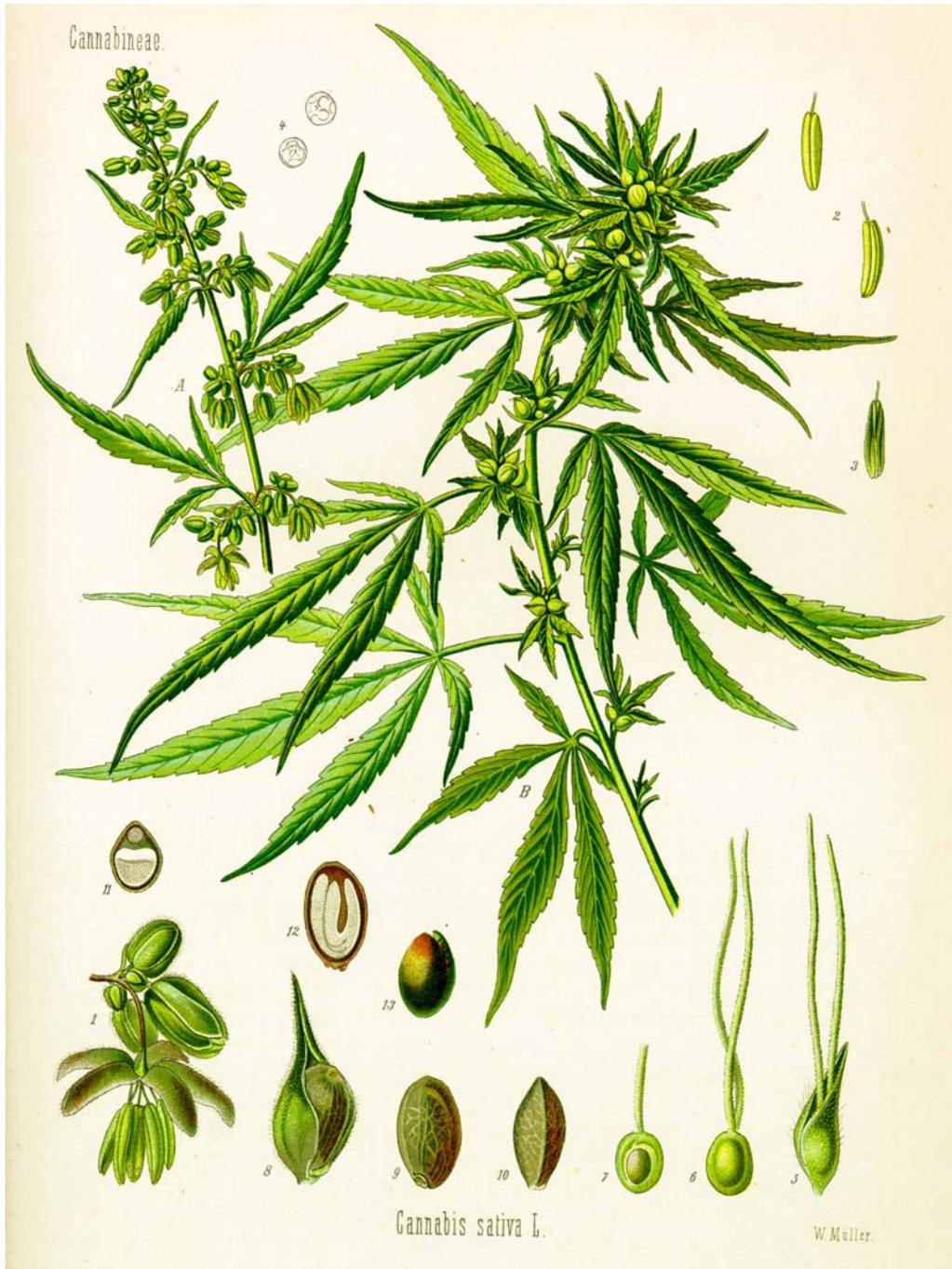


New Mexico Department of Agriculture Industrial Hemp Task Force Report 2012



Overview

The purpose of the Industrial Hemp Task Force (Task Force) is to summarize the group's research and findings regarding the potential utility and economic practicality of legalizing the use of industrial hemp in New Mexico and the consequences of doing so. The Task Force was commissioned by New Mexico Department of Agriculture (NMDA) Secretary Jeff M. Witte, at the request of members of the New Mexico Industrial Hemp Coalition and supporters.

