

# Protecting the young and the poor from prohibition:

The environmental, economic and anti-oppression benefits of an inclusive cannabis re-legalization model.

Advice from David Malmo-Levine to Justice Minister Jody Wilson-Raybould.



February, 2016

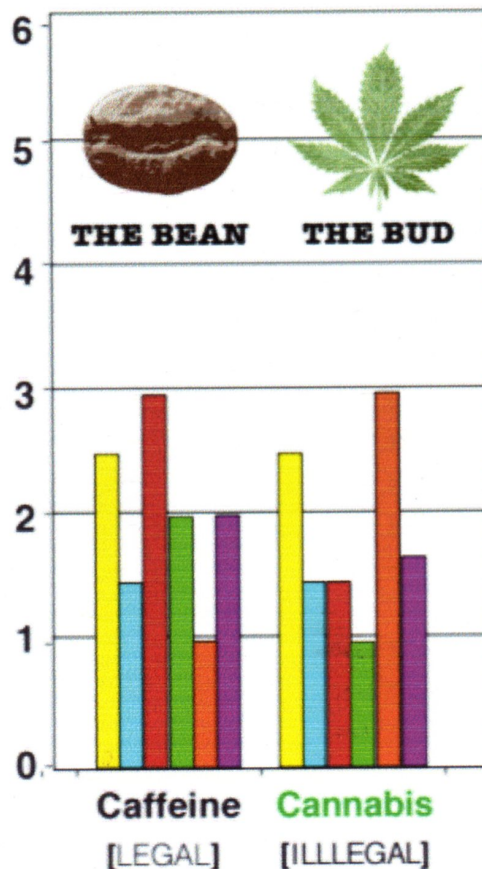
Illustrations by Bob High



**“Marijuana is a wonder drug because it is remarkably non-toxic - on a par with coffee with respect to both dependence and toxicity.”**

**- Dr. Lester Grinspoon, Harvard Medical School**

**Substances Compared**



6 = MOST SEVERE 1 = LEAST SEVERE

- Withdrawal
- Reinforcement
- Tolerance
- Dependence
- Intoxication
- Addiction Potential

FIG 15.1: Addiction ratings.  
From Henningfield, Benowitz.  
*New York Times*, Aug 2, 1994



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Note: Cannabis was legal and readily available from the 1860's to 1923 in botanical drug stores all across the country – with no real health or social problems recorded. Therefore, Canada is now “re-legalizing” cannabis, not “legalizing” it.

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## A) What the guiding principles for the legalization of cannabis should be:

1) Harmless people should not be harmed.





⑤

“The maxims (principles) of the laws are these: to live honestly, to hurt no one, to give every one his due.” – Justinian, Book 1. Of Persons, The Institutes of Justinian, 535 A.D.

“That the laws ought to be equal, so they must be good and not evidently destructive to the safety and well-being of the people.” – Article 5, The Levellers “Agreement of the People”, 1647

“Liberty consists in the freedom to do everything which injures no one else; hence the exercise of the natural rights of each man has no limits except those which assure to the other members of society the enjoyment of the same rights. These limits can only be determined by law. Law can only prohibit such actions as are hurtful to society. Nothing may be prevented which is not forbidden by law, and no one may be forced to do anything not provided for by law.” – Articles 4 and 5 of the French “Declaration of the Rights of Man and of Citizen”, 1789

“Secondly, the principle requires liberty of tastes and pursuits; of framing the plan of our life to suit our own character; of doing as we like, subject to such consequences as may follow: without impediment from our fellow-creatures, so long as what we do does not harm them, even though they should think our conduct foolish, perverse, or wrong. Thirdly, from this liberty of each individual follows the liberty, within the same limits, of combination among individuals; freedom to unite, for any purpose not involving harm to others ...” – The rights outlined immediately following the list of political rights (conscience, thought, feeling, opinion, expression) from “On Liberty” by John Stuart Mill, 1859

“In every criminal trial, the prosecution must prove the corpus delecti, or the body of the crime itself – i.e., the fact of injury, loss or harm, and the existence of a criminal agency as its cause.” – People v. Alvarez, Supreme Court of California, 2002



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2) Special care should be taken so that vulnerable people – the young, the poor, the sick – should be protected from harm.





Young people are regularly shot and killed by police over cannabis offences. In 1992, 22-year-old Vancouverite Daniel Possee was shot and killed over “15 grams” of marijuana and “a set of scales”. An informant “had seen a set of scales and a ‘quantity of marijuana’”, which had then precipitated the drug raid. (75) In 2012, unarmed black teen Ramarley Graham was shot to death in the Bronx “while he attempted to flush a bag of marijuana down the toilet.”(76) Again in 2012, another unarmed young black man, 20-year-old Wendell Allen, was shot and killed by New Orleans narcotics officers serving a search warrant for marijuana. (77) Another black teen, 17-year-old Jaquaz Walker, was shot in June of 2013 in a cannabis drug-sting gone bad. (78) Families have been routinely terrorized due to police SWAT teams (armed with M-16s at the ready) making early-morning raids based upon a teen’s prior record of misdemeanor marijuana violations. (79) The ACLU has recently released a report entitled “War Comes Home – The Excessive Militarization of American Policing”. (80) The report concludes that 62% of SWAT Deployments are for drug searches (p. 31) – disproportionately against people of color. 61% of all the people impacted by SWAT raids in drug cases were minorities. (p. 36) By 2010, 31 million people have been arrested on drug related charges since the beginning of the drug war – approximately 1 in 10 Americans. (81) According to the well-researched website drugwarfacts.org, every 3 minutes in America “a child is arrested for a drug offense”. (82) Even in Canada, young people aged 16-19 were the age group most likely to be accused of a drug offence. Youth accounted for 24% of all cannabis offences. (83) As of 2010, “almost 60 percent of confined youth in the U.S. (41,877) were still detained and imprisoned for offenses that do not pose substantial threats to public safety”, including “drug use”. (84) Amnesty International has reported that a 13-year old girl in Tuscaloosa, AL was detained for 5 weeks in a juvenile jail for possession of what was believed to be marijuana but turned out to be oregano. (85)

**Does Cannabis Inherently Harm Young People’s Developing Minds?**  
By David Malmo-Levine, Cannabis Culture on November 11, 2014

<http://www.cannabisculture.com/content/2014/11/11/Does-Cannabis-Inherently-Harm-Young-Peoples-Developing-Minds>



3) Policy makers have a duty to protect vulnerable people from black-market harms even more than they have a duty to protect vulnerable people from substance-abuse harms. This is especially true if the black-market harms pose a greater risk of actual harm than the drug abuse does. This also applies if the proposed regulations pose a greater threat to human autonomy and dignity and health than the drug abuse does.





In the United States, proponents of the legalisation of drugs have identified a range of private and social harms that can be traced directly to the black markets created by drug prohibition (Friedman 1972, Nadelmann 1989, Ostrowski 1990, 1989, Dennis 1990, Miron and Zweibel 1995, Hamowy 1987). These include:

- the increased health risks of drugs produced on the black market;
- drug-user crime caused by inflated black market prices for drugs;
- the risk of victimisation faced by buyers and sellers forced to transact in a criminal market;
- the violent “turf wars” fought by rival gangs over lucrative drug-selling locations; and
- the black market profits that finance organised crime.

**The cannabis black market and the case for the legalisation of cannabis in New Zealand**, Chris Wilkins, Economist, Centre for Social and Health Outcomes Research and Evaluation, Massey University & Sally Casswell, Director, Centre for Social and Health Outcomes Research and Evaluation, Massey University, 2002  
<https://www.msd.govt.nz/about-msd-and-our-work/publications-resources/journals-and-magazines/social-policy-journal/spj18/cannabis-black-market18-pages31-43.html>

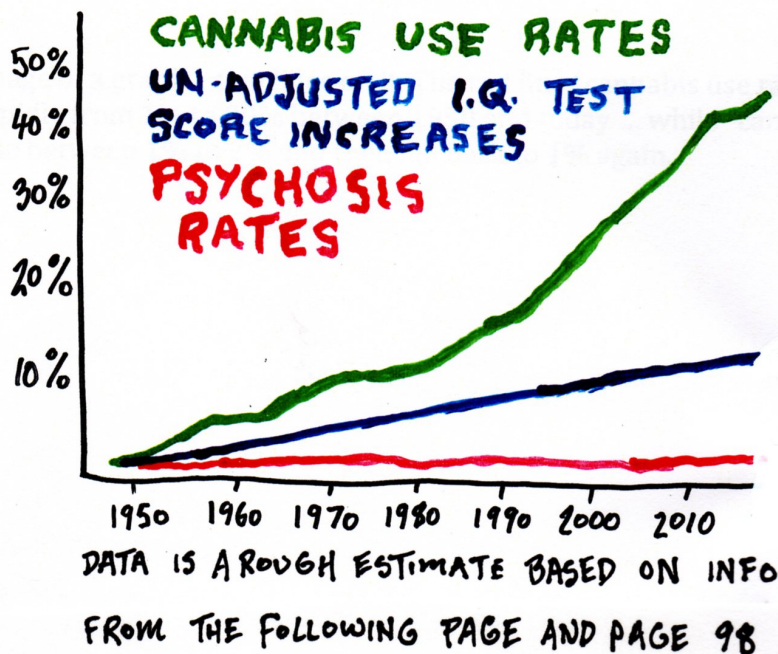
“Penalties against possession of a drug should not be more damaging to an individual than the use of the drug itself; and where they are, they should be changed. Nowhere is this more clear than in the laws against possession of marijuana in private for personal use... Therefore, I support legislation amending Federal law to eliminate all Federal criminal penalties for the possession of up to one ounce [28g] of marijuana.” – **President Jimmy Carter, Drug Abuse Message to the Congress, August 2, 1977**

<http://www.presidency.ucsb.edu/ws/?pid=7908>



**B) What the most important facts to consider are:**

- 1) There is no evidence of any problems – mental health, I.Q., cancer, violence, criminality, birth defect-related or any other problem – that have arisen in the general population with a rate that matches – or even comes close to matching - the 5 fold increase in cannabis use in all Western societies between 1950 and today. Simply put, cannabis use is not causing ANY major problems in the health care system, even with the minimal education on harm reduction techniques currently provided by the education system.**





Further evidence against a simple causal explanation for associations between cannabis use and psychosocial harm relates to population patterns of the outcomes in question. For example, incidence of schizophrenia seems to be strongly associated with cannabis exposure over a fairly short period (four-fold to five-fold relative risks over follow-up of 10–30 years). Cannabis use appears to have increased substantially amongst young people over the past 30 years, from around 10% reporting ever use in 1969–70, to around 50% reporting ever use in 2001, in Britain and Sweden. **If the relation between use and schizophrenia were truly causal and if the relative risk was around five-fold then the incidence of schizophrenia should have more than doubled since 1970.** However population trends in schizophrenia incidence suggest that incidence has either been stable or slightly decreased over the relevant time period. (46)

(46) Psychological and social sequelae of cannabis and other illicit drug use by young people: a systematic review of longitudinal, general population studies  
John Macleod, Rachel Oakes, Alex Copello, Ilana Crome, Matthias Egger, Mathew Hickman, Thomas Oppenkowski, Helen Stokes-Lampard, George Davey Smith, THE LANCET • Vol 363 • May 15, 2004 • p. 1585  
<http://www.cannabisculture.com/content/2014/11/11/Does-Cannabis-Inherently-Harm-Young-Peoples-Developing-Minds#anchor46>

“The Flynn effect is the substantial and long-sustained increase in both fluid and crystallized intelligence test scores measured in many parts of the world from roughly 1930 to the present day. ... This effect of an apparent increase in IQ has also been observed in various other parts of the world, though the rates of increase vary.[2]”

Flynn J. R. (1987). "Massive IQ gains in 14 nations: What IQ tests really measure". *Psychological Bulletin* **101**: 171–191. doi:10.1037/0033-2909.101.2.171. [https://en.wikipedia.org/wiki/Flynn\\_effect](https://en.wikipedia.org/wiki/Flynn_effect)



2) The harms that come with cannabis abuse can be dealt with through education. The far more serious harms that come with the black market and from government oppression can be dealt with by including all growers, all dealers and all users into the re-legal market. The “no grower, dealer or user left behind” policy.





Global drug prohibition is clearly a costly disaster. The United Nations has estimated the value of the global market in illicit drugs at \$400 billion, or 6 percent of global trade. The extraordinary profits available to those willing to assume the risks enrich criminals, terrorists, violent political insurgents, and corrupt politicians and governments. Many cities, states, and even countries in Latin America, the Caribbean, and Asia are reminiscent of Chicago under Al Capone — times 50. By bringing the market for drugs out into the open, legalization would radically change all that for the better.

More importantly, legalization would strip addiction down to what it really is: a health issue. Most people who use drugs are like the responsible alcohol consumer, causing no harm to themselves or anyone else. They would no longer be the state's business. But legalization would also benefit those who struggle with drugs by reducing the risks of overdose and disease associated with unregulated products, eliminating the need to obtain drugs from dangerous criminal markets, and allowing addiction problems to be treated as medical rather than criminal problems.

No one knows how much governments spend collectively on failing drug war policies, but it's probably at least \$100 billion a year, with federal, state, and local governments in the United States accounting for almost half the total. Add to that the tens of billions of dollars to be gained annually in tax revenues from the sale of legalized drugs. Now imagine if just a third of that total were committed to reducing drug-related disease and addiction. Virtually everyone, except those who profit or gain politically from the current system, would benefit.

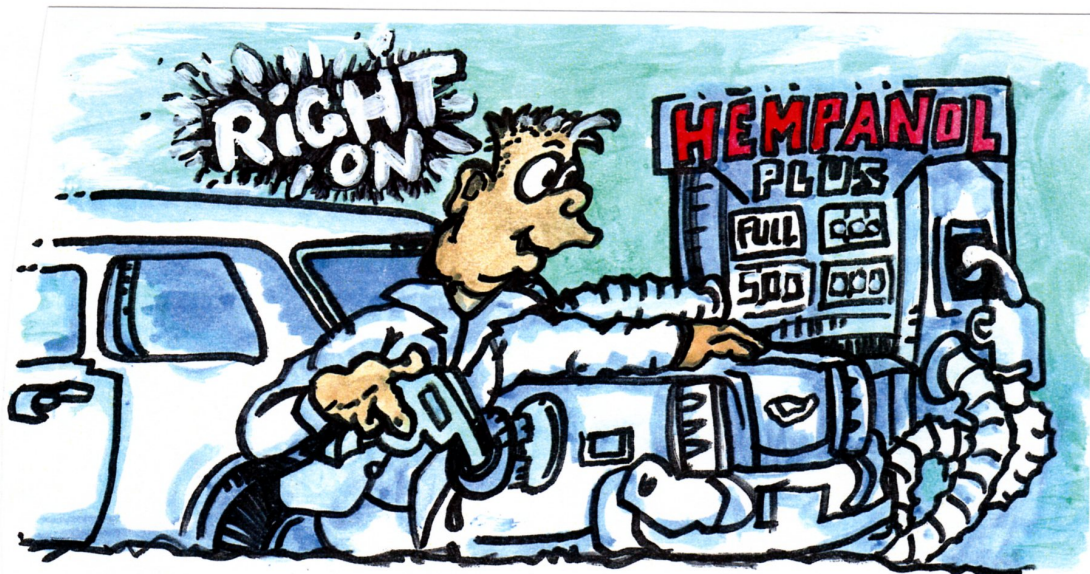
Some say legalization is immoral. That's nonsense, unless one believes there is some principled basis for discriminating against people based solely on what they put into their bodies, absent harm to others. Others say legalization would open the floodgates to huge increases in drug abuse. They forget that we already live in a world in which psychoactive drugs of all sorts are readily available — and in which people too poor to buy drugs resort to sniffing gasoline, glue, and other industrial products, which can be more harmful than any drug. **No, the greatest downside to legalization may well be the fact that the legal markets would fall into the hands of the powerful alcohol, tobacco, and pharmaceutical companies.**



**C) What the advantages to an inclusive model are (which three major threats to our species an inclusive model could address):**

**1) Environmental advantages:**

Removing the red tape around industrial hemp would allow it to compete with non-renewable energy sources such as oil, gas, coal and nuclear energy. Hemp is the most competitive fuel crop for ethanol in temperate climates, and society is going to need a fuel that can be put in a regular car engine (modified cheaply to allow for ethanol) if we are to easily transition our society from fossil fuels to renewable energy. It would also allow hemp to compete with trees for paper and cotton for fabric (replacing those much more polluting industries) and allow people to grow their own hemp seeds and harvest the CBD (psychosis and cancer-fighting medicine) from the buds - CBD is non-psychoactive, makes up to 20% of the industrial hemp buds, and is wasted every year instead of harvested.





"The added cost of the extra drying needed for crops such as sugar cane, corn and Napier grasses make these high moisture plants an inefficient source for growing methanol. The (Hawaii Natural Energy) Institutes' 1990 report concluded that thermo chemical (pyrolytic) production of methanol from biomass is the most economical alternative for transportation fuel. They also confirmed Stanford Research Institutes' conclusion from the late seventies that woody or low moisture herbaceous plants are the most efficient biomass resource for thermo chemical conversion into liquid fuels such as methanol. It is the cellulose in low moisture herbaceous and woody plants that provides the hydrocarbons necessary for fuel production. ... **Hemp is both a low moisture herbaceous and a woody plant.**"

*"Energy Farming", Lynn Osburn, (2) (2) The Emperor Wears No Clothes, Eleventh Edition, 2000, p. 252, <http://hemp-ethanol.blogspot.ca/>*

**Furthermore, hemp ethanol would eliminate:**

**1) oil wars (hemp can grow in sand, thus in nearly every country on earth), (259)**

**2) oil spills (a hemp ethanol spill would just evaporate), (260) and**

**3) climate destabilization (hemp acts as a carbon sink – reversing the greenhouse effect) (261) – this would solve three of the biggest problems we face as a species.**

Think of what we could do with the money we save! Just add up the cost of the two biggest current oil wars (Afghanistan and Iraq): \$1.5 trillion, (262) the cost of cleaning up a couple of big oil spills: \$80 billion, (263) and the costs of dealing with climate destabilization – an average of \$20 billion or so per year for each year between 2020 and 2050 – or roughly \$600 billion total for Canada. (264)

Can Hemp, Marijuana and Mushrooms Fix Fukushima? Part 5: The Solution  
By David Malmø-Levine, Cannabis Culture on April 11, 2014  
<http://www.cannabisculture.com/content/2014/04/11/can-hemp-marijuana-and-mushrooms-fix-fukushima-part-5-solution>

**In industrial hemp, CBD is the predominant cannabinoid and often occurs in a CBD/THC ratio of more than 8:1.**

Reassessing the Drug Potential of Industrial Hemp, Franjo Grotenhermen, M.D, nova-Institut, Hürth, Germany, and Gero Leson, D.Env., Leson Environmental Consulting, Berkeley, CA, April 2002 [http://www.nova-institut.de/pdf/02-04\\_Drug\\_Potential\\_of\\_Fibre\\_Hem.pdf](http://www.nova-institut.de/pdf/02-04_Drug_Potential_of_Fibre_Hem.pdf)



## 2) Economic advantages:

Allowing as many people to make money growing and breeding and selling cannabis as possible will reduce the number of people on social assistance, will lower the price and increase the quality of the medicine available, and will allow all those who kept the industry alive throughout prohibition to apply their long-struggled-for and hard-earned knowledge regarding quality, purity and potency in the new legal market. There is really only one criteria to prevent someone from getting a license to grow or sell cannabis - "being found guilty of poisoning humans". Violent criminals should be able to make money in the economy after a waiting period to ensure no further violence - a "swords into plows" policy to bring people out of - and shrink the size of - the black market. The final economic tally will involve billions in savings to the health and justice economies while also allow the collection of billions in taxes.





Tetrahydrocannabinol (THC) has been the primary focus of cannabis research since 1964, when Raphael Mechoulam isolated and synthesized it. More recently, the synergistic contributions of cannabidiol to cannabis pharmacology and analgesia have been scientifically demonstrated. Other phytocannabinoids, including tetrahydrocannabivarin, cannabigerol and cannabichromene, exert additional effects of therapeutic interest. Innovative conventional plant breeding has yielded cannabis chemotypes expressing high titres of each component for future study. This review will explore another echelon of phytotherapeutic agents, the cannabis terpenoids: limonene, myrcene,  $\alpha$ -pinene, linalool,  $\beta$ -caryophyllene, caryophyllene oxide, nerolidol and phytol. ... Over 200 have been reported in the plant (Hendriks *et al.*, 1975; 1977; Malingre *et al.*, 1975; Davalos *et al.*, 1977; Ross and ElSohly, 1996; Mediavilla and Steinemann, 1997; Rothschild *et al.*, 2005; Brenneisen, 2007), but only a few studies have concentrated on their pharmacology (McPartland and Pruitt, 1999; McPartland and Mediavilla, 2001a; McPartland and Russo, 2001b).

**Taming THC: potential cannabis synergy and phytocannabinoid-terpenoid entourage effects, Ethan B Russo Br J Pharmacol. 2011 Aug**

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3165946/>

Dr. Raphael Mechoulam, NORML, High Times and Omni magazine (September 1982) all indicate that, if marijuana were legal it would immediately replace 10-20% of all pharmaceutical prescription medicines (based on research through 1976). And probably, Mechoulam estimates, 40-50% of all medicines, including patent medicines, could contain some extract from the cannabis plant when fully researched.

<http://www.jackherer.com/chapter06.html> Legalizing Won't "Reduce the Market" AT ALL, [David Malmo-Levine](#) on May 4, 2010, <http://www.cannabisculture.com/content/2010/05/04/legalizing-wont-reduce-market-all>



## 2) Human autonomy and dignity advantages:

Human beings were not meant to be treated like livestock – to have the major decisions involving their food, their recreational past-times, their medicine and/or their careers decided for them by their “superiors”. Humans are guaranteed dignity by the Universal Declaration of Human Rights – surely dignity involves human medical and vocation autonomy, the right to be left alone to do with one’s body what one chooses and/or the right to make any career choice at all so long as one does not harm others. We must weigh the price of freedom that allows substance abuse by a small percentage of our population with the price of a police state and/or a prison state and/or evolving into beings no better than pets or beasts of burden.





“What the world needs now is not to turn one crowd out into the concentration camps and put another crowd in, but to end the concentration camp idea.”

- Justice Robert H. Jackson, quote found in “The Road to Nuremberg”, Bradley F. Smith, 1981

***Article 1. All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood.***

***Article 4. No one shall be held in slavery or servitude; slavery and the slave trade shall be prohibited in all their forms.***

***Article 5. No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment.***

The Universal Declaration of Human Rights (UDHR) is a milestone document in the history of human rights. Drafted by representatives with different legal and cultural backgrounds from all regions of the world, the Declaration was proclaimed by the United Nations General Assembly in Paris on 10 December 1948 General Assembly resolution 217 A as a common standard of achievements for all peoples and all nations. It sets out, for the first time, fundamental human rights to be universally protected.

<http://www.un.org/en/universal-declaration-human-rights/>



## D) Major policy issues:

### 1) Age limits



In 2002, the Canadian Senate recommended amendments to the Controlled Drugs And Substances Act, aiming **“To permit persons over the age of 16 to procure cannabis and its derivatives at duly licensed distribution centres...”** (p. 624, Cannabis, Our Position For A Canadian Public Policy, Report Of The Senate Special Committee On Illegal Drugs) [http://stressedanddepressed.ca/wp-content/uploads/2015/07/CanadianSenateReport\\_2002.pdf](http://stressedanddepressed.ca/wp-content/uploads/2015/07/CanadianSenateReport_2002.pdf)

This position reflected the reality that **“Youth comprised 24% of those accused of cannabis offences...”**

<http://www.statcan.gc.ca/pub/85-002-x/2009002/article/10847-eng.htm#a4> - it would be best for all of Canada to protect as many of these youths from the harm that might come from the Justice system or the black market as possible. A “parental permission policy” that allowed for the legal possession of cannabis for those 15 years or younger could protect the remainder of the youth, without sacrificing the long-held tradition of parental control over younger teens, while still saying to all young people the very important message that “cannabis is not as dangerous as alcohol”.



