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Interview with
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(Health Canada)

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INTERVIEW WITH
Health Canada

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Inside Cannabis Health

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Cannabis Health

Cannabis Health Magazine is the voice and the new image of the responsible cannabis user. The publication treats cannabis as one plant and offers balanced coverage of cannabis hemp and cannabis marijuana. Special attention is given to the therapeutic health benefits of this plant made medicine. Regular contributors offer the latest on the evolving Canadian cannabis laws, politics, and regulations. We also offer professional advice on cannabis cooking, growing at home, human interest stories and scientific articles from countries throughout the world, keeping our readers in touch and informed. Cannabis Health is integrated with our resource website, offering complete downloadable PDF versions of all archived editions. www.cannabishealth.com

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Editorial

"Let the people know the truth and the country is safe." - **Abraham Lincoln**

Imagine this scenario. Funding United Policies (FUP) has an army of District Encroachment Officers called (DEO). They are currently infiltrating their way into our private homes, disseminating prohibitionist propaganda to school-aged children through their "drug education" programme, and encouraging them to inform on "offending" family members and neighbors. Great in number, they have positioned themselves within most global communities. The FUP's DEO teams are being rewarded with large cash payoffs. Up to 5 million dollars can be granted for each successful infiltration. For decades DEO personnel, under direction of their United Policy regime, have been criminalizing, marginalizing and destroying the rights and freedoms of law abiding citizens. For years this attack on humanity has largely gone unchecked. DEOs have powerful leadership, relentless determination and vast funding resources. However, to combat the DEO, the Propaganda Opposition Project (POP) has recently expanded its POP Watch program. Law abiding citizens have been located within each school and neighborhood battleground. When the DEO are evident, if someone is being told or given propaganda, is being harassed or threatened, action is immediately taken, documented, and compiled for future public exposure. The law abiding members of the POP Watch program will do what ever it takes to stop this insanity.

Myth or Truth? The above description sounds like comic book fiction, an aspect of Orwell's **"1984"** or an epidemic of psychosis. Yet, the content is based on the reality of the War on Drugs. Shocked? Don't worry, even the strongest and wisest must occasionally take a step back to shake their heads in disbelief. The freedom to make our own choice should be one of our fundamental human rights. It is ingrained into our souls as Canadians and is the reason why so many of us continue to fight for peace.

The War on Drugs is built on lies. Even our children have been made the targets of deception, and it must be stopped. But in order for it all to end, the level of propaganda awareness must be improved upon. The internet is a wonderful tool for this. People just need to follow the documented propaganda back to source, and read.

The demand and retrieval of accurate information, what a concept! It is not however an easy task, as any research analyst will tell you. In this age of information overload one must wade through streams of data to find the elusive "accurate information" stamp. I personally use the **"who said what, why and where"** method in determining accuracy. If the **"who"** is known as credible then the **"what"** can be claimed accurate and in many cases that's all the criteria used by many media. However, I find this only works if the **"who"** is independent - not part of an entity, and is prepared to tell the truth, the whole truth and nothing but. Otherwise the **"why"** relates to the credibility of the associated source entity/s, and then the **"where"** needs to be determined. By following the information back to the final source you will be amazed at what you can find.

The first telltale sign of propaganda is the inaccurate interpretation of scientific statements. No references are generally made to any credible independent studies. The focus usually consists of scare tactics, like pictures of holey brains, threats of incarceration or organized crime invasions.

If you want to check it out, start with the prohibition propaganda pamphlet; **"Marijuana - What's the Big Deal"** passed directly to students (and CH) by a DARE-BC/DAS program officer at the Community Symposium on Drugs and Related Youth Issues, held recently in Castlegar, BC. (Watch for coverage of this excellent two day discussion forum in a future issue of CH). The pamphlet contains gross untruths about the properties of marijuana, including a photo, depicting a "Marijuana affected Brain" which appears to be riddled with corrosion and holes.

These "information" pamphlets or studies are generally funded by enforcement affiliates, i.e. ADIC/DAS/DAREBC/FVU/DEA (acronyms are very popular). If you trace the associations and links back, in most cases it will lead you to an enforcement agency in the US or possibly a DEA agency stationed in one of the US Embassies in Canada. The White House Drug Policy training manual entitled **"Marijuana Myths and FACTS"** (see link below), is a prime example of the huge US budgetary spending of affiliates like NIDA in their battle to maintain the global status quo. This paper was completely debunked years ago by *Dr Lester Grinspoon* in his book **"Marijuana Reconsidered"**.

This elementary concept of evaluating the credibility of information based on accurate source material rarely happens in today's information society. Who has time? The stream is huge, and the distorted effects of the water drops are in the eyes of the beholders, affiliations, associations and funding sources. Remember, propaganda is the tool used to build the webs of prohibition.

The majority of Canadian pot smokers and brownie munchers already know that they, for the most part, are not psychotic, nor do they have holes in their heads from using the herbal form of Cannabis. In fact, most Canadians know that cannabis cultivation and consumption is not in itself dangerous and poses no threat to individuals or society. Canadians also need not worry about some perceived drug crime syndicate. They do, however, need to start demanding protection from the organized prohibitionist enforcement agencies who have orchestrated this psychotic drug war in the first place.

Barb St.Jean

"Working together we can treat Washington's 40 billion dollar a year addiction to the War on Drugs." - **Polly Wilmoth Waco, TX**

Quote source:
http://www.druglibrary.org/schaffer/

http://www.whitehousedrugpolicy.gov/publications/marijuana_myths_facts/

Letters

Dear Editor,

I would like to respond to the "Legal Dilemma" letter, in the January/February 2005 issue of Cannabis Health, (Volume 3, Issue 2).

First, go find a specialist or doctor who IS willing to sign your forms. They are out there somewhere. And there are letters you can download (from Medical Marihuana sites), that are "addressed to doctors", promoting the benefits of "Medical Marihuana" use to try to force their hand.

As for your stolen plants, unless you already hold legal authorization to possess and cultivate your own "medicine", DO NOT GO TO ANY POLICE AUTHORITIES! They will only target you and you open yourself to harassment.

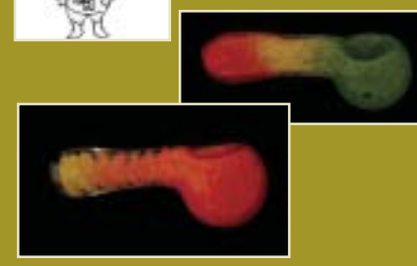
As an MMAR licensed user and grower, I myself have just been charged with impaired driving contrary to criminal code of Canada. The Ontario Provincial Police Officer confiscated my ounce of legal Medical Marihuana as evidence and stated because I had one ounce of my medicine IN my car I must be impaired. He charged me, searched me and confiscated my medicine (even after I showed him my licenses to possess and grow) with no roadside test, blood test, breath test. Nothing, just his opinion that I could smoke a joint 3 weeks ago and get hit with euphoria now, today, anytime. I feel my human rights have been violated!!

I'm not eligible for Legal Aid so I've already paid a lawyer $2000 and still owe another $2000. I'm going bankrupt over this. Health Canada gives out MMAR licenses, but police refused to acknowledge them, causing health and financial problems for sick Canadians.

So don't go to police at all. And if you do get a license to possess and grow, be wary of revealing to any police agencies.
GOOD LUCK.....

Steve.P Hamilton, Ontario

Find Mighty Mike



NEW CONTEST! FIND MIGHTY MIKE & WIN A PRIZE FROM WONG BONG GLASSWERX!!

In our next two issues we will hide Mighty Mike somewhere in the magazine. Your mission is to find him. When you do email distribution@ cannabishealth.com with the page number you found him on. You can snail mail your entry to: PO Box 1481, Grand Forks, BC V0H 1H0. Closing date for entries is July 29/05. Two winners (one guy and one girl) will be announced in the Sept/Oct issue of Cannabis Health. One entry per person please.

Health Canada Interview

The following interview was conducted by Cannabis Health with Dr. Richard Viau, Acting Director General of Health Canada's Drug Strategy and Controlled Substances Programme.

In preparation for the interview, we polled various members of the global cannabis community for their questions. This community is highly educated and is made up of many organizations (governmental and N.G.O). It also includes consumers from every walk of life and culture; ethical/compassionate growers and providers, professionals, and scientists alike. The information currently available to this community is equally diverse as it comes from many sources and takes in all aspects of cannabis production - strain selection, growing methods, environmental conditions, curing and storage processes, secondary processing, product testing, delivery methods and more. Research analysis, comparison studies, and opinions circulate at the accelerated speed of today's communications media. As the number of cannabis users has risen steadily, so has the demand for accurate information. The cannabis community openly shares information and techniques. A lack of disclosure from any producer, even though this is largely an unregulated industry, results in avoidance of the product. The overwhelming response to our poll indicated that concerns about access, production, and safety standards are at the top of everyone's list.

ACCESS:

As many as one million patients in Canada use marijuana to manage conditions such as nausea, seizures and chronic pain. Statistics from Health Canada's Office of Medical Cannabis show that as of March 4, 2005, only 813 patients were authorized to possess marijuana for medical purposes, and of those, only 150 were actually accessing Health Canada's dried marijuana. We are informed by the cannabis community that the reasons for the low level of participation are many and varied:

- Mistrust of HC/PPS product safety.
- Perceived inferior quality and potency of HC/PPS product.
- Lack of support from Canadian (and other) Medical Associations and most physicians due to a lack of clinical trial data and peer reviewed medical research relating to smoked herbal cannabis.
- It takes significant time and effort for physicians and patients to fill out and submit MMAR application paperwork – especially as compared to the traditional prescription/pharmacy drug distribution model.
- The legitimate concerns many applicants/patients feel about submitting personal information to the government – and police – regarding medical marijuana use.
- The fact that HC is only making one strain of cannabis available to patients.

Cannabis Health: Do you have information pertaining to the number of applicants under the MMAR as compared to the number of approved participants? How many applicants have been turned down?

Richard Viau: Since the MMAR regulations came into effect in July 2001, no completed applications for authorization to possess have been refused. Zero.

CH: What about the ones that are incomplete? Those who can't get a doctor to sign, for example.

RV: Let me explain a little bit about how the process works. The process is pretty clear and transparent. The regulations themselves are quite clear. The regulations outline what is needed to be approved, and if the requirements are met, then the license will be issued. No problem. If the requirements aren't met, there are no exceptions possible. Typically when people have applied and haven't received, it's because their application wasn't complete. There are myriad pieces of information that people have failed to provide. In those instances the Office of Cannabis Medical Access will work with the applicant; call them on the phone, send a letter or email explaining very clearly what pieces of information are missing and what is needed to complete the application. In some instances they have actually phoned the physician because the applicant wasn't able to clearly explain to the physician what the physician needed to do in order to fill out the application form. We provide all of the support we possibly can to the applicants. The intent is, in fact, to make the process as easy as possible and as simple as possible, but like any other regulatory process there are some requirements that are set out.

CH: How will the next amendments to the MMAR streamline the process and the paperwork for obtaining an authorization to possess?

RV: We have been cognizant of the feedback and advice from applicants and from our Stakeholders Advisory Committee. The proposed amendments will streamline the regulatory process, thereby streamlining the application process for an authorization to possess marijuana for medical purposes.

The categories of symptoms under which a person may apply will be reduced from three to two. The current Categories 1 and 2 are merged into one category (Category 1). The need for a specialist to sign the medical declaration for this category will be eliminated. The old Category 3 will become Category 2. While applicants under this category will still need to be assessed by a specialist, the treating (family) physician can sign the medical declaration.

CH: What about the liability issue that the doctors raise?

RV: A revised Medical Declaration for the physician has been developed and it will

only include those elements essential to confirm that the applicant suffers from a serious medical condition and that conventional treatments are inappropriate or ineffective.

CH: So they won't actually be prescribing it, just providing a verification of illness.

RV: Correct.

CH: Can you address the concerns many applicants/patients feel about submitting personal information to the police regarding medical marijuana use.

RV: One of the proposed amendments is to provide exclusive authority for Health Canada to communicate limited information concerning the authorization process and licenses or licensees to police. That really is for the protection of the applicants. The police get complaints; somebody's going by, sees a marijuana plant in the window and calls the police. The police don't want to go barging in, knocking down doors and putting people at risk when there's no need to, so they would much rather know. At no time will there ever be any medical information provided to the police. Strictly information…the name, how much you're entitled to have in your possession is essential. That's simply to make sure no undue legal action is taken.