Unique Opportunity in New Mexico

New Mexico is uniquely poised to capture the industrial hemp market because of its rural underpinnings, its decentralized production and its many cultures that can add unique products via alternative approaches. There is a cultural history of industrial hemp use for hundreds of years in our State. New Mexicans still recognize that agriculture underpins its state's economy and we should be continually investigating crops and products to add to our agricultural base. It is estimated that the national demand for raw industrial hemp exceeds \$400 million annually in the United States. In addition, by selecting water thrifty genetics from industrial hemp cultivars, we should be able to get maximum economic value from this crop while better utilizing New Mexico's water resources.

The Plant: Industrial Hemp

Cannabis sativa is a herbaceous annual plant in the Cannabaceae family. Cannabaceae is a family that includes several genera, including *Cannabis* (common name is hemp) and *Humulus* (known as hops). *Cannabis* plants have been cultivated since the early days of recorded human history. Different parts of the plant can be used for industrial fiber (e.g. paper, plastic replacement products, bio-fuel), seed oil, food, recreation, religious enlightenment, mood enhancement, and medicine. Time and type of harvest depends on the plant parts needed and on the purpose of its use.

In addition to its main psychoactive chemical compound Δ^9 -tetrahydrocannabinol (THC), *Cannabis* can contain about sixty other cannabinoids in much smaller amounts. Some varieties, which fall in the category of "industrial hemp," are low in THC (generally less than 1%) and are grown as agricultural crops. A concentration of 0.3% THC in the *Cannabis* plant is used in the European Union and in Canada as a threshold to separate industrial hemp from the psychoactive form of *Cannabis*.

Agronomy

Industrial hemp is well adapted to the temperate zone and will grow under a wide range of environmental conditions. Ehrensing (1998) reviewed the feasibility of industrial hemp production in the Pacific Northwest including drier portions of the inter-mountain region.

Industrial hemp requires 500-700 millimeters (20-28 inches) of available moisture, especially during the first six weeks of cultivation, for optimum yield. However, severe drought has a negative impact by hastening maturity and dwarfing the plant (Ehrensing, 1998). High quality industrial hemp production would therefore be confined to portions of New Mexico that are irrigated. Loose, well-drained loam soils of high fertility and abundant organic matter in the pH range of 5.8 to 6.0 to slightly alkaline are reported as optimal for industrial hemp production. However, industrial hemp is adaptable to a variety of soil conditions with the exception of heavy clay and acidic soils (not normally found in New Mexico) and soils with a shallow calcareous layer.

The best producing hemp varieties require about four months without killing frost to produce fiber and about 5.5 months to mature seed. Hemp grows best when mean daily temperatures are between 13° and 22° C (60°-80° F), but will endure colder and warmer conditions. Young seedlings can tolerate light frosts permitting earlier planting than corn in most areas. In Farmington, specifically (elevation 5,640), the 35 year mean frost-free days is 162 days which permits fiber production but becomes somewhat marginal for producing hemp oil seed based on the seasonal mean. However, within any particular growing season in Farmington, the minimum number of frost free days was reported as 115 days (1999) which would still permit fiber production while the maximum frost-free days was 198 (1972) which would easily permit fiber and seed oil production. With the exception of northern mountainous regions, in theory, industrial hemp production for fiber would be permissible in most New Mexico agroclimatic zones with access to irrigation.

