Annex B

Court File No. T-2030-13

FEDERAL COURT

BETWEEN:

NEIL ALLARD
TANYA BEEMISH
DAVID HEBERT
SHAWN DAVEY

PLAINTIFFS

and

HER MAJESTY THE QUEEN IN RIGHT OF CANADA

DEFENDANT

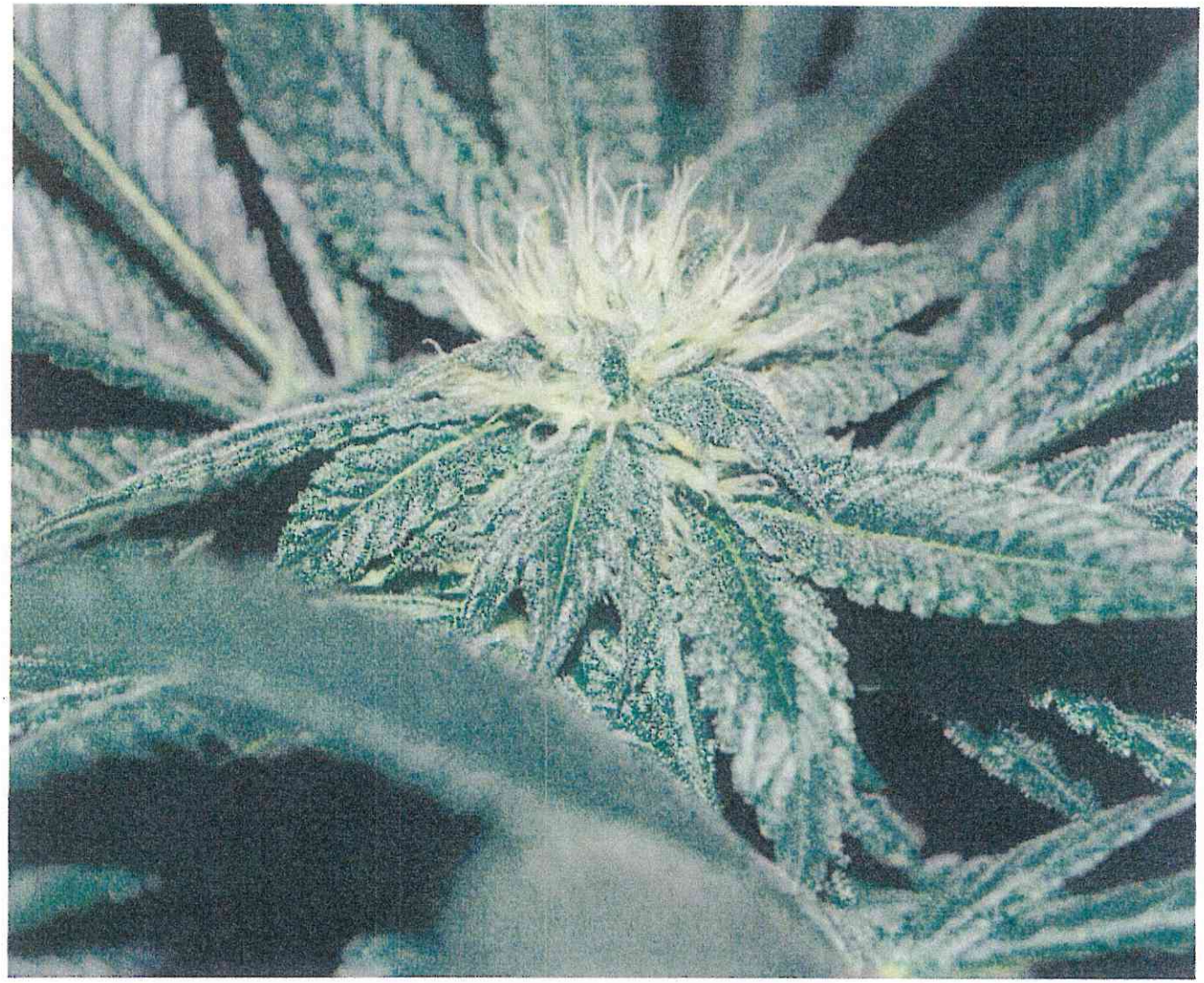
Certificate Concerning Code of Conduct for Expert Witnesses

I, Shane Holmquist, having been named as an expert witness by the Defendant, Her Majesty the Queen in Right of Canada, certify that I have read the Code of Conduct for Expert Witnesses set out in the schedule to the *Federal Courts Rules* and agree to be bound by it.

Date: October 9th, 2014

Constable Shane Holmquist
Federal – Serious Organized Crime
Coordinated Marihuana Enforcement Team
Mailstop 304 – 14200 Green Timbers Way
Surrey, BC V3T 6P3

Annex C



The above photograph depicts a flowering marihuana bud that appears to be covered in frost. These leaves are covered with trichome glands that contain THC. The THC from these leaves can be extracted and used to make a variety of derivatives such as hashish and oils.

The above photograph is a close up image of the trichomes of THC on a marihuana bud. Because trichomes are very resinous, dust and dirt particles in the air may stick to them. This photograph was taken at a MMPR facility.

Annex D

Common equipment that I have observed at MMAR production sites

Image	Description	Purpose	Price
	Fluorescent Grow lights	Lighting used on marihuana seeds and/or clones until they establish roots.	$50.00
	Metal Halide (MH) grow lights	Lighting used on marihuana plants in the vegetative growth period.	$100.00
	High Pressure Sodium (HPS) grow lights	Lighting used on marihuana plants in the flowering growth period.	$100.00
	Electrical Ballast	Usually one ballast per MH or HPS grow light.	$250.00
	Grow light cord with socket	Used to connect the electrical ballast to the grow light.	$40.00

	Light shroud	Used to reflect the light to the plants. There are a wide variety of light shrouds available.	$120.00
	Chain	Used to hang the grow lights from the ceiling. Often hooks are used which makes the lights adjustable in height as the plants grow (priced in a 100 foot length).	$40.00
	Electrical timer	Used to control the light cycle (18/6 for vegetative growth and 12/12 for flowering plants).	$75.00
	Circuit breaker	The most common grow lights utilize a 220 volt system and require the cultivator to upgrade some electrical breakers.	$30.00 each
	Sheet of plastic	Used to line the walls in grow rooms. White side is faced out to help reflect light (priced as a 100 foot length roll).	$70.00
	Thermostat	Used to control the temperature in the grow room. After grow lights are in operation for 12-18 hours, significant amounts of heat are generated.	$70.00

	Oscillating fan	Used to circulate the air in the grow room. Also used to help the plant stems grow stronger to support a larger yield of marihuana.	$60.00
	Flexible ducting	Used to transport air to and from the grow room (priced per foot).	$1.50
	Inline fan	Used to help 'push' the air through the flexible ducting. Occasionally connected directly to a charcoal filter.	$200.00
	Charcoal filter (can filter)	Helps mask the smell of growing marihuana. Air is pushed through a filter containing charcoal.	$100.00 to $500.00
	Extension cord	Used for fans and other powered devices in the grow room.	$20.00
	Grow chemicals	Huge variety of chemicals available to grow marihuana. NPK (Nitrogen, Phosphorous, Potassium). High levels of "N" in vegetative growth and high levels of "P" in the flowering stage (price of a starter kit).	$700.00

	Root stimulation powder	Used to help stimulate the cut clones to develop roots.	$5.00
	Insert trays	Clones are planted in a soil medium and placed on a propagation tray under a covered dome.	$1.50
	Propagation tray	Used as a base to grow clones. Holds water runoff.	$1.50
	Dome cover	Dome to cover clones. Used for clones to establish roots. Creates a mini-greenhouse.	$5.00
	Plant pots	The clones are replanted into bigger pots to accommodate root growth.	$1.00
	Plant pots	Often cultivators will replant vegetative plants into larger pots to accommodate the growing root structure.	$5.00

	Soil-less grow medium	107 litre bail of growing medium. Pro-mix and Sunshine mix appear to be the most popular. Cultivators are also using a coconut husk medium (known as coconut coir).	$30.00
	Water reservoir (barrel)	Used to store water that is then fed to the plants. Often water is warmed to room temperature and aerated.	$30.00
	Air pump	Installed in the water reservoir to increase oxygen content in water.	$25.00
	Sump pump	Often housed inside a water reservoir to pump the water through a garden house to the plants.	$100.00
	Garden hose	Used to water the plants.	$25.00
	Watering wand	Connected to a garden hose.	$25.00

	CO2 burner	Burning of propane or natural gas creates CO2 to help with plant growth. Like operating a BBQ inside a grow room.	$900.00
	CO2 regulator	Helps control and maintain optimum C02 levels.	$130.00
	Dehumidifier	To control moisture in the grow room. Often excess water is evaporated by the grow light and increased humidity.	$350.00
	Trimming scissors	Used to manicure marihuana bud.	$25.00
	Drying rack	Marihuana buds are placed on a screen material to allow adequate airflow for the drying process.	$50.00
	PH meter	Monitors the PH and temperature of the water for optimal plant growth.	$230.00

Annex E

Costs associated to the building of a marihuana grow room
Approximate dimensions: 25 feet wide by 45 feet long

