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CANNABINOID CHRONICLES

Medical Cannabis News and Information

Hemp vs. Cannabis: What's the Difference?



Hemp. Cannabis. Ganja. Marijuana. Pot. Call it what you wish, it's all the same plant species, *Cannabis sativa*. However, one version is legal in Canada and the other resides in a quasi-legal world that says that cannabis is ok if it is used as a physician-recommended medicine but not if used non-medicinally. So what is the difference? Depending upon how you wish to pose the question, there are two answers; scientific and legal.

Arguably, *Cannabis sativa* is one of the earliest and most important plants that has been cultivated by humans. This versatile plant is estimated to have over 30,000 different uses; textiles, building materials, fuel, body products, food, and medicine, to name but a few. The hemp seed itself is one of the healthiest on the planet; they're packed with easily digestible proteins and contain all 10 essential amino acids, putting them among the rare plant-based foods that provide complete protein.

In the 1920's and 30's, however, competing industries, business interests and racism in North America convinced the governments to enact laws to restrict and tax hemp to the point that the industry virtually disappeared. Indeed, it was a victim of the anti-marijuana propaganda spewed by Hearst, Aslinger, the DuPont family and the like.

Hemp is still cultivated legally in over 30 countries;

Canada started permitting hemp cultivation again in the 1990's, and the US federal government has recently passed the Agricultural Act of 2014 that will allow hemp to be grown again legally (it applies only to states where industrial hemp farming is already legal under state law).

The scientific difference between the two 'versions' comes from the purpose for which they were bred. Thousands of years of breeding have resulted in many different varieties. For example, some are better for seed than fiber. Some varieties are not as good for fiber but have higher concentrations of THC and other cannabinoids, specifically in the flowering buds, making them more valuable as a medicine. With the advent of prohibition, indoor gardening, and breeding programs, the flowering buds of cannabis now possess not only higher levels of cannabinoids than ever before but also a greater choice of cannabinoid ratios, e.g. THC vs. cannabidiol (CBD).

The three known subspecies, *Cannabis sativa* L., *Cannabis indica* Lam., and *Cannabis ruderalis*, have different phenotypes and chemical characteristics; these features are largely due to the latitude in which each subspecies evolved. *Cannabis sativa* grown for hemp fiber is planted close together, can reach heights of up to 4 meters, have a thick fibrous stem, few branches and open foliage. *Cannabis sativa* grown for seeds is spaced more widely apart and develop bushier plants. *Cannabis indica* Lam., aka Indian hemp, is small (growing up to 1.2 m), low in fiber, has much branching and dense foliage, and a higher level of psychoactive substances. *Cannabis ruderalis*, noted for its self-flowering capability, is a very small plant, up to 0.6 m, with a thin fibrous stem and fewer branches.

"The [legal] definition of hemp is a plant that has low
(Continued on back page)

The US House of Representatives stops federal prosecution of medical cannabis users in states where it is legal

On May 30, the US House of Representatives voted to halt federal prosecutions of medical cannabis users in states that have legalized the drug's use with a doctor's prescription, marking the first time a chamber of Congress has approved such a broad decriminalization. The 219-189 vote wasn't even particularly close, signalling a dramatic change in Congress on the issue of cannabis.

Backers said the vote is a nudge to federal prosecutors that it's time to move past the issue. House lawmakers approved language ordering the federal Justice Department not to interfere in any way with states' medicinal cannabis laws. The action still needs Senate approval to become law.

Source: www.washingtontimes.com/news/2014/may/30/house-votes-halt-federal-meddling-medical-marijuan/

Cannabidiol can improve a complex sleep-related disorder in Parkinson's disease according to case reports

The natural cannabinoid cannabidiol (CBD) is able to control the symptoms of REM sleep behaviour disorder. This is the result of four cases investigated at the Department of Neuroscience and Behaviour of the Faculty of Medicine of Ribeirão Preto at the University of São Paulo, Brazil.

Rapid eye movement (REM) sleep is a stage of sleep characterized by the rapid and random movement of the eyes. Subjects' vividly recalled dreams mostly occur during REM sleep. REM sleep behaviour disorder is characterized by the loss of muscle atonia during REM sleep associated with nightmares and active behaviour during dreaming. Researchers described the effects of CBD in these symptoms in patients with Parkinson's disease. They found that four patients treated with CBD had prompt and substantial reduction in the frequency of REM sleep behaviour disorder related events without side effects.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/24845114>

THC increases the intensity of physical activity in patients suffering from anorexia nervosa

In a placebo-controlled cross-over study in 24 adult women with anorexia nervosa, oral THC did not change the total duration of physical activity, while its average intensity moderately increased by 20%, resulting in an increased energy expenditure. The level of physical activity is inappropriately high in up to 80% of the patients suffering of anorexia nervosa, as a result of conscious efforts to lose weight.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/24890912>

Cannabis strains rich in CBD differ in pharmacological effects from strains rich in THC

Research with 102 patients from the Netherlands using three different cannabis strains from the pharmacies for medicinal purposes shows that pharmacological effects differ depending on the ratio of THC and CBD. These study results by the Netherlands Institute of Mental Health and Addiction in Utrecht and the Office for Medicinal Cannabis of the Dutch Ministry of Health were published in the Journal of Psychopharmacology. 47% of patients used the variety Bedrocan with 19% THC and less than 1% CBD, 28.5% used the variety Bedrobinol with 12% THC and less than 1% CBD and 24.5% used Bediol with nearly equal amounts of THC (6%) and CBD (7.5%). Statistical analysis of subjective effects revealed that high THC in Bedrocan and Bedrobinol resulted in increased appetite compared to Bediol. There was also a higher level of anxiety and depression in the Bedrocan group compared to the Bediol group.