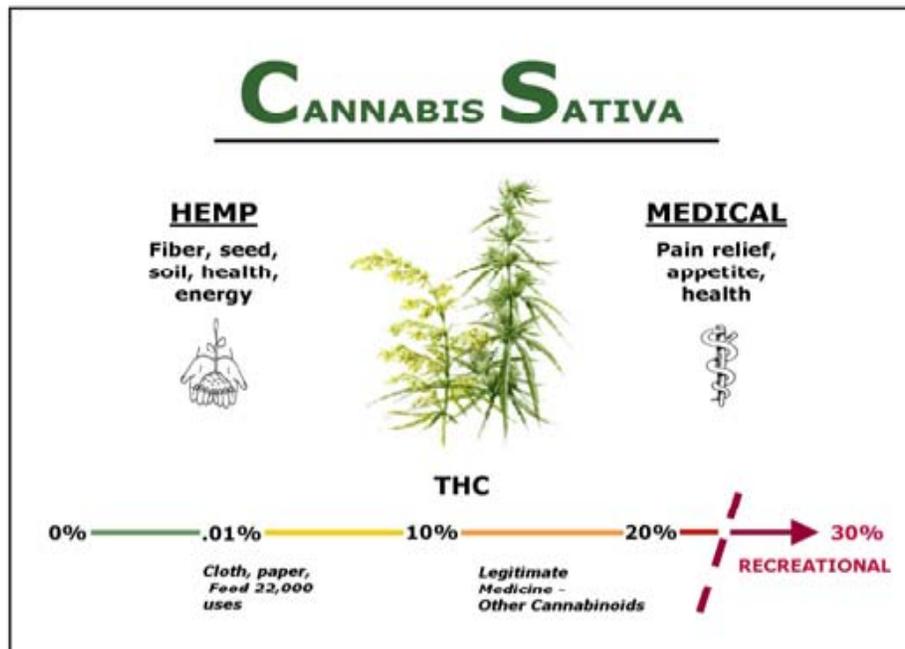


Fig. 1

Chemistry

Industrial hemp is primarily distinguished from marijuana by the absence of significant levels of Δ^9 -tetrahydrocannabinolic acid (THCA; Fig. 1). THCA is one of about eighty-five known naturally occurring cannabinoids found in marijuana. The vast majority of these compounds occur in very low abundance and only a few are known to be psychoactive. THCA, the most abundant cannabinoid can be converted (by heating) to the psychoactive compound Δ^9 -tetrahydrocannabinol (THC). Flowers are usually used for recreational or medicinal purposes.

By contrast, the THCA content in industrial hemp is considerably lower. Industrial hemp is often characterized as containing less than one percent THCA by (dry) weight. Strains grown in Canada and in the European Union are required to contain less than 0.3% THCA. In addition, industrial hemp contains modest amounts of cannabinoids, such as cannabidiolic acid, or CBDA, which has an antagonistic effect on the psychoactive effect of THC. This further reduces the desirability of industrial hemp as a source of psychoactive compounds.

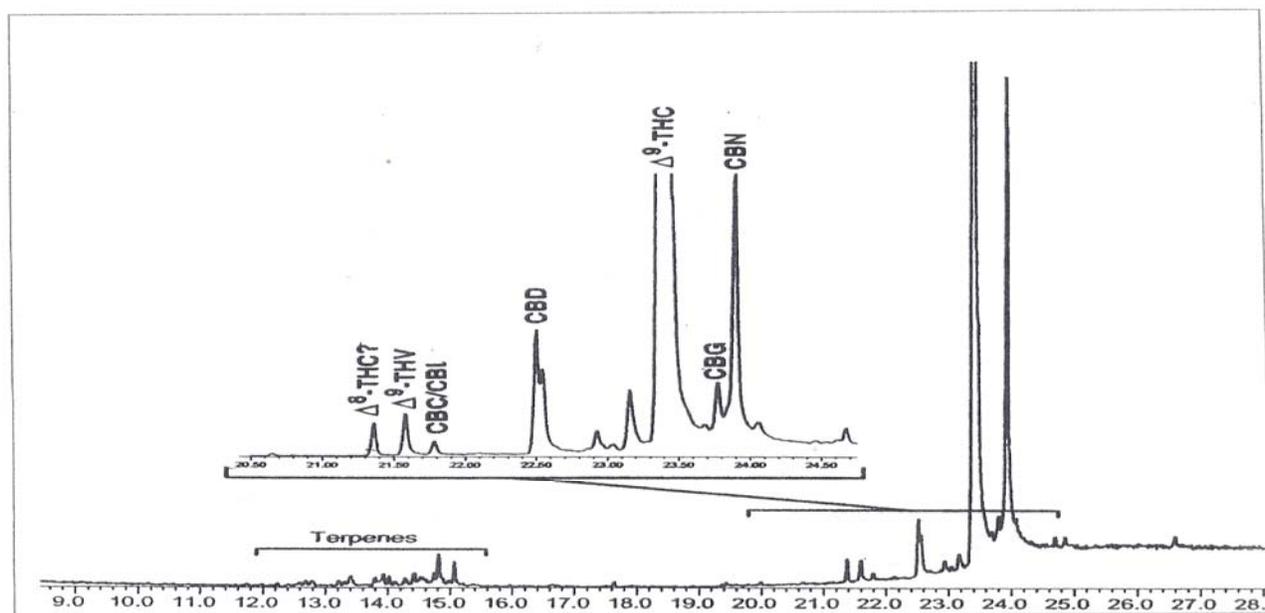


Fig. 2

Rapid and sensitive methods are available to screen the THCA content in hemp seed and crops. The two most popular methods for identifying and quantifying cannabinoids are high performance liquid chromatography, or HPLC, and gas chromatography (Fig 2). Using these methods, THCA abundances as low as 0.01 percent can be readily detected.