ITEMS	UNITS	PRICE
Building Materials		
Flood Table (2' x4')	1	$52.99
Flood Table (3' x6')	(2 @ $100.00)	$200.00
Charcoal Air Scrubber	3 @ $223.99	$671.97
Squirel Style Venting Fans	3 @ $225.00	$675.00
6" Flange foe Squire fans	3 @ $13.99	$41.97
Propagation Heating mats for Clones	1	$31.59
Propagation mat Thermostat	1	$52.00
Metal Storage Unit for Clone Station	1	$99.00
Box of Framing Nails	1	$54.99
Ceiling Hooks	(16 @ $0.52)	$8.32
Reflective Mylar Sheeting	50 ft	$36.00
Tarp Zippers	(6 @ $13.99)	$83.94
Black and White Plastic Mylar	100 ft	$180.00
Floor Paint Roller	1	$6.28
Behr Floor Paint / Epoxy	(2 @ $33.97)	$67.94
Ceiling Hooks	(3 @ $0.52)	$1.56
3" Screw Hooks	(20 @ $0.62)	$12.40
"S" Hooks	1 pk of 30	$7.98
16" Oscillating Fan	(3 @ $24.99)	$74.97
Staples	1 pk	$3.89
Isopropyl Alcohol	1	$2.39
Diagonal Pliers	1	$9.99
Linesmans Pliers	1	$11.99
Screw Hooks	(8 @ $0.69)	$5.52
"S" Light Hooks	(8 @ $0.45)	$3.60
Multidriver Screwdriver	1	$14.99
Bag of Cable Ties	1	$6.19
Spool of Thin Rope for hanging plants	1	$4.49
Lights / Shrouds / Electrical / Sockets / Timers		
Shade Chain	($0.70/ft x 30ft)	$21.00
Shade Chain	($0.69/ft @ 30ft)	$20.70
Shade Chain	($0.50/ft x 40ft)	$20.00
Light Energy Switchable Ballasts - 1000 Watt	(8 @ $220.00)	$1,760.00
Light Energy Socket and Wiring Set	(5 @ $30.00)	$150.00
Light Energy Light and Socket Set	(3 @ $20.00)	$60.00
Sylvania High Pressure Sodium Bulbs 1000 watt	(4 @ $110.00)	$440.00

Costs associated to the building of a marihuana grow room
Approximate dimensions: 25 feet wide by 45 feet long

Sylvania High Pressure Sodium Bulbs 1000 watt	(1 @ $100.00)	$100.00
"A Wing " Light Shrouds	(5 @ $42.00)	$210.00
24" A Wing Light Shround	(3 @ $40.00)	$120.00
Light Shroud with 4 flouresent bulbs	1	$180.00
Variable Electric Timers	(4 @ $4.00)	$16.00
Extension Cord	1	$25.98
Metal Halide Bulbs	(2 @ $60.00)	$120.00
Steel Wire Connections	(3 @ $0.80)	$2.40
BGP Cruise Low Temperature Thermostats	(3 @ $132.00)	$396.00
24 hr Electric Timer	1	$7.99
Ceramic Heaters	(3 @ $34.99)	$104.97
Blockheater Extension Cords	(3 @ $9.99)	$29.97
Min / Max Electricronic Temperature Gauge	(3 @ $31.44)	$94.32
16" Ped Oscillating Fan	1	$15.00
Soils and Pots		
Pro Mix Sun $ Soil	(4 bails @ $32.99)	$131.96
Listo 1 gallon pots	(20 @ $0.95)	$19.00
Plant pots - 5 gallons	(10 @ $4.38)	$43.80
Plant pots - 5" Azalea	(15 @ $0.35)	$5.25
Plant pots - 5 gallons	(14 @ $4.00)	$56.00
3" Humidome	1	$3.00
6" Humidome	1	$6.00
Rock Wool	(2 @ $15.00)	$30.00
175 Litre Tote (for soil)	1	$26.99
1 gallon Nursery Pot	(20 @ $0.68)	$13.60
5" Azalea Plant Pots	(16 @ $0.35)	$5.60
Bag Buddie (garbage bage holders)	(2 @ $14.99)	$29.98
37.9 Litre Storage Containers	(6 @ $5.92)	$35.52
Gardening Tools		
Prunning Scissors	1	$15.99
Insect Stick Strips	(5 @ $8.75)	$26.25
Twist Ties to supoort plants	(2 @ $2.79)	$5.58
4' long Plant Support Stakes	(40 @ $1.79)	$71.60
Hand Held Water Mister	1	$24.97
Hydrometer	(3 @ 19.99)	$59.97
Electronical pH meter	1	$131.99
Plastic Thermometers	(5 @$2.97)	$14.85
45 Litre Shop Vac - Canadian Tire	1	$159.99

Costs associated to the building of a marihuana grow room
Approximate dimensions: 25 feet wide by 45 feet long

Prunng Shears	(5@$20.00)	$100.00
Ziplock baggies	(2 @ $2.97)	$5.94
Chemicals & Nutrients		
Nutrilife 29% H2O2 (Hydrogen Peroxide)	1 litre	$13.00
pH 7 Solution	1	$5.00
Root Max 100 ml (Rooting Compund)	1	$17.25
Stim Root (Rooting Compound)	1	$6.00
Wilson Rooting Gel (Rooting Compound)	1	$8.20
Flora Grow	1 gallon	$38.00
Flora Bloom	1 gallon	$38.00
Flora Micro	1 gallon	$45.00
Floralicious Plus	32 oz	$65.00
Liquid Kool Bloom	1 litre	$31.00
Kool Bloom Pouch Nutrient Pack	2.2 lb	$34.00
Garden Hose	1	$39.99
Air Pump for water nutrients		$70.00
12" Air Stone		$3.40
42 gallon container (used soil)	1	$18.97
17 litre bucket (nutrients and catch basin)	(6 @ 5.95)	$35.70
20 gal Brute Bucket (Clean water)	1	$26.17
Nitric Acid pH - Down	1 litre	$12.00
12 cc Luer Lock Stringe	1	$3.00
Tubing (labelled as misc)	1	$2.00
60ml Syringe	(3 @ $4.00)	$12.00
1/8 Tubing	(6 ft @ 0.21/ft)	$1.26
12 cc Luer Lock Syringe (no charge)	1	$0.00
Eye dropper (no charge)	1	$0.00
SUB TOTAL		**$7,865.05**
GST @ 9%		**$707.85**
PST @ 9%		**$707.85**
SUB TOTAL WITH GST & PST		**$9,280.76**
DEPOT MATERIAL AND LABOUR CHARGES		
DEPOT ELECTRICAL SHOP - Electrical		$741.00
Labour - Overtime Charged (No		$0.00

Costs associated to the building of a marihuana grow room
Approximate dimensions: 25 feet wide by 45 feet long

overtime billed)		
DEPOT CARPENTER SHOP - Lumber		$800.00
Security Door Installation & Materials		$1,200.00
PST		$60.00
Labour - Overtime Charged		$0.00
Lumber		$2,000.00
DEPOT MECHANICAL - Venting		
Labour - Overtime Charged	88 hrs regular	?
	4 hrs O/T	?
Inland Metal - Materials		$349.17
Vent Dampers		$122.21
Venting Fan		$940.00
Misc metal parts		$200.00
GRAND TOTAL SPENT TO DATE		$15,693.14

- The above prices were compiled by the Regina Integrated Drug Unit and reflect the prices associated to the creation of a functional marihuana grow room in 2010.

Annex F

Total number of marihuana plants authorized for Indoor/Outdoor Production in Canada as of December 3, 2013 under the MMAR.

	PROVINCE	INDOOR # PLANTS	OUTDOOR # PLANTS	TOTAL
1	NT/NU	159	3	162
2	PEI	662	79	741
3	Yukon	769	19	788
4	Newfoundland	2,185	55	2,240
5	New Brunswick	16,535	1,246	17,781
6	Saskatchewan	19,938	311	20,249
7	Nova Scotia	38,663	2,127	40,790
8	Quebec	77,723	1,103	78,826
9	Manitoba	81,594	465	82,059
10	Alberta	150,679	767	151,446
11	Ontario	510,582	15,660	526,242
12	British Columbia	2,073,285	17,458	2,090,643
TOTAL PLANTS		**2,972,774**	**39,293**	**3,012,067**

Out of all the provinces in Canada, BC has the largest number of marihuana plants authorized to grow under the MMAR.

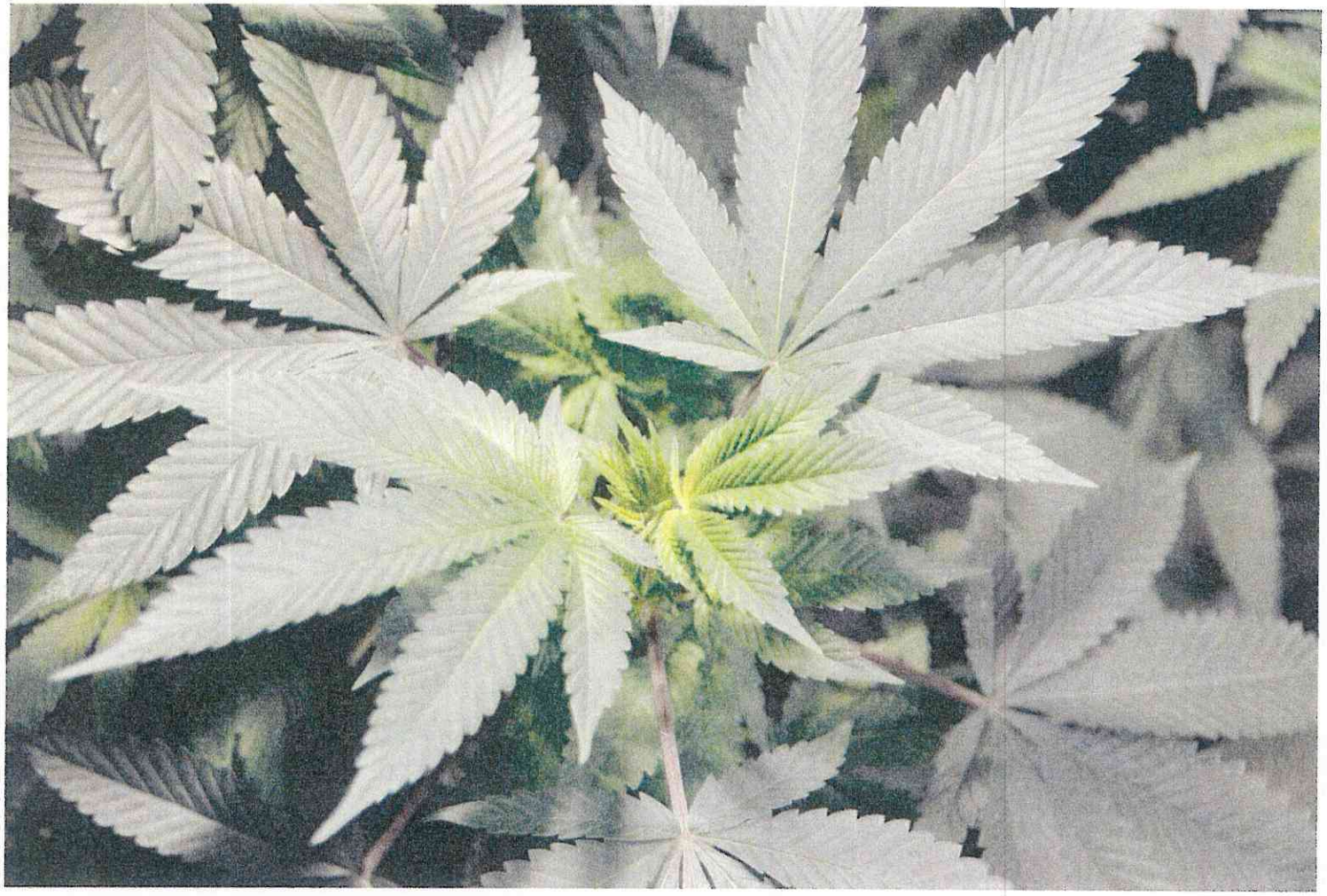
69% of all marihuana plants authorized to be produced under the MMAR have been issued to grow in BC.

