

PRESENTED BY CLYDE MORGAN, PHONE: 913-269-8400, EMAIL: ctsrelief@aol.com

Areas of Interest: Agriculture, Agriculture Development, Processing, Processing Development, Monitoring
Sativa plants are tall, loosely branched and have long narrow leaves. They are usually grown outdoors and can reach heights of up to 20 feet.

FEDERAL REGISTER, VOL. 81, NO. 156, FRIDAY, AUGUST 12, 2016

DEPARTMENT OF AGRICULTURE

OFFICE OF THE SECRETARY

DEPARTMENT OF JUSTICE

DRUG ENFORCEMENT OF HEALTH AND HUMAN SERVICES

FOOD AND DRUG ADMINISTRATION

STATEMENT OF PRINCIPLES ON INDUSTRIAL HEMP.

AGENCY: OFFICE OF THE SECRETARY, USDA; DRUG ENFORCEMENT ADMINISTRATION, DOJ; FOOD AND DRUG ADMINISTRATION, HHS

ACTION: NOTICE

- 1) Section 7606 of the Agricultural Act of 2014 legalized the growing and cultivating of industrial hemp for research purposes in States where such growth and cultivation is legal under State law, notwithstanding existing Federal statutes that would otherwise criminalize such conduct.
- 2) The growth and cultivation of industrial hemp may only take place in accordance with an agricultural pilot program to study the growth, cultivation, or marketing of industrial hemp established by a State department of agriculture or State agency responsible for agriculture in a State where the production of industrial hemp; is otherwise legal under State law.
- 3) For purposes of marketing research by institutions of higher education or State departments of agriculture (including distribution of marketing materials), but not for the purpose of general commercial activity, industrial hemp products may be sold in a State with an agricultural pilot programs but may not be sold in States where such sale is prohibited. Industrial hemp plants and seeds may not be transported across State lines.
- 4) Section 7606 specifically authorized certain entities to “grow or cultivate” industrial hemp but did not eliminate the requirement under the Controlled Substances Import and Export Act that the importation of viable cannabis seeds must be carried out by persons registered with the DEA to do so. In addition, any USDA phytosanitary (control of plant disease) requirements that normally would apply to the importation of plant material will apply to the importation of industrial hemp seed.

90196 FEDERAL REGISTER / VOL. 81, NO. 240 / WEDNESDAY, DECEMBER 14, 2016 / RULES AND REGULATIONS

LIST OF SUBJECTS IN 21 CFR PART 1308

FINAL ACTION

- 1) After careful consideration of all comments, the DEA is hereby amending 21 CFR 1308.11 (d) to include a new subparagraph (58) which creates a new code number in Schedule I as follows: “(58) Marijuana Extract—7350, “Meaning an extract containing one or more cannabinoids that has been derived from any plant of the genus Cannabis, other than the separated resin (whether crude or purified) obtained from the plant.”
 - a. Give no consideration towards the industrial use of seed use, it clearly states it is a regulation towards marijuana. Clarification would be appropriate or allowing an unusable additive to allow industrial use.

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- b. A portion of the justification for the DEA is to meet our obligations between other countries, what about other countries obligations to the United States. If this is factual then maybe legal action should be taken against those countries to determine a realistic definition, using scientific evidence.

LEGAL CHALLENGE FILED AGAINST DEA'S NEW MARIJUANA EXTRACT RULE

PUBLISHED JAN, 13, 2017, 6:03 PM

BY ALICIA WALLACE, THE CANNABIST STAFF

- 1) Denver's Hoban Law Group representing the Hemp Industries Association, Centuria Natural Foods, RHM Holdings LLC, on Friday filed a judicial review action against the U.S. Drug Enforcement Administration, alleging the agency overstepped its bounds when enacting rule establishing coding for marijuana derivatives such as cannabidiol (CBD) oil. The action, Hoban attorneys allege, puts a risk a booming cannabis and hemp industry and a wide variety of hemp-based products currently on the market.
- 2) DEA officials said the code number would assist in the tracking of materials for research and would aid in complying with treaty provisions.
 - a. Still looking how other countries are working around this the mentioned treaty provision, or is it a DEA self-made definition, without consideration of the real definition? Comprehensive Drug Abuse Prevention and Control Act of 1970 by President Richard Nixon, may of addressed this situation under "Once the DEA has received the scientific and medical evaluation from HHS, the Administrator will evaluate the available data and make a final decision whether to propose that a drug or other substance will be controlled and into which Schedule it should be placed." Could not find the scientific evidence referenced by the DEA.