Access limits to teens younger than 16 could be justified with the argument that impairment levels of novice users are greater with cannabis than with caffeine (see the Henningfield/Benowitz comparison chart in this section).

The current “reefer madness” misinformation – that cannabis harms the developing minds of young people – must now be abandoned, given the following evidence:

***Cannabis-only adolescents show better functioning than those who also use tobacco. Compared with abstainers, they are more socially driven and do not seem to have psychosocial problems at a higher rate.***

Some Go Without a Cigarette: Characteristics of Cannabis Users Who Have Never Smoked Tobacco, November 2007, J. C. Suris, MD, PhD; Christina Akre, MA; André Berchtold, PhD; André Jeannin, MA; Pierre-André Michaud, MD  
<http://archpedi.jamanetwork.com/article.aspx?articleid=571420>

**“...a huge surge in cannabis consumption over the past four decades has not been accompanied by a commensurate increase in schizophrenia rates.”**

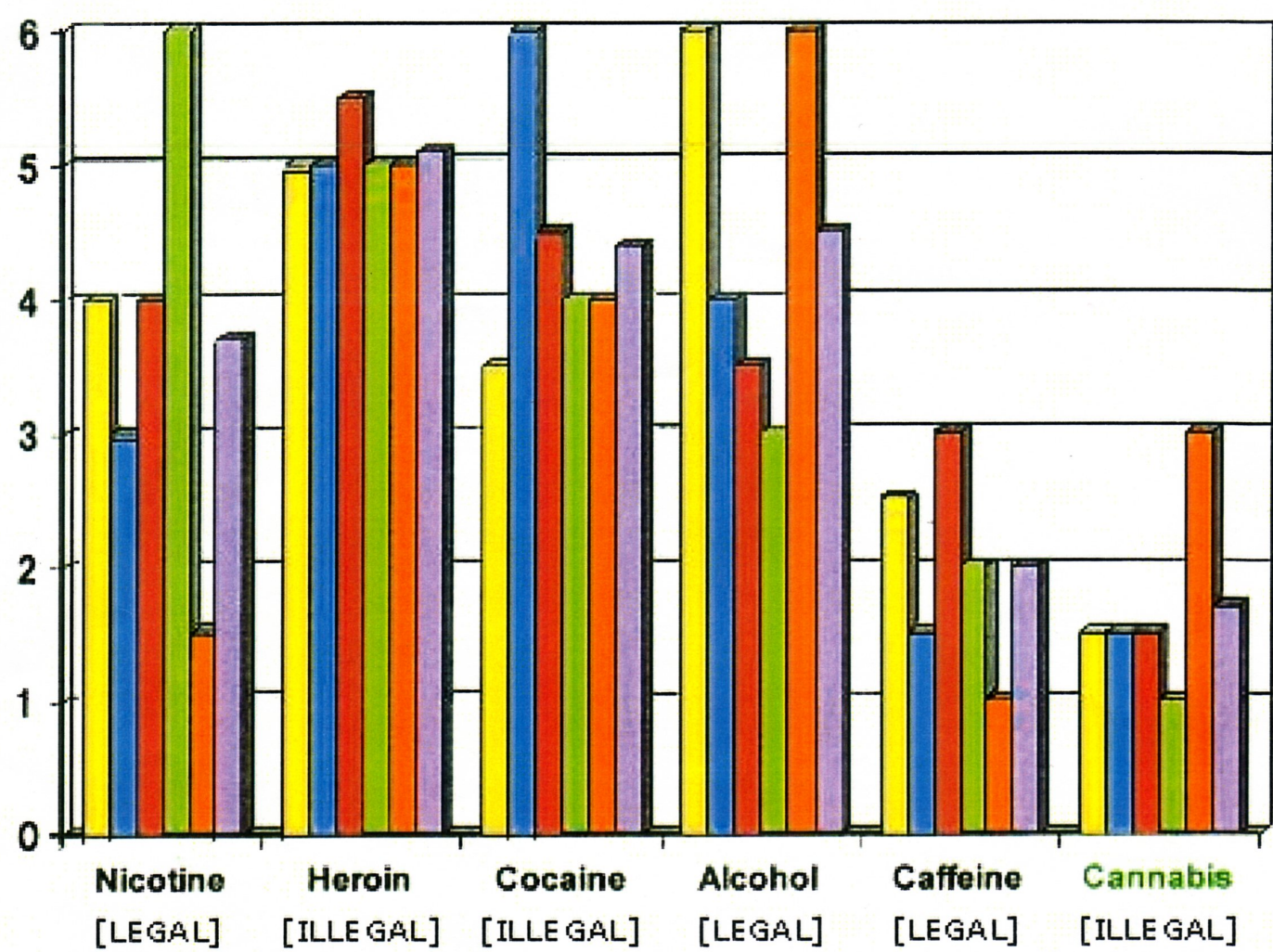
The Marijuana-Schizophrenia Link, PHILIP M. BOFFEY AUGUST 4, 2014 - [http://takingnote.blogs.nytimes.com/2014/08/04/the-marijuana-schizophrenia-link/?\\_php=true&\\_type=blogs&\\_r=1](http://takingnote.blogs.nytimes.com/2014/08/04/the-marijuana-schizophrenia-link/?_php=true&_type=blogs&_r=1)

See also:

Does Cannabis Inherently Harm Young People’s Developing Minds:  
<http://www.cannabisculture.com/content/2014/11/11/Does-Cannabis-Inherently-Harm-Young-Peoples-Developing-Minds#anchor83>



### Substances Compared



- **Withdrawal**
- **Reinforcement**
- **Tolerance**
- **Dependence**
- **Intoxication**
- **Addiction Potential**

FIG. 15.1. Addiction ratings.  
From Henningfield, Benowitz.  
*New York Times* 1994



“...if marijuana produces what seems like such a large jump in risk for schizophrenia, have schizophrenia rates increased in line with marijuana use rates? A quick search of Medline shows that this is not the case — in fact, as I noted here earlier, some experts think they may actually have fallen. Around the world, roughly 1% of the population has schizophrenia (and another 2% or so have other psychotic disorders), and this proportion doesn't seem to change much. It is not correlated with population use rates of marijuana. Since marijuana use rates have skyrocketed since the 1940's and 50's, going from single digit percentages of the population trying it to a peak of some 60% of high school seniors trying it in 1979 (stabilizing thereafter at roughly 50% of each high school class), we would expect to see this trend have some visible effect on the prevalence of schizophrenia and other psychoses. When cigarette smoking barreled through the population, lung cancer rose in parallel; when smoking rates fell, lung cancer rates fell. This is not the case with marijuana and psychotic disorders; if it were, we'd be seeing an epidemic of psychosis.”

Reefer Inanity: Never Trust the Media on Pot, Maia Szalavitz,  
neuroscience journalist, July 30, 2007  
[http://www.huffingtonpost.com/maia-szalavitz/reefer-inanity-never-trus\\_b\\_58353.html](http://www.huffingtonpost.com/maia-szalavitz/reefer-inanity-never-trus_b_58353.html)

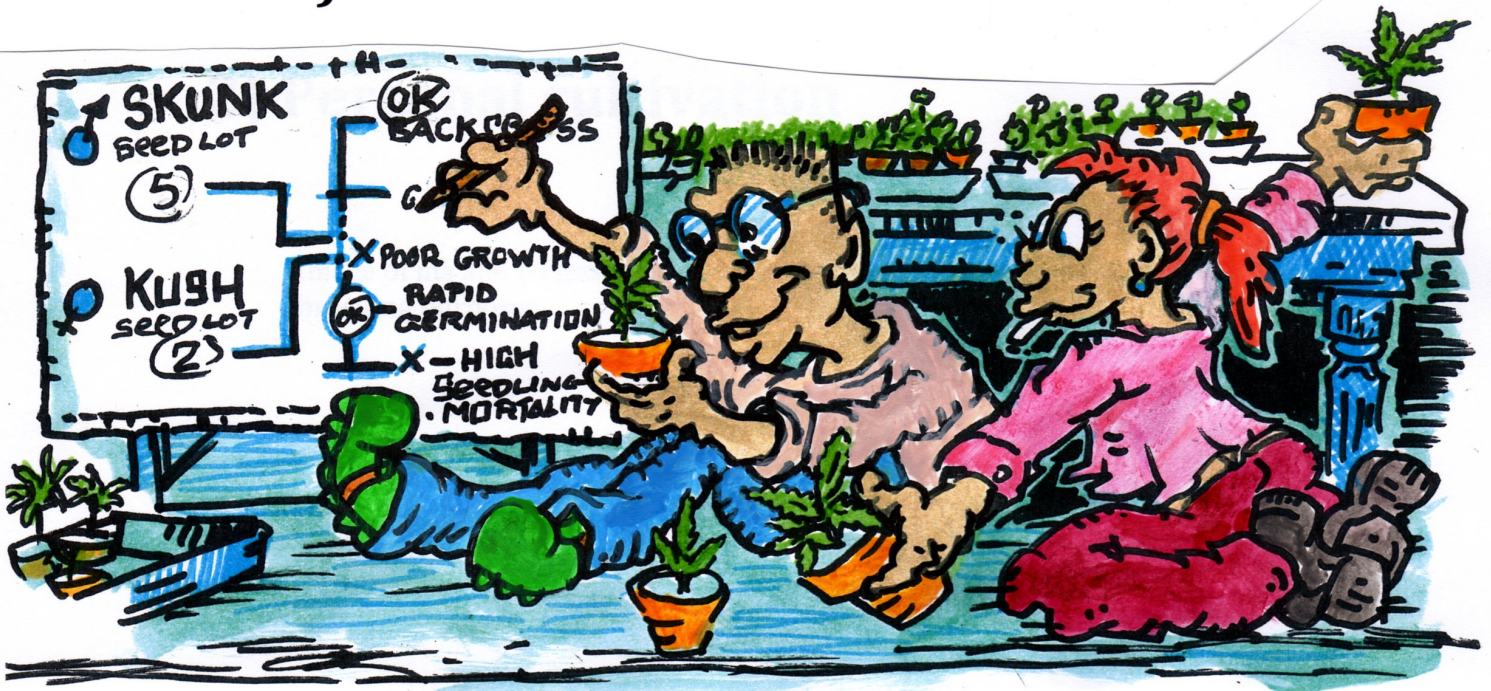
Anthropologist Margaret Mead told senators today that marijuana should be legalized for anyone over 16 and that drinking and voting ages should match the draft age. ... **She said marijuana “doesn't have the toxic effects that cigarettes have” and is milder than liquor. Therefore, she said, it should be permitted at a younger age than tobacco and alcohol.** Prof. Mead told the senators: “It is a new form of tyranny by the old over the young. You have the adult with a cocktail in one hand and a cigarette in the other saying ‘you cannot ...’ to the child. This is untenable.”

– Margaret Mead's for Legal Pot, UPI, Oct. 27<sup>th</sup>, 1969



## 2) Personal cultivation

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The greatest economic benefit of personal cultivation is to breed cannabis. Breeding involves selecting from thousands of plants some desirable traits, propagating the selected plants and killing the rest. Breeding involves the growing of thousands of plants, and may be non-commercial, for example helping a medical patient fine-tune the cannabinoid and terpene profile best suited to help him or her with their medical condition. For example, breeders can select for CBD rich plants to take advantage of it's non-psychoactive medicinal properties. For this reason there should be no plant limits for personal cultivation, to maximize the number of people participating in cannabis breeding. Taxing and regulating should only apply to those who commercialize their home production – to those who take their seeds or buds to sell them at a seed bank, hash bar, dispensary or a farmer's market. This lack of plant limit will also allow those who wish to juice cannabis leaves for their anti-cancer effects (and other medicinal uses) to grow enough plants to do that with.

There is also data showing CBD's effectiveness in [helping those suffering from schizophrenia](#), though [it may not be good for glaucoma patients](#).

Apparently CBD can be given in massive doses with no side effects and becomes very [effective as an anti-psychotic](#) when given in these doses.

Last, but certainly not least, CBD [appears to shrink tumors](#).

**CBD: Expensive, Very Expensive – or Free?**

By David Malmo-Levine, Cannabis Culture on September 14, 2012

<http://www.cannabisculture.com/content/2012/09/14/CBD-Expensive-Very-Expensive-or-Free>



25



### 3) Coverage under the healthcare system

As soon as possible, the costs of cannabis – and other herbal medicines – to poor people should be covered under the healthcare system as synthetic medicines currently are. The opportunity for the tax payer to save money by people switching from pills to herbs is just now being realized:

"A new study published in the journal Drug and Alcohol Review found that people are increasingly substituting prescription medication, alcohol, and illicit drugs with cannabis, signaling a shift in the public's understanding of marijuana's medicinal benefits. Of the 473 adult cannabis users surveyed by the Centre for Addictions Research of British Columbia, more than 86 percent of respondents reported giving up one or more of the substances for pot, with the majority (80.6 percent) forgoing pharmaceuticals for the non-toxic alternative. Those under 40 were also more likely to substitute all three for cannabis, demonstrating its dynamic appeal for both recreational and medical purposes."

<http://www.attn.com/stories/3609/prescription-drugs-that-can-be-replaced-marijuana>



It is important to note that emerging evidence demonstrates that many patients are turning to cannabis to safely and effectively reduce and/or replace synthetic antianxiety, hypnotic, soporific, and sedative medications after having grown tired of the negative side effects associated with their use. For example, many cannabis buyers club members say they use cannabis as a substitute for prescription narcotics (Gieringer, 1996), and in examinations of 2,480 California patients, Dr. Mikuriya found that 27% reported using cannabis for "mood disorders" and another 5% used cannabis as a substitute for more toxic drugs (Gieringer, 2002). Moreover, a recent survey of doctors in California found "that many of their patients were able to decrease their use of...antidepressant, anti-anxiety, and sleeping medications, or else they use cannabis to treat their side effects of jitteriness or gastrointestinal problems in order to stay on their medications" (Holland, 2010, p. 285).

**A Brief History of the Use of Cannabis as an Anxiolytic, Hypnotic, Nervine, Relaxant, Sedative, and Soporific**, David Malmo-Levine and Rob Callaway, M.A., 2012  
<http://stressedanddepressed.ca/booklets-forms-and-downloads/a-brief-history-of-the-use-of-cannabis-as-an-anxiolytic-hypnotic-nervine-relaxant-sedative-and-soporific-2/>

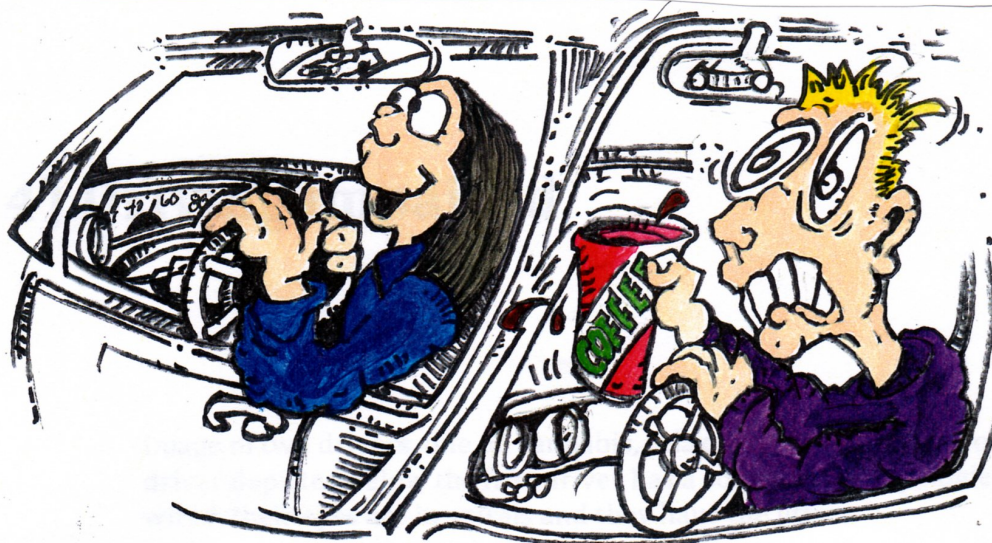
There is mounting evidence to support the notion that cannabis can actually help fight cancer, as well as treat a myriad of other conditions like narcolepsy and eating disorders. Right now, pharmaceutical companies make insane profits from selling medications to treat many of these diseases and disorders, and the hefty price tags often put them out of reach for many patients. Now, the prices of these drugs are not always set to create extraordinary profits, in the defense of many companies. Development and research costs for medication can be astronomical, and these companies need to recoup the costs to stay in business. But that doesn't help people who need the medications, and who have to try and get them under a broken and ineffective health care system, like the one the U.S. employs. But if marijuana, which literally grows in ditches all across the world, can be synthesized and used to treat some of these ailments, imagine the money that can be saved. Again, billions, if not trillions of dollars.

**What Effect Will Marijuana Have On The Healthcare System?**

- Sam Becker, March 6<sup>th</sup>, 2015

<http://www.cheatsheet.com/business/does-legal-marijuana-help-or-hurt-the-u-s-health-care-system.html/?a=viewall>





## 4) Driving impaired

The key point is that society should be testing for “impairment” only – not “amount of substance” in the body. If we test for impairment only – as we do for those impaired by a lack of sleep, prescription drugs, too much coffee, illness, old age, emotional or mental instability etc etc – then we avoid punishing people who are not impaired, and we avoid giving the green light to those who are impaired for non-substance reasons. Similar to caffeine, cannabis use-related impairment is a function of dose and familiarity – there is no inherent impairment with all users and with all doses – this is another modern myth. Statistically, cannabis impairment is not responsible for a large number of accidents. American drug policy analysts have demonstrated that increased in cannabis-related traffic accidents in US States that have legalized cannabis can be accounted for with changes in testing protocol:

“There are 2 major flaws in marijuana DUI data post legalization. First, science supports that the mere presence of THC in the blood or urine does not constitute impairment as with alcohol and some other drugs. In fact, the more regularly a person uses marijuana (such as for medical patients), the less impairment they experience. Therefore, a person who is a medical patient might have a high level of THC in their blood, but show little to no impairment on the road when compared to someone who only consumes occasionally. The second issue relates to measurement. Prior to legalization, alcohol was tested for first at the scene of an accident. If alcohol was shown to be a factor, many times the person was not tested for anything else. After legalization, states started testing for marijuana along with alcohol in every crash situation. This gives the appearance of an increase in drivers testing positive for marijuana after a crash, when in reality it reflects a change in testing protocol.”

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It is well established that alcohol increases accident risk. Evidence of marijuana's culpability in on-road driving accidents is much less convincing. Although cannabis intoxication has been shown to mildly impair psychomotor skills, this impairment does not appear to be severe or long lasting. In driving simulator tests, this impairment is typically manifested by subjects decreasing their driving speed and requiring greater time to respond to emergency situations. Nevertheless, this impairment does not appear to play a significant role in on-road traffic accidents. A 2002 review of seven separate studies involving 7,934 drivers reported, "**Crash culpability studies have failed to demonstrate that drivers with cannabinoids in the blood are significantly more likely than drug-free drivers to be culpable in road crashes.**" This result is likely because subject under the influence of marijuana are aware of their impairment and compensate for it accordingly, such as by slowing down and by focusing their attention when they know a response will be required. This reaction is just the opposite of that exhibited by drivers under the influence of alcohol, who tend to drive in a more risky manner proportional to their intoxication.

Marijuana and Driving: A Review of the Scientific Evidence

<http://norml.org/library/item/marijuana-and-driving-a-review-of-the-scientific-evidence>

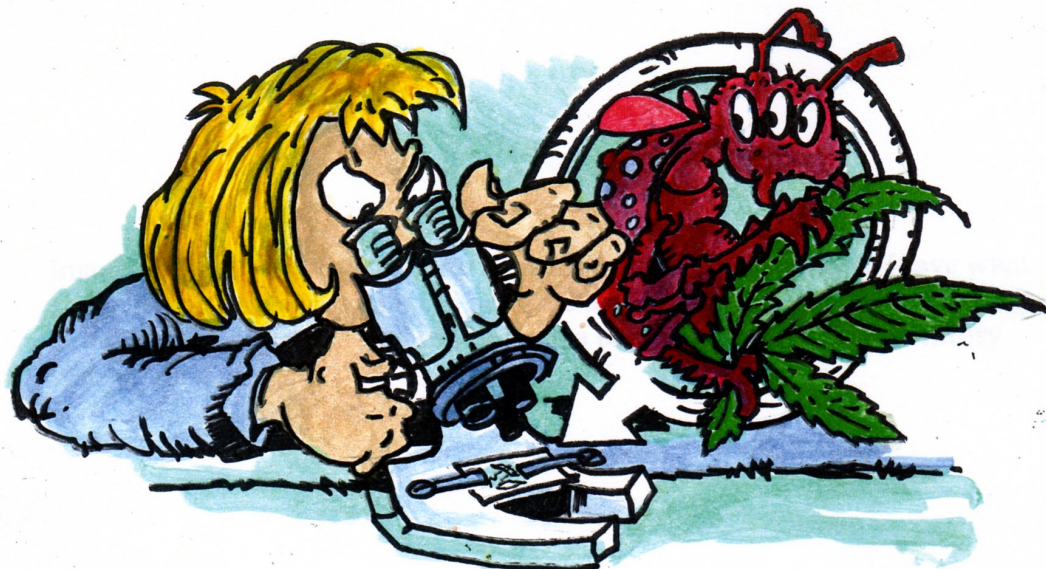
Investigators at Columbia University conducted a case-control study to assess the association between drug use and fatal crash risk. Of the substances identified by researchers, authors reported that depressants were most likely to be associated with crash risk (estimated odds ratio = 4.83). Estimated odds ratios for other specific drug categories were 3.57 for stimulants, 3.41 for polydrug use (excluding alcohol), and 3.03 for narcotics. **Marijuana (1.83) possessed the lowest odds ratios of the substances identified.**

<http://norml.org/news/2013/10/10/study-marijuana-less-likely-to-elevate-vehicle-crash-risk-as-compared-to-other-substances>

**Drivers who test positive for the presence of THC in blood are no more likely to be involved in motor vehicle crashes than are drug-free drivers,** according to a federally sponsored case-control study involving some 9,000 participants. The study, published Friday by the United States National Highway Traffic Administration (NHTSA), is the first large-scale case-control study ever conducted in the United States to assess the crash risk associated with both drugs and alcohol use by drivers. - <http://blog.norml.org/2015/02/09/federal-study-thc-positive-drivers-not-more-likely-to-be-involved-in-motor-vehicle-crashes/>



## 5) Quality control



The legalization of recreational cannabis is an opportunity to re-examine the quality control policies in place in the current legal medicinal cannabis marketplace and improve upon them. Currently, legal med pot suppliers are under no obligation to post their metals, microbes and contaminants counts, are allowed to destroy the medicinal ingredients through irradiation, and are allowed to sell non-organic cannabis. All this should end. Information is piling up to suggest that it is the radioactive elements in chemical fertilizers – not the tobacco itself – which causes cancer, and is responsible for the global crisis of 5 million tobacco-related deaths every year. Organic standards on pesticides and fertilizers would solve this problem. Those who grow cannabis for sale should be required to post their metals, microbes and contaminants counts online. Those who grow significant quantities – over 100 pounds of any one type – should also be required to post cannabinoid and terpenoid profiles of their product.

**“Our results indicate that acyclic monoterpenes are sensitive to irradiation whereas most other volatile compounds are resistant.”**

Degradation of monoterpenes in orange juice by gamma radiation. [Fan X<sup>1</sup>](#), [Gates RA](#). *J Agric Food Chem*. 2001 May;49(5):2422-6. <http://www.ncbi.nlm.nih.gov/pubmed/11368614>



Health Canada's reaction to these test results has been totally unsatisfactory. When informed by CSA that its independent tests showed high levels of heavy metals in the PPS cannabis, Health Canada spokesperson Jirina Vlk stated that Health Canada's own tests showed that heavy metal concentrations in the PPS cannabis were similar to those found in Canadian tobacco, and well within allowable limits. When pressed as to what these "allowable limits" might be, she admitted that there are currently no legal limits to heavy metal content in either cannabis or tobacco in Canada.<sup>(12)</sup> This disingenuous response is of little reassurance to the critically and chronically ill Canadians who depend on cannabis for their health and well-being.