CH: What recourse does a licensed medical user have if they feel they are being unduly harassed by police? Can they call Health Canada for help?

RV: The police do not work for Health Canada. Every police agency has a recourse mechanism, an ombudsman or some sort of investigative branch that looks into complaints of harassment or use of undue physical intervention and that sort of thing, and that is who these people should complain to. There will be a follow-up investigation and if the complaint is founded then action will be taken. Health Canada really has no role to play in that.

CH: When can we expect to see these amendments come into effect?

RV: I would think sometime later this spring. I can't give you an exact date because that's something that we don't control. The current set of amendments was published in Part 1 of the Canada Gazette in October 2004. After Part 1 of the Canada Gazette, all of the inputs are analyzed, and comments responded to. If there's need to make changes to the proposed amendments, those are made, and then the draft regulations go before Cabinet for final approval. We don't control the agenda at that point. We do not control the timing of when the regulations will go before Cabinet for final approval.

CH: Could patients fill out the current forms and send them in so that they can be reviewed as soon as the new process is in place?

RV: Once the amendments have been published in Part 2 of the Canada Gazette the new procedures will take effect and applicants will be able to use the new forms and processes. Until that happens they still have to use the old process.

CH: Will you be collecting data from the patients or compiling any usage stats?

RV: That's kind of speculative. When the amendments take effect we may find that everybody is happier than happy. If that's the case, there will be no statistics to gather, so I'd rather not speculate as to what's going to happen after the new amendments take effect. Let's just let them take effect and then we'll see what happens afterward.

CH: But you will be open to feedback from consumers?

RV: We always have been from the very beginning and will continue to be. People can contact us by email, regular mail, fax or a toll free phone number, all of which are available on our website.

CH: The latest amendments to the MMAR suggest that personal production and designated grower production licenses are going to be phased out, leaving HC the only legal source of cannabis. A lot of people are concerned about that; they want to grow for themselves.

RV: The designated grower and the ability to grow for yourself, still an option. The option hasn't been removed. Indeed, if there is a move to change that, there will be ample consultation, ample discussion and ample opportunity for anyone and everyone affected to provide feedback. Everything will be considered and once everyone has had a chance to have input, then a final decision will be made.

QUALITY:

CH: The first marijuana distributed by HC/PPS for patient consumption was blended with leaf and stem and had low levels of THC. Grinding cannabis is known to increase oxidation and deterioration of THC. Although the THC level is only one part of the effectiveness of the overall product, it is tied to consumption levels. The stronger it is , the less is needed, thereby reducing the risk incurred by smoking. In addition, the analgesic and anti-spasmodic effect appears to be more significant in cannabis with higher levels of THC. Have your requirements and standards for the product changed since that time?

RV: Let's look at consistency. The grinding is to try and get more consistency because every plant is a little bit different from every other plant and it depends if you just take the primary bud or the secondary buds. It also depends on the maturity level and the time you harvest. There are a lot of factors that affect your THC level. We have been doing a lot of work to optimize all of those conditions so we can reduce those inconsistencies. One of the things that we do is the grinding so that, in fact, from batch to batch, even within a batch, when you take a sample it will be

consistent. That is the reason behind that.

CH: I understand you are now taking a lot of the stems and sticks out so that the product is almost pure bud, is that correct?

RV: I will say that it is pure bud. To the extent that you can take all of the sticks and stems out, we do.

Let's talk a little bit about what quality means. Quality is not just THC levels. Quality is all about having a very clearly defined process, so that you know what all of the qualities of the product are and so that you have consistency in your product on an ongoing basis. One of the qualities that you want to know is the THC content. The THC content of the product that we are currently distributing is between 11% and 14% and indeed, one of the recipients of our product has commented to us that they were very, very pleased with it, because unlike the product they were getting from the black market, our product was consistent from batch to batch and it made it very easy for them to self-medicate. We find that sort of comment very helpful because it gives us an indication that we are on the right track.

CH: The THC level patients seem to be looking for is between 14 and 18%.

RV: I'll tell you a couple of things about that because I know quite a lot about THC levels in marijuana. There are a lot of misconceptions out there about how much THC there is in marijuana. We've analyzed about 16,000 black market samples of marijuana so I think we have quite a lot of information about what black market marijuana is. The average THC content is 9.6% in the last two years and in previous years it was lower than that. There is only about 7% of marijuana seized by police that has THC that is over 14%. There's also an interesting experiment that was done in Holland, where scientists went into the cafes. Users couldn't differentiate between 14% and 18% THC content.

CH: So this has more to do with the cannabinoid profile, right?

RV: No, there's another piece to it too. If someone from the black market claims their marijuana has X percent THC, how do they know that?

CH: There is no way right now, because there's no testing available.

RV: That's right. So how do they know that they've got 14 – 18%? They also don't know what the cannabinoid profile is. The only way you can know is by testing and in fact, when you go out and test, you sometimes find that this product and that product, that are said to be different, have exactly the same profile. It's perception.

CH: Is it possible for a licensee to submit a sample of their own marijuana for testing?

RV: The short answer is no. If they wanted it to be tested, they would have to go to a private testing laboratory and if a private testing laboratory wanted to get into testing marijuana for consumer use they would have to apply for a license to do that.

CH: So there's no place right now patients can get their supply tested?

RV: No private testing laboratory has ever applied for licensing other than the two that do testing for Prairie Plant Systems. No other labs that we're aware of have ever applied for a license to test marijuana for consumer use.

CH: Does HC plan to provide more than one strain for patient use or for research?

RV: For sure, the possibility of growing other strains has been considered, but right now, we haven't made any decision. Right now, we're working at making sure that we know anything and everything we need to know with the one strain. Get all the answers. Obviously once you have all the answers, it's much easier should you decide to expand to other strains. Trying to do the experiments on three, four, five strains just expands your risk that many times. You want to work it out with one and then you move on.

CH: What strain is HC providing currently?

RV: What we are growing is Cannabis sativa L, subspecies indica, cultivar indica. That's based on "The Key to Subspecies for Marijuana" published by E. Small and A. Cronquist in 1976. The reason I say this is that there is another set of nomenclatures for cannabis that other people use. E. Small is a research scientist at Agriculture Canada and he developed this nomenclature in the mid 70s and that is the one we are using.

CH: Many medical users maintain that different strains are effective in managing different symptoms and conditions. They are particular about how much sativa and how much indica they want in their mix because each one seems to have its own characteristics.

RV: As you know marijuana is not an approved drug anywhere in the world and indeed, there really is a lack of sound research to demonstrate the safety and efficacy of marijuana. Health Canada and the Canadian Institutes of Health Research (CIHR) are working as partners to facilitate a five year research plan called the Medical Marijuana Research Programme. One of the questions that researchers want to look at is whether or not, in fact, different cannabinoid profiles do or do not have any impact in treating different types of conditions. Right now there exists no scientific evidence in support of that thesis.

I go back to what I said earlier. Patients don't know what they're dealing with so how can you conclude that this profile or that profile helps you when you don't know what the profile is? You can't make that conclusion and that's the problem with research that's based on anecdotal information. There are information gaps and leaps of logic that are not supported by fact. When you do a controlled experiment, you may find that the leap of logic is supported or you may find that it's not.

SAFETY:

CH: Test results on an early batch of HC/PPS product, obtained through the Access to Information Act, showed unacceptable levels of heavy metals, bacteria, moulds, aflatoxins and mycotoxins. How do you respond to the concerns expressed by the Cannabis Community about the safety of HC/PPS product?

RV: Let's talk about those test results. Those data refer to product that was grown while we were still in the development stage. It was never distributed to anyone - not researchers, not therapeutic users. On the question of heavy metals, we test every batch and I do recall being contacted by the individual who had requested the information. I'm a chemist, I have a PhD in chemistry and I explained to that person that the results he had in his possession were inconsistent with the results we had. They were out by orders of magnitude.

CH: Could it be because the product was old?

RV: No, it's not a question of how old the product is. I believe there was an error in the analysis. I asked for information on which test lab had done it. Was it a reputable, accredited test lab? This information was not provided, making it very difficult to assess the credibility of the results.

CH: What can you tell us about the use of herbicides and pesticides on PPS product?

RV: If you want organic, I can tell you, we're as organic as you're going to get. We don't use any herbicides, pesticides, nothing like that, absolutely prohibited. We use natural ways of dealing with grubs.

CH: So you use nematodes?

RV: Yes. I don't want to get into revealing our trade secrets. (laughing).

CH: Of particular concern to the AIDS Foundation are bacteria and aflatoxins - opportunistic fungi which can infect via the respiratory tract. Can people with compromised immune systems rest assured that PPS product will be safe for them?

RV: Obviously, that is a concern. Indeed, how do you get aflatoxins? You don't get aflatoxins unless you have mould. So how do you ensure that you don't get mould? You ensure you don't get mould by proper drying of your product. We dry the product at 25 degrees Centigrade, which is at the high end of the range of normal room temperature, and we get the moisture below 15%. Then we freeze and irradiate to ensure there are no viable mould spores on the product. We also test the product before it goes out for any presence of mould. Now I'll come back to what I said earlier. When you're buying from the black market or a designated grower, or when you're growing for yourself, how do you know that there is no mould? Do you test? No, so you don't know. The stuff you get from PPS, you know. There is NO mould.

CH: There's controversy surrounding irradiation.

RV: We don't think there's any controversy. We think it's the way to go.

CH: Could you explain to me the reasoning behind choosing the gamma irradiation as opposed to sterilization by heat?

RV: Something that you really need to know is that there are no health implications or impacts with the dose of gamma radiation that we use to irradiate the product. We use the lowest dose possible, and gamma irradiation is a process that has been used for a long time on a variety of food products including herbs and spices so this is nothing new. I think there is real misapprehension about the heat process. Heat sterilization involves putting the product in an autoclave and heating it to above 120 degrees Centigrade. If you did that to marijuana, I guarantee you would find very little THC left and you in fact would denature the protein of the plant, so there is no way we would ever consider using that as a method of sterilization.

CH: Are the terpinoids and CBD's affected by the gamma irradiation?

RV: At the level which we irradiate it doesn't affect them at all. We measure everything, the whole profile, before and after irradiation, and there is no significant difference that we can measure in any of these levels.

CH: Can you claim safety for material that is to be smoked or inhaled by extrapolation from standards for oral consumption?

RV: There are only two common smokable products: tobacco and marijuana. The fact of the matter is that marijuana is not an approved drug and there really is a lack of scientific data on the efficacy of marijuana as a drug. Indeed, one of the areas researchers have said they want to look at is administration. Is smoking, in fact, the best form of administration? We do know that there is a company from England that has applied to have a product that is derived from marijuana as a sublingual spray. Currently there are two products on the market in pill form that are ingested orally. So there's still a lot of research that needs to be done on the question of safety and efficacy. We are currently engaged in a research project called the Mainstream Smoke Study, which uses smoke machines to capture the smoke and analyze all the constituents in it. I would expect sometime in this calendar year or early in the next that there should be some results coming out from that study.

CH: Some patients are looking now at vaporization as a harm reduction measure. Will you be looking at vaporization as well?

RV: Right now, we're going to finish the smoking study and we'll decide where we go after that.

CH: Health Canada's OCMA Information webpage states that PPS conducts laboratory testing and quality control of its marijuana throughout the product's life cycle; records of tests and their results are obtained and assessed against specifications to ensure compliance, and the product is not released for sale or supply prior to approval by the quality control department. Is the testing process also applied to packaged product and to product that has been in storage for varying lengths of time?

RV: For sure testing is a huge part of what we do. Basically, we test product after it's harvested, we test product after it's packaged and ready to go out the door to therapeutic users or to researchers. We test it before and after irradiation. Lots of testing, lots of testing. And we don't only test for THC; we test for a variety of other things.

CH: You're testing for cannabinoid profile, contaminants, biological problems, etc., correct?

RV: You've got it.

CH: Is HC willing to provide consumers with the data obtained in the ongoing testing process?

RV: We are in the process now of translating all of our test results for every batch we've sent out, and they will be posted on our website within a couple of weeks I would hope.

CH: Many medicinal users, because of their health condition, are in the lowest of income brackets. Given that HC can never hope to recoup the cost of the MMAR program, why is the price of your product so high? Why would a patient choose to buy at HC's current price of $150 per 30 gm, when a product they believe to be superior is available on the black and grey markets for a comparable or better price?