Chronic pain (53%) was the most common medical indication for using cannabis followed by multiple sclerosis (23%), and 86% of patients experienced therapeutic satisfaction independent of cannabis variety. Authors wrote that "these results show that patients report therapeutic satisfaction with pharmaceutical cannabis, mainly pain alleviation." The amount of cannabis used did not differ between different strains. With regard to the different effects authors suggest that "CBD may have a modulatory effect on some of the THC's well-known subjective adverse-effects, such as anxiety and depressed mood."

Source: <http://www.ncbi.nlm.nih.gov/pubmed/24747979>

THC reduces brain damage caused by methamphetamine

Results of studies with rats indicate that THC reduces methamphetamine-induced brain damage through CB1-dependent and independent mechanisms.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/24844285>

N-Arachidonoylserotonin reduces stress

N-Arachidonoylserotonin, a dual blocker of FAAH, the enzyme responsible for the inactivation of the endocannabinoid anandamide, and vanilloid receptor (TRPV1) reverses the despair following exposure to stress in rats. This effect was associated with the normalization of the deregulation in the brain that follows stress application. Authors noted that "blockade of FAAH and TRPV1 may thus represent a novel target to design novel therapeutic strategies for the treatment of stress-related disorders."

Source: <http://www.ncbi.nlm.nih.gov/pubmed/24861565>

Cannabis Can Reduce PTSD Symptoms

Clinical research supports a conclusion that smoking cannabis is associated with PTSD symptom reduction in some patients. The results of a recent study indicated that patients in the sample reported an average of 75% reduction in all three areas of PTSD symptoms while using cannabis, yet further research is still called for by the researchers.

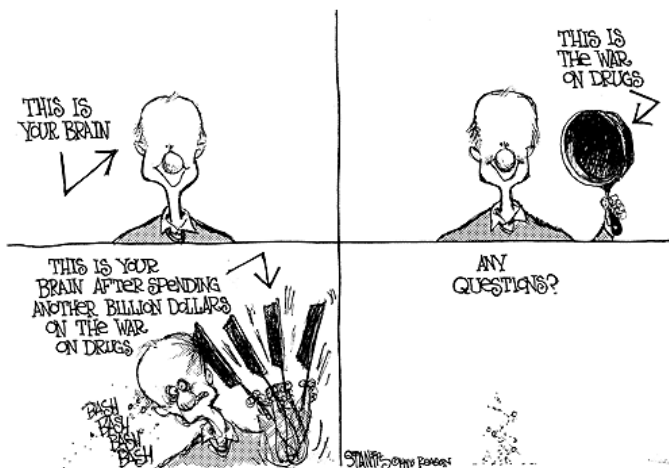
"Many PTSD patients report symptom reduction with cannabis, and a clinical trial needs to be done to see what proportion and what kind of PTSD patients benefit, with either cannabis or the main active ingredients of cannabis," said one of the researchers.

Source: www.sciencedaily.com/releases/2014/05/140522104850.htm

Cannabis May Be Effective Treatment for Multiple Sclerosis Spasticity (MSS)

Multiple Sclerosis (MS) is an auto-immune disease that affects the central nervous system. No cure exists for MS, but treatment is generally focused on managing symptoms to improve each patient's quality of life. While cannabinoids have been used to treat symptoms, it has never been used as a stand-alone therapy. A group of German researchers, using Sativex oromucosal spray (1:1 ratio of THC to CBD) conducted an observational study of MS patients with a follow-up period of 3-4 months. According to their results, 74.6% of the 276 patients observed showed improvement after one month of treatment. 55.3% of patients observed had maintained treatment through three months, with up to a 25% decrease in spasticity. In conclusion, Dr. Peter Flachenecker, the study's lead author, said: "Real-life data confirm nabiximols (Sativex) as an effective and well-tolerated treatment option for resistant multiple sclerosis spasticity (MSS) in clinical practice."

Source: <http://www.ncbi.nlm.nih.gov/pubmed/24525548>



Quebec Hospital Permits Medical Cannabis Vaporization in Rooms

In mid-June, doctors, dentists and pharmacists at CHUS hospital in Sherbrooke, Quebec, unanimously approved cannabis use by patients who are within the federal medical cannabis program.

Patients at CHUS hospital who want to use cannabis will have to comply with several conditions, including using "a vapourizer in a negative pressure room or a private room," said Dr. Serge Lepage, president of the CHUS doctors' association.