**Open Letter of Concern for the Health and Safety of Canada's Medicinal Cannabis Community, Canadians for Safe Access, January 1<sup>st</sup>, 2005**

<http://safeaccess.ca/research/flinflon/opnltr0105.htm#qandp>

The topic of "radioactive chemical fertilizers" is worthy of an article all to itself. What I have been able to ascertain is that all chemical fertilizers are radioactive (that is to say, they test at higher than background levels of radiation), whereas the vast majority of organic fertilizers are not. <sup>(181)</sup> Some researchers suggest that the main reason for lung cancer from tobacco smoking is the radioactive chemical fertilizers – not the tobacco itself. <sup>(182)</sup> I'm inclined to agree, as the spike in lung cancer rates was twenty years after chemical fertilizers overtook organic fertilizers as the main source of soil amendments for farmers – in the early 1900s – not after the introduction of widespread, heavy use of tobacco – in the 1600s. <sup>(183)</sup> The Phillip Morris corporation contemplated switching from what they knew to be very radioactive fertilizers back to less radioactive fertilizers, but they called it "a valid but expensive point" and decided to save a buck and keep giving people cancer instead. <sup>(184)</sup> As an interesting side note, nobody who smokes cannabis has gone on to get lung cancer from smoking cannabis! <sup>(185)</sup> And smoking cannabis has shown to have some sort of "slight protection against the harmful effects of smoking tobacco", according to a study of long-term users in Costa Rica. <sup>(186)</sup>

**Can Hemp, Marijuana and Mushrooms Fix Fukushima? Part 4: Other Sources of Dangerous Radiation By David Malmo-Levine, Cannabis Culture on February 18, 2014**

<http://www.cannabisculture.com/content/2014/02/18/can-hemp-marijuana-and-mushrooms-fix-fukushima-part-4-other-sources-dangerous-rad>



And for those who pay attention to the history of cannabis economics, it is clear that throughout human history there has always been a small minority of people who attempt to justify exclusive distribution rights of this raw material and medicine.

The latest version of this attempt is genetically modified cannabis. "Genetic modification" - also called "GM," "genetically modified organisms," "GMO" and "transgenic" - is a process by which genes from one living thing are spliced together with another, in a manner that nature would not allow to occur on its own - as opposed to "breeding," which is speeding up a natural selection process with human selection but still limited to what could possibly happen over time in nature.

There is no consensus in the scientific community that genetically modifying a plant helps farmers increase their yield in any way or that GM crops are safe for human consumption or environmentally friendly or pose no threat to global food security, but nearly everyone agrees that it does allow a monopoly on the selling of that particular seed, allows the producers to justify a patent, and allows those who hold the patent to sue those who grow the plants without paying for the seeds - even if the GM pollen drifted onto the field of the farmer in question.

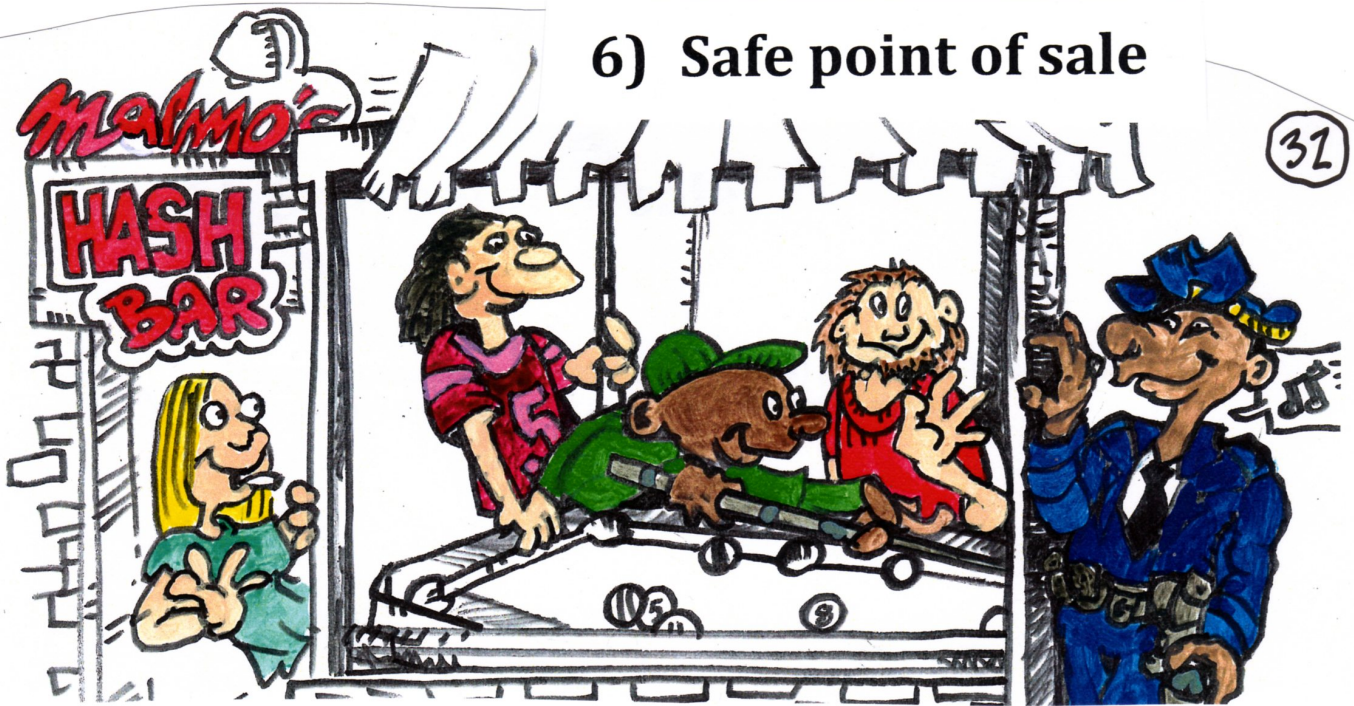
### **Why We Must Ban GM Cannabis**

**By David Malmo-Levine Friday, October 21, 2011**

<http://gmocannabiswatch.blogspot.ca/2011/10/why-we-must-ban-gm-cannabis.html>



## 6) Safe point of sale



Bill Blair – Justin Trudeau’s pick to bottom line legalization in Canada – has stated publicly that he favors the sale of cannabis out of liquor stores – stating it’s better than teens being able to buy it from “some criminal in a stairwell”. He ignores the fact that – if we all ignore the Canadian Senate’s recommendations that 16 year olds should be able to take advantage of quality control and a safe point of sale in a legal market, forcing these young users into meeting “some criminal in a stairwell” is the predictable consequence of requiring the same age limit for hard drugs like alcohol. The other option instead of total teen prohibition/forcing teens to remain in the black market is to follow the Senate’s recommendations and protect teens as young as 16 from the black market. This would mean we would have to separate the sale of hard drugs – alcohol and tobacco – from soft drugs such as cannabis, caffeine, and other herbal medicines. Cannabis is not as dangerous as alcohol. Why associate one of the hardest drugs with one of the softest? We teach our young people with our actions far more than with our words. People who work at liquor stores may know nothing about cannabis. Those who dispense this herbal medicine should be experts. By lumping the hard drug alcohol with the soft drug cannabis, you risk making the association in people's minds that they are equivalent, you lose the opportunity to educate the public with the experience that experts bring to the process, and you unnecessarily limit access to 16 year olds who use cannabis at a high rate and will continue to do so under any legal model, regardless of whether or not they have safe access.



In Holland, "Coffeeshops are not allowed to serve alcohol or other drugs, and risk closure if they are found to be selling soft drugs to minors, hard drugs or selling alcohol."

[https://en.wikipedia.org/wiki/Cannabis\\_coffee\\_shop](https://en.wikipedia.org/wiki/Cannabis_coffee_shop)

The reason they do this is outlined in the 1995 Dutch report, "Drugs Policy in the Netherlands - Continuity and change" p. 7: "Tolerating relatively easy access to quantities of soft drugs for personal use is intended to keep the consumer markets for soft and hard drugs separate, thus creating a social barrier to the transition from soft to hard drugs."



## 7) Criminal Record Check

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A conviction for a cannabis-related offence may be appropriate for a resume in the emerging legal cannabis job market, but should not be used as a reason to exclude a person from that market. Obedience – especially obedience to irrational laws - is not a characteristic worthy of determining whether or not one may work in their livelihood of choice. In fact, it was disobedience that saved the cannabis economy from total destruction – there would be no cannabis jobs at all if it were not for disobedience. The only crimes worthy of excluding someone from participating in the legal cannabis market are those involving poisoning or polluting or contaminating people with toxins. Even those involved in violence should be able to participate in the cannabis economy once a reasonable time has passed with no further offences – literally the “swords into ploughs” solution mentioned repeatedly in the Bible. As well, all cannabis-only charges (growing, dealing, smuggling, possession etc etc) should be pardoned, and every cannabis criminal released. Immediately.

**And he shall judge among the nations, and shall rebuke many people: and they shall beat their swords into plowshares, and their spears into pruninghooks: nation shall not lift up sword against nation, neither shall they learn war any more.**

– [Isaiah 2:4](#) see also, [Joel 3:10](#) [Micah 4:3](#)



According to the well-researched website [drugwarfacts.org](http://drugwarfacts.org), every 3 minutes in America “a child is arrested for a drug offense”. (82) Even in Canada, young people aged 16-19 were the age group most likely to be accused of a drug offence. Youth accounted for 24% of all cannabis offences. (83) As of 2010, “almost 60 percent of confined youth in the U.S. (41,877) were still detained and imprisoned for offenses that do not pose substantial threats to public safety”, including “drug use”. (84) ... Justice Canada estimates that over 600,000 Canadians have a criminal record for cannabis possession. In fact, police in British Columbia have reported that the number of cannabis drug offences have jumped from 11,952 in 2002 to 16,578 in 2011. (87)

As for arrests, which can negatively impact a person almost as much as a criminal record, there were 78,000 of them in Canada for marijuana-related offences. 4,700 Canadians between ages 12 to 17 were charged with a cannabis offense in 2006. “Legal sanctions against young people lead to even worse outcomes” the report said, “not improvements in their lives”. (88)

Criminal records “can prevent you from traveling to other countries, getting certain jobs, being bonded (which some jobs require), and applying for citizenship” (89) as well as having “... far reaching implications and can affect a youth’s post-secondary education acceptance, work and travel opportunities and also impact eligibility for future loans and credit card acceptance.” (90)

A criminal record also negatively impacts getting insurance. (91) You can even be turned back from crossing a border because of an arrest that did not lead to a conviction. (92) If you lie or try to mislead the border officer, you risk “being declared inadmissible and automatically prohibited from entering the country.” (93) You still must answer “yes” to the question “have you ever been found guilty of a criminal offence or convicted?” even if you have received a record suspension. (94)

### **Does Cannabis Inherently Harm Young People’s Developing Minds?**

By David Malmo-Levine, Cannabis Culture on November 11, 2014

<http://www.cannabisculture.com/content/2014/11/11/Does-Cannabis-Inherently-Harm-Young-Peoples-Developing-Minds>



## 8) Taxes



Taxes should be placed upon recreational cannabis, but not medical. The double standard that allows synthetic medicines to be sold tax free while herbal medicines are taxed heavily must now end, if we as a society do not want to give an advantage to medicines that are not as safe, as cheap or as effective as herbs. If the tax on a bottle of wine – a “buzz” for two people – is about 25 cents per bottle, then the tax on a typical recreational cannabis joint - .5 of a gram – should also be 25 cents. This would amount to a tax of \$14 dollars per ounce, or \$224 dollars per pound.

“More and more Canadians are using natural products, often under the direction of their doctors or other health care practitioners. Yet the cost of natural products is not allowed as a tax credit, as are prescription drugs. Nor are natural remedies included in most medical plans, which mirror the tax credit coverage in the Income Tax Act to ensure the benefits are not taxable. To add insult to injury, there is also GST or HST on natural remedies but not on prescription drugs.”

Why Can't We Claim Natural Health Products?

Assessing the regulation and taxation of NHPs

UPDATED ON October 30, 2013 WRITTEN BY Shawn Buckley and Genevieve Eliany

<http://www.alive.com/health/why-can-we-claim-natural-health-products/>



**The sales tax on a gallon of wine is about \$1.27, with 20 cents going to the State of California, and 107 cents to the United States Government. This works out to about 25 cents per bottle. (68) As was pointed out in source #43, California wine sales result in \$14.7 billion in state and federal tax payments. The state's top tax collector estimates that taxing pot like liquor could bring in more than \$1.3 billion annually. (69) Speaking about the possibility of one day seeing nation-wide legalization, a CNBC economic analysts point out that:**

“Tobacco and alcohol sales generate over \$17 billion in federal tax revenue. States tax tobacco and alcohol and benefit as well. ... Assuming comparable taxes to tobacco of 40-50% (excise and sales tax), a \$40 billion marijuana market would yield \$16-20 billion in taxes.” (70)

Harvard University economist Dr. Jeffrey Miron has written a paper entitled “The Budgetary Implications of Marijuana Prohibition”. This paper is endorsed by over 500 economists, including Nobel Prize-winner Milton Friedman. In this paper, Miron concludes that instituting legal regulations will save the government \$7.7 billion just by not having to enforce current prohibition laws (\$2.4 billion at the federal level and \$5.3 billion at the state and local levels). He goes on to state that tax revenue could range from \$2.4 billion per year if marijuana were taxed like ordinary consumer goods to \$6.2 billion if it were more heavily taxed like alcohol or tobacco. (71)

**Crystal Clear Glasses and Unbleached Rollies**

David Malmo-Levine, Cannabis Culture on July 8, 2011

<http://www.cannabisculture.com/content/2011/07/08/crystal-clear-glasses-and-unbleached-rollies>





Because they are aware that they are growing medicine – realizing that this is a form of a sacred trust - a greater percentage of cannabis growers have adopted organic cultivation methods than the growers of other crops. Cannabis growers would not resist organic standards if they were mandatory for all growers in exchange for being accepted into society as producers of non-toxic medicine. Considering the role chemical fertilizers play in tobacco-related lung cancer, having mandatory organic standards would be the perfect solution to concerns over possible increases in lung damage that might come from a greater acceptance of cannabis as a medicine or recreational drug option. Hopefully, these mandatory standards will one day be adopted for all herbal medicine, and eventually, all crops – one of the most important steps towards a sustainable society. If society was forward-thinking, it would fire all the narcotics officers and re-hire the ones who wanted to enforce the prohibition of radioactive chemical fertilizers instead.

## II. General principles of organic production

Organic Agriculture is based on the following general principles:

Principle of health – Organic agriculture should sustain and enhance the health of soil, plants, animals, humans and the planet as one and indivisible.

Principle of ecology – Organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.

Principle of fairness – Organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.

Principle of care – Organic agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

<http://www.tpsgc-pwgsc.gc.ca/ongc-cgsb/programme-program/normes-standards/internet/bio-org/pgng-gpms-eng.html>



The so-called 'Green Revolution', which foisted artificial fertilizers, pesticides, and monocrop agriculture on the developing world is destroying the soil, polluting the air and water and driving farmers into debt, poverty and dislocation. Genetically engineered crops are a false dead end solution. New agriculture policies must concentrate on small scale, organic, and traditional farming. They must empower women and acknowledge indigenous knowledge.

<http://www.greenpeace.org/canada/en/Blog/defining-the-future-of-agriculture/blog/3742/>

Conspicuous because of its absence is research into the role of the radioactive component of cigarette smoke. The alpha emitters polonium-210 and lead-210 are highly concentrated on tobacco trichomes and insoluble particles in cigarette smoke. The major source of the polonium is phosphate fertilizer, which is used in growing tobacco.

– Winters-TH, Franza-JR, Radioactivity in Cigarette Smoke, *New England Journal of Medicine*, 1982; 306(6): 364-365 (178)

<http://www.cannabisculture.com/content/2014/02/18/can-hemp-marijuana-and-mushrooms-fix-fukushima-part-4-other-sources-dangerous-rad>

Tobacco smoking has been popular for centuries, 11 but lung cancer rates have only increased significantly after the 1930's.<sup>12</sup> In 1930 the lung cancer death rate for white US males was 3.8 per 100,000 people. By 1956 the rate had increased almost tenfold, to 31 per 100,000.<sup>13</sup> Between 1938 and 1960, the level of polonium 210 in American tobacco tripled, commensurate with the increased use of chemical fertilizers.<sup>14</sup> Publicly available internal memos of tobacco giant Philip Morris indicate that the tobacco corporation was well aware of radiation contamination in 1974, and that they had means to remove polonium from tobacco in 1980, by using ammonium phosphate as a fertilizer, instead of calcium phosphate. One memo describes switching to ammonium phosphate as a "valid but expensive point."<sup>15</sup>

<http://www.ncbi.nlm.nih.gov/pubmed/3003925?dopt=Abstract>

<http://www.tobaccofreedom.org/issues/documents/landman/radioactive/rad1.gif>

**Radioactive tobacco**, David Malmo-Levine, 02 Jan, 2002

[http://www.whale.to/a/radioactive\\_tobacco.html](http://www.whale.to/a/radioactive_tobacco.html)



The Cannabis industry, too, is attempting forms of ecological self-regulation, and may have helped to promote organic farming and gardening in the United States, including California. In the Fall/Winter 1985 issue of the west coast growing periodical "Sinsemilla Tips", a reader's poll indicated that 34% of the growers who responded chose organic fertilizer, with the number increasing to 46% for those who were only growing for themselves (102).

High Times magazine, the longest-running and most popular Cannabis-oriented magazine in the world, has featured cover stories on organics at least a dozen times since 1995 (103). At least seven High Times articles on California growers since 2002 extol the virtues of organic growing methods (104), including reporting on the Namaste Center for Sustainable Ganja Farming, Communities Addressing Pollution Pot, Clean Green (a sustainability certification organization), and the "Humbolt Growers Association". Toxic chemical fertilizers and water management are brought up as concerns by these groups.

There is also an attempt at self-regulation in quality-control, in the form of "Steep Hill Analysis Laboratory", "where California growers and dispensaries submit their products to make sure they're pure, pesticide-free and properly measured for potency" (105). It's safe to say that Cannabis farmers are far more likely to be farming sustainably than regular farmers, and their legitimization will only increase opportunities to make sustainable agriculture the rule rather than the exception.

#### **Crystal Clear Glasses and Unbleached Rollies**

David Malmo-Levine, Cannabis Culture on July 8, 2011

<http://www.cannabisculture.com/content/2011/07/08/crystal-clear-glasses-and-unbleached-rollies>



## 10) Fair trade labor practices



Ever since Moses threatened to banish those who were unworthy of using the sacred kanna-bosm anointing oil in Exodus 30:33, people have been fighting over the distribution rights of sacraments and medicines in general, and cannabis in particular. For the last 45 years, the majority of the cannabis community have recognized the low-risk to health cannabis has represented relative to other popular recreational drugs, and have advocated for an inclusive economy with plenty of small-scale “ma and pa” participants. The low cost of participation in the economy – just seeds, soil, fertilizer and water costs - allow one to make a decent living, making small cannabis businesses much more possible than other recreational drug crops allow for. Coffee and cacao require the capital to import and warehouse, while tobacco and alcohol often involve a more expensive manufacture process. With economies of greater scale come a greater incentive to cut costs in quality, not to mention labor costs. This then leads to increases in pollution, and decreases in the quality of life of the workers involved in the industry, who are often poisoned by synthetic fertilizers and pesticides, and exploited for cheap labor. For the last 35 years, an attempt has been made on the part of government, police and opportunists to come up with excuses to create an exclusive economy for the lucky few. Most of these cartel schemes center around some reefer madness myth regarding some imagined danger of cannabis that involves some expensive criteria that only the very fortunate can afford to meet, such as the “you must grow it in a mine shaft” scam of the previous Liberal government, or the “you must spend hundreds of thousands of dollars on security and accounting” of the previous Conservative government. There have even been attempts to grant exclusivity in production rights for those who spent money in support of monopolistic US citizen’s initiatives. The best way to protect the health and livelihood of those in the industry is to allow for an inclusive model. A legalization model that allows anyone who wishes to participate to do will create much more supply. This increased supply will come with increased quality and increased selection and decreased price, in order to be competitive in the increased-supply market. There will be fewer larger and more smaller operations and even one-person operations, which will improve employer-employee relationships, safety, job-satisfaction and wealth sharing considerably.



“The object is to spread the wealth as much as possible. We don’t want the oil, tobacco, and liquor companies, or the pharmaceutical industry gaining control of this market. It’s extremely important that it be kept in the hands of the people who have put it together over these last twenty years.” [23]

[23] Gatewood Galbraith, *High Times*, March 1990, p. 14

**Legalization For All, David Malmo-Levine on January 7, 2011**

<http://www.cannabisculture.com/content/2011/01/07/legalization-all>

Valerie Corral, executive director of the Wo/Men’s Alliance for Medical Marijuana, stated that “This plant should not follow in the path of Coca Cola, Marlboro or Merck.” (116) Medical marijuana entrepreneur Stephen DeAngelo argued that:

“Society has a chance to get it right this time,” he said. “We didn’t get it right with tobacco. We didn’t get it right with alcohol. We put those potentially dangerous substances in the hands of corporations who had no interest other than making as much money as possible. Do we want those kinds of companies getting their hands on Cannabis?” (117)

Legendary lawyer J. Tony Serra, champion of the downtrodden (legal, economic, racial or otherwise) expressed similar concerns:

“Once it is legalized the greedy corporations will get their hands in it and it creates this corporate moral disability. Some large dispensaries already practice acts of corporate moral disability. I want it to stay with the mamas and the papas. The small and unique places. I want the government out of my closet. It should be free, man.” (118)

...

Communities Addressing Pollution Pot put it this way:

“By limiting the size of Cannabis farms, we could ensure the pot market stays horizontally integrated, supporting as large a number of small growers as possible, rather than industrial-scale “weed factories” that will extract maximum profits at any cost.” (120)

**Crystal Clear Glasses and Unbleached Rollies**

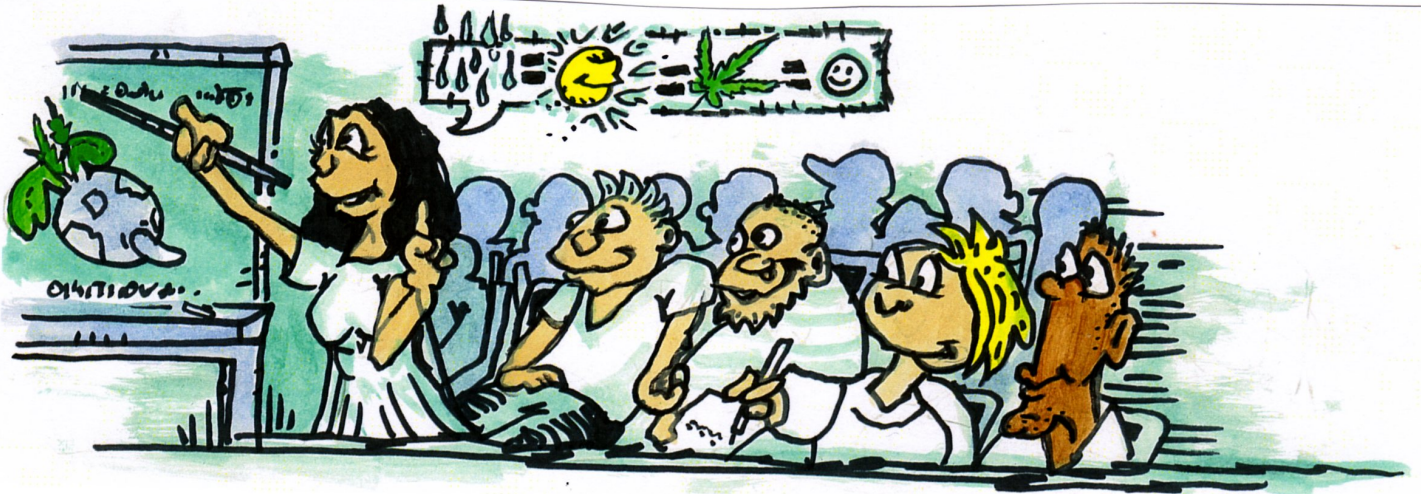
David Malmo-Levine, Cannabis Culture on July 8, 2011

<http://www.cannabisculture.com/content/2011/07/08/crystal-clear-glasses-and-unbleached-rollies>



## 11) Educational programs

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Despite official assurances that cannabis is inherently harmful to certain vulnerable groups, a preponderance of evidence points to the fact that cannabis is only harmful when abused – when it is used properly it is helpful, allowing an individual to live longer with less stress. Currently there is a program developed by the Center for Addictions Research of BC, developed for children in grades 4 through 10 – “iMinds” – that teaches cannabis harm reduction to grade-school children. Cannabis harm reduction consists of understanding dose, familiarity, setting, mindset, quality, purity, strain selection, mode of administration, clean ignition and smoke-cooling. The ideal strategy for novice users to avoid hurting themselves with cannabis is to limit one’s use to taking small hits of organic, high potency cannabis from a joint rolled with organic unbleached hemp or rice papers during high-pleasure, low-pressure activities. These skills are not beyond the abilities of most teenagers. The important thing to remember is that there is no evidence of cannabis – used properly – harming an individual. Those who have a vested interest in exclusive cannabis economies and continued persecution of the cannabis community can only justify their actions based upon the “inherent harm” myth, and thus are in denial regarding the evidence of cannabis harm-reduction techniques.

