Kentucky State Police (Mar. 1, 1995), *reprinted in* Governor's Hemp and Related Fiber Crops Task Force, *supra* note 39, at Appendix B. For comments regarding the opinion, see *Anti-Hemp Law Binds Researchers*, THE COURIER-JOURNAL (Louisville, Ky.), Mar. 31, 1995, at 1B.

²¹⁶ See Governor's Hemp and Related Fiber Crops Task Force, *supra* note 39, at 2, 40. There can be little doubt that these issues would need to be addressed if Kentucky were to pursue hemp cultivation, but they may not be as insurmountable as the report indicates. Enforcement problems have been dealt with in the past through a rigorous system of licensing and registration. See *supra* note 143. Also, markets may currently be small, but with growing concern over the environmental effects of synthetic products and deforestation, as well as American ability to create new markets, hemp may be more viable than it would appear at first glance. See *supra* Part III.

²¹⁷ See *Prospects for Growing Hemp Remain Cloudy*, *supra* note 214.

²¹⁸ See Mark A. Chellgren, *Hemp-Panel Chairman, Critics Disagree*, THE COURIER-JOURNAL (Louisville, Ky.), Aug. 16, 1995, at 2B.

showing that seventy-seven percent of Kentuckians favor the legalization of industrial hemp in the state.²¹⁹ This percentage covers a range of profiles, with no particular individual characteristics standing out to mark those favoring such legislation.²²⁰

While Woody Harrelson is trying to make a difference in the courts, other groups are making efforts to change Kentucky's law via the legislature. In the summer of 1997, members of the Community Farm Alliance were granted a legislative hearing before the General Assembly. The hearing, at which both farming and law enforcement interests were represented, was intended to lay the groundwork for potential legislation in the 1998 session.²²¹ The Fayette County Farm Bureau has also been active, pressing Governor Patton to legalize the cultivation of industrial hemp.²²²

VII. HEMP'S LEGAL STATUS TODAY - OTHER STATES

Although Kentucky has not yet considered proposed legislation to legalize hemp cultivation, over thirty pieces of legislation relating to industrial hemp have been proposed in eleven states.²²³ There is a split among these pieces of legislation, with some proposing more conservative measures aimed at funding hemp research projects²²⁴ and others making

²¹⁹ See UNIVERSITY OF KENTUCKY SURVEY RESEARCH CENTER, REPORT ON THE LEGALIZATION OF INDUSTRIAL HEMP at 1 (Sept. 1995).

²²⁰ See *id.* The factor that seems to make the most difference is an individual's level of knowledge about hemp and the differences between hemp and marijuana. This would indicate that any efforts to legalize hemp as a cash crop for Kentucky farmers should be preceded and accompanied by significant efforts to educate the state's population about hemp. See *id.* at 3.

²²¹ See *CFA Gets Legislative Hearing on Industrial Hemp!*, CFA NEWS 1 (Aug./Sept. 1997).

²²² See Joe Ward, *Another Look at Hemp as a Legal Crop Sought*, THE COURIER-JOURNAL (Louisville, Ky.), Dec. 5, 1996, at 10B.

²²³ These eleven include Colorado, Hawaii, Iowa, Kansas, Minnesota, Missouri, New York, North Dakota, Oregon, Vermont, and Virginia.

²²⁴ See H.B. 1274, 61st Gen. Ass., 1st Reg. Sess. (Col. 1997); H.B. 284, 19th Leg. (Haw. 1997); H.B. 59, 19th Leg. (Haw. 1997); H.R. 88, 19th Leg. (Haw. 1997); H.C.R. 138, 19th Leg. (Haw. 1997); H.B. 2963, 18th Leg. (Haw. 1996); H.B. 2962, 18th Leg. (Haw. 1996); H.R. 71, 18th Leg. (Haw. 1996); H.C.R. 63, 18th Leg. (Haw. 1996); H.C.R. 92, 17th Leg., 1st Reg. Sess. (Haw. 1993); H.B. 402, 77th Gen. Ass., 1st Reg. Sess. (Iowa 1997); S.B. 340, 77th Gen. Ass., 1st Reg. Sess. (Iowa 1997); S.B. 203, 77th Gen. Ass., 1st Reg. Sess. (Iowa 1997); S.C.R.