6 UNEXPECTED PRODUCTS MADE FROM HEMP

[HTTP://WWW.MNN.COM/EARTH-MATERS/WILDERNESS-RESOURCES/STORIES/6-UNEXPECTED-PRODUCTS-MADE-FROM-HEMP](http://www.mnn.com/earth-matters/wilderness-resources/stories/6-unexpected-products-made-from-hemp)

MATT HICKMAN, JULY 30, 2014, 2:15 P.M.

- 1) Because it is illegal to grow the plant in the U.S., hemp product and the raw materials used to make them must be imported from a country—like China, Canada, France, Romania, or Turkey, just to name a few—were its production is not verboten.
 - a. Kansas farmers (U.S. farmers and potential processors are discriminated against because of unscientific evidence that hemp is dangerous. The only ones agriculture industrial hemp is dangerous to be those who now benefit from the illegalization, aka government protection.
- 2) **BICYCLES**, Erba Cycles // **CLOTHING**, Patagonia, H&M, Calvin Klein and other clothing brands (I found at Organic Grocers in Kansas) // **LOTION**, moisturizers, shampoo, sunscreen, lip balm and hand slave. // **CAR BIOCOMPOSITE MATERIAL PARTS**, Motive (development), BMW // **HOUSES**, Hempcrete (impervious to mold, termites, fire, absorbing carbon dioxide from the atmosphere), Asheville, North

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Carolina completed in 2010 // **SKATEBOARDS**, Vans, Element, Adidas > Find some of these product on Amazon.

25 THINGS YOU DIDN'T KNOW COULD BE MADE FROM HEMP

RACHEL GARLAND

AUGUST 9, 2016

- 1) Fuel, biodiesel and hemp ethanol/methanol
 - a. Potentially could be opportunities for Carbon Credit.
- 2) Ink, non-toxic inks, unlike soy inks that are non-toxic, hemp dries faster.
 - a. We are not only talking about pens but also ink for printers.
- 3) Mulch
 - a. Not destroying tree and is renewable yearly basis.
- 4) Carpet, reduces indoor pollution and toxins.
- 5) Fiberboard, lighter, stronger and water-resistant.
- 6) Batteries
- 7) Makeup
- 8) Plastic Products, 5 times stiffer and 2.5 times stronger than polypropylene plastic (pp).
- 9) Butter, high fiber, protein and magnesium.
- 10) Nail Polish, natural healthy properties, containing Vitamin E, central fatty acids and protein.
 - a. How many people have experienced healthy polish?
- 11) Jeans, more durable than cotton, being naturally odor and water resistant.
- 12) Surfboards, strong and UB resistant.
- 13) Milk, Vitamin A, Vitamin E, Vitamin B12, Folic Acid, Vitamin D, Iron.
 - a. Long history of Soy milk, Almond milk, Coconut milk and such, expect the next health craze will be Hemp milk due to the wide range of nutrients.
- 14) Lotions, unlike petroleum and mineral based oils hemp oil is totally renewable and sustainable.
 - a. Imagine we won't have to worry about pumping petroleum oil out of the ground.
- 15) Paper, 75% - 90% of all paper in the world was made with hemp fiber until 1883.
 - a. Switching or supplementing hemp for wood could provide an economic boost through new manufacturing plants for the U. S.
- 16) Diapers, anti-microbial qualities of the fiber.
 - a. I don't know the diaper rash impact would suspect some drug producing companies would have some fear, maybe altering drug company investment.
- 17) Flour, naturally gluten free, nutritious with fiber and essential omega fatty acids. Good consideration for those with celiac disease.
- 18) Bags, stronger than cotton. Cotton production is resource intensive.
 - a. Might expect resistance by large cotton processors, while being advantageous for cotton growers.
- 19) Animal Food, hemp is considered a globular protein food, thought to be easier to digest than corn, with less health issues.
- 20) Canvas, proven through history dating back almost 10,000 years ago.
 - a. Literally pull out from American feet because of unscientific scare tactics to shut down hemp industry while describing it as a drug with no scientific evidence.