*No valid conclusion as to the use of a thing can be drawn from its abuse.*

– Lord Denman, *Stockdale v. Hansard*, 1839



Or take, for another example, the importance of strain selection. The legitimacy of strain selection has come to light in recent years, especially with the publication of Dr. Ethan Russo's comprehensive report on cannabinoids and terpenes in the *British Journal of Pharmacology*: "Taming THC: potential cannabis synergy and phytocannabinoid-terpenoid entourage effects":

*If – as many consumers and experts maintain (Clarke, 2010) – there are biochemical, pharmacological and phenomenological distinctions between available cannabis 'strains', such phenomena are most likely related to relative terpenoid contents and ratios. (35) ...*

According to the wisdom gained from the experience of those who work in medical cannabis dispensaries;

*People experiencing heightened anxiety, or those with mental health conditions should use caution with Sativa-dominant varieties. (37)...*

Regarding the reports that do mention harm reduction, *Fischer et al.* (2011) mentions "dose, setting, potency, purity, frequency, mode of administration, titration, delaying using until after 18 years old or abstaining altogether" (pp. 324-326), but did not mention familiarity, freshness, growing conditions, mindset or strain. *Swift et al.* (2000) mentions "dose ... method of use, drug experience, tolerance, concurrent drug use, expectations and personality" as factors involved in harm reduction. (p. 102) *Mathre et al.* (2002) mentions cannabis harm reduction with respect to reducing harm through smarter smoking techniques or other modes of administration (p. 107) and cannabis use as a substitute for harder drug use. (p. 109) *Melamede* (2005) mentions "...amount, frequency, quality, and probably most importantly, the idiosyncratic biochemistry of the user" as being factors involved in harm reduction. (p. 2)

### **Does Cannabis Inherently Harm Young People's Developing Minds?**

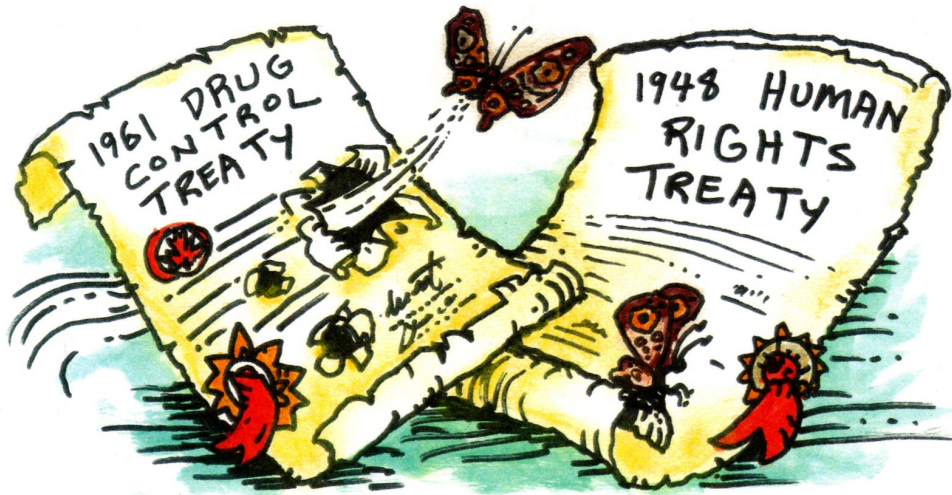
By David Malmo-Levine, Cannabis Culture on November 11, 2014

<http://www.cannabisculture.com/content/2014/11/11/Does-Cannabis-Inherently-Harm-Young-Peoples-Developing-Minds>



## 12) International Treaty Obligations

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There are many points to consider: 1) Holland, Uruguay, and The United States of America have all legalized or regulated cannabis in one way or another, and are signatories to every treaty Canada has signed. 2) The 2002 Canadian Senate Report on cannabis recommended legalization and specifically said the treaties would not stand in the way, 3) Each treaty has giant "scientific and medicinal" loopholes you could drive a truck through, 4) Canada has been in violation of the treaties ever since the MMAR was introduced in 2001 and continued to be violated when the MMPR was introduced in 2014, 5) There's no penalty for ignoring or disavowing the treaty, 6) The treaties were not meant to replace or take precedence over a country's constitution or other international treaties such as the human rights treaty of 1948, the anti-slavery or institutions similar to slavery treaty of 1956, or the anti-genocide convention of 1951.

"Chances are, then, that Canada will be able to legalize marijuana, and potentially do so without any global repercussion. That will send a big signal to other countries — that, at least when it comes to marijuana, these treaties no longer hold the weight they once held. It could, then, expose a huge hole in the treaties, making more nations comfortable with the idea of legalization."

Canada's newly elected Liberals may legalize marijuana. That could impact US drug policy. Updated by [German Lopez](#) on October 20, 2015, 10:20 a.m.

ET @[germanlopez](#) [german.lopez@vox.com](mailto:german.lopez@vox.com)

<http://www.vox.com/2015/10/20/9573497/canada-marijuana-legalization-justin-trudeau>



"...there is nothing to bind countries such as Canada to the more stringent measures that they have adopted in their drug policies; indeed, the opposite is true. The three Conventions recognize the particular features of national legal and judicial systems and specify that the measures that States adopt will respect these systems. The words used are different in each, but the intention seems to be the same. Article 36 of the Single Convention, 1961 states: "subject to its constitutional provisions ..."; article 21 of the Convention on Psychotropic Substances states: "having due regard to their constitutional, legal and administrative systems ..."; and article 3 of the Convention against Illicit Traffic states: "subject to its constitutional principles and the basic concepts of its legal system." In Canada, these particular features may be identified as being all the elements of constitutional law to which each level of government in the Canadian federation (the federal government and the provinces), and each branch of that government (legislative, executive and judicial), is subject.

According to Dupras, implementation that does not comply with those principles and concepts will be void or non-existent at the national level; and failing implementation, there can be no ratification. Since the Canadian Charter of Rights and Freedoms was enacted in 1982 and entrenched in the Canadian Constitution, there can be no doubt that its provisions are elements of the "basic concepts of the legal system" of Canada. Parliament and the legislatures may not disregard the Charter, and the numerous judgments of the Supreme Court act as a reminder of this fact. This means that the rights of Canadians have to be protected, including ensurance of:

Guarantee against unreasonable search and seizure;  
Guarantee against any cruel and unusual treatment or punishment. ...

Article 28, paragraph 3 of the *Single Convention* states that "The Parties shall adopt such measures as may be necessary to prevent the misuse of, and illicit traffic in, the leaves of the cannabis plant." This clause and Article 22 have been taken to mean that if a country decides that a system other than prohibition is most appropriate for protecting public health and welfare and for deterring illicit trafficking, **"that country is not obliged by virtue of the *Single Convention* to maintain a prohibition policy"**. The authors of the New Zealand report conclude that: "Our reading of this complicated literature, and of the treaties themselves, leads us to conclude that a policy of partial prohibition... would certainly be considered by most authorities as being in compliance with international treaties.... authoritative interpretations of the *Single Convention*... would appear to permit a system of regulation and control." They suggest that **"... if New Zealand were to notify the United Nations that, after careful study, it has determined that a regulated system of cannabis control were necessary to reduce both public harm and illicit trafficking, it seems unlikely that such an announcement would be condemned (except, perhaps, by the United States)"**. "It seems inappropriate for countries to be forced by international treaty to foster black markets within their borders, especially if doing so serves to disadvantage native populations".

**Drugs and Drug Policy in Canada - A brief review and Commentary, Diane Riley, PhD**  
Canadian Foundation for Drug Policy & International Harm Reduction Association  
**Prepared for the Honourable Pierre Claude Nolin, November 1998**

<http://www.parl.gc.ca/Content/SEN/Committee/362/ille/rep/rep-nov98-e.htm#5>



### 13) Stigma foisting, discrimination and oppression



“Legalization” is a big concept that includes many different models. Some legalization models bring an end to discrimination and oppression, and others perpetuate discrimination and oppression. Legalization based upon the lie that “cannabis inherently harms vulnerable groups” will perpetuate discrimination and oppression. These groups - such as young people, the mentally ill, pregnant women and chronic users - will experience more discrimination and more oppression so long as this lie is allowed to persist. All those growers and dealers who are too poor to afford to meet the criteria society supposedly requires to ensure the vulnerable groups are not harmed – such as discriminatory licensing, security and accounting measures that no other soft drug dealer or herbal medicine dealer must meet – will continue to be unfairly punished. The exclusion of the vulnerable groups from a safe points of sale will guarantee further persecution of harmless people by the police, and will allow a cartel to form through expensive legitimacy criteria, justified by this new form of reefer madness. Continued raids against growers and dealers too poor to jump through all the hoops that “tight regulations” require, bans on advertising, bans on heritage names, irrational limits on cannabinoid levels (hashish has been around for centuries and contained the highest THC levels imaginable) and continued punishment for young users are just some of the indignities promised by those who spout the lies of “reefer madness 2.0”. These over-regulators, monopolists and cartelists do not possess the truth. One day it will be common knowledge that “tight regulations” are not required to protect people – rather, it is an inclusive legalization model that will protect people - **because cannabis isn’t harming people one tenth of one percent as much as cannabis prohibition harms people.** There are dead bodies from cannabis prohibition – notably in North Vancouver Daniel Possee was killed over a half-ounce of cannabis because the police had “information” that someone had “a quantity” of pot at that house. Nearly every year in the United States a teen is shot and killed because of police attempting to enforce cannabis laws. There are no dead bodies from cannabis abuse that could not have been prevented by encouraging proper cannabis use, but the only way to stop dead bodies from piling up as a result of cannabis prohibition is to end the prohibition for everyone, not just end it for the old and the well-to-do, who have not been suffering under cannabis prohibition as much as the poor and the young have.



## 14) Pros and Cons of existing cultivation and distribution models

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There is a large body of work to draw from in examining different legalization models. Some of the best results that maximized human dignity and minimized unnecessary suffering have come out of Holland over the last 40 years and Colorado out of the last 6 years. There is still lots of unnecessary suffering arising from all legalization models, especially the one in Washington State, which was created with the least consideration for the needs of users, growers and dealers of any legalization model so far. From Holland we have learned that whether cannabis is legal or illegal has little to do with cannabis use rates, but separating the soft and hard drugs keeps people from moving from soft drugs to hard drugs – something to keep in mind when deciding whether or not to sell cannabis and alcohol together. Colorado has provided a model that reduces traffic fatalities, prescription drug use, violent crime while increasing job growth and tax revenue.

Unfortunately the Colorado Board of Health did not add PTSD to the list of legitimate medical conditions cannabis can be used for, denying veterans access to a much-needed healthcare option that should be subsidized. The Washington State model involves taxes of 75% on the end product, a ban on public puffing, drivers being unfairly penalized based on considerations other than impairment, young drivers being automatically deemed impaired if they test positive for any amount of cannabis in their blood and police using this fact to arrest young people of color en masse – “like shooting fish in a barrel”. It is now a felony for teens to possess cannabis – it wasn’t before. They used to be punished with a maximum of 90 days jail for their intelligent preference to cannabis – now it’s five years in jail. Having been to jail, this author can testify to the fact that a few days in jail can damage the developing minds of young people far worse than cannabis ever could.



## Holland

In conclusion, trends in cannabis use in the Netherlands are rather similar to those in other European countries, and Dutch figures on cannabis use are not out of line with those from countries that did not decriminalise cannabis. The U.S. figures consistently appear to be higher than those in the Netherlands. Over time prevalence of cannabis use show a wave-like trend in many countries, including the Netherlands. This supports Reuband's earlier conclusion that trends cannabis use evolve rather independently from drug policy, and that countries with a 'liberal' cannabis policy do not have higher or lower rates than countries with a more repressive policy. [Reuband, 1995].

### **TRENDS AND PATTERNS IN CANNABIS USE IN THE NETHERLANDS**

Dirk J. Korf, University of Amsterdam (Bonger Institute of Criminology) [korf@jur.uva.nl](mailto:korf@jur.uva.nl)

Paper to be presented at the Hearing of the Special Committee on Illegal Drugs **Ottawa, November 19, 2001**, <http://www.parl.gc.ca/Content/SEN/Committee/371/ille/presentation/korf-e.htm>

Coffee Shops and Compromise: Separated Illicit Drug Markets in the Netherlands tells the history of the Dutch approach and describes the ongoing success of the country's drug policy. This includes the impact of the Dutch "separation of markets," which potentially limits people's exposure and access to harder drugs. Though coffee shops have traditionally commanded the most media attention, the Netherlands also pioneered needle exchange and safer consumption rooms, decriminalized possession of small quantities of drugs, and introduced easy-to-access treatment services. These policies, coupled with groundbreaking harm reduction interventions, have resulted in the near-disappearance of HIV among people who inject drugs and the lowest rate of problem drug use in Europe.

Coffee Shops and Compromise: Separated Illicit Drug Markets in the Netherlands

July 2013 [Global Drug Policy Program](http://www.opensocietyfoundations.org/reports/coffee-shops-and-compromise-separated-illicit-drug-markets-netherlands) <https://www.opensocietyfoundations.org/reports/coffee-shops-and-compromise-separated-illicit-drug-markets-netherlands>



## Colorado

1. Less Children Use Pot.
2. Traffic fatalities are at all time lows.
3. Fewer people take dangerous meds.
4. Lazy? Nope. Record setting job growth.
5. Violent crime has dropped significantly.
6. More tax money than alcohol.

Sources: <http://www.drugpolicy.org/resource/marijuana-legalization-colorado-one-year-status-report>

[https://www.drugpolicy.org/sites/default/files/Colorado\\_Marijuana\\_Legalization\\_One\\_Year\\_Status\\_Report.pdf](https://www.drugpolicy.org/sites/default/files/Colorado_Marijuana_Legalization_One_Year_Status_Report.pdf)

<http://drthurstone.com/wp-content/uploads/2014/07/Crime-Stats-Thurstone.pdf>

<http://www.imfromdenver.com/6-things-that-have-blown-away-the-propaganda-since-colorado-legalized-marijuana/>

In a statewide vote last November, 69 per cent of voters even rejected refunds after the state collected an unanticipated \$66.1 million in pot sales tax revenue. Instead, \$40 million went to school construction and \$12 million to youth and substance-abuse programs. The remaining \$14 million went into a discretionary fund, according to the Denver Post.

<http://www.thespec.com/news-story/6233976-marijuana-tax-revenue-paying-for-sidewalks-schools-in-colorado-why-not-here/>

Denver's Landmark Theatres has just re-opened one of their 16 movie theaters into a marijuana-use purposed theater.

<http://www.imfromdenver.com/the-first-marijuana-friendly-movie-theater-opening-in-denver/>

The Colorado Board of Health voted 6-2 — amid shouts, hisses and boos from a packed house — not to add post-traumatic stress disorder to the medical conditions that can be treated under the state's medical marijuana program.

[http://www.denverpost.com/news/ci\\_28487952/colorado-board-votes-no-allowing-medical-pot-ptsd](http://www.denverpost.com/news/ci_28487952/colorado-board-votes-no-allowing-medical-pot-ptsd)



The figures are similar in states that have legalized medical marijuana. While some studies have shown that the number of drivers involved in fatal collisions who test positive for marijuana has steadily increased as pot has become more available, other studies have shown that overall traffic fatalities in those states have dropped. Again, because the pot tests only measure for recent pot use, not inebriation, there's nothing inconsistent about those results.

Since marijuana legalization, highway fatalities in Colorado are at near-historic lows  
By Radley Balko August 5, 2014, <https://www.washingtonpost.com/news/the-watch/wp/2014/08/05/since-marijuana-legalization-highway-fatalities-in-colorado-are-at-near-historic-lows/>

While marijuana can impair driving ability, it has a less dramatic impact than alcohol does. A 1993 report from the National Highway Traffic Safety Administration, for example, concluded: "The impairment [from marijuana] manifests itself mainly in the ability to maintain a lateral position on the road, but its magnitude is not exceptional in comparison with changes produced by many medicinal drugs and alcohol. Drivers under the influence of marijuana retain insight in their performance and will compensate when they can, for example, by slowing down or increasing effort. As a consequence, THC's adverse effects on driving performance appear relatively small." Similarly, a 2000 report commissioned by the British government found that "the severe effects of alcohol on the higher cognitive processes of driving are likely to make this more of a hazard, particularly at higher blood alcohol levels."

Given these differences, it stands to reason that if more pot smoking is accompanied by less drinking, the upshot could be fewer traffic fatalities. Consistent with that hypothesis, a study published last year in the *Journal of Law and Economics* found that legalization of medical marijuana is associated with an 8-to-11-percent drop in traffic fatalities, beyond what would be expected based on national trends. Montana State University economist D. Mark Anderson and his colleagues found that the reduction in alcohol-related accidents was especially clear, as you would expect if loosening restrictions on marijuana led to less drinking. They also cite evidence that alcohol consumption declined in states with medical marijuana laws.

More Pot, Safer Roads: Marijuana Legalization Could Bring Unexpected Benefits, Jacob Sullum, April



3, 2014, <http://www.forbes.com/sites/jacobsullum/2014/04/03/more-pot-safer-roads-marijuana-legalization-could-bring-unexpected-benefits/#5189543d378145c0a5463781>

## Washington State

**"The taxation scheme is onerous and burdensome," Houston told MainStreet. "The tax on the end product is up to 75%, which makes it hard to do business."**

Pot Professionals in Suspense Over Marijuana Licensing and Supply in Washington State, Juliette Fairley, Jul 7, 2014

<https://www.mainstreet.com/article/pot-professionals-suspense-over-pot-licensing-and-supply-washington-state/page/2>

**The DUI provision that penalizes drivers based on "the amount of active THC in their system," rather than "impairment" is just one problem highlighted by Boiter and others.**

**Recreational Vs. Medical Pot Issues Draw Battle Lines in Tacoma Washington**

December 24, 2014 | Kris Hermes

[http://www.safeaccessnow.org/recreational\\_vs\\_medical\\_pot\\_issues\\_draw\\_battle\\_lines\\_in\\_tacoma\\_washington](http://www.safeaccessnow.org/recreational_vs_medical_pot_issues_draw_battle_lines_in_tacoma_washington)

**Hiatt, who opposed Washington state's pot legalization law in part over concerns about its driving provision, pointed to the zero-tolerance standard for drivers under age 21, which he said makes teens vulnerable to police officers looking for easy arrests. "It's like shooting fish in a barrel," he said. "It hits the kids of color the hardest."**

**Pot smokers arrested for DUI: A record high in Washington**

By Jonathan Kaminsky, Reuters, NOVEMBER 23, 2013,

<http://www.csmonitor.com/USA/Latest-News-Wires/2013/1123/Pot-smokers-arrested-for-DUI-A-record-high-in-Washington>



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LEWISTON, Idaho (AP) — A prosecutor in southeastern Washington has charged three teens with felonies for marijuana possession, saying a new law demands the higher level of offense. The Lewiston Tribune in Idaho reports (<http://goo.gl/g8Xhpl>) three teens ages 14, 15 and 17 have been charged in nearby Asotin County, Wash., with felonies that could net them up to five years in prison. The offense was previously a misdemeanor with a maximum 90-day jail sentence. Asotin County prosecutor Ben Nichols says Senate Bill 5052 contains the new language. The bill's sponsor, Republican state Sen. Ann Rivers of La Center, Wash., says the tougher penalty was designed to deter minors from trying an adult drug. A spokesman for Gov. Jay Inslee says the provision is an unintended consequence of a law focused on regulating the state's medical marijuana system.

New side-effect of Washington's marijuana law: Youth possession now a felony  
POSTED 6:18 PM, SEPTEMBER 18, 2015, BY ASSOCIATED PRESS  
<http://q13fox.com/2015/09/18/new-side-effect-of-washingtons-marijuana-law-youth-possession-now-a-felony/>

This year's festival was probably the lamest one held in Seattle since the end of the Drug War. It was a marijuana festival with only two small designated consumption areas and although there were no cops around, most people (with the exception of yours truly) didn't light up in public areas. Instead people snuck behind vendor tents, lit up backstage or down by the water – out of sight – remembrances of high school past. All the result of I-502. Don't let anyone say this is legalization. Nothing is legal except possession of under an ounce of store-bought marijuana. In Washington State, legalization means possession of 28 grams is legal, 29 is a misdemeanor and 40 grams or more is a felony. Smoking in public is a misdemeanor. Home growing is a felony. The state commission is trying to eliminate medical marijuana as a separate category. Patients will be subject to the same confiscatory taxes as adult users. Driving with a minimum amount of non-intoxicating analog in blood results in a DUI. I call this the "Chauffer Employment Act" because no one who uses regularly can pass the blood test.

THE MARIJUANA USERS BILL OF RIGHTS – ED ROSENTHAL, SEPT 17, 2014  
<http://mjnewsnetwork.com/legal/the-marijuana-users-bill-of-rights/>



"The real story in Washington State? Farmer's markets where patients were helping patients have been forced closed. While they were open it was a usual occurrence to go in and access high THC, and High CBD strains for \$150./\$200. per ounce. Full Extract Cannabis Oil was \$20. per gram at the Farmer's market and it's \$90. for a half gram at the recreational store. Patient growers who shared the expenses in collectives are no longer allowed to grow more than 15 plants and help four people, but only if they register their location with the state, if they do not they are only allowed to grow 4 plants for their self. It is illegal to gift or share cannabis with a friend, even the healing oil. A recent purchase at the legal recreational store called the White Rabbit had a good amount of stem just sitting in the bottom of the jar. This article is bullshit lies, outsiders making wrong assumptions! The good people are snitching out the bad people, but the people getting snitched out are really good people. The media and some activists say that people that are being prosecuted deserve it. The prosecutors are saying they are going to start giving civil and criminal charges to people that continue to sell cannabis without a license, but the liquor control board never has allowed any medical producers to even apply for a license. The only time the licensing was opened up for producers was a few years ago when the state asked for people to apply to produce for recreational, Many of the medical growers did not apply, because they were not in this for the recreational folks, but for the medicine. So we waited. The legal producers have convinced the legislature that they can produce all the cannabis our state needs, so the application process was never opened up for medical.