RV: I want to be very clear that the program that we have is a compassionate program. We are supplying a legal source of marijuana and this eliminates legal and safety risks associated with the black market purchase or production of marijuana. So they're getting all of this testing, this really controlled process. We're moving to the process that you would use for the production of a biological drug. If you've ever seen the lengths to which drug companies go, that's where we're going. So, yes, there are some costs. I think that for a product with a quality and consistency that can't be matched and for which they have no legal or safety concerns, the price is extremely reasonable. When you compare our price with the price of black market, based on information that we've had from police across the country, our price is two to three times lower than what people buy on the black market.

CH: Two to three times? No, the police typically inflate the value of seized drugs. Most of our patients are buying from ethical Mom and Pops at about $100 per ounce (30 grams).

RV: Let me be very clear… "ethical Mom and Pops", what they're doing is illegal. It's black market. Unless they're licensed, they're illegal. If the police find these operations and raid them, these people will be charged with cultivation.

And so we come full circle. Until we can overcome the access hurdles, this is the dilemma faced by the medical users - those at the greatest risk due to their compromised health. The vast majority of medical users don't have a supportive physician and must either find an ethical "ma & pa" grower, purchase from a compassion club if available, buy from the black market or grow it themselves. Those are the choices. Each one represents a risk, especially if the quality of the product is in question.

For additional information about legal access in Canada: http://www.hc-sc.gc.ca/hecs-sesc/ocma/

Canadian AIDS Society | Société canadienne du sida

Canadian AIDS Society & Cannabis as Therapy

Lynne Belle-Isle, Project Consultant, Canadian AIDS Society, meeting with lawyer Alan Young, the project's legal consultant.

Background on HIV and AIDS

HIV/AIDS surfaced in Canada in the early 1980s. AIDS has killed more than 13,000 people in Canada to date, and there are currently about 60,000 Canadians living with HIV/AIDS, with about 3,000 to 5,000 new infections every year. Despite advancements in therapy that now keep people with HIV alive longer than ever, there is still no cure.

HIV (Human Immunodeficiency Virus) attacks the immune system by destroying cells that are important for immune response. People with HIV may have no symptoms for a long time. Over time, the immune system may grow weak and the infected person can become sick with different illnesses. Once the immune system is no longer able to defend the body from infections, diseases or cancers, a person is said to have developed AIDS (Acquired Immune Deficiency Syndrome). About half of people with HIV develop AIDS within 10 years after infection. This varies greatly from person to person.

Use of cannabis by people living with HIV/AIDS

One of the first indications of AIDS is often the onset of wasting syndrome. This occurs when a person involuntarily rapidly loses more than 10% of their weight. This is often accompanied by fever, diarrhea and fatigue for more than 30 days and for which there is no other explanation, such as a flu or other causes. During this wasting, people not only lose fat but also lose muscle mass. Wasting is linked to disease progression and death. Between 23% and 50% of people living with HIV/AIDS use cannabis as part of their therapy. They use it to help stimulate their appetite, which helps slow down the wasting and maintain their weight.

People who are on treatment for HIV take a multitude of medications. In the mid 1990s, a new class of drugs called protease inhibitors was approved. When used in combination with the standard antiretroviral drugs, they markedly slow the progression of HIV/AIDS disease. The side effects of protease inhibitors can be more severe than the standard drugs, often so severe that the treatment is intolerable and many become reluctant to maintain their treatment. Cannabis can provide relief from the treatment's side effects such as nausea and vomiting, and people are more able to stick to their treatment.

Nausea and vomiting caused by the medication can also lead to low food intake and wasting. Appetite stimulants such as Megace and Marinol (synthetic THC) can be used to help. Megace, however, mostly increases body fat. Marinol does not work well for everyone and many people with HIV/AIDS prefer to use marijuana to stimulate their appetite. Ron Reid, long-time HIV survivor, reports "I started using marijuana on the advice of my physician a few years ago. As my health began to deteriorate, I agreed to use it. I had used Marinol before but it did not have any therapeutic effect. I also used Cesamet (a synthetic cannabinoid to manage nausea and vomiting) but the results were marginal at best."

Some people living with HIV/AIDS also report that cannabis helps with pain, sleep and relaxation, anxiety and depression, and mood, therefore improving their quality of life.

For many, using cannabis has meant that they have been able to reduce the number of pharmaceutical pills needed to control the side effects. "When I was put on therapy in 1994 with AZT, 3T3, and D4T, I became very sick with extreme body pain, nausea, night/day sweats, headaches and depression," says Jason Wilcox, who has been living with HIV for 15 years. "My doctor has a pill for this and a pill for that. Soon I found myself taking 10 pills a day instead of the six I truly needed in the HIV cocktail. I also have hepatitis C so taking all these pills could do some serious damage to my liver over time, and to other organs, not to mention possible drug interactions. It was then that a friend suggested smoking marijuana to substitute some of the pills." Similarly, Robert Newman states, "I am an anti-pill type of person, but living with AIDS, I have grown accustomed to the fact that pills are a part of my life, whether I like it or not. I take HIV/AIDS pills and very little else that is not in some way or another holistic or organic if it works as well." Many people living with HIV/AIDS use various forms of complementary therapies.

The Canadian AIDS Society gets involved

With the increase in combination therapy in the 1990s, cannabis as a complementary therapy became more popular as a way to manage the various side effects. In 1998, the Canadian AIDS Society's Board of Directors adopted a position statement on the use of cannabis as part of HIV/AIDS therapy. It

became the first 'patient organization' in Canada to be so vocal in calling on compassionate access to cannabis for therapeutic purposes.

The Canadian AIDS Society (CAS) was also invited to be on Health Canada's Stakeholder Advisory Committee on Medical Marihuana and has been an active member of the committee since its onset in 2002, providing a voice for people living with HIV/AIDS and for AIDS service organizations in the development of the medical marijuana program and the Marihuana Medical Access Regulations.

Funding comes through for a project on cannabis as therapy

More recently, the Public Health Agency of Canada's (then Health Canada's) HIV/AIDS Policy, Coordination and Programs Division, through the Canadian Strategy on HIV/AIDS (CSHA), identified broad priorities and called for proposals to address these priorities. They included specific issues such as the legal, ethical and human rights issues related to access to treatment. Treatment in this case included controlled substances for medical use, such as marijuana. CAS submitted a proposal and received funding to conduct this work through the CHSA's Legal, Ethical and Human Rights Fund.

The project is called "Cannabis as Therapy: Access and Regulation Issues for People Living with HIV/AIDS". As of January 2005, Lynne Belle-Isle was hired as the Project Consultant to do this work over the next 18 months. "This is a very challenging and exciting project where we will be documenting the realities that people living with HIV/AIDS face when they choose to use cannabis as part of their therapy, and identifying the various barriers they face when they want to access cannabis due to the current regulatory environment." says Lynne Belle-Isle. "We have brought together an amazing team of people to be part of the National Steering Committee that will guide this project and develop a plan of action to address the barriers." The National Steering Committee includes a variety of community members from across Canada. (See sidebar pg 16)

CAS believes that a person has the right to make decisions of fundamental personal importance, which includes the right to choose and access a treatment to alleviate the effects of an illness with life-threatening consequences, and to do so without fear of criminal prosecution.

By the end of the project, CAS will have produced a document to present the legal, ethical and human rights issues related to access to and regulation of cannabis as therapy for people living with HIV/AIDS. The report will include a list of recommendations and will be a powerful tool to influence the future direction of access to marijuana for medicinal purposes in Canada.

Canadian AIDS Society & Cannabis as Therapy

Raymond Berger, member of the National Steering Committee, also on the Canadian AIDS Society's Board of Directors

The report will include an in-depth legal review and analysis. CAS has hired barrister and solicitor Alan Young to do this work. "In light of my experience in working to constitutionally enshrine the right to choose cannabis as medicine, I welcome the opportunity to provide the Canadian AIDS Society with an exhaustive report on the evolution of lawful access to medicinal cannabis and a prognosis for the future." The legal review and analysis will be conducted with the consideration that laws and policies also affect the health of individuals, communities and populations. The way policies and programs are designed or implemented can promote or violate human rights.

The National Steering Committee will be providing input into the legal review and analysis. The suggestions for future avenues that will come out of this analysis will be integrated into the plan of action that will guide the CAS' future work in this area. A dissemination plan will be developed to distribute the document to a targeted audience of community-based organizations, politicians, policy makers, people living with HIV/AIDS, among others.

To document the realities of people living with HIV/AIDS who use cannabis as therapy, focus groups will be conducted in Victoria, Vancouver, Toronto and Montreal. In order to get to hear from people all across Canada, there will also be a focus group at the 2005 People Living with HIV/AIDS Forum which will take place in Ottawa from June 15th to June 17th. Key stakeholders such as physicians, pharmacists, Health Canada's Drug Strategy and Controlled Substances Programme, the Public Health Agency's HIV/AIDS Division, police officers, compassion clubs, producers, and others will also be interviewed to ensure their perspectives are included in the report and plan of action.

The project will document people's experiences with the government's medical marijuana program. Some people living with HIV/AIDS have managed to apply to the program successfully, others have encountered obstacles, and others choose not to apply to the program. Some of the National Steering Committee members have shared their stories and provide a glimpse into the kinds of issues that will be captured through this project. "I found it empowering in the late 1990s to hear that the federal government was going to license persons with terminal illnesses to obtain and possess medicinal cannabis." says Jason Wilcox. "It was a great step forward in my eyes. No longer would the fear of jail be a factor for something generally supported as a medical treatment. I soon learned it was even more difficult to obtain a license for cannabis than to get a gun license which we all know is extremely hard to get in Canada."

Finding a doctor to sign the application

Jason Wilcox, member of the National Steering Committee, with his 5-year old daughter.

forms remains an important obstacle for people wanting to obtain an Authorization to Possess from Health Canada. Raymond Berger states: "I asked my physician to fill out and sign the forms to apply for my authorization. My physician refused for fear of the Collège des Médecins du Québec." (Quebec's college of physicians, who have been vocal in their opposition to the program) "My doctor told me "I still have a child to send to university!" It seemed too risky and [no doctor] wants their career to end because of marijuana."

Even when they find a doctor to sign the forms, obstacles occur. "Once I found a doctor to sign for me, I was turned down by Health Canada for he was not recognized as an HIV/AIDS specialist." reports Jason Wilcox. For clarification, there is no recognized HIV/AIDS specialty in Canada, even if a good proportion of a family physician's or a general practitioner's patient base consists of people living with HIV/AIDS. "I was angry of course. I had a baby coming and did not want to be illegal when possessing cannabis." In order to apply under Category 2 of the current MMAR, people with HIV/AIDS have to be referred to a specialist such as an infectious disease specialist, an immunologist, or some other relevant specialist. Once the amended MMAR are implemented, they will be able to get their family doctor or GP to sign their application.

Others are more defiant about applying to the government program. "I have not applied for the federal authorization." says Robert Newman, "The information I collected for the compassion club membership is similar in context to the information required in the federal application. Since both applications boiled down to the doctor's letter, and I have one, I challenge the legality of one and the illegality of the other." The project will review the government's medical marijuana program and provide suggestions as to how it could better address the needs of people living with HIV/AIDS.

The issue of a legal supply of cannabis is a contentious one. Authorized persons have a choice to grow their own, get a designated grower who is only allowed to grow for one person, or buy the cannabis grown by Prairie Plant Systems under contract with Health Canada. There have been many concerns expressed regarding the cannabis grown for the government, and some measures have been taken to improve the product. Public perception of this product remains negative, and this is reflected in the few people that are actually ordering their cannabis through PPS.

For many, using cannabis has meant that they have been able to reduce the number of pharmaceutical pills needed to control the side effects.

Canadian AIDS Society & Cannabis as Therapy

CAS would like to work with the government to improve access to and distribution of legal cannabis in Canada. Several options will be explored through this project and different models of distribution will be analyzed. "We must urgently favour the development and legalization of licensed growers so that they may produce for many medical users." suggests Luc Gagnon. "Many current producers already possess a remarkable expertise that we must tap into, instead of wasting public funds in experiments that lead nowhere" he says, referring to the Prairie Plant Systems' production.

The stigma and discrimination associated with the use of cannabis will also be examined.