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- 21) Paint/Varnish, quickly absorbed into surfaces as wood.
 - a. Today's industry have several communities that no longer allow the use of volatile organic compounds in paints and coatings because of scientific evidence of harm.
- 22) Shampoo, rich in nutrients as omega-3, omega-6 fatty acids and vitamin E.
 - a. They forgot to mention the natural anti-microbial benefits.
- 23) Tofu, not soybean, but hemp tofu using the same processing techniques as available in present facilities.
 - a. NCBI, <https://www.ncbi.nlm.nih.gov/pubmed/21175082> cautions soy as an endocrine (glands that secrete hormones) disrupter.
- 24) Sneakers, long lasting fibers.
 - a. Maybe also because of anti-microbial characteristics the smell won't be coming out of the closet door when the shoes are confined.
- 25) Chocolate hemp hearts are used to incorporate the chocolate.

BIODIESEL MAGAZINE

EXTREME BIODIESEL GETS A \$5 MILLION CREDIT LINE TO GROW HEMP

2/3/2017

- 1) Extreme Biodiesel Inc. announced that the company and its wholly owned subsidiary XTRM Cannabis Ventures has just received preapproval for a \$5 million line of credit from Coastal Mortgage Group for the purpose of purchasing real estate.
 - a. Attended a bio-diesel luncheon, presented by a couple of process engineers. I learned that bio-diesels from seed oils provide more lubricating protection than does ground based oil pumped from the ground.
- 2) "Using existing relationships with withers involved in the industry such as product developers and growers we believe there will be a great demand for this product," said Company President Joseph Sadafore.
 - a. Not a very bold statement, since the scientific data and testing has already been proven.
 - b. Also not noted was the common quantity of oil produced by an acre of land, often quoted as 300 pounds (approximately 42 gallons).

HEMP IS USED IN OVER 25,000 PRODUCTS, NOW INCLUDING BMW'S—QUARTZ

[HTTPS://QZ/COM/109268/HEMP-IS-USED-IN-OVER-25000-PRODUCTS-NOW-INCLUDING-BMWS/](https://qz.com/109268/hemp-is-used-in-over-25000-products-now-including-bmws/)

2/5/2017

- 1) BMW'S NEW ELECTRIC CAR, THE I3, Bloomberg notes in passing that the car maker will line the door panels with hemp, as part of an interior design, apparently aimed at making the i3's drivers feel closer to nature and less likely to drain the battery in a speed-freak fit.
- 2) The Hemp Research Association estimates that the retail value in the U.S. of hemp products came to \$500 million in 2012, even though the U.S. Remains the only industrialized country in which it's illegal, except in two states, to grow even the drug-free form of hemp.

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- 3) Students at the University of Warwick even developed a race care in 2007 whose outer shell was made from hemp. James Meredith and his team believe that hemp can replace carbon fiber as a light-weight material for a car body.

RULES – 2003

21 DFR PART 1308

[DEA-206F]

WHAT DOES THE RULE ACCOMPLISH AND BY WHAT AUTHORITY IS IT BEING ISSUED?

[HTTPS://WWW.DEADIVERSION.USDOJ.GOV/FED_REGS/RULES/2003/FR0321.HTM](https://www.dea diversion.usdoj.gov/fed_regs/rules/2003/fr0321.htm)

- 1) This final rules revises the DEA regulation to add a provision exempting the CSA control certain THC-containing industrial products, processed plant materials used to make such products, and animal feed mixtures, provided such products, materials and feed mixtures are made from those portions of the cannabis plant that are excluded from the definition of marijuana and are not used, or intended for use, for human consumption. (DATES: This final rule becomes effective on April 21, 2003.)