In Washington state ... the licensed producers and retailers have suffered financially because of the costs of complying with the regulations, the taxes, and not being able to take any tax deductions for traditional operating expenses. The only reason the prices have dropped is to try to compete with the reemerging black market, the medical people that have been forced to close. The legislature gave the date of July 2016 for the unlicensed shops to close, but since then the city of Seattle, King County, and a week ago, even the liquor and marijuana control board have been closing places prematurely, sending letters of pending civil, or even criminal charges. Crazy, but with a phone call, most patients can still find an ounce for \$150., or a gram of Full Extract Cannabis Oil for \$20. This is illegal, so considered black market. How is this legalization? Do you think those that have been helping patients for years should stop now because the state didn't choose them or even give them a chance to begin with?"

- Washington State Cannabis activist Allison Bigelow, January 23<sup>rd</sup>, 2015, personal communication



When marijuana is available, it's expensive. At Uncle Ike's in Seattle, prices range from \$21 to \$28 a gram, including all taxes. Cannabis City, another Seattle store, advertises prices ranging from \$20 to \$24 per gram after taxes. Ocean Greens has a few strains that are much cheaper, going for about \$11 per gram after taxes, but its top price is higher, about \$30 after taxes. By comparison, Davis sells his very best cannabis for about \$15 a gram after the standard sales tax, which is the only levy that applies to medical marijuana. Davis says black-market prices in Seattle range from \$10 to \$15 a gram. One more comparison: After-tax prices for recreational marijuana in Denver range from \$12 to \$20 a gram, and those prices are expected to fall dramatically as newly licensed growers start harvesting early next year.

When I interviewed Alison Holcomb, the Seattle lawyer who spearheaded the I-502 campaign, back in January, she figured the prices charged by state-licensed stores in Washington "will be just about the same as the black market," although "they might be a little bit higher than the black market in the beginning." That prediction proved to be rather optimistic. By June it was clear that legal prices would be much higher than black-market prices, which will remain true for the near future at least. Although pot prices should drop as more growers are licensed and begin harvesting, Washington's hefty taxes, which make marijuana cost about 60 percent more than it otherwise would, will continue to give black-market dealers an advantage.

Marijuana Legalization Lessons From Washington's Shaky Start, Jacob Sullum, OCT 30, 2014

<http://www.forbes.com/forbes/welcome/#293221cf1bac3fc589bb1bac>



## Colorado/Washington State comparisons

By contrast, Colorado, whose voters also legalized recreational marijuana, understands the importance of keeping its medical cannabis program distinct, under the authority of the Department of Public Health. Because of this, patients have retained their privacy, are able to ask questions about their medicine that allows for informed medical decisions, and can obtain cannabis at more affordable prices than from the recreational market.

### **Warning from Washington: Alcoholic Beverage Control Will Ruin Medical Marijuana in California**

April 21, 2014 | Kari Boiter

Despite the ambivalent and indifference of prominent marijuana reform advocates when it comes to ending pot prohibition for all adults, statistics show that young adults are far more likely than the general public to use marijuana. According to the National Survey on Drug Use and Health, in 2010—before marijuana was legalized by any state—21.5 percent of American adults between the ages of 18 to 25 ignored legal prohibitions and used marijuana at least once in the past month. For adults 26 and older, the percentage was only 4.8 percent.

Young Adults Left Behind by Marijuana Legalization in Colorado, Washington, Steven Nelson Jan. 15, 2013

<http://www.usnews.com/news/articles/2013/01/15/young-adults-left-behind-by-marijuana-legalization-in-colorado-washington?page=2>



## **Washington and Colorado Pot Legalization – Main Differences**

### **1. Home Growing**

Home growing of cannabis has been legalized in Colorado, but it still remains illegal in Washington. Regulators in Washington believe that home grows will increase the size of the black market, while Colorado lawmakers believed just the opposite. Colorado patients can grow up to 6 plants per person or 12 per household.

### **2. Local Restrictions**

Colorado law allows local municipalities (such as Lakewood and Colorado Springs) to opt out of retail marijuana sales in their towns. This means that it is still illegal for shops to sell weed to customers without medical cards in many Colorado jurisdictions. Washington, on the other hand, does not allow for local municipalities to ban legal sales.

### **3. Vertical Integration**

Colorado initially set up its medical marijuana industry so that cannabis business must produce at least 70% of the weed they grow. This created an interesting dynamic for pot entrepreneurs, who were required to handle both production and distribution of their product. Until October 1, 2014, this rule also applied to retail cannabis businesses in the state. This differs from the Washington market, which keeps distinct separation between producers, manufacturers, and retailers.

### **4. Medical Industries**

In Colorado, it was possible for medical marijuana companies (some of which have been around for nearly a decade) to convert into the recreational market. This meant that the already established and robust industry could transition into the new retail market, and is what many credit as the main reason for Colorado's amazingly smooth transition into retail cannabis sales. Washington, on the other hand, did not allow for this transition for medical businesses. The medical industry still remains vastly unregulated in Washington, and it is currently unknown what will happen to many of these businesses. It is certain, however, that Washington has seen severe hiccups in the transition into the retail market. The few shops that were able to open thus far have been struggling to keep up with supply, which has forced pricing through the roof. In time, the supply issue should begin to resolve, but it will be after much tension and some significant struggles between producers and retailers.

### **5. Security**

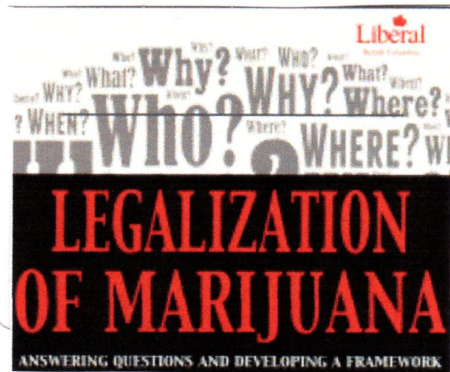
Colorado retail shops are currently allowed by law to have armed security guards on the premises if desired. Nearly all retail shops hire armed security due to the primarily cash-only nature of the industry, which lead a host of break-ins and robberies over the years in the medical marijuana industry. Washington, on the other hand, does not allow for armed security guards in dispensaries.

**LeafBuyer 10-04-14**

<http://cannabisconsumerresearch.com/big-differences-in-pot-legalization-in-wa-co/>



## 15) The good and bad parts of the Liberal 2013 legalization plan



The policy paper is flawed in regard to its view that cannabis – a soft drug – should have the same legal age limit access as hard drugs such as alcohol, and that it should be sold in the same place as hard drugs like alcohol. But it was right to defend dispensaries and home growing, to denounce the international drug control treaties as a non-issue and to encourage clemency.

### 1. What will the age and possession limits be?

The policy paper recommends making the age limits for recreational cannabis the same as alcohol consumption, so Canadians would be able to purchase pot legally once they turn 18 or 19, depending on which province they live in. Canadians would be allowed to possess up to four ounces of cannabis, which is four times the limit in [Colorado](#), [Oregon](#), [Washington](#). That difference was part of the plan. Smaller limits create more work for law enforcers. And since plants can yield more than an ounce, Canadians who home grow might find themselves being charged simply because their harvest was better than expected.

### 2. Can we grow pot at home?

Yes, you read that correctly. Canadians would be allowed to grow their own cannabis at home if Trudeau adopts the policy drafted in 2013. Home growing, the policy makers wrote, would likely prevent a black market from developing by giving consumers a legal alternative to retail cannabis. This would also be part of their strategy to combat the black market by keeping prices low and quality high so that there's no incentive for people to buy outside of the legal framework.

### 3. Where will weed be sold?

This has become a [hot debate](#) in Canada. Many politicians want [provincially run liquor stores](#) to handle the marijuana market, but activists argue that independent



retailers should handle regulated sales. The 2013 policy offered a compromise: liquor stores would share the market with specialty private stores. But gas stations and convenience stores would be out of luck: the policymakers didn't think those locations could keep cannabis away from minors.

#### **4. How will we deal with international prohibition treaties?**

Early in January 2015, a leaked memo to Prime Minister Trudeau sparked fears that [Canada's commitments to three United Nations drug conventions](#) would become roadblocks on the path to legalization. But the policy analysts in 2013 had anticipated that problem and have offered solutions. First, Canada is a sovereign nation, which means its elected officials are ultimately responsible for making or revising federal law. Legalization would be a major change, but other countries have liberalized their cannabis laws without repercussions from the U.N. Second, Canada is not bound to uphold the treaties by international law. According to the policy paper: "The conventions impose moral obligations on states, not legal ones. There are no penalties or sanctions for violating the conventions other than a public rebuke by some of the signatories." Third, if the treaties do become major obstacles, the government could withdraw from them: "Canada has rights to withdraw from these UN conventions, as granted in the articles of each convention - exercisable by written notification to the UN Secretary-General. Withdrawal would take effect one year after the date notification was received." Lastly, the policy makers say that Canada not only can but should take a stance against the conventions (as they currently stand): "Canada should lead a movement to amend out-of-date international conventions to reflect changes in medical evidence and international consumption rates. They have been used as an excuse for inaction and regressive thinking for too long."

#### **5. Will people convicted of cannabis offenses get a fresh start?**

The paper recommended offering clemency to prisoners, and pardoning and expunging the records of all Canadians found guilty of minor cannabis offenses. That recommendation was [missing](#) from the legalization initiatives in Colorado, Washington state, Oregon, and Alaska, where many residents are still haunted with criminal records.

Canada Doesn't Need A Plan For Legalization – The Governing Party Already Has One. January 19, 2016, James McClure

<https://www.civilized.life/heres-what-legalization-could-look-like-in-canada-1561530245.html>



## E) The ideal re-legalization announcement press release:

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Attention journalists. Today we announce our framework for cannabis re-legalization. We realize that the provincial governments will be writing and/or implementing many of the laws surrounding re-legalization, but we thought we of the federal government should distil the wisdom we gained through consultation with all elements of the Canadian public, to provide a Canadian vision of legalization the Provinces could follow.

The guiding principle of this vision is that harmless people should not be harmed – harmed by cannabis abuse or by irresponsible users or by police and the justice system – harmless people should not be harmed and should no longer be harmed. Vulnerable people – the young, the poor and the sick – should especially be protected from harm. We have a duty to recognize that cannabis is a drug that can be abused, and serious harm can result from this abuse, but we also have a duty to recognize that black market harms and discrimination and the oppression of harmless groups by the government – punishment for what can be accurately described as having an intelligent preference for a cheap, relatively safe and effective stimulant, relaxant, euphoric and performance enhancing herb - can lead to even more serious harms than cannabis abuse leads to.

There are two very relevant facts that we all must consider when relegalizing cannabis. First and foremost, there is no evidence of any



problems – mental health, I.Q., cancer, violence, criminality, birth defect-related or any other problem – that have arisen in the general population with a rate that matches – or even comes close to matching – the 5 fold increase in cannabis use in all Western societies between 1950 and today. Simply put, cannabis use is not causing ANY major problems in the health care system, even with the minimal education on harm reduction techniques currently provided by the education system.

Second, The harms that come with cannabis abuse can be dealt with through education. The far more serious harms that come with the black market and from governmental oppression can be dealt with by including all growers, all dealers and all users into the re-legal market: The “no grower, dealer or user left behind” policy.

There are three major advantages that would aid the human race in it’s quest to become more sustainable that come with adopting the inclusive cannabis re-legalization model: The first advantage is that all the red tape that is currently wrapped around the growing of industrial hemp can be removed, and it’s true environmental and economic advantages can be realized. Currently, paper, fiber, fuel, food and medicine applications of industrial hemp are left unrealized because cannabis prohibition creates additional expenses and obstacles to it being competitive. Given the environmental problems the world faces, we need all the help we can get, and hemp can help in many different ways.

The second major advantage from adopting the inclusive cannabis re-legalization model is the benefit to our community from taking the medicine economy out of the exclusive control of big chemical companies and sharing it with the farmers and the gardeners. The money made from producing medicine is more likely to stay in the community if that money is made by the community – the chemical companies tend to spend the money on war and disease and destruction.

The third major advantage from adopting the inclusive cannabis relegalization model is that it will do wonders for human autonomy. It will help teach people to be self-sufficient in producing their own medicine and food and raw materials, for teaching people to stop harming harmless people and tolerate differences, for increasing the level of dignity of all humans to make their own life choices, their own



medicinal and vocational choices, and to stop scapegoating other harmless people in the future.

Guided by these principles and facts, the following vision of Canadian cannabis relegalization emerges:

As per the 2003 Canadian Senate Report on legalizing cannabis, there should be a 16 year old age limit on cannabis purchases. Those who are 15 years and younger may legally possess and use cannabis with parental and healthcare practitioner consent. Considering how many teen cannabis users there are, the Canadian government takes protecting all these young users from black-market and justice-system related harms very seriously. Comprehensive educational programs will be put in place – paid for with some of the new cannabis tax revenue – to prevent novice users from misusing cannabis.

Personal cultivation will be allowed at a plant number rate set by the provinces – the number of plants should be less than that of a commercial venture but enough to allow breeding for desired characteristics and production that will provide enough medicine for the entire household. For Canadians living with disabilities or on income assistance, medicinal cannabis will be covered under the healthcare program, along with the rest of the medicinal herbs.

Driving while impaired on cannabis will remain illegal. Cannabis-related impairment will be measured in the same manner as impairment from fatigue, prescription drugs, caffeine, illness, old age or mental or emotional instability – through walking a straight line, standing on one foot, counting backwards from 100 and other such tests.

There will be quality control in place. All commercial growers will have to be certified organic, and publicly post their metals, microbes and contaminants counts on their websites. No irradiation or GMO experimenting will be allowed. All large-scale growers will also have to provide cannabinoid and terpene profiles.

Cannabis will not be sold in drug stores, liquor stores or gas stations along side hard drugs such as synthetics, alcohol and tobacco. Cannabis will be sold by experienced specialists in specialty shops along side coffee, tea, chocolate and medicinal and sacred herbs. When you sell soft drugs – drugs with acceptable risks for most users to take – in one area and hard drugs in a different area while at the same time instructing



society as to which is which, the result is you have less people crossing over from the soft to the hard.

All criminals currently serving time for cannabis-only offences will immediately be set free and everyone's criminal records for cannabis-only offences will be erased. Our justice system will take this opportunity to review the wisdom of forcing non-violent drug offenders to face jail time when there are so many other justice options available, and perhaps one day review the wisdom of jailing any non-violent offenders. Police forces will be freed up to go after predatory criminals and corporate polluters – especially the narcotics squad, who have gotten used to going after powerful people and hunting dangerous chemicals.

Taxes will be collected on all commercial sales, in a similar manner to alcohol. Medicine prescribed by a practitioner will not be taxed. There will be no unnecessary barriers to becoming a commercial cannabis grower or cannabis retailer – no more burdensome regulations than for organic, fair-trade coffee bean production and sale (aside from the 16 year old age limit).

20% of all tax revenue will go towards building the best cannabis consumer education program in the world. All the latest information on beneficial use and harm reduction will be made available to all citizens using all media.

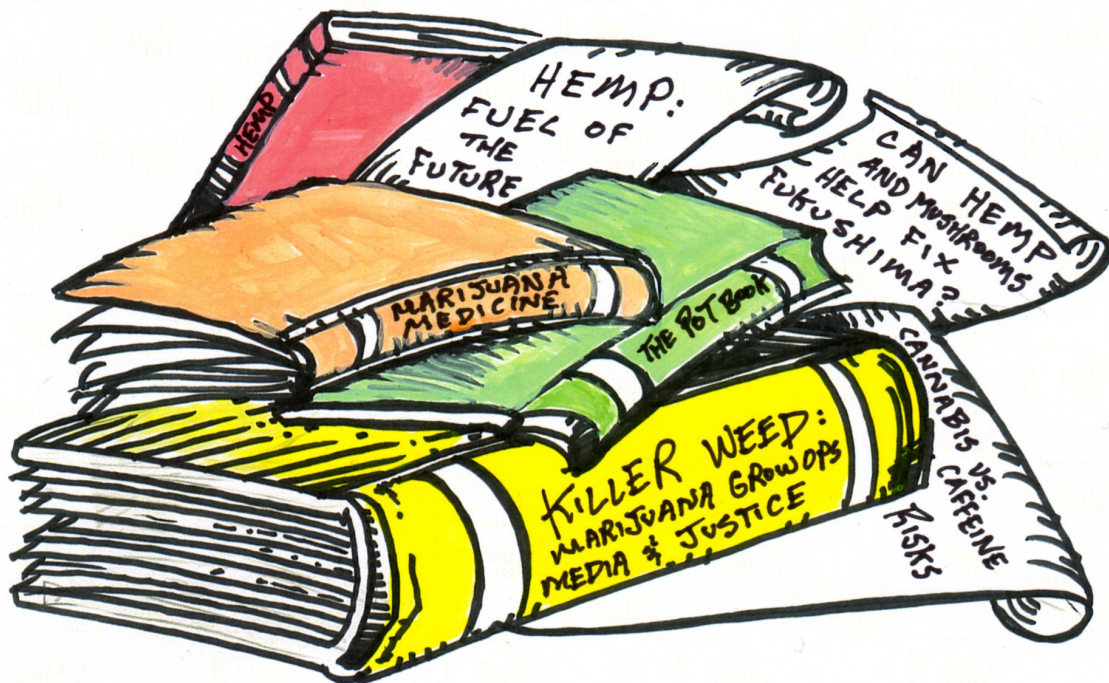
Canada will pull out of the International Drug Control Treaties, choosing instead to remain in all the International Human Rights Treaties. Canada will lead the way in treating people as dignified human beings, regardless of people's tastes and pursuits – regardless of their medicinal or recreational or health or lifestyle or vocational choices – so long as they do not harm others.

There is a legend of a "tree of life" in many cultures – a tree that's leaves are for the "healing of nations". American Indigenous people speak of a "sacred", "healing herb" that helps "people prosper". It's 2016 – we have reason to believe that this tree of life – this sacred healing herb - is cannabis. It's about time we brought it back into our farms and our gardens.

Are there any questions?



## F) Relevant documents provided to the Justice Minister, Jody Wilson-Raybould:



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Does Cannabis Inherently Harm Young People's Developing Minds?  
David Malmo-Levine, 2015

Killer Weed – Marijuana Grow Ops, Media, and Justice, Susan C. Boyd and Connie I. Carter, University of Toronto Press, 2014, p. 35

The Pot Book – A Complete Guide to Cannabis – It's Role in Medicine, Politics, Science, and Culture, Edited by Julie Holland, M.D., Park St. Press, 2010

Marijuana Medicine, Christian Ratsch, Healing Arts Press, 2001

A Brief History of the Use of Cannabis as an Anxiolytic, Hypnotic, Nervine, Relaxant, Sedative and Soporific, David Malmo-Levine and Rob Callaway, M.A., 2012

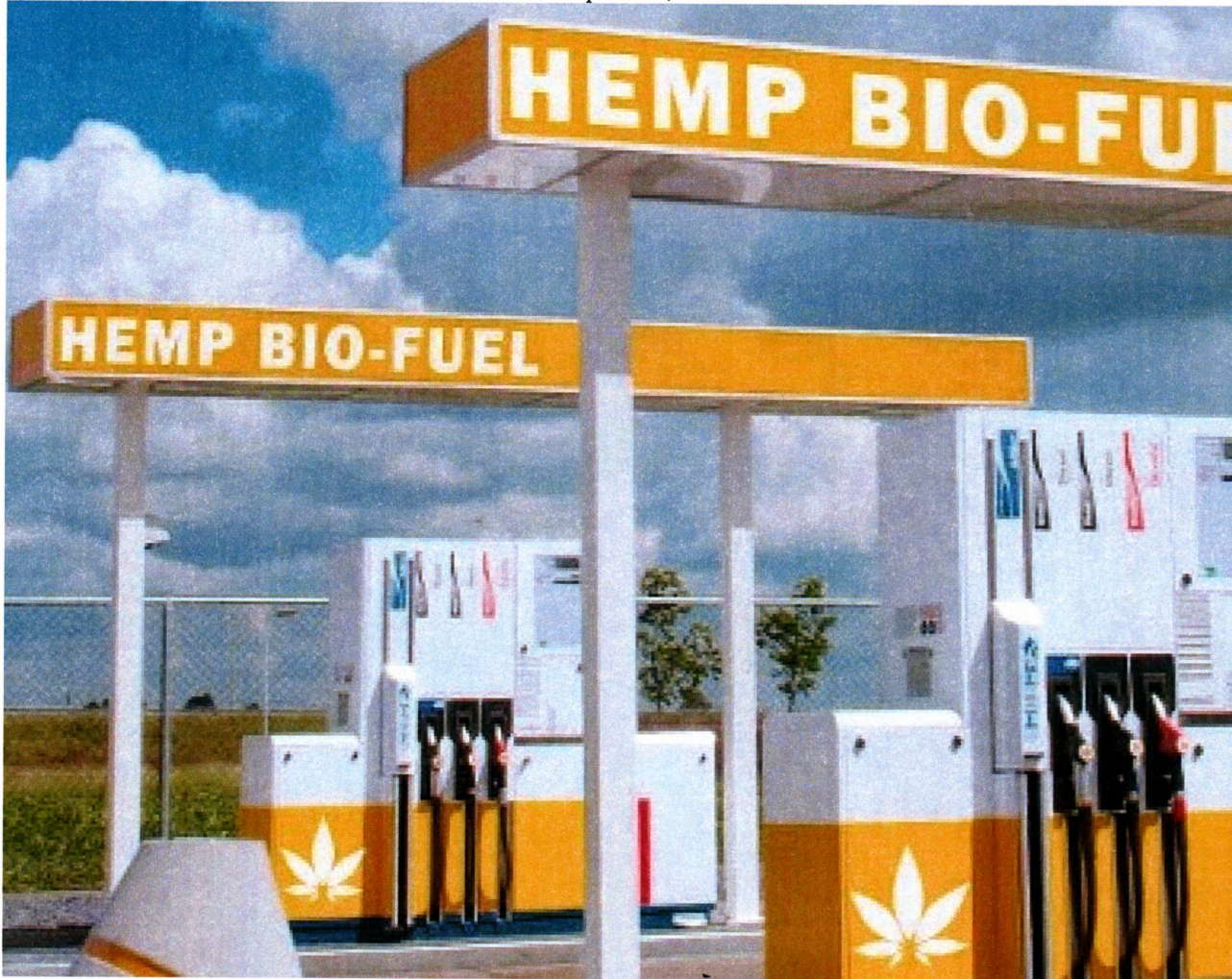
A Brief History of the Use of Cannabis as an Antidepressant and Stimulant, David Malmo-Levine and Rob Callaway, M.A., 2012

Cannabis In Canada – The Illustrated History, Dana Larsen, 2015



# Can Hemp, Marijuana and Mushrooms Fix Fukushima? Part 5: The Solution *(excerpt)*

By David Malmo-Levine, Cannabis Culture on April 11, 2014



CANNABIS CULTURE – Hemp, cannabis and mushrooms can be used to clean up and protect us from radioactive pollution and nuclear disasters.

Read [“Part 1: What Happened?”](#).

Read [“Part 2: Global Consequences”](#).

Read [“Part 3: The Dangers of Nuclear Power”](#).

Read [“Part 4: Other Sources of Dangerous Radiation”](#).

Part 5 of this multi-article work looks at the surprising solutions to the growing nuclear threat to humankind.

## **Nuclear Power’s Hidden Costs**

Estimates of the cost of cleaning up the Chernobyl nuclear disaster are in the \$250 to \$300 billion range. ([239](#)) Imagine how many renewable power plants that would



would buy. Hundreds. Maybe thousands. When evaluating the true cost effectiveness of nuclear power, one must be aware of the hidden costs: research and development, direct subsidies, decommissioning costs and the potential clean-up costs.