Under the MMAR, a total of 3,012,067 were authorized to be produced which represents the production of 1.1 billion dollars of marihuana each year.

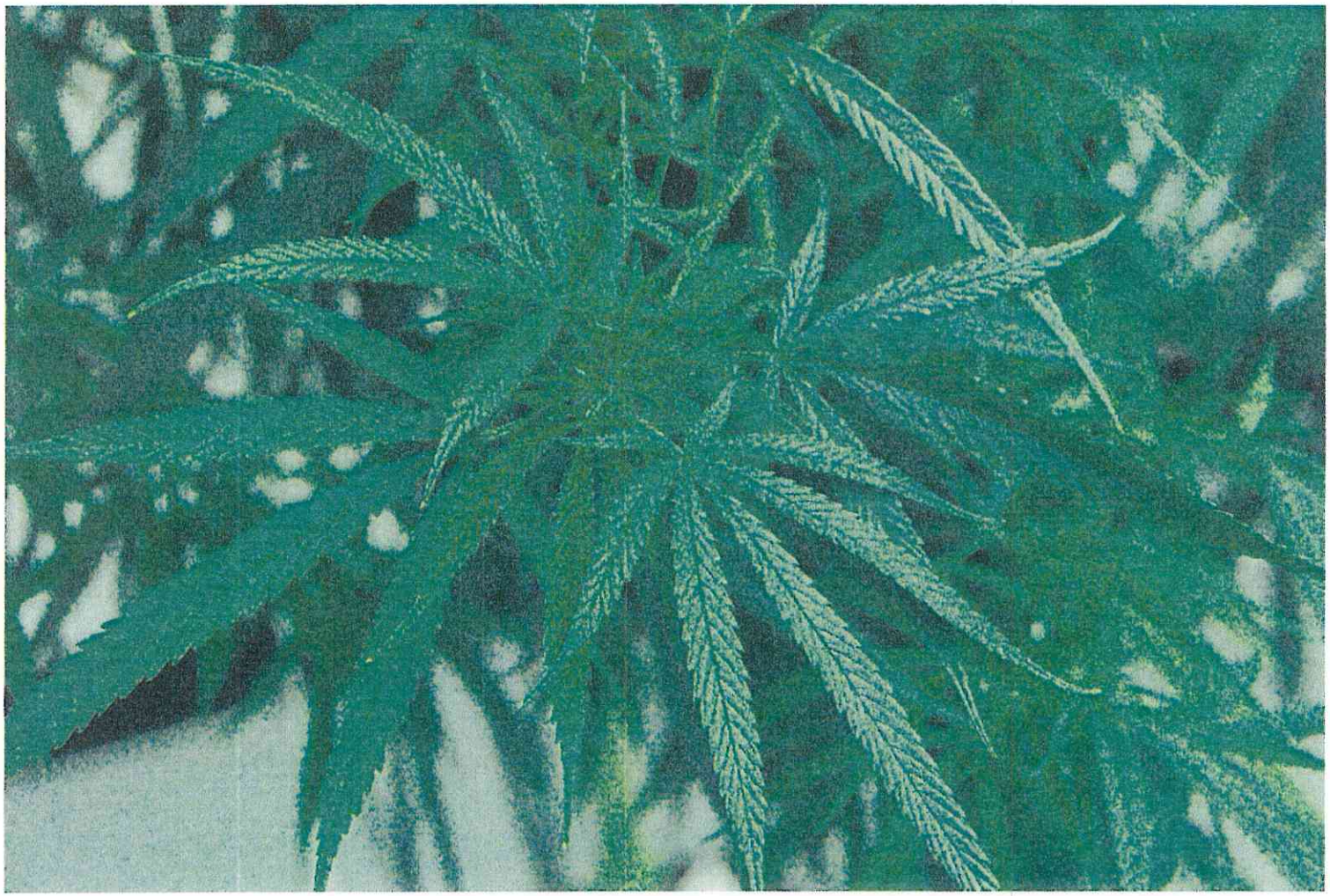
(3,012,067 total plants x 3 crops a year 9,036,201 plants x 1 ounce per plant x .0625 lbs per plant = 564,762 pounds x $2,000 a pound = $1,129,524,000)

***SOURCE**: Above numbers provided to Cst. Shane HOLMQUIST on February 7, 2014 in Ottawa during a meeting with law enforcement personnel across Canada regarding the structure of the transition from the MMAR to the MMPR.*

Annex G



*The above photograph depicts an **Indica** dominant marihuana plant strain. I took this photograph inside a MMPR Licensed Producer Facility.*



*The above photograph depicts a **Sativa** dominant marihuana plant strain. I took this photograph inside a MMPR Licensed Producer Facility.*

Annex H

MARIHUANA MEDICAL ACCESS REGULATIONS
DAILY AMOUNT FACT SHEET (DOSAGE)

Marihuana is not approved as a therapeutic drug in any country in the world. It cannot be approved in Canada without scientific evidence proving its benefits and defining its risks. At present, while pointing to some potential benefits, scientific evidence does not establish the safety and efficacy of cannabis to the extent required by the *Food and Drug Regulations* for marketed drugs in Canada. However, the *Marihuana Medical Access Regulations* provide a mechanism for patients to access marihuana for medical purposes with the support of their physician.

When considering marihuana for medical purposes it is understandable that patients and physicians may have questions regarding the daily amounts of marihuana that would be appropriate. The following has been prepared to provide applicants and their physicians with information related to the dosage of marihuana.

- **Health Canada's examination of the current available information suggests most individuals use an average daily amount of 1 gram to 3 grams of dried marihuana for medical purposes, whether it is taken orally, or inhaled or a combination of both.**

- Based on the World Health Organization (1997), a typical joint contains between 0.5 and 1.0 gram of cannabis plant matter. Accordingly, a daily amount of 3 grams will result in approximately 3 to 6 joints. Actual dose of THC absorbed when smoked is not easily quantified. It has been estimated that 20-70% of the actual THC level is delivered in the smoke.

- It is reported that an elevated daily dosage of more than 5 grams may increase risks with respect to the effect on cardiovascular, pulmonary and immune systems and psychomotor performance, as well as potential drug dependency.

- An authorized patient can choose to order marihuana from Health Canada. With that option he/she can access a standardized and tested source of supply produced under contract for Health Canada. It is comprised of flowering heads and female plants with a tetrahydrocannabinol (THC) level of $12.5 \pm 1.5\%$.

- Authorized patients also have the option of cultivating marihuana for themselves or having a person designated to cultivate for them. The number of marihuana plants they can cultivate is based on the daily amount identified in the application. For instance, a daily amount of 3 grams is approved for indoor production of 15 plants and a storage quantity of 675 grams of marihuana.