History of Illegalization

Currently, *Cannabis sativa* is listed as a Schedule I controlled substance by the United States Department of Justice Drug Enforcement Administration (DEA), including the selections of hemp that contain no psychoactive components. This seems confusing to well-meaning investigators, but there is a very traceable and explainable history of illegalization of the Cannabis plant in the United States. Despite being a common household pharmacopeia product in yesteryear, and a fiber of unparalleled quality for use around the house, its relationship with its demonized cousin “marijuana” allowed it to be categorized as a Schedule I controlled substance. Some suspect that its versatile usage threatened existing lumber and petroleum product industries, which helped with its demonization.

In 1937, the Marihuana Tax Act (Act) passed with little debate in Congress but with massive propaganda in a national campaign, funded largely by drug and paper companies. Industrial hemp growers were promised that the Act did not apply to them, but after passage it was revealed that industrial hemp was included and over the years it became harder and harder to get a license to grow industrial hemp. The last legal United States (U.S.) industrial hemp crop was harvested in 1957.

The following summary of events demonstrates the strange history of the plant in the U.S. during the 20th century:

- In 1937, Harry J. Anslinger, then Chief of the Federal Bureau of Narcotics, placed industrial hemp in the same category of THC-containing Cannabis via the Act.
- In 1942, the United States Department of Agriculture (USDA) called for increased industrial hemp production for U.S. defense reasons via the mechanism of a public movie called “Hemp for Victory.”
- In 1944, Mayor Fiorello LaGuardia of New York City commissioned his own research team to study Cannabis and emphasized its worth. However, Commissioner Anslinger erected felony precepts for scientists and physicians who independently studied, researched and tested cannabis, thus concretizing a schism between Cannabis and objective research culture.
- From 1976 to 1983, Gerald Ford and Richard Nixon continued with the anti-science environment relating to Cannabis by commanding the destruction of all Cannabis related research files.
- In 1998, medical marijuana acts were initiated, taking on (and winning) the beginning admittance of a health use for the plants cousin marijuana, thus making non-psychoactive industrial hemp use a much easier advocacy.

Logic to Illegalization

It would be wise to try and understand the logical basis for organizations opposed to the legal production of industrial hemp.

From a law enforcement point of view, combined with general ignorance of plant botany—there is arguably a rationale to industrial hemp prohibition. What if the promises and predictions of the pro-industrial hemp advocates do not hold-up and the reality or the perception is that fields of marijuana are growing everywhere? There is also the “Camouflage Factor.” What if the fields of industrial hemp can cover and conceal marijuana?

Since industrial hemp is naturally low or bereft of THC, the presence of industrial hemp fields in an area would render most outdoor cultivation of recreational marijuana in that same area useless. If one does not understand pollen dissemination phenology and the fact that high THC is an artificial construct of human culture, one could make these erroneous assumptions. However, after reviewing the science, these assumptions are no longer valid.

Hemp Legal Issues

In 1970, the Comprehensive Drug Abuse Prevention and Control Act repealed the Marihuana Tax Act of 1937 but incorporated verbatim that Act's definition of marijuana. The key difference was that, while the 1937 Act used a system of taxation and licensing to maintain the pretense that industrial hemp was allowed, the 1970 Act abolished the taxation approach and effectively made all Cannabis cultivation illegal, except where the DEA issued a limited use permit, setting zero tolerance for THC. The 1970 law saw little debate in Congress and industrial hemp was never considered at all.

There are relevant challenges to DEA's interpretation of the Controlled Substances Act (CSA) as it relates to industrial hemp. The CSA was enacted as title two of the Comprehensive Drug Abuse Prevention and Control Act and regulates the importation, manufacture, distribution, possession and improper use of certain controlled substances. The relevant challenges demonstrate the uncertainty of industrial hemp's legal status based on conflicting court holdings as well as conflict created in international law. These challenges include:

- North Dakota Hemp Farming (Monson v. DEA, 522, F.Supp. 1188 (D N.D. 2007))
 - The State of North Dakota authorized the cultivation of parts of industrial hemp. Two North Dakota farmers seeking to cultivate industrial hemp sought a declaration that they could not be criminally prosecuted under the CSA. The court held that whether viewed as marijuana or as industrial hemp, the plant the farmers sought to grow was clearly a Schedule I controlled substance under the plain language of the CSA. Despite North Dakota's efforts to authorize cultivation of industrial hemp the farmers could be prosecuted at the federal level if they grew industrial hemp.