Each Japanese nuclear power plant costs the Japanese people about \$238 million CAN per plant per year in R&D (about \$10.7 billion CAN per plant over 45 years for a grand total of about \$235 billion in R&D for all 22 of Japan's nuclear reactors over 45 years), (240) about \$26 million CAN per plant per year in direct subsidies (about \$1.17 billion total per plant over 45 years, for a grand total of \$25.7 billion for all 22 reactors over 45 years), (241) \$400 million to \$1 billion US per plant decommissioning cost (for a grand total of \$8.8 billion to \$22 billion to decommission all 22 reactors), (242) and potential damage cleanup costs of \$25 to \$150 billion (or more) CAN per disaster (243) – the vast majority of such cost taken on by taxpayers.

When all costs are factored in, the total subsidies over the course of 45 years for all 22 reactors is a staggering amount – anywhere from \$294.5 billion (235 + 25.7 + 8.8 + 25 billion) to \$3.58 trillion or more (235 + 25.7 + 22 + 3,300 billion) for all of Japan's nuclear power plants together, depending on how many more of them get hit with disasters, and how big the disasters are. To put this in perspective, the high-estimate cost of cleaning up 5 Fukushima-like disasters is about the same cost to Germany of transforming it's entire energy grid to renewable energy – around \$750 billion. (244) These numbers are on par with the massive subsidies given to fossil fuels, directly and in the costs of oil wars, oil spill clean-up and climate change. These costs are also said to be in the 100's of billions, if not trillions. (245)

Unlike nuclear power and fossil fuels, the “clean-up” and “decommissioning” costs of renewable energy is negligible. Nobody dies prematurely of some horrible renewable-energy-related cancer. The soil surrounding renewable energy plants can be used to grow food. Both nuclear AND fossil fuel subsidies should be transformed into renewable energy subsidies. Now ... what sort of renewable energy power plants could Japan get for \$294.5 billion? Or \$3.58 trillion for that matter?

### **Shopping Around For Different Energy Systems**

Small solar, wind, micro-hydro or geothermal energy systems designed for individual homes can run between about \$10 and \$50 thousand each. That, combined with energy conservation practices, can supply energy to between 6 to 30 million households for \$300 billion, or 60 to 300 million households for \$3 trillion. Japan's entire population is only 127 million. The solar systems, for example, are expected to pay for themselves in 3 to 14 years, and last 25 to 30 years. (246) While more expensive over-all than mega-projects, the mini-projects have the added bonus of being income-generators for the millions of owners. On the other end of the size scale, the world's largest solar power project – the Agua Caliente Solar Project – will take about 4 years to complete (it will be completed some time in 2014), costs 1.8 billion dollars to make and will supply a



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maximum capacity of 397 megawatts (397 million watts) at one time – or over 626 gigawatts (626 billion watts) per year. (247) The average US home uses about 11 thousand kilowatts per year, (248) Which means, for 1.8 billion, one major solar project can supply power to nearly 57 million homes. 300 billion can provide for 166 major solar projects – power to 9.5 billion homes. At this point it should be pointed out that there aren't even 9.5 billion people – let alone 9.5 billion homes – on planet earth.

Just slightly less amazing is wind power. The largest wind farm in the world is the Alta Wind Energy Center. It's forecasted annual generation is between 306 and 552 gigawatts, (249) and it's price tag is about 1.85 billion dollars, and it's taken about three years to build – construction began in 2010. (250)

Less massive but still much cleaner and safer than nuclear energy and fossil fuels is geothermal. The largest geothermal power plant in the world is The Geysers. Built in 1960, it served 1.8 million people with power back in 1987, and currently serves 1.1 million people with power. (251) Some geothermal operations, such as the Svartsengi Power Station in Iceland, also provides a massive heated pool – the “Blue Lagoon” – to bathe and swim in. (252)

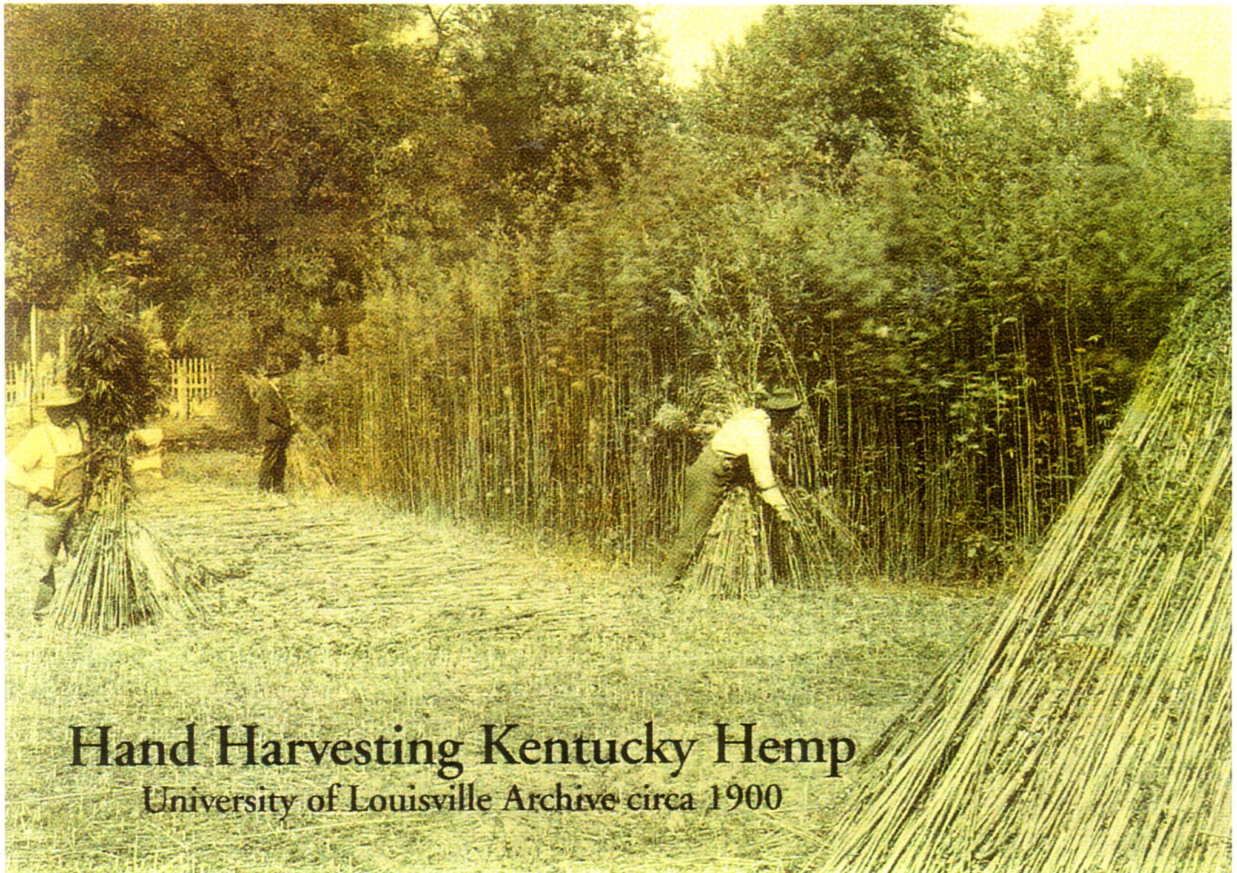
The world's largest wave farm is being built off the coast of Scotland, at a cost of £4 million (\$6.34 million CDN). (253) Once completed, it should be big enough to power 30,000 homes each year. (254) The advantage to wave power is that it's located near most of the people on earth (who live near the coast) and it's constant – the sun doesn't always shine, the wind doesn't always blow, but waves hit the shore 24/7/365, thanks to the moon. \$300 billion buys 47,318 massive wave farms – enough to power nearly 1.42 billion homes. \$3 trillion buys over 473 thousand wave farms – enough to power over 14 billion homes.

### **Tank Goodness For Hemp Ethanol**

Solar, wind, geothermal and wave are fine for feeding energy grids, but what should we be running our cars on? And what else besides wave energy can provide energy 24/7/365 regardless of the weather? The cheapest source of energy to replace oil and gas with – one that only requires a \$270 to \$700 dollar conversion kit to switch any gas powered car over (255) – is the switch to cellulosic ethanol. For just \$200 million, a facility can be made that produces 30 million gallons per year of cellulosic ethanol. (256) The US currently consumes about 134 billion gallons of gas per year. (257) For \$300 billion, one could afford to make 1500 cellulosic ethanol plants, producing a grand total of 45 billion gallons of ethanol. For \$3 trillion, one could afford to make 15,000 plants producing 450 billion gallons.

As luck would have it, the best source of cellulose from an energy crop is ... industrial hemp. Hemp: 1) doesn't need as much fertilizer or water as corn, switchgrass or other energy crops 2) doesn't require the expensive drying required of corn and sugar cane 3) can be grown where other energy crops can't







4) is more resistant to “adverse fall weather” than other crops and 5) has long been known to be the lowest-moisture highest-cellulose crop – hemp stalks being “over 75% cellulose” according to a 1929 paper from Schafer and Simmonds, with more conservative estimates indicating 53-74% of the bark being cellulose. According to the *Stanford Research Institute* and the *Hawaii Natural Energy Institute*, it is woody, low-moisture herbaceous plants that make the best biomass for liquid fuels. Hemp is both a low moisture herbaceous and a woody plant. (258)

Furthermore, hemp ethanol would eliminate 1) oil wars (hemp can grow in sand, thus in nearly every country on earth), (259) 2) oil spills (a hemp ethanol spill would just evaporate), (260) and 3) climate destabilization (hemp acts as a carbon sink – reversing the greenhouse effect) (261) – this would solve three of the biggest problems we face as a species.

### **Imagine The Savings**

Think of what we could do with the money we save! Just add up the cost of the two biggest current oil wars (Afghanistan and Iraq): \$1.5 trillion, (262) the cost of cleaning up a couple of big oil spills: \$80 billion, (263) and the costs of dealing with climate destabilization – an average of \$20 billion or so per year for each year between 2020 and 2050 – or roughly \$600 billion total for Canada. (264) The US being 10 times bigger, one could expect the costs to be ten times greater, or \$6 trillion dollars over a 30-year period.

So we take that \$8-or-so trillion of future money wasted on the fossil fuel industries and add it to the \$3-or-so trillion from the over-all nuclear power-related costs including the cost of cleaning up a possible future two dozen “level 7” nuclear power plant disasters in earthquake-prone Japan, and instead of doing all that we instead spend the \$11 trillion on solar, wind, geothermal, wave and hemp ethanol, we’d be doing alright as a species.

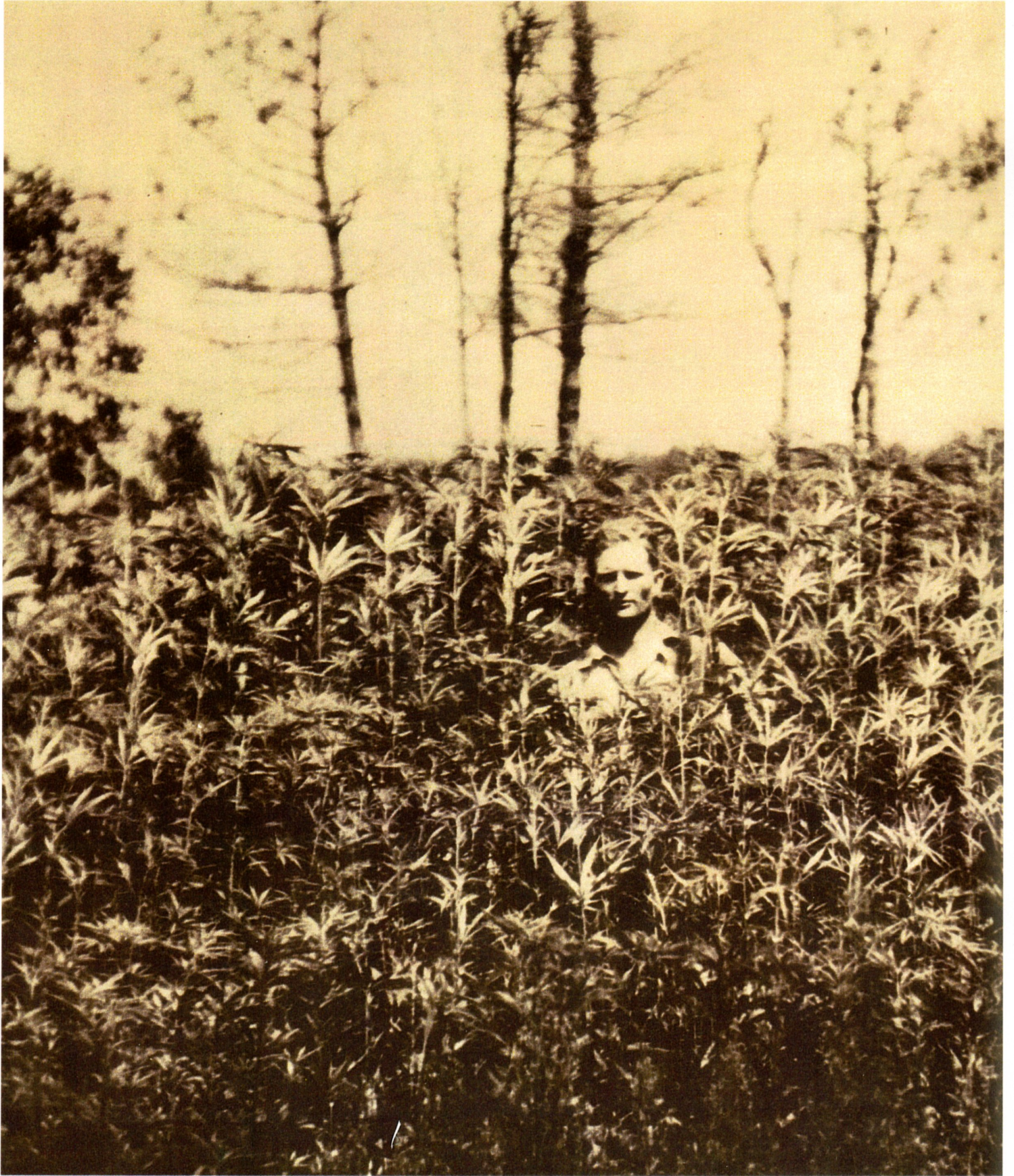
I daresay we would solve our energy problem 3 times over. Those are far from hard numbers, but I think I made my point. But that’s just the energy problem. We still have all this radiation pollution lying around everywhere. What are we to do about that? Hemp and mushrooms, that’s what!

### **Cleaning Up The Soil Part 1 – Hemp**

According to experts in the field, hemp is “one of the best” crops for “phytoremediation” – using plants to clean up toxic pollution in soil. (265) Hemp was one of the crops used to help clean up Chernobyl. (266) Research should be focused on finding a way to grow a hemp crop to create ethanol and clean the soil at the same time. One day, the radioactive metals could be separated from the fuel, and farmers will clean the soil while making a profit with free-from-radiation fuel crops. This is already being discussed as a possibility, but so far the author has not seen the technology manifest into reality. (267) Sunflowers,



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field mustard, amaranthus and cockscomb are other plants good for phytoremediation. (268)

<http://www.cannabisculture.com/content/2014/04/11/can-hemp-marijuana-and-mushrooms-fix-fukushima-part-5-solution>

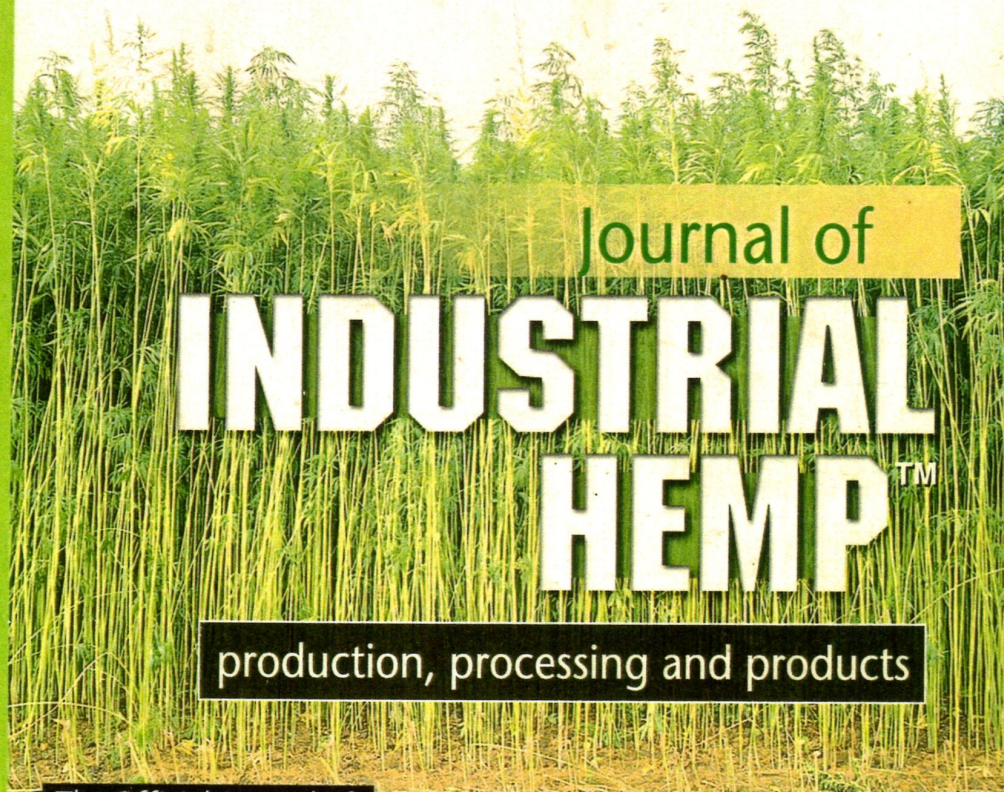




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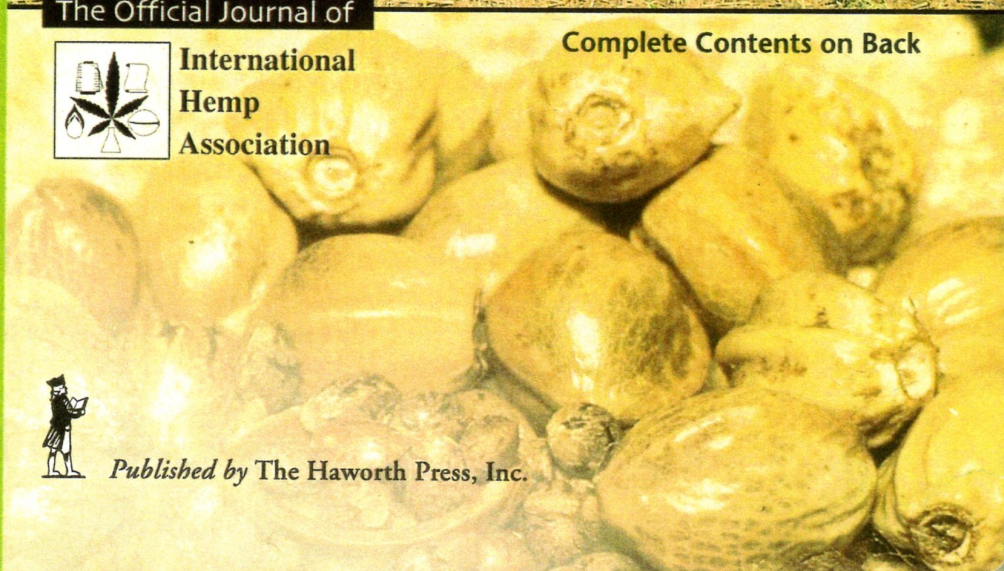
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## Could *Cannabis* Provide an Answer to Climate Change?

Marc R. Deeley

**ABSTRACT.** The largely technocratic debate over the way humanity should respond to the now very real problem of global climate change has reached a critical point. Almost every legislative and technological option has been explored—at least theoretically—without any real progress being made in terms of actually addressing the situation and we are now at a stage where we do not have time to discuss the merits of “wind power over nuclear power” or how we can “develop ways of freezing and storing” the anthropocentrically generated excess of greenhouse gases in the atmosphere—as president Bush recently suggested. This was the “debate” during the 1980’s—and unfortunately also the 90’s—when the representatives of world science on this issue, otherwise known as the Intergovernmental Panel on Climate Change (IPCC), were explaining to World leaders the (then) urgent requirement to take action. This article discusses the very real possibility that *Cannabis* could play a part in stabilizing a global environment. [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <getinfo@haworthpressinc.com> Website: <<http://www.HaworthPress.com>> © 2002 by The Haworth Press, Inc. All rights reserved.]

**KEYWORDS.** *Cannabis*, climate change, environment

As we can see there are very few—if any—places in the world where the effects of global climate change are not being felt to varying de-

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This article is a summary of the author’s thesis titled “*Cannabis: An environmentally and economically viable method for climate change mitigation*” University of Strathclyde, Glasgow, Scotland, 2000 (revised 2001).

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grees. The scientific consensus is that these “symptoms” (floods, droughts, storms, etc.) will persist, increase in their severity and actually perpetuate the problem of climate change by further contributing to its causes such as desertification. Like a cancer patient, the World will not recover without immediate and effective long term treatment which targets the cause(s) of ailment—fossil fuel consumption and unsustainable land use conversions being most responsible. IPCC projections of climate change within the context of an industrial and therefore fuel dependent World consider the best possible strategies to remedy the situation; these strategies explicitly link the areas of agriculture, land use and society’s demand for resources with the industrial utilisation of biomass. *“If the development of biomass energy can be carried out in ways that effectively address concerns about other environmental issues and competition with other land-uses, biomass could make major contributions in both the electricity and fuel markets, as well as offering prospects of increasing rural employment and income” (IPCC, 1996b, p. 15).*

Utilisation of biomass in both the energy and transport sectors holds several benefits not least because these can be used to offset or substitute directly for fossil fuels thereby reducing emissions of Greenhouse Gases (GHGs), particularly carbon dioxide (CO<sub>2</sub>), while simultaneously sequestering atmospheric CO<sub>2</sub> via photosynthesis by creating and enhancing terrestrial “carbon sinks” (IPCC, 1996b). Following the United States’ refusal to consider serious reductions in their emissions, “carbon sinks” are now a universally agreed method to achieve atmospheric carbon reductions as set out in the Kyoto Protocol. The IPCC (1996b) considers *fast-growing hardwoods* to be the best possible option. *Cannabis* is, therefore, perfectly placed to be utilised in this area given its chemical composition, which is comparable to that of a hardwood (van der Werf et al., 1999) and rapid growth cycle compared to other high cellulose content organisms.

Moreover, there exists at present much of the technology to translate this into a pragmatic climate change mitigation option with higher energy efficiency and lower unit capital costs than conventional methods of energy production (IPCC, 1996b). This is especially significant given that *“analysis of future global trends in greenhouse gas emissions has shown that reducing emissions from fossil fuels will have the greatest effect on atmospheric carbon concentrations between 1990 and 2100”* (Adger and Brown 1994, p. 229).

According to a paper published in *Biomass and Bioenergy*, “*Assessing the Ecological and Economic Sustainability of Energy Crops*” which considers the viability of nine possible biomass contenders<sup>1</sup> via



comprehensive life cycle assessments, Hanegraaf et al. (1998, p. 351) conclude that, "hemp comes out as one of the best options for energy cropping." I would be inclined to go further. An *ideal* approach to climate change mitigation would include the following objectives:

- Sequestration of atmospheric carbon dioxide and/or reduced fossil fuel consumption.
- Prevent the destruction of natural ecosystems (biodiversity).
- It would not burden developing countries with costly socio-economic regulations.
- It would not require significant changes to current land use (i.e., displacing people or activities).
- It would have a minimal environmental impact and/or address other environmental/pollution problems.
- It would also provide (socially equitable) economic incentives for *global* implementation.

(Adapted from UNFCCC, 1992 and IPCC 1990, 1996a, 1996b)

*Cannabis* cultivation has the potential to satisfy all of the above criteria. While farmers would find the cultivation of another annual crop easier than trying to integrate perennials, the adoption of *Cannabis* as a key rotation crop (irrespective of farm size) would also yield several direct benefits including the reduction of pesticides while increasing the yield of crops following from it in rotation (Roulac, 1997) thereby assisting the goal of achieving sustainable agricultural systems. It is also the case that years of mono-culture (and, relative to *Cannabis*, protein deficient)<sup>2</sup> cereal production will require *alternative and rotational* crops rather than for instance genetically modified crops to, "allow control of those weeds, pests and diseases that still cannot be controlled in the cereal crops themselves, and perhaps more importantly [would] help restore organic matter to the soil following years of depletion by cereal crops" (Forbes and Watson, 1992, p. 257).