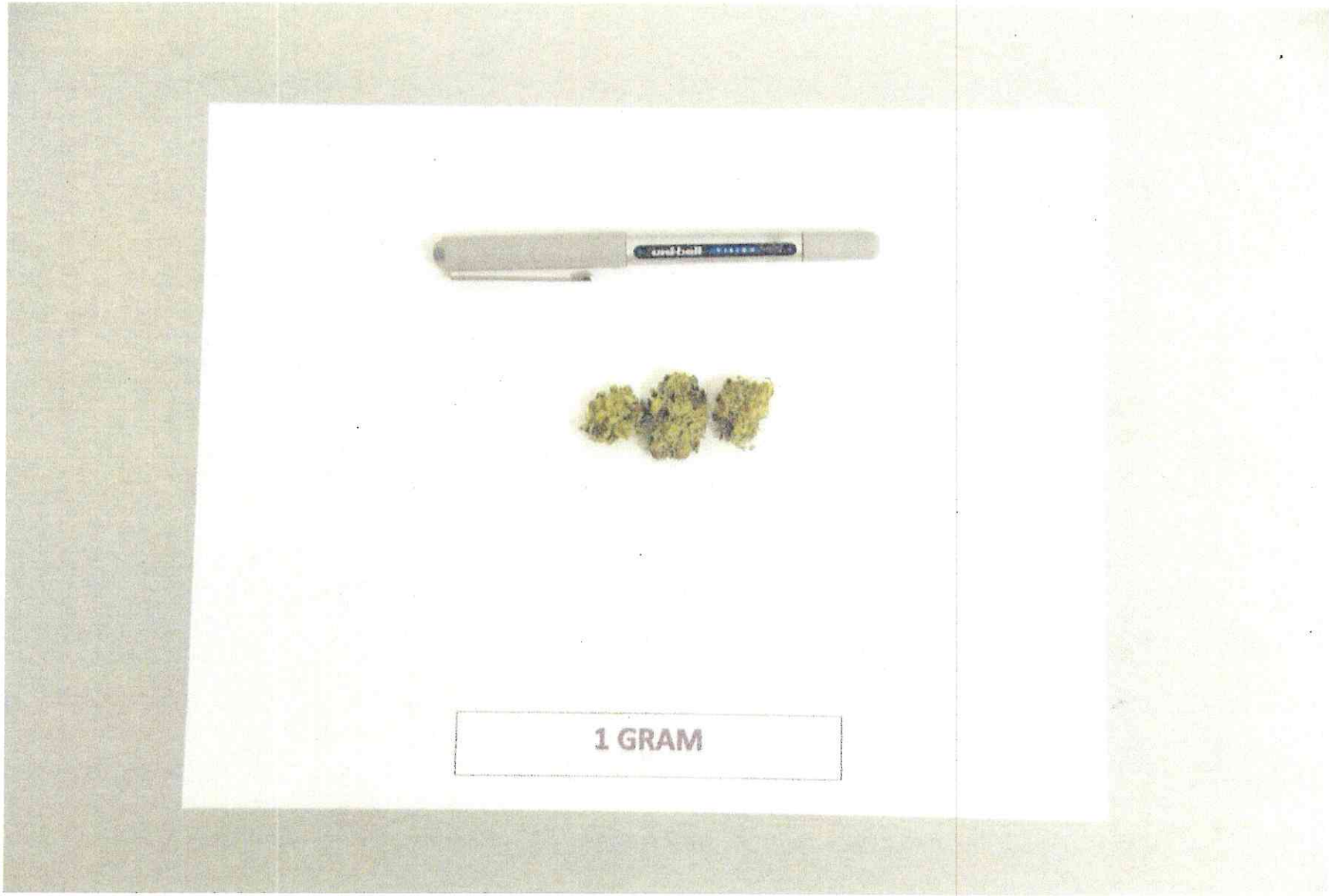
- For more information consult "*Information for Health Care Professionals - Marihuana*" or "*Information for the Patient - Marihuana*". Both documents as well as information on the marihuana product produced by Health Canada can be found on the Web site or by calling the toll-free number.

For more information contact the Health Canada Web site at www.healthcanada.gc.ca/mma or call toll-free at 1-866-337-7705.

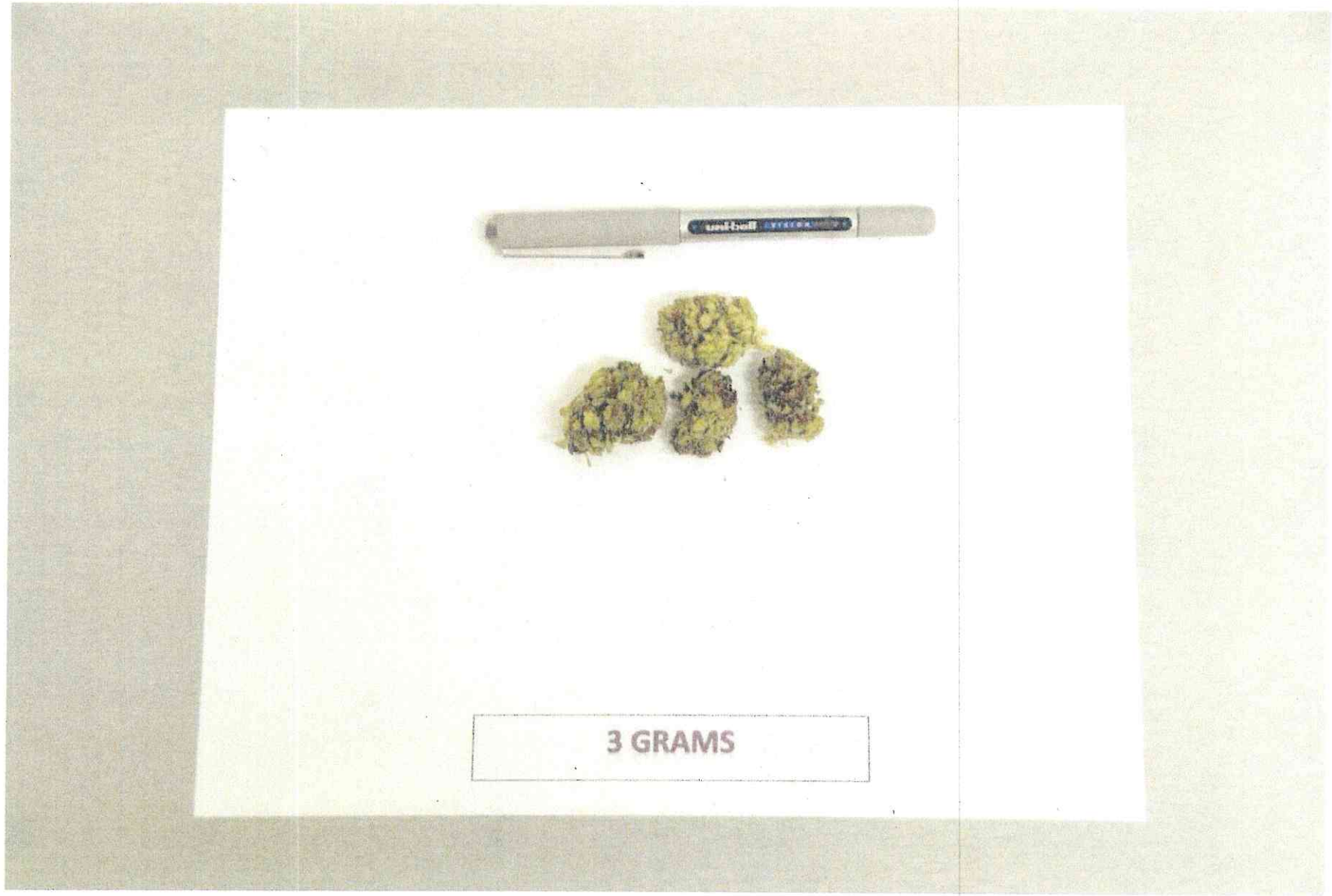
March 2007

Canada

Annex I

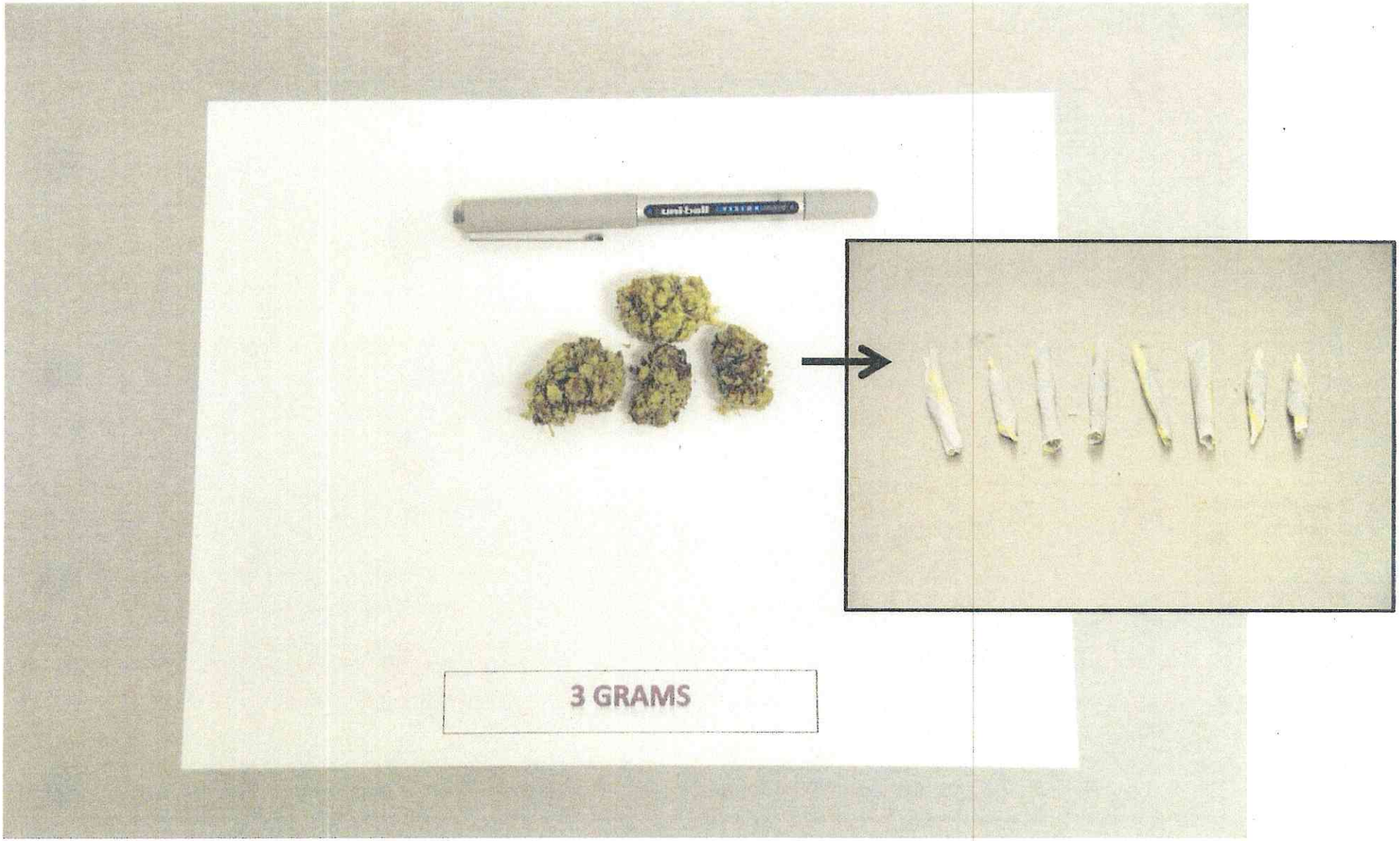


I weighed one gram of marihuana bud and placed it on a standard 8.5"x11" piece of paper and then placed a pen beside the marihuana for scale. Dry marihuana bud is light, and one gram takes up more volume than tablets that weighs 1 gram.