Some people report that it is important for them to know and trust their source of cannabis. "I have much more trust for growers that I know who grow a product that is of organic quality, at a very competitive price. I have always been lucky enough to have some quite reliable contacts to supply me with marijuana, and yet I have to break the law to get therapeutic marijuana that I consider helpful for me." says Raymond Berger. Many other people living with HIV/AIDS obtain their marijuana through a local compassion club. Clubs report that people with HIV/AIDS represent about 25-30% of their membership. CAS appreciates the importance of community-based models for distribution of medicinal marijuana and will consider this in its analysis. Of course, agricultural standards and quality control are also paramount and will be factored into the analysis.

The stigma and discrimination associated with the use of cannabis will also be examined. When asked how people react to their use of cannabis as part of their therapy, Raymond Berger comments "Unless they have experienced benefits from therapeutic marijuana themselves, most people are convinced that the therapeutic part is just an excuse to smoke pot freely!" Even doctors share this view, as his physician's reaction was to say "The use of marijuana is more of a lifestyle than a treatment"!

The stigma attached to the euphoria (or 'high') associated with cannabis is still very present. However, for some, the mood enhancing property has a beneficial effect on their overall health and quality of life. "Smoking marijuana was helpful to keep me awake and to believe that life was still worth living while I was taking Kaletra and other antiretroviral medication" states Berger. Robert Newman says, "I currently use marijuana to combat depression. Smoking marijuana not only gives me the relaxing and calming effects to my day, the act itself of stopping my day to partake for 5 minutes is something that I enjoy." One could argue that health is more than the absence of symptoms or disease but includes quality of life and well-being.

The stigma of using cannabis as part of one's therapy is of particular concern to a parent. "Parents face insurmountable pressures to take pills instead of smoking medication when they have a child" said Jason Wilcox. "I personally came under attack for marijuana use by the Ministry of Children and Families here in B.C back in March of 2001. The Ministry lawyer explained that they were concerned about the medication I was taking and whether that would have an impact on my ability to care for my daughter." After lengthy discussions and debate, the Ministry backed off, though this situation clearly indicates the need for better public knowledge surrounding the therapeutic use of cannabis.

An important element of the project will be to develop resource materials to assist the HIV/AIDS community and build its capacity to provide information about the use of cannabis as therapy, how to apply to the medical marijuana program, legal considerations, how to speak to a doctor about cannabis, where and how to obtain cannabis, and issues of stigma and discrimination. This work will ultimately benefit all medicinal users of marijuana.

The project began in January 2005 and will run for 18 months. The results and materials will be ready to be presented when Canada hosts the XVI International AIDS Conference in Toronto on August 13-19, 2006. For more information about the project, or to participate in one of the focus groups, please contact Lynne Belle-Isle at the Canadian AIDS Society at 1-800-499-1986, extension 126, or at lynneb@cdnaids.ca

Members of the National Steering Committee:

Lynne Belle-Isle, Canadian AIDS Society (Chair/NSC)

Claire Checkland, Canadian AIDS Society

Raymond Berger, CPAVIH in Montreal, Quebec (also on CAS' Board of Directors)

Glenn Betteridge, Canadian HIV/AIDS Legal Network

Nathalie Bouchard, Production Douce Bohème/Gentle Craft Production

Horace Josephs, Canadian Treatment Action Council

Laurie Edmiston, Canadian AIDS Treatment Information Exchange

Luc Gagnon, Montreal, Quebec

Brent Lewandoski, Medicine Hat, Alberta

Philippe Lucas, Vancouver Island Compassion Society

Dr. Glenda MacDonald, Pharmacotherapy Consulting Group

Eric Nash, Island Harvest

Robert Newman, AIDS Committee of London, Ontario

Ron Reid, Toronto, Ontario

Trevor Stratton, Canadian Aboriginal AIDS Network

Dr. Mark Ware, Montreal General Hospital Pain Centre

Jason Wilcox, Vancouver Island Persons Living with Infectious Viruses Caucus

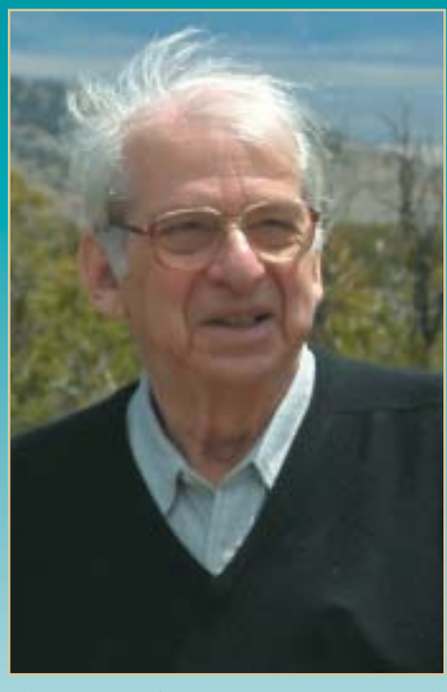
Charles Dawson, Charlottetown, Prince Edward Island

Ex-Officio/Non-Voting Members:

Valerie Lasher, Manager of the Office of Cannabis Medical Access at Health Canada

Michael McCulloch, Senior Policy Advisor, HIV/AIDS Policy, Coordination and Programs Division at the Public Health Agency of Canada

Sublingual Delivery of Sativex



This picture of Dr. Grinspoon was recently taken by his son David when they were visiting the San Luis Valley in Colorado.

Dr. Lester Grinspoon MD, is an emeritus professor of psychiatry at Harvard Medical School, and has recently signed on as a scientific advisor for Cannasat, Canada's newest cannabis company. He has been studying cannabis since 1967 and has published two books on the subject. "Marihuana Reconsidered" was published by Harvard University Press in 1971. "Marihuana, the Forbidden Medicine", co-authored with James B. Bakalar, was published in 1993 by Yale University Press. The revised and expanded edition appeared in 1997 and is now translated into 10 languages. (Medical Uses rxmarijuana.com - Uses of Marijuana - marijuana-uses.com)

I am pleased that Health Canada is considering allowing Sativex to be sold as a medicine in Canada if for no other reason than it contributes to the growing understanding that cannabis has some remarkable medicinal utilities. However, I think it important that as part of that consideration it address some concerns about Sativex and GW Pharmaceuticals.

A few years ago GW Pharmaceuticals persuaded the UK Home Office that it should be allowed to develop this product on the assertion that it will provide all of the medical benefits of cannabis without burdening patients with two common wisdom "dangerous" effects — those of smoking and getting high. There is very little to support the belief that smoking marijuana represents a significant risk to the pulmonary system. Although cannabis has been smoked widely in Western countries for more than four decades, there are no reported cases of cancer or emphysema which can be attributed to marijuana. I suspect that a day's breathing in any city with poor air quality poses more of a threat than inhaling a day's dose of smoked marijuana. Furthermore, those who are, in today's antismoking climate, concerned about any toxic effects on the pulmonary system can now use a vaporizer, a device which frees the cannabinoid molecules from the plant material without the necessity of producing smoke by burning it. As for the psychoactive effects, I am not persuaded that the therapeutic benefits of cannabis can always be separated from the psychoactive effects nor am I convinced that attempting to do so is always a desirable goal. For example, many patients with multiple sclerosis who use marijuana speak of "feeling better" as well as the relief of muscle spasm and other symptoms. If cannabis contributes to this mood elevation, should patients be deprived of this effect? The statement, "The company maintains that Sativex, when taken properly, does not cause the kind of intoxication that people routinely experience from smoking marijuana" hinges on the phrase, "when taken properly". Properly here means taking a dose which is under the level required for the psychoactive effect. One has to question whether that dose is always therapeutic and whether cannabis taken sublingually can be so carefully titrated to readily find that precise dose. It is also true that people who want to use Sativex to get high will certainly be able to do so.

One of the most important characteristics of cannabis as a medicine is its capacity for self-titration when taken through the pulmonary system. Because the effects are achieved so rapidly through this means of administration, the patient can determine precisely the amount needed for symptom relief; the risk of underdosing or overdosing is minimized. While sublingual absorption of cannabis leads to faster relief than oral administration (which may take one and a half to two hours), it is not nearly as fast as pulmonary administration and therefore makes self-titration much more difficult if not impossible. Furthermore, many patients cannot hold the Sativex, which has a most unpleasant taste, under the tongue long enough for it to be absorbed; as a consequence varying amounts trickle down the esophagus. It then behaves like orally administered cannabis with the consequent delay in the therapeutic effect.

Cannabis will one day be seen as a wonder drug as was penicillin in the 1940s. Like penicillin, herbal marihuana is remarkably nontoxic, has a wide range of therapeutic applications, and will be quite inexpensive when it is freed of the prohibition tariff. Even now good quality illicit or homegrown marijuana, which is, at the very least, no less

Sublingual Delivery of Sativex

useful than Sativex, is less expensive than Sativex will be.

While the pharmaceutical industry will undoubtedly produce new strains of herbal marihuana and unique analogs of cannabis which will be useful in ways that whole smoked cannabis is not, Sativex provides only one advantage over whole smoked (or vaporized) marihuana: its use will be legal. I have yet to see a patient who has used both dronabinol (Marinol, a prescription-available synthetic form of the most active cannabinoid) and smoked marijuana who has not found the latter more useful and manageable. The primary reason patients use dronabinol rather than herbal marihuana is a function of the law. Without the prohibition, few would use dronabinol. Similarly, the commercial success of Sativex will largely depend on the vigor with which the prohibition is enforced. It is not unreasonable to believe that as the pharmaceutical armamentarium of cannabinoids increases, so will the pharmaceutical industry's interest in sustaining the prohibition. Dr. Geoffrey Guy claims that he founded GW Pharmaceuticals to keep people who find marijuana useful as a medicine out-of-court; there is, of course, a way to do this which would be much less expensive both economically and in terms of human suffering.

Dr Lester Grinspoon has agreed to be interviewed in the next issue of Cannabis Health. If you would like to submit a question about this article or any other topic please send to editor@cannabishealth.com prior to May 31st, 2005.

The Body's Own Cannabinoid System

Franjo Grotenhermen, M.D.,
Chairman of the IACM

Dr. Franjo Grotenhermen is a medical doctor. He is principal of the nova-Institut in Hürth near Cologne, Germany, (www.nova-institut.de) and Executive Director of the International Association for Cannabis as Medicine (IACM) (www.cannabis-med.org).

D9-THC (THC), the main active compound of the cannabis plant, and many other cannabinoids exert most of their actions through binding to cannabinoid receptors in the body, while the mode of action of other cannabinoids of therapeutic interest, among them cannabidiol (CBD), as well as the carboxy metabolite of THC (11-nor-9-carboxy-D9-THC) and its analogues is less well established.

The majority of THC effects are mediated through agonistic actions at cannabinoid receptors. Agonistic action means that receptors are activated, in contrast to antagonistic action, i.e. blockade of receptor effects. The activation of cannabinoid receptors results in different actions depending on the location of the cells with receptors on their surface, e.g. decrease of pain in pain centers of the brain.

Some non-cannabinoid receptor mediated effects of THC and synthetic derivatives have also been described, e.g. some effects on the immune system, some neuroprotective effects, and anti-emetic effects. It is possible that several effects previously thought to be non-receptor mediated are mediated by cannabinoid receptor subtypes that have not yet been identified.

Cannabinoid Receptors

To date two cannabinoid receptors have been identified, the CB1, and the CB2 receptor. They differ in signaling mechanisms, distribution in organs and tissues, and sensitivity to certain agonists and antagonists.

CB1 receptors are mainly found on nerve cells in the brain, spinal cord and peripheral nervous system, but are also present in certain peripheral organs and tissues, among them endocrine glands, leukocytes, spleen, heart and parts of the reproductive, urinary and gastrointestinal tracts. One of the functions of CB1 receptors is inhibition of neurotransmitter release. The cannabinoid system is one of the most important systems in the brain that inhibits other neurotransmitters. CB1 receptors are highly expressed in the basal ganglia, cerebellum, hippocampus and in certain regions of the spinal cord, reflecting the importance of the cannabinoid system in motor control (basal ganglia, cerebellum), memory processing (hippocampus) and pain modulation (spinal cord). Their concentration in the brainstem is low, which may account for the lack of cannabis-related acute fatalities, e.g. due to depression of respiration. The brainstem connects the brain with the spinal cord and is responsible for the general functions of life. Its structures control the frequency of the heartbeat, blood pressure and respiration.

CB2 receptors occur principally in immune cells, among them leukocytes, spleen and tonsils. Immune cells also express CB1 receptors in lesser numbers.