*Cannabis* cultivation could, therefore, be used to promote environmentally beneficial methods of agriculture (especially via rotation cultivation) which could actually *help secure a long-term strategy of land management, ensuring that food shortages do not occur*. This would be greatly enhanced by taking advantage of the multiplicity of possible uses *Cannabis* presents us with according to local economic, social and environmental needs. For example, depending on these local variables *Cannabis* could be used for *either* food (see footnote 2 above), fibre or



as a bioremediation crop to restore unproductive land (especially that degraded by the overuse of chemicals high in heavy metals) back to agricultural productivity while at the same time providing industrial quantities of cellulose for fuel and/or energy production. According to Ranalli (1999, p. 69) *Cannabis* is "able to extract heavy metals from the soil in amounts higher than many other agricultural crops" and it is the case that agricultural land shortages are arguably far more likely to occur in areas where there is a deficit of suitable land due to *intensive* agricultural practices combined with inadequate land management (IPCC, 1996b).

However, the greatest advantage for *Cannabis* cultivation as a method of climate change mitigation is in terms of logistics and the comparative ease with which this particular form of biomass could be integrated into the existing fossil fuel economy. With the ability to be grown at all but the very coldest latitudes, *Cannabis* could form the basis of an internationally distributed (yet locally determined) fuel industry. The chemical composition (high cellulose) and physiology of *Cannabis* make it an ideal feedstock for ethanol production in comparison to the starch based crops currently used in the US and South America (Lorenz and Morris, 1995). Ethanol is not only a complementary product to the oil economy (combining ethanol with gasoline increases quality of gasoline and produces significant environmental benefits) but can also be used as a direct replacement requiring only modest alterations to industrial operations.

The key determining variable is global land use and contrary to popular belief there is more than enough available cropland to satisfy the World's rapidly growing population. Taking into account the unsuitability of some soils and terrain, the FAO considers there to be 3000 Mha of potential cropland of which only about 50 percent is at present cultivated (around 1450 Mha)(IPCC, 1996b, p. 809). In light of this, many of the analyses (Hall et al., 1994 and IPCC, 1996b) that consider between 10 and 15 percent of total global cropland to be available for biomass production specifically for energy (and transport) applications represent conservative assumptions. When taken along with the potential use of *Cannabis* as a bioremediation crop for land suffering "light" to "moderate" degradation, (750 Mha and 910 Mha, respectively) much of which is caused by the over cropping of erodible soils, unsustainable land use conversions (i.e., forest to livestock) and over use of chemical inputs (IPCC, 1996b) the possibilities have even more practical relevance for future development, especially in the agricultural sectors of developing countries.



The World urgently needs a replacement for fossil fuels and while there are many overtly technological options the only realistic possibility rests in finding a comparatively similar substitution feedstock. Cellulose derived ethanol would appear to be an ideal industrial successor to fossil fuels with *Cannabis* appearing to be the most environmentally sound and economically viable feedstock for ethanol production. In addition we should consider all the products ranging from plastics to building composites currently dependent on fossil fuels which the utilisation of highly versatile cellulose such as *Cannabis* could replace. In effect we would be replacing an unsustainable industrial feedstock for one which is not only sustainable but addresses some very serious environmental and socio-economic issues. There is certainly enough supportive evidence to get such projects underway—the rest is politics.

## NOTES

1. These include Rape seed, Sugar beet, Winter wheat, Silage maize, Hemp, Miscanthus, Poplar, Willow and Grass fallow.

2. *Cannabis* seed (often referred to as a nut or fruit) is a unique and highly nutritious food source which according to Pate (1999) contains 20-25 percent protein, 20-30 percent carbohydrates, 10-15 percent insoluble fibre and 25-30 percent oil in addition to a variety of minerals including phosphorus, magnesium, sulphur, calcium with modest amounts of zinc.

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- Van der Werf Hayo M.G., Mathijssen, Els W.J.M. and Haverkort, Anton J., 1999. Crop Physiology of *Cannabis sativa* L.: A Simulation Study of Potential Yield of Hemp in Northwest Europe. Pages 85-131 in: Ranalli P., (Ed.) *Advances in Hemp Research*. Haworth Press, Binghamton, NY, USA.

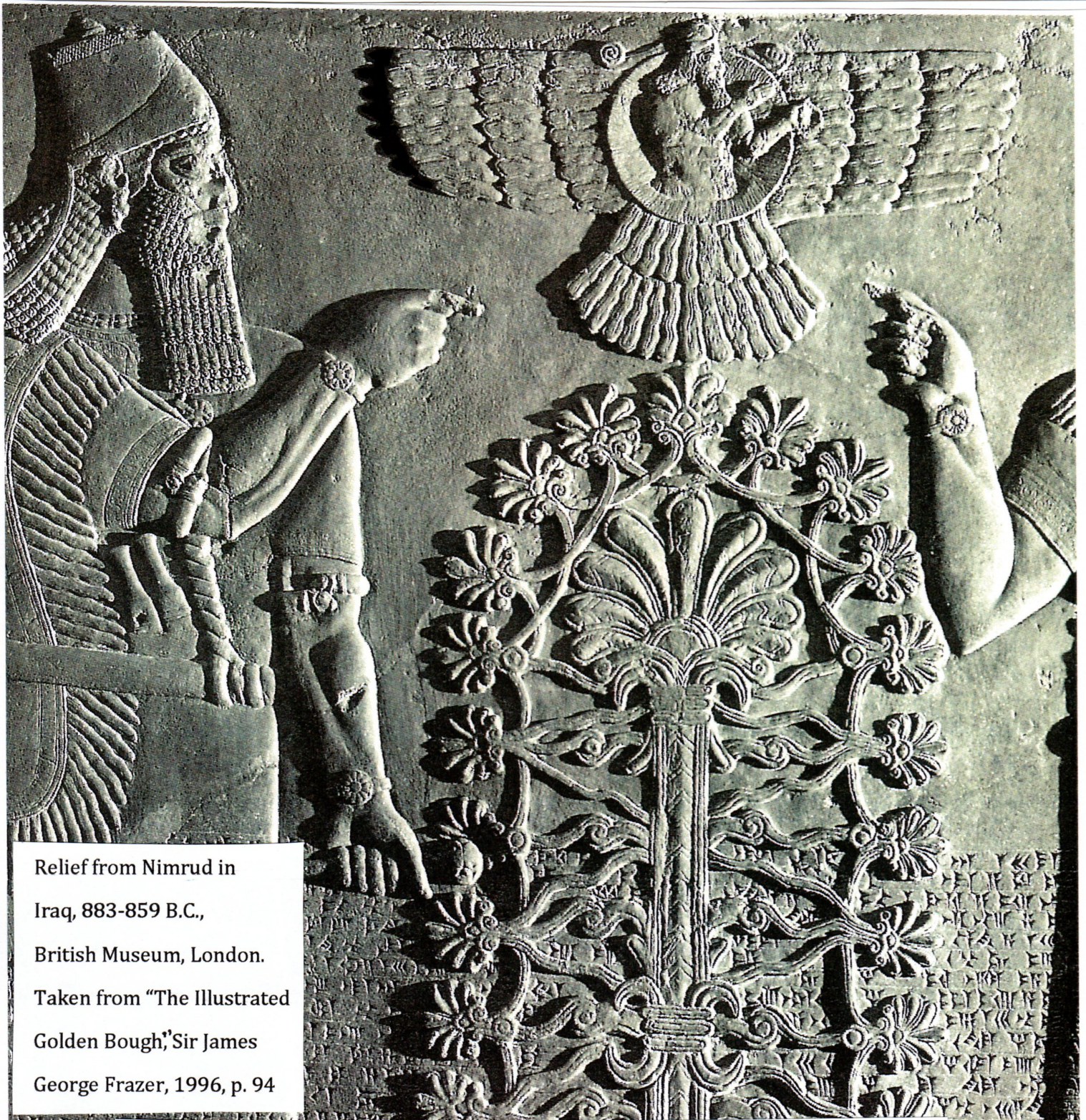




**"Moreover the riches of the earth are for all ..."**  
Ecclesiastes 5:9, the Peshitta (Aramaic Bible)

The detail on the headress of Sumerian Queen Shub-ad, circa 2685 B.C., found in the Woolley Expedition. The cannabis-like leaves are identified as cannabis by W.R. Emboden Jr. in "Art and Artifact as Ethnobotanical Tools in the Ancient Near East" in a book edited by Schultes & Reis - "Ethnobotany - Evolution of a Discipline":  
**"Others (Lloyd 1961, p. 302) have suggested willow (Salix), but the venation is more like that of Cannabis, as is the leaf morphology."**





Relief from Nimrud in  
Iraq, 883-859 B.C.,  
British Museum, London.  
Taken from "The Illustrated  
Golden Bough," Sir James  
George Frazer, 1996, p. 94

**"Engravings from the time of Essarhaddon's son Assurbanipal, who as noted is another ancient Assyrian king associated with cannabis, also depict the sacred tree shown in the basalt of his father, King Esarhaddon. In 1951, Professor Widengren postulated that every temple had a holy grove, or garden with a Tree of Life that was taken care of by the king, who functioned as a 'master-gardener'. By watering and caring for the Tree of Life, the king gained power over life."**



**So when the woman saw that the tree was good for food, and that it was a delight to the eyes, and that the tree was to be desired to make one wise, she took some of its fruit and ate: and she also gave some to her husband, and he ate. Then the eyes of both were opened ...**

- Genesis 3:6, The Holy Bible, Revised Standard Version, 1952,  
The World Publishing Company



**"The Creation Of Eve" - detail from the Tapestry from Gerona Cathedral, Spain, 12<sup>th</sup> Century, from Mythology, An Illustrated Encyclopedia, R. Cavendish, 1980, p. 157**







AMATI LVSIT. COMMENT.  
DE CANNABI SYLVESTRIS.

Græcè, κάνναβις ἄργεια.

Enarratio CLXII. CLXIII.

*Cannabis  
sativa.*

Dioscorides,  
"De Materia Medica",  
1558, from  
antiquecannabisbook.com



*Cannabis.*

**C**annabis sativa vulgaris est, excellens tamen apud Hollandos nascitur, ex eua linei panni Hollandiae dicti, quos Itali, de renzo appellant, fiunt. Huius porro semen comestum, hominibus genituram extinguit, gallinis verò auget, videmus enim gallinas rigida hieme hoc semine pastas, oua parere, id quod aliis semē non comedentibus, nō euenit: & vt tradit: Gale. lib. vij. de Facultat. simplic. medic. cannabis semen adeo factus discutit exiccatque, vt si argius edatur, genituram absumat. In fine

"That we may work in righteousness, and lay  
the Foundation of making the Earth a Common  
Treasury for All, both Rich and Poor"

- Gerrard Winstanley; The True Levellers Standard Advanced, April 20, 1649





etliche ganz weiß/in der gestalt/wie die Wynnfaugen.  
 Der Samen ist dem zamen Hanff aller ding ähn-  
 lich/wachset auff den alten Gräbern vnd Gemäwr/  
 hinder den Zäunen vnd vngewarten rauhen örtern.  
 Dife Hanff stincken vbler dann die zamen/ verge-  
 hen alle Jahr gegen dem Herbst.

\* Difer wilde Hanff ist Cannabis sylvestris  
 Tragi:Spuria Gerard. Cannabis sylv. Spuria altera  
 Lob Cannabina alba Tabern. Urtica aculeata fo-  
 lijs serratis. Ist zweyerley: der eine hat braune:  
 der andere weiße Blumen. \*

Von den Namen.

Der zame dünne Hanff/der sich nicht besamet/  
 Ist freylich das Weiblein/dann unsere Weib-  
 er nennen denselben Femel/quasi Femellam.  
 Den andern mit dem Samen nennet man Hanff/  
 wiewol Femel oder Cannabis sativa von andern  
 Masculakommen ist. Diosco. lib. iij. cap. clviij. nen-  
 net zamen Hanff Cannabion/ Asterion/ vnd dies  
 weil man Seil darauß macht/ auch Schenostro-  
 phon. Von Hanff lese Apul. cap. cv. Den wilden  
 Hanff aber/den er mit Stengel/Samen vnd Wur-  
 sel dem Ybisch vergleicht/nent Dioscorides Hi-  
 drastinam/ Terminalem/ Cannabim sylvestrem.  
 Difen Hanff haben wir nicht/ Dioscorides hab  
 dann den einen zamen darbey verstanden/ oder sey  
 dasselbig Capitel vberflüssig/wie ich acht. Dann er  
 setz vom wilden Hanff zum ersten/darnach vom za-  
 men/das doch sein gebrauch nicht ist. Jedoch so

sagt Plin. lib. xix. cap. ix. von dreien geschlechtern/den besten nennet er Mesam/ den andern  
 Milesiam/ den dritten Roseam/das redt er alles vom zamen Hanff/gedenckt keins wilden/  
 aufgenommen im zwentsigsten Buch cap. xxiiij. schreibet er/der Hanff sey erstmals im Ge-  
 wald erfunden/ mit seinen schwarzen rauhen blettern. Dife wort aber mögen wol von  
 von vnserm Hanff verstanden werden.

Zum andern meldet Diosco. die Wurzel/ Stengel vnd Samen/ seyen dem Ybisch  
 gleich/an diser red Diosco. muß ein mangel sein/vrsach/ es ist weder Stengel/Samen oder  
 Wurzel dem Ybisch gleich/jedoch wer dem ort wol auß Plinio also zu helfen/ das man in  
 Dioscoride also lese. Der Hanff ist/so er noch grün ist/dem Ybisch gleich/ in dem dann/  
 so bald man den frischen grünen Hanff stoffet/ vnd zerknitschet/ vnd darüber Wasser thut/  
 so er also vber nacht bleibt stehen/so gesticket/oder coaguliert sich das Wasser nicht anderst/  
 dann wie vber der Ybisch Wurzel/die dergleichen würckung thut. Der Arabs Serapio  
 cap. ccviij. sagt Canabs vnd Sechedenegi. Hie haben die Medici ein vnderscheid/vnd spe-  
 chen/ Sechedenegi sey Hanffsamem/ vnd Sechedenegi sey der Blutstein Hematites/ vnd  
 Secheteregi sey Zumusterze/Taubenkropff. Von Hanff/wie der gepflanz soll werden/  
 zeigt Plinius in obgemelten örtern/ vnd Palladius titulo quinto / des Hornungs oder  
 Februarij.

\* Vielleicht kompt das wörtlin Hanff von dem griechischen her. Dann die Grie-  
 chen nennen den Hanff κάναβις.

Hat etliche differentias, wie in Pinace C. Bauhini l. 8. f. 5. tit. Cannabis zusehen. \*

Von der Krafft vnd Wirkung.

Alle Hanff Kräuter seind kalter qualitet / werden mehr Sufferlich dann in Leib  
 gebraucht/ jedoch ist der Samen nun mehr auch in die Kuchen vnter die Legumina  
 gezehlt.

\* Gal. sagt l. 7. simpl. c. propr. Der Hanffsamem seye truckner Natur/Also das wann  
 man seiner zu vil in der Speise geneißt/ er den natürlichen samem außdörre vnd verzehre.

Der zame dünne  
 Hanff/der sich nit  
 besamet. ist Canna-  
 bis foemella Tragi.  
 Cannabis sterilis Do-  
 don. Camerar.  
 Cannabis sylv. cfr. is  
 Castor.  
 Cannabis erratica C.  
 Bauhini.  
 Cannabis erratica pa-  
 ludosa sylv. Lobel.  
 in adv.  
 Der ander Hanff so  
 Samen trägt. ist/  
 Cannabis major Tragi.  
 Cannabis sativa Fuchs.  
 Cord. C. Bauhin.  
 Cannabis foecuada  
 Dodon.  
 Cannabis Brunf. Matth.  
 Casalp. Lobel. Ta-  
 bern. Lonic. Ang.  
 Tur.  
 Cannabis mas alio-  
 rum.



In 1615, an Italian physician and demonologist, Giovanni De Ninault, listed hemp as the main ingredient in the ointments and unguents used by the "Devils followers."

- Cornelius Agrippa, *De Occulta Philosophia* (n.d.), vol 43; and Pierre d'Alban, *Heptameron seu Elementa Magica* (1567), p. 142, P. Kemp, *The Healing Ritual*, (London: Faber and Faber, 1935), pp. 57, 198, cited in Ernest Abel, *Marihuana; The First Twelve Thousand Years*





MCCLXXXIII.



*Cannabis sativa.* Common Hemp.





One of Queen Victoria's Physicians, Sir Russell Reynolds, wrote in the first issue of the *Lancet* that cannabis was "one of the most valuable medicines we possess."



# The World's Menace

Devoted to the Suppression of the "Drug Traffic."

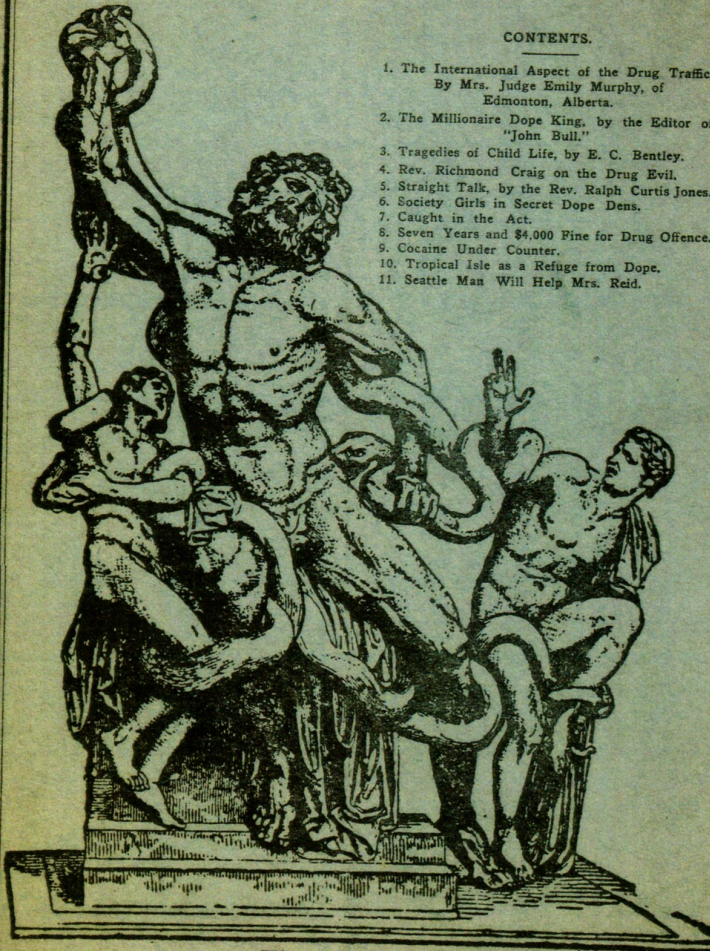
Vol. 1. No. 2

MAY 1923

Price 15 Cents

### CONTENTS.

1. The International Aspect of the Drug Traffic. By Mrs. Judge Emily Murphy, of Edmonton, Alberta.
2. The Millionaire Dope King, by the Editor of "John Bull."
3. Tragedies of Child Life, by E. C. Bentley.
4. Rev. Richmond Craig on the Drug Evil.
5. Straight Talk, by the Rev. Ralph Curtis Jones.
6. Society Girls in Secret Dope Dens.
7. Caught in the Act.
8. Seven Years and \$4,000 Fine for Drug Offence.
9. Cocaine Under Counter.
10. Tropical Isle as a Refuge from Dope.
11. Seattle Man Will Help Mrs. Reid.



The "Laocöon."

Image of "The World's Menace" - an anti-drug magazine published across from Victory Square (kitty corner to the famous "Pot Block" of today), Vancouver, BC, 1923.

"There are plenty of folk who pretend to themselves that they yield to narcotic enchantment in a desire for research and not for sensual gratification, and that they inure their friends to its effects for the same reason, but, however kindly in judgment, one finds these stories hard to credit, and even if credited, only demonstrates these persons as rascals-manifest."

- "Marijuana: A New Menace", in The Black Candle by Emily Murphy, 1922, p. 336





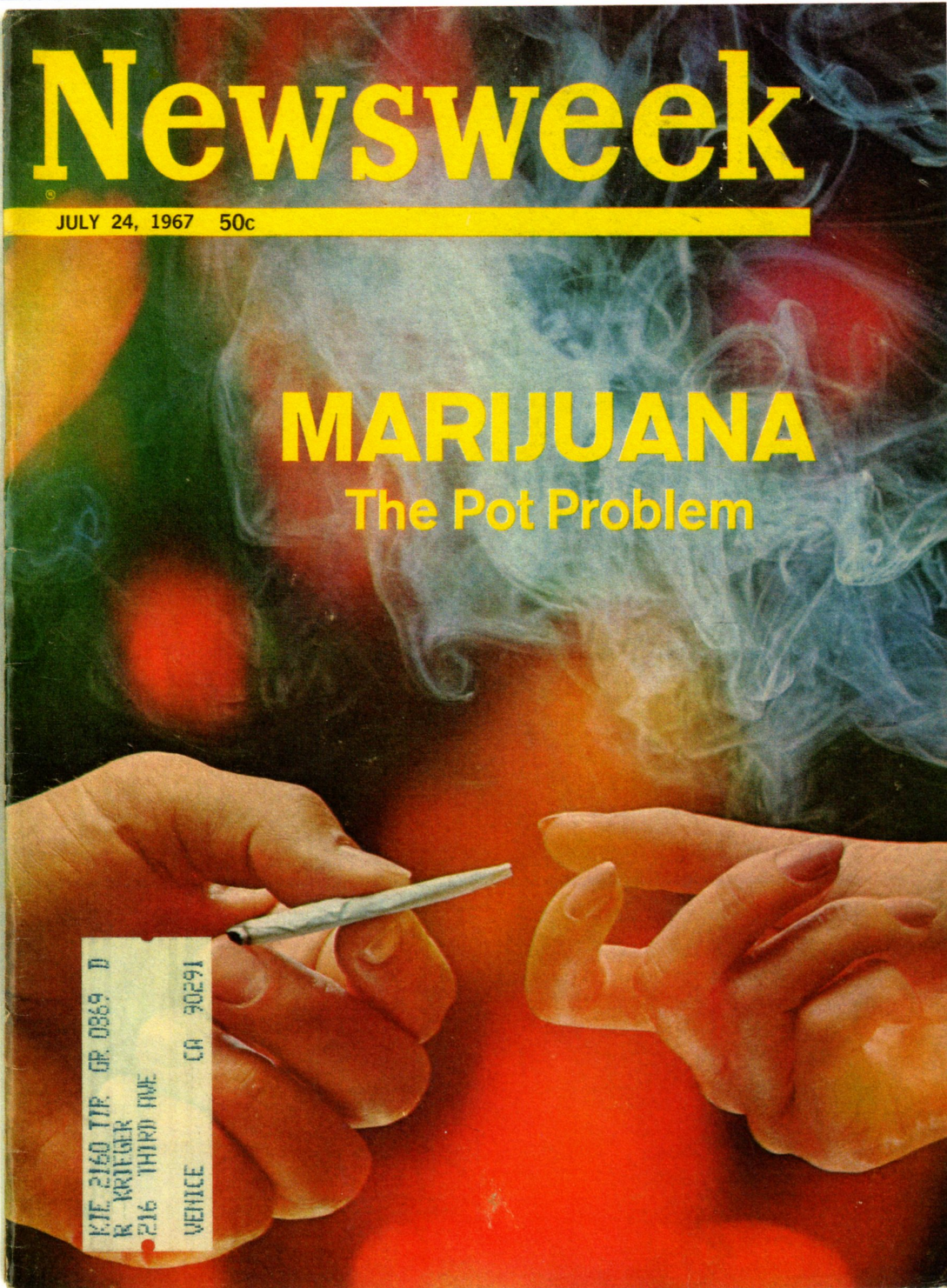
**"Sexual desire flames into fires of passion, undeniable, uncontrollable. This is the second phase of reaction. The most debasing perversions are invited and practiced whether the users of the drug be school children meeting in basement rooms, or college youths in groups in or outside the campus, or whether they be prison inmates who have secured quantities of the drug through trustees." - Assassin of Youth! Marijuana, Robert James Devine, 1943, Northland Publishing House, p. 55**



# Newsweek

JULY 24, 1967 50c

## MARIJUANA The Pot Problem



"It used to be the magic grass of the Negro ghetto, or the jazz world, or - more recently - the hippie community. But now it is entering the bloodstream of U.S. middle-class life. Marijuana, it seems, is becoming a widespread weed of dissent, a symbol of revolt, a turn-on (or cop-out) for young people who want to enlarge their experience - or escape it."