I weighed out three grams of marihuana bud and placed it on a standard 8.5"x11" piece of paper and placed a pen beside the marihuana for scale.

Annex J



I weighed out three grams of marihuana bud that was then rolled into eight joints. Generally I have found a joint to weigh between .25 grams and 1 gram. In this example, the average weight per joint is .375 grams (.375grams x 8 = 3 grams).

Annex K

If someone was to consume 3 grams a day (depicted in the small circle), they would consume 90 grams in a month (depicted in the medium size circle), and they would consume 1,095 grams over the course of 365 days (depicted in the largest circle).

Annex L

Protected "A"

An Analysis of National Cases Related to the Marihuana Medical Access Regulations

Prepared on behalf of the CACP
by the RCMP
November 2010

Royal Canadian Mounted Police / Gendarmerie royale du Canada

Canada

Acknowledgement

This report could not have been written without the assistance of the following collaborators:





OTTAWA POLICE SERVICE
SERVICE DE POLICE D'OTTAWA
Working together for a safer community
La sécurité de notre communauté, un travail d'équipe



Prepared on behalf of the CACP by the RCMP

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Table of Contents

Executive Summary

The Canadian Association of Chiefs of Police (CACP) Drug Abuse Committee requested a formal report on any misuse and non-compliance issues of the Marihuana Medical Access Regulations (MMAR) encountered by law enforcement agencies throughout Canada. (U)

This report analyzes national cases of abuse related to the MMAR administered by Health Canada (HC). It examines criminal activity associated with MMAR licences, challenges with the MMAR from a public safety perspective, and provides strategic recommendations on the application of the MMAR. A total of 190 MMAR-related cases submitted by various law enforcement agencies, covering the time frame between August 2003 and April 2010, were examined for this assessment. (A)

This report does not claim to provide a comprehensive review of the MMAR and the Marihuana Medical Access Program, rather it is intended to provide examples of abuses that have come to the attention of the police and which have resulted in enforcement action. In order to produce an accurate scale of abuses, each and every MMAR grow operation would have to be inspected by HC. HC has limited capacity to conduct inspections and during the time period covered by this report had not conducted any inspections, to the knowledge of the authors of this report. (A)

Cases outlined in this report have been investigated by the police across Canada. It is important to note that, in the majority of instances, when police start an investigation into a marihuana grow, they contact HC to confirm if there is a holder of a production licence at that address. If the response from HC is positive, and no further extenuating circumstances exist, the investigation is often concluded and no further action is taken. If information exists about trafficking, overproduction or other issues, then the investigation is continued. Some of those cases are included in this report. (A)

It is important to add that HC licences individuals only, and that it does not licence organizations such as "compassion clubs" to possess, produce, or distribute marihuana for medical purposes. The Department restricts the number of people growing in common through two provisions of the Regulations: by limiting the number of production licences in one location to four, and by limiting the number of people a person can produce for to two. A licensed production holder whose site exceeds these limits would be subject to law enforcement measures. (A)

Key Findings

- Sixty-seven of the 190 cases involved trafficking and/or production of marihuana exceeding the terms of the MMAR authorization or licence. The remaining 123 files involved licence violations, violence against licence holders, and health and safety hazards. (A)
- Thirty-seven of 134 licensees[1] had a minimum of one trafficking and/or production conviction — 67 had a criminal record. (A)

1 There were 134 licensees identified in this review, however, a number of licensees appeared in several of the 190 files.

- The number of Designated Person Production Licences (DPPL) being granted is increasing, and licensees are now permitted to grow more marihuana plants for an increasing number of individuals. (A)
- A single marihuana plant can yield approximately five to six times more dried marihuana than what is estimated by HC in the MMAR. (A)
- The current ratio of HC MMAR inspectors to licensees in Canada is one to 338. (A)
- Marihuana grow operations, legal or otherwise, continue to be a concern for health and safety reasons. There is an increased risk of home invasion, violence, fire, and health related issues. (A)

Introduction

The illicit production of marihuana in Canada has increased steadily in the last 20 years. In 2008, HC reported that marihuana seizures represented nearly 75 percent of all illicit drugs seized by law enforcement agencies in Canada.[i] According to the U.S. National Drug Intelligence Center, while seizures of Canadian marihuana have declined[2] at the U.S.-Canada border, Canada continues to be one of the source countries for high-grade marihuana destined to U.S. illicit drug markets.[ii] Cannabis products have the largest consumer market in the world.[iii] The drugs' popularity with the general public and its potential for profit makes it an attractive market for organized crime (OC) involvement. In 2009, there were 343 Canadian OC groups known to be involved in the marihuana market, 102 of these groups are specifically involved in marihuana grow operations.[iv] (A)

A 2007 study in the Journal of Quantitative Criminology stated that the risk of detection in one year for indoor marihuana grow operations in the province of Quebec[3] was less than 10 percent, even for the largest grow operations.[v] Across Canada the risk of detection of MMAR grow operations that are committing criminal abuses is assumed to be significantly lower than the study found. Unlike illegitimate marihuana grow operations, police do not normally search for and pursue suspected MMAR violators due to the presence of a licence to produce and other law enforcement issues highlighted in this report. (A)

Many law enforcement agencies across the country have voiced similar concerns as those expressed by Cpl. Chris NEWEL of Clearwater RCMP Detachment "E" Division:

> *"The problem is we start an investigation only to find out somewhere along the line that there is a MMAR licence, at that point we basically stop the investigation. Although we "believe" the person is not abiding by the regulations (i.e. too many plants, trafficking, etc.), because we don't execute a warrant we never know for sure. The Crown (prosecutor) has basically told us not to go near a licensed grow." (A)*

The current MMAR and its application have exposed a new avenue for Canadian drug traffickers to produce and sell illicit marihuana with minimal interference from law enforcement agencies. Some police agencies and crown attorneys have shown a lack of appetite to pursue MMAR violators, as an individual's access to medical marihuana can be a sensitive issue. (A)

This assessment of 190 law enforcement cases involving the MMAR across Canada highlights the limitations of the current regulations and provides recommendations for improvements and enhanced controls. (A)

2 The 2010 NDIC National Drug Threat Assessment reported a decrease in the amount of marihuana seized along the U.S.-Canada border from 10,447 kilograms in 2005 to 3,423 kilograms in 2009.

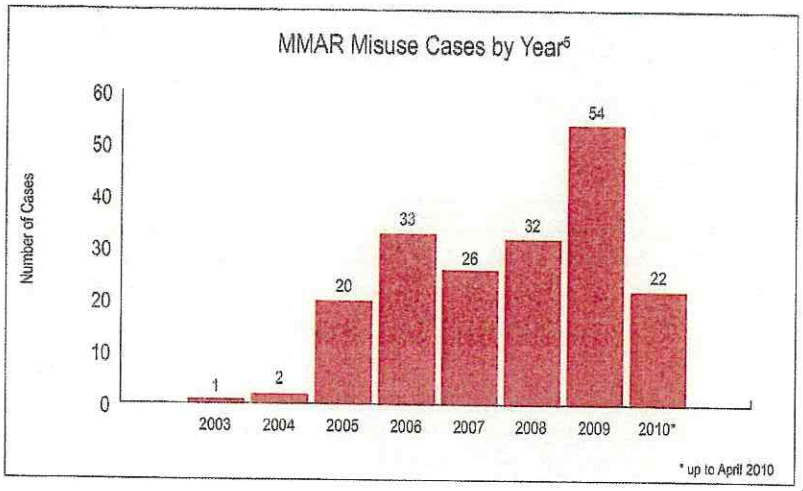
3 The study examined the province of Quebec only, detection rates in other provinces were not provided.

Methodology

In order to obtain a national perspective of MMAR licence misuse in Canada, the CACP requested Canadian law enforcement agencies to participate in an examination of investigational and/or intelligence files held by their agency regarding MMAR infractions. (U)

This report is the result of an analysis of information contained in files, from intelligence reports and other information sources from various law enforcement agencies including: RCMP; Abbotsford Police Department; Calgary Police Service; Edmonton Police Service; Guelph Police Service; Halifax Regional Police; Hamilton Police; Ontario Provincial Police; Ottawa Police Service; Peel Regional Police; Royal Newfoundland Constabulary; Service de police de la Ville de Montréal; Service de police de la Ville de Québec; Sûreté du Québec; Strathroy Caradoc Police Services; Taber Police Service; Toronto Police Service; Vancouver Police Department; Winnipeg Police Service; and, Windsor Police. (U)

A total of 190[4] files dated between August 2003 and April 2010 were reviewed; this included the 70 files previously collected for a RCMP Criminal Intelligence Brief produced in April 2009 on this subject.[vi] (A)



4 On May 27, 2010 a seizure occurred at a MMAR grow operation. The licensee had a licence to produce 75 plants and was found with 1,744 plants growing in the residence. This is the largest known plant seizure at a MMAR licensed grow operation. While this case fell outside the date parameters of data collection for this report, the authors chose to include this example due to the significance of the seizure, for the benefit of the readers.