Geschlafen Activation of the CB1 receptor produces cannabis-like effects on psyche and circulation, while activation of the CB2 receptor does not. Hence, selective CB2 receptor agonists have become an increasingly investigated target for therapeutic uses of cannabinoids, among them analgesic, anti-inflammatory and anti-cancer actions.

There is increasing evidence for the existence of additional cannabinoid receptor subtypes in the brain and periphery. These receptors are more likely to be functionally related to the known cannabinoid receptors and have a different structure to CB1 and CB2, as there is no evidence for additional cannabinoid receptors in the human genome.

Endocannabinoids

The identification of cannabinoid receptors was followed by the detection of molecules present in humans and animals that bind to these receptors. They are called endocannabinoids and are derivates of fatty acids. To date five endocannabinoids have been identified. These are N-arachidonylethanolamide (anandamide, AEA), 2-arachidonylglycerol (2-AG), 2-arachidonylglyceryl ether (noladin ether), O-arachidonyl-ethanolamine (virodhamine), and N-arachidonyl-dopamine (NADA).

Cannabinoid receptors and endocannabinoids together constitute the endocannabinoid system which is teleologically millions of years old and has been found in mammals and many other species. Endocannabinoids serve as neurotransmitters or neuromodulators.

Anandamide and NADA do not only bind to cannabinoid receptors but also stimulate vanilloid receptors (VR1), non-selective ion channels associated with hyperalgesia (increased pain sensitivity). Capsaicin, a compound of red hot chili peppers also activates vanilloid receptors. Thus, the historical designation of anandamide as an "endocannabinoid" seems to be only one part of the physiological reality. Cannabinoid receptors seem to amount only to some of the "anandamide receptors".

The first two discovered endocannabinoids, anandamide and 2-AG, are best studied. Anandamide was named after the Sanskrit word for bliss ("ananda") and the chemical structure, an amide of a fatty acid. Endocannabinoids are produced "on demand" by the body and released from cells in a stimulus-dependent manner. Among these stimuli is pain, which may increase the levels of endocannabinoids in areas of the brain responsible for pain control. Another stimulus is hunger, which results in an increase of endocannabinoid concentrations in the gut and brain centers for appetite control. Endocannabinoids are produced by tissues that express cannabinoid receptors. After release, they are rapidly deactivated by uptake into cells and metabolized. The duration of action of endocannabinoids is only a few minutes, in contrast to THC whose effects last several hours.

Affinity to the Cannabinoid Receptor

Cannabinoids show different affinity to CB1 and CB2 receptors. Synthetic cannabinoids have been developed that act as highly selective agonists or antagonists at one of these receptor types. D9-THC has approximately equal affinity for the CB1 and CB2 receptor, while anandamide has marginal selectivity for CB1 receptors. However, the efficacy of THC and anandamide is less at CB2 than at CB1 receptors.

Tonic Activity of the Endocannabinoid System

When administered by themselves antagonists at the cannabinoid receptor not only block the effects of endocannabinoids, but produce effects that are opposite in direction from those produced by cannabinoid receptor agonists, e.g. cause increased pain. This would suggest that there is a constant release of endocannabinoids, or that there is a portion of cannabinoid receptors that exist in a constitutively active state, indicating that the cannabinoid system is tonically active.

Tonic activity of the cannabinoid system has been demonstrated in several conditions. Endocannabinoid levels have been demonstrated to be increased in a pain circuit of the brain (periaqueductal gray) following painful stimuli. Tonic control of spasticity by the endocannabinoid system has been observed in chronic relapsing experimental autoim-

The Body's Own Cannabinoid System

To date two cannabinoid receptors have been identified, the CB1, and the CB2 receptor. They differ in signaling mechanisms, distribution in organs and tissues, and sensitivity to certain agonists and antagonists.

mune encephalomyelitis (CREAE) in mice, an animal model of multiple sclerosis. An increase of cannabinoid receptors following nerve damage was demonstrated in a rat model of chronic neuropathic pain and in a mouse model of intestinal inflammation. An increase of cannabinoid receptors may increase the potency of cannabinoids used for the treatment of these conditions. Tonic activity has also been demonstrated with regard to appetite control and with regard to vomiting in emetic circuits of the brain.

Antagonists

Antagonists interfere with the physiological functions of endocannabinoids. Several mechanisms have been proposed for the action of antagonists. They may antagonise the effects of endocannabinoids, they may modulate the cannabinoid receptors, changing them from a constitutively active state to an inactive state, or they may act through cannabinoid receptor independent mechanisms. Antagonists are reported to increase motor activity, improve memory, increase pain perception, cause vomiting and several other effects in animals.

Endocannabinoids are important molecules for the extinction of aversive memories. CB receptor antagonists block this ability of the cannabinoid system to help the brain forget stressful experiences, e.g. physical or psychological violence.

Therapeutic Prospects

Mechanisms of action of cannabinoids are complex, involving activation of and interaction at the cannabinoid receptor, as well as activation of vanilloid receptors, influence of endocannabinoid concentration, antioxidant activity, and metabolic interaction with other compounds. Cannabinoids enhance the effects of endocannabinoids, increase appetite, decrease pain, relax muscles, decrease intraocular pressure, and change our mood. CB receptor antagonists (blockers) are under investigation for the treatment of obesity and nicotine dependence.

Cannabinoid analogues that do not bind to the CB1 receptor are attractive compounds for clinical research. Additional ideas for the separation of the desired therapeutic effects from the psychotropic action comprise the concurrent administration of THC and CBD; the design of CB1 receptor agonists that do not cross the blood brain barrier, so that they do not bind to cannabinoid receptors in the brain; and the development of compounds that influence endocannabinoid levels by inhibition of their membrane transport (transport inhibitors) or hydrolysis (FAAH inhibitors). Such compounds increase the concentration of endocannabinoids, enhancing their action. For example, blockers of anandamide metabolism were able to reduce anxiety in animal tests.

It is remarkable that FAAH inhibitors may already be in clinical use. The non-steroidal anti-inflammatory agent flurbiprofen inhibits the metabolism of FAAH. When administered into the liquid of the spinal cord, it reduces inflammatory pain by increasing the level of endocannabinoids.

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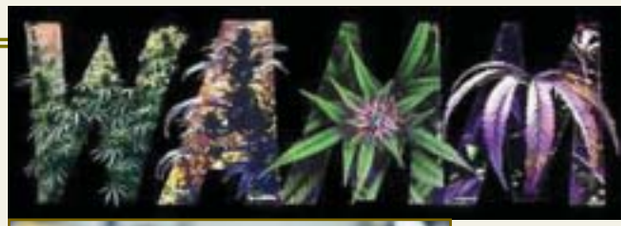
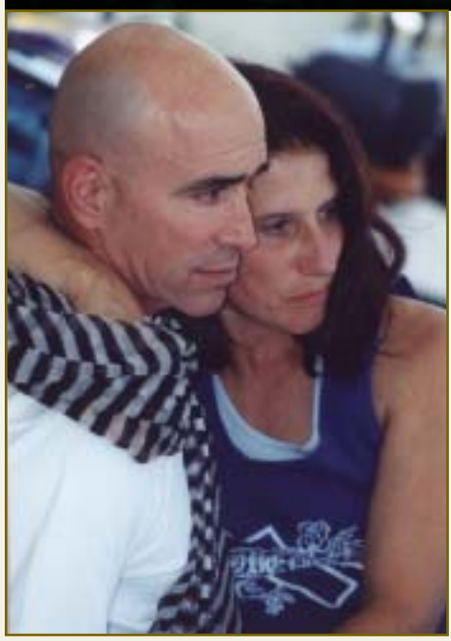
Strain Specific Research

Wo/Man's Alliance for Medical Marijuana





Header art credit: Jean Hanamoto
Photo: Valerie & Mike Corral

Valerie Leveroni Corral founded the Wo/Men's Alliance for Medical Marijuana, WAMM in 1993. WAMM is a collective of patients and caregivers attempting to create community, build hope, dissolve barriers, and provide support and medical marijuana at no cost to patient members who possess a signed and verified recommendation from a physician licensed to practice medicine in California. A genetically monitored, organic, communal garden is tended by WAMM clients / participants under the direction of Mike Corral and Valerie A. Leveroni Corral.

WAMM initiated a study in 1993 designed to address the question of differential clinical effects between Cannabis sativa and C. indica strains and hybrids, and also examining effects of inhaled and ingested routes of administration. This study is ongoing and now includes "blind" trials where the varieties used are not apparent to the participating patient.

The data collected since 1993 from WAMM members suggest a trove of possibilities. That a single plant comprised of a myriad of components promises such a wealth of potential is not a novel consideration. It is no surprise to researchers investigating the earth's flora in the hope of developing drugs to ease the ills of humankind. Nor to indigenous peoples who have relied on plant medicines to reduce suffering and even lay claim to "miracle" cures. It may well be that the symbiotic relationship between the components that make up each plant in our world could influence their efficacy. A "whole plant medicine" approach suggests that these combined properties may add a level of usefulness yet untapped in synthetically produced single compounds.

The most significant limitation to this type of research is the absence of a legal mechanism in the USA for analyzing cannabis samples for their biological constituent content. However, the value of clinical observation when further combined with the enduring relationship of observer to subject provides a depth of understanding that cannot be obtained in any short-term study.

Endocannabinoids (neuroprotective agents in our brains) appear to be part of a central system, interdependent with other systems of human physiology. (1) Restricted access to the use of whole plants may hinder a patient's ability to effectively control symptoms and improve quality of life. Controlled studies of cannabis have revealed the varying therapeutic effectiveness of cannabinoids in treating illnesses such as cancer, AIDS and Lupus chemotherapies, AIDS wasting, MS, asthma, glaucoma, rheumatoid arthritis, epilepsy and other seizure disorders, and aiding in the retardation of tumor growth.

Our present collection of data also includes measures of effectiveness of cannabis on other autoimmune illnesses such as systemic lupus erythematosis, as well as on other disorders, including muscular dystrophy, epilepsy, quadriplegia, paraplegia, Parkinson's disease, fibromyalgia, depression and migraine.

It is reported that THC may reduce spasms associated with both neurological and non-neurological disorders (Hollister, 1986; British Medical Association Report, 1997). The non-psychoactive cannabinoid cannabidiol has been shown to exhibit anticonvulsant properties in certain animal studies (Iversen 2000)(The Science of Marijuana,

L.L.Iversen, PhD). In the case of some patients it has been noted to reduce or prevent the onset of both spasm and seizures. It appears that there are receptor sites for cannabinoids that have beneficial effects on seizure activity.

Marijuana produces its medical and other effects by virtue of the concentration and balance of various active ingredients, especially the cannabinoids, which are unique to marijuana, but including also a wide range of terpenoids and flavonoids (McPartland and Mediavilla 2001; McPartland and Pruitt 1999). The concentration and relative proportions of these ingredients depend on the plant's genetic structure and applied hybridization techniques, and as such, allow for a substantially varied outcome.

photo courtesy of www.wamm.org

Origin & Development of Strains

In this discussion of marijuana or cannabis we must articulate the origin of the plant. There exists some consensus that the genus is comprised of a single highly variable species, Cannabis sativa, and is easily adaptive throughout the world. It is considered by some researchers that the sub-species indica is actually a separate species (e.g., R. Clarke 1998). For purposes of discussion here we will divide the species into C. sativa, generally grown in northern latitudes and C. indica grown further south. It is noted that C. indica is cultivated for its psychoactive resin production and C. sativa, until modern times, mainly for fiber. The differentiation between the species is often characterized by physical distinctions; C. sativa exhibits taller growth, increased distance between nodes, long, thin, fingerlike leaf structure and an extended life cycle, 6-9 months. C. indica is shorter in stature, with less distance between nodes, a wide leaf structure, and less time to maturation, 4-6 months. Marijuana produces three types of resin-(cannabinoid)-producing trichomes; small bulbous, capitate sessile, and capitate stalked. The highest levels of cannabinoids occur in the capitate stalked trichomes produced only by the female flowers. It is logical therefore, to attempt to breed plants that express more flowers and fewer leaves.