- "The Marijuana Problem", Newsweek Magazine, July 24, 1967, p. 46

"You know that it would be untrue / you know that I would be a liar /  
if I was to say to you / girl we couldn't get much higher ..."

- "Light My Fire", The Doors, 1967



Oct. 27th, 1969

# Margaret Mead's for Legal Pot

Washington, Oct. 27 (UPI) —Anthropologist Margaret Mead told senators today that marijuana should be legalized for anyone over 16 and that drinking and voting ages should match the draft age.

Prof. Mead, 67, said the harsh laws against marijuana use are damaging society much more than the prohibition on liquor in the 1920s and are forcing youngsters to turn to hard drugs such as heroin.

## "A New Form of Tyranny"

She did not mention a minimum age for marijuana use in her testimony before Sen. Gaylord Nelson's Senate Small Business Monopoly subcommittee. But she told newsmen afterward that the minimum age should be "probably 16."

She said marijuana "doesn't have the toxic effects that cigarettes have" and is milder than liquor. Therefore, she said, it should be permitted at a younger age than tobacco and alcohol.

Prof. Mead told the senators: "It is a new form of tyranny by the old over the young. You have the adult with a cocktail in one hand and a cigaret in the other saying: 'You cannot. . . ' to the child. This is untenable."

## Book About the Gap

She said youngsters switch from marijuana to hard drugs because of a philosophy that "you might as well be hung as a sheep as a lamb."

Prof. Mead, who recently wrote a book about the generation gap,



Anthropologist Margaret Mead testifying on use of marijuana.

told the senators that medical evidence leaves no doubt that marijuana is not addictive, does not by itself lead the user to hard drugs and is much milder in its effects than alcohol.

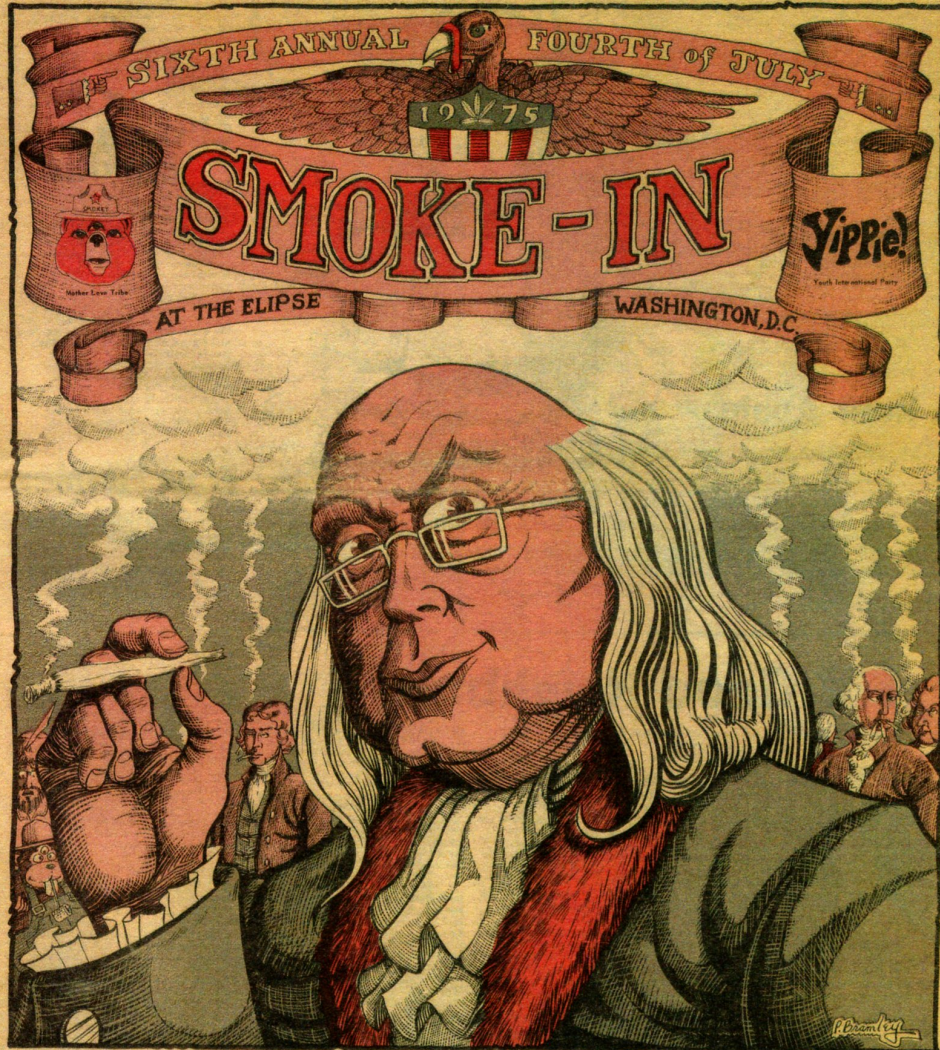
She said 99% of marijuana smokers never switch to harder drugs. Those who do, she said,

are probably motivated by the harsh laws.

Prof. Mead is curator emeritus of ethnology at the American Museum of Natural History and professor of anthropology at Columbia University. She gained fame for her studies of natives in Samoa and New Guinea.



# Yipster Times



**TAKE THE TOKE HEARD  
ROUND THE WORLD  
MARCH TO DISBAND THE DEA**

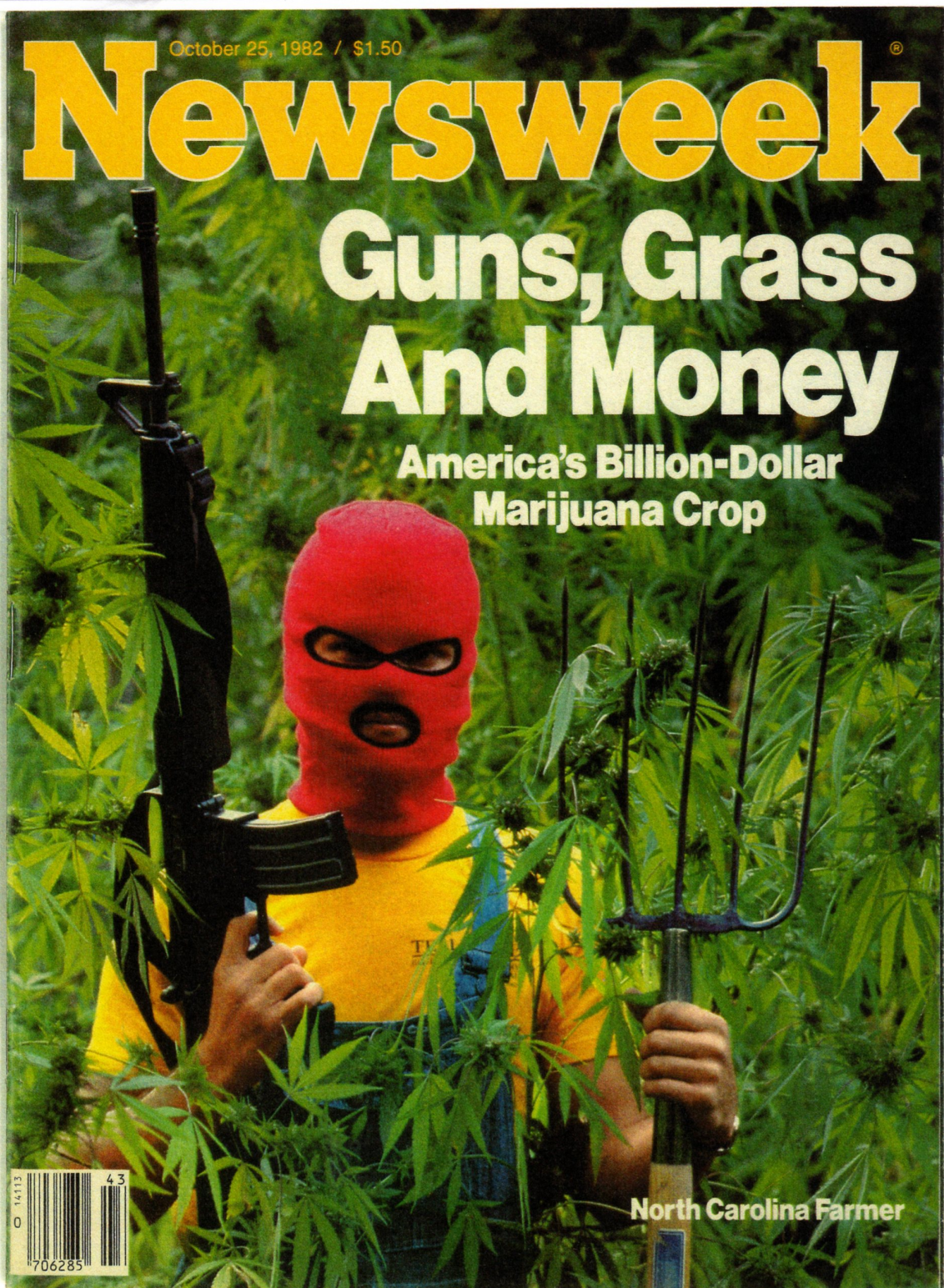
YIPSTER TIMES  
P.O. BOX 900 CANAL ST STA  
N.Y.C. 10013

“What’s exciting organizers about Insurrection City isn’t just the dozens of phone calls coming in here at 1404 M Street, or the crowd predictions (now topping 30,000 for the crowd smoking on the Ellipse). More important is that this year’s get together has the best potential for results since our impeachment action of July 1973 or since the anti-smack march in 1971 put the CIA’s Vietnamese connection on CBS News.”

- “Why We’re Marching on the DEA,” YIPster Times, 1975, p. 3



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Prosecuting growers "is like killing the golden goose," says Joe Allen, district attorney for pot-prosperous Mendocino County, Calif. "People have seen there really hasn't been a change in the community - the seventh graders haven't burned down the school because they're high. The only difference now is that people who would've been unemployed are picking up some extra money."

- "Guns, Grass - And Money," Newsweek, October 25, 1982, p. 41



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PPS / Health Canada cannabis

circa 2005

Vancouver Island Compassion Society



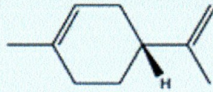

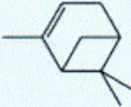

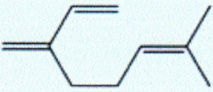

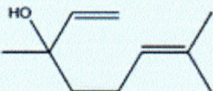

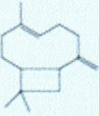
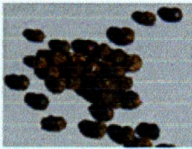
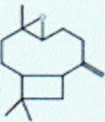

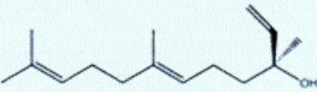

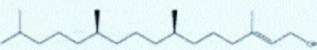

**Many might go to heaven with half the labor they go to hell, if they would venture their industry the right way. – Ben Jonson, 1640**

**When informed by Canadians for Safe Access that its independent tests showed high levels of heavy metals in the PPS cannabis, Health Canada spokesperson Jirina Vlk stated that Health Canada's own tests showed that heavy metal concentrations in the PPS cannabis were similar to those found in Canadian tobacco, and well within allowable limits. When pressed as to what these "allowable limits" might be, she admitted that there are currently no legal limits to heavy metal content in either cannabis or tobacco in Canada.**

- **Open Letter of Concern for the Health and Safety of Canada's Medicinal Marijuana Cannabis Community, January 1<sup>st</sup>, 2005, [safeaccess.ca](http://safeaccess.ca)**



# TAMING THC: POTENTIAL CANNABIS SYNERGY AND PHYTOCANNABINOID-TERPENOID ENTOURAGE EFFECTS. ETHAN RUSSO · BRITISH JOURNAL OF PHARMACOLOGY

Terpenoid	Structure	Commonly encountered in	Pharmacological activity (Reference)	Synergistic cannabinoid
Limonene		 Lemon	Potent AD/immunostimulant via inhalation (Komori <i>et al.</i> , 1995) Anxiolytic (Carvalho-Freitas and Costa, 2002; Pultrini Ade <i>et al.</i> , 2006) via 5-HT <sub>1A</sub> (Komiya <i>et al.</i> , 2006) Apoptosis of breast cancer cells (Vigushin <i>et al.</i> , 1998) Active against acne bacteria (Kim <i>et al.</i> , 2008) Dermatophytes (Sanguinetti <i>et al.</i> , 2007; Singh <i>et al.</i> , 2010) Gastro-oesophageal reflux (Harris, 2010)	CBD CBD CBD, CBG CBD CBG THC
α-Pinene		 Pine	Anti-inflammatory via PGE-1 (Gil <i>et al.</i> , 1989) Bronchodilatory in humans (Falk <i>et al.</i> , 1990) Acetylcholinesterase inhibitor, aiding memory (Perry <i>et al.</i> , 2000)	CBD THC THC?, CBD
β-Myrcene		 Hops	Blocks inflammation via PGE-2 (Lorenzetti <i>et al.</i> , 1991) Analgesic, antagonized by naloxone (Rao <i>et al.</i> , 1990) Sedating, muscle relaxant, hypnotic (do Vale <i>et al.</i> , 2002) Blocks hepatic carcinogenesis by aflatoxin (de Oliveira <i>et al.</i> , 1997)	CBD CBD, THC THC CBD, CBG
Linalool		 Lavender	Anti-anxiety (Russo, 2001) Sedative on inhalation in mice (Buchbauer <i>et al.</i> , 1993) Local anesthetic (Re <i>et al.</i> , 2000) Analgesic via adenosine A <sub>2A</sub> (Peana <i>et al.</i> , 2006) Anticonvulsant/anti-glutamate (Elisabetsky <i>et al.</i> , 1995)	CBD, CBG? THC THC CBD CBD, THCV, CBDV
β-Caryophyllene		 Pepper	AI via PGE-1 comparable phenylbutazone (Basile <i>et al.</i> , 1988) Gastric cytoprotective (Tambe <i>et al.</i> , 1996) Anti-malarial (Campbell <i>et al.</i> , 1997) Selective CB <sub>2</sub> agonist (100 nM) (Gertsch <i>et al.</i> , 2008) Treatment of pruritus? (Karsak <i>et al.</i> , 2007) Treatment of addiction? (Xi <i>et al.</i> , 2010)	CBD THC ? THC THC CBD
Caryophyllene Oxide		 Lemon balm	Decreases platelet aggregation (Lin <i>et al.</i> , 2003) Antifungal in onychomycosis comparable to ciclopiroxolamine and sulconazole (Yang <i>et al.</i> , 1999) Insecticidal/anti-feedant (Bettarini <i>et al.</i> , 1993)	THC CBC, CBG THCA, CBGA
Nerolidol		 Orange	Sedative (Binet <i>et al.</i> , 1972) Skin penetrant (Cornwell and Barry, 1994) Potent antimalarial (Lopes <i>et al.</i> , 1999, Rodrigues Goulart <i>et al.</i> , 2004) Anti-leishmanial activity (Arruda <i>et al.</i> , 2005)	THC, CBN - ? ?
Phytol		 Green tea	Breakdown product of chlorophyll Prevents Vitamin A teratogenesis (Arnhold <i>et al.</i> , 2002) ↑GABA via SSADH inhibition (Bang <i>et al.</i> , 2002)	- - CBG

Representative plants containing each terpenoid are displayed as examples to promote recognition, but many species contain them in varying concentrations. 5-HT, 5-hydroxytryptamine (serotonin); AD, antidepressant; AI, anti-inflammatory; CB<sub>1</sub>/CB<sub>2</sub>, cannabinoid receptor 1 or 2; GABA, gamma aminobutyric acid; PGE-1/PGE-2, prostaglandin E-1/prostaglandin E-2; SSADH, succinic semialdehyde dehydrogenase.

HOP SMELL = RELAXANT. LEMON SMELL = STIMULANT. AUGUST 2011  
THERE ARE OVER 200 TERPENES!





## THE WONDERS IN A DREAM

While riding along the Little Bighorn River one day in 1873, a nine-year-old Oglala boy later named Black Elk collapsed from a mysterious illness that would leave him unconscious for 12 days. While he lay inert in a tipi, he had a vision: Two cloud-borne men came before him singing, "All over the sky a sacred voice is calling you." Heeding their summons, he followed them up into the heavens, wondrous things there to behold.

Long after the boy had become a great holy man of his tribe, Black Elk (left, in his eighties) recounted the vision that transformed his life. In it he was shown the great beauty and harmony that pervade the universe, and from the spiritual beings who summoned him, he learned of the sacred symbols and objects that gave the power to heal sickness and quell strife, a gift that would serve his people well in the troubled years ahead.

*Near the end of his vision, Black Elk found himself carried east astride his horse, accompanied by the riders of the four quarters until he was standing on the highest of all mountains, while beneath him stretched the "whole hoop of the world." In a painting done by his lifelong friend, Standing Bear, Black Elk is shown at the center of the earth with a spotted eagle—one of his guides—on his shoulder, a sacred flowering stick, and a peace pipe offering smoke to the heavens.*

"THE HERB OF  
UNDERSTANDING"  
(P. 219)  
"THE TREE MIGHT  
BLOOM AGAIN AND  
THE PEOPLE  
PROSPER." (P. 238)

Image above from Time Life Books - "The American Indians - The Spirit World", 1992, p. 124

From the 1961 University of Nebraska edition of "Black Elk Speaks", on page 28 Black Elk mentions a "bright red stick" that was "a holy stick that was a tree". (p.29) When "the holy tree seemed dying" a voice says "your people walk in difficulties". (pp.37-38) But then a "sacred herb" grows right where the tree had been." (p. 38) "The people all seemed better when the herb had grown and bloomed." (p. 39) Black Elk called it "the healing herb" (p.45)

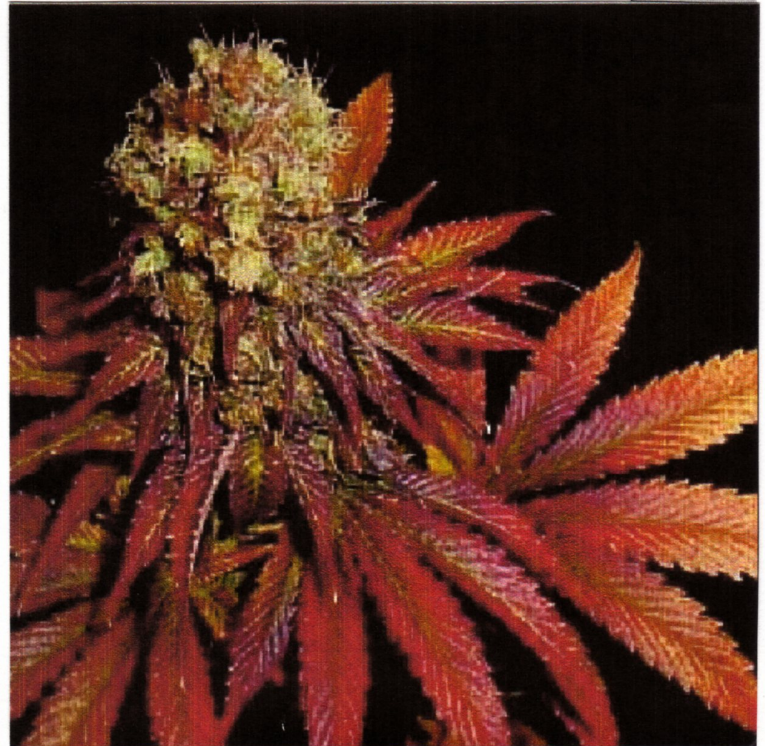
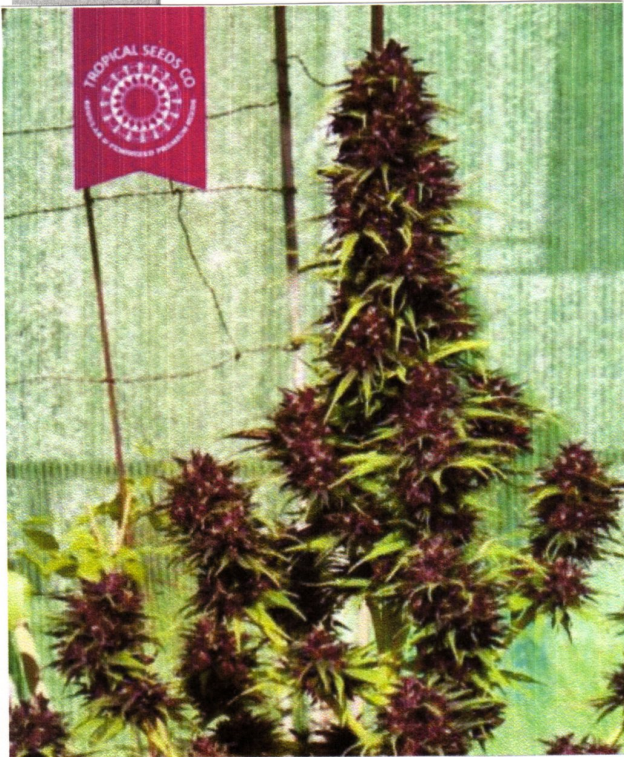
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Country	Geographical area	Year	Age range	Cannabis (%)
United States	National	2010	16-34	51.6
Canada	National	2005	15+	44.5
New Zealand	National	2004-5	16+	41.9
Denmark	National	2005	16-64	36.5
Australia	National	2007	14+	33.5
France	National	2005	15-64	30.6
UK ( England)	National	2005-6	14-59	29.8
UK ( Wales)	National	2005-6	16-59	29.8
United Kingdom	United Kingdom overall	2004	14+	29.6
Italy	National	2005	15-64	29.3
Spain	National	2005-6	15-64	28.6
Chile	National	2009	12-64	26
Germany	National	2003	18-59	24.5
Netherlands	National	2005	15-64	22.6
Ghana	National	2007	15-64	21.5
Czech Republic	National	2004	18-64	20.6
UK ( Scotland)	National	2004	16-64	20.5
Austria	National	2004	15-64	20.1
Philippines	National	2002-3	15-64	17.4
UK ( Northern Ireland)	National	2002-3	15-64	16.8
Norway	National	2004	15-64	16.2

**Adult general lifetime cannabis use rates by country - Wikipedia**

[https://en.wikipedia.org/wiki/Adult\\_lifetime\\_cannabis\\_use\\_by\\_country](https://en.wikipedia.org/wiki/Adult_lifetime_cannabis_use_by_country)



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Quotes come from Black Elk Speaks and may or may not apply to cannabis. Just sayin'.



Pierre Trudeau

Saudi Arabia

Date unknown



"I was in Turkey and these guys invited me into one of the coffee shops and passed the hookah around and I smoked it ... What was in it, I don't know, probably some hash. Same thing in India (and) China. I smoked all kinds of things."

P. E. Trudeau  
January 4, 1994,  
*Toronto Star*.  
"Trudeau glare  
is there for  
televised  
memoirs"

*How  
glare*

*Trudeau - 4th Saudi Arabia. Report after 10 years in Canada. To*