5 This chart shows the breakdown of the 190 cases in this assessment by year of occurrence.

Background

On July 30, 2001 Health Canada (HC) implemented the MMAR. The objective was to provide Canadians suffering from critical and chronic illnesses (terminal illnesses or severe conditions) a means with which to access a lawful source of marihuana for medicinal purposes. It was created in response to a court decision that identified a need to offer access and a supply of marihuana to those suffering from these illnesses where conventional treatments were not appropriate or providing the necessary relief. (U)

Currently there are three types of authorizations under the MMAR:

- Authorization to Possess (ATP) — licence holder can possess dried marihuana for medical purposes;
- Personal-use Production Licence (PPL) — licence holder can produce marihuana plants for their own personal consumption for medical purposes;
- Designated Person Production Licence (DPPL) — licence holder can produce marihuana for medical purposes on behalf of a person with an ATP. (U)

Holders of an ATP can currently purchase dried marihuana from the Government of Canada supply. Holders of a production licence can purchase marihuana seeds from the Government as well.[6] (U)

Obtaining a Licence

In order to obtain a licence to possess or produce marihuana for medical purposes applicants must be a resident of Canada, complete a detailed written application, include two photos, fall into one of the two eligibility categories,[7] and have the support of a medical practitioner.[8] Licence holders are required to renew their authorization every year, and must include the signed declaration of their medical practitioner with each renewal. A criminal record check is completed on those applicants applying for DPPL and is redone every year upon renewal of the licence. At this time a criminal record check is not completed for those applying to produce or possess for personal use. Once approved, licence holders are issued an identification card that can be shown to law enforcement officials as evidence that they are authorized to possess or produce marihuana for medical purposes. (U)

Based on the type of licence obtained and an applicant's medical needs, there are specific terms and conditions assigned with regards to the amount of marihuana the licence holder can possess for a 30-day treatment supply, or the amount of marihuana plants that can be grown. Growers are told that they need to take the necessary measures in order to protect plants as well as dried marihuana from any potential loss or theft. (U)

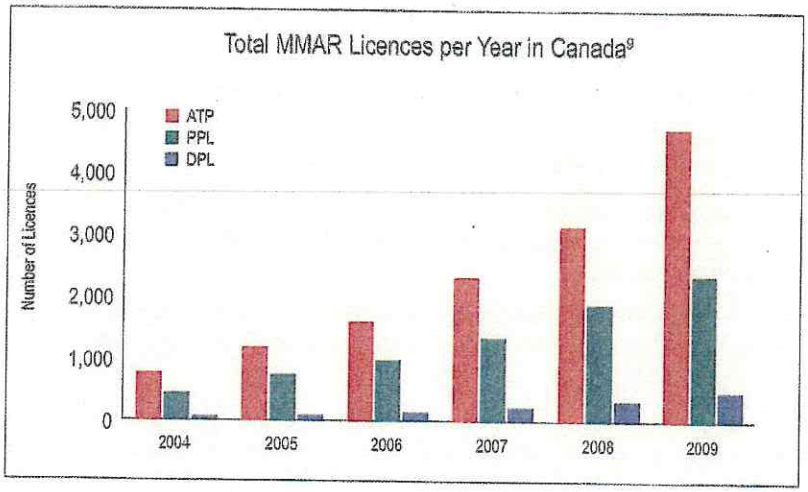
6 Health Canada has a contract with Prairie Plant Systems Incorporated which extends through Fall 2011.

7 Category 1 is compassionate end-of-life care, and Category 2 is symptoms of a serious condition not listed in Category 1. In the case of Category 2, the applicant needs to demonstrate that they have consulted with a Specialist.

8 As of June 2009, 1,977 physicians had referred two patients or more under the MMAR.

Current Status

As of November, 2009 4,728 Canadians were issued authorizations to possess (ATP) dried marihuana. There have been 3,430 production licenses granted, this includes both PPL and DPPL. The program has grown in size since its inception and it is believed that it will continue to increase in number. (U)



9 These are Health Canada statistics for total ATP as of November, 2009, and for PPL, and DPPL as of June 2009.

Criminal Abuses of MMAR Licences

Production and Trafficking of Marihuana for Personal Gain

Many (67) of the cases reviewed for this assessment involved production and/or trafficking violations as outlined under the Controlled Drug and Substances Act (CDSA).[vii] Licence holders, both Personal and Designated Producers, appear to be capitalizing on the excess medical marihuana they produce and are selling it illegally for profit. (A)

On March 2, 2007, police executed a search warrant at a residence in the city of Ottawa, Ontario. Information was received regarding an individual who possessed a licence and was believed to be selling marihuana and hash oil. Two suspects were arrested and charged with numerous offences. Police found 20 marihuana plants, only the one plant over the exemption was seized. Police also seized 271.5 grams of Hashish, four vials of Hash oil, and a loaded shotgun. The licence holder was convicted for possession for the purpose of trafficking contrary to Section 5(2) CDSA and Unauthorized Possession of a Firearm. (Ottawa Police Service 2007-56620) (A)

In 2008, officers were involved in an undercover operation where they purchased Oxycontin® and marihuana from a male and female residing in Wasaga Beach, Ontario. The undercover officer was shown the suspect's indoor marihuana grow operation where he bragged that he had a licence to grow 25 plants. Police subsequently executed a search warrant at the suspect's residence. The licence stated that he could grow 25 plants, and he was found to be growing approximately 40. (Ontario Provincial Police (OPP) RM08086145) (A)

Police received intelligence that a subject in Saskatchewan had a MMAR grow operation and was selling marihuana to numerous persons. Investigations revealed that the suspect did have a MMAR licence to grow 25 marihuana plants, store 1,126 grams of dried marihuana, and possess 150 grams. In November 2009, two undercover police officers each purchased approximately eight grams of marihuana from the licence holder. (Saskatchewan RCMP 2008-734171) (A)

Producing Over the Legal Limit

In 57 of the 190 files reviewed for this assessment, licensees were found to be cultivating well over their specified legal limit of marihuana plants. In some cases, the excess produced was found to be used in trafficking activities, generating personal profit for the licence holder. This creates a situation where marihuana produced under the cover of a legal licence is diverted to the illicit drug market. In most cases, where the licence holder is producing over their legal limit, law enforcement officials are directed to take the excess plants, leaving the licensee with their legal allowable amount. (A)

In January 2007, police investigated a residential building suspected of having an illegal marihuana grow operation. Upon executing the search warrant, police were confronted by a woman with a knife who was subsequently subdued. The woman believed thieves were trying to steal the marihuana from the grow operation. The male MMAR licence holder responsible for the grow operation was allowed to produce 75 marihuana plants and store 3,375 grams of dried marihuana. Police located a total of 464 marihuana plants. (Service de Police de la ville de Montréal (SPVM) 23-070124-007) (A)

On December 19, 2007, police arrested a MMAR license holder following a search warrant executed at his residence. The MMAR license holder was allowed to grow 14 marihuana plants and possess 5.2 kilograms of dried marihuana. Police found 50 kilograms of dried marihuana, seven marihuana plants, and 195 grams of hashish. Police found evidence of production of hashish, documentation detailing the suspect's illegal trafficking activities and proceeds obtained to finance the purchase of his residence. (Sûreté du Québec 163-071008-009) (A)

On September 10, 2008, the OPP were conducting a marihuana eradication operation and located a marihuana grow operation on a property in Norfolk County, Ontario. The subject had a MMAR licence to produce 38 plants, however, was producing 311 marihuana plants. The Children's Aid Society was involved as children were present on the property being investigated. (OPP RM08110644) (A)

On April 29, 2009, police executed two search warrants at a MMAR licence holder's residence and her separate production site. The licence holder was authorized to produce 39 marihuana plants and allowed to store 1,755 grams (3.9 lbs) of dried product at her residence. The licence holder and her spouse were suspected of producing over 39 plants and trafficking the excess marihuana. At the licence holder's residence, police located 348 marihuana plants and two unsecured firearms; at the production site, police located 26 marihuana plants. On October 19, 2009, police continued their investigation on the same noted couple and executed two additional search warrants. Police seized approximately 48 pounds of marihuana at the licence holder's production site. (Nova Scotia RCMP CMET 2009-443799 & 2009-1240673) (A)

On June 9, 2009, at the end of a two month investigation, police executed two search warrants at two properties owned by one family. This family had a MMAR license to produce 36 marihuana plants. During searches at the two properties, police found a total of 1,483 marihuana plants, $30,000.00 of growing equipment, $42,400.00 of stolen property, and five firearms with ammunition. (Hamilton Police Service 09-216527) (A)

On October 28, 2009, the Green Team North executed a search warrant at a MMAR grow operation suspected of overproduction. The location had two MMAR licences permitted to grow a total of 50 marihuana plants. Police seized a total of 262 marihuana plants. (Edmonton Police Service 2009-1279457) (A)

In November 2009, the Cowichan RCMP Green Team investigated a report of a suspected marihuana grow operation at a residence. The investigation determined that the suspected grow operation was in fact a MMAR grow operation, whose owner was licensed to grow a maximum of 50 plants. Police found the electrical consumption at the location to be unusually high and suspected overproduction. The licence holder responsible for the MMAR grow operation admitted to overproduction and police seized a total of 866 marihuana plants. (Cowichan RCMP 2009-15782) (A)

On March 10, 2010, the City of Vancouver district electrical inspectors investigated a complaint of faulty wiring at a commercial premise selling marihuana for medical purposes to the general public. Health Canada did not recognize the business in question, but advised that there were two MMAR licences at the premises to produce a total of 58 marihuana plants. The business was found to be producing in excess of their allowed amount. The Vancouver Police Department (VPD) seized 604 excess marihuana plants. While on site, VPD observed at least 10 subjects coming to the business to attempt to purchase medical marihuana. (Vancouver Police Department GO 2010-42983) (A)

Factors Contributing to Criminal Abuses of the MMAR

Several factors likely contribute to this criminal misuse of the MMAR, including: the reasonably low risk of being apprehended within the existing system; the large production and possession amounts being granted to licence holders; the issuance of multiple licences; the excess marihuana being produced per plant; having no controlled manner in place to destroy any excess; the potential for profit gained by trafficking marihuana; and, the lack of both monitoring and penalties that exist under the current MMAR. (A)

Low Risk of Apprehension

Within the current MMAR system there is a relatively low risk that a licence holder will be apprehended when exploiting the terms of their licence. This is partly due to a lack of HC resources to monitor licence holders and a lack of authority in both HC inspectors and law enforcement to enforce licence compliance or revoke licence privileges. In the event a licensee is apprehended, prosecution is unlikely. Public Prosecution Service of Canada (PPSC) often will not entertain a prosecution due to a lack of resources as well as a difficulty in attaining a conviction. (Staff Inspector Mario DI TOMASSO, Drug Squad, Toronto Police Service) (*Please see Lack of Monitoring, page 17*). (A)