bolder efforts to legalize cultivation of hemp.²²⁵ Of the proposed legislation, only three bills – two in North Dakota and one in Vermont – have become law.²²⁶ All three of these bills provided only for research regarding the production of hemp. Additionally, a concurrent resolution in Hawaii requiring the House Legislative Research Bureau to study the potential for hemp cultivation appears to have been passed by both houses of the state legislature.²²⁷ Three 1997 bills in Iowa were carried over to the next legislative session.²²⁸ All other proposals apparently have died in committee or have not been transferred to the next legislative calendar.

Proposed legislation addressing legalization of industrial hemp has included significant measures to control the crop at all stages. For instance, the Colorado Hemp Production Act of 1995 would have required all hemp farmers to be licensed by the state. Seed could be purchased only through authorized dealers. Only designated fields could be planted, and these fields would be subject to inspection twice per growing season. Plants could be tested for THC content, and any that exceeded 1.4% would be confiscated and destroyed.²²⁹ In Missouri, the bill for hemp production included a reporting requirement under which all hemp farmers had to file a list of buyers after the hemp was sold.²³⁰ New York's proposal also included a stringent reporting scheme.²³¹

1605, 77th Leg., Reg. Sess. (Kan. 1997); H.B. 1306, 55th Leg. Ass. (N.D. 1997); H.B. 1305, 55th Leg. Ass. (N.D. 1997); H.B. 783, Adjourned Sess. (Vt. 1996); J.H.R. 656, Reg. Sess. (Va. 1996).

²²⁵ See S.B. 132, 60th Gen. Ass., 1st Reg. Sess. (Col. 1995); S.B. 67, 60th Gen. Ass., 2d Reg. Sess. (Col. 1996); H.B. 55, 19th Leg. (Haw. 1997); H.B. 3791, 18th Leg. (Haw. 1995); H.B. 3289, 18th Leg. (Haw. 1995); H.R. 291, 18th Leg. (Haw. 1995); H.R. 36, 18th Leg. (Haw. 1995); H.C.R. 315, 18th Leg. (Haw. 1995); H.C.R. 28, 18th Leg. (Haw. 1995); H.B. 349, 80th Reg. Sess. (Minn. 1997); S.B. 1181, 80th Reg. Sess. (Minn. 1997); H.B. 283, 89th Gen. Ass., 1st Reg. Sess. (Mo. 1997); S.B. 972, 88th Gen. Ass., 2nd Reg. Sess. (Mo. 1996); S.C.R. 26, 88th Gen. Ass., 2nd Reg. Sess. (Mo. 1996); S.B. 798, 218th Gen. Ass., 1st Reg. Sess. (N.Y. 1995); H.B. 3623, 69th Leg. Ass. (Or. 1997).

²²⁶ See H.B. 1306, 55th Leg. Ass. (N.D. 1997); H.B. 1305, 55th Leg. Ass. (N.D. 1997); H.B. 783, Adjourned Sess. (Vt. 1996).

²²⁷ See H.C.R. 63, 18th Leg. (Haw. 1996).

²²⁸ See H.B. 402, 77th Gen. Ass., 1st Reg. Sess. (Iowa 1997); S.B. 340, 77th Gen. Ass., 1st Reg. Sess. (Iowa 1997); S.B. 203, 77th Gen. Ass., 1st Reg. Sess. (Iowa 1997).

²²⁹ See Ballanco, *supra* note 127, at 1168-69.

²³⁰ See S.B. 972, 88th Gen. Ass., 2d Reg. Sess. (Mo. 1996).

²³¹ See S.B. 798, 218th Gen. Ass., 1st Reg. Sess. (N.Y. 1995).

While such efforts to rejuvenate the hemp industry continue to surface, the DEA is still hostile to state efforts to allow for industrial hemp. As indicated in a letter to Colorado State Senator Lloyd Casey, the DEA believes that hemp is a cover for marijuana and that its cultivation violates federal law.²³² It remains to be seen what the DEA will do if a state does pass legislation allowing for hemp cultivation.