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In addition, any USDA phytosanitary (control of plant disease) requirements that normally would apply to the importation of plant material will apply to the importation of industrial hemp seed.

HEMP IS THE ULTIMATE CASH CROP, PRODUCING MORE FIBER, FOOD AND OIL THAN ANY OTHER PLANT ON THE PLANET

WM. CONDE

NOTRE DAME UNIVERSITY PUBLICATION; THE MIDLANDS NATURALIST, FROM THE 1975 ARTICLE CALLED, "FERAL HEMP IN SOUTHER ILLINOIS"

- 1) 8,000 pounds of hemp seed per acre.
- 2) Six to ten tons per acre of hemp bast fiber. Bast fiber makes canvas, rope, lace, linen and ultra-thin specialty papers.
- 3) Twenty five tons of hemp hurd fiber. All grades of paper, composite building materials, animal bedding and material for absorption of liquids and oil.
- 4) The deep tap roots draws up sub-soil nutrients and then, when the leaves fall from the plant to the ground they return these nutrients to the top of the soil for the next crop rotation.

INDUSTRIAL HEMP – AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

<http://www.agr.gc.ca/eng/industrial-hemp/?id=1174595656066>

12/4/2016

- 1) 60 year ban was lifted and commercial cultivation of hemp was authorized in Canada in 1998. The Industrial Hemp Regulations came into effect on March 12, 1998, and covered cultivation, processing, transportation, sale, provision, import and export of industrial hemp.
 - a. U. S. is now over 60 years behind Canada industrial advancements because of non-scientific evidence and lack of knowledge.
- 2) Hemp Seed: Confectionary, Beer, Flour, Feed, Dietary Fiber, Snacks, Non-dairy Milk and Cheese Baking.
- 3) Hemp Oil: Cooking, Salad Dressing, Dietary Supplements, Body Care Products, Fuel, Detergents, Spreads, Paint.
- 4) Hemp Fiber Product Uses: Fabric, Insulation, Carpet, Paneling, Pulp and Paper, Recycling Additive, Automotive parts

HEMP AND MARIJUANA: MYTHS & REALITIES

BY DAVID P. WEST, PH.D.

FOR THE NORTH AMERICAN INDUSTRIAL HEMP COUNCIL

- 1) We are one of the few countries in the world that continues to insist that we should outlaw a crop simply because one of its botanical cousins can be used inappropriately.
 - a. Would expect to see sizable advancements in detecting the differences between hemp and marijuana in a fairly short period of time.

SETTING THE STANDARD FOR CBD-HEMP

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MONDAY, JANUARY 16, 2017

BLUEBIRD BOTANICALS

- 1) Bluebird is now sourcing Kentucky Hemp, and is working with farmers in Kentucky Hemp Pilot Program to advance the U.S. industry through research and development.
 - a. Kansas doesn't need to start at the bottom, there are companies like Bluebird Botanicals that are ready to share their knowledge.
- 2) This motivated Beatty and the Bluebird team to shift all focus on developing CBD wellness products, making it one of the first privately owned CBD companies to sell nationwide.
 - a. <https://www.bluebird-botanicals.com/contact-us/>
 - b. 720-726-5132
 - c. Bluebird Botanicals, 580 Burbank St. #120, Broomfield, CO 80020

HEMP UNIVERSITY

LEARN WHAT INDUSTRIAL HEMP IS AND HOW TO GROW HEMP

<http://www.hempuniversity.com/hemp-university/growing-hemp/countries-growing-hemp/>

- 1) Countries that grow hemp: Australia, New Zealand, Austria, Canada, Chile, China, Denmark, Finland, France, Germany, Great Britain, Hungary, India, Japan, Netherlands, Poland, Romania, Russia, Slovenia, Spain, Switzerland, Egypt, Korea, Portugal, Thailand, Ukraine and advanced thinking states in the United States.
 - a. A great opportunity for advanced industrial processing for the United States to enter a market where hemp is already established as a viable product.