Large Licence Amounts

The number of plants and amount of dried marihuana HC authorizes for a MMAR licence holder is based on a specified formula that incorporates a physician's recommended daily amount and the estimated plant yield. For example, the amount allowed for a production licence is calculated by taking the daily amount of dried marihuana needed (as recommended by the physician), while also taking into account the growth cycle of the plants and the estimated yields. The formula is altered based on whether the licence holder will be producing indoors or outdoors, as this affects yield amounts. (See Appendix A) (U)

> *"The marihuana dosage recommended by a physician has many unknowns and is often based on the patient's recommendation of his or her tolerance to marihuana usage. This method for recommending medicinal marihuana by physicians can lead to the issuance of large permits which, in turn, leads to abuses of the MMAR by criminals. These large permits create an environment of legalized commercial production of marihuana where the excess product can be easily diverted to support illicit and lucrative drug trafficking activities with minimal or no intervention by police". (S/Sgt. Darren DERKO, EDGE Unit, Edmonton Police Service) (See Appendix D) (A)*

The daily amount being recommended to medicinal marihuana users does not take into consideration the tetrahydrocannabinol (THC)[10] levels and its subsequent effect on the potency of the marihuana. The average THC content has increased over time — in the 1960s it was three percent whereas today the average is between 12 and 15 percent.[viii] THC levels in marihuana should likely be considered when making licence amount recommendations as potency will impact the effectiveness of the marihuana in alleviating symptoms associated with medical conditions. (A)

Health Canada has reported that an increasing number of MMAR program participants are being authorized to possess higher daily amounts of marihuana.[ix] These higher daily amounts translate into permission to produce larger crops for those who hold PPLs and DPPLs. The files reviewed in this assessment found HC to be granting authorization for large numbers of marihuana plants, as well as high quantities of dried marihuana permitted to be stored. Several of the files in the review (31) found both PPLs and DPPLs to have licences for considerably large amounts of marihuana. Specifically, in the 31 files, the minimum amount permitted for plant production was 44 plants (most being for a larger number), and for authorizations to possess dried marihuana the minimum noted was 1,755 grams to be stored at one time. (A)

For example, one licensee was granted a PPL to produce 273 plants and store 12,285 grams of dried marihuana. This is a large amount for one person to produce for their own personal medical marihuana needs; a producer of medical marihuana only needs nine plants to bud every five months in order to have an adequate supply for one heavy medicinal user.[x] It should be noted that licence holders may need to produce larger amounts of marihuana plants if they will be using the marihuana in baked goods, as this is one available method of consumption, based on the user's preference. However, eating marihuana bud is a less typical and desirable method to consume marihuana as a result of the lessened 'high' experienced due to digestion. The typical amount of marihuana bud consumed at one time by oral ingestion is one gram; the effects last up to four hours.[xi] (A)

10 THC is the psychoactive substance in the cannabis plant. THC levels determine the potency, the higher the level the more potent the marihuana.

On February 25, 2009, police investigated an individual suspected of having two marihuana grow operations at his two residences in the Toronto area. Upon executing search warrants at both locations, police discovered that the main suspect had a MMAR license to produce in one residence and his associate had a MMAR license to produce in the other residence. Both subjects were allowed to produce a total of 138 marihuana plants. Police located a total of 367 marihuana plants. (Toronto Police Service File no. unavailable) (A)

During a court hearing in Québec for a MMAR licensee charged with trafficking related offences, an anaesthetist testified on her knowledge and experience to treat the chronic pains of the Accused. In her testimony, the physician stated that it was the Accused who had determined his dosage to fight his pain. As a medical specialist, the physician also stated that cannabis resin and cannabis itself were the same substance, which is not exactly the case. In light of the physician's evidence, the judge had to remind the anaesthetist that cannabis resin was not legally admissible under the MMAR. In this case, there was an incomprehension or lack of knowledge in the application of the MMAR. The Accused in this case was found with 50 kilograms of dried marihuana. (*Sgt. Suzanne DE LAROCHELLIÈRE, Drug Specialist, Sûreté du Québec*) (A)

Multiple Licences

Another issue of concern is the recent development of multiple licences. Multiple licences are now being granted to several people who reside at the same location. The licensing developments are a contributing factor to the increased amounts of marihuana being legally grown. The court decision of SFETKOPOULOS v. Canada, 2008, has allowed for a single designated producer of medical marihuana to produce for more than one medical marihuana user, currently set at no more than two; this was previously not authorized under the regulations. The court decision of R. v. BEREN and SWALLOW, 2009, ruled that the restricting of production sites placed undue limits on access to medical marihuana. As a result, HC amended the regulations so that now no more than four production licences are permitted per site. These decisions have created the possibility of individuals running 'legal' large scale marihuana grow operations. (A)

Excess Marihuana Per Plant

As per Section 30 of the MMAR, HC estimates that one indoor marihuana plant will produce approximately 30 grams of dried marihuana.[xii] Although it is difficult to determine the exact amount yielded per plant, various law enforcement expert findings indicate the numbers are a considerably low estimate of what a marihuana plant can actually produce. It appears as though many licence holders are aware of this fact and are using it for their personal gain, as demonstrated by the number of misuses noted in this review of cases. (A)

The yield measurements of dried marihuana per plant as observed by law enforcement agencies in Canada often surpass the 30 gram estimates. (Appendix C shows the type of yield amounts that some law enforcement agencies are finding at illegitimate marihuana grow operations.) It is believed that the 30

gram measurement was established early in the creation of the MMAR and that its conservative amount is a reflection of marihuana plants grown naturally without any specialty growing supplies or techniques. There is a significant risk when the potential yield per plant is estimated without considering the yields that can occur from a three stage grow operation.[xiii] (A)

Sgt. Vincent ARSENAULT of the Surrey RCMP Green Team is a court-recognized expert in marihuana production and trafficking. (See Appendix D) He stated the following:

> *"Indoor grown marihuana plants (Indica variety) can yield in excess of two pounds (over 900 grams) of dry bud, depending on the type of operation (i.e. two stage (60 day) 'sea of green' versus the three stage (90 day) operation or the three stage 'monster' plant operations (120 days))" (A)*
>
> *"Two Stage" marihuana plants will max out at approximately 1 ½ feet in height and yield 1-2 ounces of drug bud per plant, however they mature much sooner (60 days). These plants by-pass the vegetative stage of plant growth. (A)*
>
> *"Three stage" marihuana plants take longer to mature (90 days), however they grow much larger (3-5 feet high) and consequently yield considerably more dry bud per plant (3-6 ounces). (A)*
>
> *"Three stage - Monster Grow" operations take even longer for the marihuana plants to mature (120+ days), however the plants yield far more dry bud than other types of operations (between one (1) and two (2) pounds of dry bud per plant). (A)*

There are several factors that will influence how much dried marihuana can be yielded per plant: whether the plants are grown indoor or outdoor; the genetics of the marihuana plants used; growing techniques such as soil-based growing or hydroponics;[11] [xiv] and, the lighting being used. Several cases in this review involved indoor grow operations using varying amounts and types of lights. (A)

These lighting techniques allowed for growth of super-sized marihuana plants — some plants were seven feet tall. These large plants would deliver a high yield of dried marihuana and would allow the licence holder to remain within their legal limit of plants, by number only. (A)

"Growers are not limited to the size or type of plant, only a total number, there is also no limit to the amount of lights they can use. Growers are able to grow large plants (the size of Christmas trees) and produce 1 to 1 ½ pounds per plant". (Cpl Shawna BAHER, Green Team, RCMP "E" Division) (See Appendix D) (A)

11 The term hydroponics refers to an extremely fast and efficient growing method that produces higher yields per plant.

This picture depicts two marihuana plants being grown indoors at a MMAR grow operation in Manville, Alberta. The Edmonton Green Team police officer in the picture measures 6'1" in height. The MMAR licence holder in this case was allowed to grow 73 plants; police located 93 plants in total. The excess 20 plants were between four and six feet in height and growing in a concealed room only accessible through a trap door. (Vermillion RCMP 2006-309269) (A)

The following pictures depicts a marihuana grow operation with expired MMAR licences. One of the suspects was in the process of applying for a MMAR licence. The indoor plants in this instance were averaging 7' in height. (Nanaimo RCMP 2009-30970) (A)

In January 2010, Langley RCMP investigated numerous complaints about a strong smell of marihuana in a residential area. The property in question belonged to a MMAR licence holder with two production licences, both for 49 plants. However, there were 28 high intensity lights so the plants were about 7' tall, easily providing a yield of over one pound per plant. This grow operation could yield approximately 100 pounds per crop. The maximum amount of dried product allowed for both parties is 2,205 grams each (or about five pounds). The grow operation was located directly across from a daycare and an elementary school. (Langley RCMP 2010-2735) (A)

No Controlled Manner to Destroy the Excess

The expectation by HC is that licence holders will destroy excess amounts of marihuana they produce. However, there is no policy in place to guide the safe removal and destruction of this excess. Depending on the disposal method chosen by the licensee (e.g. burn the excess or dispose of in the garbage), there is an increased risk that the drugs may find their way into the wrong hands. (A)

"The regulations do not clearly define the manner of destruction of excess marihuana and the security measures that have to be taken, whereas police destruction procedures are clearly defined to ensure safety and to respect the CDSA". (Sgt. Suzanne DE LAROCHELLIÈRE, Drug Specialist, Sûreté du Québec) (See Appendix D) (A)

Potential for Profit

Trafficking the excess marihuana could potentially bring a licence holder a high amount of profit. Even when using the conservative estimates of yield amounts HC utilizes in the MMAR, a licensed grower could sell the excess marihuana they produce and make a substantial personal profit. (A)

The current MMAR does not state any specified terms for a designated producer with regards to the amount of money they are permitted to charge a medical user for the product they sell. This can be seen as a potential opportunity for current and future designated producers to make a personal profit through an untaxed means of income. (A)