VIII. ENFORCEMENT AND PUBLIC PERCEPTION

Both the DEA and state police, often in cooperation with each other and with the National Guard, are responsible for controlling marijuana. In the hills of eastern Kentucky, it is not unusual to see National Guard helicopters flying overhead, scouring the hillsides and hollows for marijuana patches. The federal government pours hundreds of thousands of dollars each year into efforts to eradicate *Cannabis sativa* L.²³³ As a result, thousands of plants are destroyed.²³⁴ Destruction of marijuana is often paired with seizure of a planter's property and drug-related assets and eventual forfeiture to the government. Such measures result in huge sums of money going to police agencies to further the war on drugs.²³⁵ These enforcement tactics also have resulted in death. In 1993, a Kentucky farmer was killed by gunfire from state police during a standoff over a patch of marijuana.²³⁶

Given such animosity toward marijuana and the zero-THC requirements embraced by the DEA and many states, Kentucky included, any

²³² See Halpern Memorandum, *supra* note 124, at 14 (citing letter from Phillip W. Perry, Special Agent in Charge, DEA Rocky Mountain Division, to Sen. Lloyd Casey, Senator, Colorado State Senate (Feb. 16, 1995)).

²³³ The Omnibus Crime Control and Safe Streets Act of 1968, Pub. L. No. 90-351, 82 Stat. 197 (1968), was amended in 1986 to give the Department of Justice an extra \$225,000,000 for drug enforcement activities. See Amendment, Pub. L. No. 99-500, 100 Stat. 1783-353 (1986). By 1989, more than \$5,000,000 had been given to Kentucky to use in the fight against drugs. This money was further supplemented by annual federal grants. In 1989, these supplemental grants totaled \$750,000. See Cynthia Crossley, *Search and Destroy Mission; State Declares War on Marijuana as Harvest of Bountiful Crop Nears*, THE COURIER-JOURNAL (Louisville, Ky.), Aug. 14, 1989, at 1A. These figures are likely to be higher today.

²³⁴ See Crossley, *supra* note 233; see also West, *supra* note 15, at 5 (stating that over nine million plants were destroyed in Wisconsin in 1993).

²³⁵ See Crossley, *supra* note 233.

²³⁶ See *Pro-Marijuana Group Files Petitions*, THE COURIER-JOURNAL (Louisville, Ky.), Sept. 22, 1993, at 3B.

renaissance of the hemp industry would pose serious enforcement challenges. Although hemp was grown in the United States for centuries without being smoked, today it is virtually impossible to separate the issue of hemp from that of marijuana. Assuming cooperation by the DEA, Kentucky seems to have three options. The first is to continue intolerance of both hemp and marijuana. This would do nothing to help solve the crisis faced by farmers. The second is to legalize both. While this option is popular in certain circles, it would be politically difficult. The third is to foster the rebirth of the hemp industry while keeping marijuana illegal. This could be accomplished through licensing and inspection measures.

This last option is the one chosen by all states that have proposed legislation legalizing hemp.²³⁷ With a series of licensing requirements or registration of seed dealers, farmers, and processors, along with field inspections and plant tests, it would be possible to ensure that hemp rather than marijuana is being grown. The availability of genetically altered seeds that contain no detectable THC would further the ability to control the crops.²³⁸

Concern is often expressed that such a system would result in a “leaky bucket” – that farmers will ring their fields with industrial hemp and hide a few marijuana plants in the middle to bring in more money.²³⁹ While this is possible, it would not work for long. Despite their differences, the plants can cross-breed. The result is marijuana that will not produce a high. “Cross-pollination’s long-term effect of diluting marijuana’s potency would be devastating to the illegal trade.”²⁴⁰ This fact, paired with the different requirements for cultivation and different appearances of the two plants, should not make enforcement significantly more difficult than it already is.²⁴¹

Law enforcement’s concern over hemp fields being looted also seems to be misplaced. The experimental crop cultivated in California by the Hempstead Company suffered no attempted or actual breaches of security.²⁴² Even if someone did trespass in search of marijuana, a field of industrial hemp would do him or her little good. Because hemp contains little THC and often high levels of CBD, smoking it will result in nothing more than a bad headache.