USDA AND PARTNERS COMPLETE FIRST OF ITS KIND SALE OF CARBON CREDITS FOR WORKING RANCH AND GRASSLANDS

USDA NEWSROOM

RELEASE NO. 0253.14

NOVEMBER 17, 2014

- 1) Agriculture, Secretary Tom Vilsack today said a U.S. Department of Agriculture grant has helped initiate a partnership that is improving the environment, creating a market for carbon credits generated on working grasslands. Chevrolet, a division of General motors, recently purchased almost 40,000 carbon dioxide reduction tons generated on a working ranch grasslands in the Prairie Pothole region of North Dakota.

AGRICULTURAL CARBON OFFSETS

INFORMATION FOR ALBERTA'S OFFSET MARKET

AG-INFO CENTRE AT 310-FARM (3276) OR PAUL JUNGNITSCH AT 780-427-3801, ALBERTA GOVERNMENT

July 2014

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- 1) These credits will trade somewhat under the cost of compliance that companies can choose to pay into the Climate Change and Emissions management Fund, which is currently \$15.00/tonne.

CARBON MARKET OPPORTUNITIES FOR AGRICULTURE

MICHIGAN STATE UNIVERSITY EXTENSION

- 1) Carbon markets provide a final incentive to adopt conservation, mitigation and carbon-credit-generating technologies and practices to reduce greenhouse gases. They also offer some agricultural businesses the potential to generate revenue and to help compensate for additional on-farm costs associated with voluntary and/or future mandatory air quality improvements and energy management.

CREDITING FARMERS FOR NUTRIENT STEWARDSHIP: USING CARBON MARKETS TO CREATE A POSITIVE ENVIRONMENTAL CHANGE

VOUME7 | ISSUE 4 | PAGE 52-57 | JULY 2016

- 1) Carbon crediting hold the potential to incentivize optimal nitrogen fertilizer usage on farms, avoiding negative environmental consequences like climate change while supplementing revenues to farmers. Realizing the potential of this solution will depend on key factors including the adoption of nutrient management crediting structures for compliance carbon markets, increased data collection and usage efficiencies, and economies of scale for project expense such as credit verification. This paper explores the potential, key barriers, and solutions for nutrient management crediting at scale.
 - a. It has been suggested, by a process engineer, that hemp may qualify as an Advanced Carbon Credit, this needs to be discussed and investigated further.

CANNABINOIDS AS ANTIOXIDANTS AND NEUROPROTECTANTS

U.S. PATENT NUMBER 6630507 B1 | PUBLICATION DATE OCTOBER 7, 2003

ORIGINAL ASSIGNEE: THE UNITED STATES OF AMERICA AS REPRESENTED BY THE DEPARTMENT OF HEALTH AND HUMAN SERVICES

- 1) Cannabinoids have been found to have antioxidant properties, unrelated to NMDA () receptor antagonism. This new-found property makes cannabinoids useful in the treatment of prophylaxis of wide variety of oxidation associated diseases, such as ischemic, age-related inflammatory and autoimmune diseases.
 - a. NMDA, a type of glutamate receptor that participates in excitatory neurotransmission and also binds N-methyl-D-aspartate; may be particularly involved in the cell damage observed in individuals with Huntington disease.
 - b. Did Health and Human Services, patenting a product as a non-psychotherapy process. What does this do to the DEA claims as a dangerous drug, in that HHS says it is beneficial. I was not able to determine the dosage or find follow up articles, or possibly who may have a license to manufacture and distribute if any at all.

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Closing Statement: These are my personal feelings that developed through reviewing over a hundred articles in the last few months.