We began experimenting with marijuana cultivation in 1974. In the ensuing years we developed 32 strains. Of these we have chosen to focus on the cultivation of four particular strains: C. sativa, C. indica and two hybrids. We have traced our C. sativa to Eastern Malawi. We call her the African Queen (AF). This was initially selected for rapid growth, high yield and aromatic qualities. Our C. indica, named Purple Indica (PI), originated in Afghanistan. The qualities most noted include early flowering, significant production of resin, and a superior flower to leaf ratio. Utilizing these two distinct strains, as well as hybrids of both, has resulted in significant variation. Our method of cultivation was inspired by the wisdom of Luther Burbank, mentor to many a homespun gardener. We planted hundreds of seedlings and selected, from those, a few of the highest quality from each variety.

Distinction between strains

Observing the evidence provided by the test articles, we selected the varieties according to reported successful use by our collective. In 1998 a revised protocol was developed in which patients receive a one-week supply of cannabis without knowledge of the particular variety provided. Patients complete forms on a weekly basis. This blinding method confirms distinctions between C. sativa and C. indica. Results have implications for subsequent crossbreeding of strains to maximize therapeutic effects.

Each variety exhibited distinct effects on the symptoms of our mostly terminally ill membership. At the time these instruments were analyzed, our patient base (some with multiple diagnoses) consisted of the following:

HIV/ AIDS 141 patients
(48 HIV / 93 AIDS)
Cancer 57 patients
Neurological Disorders 7 patients
MS 13 patients
Epilepsy/ Seizure Disorder 13 patients
Paraplegia/ Quadriplegia 11 patients - Spinal Stenosis/ Nerve Injury 13 patients

Cannabis administration

Cannabis inhalation methods consisted mostly of smoking, with some use of vaporization, although patient reports of effectiveness appear substantially lessened when this technique was employed. This could certainly depend on the quality of the vaporizer design. Inhaled marijuana is uniformly effective in relieving symptoms across a wide range of diagnostic categories. Two symptoms, spasm and nausea, showed preferential improvement with smoking as compared to ingestion.

Initially, we observed that C. indica provided increased energy and improved appetite. The hybrid C. indica x C. sativa (PIxAF) shows a similar quality to that of C. indica (PI) in stimulating appetite. C. sativa and its hybrid AFxPI are less effective in stimulating appetite. In treating nausea in HIV/AIDS & orthopedic diagnosis groups, C. sativa and C. indica strains prove equivalent.

C. indica proved to significantly reduce discomfort in patients experiencing pain. Upon analysis of blinded therapeutic cannabis exposures, coupled with long-term observation, results indicate that the contributing factor of pain relief itself was largely responsible for reported increased energy.

When patients are exposed to the pure-bred C. sativa (African Queen), or the hybrid

garden blessing - Valerie & Mike Corral WAMM

C. sativa x C. indica (AFxPI), a significant increase in energy, not linked to the relief of pain, is contrasted to the lethargy and somnambulance reported by pain-free patients using C. indica.

Interestingly, we have found that the intraocular pressure of glaucoma can best be reduced with continuous use of low quality C. sativa throughout the day.

For more detail refer to http://www.marijuana-research.org/

WAMM's ingested forms of cannabis consist of capsules (two grades), "mother's milk" (a soymilk-based liquid), baked goods, and a whole cannabis tincture made from pure grain alcohol with leaf or a homogenized blend of leaf and flowers.

C. indica and C. sativa are employed in the preparation of these products. Consistency is maintained from year to year throughout production. Our blend of leaf and flowers is added to butter and cooked at about 150°F for four hours. The mixture is cooled and put into capsules. Patients report that this alternative means of ingestion induces sleep and interrupts acute pain. Users of our tincture report relief of neuropathic pain in extremities, including reduction in joint ache symptomology.

A topical solution (Rub-a-Dub) is prepared by soaking the unusable parts of the plant in Isopropyl alcohol for 6-12 months and is administered by spraying on the skin. This liniment relieves the pain of arthritis and non-weeping shingles (Herpes Zoster).

Because the therapeutic effects of cannabis are sometimes ascribed to its mood-altering properties, we also performed a correlation analysis of the change in mood score with other outcome variables. Energy level was the only variable to show a significant correlation with mood. Mood was not correlated with any other outcomes, including pain relief. It appeared that mood was often independent of symptom expression. However written testimony by patients in their surveys indicated that they believe that changes in awareness or consciousness do affect overall healing.

Of all the symptoms that are touched by medical marijuana, perhaps the most profound effect reported by patients facing death has been described as a "shift in consciousness"… "a door opening to an alternative reality". Sitting at the deathbed of countless friends, it seems there is no more important "side-effect" than this ability to change awareness. On several occasions, terminally ill patients have remarked on this recurrent phenomenon which allows them to approach their impending death more "openly" or in a more "relaxed" manner. This is of particular interest, as each patient also reported a reduction in anxiety often associated with the dying process.

Patients come to WAMM seeking marijuana. They soon recognize something in one another, something simpatico. This provides insight for us to both meet our own needs and to see beyond them, by revealing the importance in serving others. We work together to provide for our whole collective. Patients and our caregivers work in our garden, our office, making medicines, at our weekly meetings and at each other's bedsides. These plants have inspired the creation of a community for people who might otherwise be disenfranchised by illness. Since our inception in 1993 more than 150 WAMM members have died. Each life touches us in profound ways. We recognize that we are assisting each other on a journey that we all travel.

And while our hearts sometimes break, they are made richer with every turn of the soil, with every meeting of a new friend, with each day that brings us closer to the realization that our struggle for access to medical choice is also a struggle for liberty.

To contact us visit our website www.wamm.org. To send donations or for information about our ongoing legal battle & updates & to purchase our grow video Cannabis Cultivation Outdoors; A 12-Step Guide For Growing Medical Marijuana Join us for our 3rd ANNUAL WAMMfest Celebration September 10, 2005 in Santa Cruz, CA.

1. Dr. Rafael Mechoulam, Mavericks of Medicine. D.J. Brown, 2005

Cannabis in Pharmacies: The Next Step

Left: Glenda MacDonald Right: Robin O'Brien

Glenda MacDonald, BScPharm, PharmD, RPh Robin O'Brien, BSc, BScPharm, PharmD, BCOP, RPh Drs. Glenda MacDonald and Robin O'Brien are clinical pharmacists who assist patients with their medications in Vancouver, British Columbia.

Canadian pharmacists have been quietly dispensing synthetic oral cannabinoids, including THC (delta-9-tetrahydrocannabinol), for over twenty years and the vast majority welcome the proposed regulatory change that will allow them to dispense herbal cannabis. This is especially true in British Columbia (BC). In an unprecedented move, the College of Pharmacists of BC issued a medical marijuana statement in 2003 that supports the therapeutic use of cannabis and its distribution through pharmacies (see sidebar pg 26).

The College of Pharmacists is the regulatory body that licenses pharmacies and pharmacists in the province of BC, making their

Cannabis in Pharmacies: The Next Step

supportive statement particularly noteworthy. The role of the College is to protect the public. Because the issue was controversial, pharmacists were surveyed prior to adopting the statement. An impressive majority of 80% of respondents agreed with the statement, the highest ever seen in a College survey. When questioned, pharmacists often responded, "It's about time!"

Approximately 7% of the BC population is using marijuana as medicine according to a Health Canada survey reported in The Vancouver Sun. However, only a handful of British Columbians are currently receiving Health Canada's cannabis. That leaves potentially tens of thousands of BC patients to rely on homegrown or black market marijuana for their medicine.

These patients have a right to access safe, legal, standardized therapeutic cannabis products through one of thousands of community pharmacies located across the country. Patients also have a right to obtain information on the proper use of their medicine from qualified, registered pharmacists who are recognized as medication experts.

Pharmacists have a responsibility to inform and patients have a right to know what effects, both positive and negative, they can expect when using a medication. Medicinal marijuana users, even those with recreational cannabis experience, require assistance in determining dose, route and frequency of administration. The "high" anticipated by recreational users is not necessarily the therapeutic endpoint for medicinal users. In fact, many patients wish to avoid it.

Pharmacists must ask if Health Canada's cannabis meets the three basic requirements for a medication to be accepted as a legitimate treatment option by the healthcare community: efficacy (does it work?), safety (does it hurt?) and quality (is it standardized?). We believe the answer is yes.

Efficacy

The discovery of cannabinoid receptors in 1988 ignited an explosion of research aimed at gaining further understanding of the medical benefits of the constituents present in the marijuana plant. Our understanding of the therapeutic effects of cannabinoids continues to grow, and research efforts are ongoing to answer the many questions that remain.

Health Canada has acknowledged the effectiveness of cannabis for the treatment of symptoms related to a number of medical conditions. As new evidence emerges from clinical trials, it is likely that new indications will be added. The Canadian Institutes of Health Research (CIHR) has stated their commitment to funding Canadian researchers to undertake studies in this important area. It is our hope that further acceptance by the medical and scientific community will translate into increased availability of funding.

Safety

As health care practitioners, pharmacists are bound by our code of ethics to ensure that the benefits of the treatments we offer outweigh any potential harm. Most health concerns are about the smoked route of cannabis. The temperature at the burning end of a cannabis cigarette can reach over 800 degrees Celsius. Tars and hundreds of chemicals are produced during combustion and inhaled when smoking cannabis.

The potential long-term health risk on lung and other tissues cannot be ignored. A vaporizer is thought to be a safer method of inhaling the active ingredient. The cannabis is heated just to the point where the active ingredient vaporizes (185-195∞C), theoretically avoiding inhalation of the toxic products of combustion. However, the inhalation route of administration with its associated risks can be avoided altogether by using the oral route.

Quality

Patients who could benefit from cannabis as medicine have the right to expect that the same stringent standards will be applied to this medicine as to any other that they may receive. The research-grade cannabis that Health Canada is currently distributing was developed to satisfy the research needs of the scientific community. Initially, the product was criticized because of low potency and the presence of stems. Improvements were made in 2004 to address these concerns.

While research-grade cannabis may not be necessary for routine therapeutic use, standardization and rigorous quality control testing are still essential. THC and cannabidiol content are used as markers for standardization of active ingredients in medicinal cannabis. Standardization confers the predictability and reliability that enables health professionals to recommend to patients how much to use and what results to expect.

The product should be of reliable and reproducible strength. It should be free of contaminants and toxins. Storage requirements should be clear - how long it can be kept and under what conditions. The amount of active ingredient present directly relates to how much is taken, and how often, in order to achieve the expected result.

Pharmacy Pilot Program

The proposed regulatory changes to Health Canada's Marihuana Medical Access Regulations will enable distribution of therapeutic cannabis through pharmacies. The first step is to design a pilot program.

BC is unique in its capability to undertake a pharmacy pilot because of its powerful, province-wide PharmaNet system. PharmaNet is the pharmacy computer system that links together every retail pharmacy in the province. Thus, BC pharmacists have access to a complete medication profile for their patients, even if prescriptions are dispensed by another pharmacy. Each time a new prescription is filled, PharmaNet automatically checks for interactions with every other prescription medication the patient is taking.

Since there are a number of practical questions still to be answered, a research component will need to be included in the pharmacy pilot. Again, BC has a unique capability to

Cannabis in Pharmacies: The Next Step

capture outcome data for the pilot through a province-wide research network of community pharmacies. The network was utilized to pilot BC's highly successful emergency contraception (EC) program which improved women's access to the "morning-after pill" by allowing registered pharmacists to independently prescribe emergency contraception. Now the EC project can serve as a model for the cannabis pilot program.

The existing community pharmacy research network can collect outcome data such as an individual patient's response to cannabis therapy, as well as any adverse effects that may occur. Databases like BC's PharmaNet and Medical Services Plan can be used to gather other data that act as surrogate measures of benefit or harm, including the usage patterns of other prescription medications, number of physician visits and hospital admissions. This type of objective 'hard' data is more credible to the medical community than subjective 'soft' data such as patient satisfaction.

Not surprisingly, there are a number of challenges ahead of us. At the forefront is the association of medical use of cannabis with the smoked route of administration. The therapeutic use of smoked marijuana stems from the familiarity with this route by individuals with previous recreational experience. However, due to the well-known hazards of tobacco smoking, pharmacists and other health care professionals cannot endorse the long-term use of the smoked route as part of a therapy intended to improve health outcomes.

There is a role for the inhaled route using vaporizers for patients who are unable to use the oral route (for example, because of nausea and vomiting associated with chemotherapy). While there are a number of vaporizers on the market, some have no temperature regulating mechanism making them unsafe for medical use. Vaporizers that are safe and approved as medical devices need to be available in pharmacies but, currently, none of the vaporizers are approved in Canada as a medical device.