²³⁷ See *supra* note 223 and accompanying text.

²³⁸ See West, *supra* note 15, at 34 (discussing the THC-free variety of hemp developed in Holland).

²³⁹ See Rosenthal, *Hemp Realities*, *supra* note 59, at 69

²⁴⁰ Graves, *supra* note 25.

²⁴¹ See *id.*

²⁴² See Rosenthal, *The Hempstead*, *supra* note 90, at 257

The public also has concerns over the legalization of industrial hemp. As evidenced in the debate seen in major Kentucky newspapers, people are split on the issue of industrial hemp. Some see the push for industrial hemp as a cover for legalizing marijuana. As one reader of Louisville's Courier-Journal wrote, "No, this isn't about rope! It's about dope! And all the players know it. [Woody] Harrelson and his minions know that hemp is essentially indistinguishable from marijuana and to legalize hemp is a de facto legalization of marijuana."²⁴³ Others have expressed the opposite view, encouraging the spread of knowledge about hemp and acceptance of hemp as a viable crop for Kentucky²⁴⁴

In a state where farming is so vital to the economy, public perceptions about marijuana and hemp will have a significant impact on the future of Kentucky farms. Despite the concerns over marijuana, information about hemp seems to be reaching the public more and more readily. Discussions in newspapers have increased, with many articles and letters explaining the basic differences between marijuana and hemp and the advantages of hemp as an agricultural product. Recently, a hemp museum opened in Campbellsville, Kentucky, and a retail hemp clothing store began operation in Lexington. The Kentucky Hemp Growers Cooperative, after forty-six years of inactivity, has been reestablished.²⁴⁵ As mentioned above, the Farm Bureau is actively pursuing the issue with the state government,²⁴⁶ and legislative hearings on the issue of hemp featuring the Community Farm Alliance were headline news in July 1997.²⁴⁷ Given this groundswell of interest, it may be possible to cultivate hemp in Kentucky before too long.

IX. CONCLUSION: PROPOSAL FOR KENTUCKY

In light of the many industrial uses for hemp and the upturn of commercial interest in the plant, hemp could be a viable alternative to tobacco for Kentucky farmers. While hemp will not be the only crop necessary to ease the strain of tobacco's demise, history has shown that hemp grows quite successfully in Kentucky. It could be a profitable investment for the state.

²⁴³ Harrelson, *Cockrel and Hemp*, THE COURIER-JOURNAL (Louisville, Ky.), July 19, 1997, at 6A.

²⁴⁴ See, e.g., *Readers' Forum: Insane Ban on Hemp*, THE COURIER-JOURNAL (Louisville, Ky.), Apr. 25, 1994, at 6A.

²⁴⁵ See *Prospects for Growing Hemp Remain Cloudy*, *supra* note 214.

²⁴⁶ See *supra* note 222 and accompanying text.

²⁴⁷ See *supra* note 221 and accompanying text.

Kentucky must act to make hemp a reality. First, the legislature must reverse the changes to the definition of marijuana made in 1992. The original definition should be readopted to allow cultivation of hemp for fiber, seed, and oil. Second, further research into the agricultural needs and the economic potential of hemp is necessary. This research must include the likelihood of attracting processing plants to Kentucky. The Center for Business and Economic Research at the University of Kentucky has proposed such a study to the Kentucky Hemp Museum and Library. This proposal, along with others like it, should be supported. Third, research into possible improvements in technology is needed to reduce the labor involved in hemp processing. Capital investments in technology will be required, but we must be willing to make them if we want our farmers to survive. Fourth, the General Assembly should pass legislation establishing a system of licensing, registration, inspection, and testing that would provide the means to legally cultivate hemp. This system can be modeled after that proposed in other states or used by the federal government prior to 1970.

If these calls to action are answered, hemp may again grow in Kentucky's fields and support the state's economy. It is not only Kentucky's farmers who will benefit. All Kentuckians will reap the rewards of an economy that is healthy and stable, even in the absence of tobacco.