- DEA hemp food rules challenge
 - DEA issued rules in 2003 to clarify the legal status of industrial hemp and its products by interpreting the CSA to state anything that contains any quantity would be designated a Schedule I controlled substance while exempting industrial products that contained THC but were not for human consumption. The rules provided hemp food retailers a date for which DEA could seize any such products remaining on the retailers' shelves. Hemp trade groups requested and received court-ordered stays blocking the provisions enforcement. In 2004, the U.S. Court of Appeals for the Ninth Circuit held the DEA rules were impermissible under the CSA and DEA could not enforce them (*Hemp Industries Association v. DEA* (357 F.2d (9th Circuit 2004))).
- White Plume case (*U.S. v. White Plume*, 447 F3d 1067)
 - The Oglala Sioux Tribal Council amended an ordinance to exclude industrial hemp from the definition of marijuana which would allow for its cultivation. In response to the ordinance, Oglala tribal members raised hemp crops on federal trust land. DEA destroyed the hemp crops. The U.S. Court of Appeals for the Eighth Circuit held that the district court properly found that the members violated the CSA and permanently enjoined them from cultivating hemp without a DEA permit. Also, the U.S. Court of Appeals for the Eighth Circuit held that the district court properly held that industrial hemp was subject to the CSA because it was marijuana at some point in the farming operation, containing natural THC.
- North American Free Trade Agreement (NAFTA) challenge
 - A Canadian company that manufactures markets and distributes industrial hemp products submitted a notice of arbitration under the United Nations Commission on International Trade Law, or UNCITRAL, rules. The company challenged the DEA's interpretation of the CSA by claiming DEA's actions violated NAFTA's investment provisions.

Economic Benefits to New Mexicans

The United States is the only industrialized country in the world that does not allow the cultivation of industrial hemp. To date, thirty-one states have introduced pro-hemp legislation and seventeen have passed legislation while eight states (Hawaii, Kentucky, Maine, Maryland, Montana, North Dakota, Vermont and West Virginia) have removed barriers to its production or research. However, despite state authorization to grow hemp, farmers in these states risk raids by federal agents and possible forfeiture of their farms if they plant the crop due to the failure of federal policy to distinguish oilseed and fiber varieties of *Cannabis* (i.e., industrial hemp) from psychoactive drug varieties.

Seventy-four years after *Popular Mechanics* declared hemp a billion dollar crop (published only a few months after hemp was banned in 1938), it is now being called the trillion dollar crop. Hemp for the past twenty-one years has grown from under one million

dollars to currently over \$400 million in annual national sales. Industrial hemp products are sold in every state in the U.S. in health food stores, grocery stores, automotive manufacturing facilities, nutrition companies; in products such as textiles, clothing, construction materials for home building, bio fuels, paints and varnishes; plus too many other sub industries to even mention.

No other agriculture crop has the potential for so many cross vertical integration of thousands of products to be manufactured and sold on a national/international level—all conceivably grown and manufactured in New Mexico. A summary of uses include food, fuel, textiles, cordage, oils, medicinals, industrial components, furniture and construction materials. The benefits of industrial hemp are potentially large and have been clearly laid out in numerous articles, including state and federal reports.

Interested Supporters/Stakeholders

There are numerous interested parties and stakeholders in this movement including farmers, soil conservationists, environmentalists, agricultural entrepreneurs, industry clients looking to be environmentally friendly, national groups and sovereign Indian Nations.

During the 2009 legislative session, House Memorial 47 (sponsored by Representative Ray Begaye) and Senate Memorial 30 (sponsored by Senator Cisco McSorley) were passed and requested an investigation and feasibility study of state incentives for the commercialization of industrial hemp in New Mexico. At that time, individuals and organizations were identified which supported the memorials and incentives to establish a hemp industry in the state. Some of these key groups included:

- Native International Solutions, Dulce, NM;
- International Alliance of Theatrical State Employees, Local 480, Santa Fe, NM;
- Rocky Mountain Farmers Union, Denver, CO;
- National Farmers Union, Washington, DC;
- Hemp Industries Association (a national trade association), Summerland, CA;
- National Latino Farmers & Ranchers, Las Cruces, NM;
- Rural Coalition, Washington, DC; and,
- Hempstead (importers of hemp products), California.