In the absence of Health Canada approved vaporizers suitable for sale in pharmacies, patients unable or unwilling to take cannabis orally must rely on the smoked route. This is an ethical dilemma for pharmacists and puts Health Canada into a politically difficult position: patients are smoking Health Canada's cannabis while Health Canada is running a massive anti-smoking advertising campaign targeting tobacco smokers.

Some patients are unable or unwilling to use the oral route, as cannabis must be processed into another form in order to be active orally. Loose herb taken in capsules will have no effect. Teas are simple to make but the low water solubility of THC and other cannabinoids limits the usefulness of teas. Consequently, cannabis is usually heated or extracted with oil or alcohol. Influenced by recreational use, patients often use the same principles to process cannabis into baked goods such as cookies. However, not every patient is willing or able to bake.

Therapeutic cannabis will be of great interest to pharmacies specializing in compounding and natural medicine. Historically, pharmacists (or apothecaries) compounded herbal cannabis into pills. Today, Health Canada discourages pharmacy compounding of any product as it bypasses the drug review and approval process and borders on pharmaceutical manufacturing if produced in bulk.

On the other hand, Health Canada recognizes a patient's right to access individualized drug therapy that requires custom compounding. Pharmacists are permitted to compound dosage forms that are not commercially available, which is certainly the case with cannabis. Bulk compounding in limited quantities is also permitted in anticipation of receiving prescriptions. These guidelines should be less stringent for cannabis products as permit holders will not require a prescription.

Another challenge for a pharmacy pilot program will be patient recruitment. Patients will require Health Canada permits in order to obtain cannabis through their local community pharmacy. The proposed changes to the regulations will simplify the permit application process, which should encourage more eligible patients to obtain permits.

Our expectation is that physicians will continue to be reluctant to sign the permit application forms despite changes to the application process that shift responsibility for the decision to use therapeutic cannabis from the physician to the patient. Physicians' comfort levels will be higher knowing that a pharmacist will be checking for drug interactions, counselling the patient (including alternatives to smoking) and providing ongoing monitoring and advice, especially if part of a research protocol.

Pharmacists and physicians traditionally work together to ensure the effectiveness and appropriateness of a patient's medication regimen. They share the same desire to see patients improve. To date, representatives of physicians have made it clear that they do not wish to function in a "gate-keeper" role with respect to Health Canada's permit process. An expanded role for pharmacists would be welcome, and no doubt would alleviate some of these concerns. This would facilitate access for greater numbers of Canadians who could benefit from therapeutic cannabis.

It is more likely that health insurance companies and other third-party payers will be receptive to covering the costs of herbal cannabis that is distributed through pharmacies. Acceptance of the benefits of therapeutic cannabis by the health care community eventually will be reflected in the reimbursement schedules and policies of insurers.

The scope of the pharmacy pilot program is still to be determined. There is a real concern that the supply of Health Canada's research-grade cannabis will not be able to meet the demand should patient recruitment be successful. The alternatives include restricting enrolment, increasing current cannabis production or possibly seeking additional suppliers.

Canada is not the first country to support distribution of cannabis through pharmacies. Although we were the first to legalize marijuana for medical use, the Netherlands was the first to distribute cannabis through pharmacies. Their program demonstrates that it can be done. As pharmacists, we believe that it is time for Canada to move towards pharmacy distribution and that British Columbia is the ideal location for implementation of a Canadian pilot program.

College of Pharmacists of British Columbia Professional Practice Policy: Medical Marijuana.

The College of Pharmacists of British Columbia considers medical marijuana to be the herbal form of the cannabinoid class of drugs - Pharmacists currently dispense cannabinoids as the prescription synthetics, nabilone and dronabinol. - Dronabinol is THC, which is also the primary active constituent of medical marijuana - Patients have the right to use either a synthetic or herbal source of THC and other cannabinoids for legitimate uses. - The College discourages the smoked route and encourages research that includes alternative delivery systems. The College supports patient access to standardized medical marijuana through pharmacies, preferably at the same level of control as the synthetic cannabinoids.

Crazy Cookies
Cannabis edibles and the law circa 2005

John Conroy QC - photo credit Kim O'Leary

John Conroy is one of Canada's foremost cannabis lawyers. He has taken the current inadequacies of the law on as a challenge - all the way to the Supreme Court. John's law practice Conroy & Company can be found in Abbotsford, BC, Canada and a wealth of information can be found on his website at; www.johnconroy.com.

No doubt most of your readers have by now heard of the case of Mary Jean Dunsdon, aka Watermelon, Pot Diva, comedian, nudist, and cookie vendor, who was charged with trafficking and possession for the purpose of trafficking in "Cannabis resin" under 3 kg on Wreck Beach, a local nudist beach near Vancouver in 2001 and again in 2003. She was also prohibited by her bail conditions, from attending any part of the UBC Endowment Lands except the hospital, in an effort to ban her from the beach in order "to make it more acceptable for families", or so they said in their 'Operational Plan.'

The RCMP Detachment from Richmond, BC covers UBC. It decided to mount an 'undercover operation' at the local 'clothing optional' beach (they – a male and female officer - wore bathing suits), in order to catch the people selling illegal drugs. In so doing they enlisted the help of the illegal booze vendors to hunt down those terrible but popular 'crazy cookie' vendors!! Once Watermelon was pointed out to them they hailed her over as she came down the beach yelling 'crazy cookies, crazy cookies' in an effort to sell her wares – in the nude, of course. They soon engaged her in conversation as to what was in the cookies and secured an admission – cannabis of course and that they packed a real punch! They purchased a couple of cookies and sent them to the lab for analysis. Eventually the designated and certified Health Canada analyst analyzed the 'cookie' following the Cannabis Identification Guidelines set out in his Standing Operating Procedures or 'the protocol' and concluded that they contained 'Cannabis resin' as prohibited by the Controlled Drugs and Substances Act (CDSA).

The analysis went like this. First it looks like a cookie and smells like a cookie. Second no botanical features can be seen such as fragments of leaves, stalks or seeds. This is confirmed on microscopic analysis. If botanical features sufficient to identify the cannabis plant are seen they will, following the protocol, certify the substance to be "cannabis (marihuana)". If no botanical features are seen, they then apply something called the 'Duquenois-Levine' test which simply indicates the presence of 'cannabinoids' if a certain colour is achieved as a reaction to the application of a certain solution. If a presence is indicated, they then do a further chemical analysis (thin layer chromatography) to determine if certain three or four cannabinoids, characteristic to Cannabis are present. If they are, they certify the substance to be "cannabis resin". While the CDSA and its regulations do not define what 'resin' is, the protocol defines 'cannabis resin' as **(a)** a solid or sticky resinous material containing cannabinoids prepared from cannabis plant material; **(b)** a liquid extract to be the cannabis plant material or cannabis resin; or **(c)** mouldy or decomposed material containing cannabinoids and lacking botanical characteristics of cannabis (marihuana).

They do not see any 'resin'. Those of you who know anything about baking know that the minute the resin is in the mix you will no longer be able to visibly find it. Not having baked before, I didn't think about this until later.

We managed to get the Court to remove the 'no go' restriction and Watermelon returned to the scene of the crime. Police suspected her of re-offending , but they weren't quite sure – meaning they had 'no reasonable grounds' to search her or her bags. Because her first arrest on the beach had caused a mini riot on her behalf, the police decided to wait and arrest her later. They stopped her at the top of the stairs to the beach, searched her bag and found some more of those 'crazy cookies'. They later conducted a further 'undercover operation' similar to the first and caught Watermelon selling cookies again. So now she was facing several trafficking charges as well as several breach of bail charges.

My problem was trying to figure out what her defense was going to be. I knew I had an arguable unreasonable search and seizure at the top of the stairs on the possession for the purposes charge when they searched her bag without grounds and thereby violated her constitutional rights. When later at trial they tried to stretch it into an 'officer safety' search we won and the evidence was excluded. But what about the trafficking counts? Two separate sets of undercover operators with surveillance backup and a webpage (www.melon girl.com) to confirm just who she is, what she does and even the recipe for the 'crazy cookies'! I thought we should probably make a deal and get one count with probation as a penalty, but it would mean a 'no go' condition for a period of time. Watermelon was having nothing of the sort and assured me that she was praying for a miracle and seemed confident that one would come to pass.

Then one day I had lunch with David

Crazy Cookies
Cannabis edibles and the law circa 2005

Pate PhD, an expert on Cannabis, and chemist. When telling him this story he pointed out the bakers tip – you can't see resin in a baked cookie. We wondered how they were going to prove they contained Cannabis resin and under 3 kg. We got the analysts work sheets and figured out what he did, but still couldn't figure out how he came up with cannabis resin because we didn't know about the protocol. My concern was that if we showed they couldn't identify 'resin' they might ask the court to amend the charge to conform to the evidence at the end of the Crown's case to say just "cannabis" or perhaps a specific 'cannabinoid' like "THC".

At the first trial we asked the Crown to call the analyst so we could ask questions about his certificate saying it was 'cannabis resin'. Under cross examination he explained the process, that he was not a botanist and could not say that he had seen any 'resin', and the protocol he must follow to certify it to be 'resin' if he didn't see any botanical features and the cannabinoids were present. He conceded that one might find the presence of cannabinoids in cookies made from perfectly legal parts of the cannabis plant such as non viable seed or mature stalks. The Crown declined to provide us or the Court with a copy of the analysis protocol at that time. We called no evidence in our defense and argued that the Crown had failed to prove beyond a reasonable doubt that the cookies contained 'cannabis resin', and they had not proved any measurable amount of the substance. Remember the charge was trafficking in an amount under 3 kg. The Crown argued they had proved the case, and if not, that the court could amend on its own motion to conform to the evidence.

The trouble for the Crown was that some years ago Parliament Americanized the Controlled Drugs and Substances Act (CDSA) to some extent by providing for this distinction between under 3kg and over, as well as over and under 1gram of resin or 30 grams of marihuana. Possession under 1gram of resin or 30 grams of marihuana is a summary conviction only offence. The matter is in the absolute jurisdiction of the Provincial Court. The person is not subject to fingerprinting and photographing under the Criminal Records Act (so your Record is harder to find). The penalties are lower involving a maximum of 6 months in prison. Similarly, although an indictable and therefore more serious offence, if you traffic under 3kg of 'cannabis resin' or 'cannabis marihuana' it is within the same absolute jurisdiction of the provincial court and the maximum is five years less a day. If over 3 kg, then the accused has the option to be tried in the provincial court, or to elect to go up to the BC Supreme Court for a trial by judge alone or by a judge and jury. The maximum is life imprisonment.

The only possible amendments were to delete the word 'resin' leaving a charge of trafficking in 'cannabis' without any qualifier or alleging a specific cannabinoid. However the Crown had alleged 'resin' and under 3kg and had been unable to prove either. We were stuck in provincial court because of that decision. Had the Crown charged cannabis or a cannabinoid initially, we could have elected trial by jury. We didn't get that opportunity. Consequently to make the amendment at that late stage was prejudicial to the Defense and was not permitted. The Crown failed to prove its case and Watermelon was acquitted.

By the time of the second trafficking trial we had obtained a copy of the protocol and were able to cross examine the Crown's analyst as well as call Dr. Pate as our expert. The result was the same in that the Crown failed to prove the existence of cannabis resin in the cookies and she was acquitted.

Last week they finally not only abandoned an appeal of the first decision but also dropped all the breach charges. We were going to argue that they violated her mobility rights under the Charter and that a policeman cannot absolutely ban someone from going somewhere before trial, but can only impose conditions on going to such place that relates to the protection of a victim or witness. Free speech and association were also in the mix. She can now return to her Church!

So remember if you are going to make crazy cookies (from perfectly legal non viable seeds and mature stalks of course), if they can see botanical features they will charge you with 'cannabis marihuana' under 3kg unless you really made a pile of cookies. Your trial will be in Provincial Court. If they can't see any botanical features they will do the other tests and you may be charged with something in relation to 'cannabis' with no qualifier or a specific 'cannabinoid'. You will have the option to be tried in Supreme Court before a Judge alone or before a court composed of a Judge and Jury or to stay in provincial court.

And most importantly, if you're selling them at Wreck Beach – don't sell them to anybody who has their clothes on!

Marijuana Party Leader Joins Liberal Party of Canada

Deputy Prime Minister Anne McLellan and Marc Boris St-Maurice

It came as a surprise to everyone that I resigned as Leader of the Marijuana Party to join the Liberal party of Canada, including myself. Why did I resign, you might ask, and more importantly, why did I choose the Liberals?