Lepage says the medical cannabis policy only applies to his hospital but he adds, "I feel that it will stimulate discussion elsewhere."

The Quebec government has said it will monitor the situation before deciding whether to introduce regulations. The Canadian Medical Association (CMA) wouldn't comment on the case, but the CHUS doctors are taking their own path on the issue. In a June 2013 position paper, the CMA said there was "no clinical evidence" to support the use of cannabis as a medical treatment.

"We have no information on potency, dosage or how it interacts with other therapies," said the CMA.

Find the CMA paper here: <http://mapinc.org/url/CAxT0vr7>

Source: <http://www.mapinc.org/drugnews/v14/n534/a10.html>

Seven Canadian Provincial Colleges of Physicians Set Medical Cannabis Guidelines

The seven provincial colleges of physicians that have issued medical cannabis guidelines are urging their members to take a cautious approach when prescribing. The colleges advise physicians to take great care when deciding whether to prescribe cannabis to patients and to first ensure that conventional therapies have been exhausted. The uncertainty over the risks and benefits of the drug and the lack of reliable data on its clinical effects are underlying caveats in guidelines from the colleges. To help fill that knowledge gap, the Collège des médecins du Québec is setting up a pharmacovigilance research project with the Canadian Consortium for the Investigation of Cannabinoids, to track outcomes and adverse events. (See www.cmaj.ca/content/early/2014/05/05/cmaj.109-4791.full.pdf+html)

Medical cannabis advice for physicians is available for British Columbia, Alberta, Saskatchewan, Manitoba, Quebec, New Brunswick and Newfoundland. The colleges in Nova Scotia, Ontario and Prince Edward Island have not yet finalized their guidelines.

Source: www.cmaj.ca/site/earlyreleases/13may14_colleges-set

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THC and perhaps has a higher level of CBD,” says publisher and cannabis cultivation expert Ed Rosenthal.

According to Dana Larsen, author of the soon-to-be released *The Illustrated History of Cannabis in Canada*, a Canadian scientist, Ernest Small, developed a definition of hemp versus cannabis in 1971. Small acknowledged that there was not a point at which the cannabinoid content could distinguish between the two ‘versions’, but, according to Larsen, he “decided that 0.3 percent THC in a sifted batch of cannabis flowers was the difference between hemp and marijuana.” This value has largely been adopted around the world (some use 0.2%), although it does not necessarily reflect which strains are better for agriculture or, say, for use as an anti-emetic.

For many years, the USA did not recognize any THC limit but the recent Agricultural Act 2014 has defined “Industrial Hemp” as *Cannabis sativa* L. with a delta-9 THC concentration of not more than 0.3% on a dry weight basis (Section 7606 (b)(2)). Yet, under their Controlled Substances Act, marijuana is legally defined as all parts of the *Cannabis sativa* L. plant and any resin extracted, but does not include mature stalks and associated fiber, oil or cake made from the seeds of such plant or the sterilized seed - presumably these exclusions are considered “hemp”.

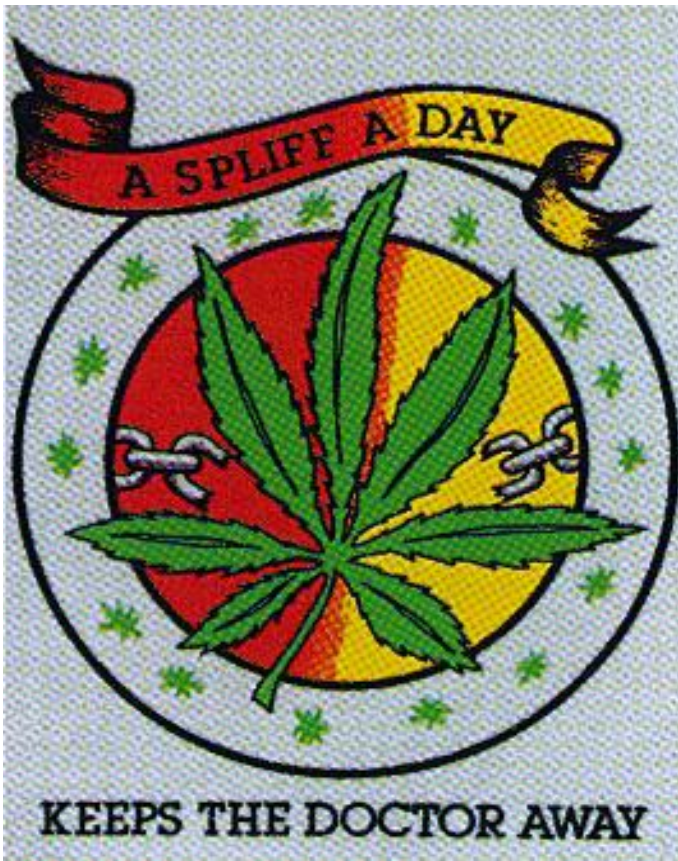
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“If people let government decide which foods they eat and medicines they take, their bodies will soon be in as sorry a state as are the souls of those who live under tyranny.”

-- Thomas Jefferson