Many national groups agree that industrial hemp should be distinguished from marijuana:

- The National Association of State Departments of Agriculture supports revisions to the federal rules and regulations authorizing commercial production of industrial hemp as stated in its 2012 policy statements.
- The National Farmers Union 2012 policy supports the urging of the president, attorney general and Congress to direct the DEA to differentiate between industrial hemp and marijuana and adopt a policy to allow American farmers to grow industrial hemp under state law without requiring DEA licenses.

- The Rocky Mountain Farmers Union 2012 National Policy as well as it New Mexico Policy supports the decoupling of industrial hemp from the definition of marijuana under the Controlled Substances Act of 1970 and demand the President and the Attorney General direct the DEA to differentiate between industrial hemp and marijuana and adopt a policy to allow American farmers to grow industrial hemp under state law without requiring DEA licenses.

One case specifically in New Mexico deserves mention. In the 1990's, the Navajo Nation leaders approved the production of hemp in hopes of helping economic development on Navajo lands. The Navajo people cultivate crops for their livelihoods; leaders intended the hemp product for textile use in their traditional Navajo rugs. Industrial hemp production is an opportunity for the Navajo people. With available agricultural lands to cultivate and extend the market to produce textiles, fabric, building materials, and natural food and feed products; the opportunity is significant. The executives at Navajo Agricultural Products Industry, or NAPI, are interested and have the resources available for large scale trials once a community consensus is established.

Action Plan

An action plan for the decriminalization or legalization of industrial hemp would take a multi-pronged approach spanning local, state and federal jurisdictions; including grassroots groups, community organizations, business interests, farmers and ranchers, local government groups, community activists, church affiliated organizations, farmers and workers unions, law enforcement officers, irrigation districts, conservation districts, business and manufacturers, and researchers. All would need to be on the record as supporting a comprehensive change in federal policy regarding industrial hemp.

A state level hemp action plan would consist of education programs to raise awareness of the misconception and benefits of industrial hemp. Through the education program the goal is to increase support from legislators and the Office of the Governor for the cultivation of industrial hemp. It will also be necessary to gain support of the New Mexico Secretary of Agriculture, farmers, ranchers and researchers as well as city and county officials, including law enforcement.

At the federal level, support should be sought from tribes and pueblos, grassroots community groups, farmers and workers unions, business and industry.

Administrative Rule Change

Some options for achieving a policy change on the federal level may be through the administrative rule change process. The Administrative Procedures Act (APA), enacted in 1946, is the federal law which governs the manner which administrative agencies may propose and establish regulation:

"If an agency receives a 'Petition for Rulemaking' from a member of the public, it may decide to announce the petition in the *Federal Register* and accept public comments on the issue. This preliminary stage is known as the Advance Notice of Proposed Rulemaking. In this process an agency invites members of interested groups to meetings where they attempt to reach a consensus on the terms of the proposed rules. If the participants reach agreement, the agency may endorse their ideas and use them as the basis for the proposed rule."

The APA also provides an alternative option that allows "agencies to finalize some rules without first publishing a proposed rule in the *Federal Register*. This exception is limited to cases where the agency has 'good cause' to find that the notice-and-comment process would be 'impractical, unnecessary, or contrary to the public interest.' "

A concise guide is available from the Office of the Federal Register, titled, "Guide to the Rulemaking Process."

Recommendations and Courses of Action

The Task Force recognizes the barriers to cultivation of industrial hemp can be removed by one of the five following means:

1. Congress passes legislation to distinguish hemp from marijuana allowing for the cultivation of hemp and direct DEA to allow USDA jurisdictional oversight of industrial hemp;
2. USDA and DEA collaboratively develop and adopt, through administrative action, an official definition of industrial hemp as distinguished from marijuana and DEA revise its policies to allow USDA oversight and establish an industrial hemp regulatory program;
3. The President, by executive order; or
4. International Trade organizations demands free trade in industrial hemp.

The Task Force recommends the following courses of action:

1. New Mexico's Secretary of Agriculture forward the report to the Congressional delegation and request their support to work with and allow industrial hemp production in the United States;
2. Enlist the help of the Dean of the College of Agricultural, Consumer and Environmental Services at New Mexico State University (NMSU), thus enlisting research and extension resources;
3. Enlist the help of the Dean of the College of Business at NMSU, thus enlisting economic analysis resources and non-agricultural faction awareness; and
4. Meet with interested legislators and other parties.

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***Citations Available Upon request**

****Special Thanks to Bernice Muskrat for Legal Contributions on Administrative Rule Change**

(September 2012)