After the last elections, it occurred to me there was a limit to what could be achieved on the political fringe, and as Marijuana Party leader, that limit had been reached. I was left with the prospect of knocking on the palace gates for the rest of my days or taking the plunge and crossing the threshold to work from within.

The fact that marijuana is making headway into mainstream politics—medical marijuana is legal, decriminalization is on the agenda—and the liberal party is directly involved, meant the time was right for a bolder move.

It occurred to me that when these laws are changed it will take a party with a history of wielding power, something the Bloc Quebecois and the NDP have no experience with.

That left the Liberals as the only option. The Conservatives, aside from Senator Nolin, aren't poised to back legal marijuana anytime soon and judging from the reception I got when I joined, it proved to be the right choice.

I went to Ottawa for the Liberal party convention in March and by sheer coincidence a resolution was introduced on legalizing marijuana. My arrival could not have come at a better time, the media frenzy was unrelenting and I entered the Liberal party with a huge bang.

Most members, and a few ministers I met, were favorable to the idea, and were enthusiastic I had joined. They gave me the impression they respected a clear strong voice on the issue as I discovered they hold in high regard the principles of open debate, inclusiveness and political dissent.

I found myself quite at home discussing a wide variety of issues from municipal politics to national unity, missile defense, gay rights, legal prostitution, parliamentary procedures, the kind of high political junkies dream about. It was the real deal, and you could feel the intensity. This, after all, is the party in power, and that feeling was pervasive.

I got to shake hands with several ministers, even our Justice Minister, and mentioned the importance of legalization. I found a strong ally in Reg Alcock, a senior cabinet minister who reiterated his support in the media for legal marijuana. It would seem the Liberal party is a fertile ground for this idea to take root, all that's needed now is some tend-

Marijuana Party Leader Joins Liberal Party of Canada

ing to the soil so it may one day blossom.

The crowning moment of the convention was when I got to shake Deputy Prime Minister Anne McLellan's hand. Her opinion may not be the same as mine, but we nonetheless maintained a professional attitude. This is a battle of ideas, not people, and the last thing I needed was to alienate a senior cabinet minister.

I am now looking into what can be done to build support within the party and have a few key allies to work with. There will be hearings this spring on the decriminalization bill, and most everyone I spoke to agreed I should participate.

I am in this for the long haul and want to serve my new party well. I do hope our success will be measured in years not decades, but if being a Liberal for life is what it takes, that is what I am prepared to do. Not just for medical users, but until every single adult who desires to can possess or use marijuana in a safe and legal environment.

Marc Boris St-Maurice

Jeffrey's Journey

In Jeffrey's Journey, a concerned mother recounts the heartbreaking, true story of her son's struggle with obsessive compulsive and oppositional defiance disorders. The book recounts the shocking number of ineffective medications Jeffrey was prescribed by different doctors, and his family's life-changing decision to try medical marijuana-the only drug which offered the boy relief from his constant anger and violent rage.

Although strongly against the idea of medical marijuana at first, Debbie, faced with the real possibility of having her son institutionalized, found a new doctor who agreed to prescribe medical marijuana for Jeffrey. Forty-five minutes after eating part of a muffin with marijuana baked inside, Jeffrey said that he was "happy, not mad…and my head doesn't feel noisy anymore." Jeffrey was now able to maintain control most of the time, and was capable of benefiting from psychological and behavioral counseling. "*The positive effects of the marijuana on Jeffrey's behavior were too profound to be questioned,*" writes Debbie. It wasn't a cure, but it was still a miracle and a very surprising answer to their prayers. For almost two blessed years, Jeffrey was able to experience "normal" life, complete with going to school, living at home, and having friends. And then it all came to a grinding halt.

In the fall of 2002, Wo/Men's Alliance for Medical Marijuana (WAMM) in Santa Cruz, California the organization where Debbie Jeffries received medical marijuana aid for her son was closed down by the Federal Government. Without medical marijuana, Jeffrey's violent rages quickly returned. Although the organization was reinstated by a judge's order, it had lost the specific strains that had helped Jeffrey. He was eventually sent to a therapeutic ranch in Utah for troubled youth. Jeffrey was taken off all medications and remains living there today.

"*This is a remarkable account of one mother's love for her son and her courage to question conventional thinking in medicine and politics.*" **Montel Williams, TV host & Medical Marijuana Advocate**

"*As we slowly emerge from our near delusional beliefs in marijuana's toxicity, we are also finally reawakening to its remarkable medicinal utilities…This compelling book tells of the heartwarming story of this family's discovery of one of those wonders.*" **Lester Grinspoon, MD, Professor Emeritus Harvard Medical School**

"*I enthusiastically support Debbie and LaRayne Jeffries' decision to treat their son Jeffrey's condition with medical marijuana…This book should be required reading in every medical school.*" **Claudia Jensen, MD, Pediatrics**

"'*Jeffrey's Journey' is a compelling first-hand account of the successful use of medical marijuana to treat a serious behavioral disorder in a child. This engaging case report offers an honest look at conventional psychiatric medications and sheds new light on the untapped possibilities of cannabis as an alternative.*" **Andrew Weil, MD, Harvard University, Clinical Professor of Internal Medicine & Founder and Director of Integrative Medicine Program at University of Arizona at Tucson.**

"*This is a book that should be read by parents, healthcare practitioners and policy makers-each of whom wields enormous influence in the national debate about the legal use of medical marijuana and all of whom will find something captivating and persuasive in this family's story.*" **Joycelyn Elders, Former US Surgeon General**

"'*Jeffrey's Journey' makes clear that the need to relieve a child's suffering must transcend policies. As teachers, parents and role-models, we have a responsibility to pursue honest, science-based information. This book demonstrates that it is necessary to broaden our perceptions of marijuana to include a continuum of acceptable applications.*" **Marsha Rosenbaum, PhD, Director, The Safety First Project of the Drug Policy Alliance, San Francisco**

"*This book is an absolute must-read. By the time I put it down (about three hours after I picked it up) I was angry and saddened. My heart ached for this little boy who just wants to be normal and breaks for his mother as she searches for something to help her precious son. I can only hope that if I was ever faced with this type of situation, I would find the courage Debbie shows throughout her battle.*" **Cannabis Health Magazine staff review**.

Debbie Jeffries & LaRayne Jeffries
Quick America, 128 pages $12.95 paperback

Pulmonary Drug Delivery Technologies (Vaporizers?)

"We called it a 'Vaporizer' and the name stuck" said Steve Smith, creator of the "Original BC Vaporizer" and owner of Plasicsmith Inc. Back in 1994 they produced the first ten prototypes of an electric powered device designed to "bake" marijuana in an oxygen restricted container. "The idea was simple" Steve said; "burning and inhaling anything is bad for your lungs and two things are required to cause plant matter to burn, heat and oxygen. The solution was to make a heating element that would reach the boiling point of THC and isolate the resulting vapor inside an airtight glass container". The idea caught on and over the years the BC Vaporizer went through a number of design changes, but the original principle remained the same.

Research indicates that regular tobacco, but not marijuana, smoking is associated with greater annual rates of decline in lung function than in nonsmoking. Even heavy, habitual marijuana smoking does not cause an accelerated decline in lung function with age.(1) Tashkin et al, 1997

An often-cited affidavit written by Paul David Wolf for Renee Boje's claim for convention refugee status (2) states; "In adults, the alveolar tissue of the lungs provides roughly a thousand square feet of potential absorptive surface area, comprised of approximately a half billion tiny air sacs known as alveoli, which are enveloped by an equally large capillary network. These alveoli are non-ciliated, mucous-free, and composed of only a thin single cellular layer, enabling efficient absorption of cannabinoids directly into the blood-stream. For this reason, the lungs provide an ideal entry point for the rapid, non-invasive introduction of cannabinoids into the body."

> However, the current vapor device technology used for herbal cannabis is for the most part still in the infancy stage.

Even though smoking cannabis cigarettes is widely accepted, the inhaling of burning plant material is just not appealing to some patients, but the need for a fast delivery method is. For that very reason the "vaporizer" has become synonymous within the herbal cannabis community just as "pulmonary drug delivery devices" have for the pharmaceutical industry.

According to the article PULMONARY DRUG DELIVERY: FROM DREAMS TO REALITY by Dhiraj Ajmani, MS – (3) "The research, products and technologies of the pulmonary drug delivery market is expected to grow from $2.98 billion in 2003 to $9.11 billion in 2009. …research and development advances have been instrumental in offering pulmonary drug delivery systems as an alternative to injectable drug delivery. With advancing technology, the dream of utilizing the huge surface area of lungs to deliver drugs into the blood circulation has been slowly transforming into reality. Lungs are considered the Best Alternative for drugs needing to bypass the gastrointestinal tract, such as proteins. Physiological parameters of the lungs, such as pH, pave the way for systemic and local deliv-

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ery of proteins, peptides, and small molecules as an alternative to injectable drugs, safely and efficiently."

The Pulmonary Drug Delivery market includes such medical devices as Metered Dose Inhalers (MDIs) - pressurized hand-held devices that use propellants for delivering medications to the lungs, and Dry Powder Inhalers (DPIs), which deliver the powder form of the medications directly to the lungs locally. This technology has also been used to develop systemic delivery of drugs. Liquid-Based Inhalers (LBIs) are expected to be introduced in the US market in 2006, and patient convenience is expected to spur the acceptance of LBIs in the coming years.

Vaporizer technology is advancing within the global pharmaceutical marketplace and vapor devices will be included in this list one day. One of the companies taking this concept forward is Vapore Inc (4), based out of Richmond, CA. They have designed the Capillary Force Vaporizer (CFV). It creates rapid vaporization of a thin liquid film by combining electrical resistance heating with capillary force in a high porosity ceramic device. The CFV in future years may be able to vaporize many active drug formulations, including prescription drugs, OTC medications, and self-care products.

However, the current vapor device technology used for herbal cannabis is for the most part still in the infancy stage. According to Steve Smith; "In the past five years a lot of people have jumped on the vaporizer band wagon. Some have a good design and work well; others are copies or 'knock-offs' of popular models. Anyone can hack something together in a basement workshop and call it a vaporizer." Steve feels regulatory practices and standards need to be addressed and Plasticsmith is working on its medical device certificate.

"Some devices, like the heat gun variety, could give off toxic particles," says Smith. In a Vaporizer article entitled; LOTS OF HOT AIR published in CannaBusiness Magazine 1/2004, this reservation was voiced: "…using a hot air gun as heat source is common with some low cost vaporizer types. This method, however, encounters serious health

the heat causes zinc to flake off the bowl

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concerns, because the heating motor of standard hot air guns releases noxious particles." Smith goes on to say; "In other devices the heat causes zinc to flake off the bowl, or copper fittings to off-gas and disintegrate with use. Consumers need to know about these potentially dangerous devices. As the inventor of this idea I feel I have a responsibility to people who use them. No one should sell anything to someone whose health is compromised, unless they can prove it is not harmful."

We feel the same way. However, in order to allow for the research, development and regulation of this technology to advance it would require the prohibition of herbal cannabis to end. Funding and research for the development of delivery devices within the conventional marketplace for pharmaceuticalized cannabis products (i.e.; Sativex) have been obtained, yet funding and/or approvals for research and development of pulmonary drug delivery products for herbal cannabis, an "illegal drug", is still all but non existent. In fact it has been blocked, forcing organizations like MAPS/CaNORML and individuals like Prof. Craker and Valerie Corral to file lawsuits against the DEA and also against HHS/NIH/NIDA for obstructing medical marijuana research on vaporization. (July 21, 2004) Web retrieval March 28th, 2005 - http://www.maps.org/mmj/vaporizer.html

Until fair market research can be obtained our best advice is buyer beware – look for more information on this topic in future issues of Cannabis Health.

(1)[Tashkin et al, "Heavy Habitual Marijuana - Marijuana Smoking Does Not Cause an Accelerated Decline in FEV1 With Age," American Journal of Respiratory and Critical Care Medicine, 1997;155:141-148] (web retrieval March 26, 2005)
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(3)http://www.drugdeliverytech.com/cgi-bin/articles.cgi?id Article = 259
(4)Rodney E. Thompson, Ph.D. http://www.vapore.com/documents/Drug%20Delivery%20Apps%20for%20CFVs.pdf
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*Plasticsmith Inc. - BC Vaporizer - http://bcvaporizer.com/index.html