- 1) Everyone involved should have a basic knowledge surrounding Hemp activities regarding Agriculture, Processing, Products developed, Scientific Evidence, U. S. Laws as well as foreign laws, Harmful effects, beneficial effects, no matter what their expertise is.
- 2) Presently my understanding is that hemp was thrown in with marijuana without scientific evidence to either possibly protect other industries or unwillingness to review scientific evidence. It may continue today, during my review I have seen large monetary benefits if hemp industry is prevented to progress for individual groups, corporations and educational facilities willingness to recognize others actions that are taken to stop progress and benefits for others to protect their own financial benefits.
- 3) Kansas participation in the Hemp industry revolution will not be on the breaking edge, on a world basis, but Kansas could very well take the lead in the United States, while benefiting from license fees, taxes and other industrial revenues.

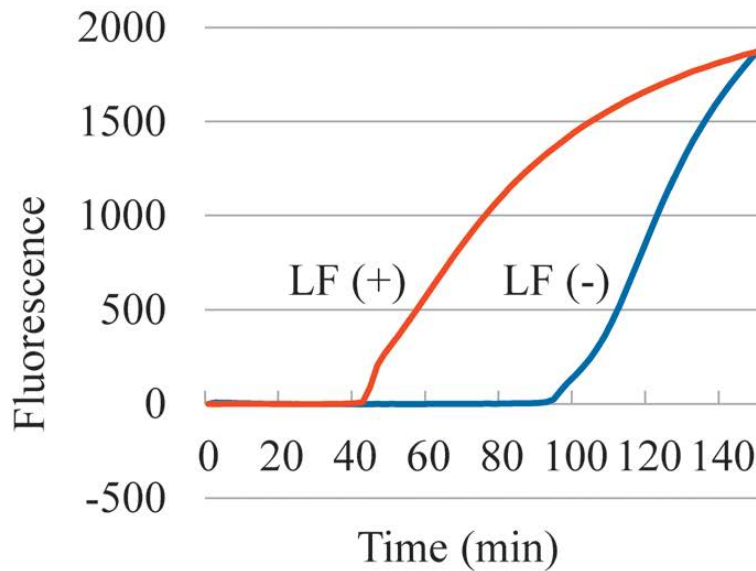
Rapid identification of drug-type strains in cannabis sativa using loop-mediated isothermal amplification assay
J nat med (2017) 71:86-95
Doi 10.1007/s1 1418-016-1031-z

Masashi kitaura^{1,2} · masako aragane³ · kou nakamura³ · kazuhito watanabe⁴ · yohei sasaki¹

- 1) As the two strains cannot be discriminated by morphological analysis, a simple method for identifying the drug-type stains is required for quality control in legal cultivation and forensic investigation. We have developed a novel loop-mediated isothermal amplification (LAMP) assay for identifying the drug-type strains of *C. sativa*. We designed two selective LAMP primer sets for on-site or laboratory use, which target the drug-type THCA synthase gene. The LAMP assay was accomplished within approximately 40 min. The assay showed high specificity for the drug-type strains and its sensitivity was the same as or higher than that of conventional polymerase chain reaction.
- 2) **Acknowledgments** This research was partly supported by a Grant from the Research Foundation for Safe Society. We thank our colleagues for the support extended in the course of this study.

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A Detection by fluorescence



B Detection by electrophoresis

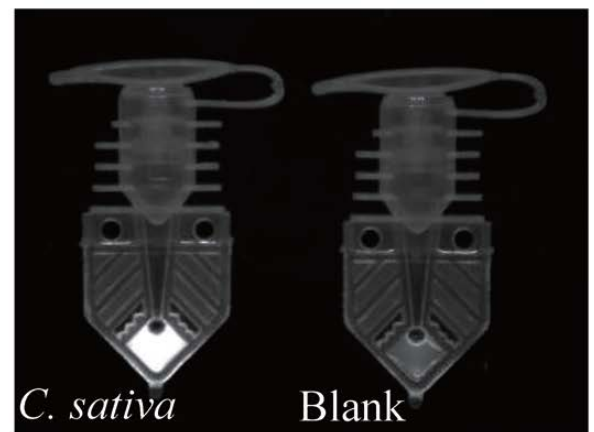


Marker: 100 bp ladder

C Detection under natural light



D Detection under ultraviolet irradiation



- a. New science is being developed everyday around the world and most of us don't even know it has been accomplished. In this case a plant's DNA is isolated.