"In understanding the issue respecting "amounts or weights" of marihuana, it is important to conceptualize what these amounts signify. One ounce of marihuana equals 28.4 grams, for simplicity 28 grams will be utilized to represent one ounce. The standard street level packaging for marihuana sold at the ounce level is a plastic sandwich bag filled with marihuana. This is still an abstract amount for many individuals to comprehend. To truly understand what this amount represents, in the form that this product is commonly consumed, we need to understand how many marihuana cigarettes or "joints" this represents. On average 1 gram of marihuana produces 3 to 5 marihuana "joints". Therefore 1 ounce or 28 grams would equate to 84 to 140 joints (3 joints /gram x 28 grams = 84 joints or 5 joints / gram x 28 grams = 140 joints). When one is to consider what a MMAR licence holder is permitted to possess at any given time the allocated amount should be considered in terms of what that amount truly represents, and in a term that can be conceptualized". (Sgt. Lorne ADAMITZ, Drugs and Organized Crime Awareness Services, RCMP "K" Division) (See Appendix D) (A)

When you consider the expert yield amounts based on a two stage grow method there is a high potential for the grower to profit. Taking the lowest yield estimate of 28 grams and applying it to a marihuana grow operation where the licensee is growing an excess of 50 plants, this would mean a production of 1,400 grams. If the grower produces four crops in a year and sells their excess product for $2,800, the average market price for a pound,[xv] the annual tax-free profit potential for the marihuana grower would be $33,600.00. (See Appendix B) (A)

On May 6, 2009, police executed a search warrant at the residence of a MMAR licence holder suspected of overproduction. The licence holder was permitted to produce 49 marihuana plants and store up to 2,205 grams of marihuana. At the residence, police located the licence holder, his wife and child. Police seized: 136 marihuana plants; 6,274 grams of dried marihuana; a business plan showing the cost of setting up a grow to produce 200 plants and the estimated profits that could be made; ammunition; unsafely stored shotgun and rifle; brass knuckles; trafficking paraphernalia; and, cannabis oil. The licence holder had high end televisions, an ATV, a ride-on lawnmower, a boat, fly rods, high end appliances, and stereo equipment. (Kamloops RCMP 2008-31825) (A)

On March 18, 2010, Provincial and Municipal inspectors as well as law enforcement conducted an inspection of a building to be used for a MMAR grow operation. The property was in close proximity to the United States border and could accommodate a helicopter landing site. The licence holder was permitted to grow 199 plants and store up to 19 pounds of dried marihuana. The building and electrical set up could accommodate a commercial marihuana grow operation able to produce over 5,000 marihuana plants. The building was approximately 120 feet in length by 50 feet in width. The son-in-law of the licence holder is a helicopter pilot with a known association to the Hells Angels. (Chilliwack RCMP 2010-7736) (A)

There were nine air conditioning units outside (four visible in this picture).

There were four grow rooms each 30 feet by 40 feet. There were ten electrical sockets on the ceiling in each grow room that had three electrical twist plugs.

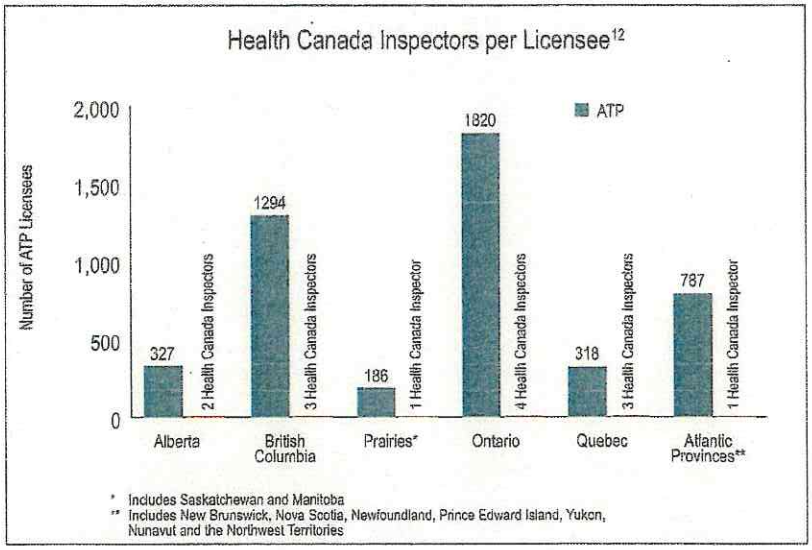
Two 600 amp service panels

The electrical inspector stated that it would have been easy to install a bypass in this type of set up.

Lack of Monitoring

Depending on the type of licence, a MMAR licence holder is permitted to grow a certain number of plants and possess and store a specific amount of dried marihuana for their daily use. Any excess is expected to be destroyed by the licence holder, as per the MMAR. Adhering to these set legal limits operates mainly on the principle of an "honour" system. The responsibility of staying within the legally permitted amount of marihuana is entrusted to the licence holders. It would appear that this arrangement is flawed. There were several files, 57 of the 190 reviewed, where individuals were found to be producing well over their legally permitted marihuana amounts. (A)

There are insufficient HC inspectors (14 Canada wide) to monitor MMAR licence holders to ensure conformity. They also are responsible for all CDSA inspections. Ontario has the highest number of ATP licences (1,820), and only four HC inspectors to monitor all MMAR licences in that province. These numbers indicate insufficient resources to consistently and effectively inspect and monitor licence holders across the country. The number of licence holders is expected to increase as the program continues to grow. HC estimates that the number of ATP licences will grow to at least 6,000 by 2011 from the 4,728 who are currently licensed.[xvi] (A)



Section 57 of the MMAR outlines the guidelines concerning HC's inspection of medical marihuana grow operations. It states 'an inspection may occur at any reasonable time'. However, the guidelines do not state a specified schedule of required inspections (i.e. monthly, quarterly, yearly, etc.). It is possible that an individual authorized to grow medical marihuana may never undergo an inspection of their grow operation. (A)

12 These are the Health Canada statistics for ATP as of November, 2009.

In addition to a lack of resources, inspectors also have a limited authority. A HC inspector can inspect the building specified by the licence holder as the growing site, but they may not inspect dwelling houses. Inspectors must have the consent of the occupant prior to entering any residence or dwelling. Police officers do not have the authority to inspect licence holders unless there are sufficient grounds of criminal activity and a search warrant can be obtained. (A)

"There appears to be no person or organization that inspects these licensed grows except for the police when they inadvertently receive information regarding the marihuana grow operation. It appears that once the police receive information from Health Canada that the grow is licensed then it increases the difficulty to obtain a warrant as there must now be evidence to indicate that the amount of marihuana is in excess of the licensed amount". (Sgt. Neil MUNRO, Vancouver Police Department) (A)

"Carrying out such investigations is difficult as the presence of 'normal' signs of an indoor marihuana grow operation are negated by the Health Canada permit. Investigators must therefore resort to other methods of investigation in order to acquire sufficient grounds to support an application for a CDSA search warrant, which is time and resources consuming. In some instances, smaller investigative units often must ignore these investigations as a result of limited resources". (Sgt. Simon ROY, Coordinated Marihuana Enforcement Team, RCMP "J" Division) (A)

Public Safety Issues

The presence of a marihuana grow operation within a community, whether legally permitted by HC or otherwise, is a public safety concern. There are several dangers to public health and safety associated with grow operations: fire, health, electrocution, poisonous gas and chemicals, violence, booby traps and children being put at risk.[xix] This assessment revealed a number of public health and safety issues. The health and safety issues seen at illegal marihuana grow operations are also seen at legal grow operations. (A)

Medical marihuana grow operations can affect the safety of a community and its members. Crime tips are often received by concerned neighbours or members of the community who suspect the presence of an illegal marihuana grow operation, and are concerned with the potential for illegal activities and illicit drug trafficking. In several cases police have begun investigations only later to discover it is a licensed MMAR grow operation. In order for police to more effectively monitor and safeguard for safety risks and concerns, they should be made aware of the presence of a legal grow operation. As first responders, the police services or fire departments would benefit from being informed about the presence of medical marihuana grow operations. Having this information before entering a residence could reduce health and safety risks by allowing responders to be appropriately prepared. (A)

Child Endangerment

The MMAR states that medical marihuana being grown outdoors cannot be adjacent to any public property that is mainly frequented by persons 18 years of age or younger, such as a school or public playground.[xx] This rule only pertains to outdoor growing, as an indoor grow operation does not have the same restrictions; children can reside in a dwelling that has been granted a licence to grow medical marihuana. Children who live with a marihuana grower or user have increased access to the drug, exposure to potential illegal activities, as well as all the potential health and safety issues associated with that environment. (A)

Marihuana grow operations require considerable amounts of water, resulting in high levels of humidity within the residence. The presence of continued humidity without proper ventilation can cause a build-up of mould. HC completed two reviews of scientific literature on the effects of indoor moulds and they found that exposure to indoor mould is associated with an increased prevalence of asthma-related symptoms such as chronic wheezing, irritation symptoms, and non-specific symptoms.[xxi] Exposure to emissions from chemicals used at indoor grow operations can also be the cause of respiratory health problems, particularly with regards to children.[xxii] (U)

> *"The immediate risk for children living in a grow operation is the elevated risk of fire, electrocution, inadvertent exposure to harmful chemicals, higher risk of respiratory problems or fungal infections from exposure to mould and carbon monoxide". (S/Sgt. Ian SANDERSON, Drugs and Organized Crime Awareness Service, RCMP "K" Division) (See Appendix D) (A)*

Not only is health an area of concern for children but the presence of a marihuana grow operation increases their risk of exposure to a lifestyle that involves criminal activity or violence, such as grow-rips[13] and home invasions, as well as other serious safety issues such as fires and electrocution. Children present at grow operations are exposed to situations and factors that place them at a higher risk of injury and/or illness.[xxiii] This review found children were present in 15 of the cases examined. A few of the cases also referred to marihuana grow operations discovered in very close proximity to a school or a daycare. While they were not technically contravening the MMAR — as the property would have to be directly adjacent — the proximity could expose children to the health and safety risks referenced in this report. (A)

On September 29, 2006, the Ontario Provincial Police communication centre received a 911 call reporting that a male had been shot at a residence. It was determined that the homeowner resides at the location with her ten year old daughter, twelve year old son, as well as her common-law partner. The homeowner held a Designated Producer licence from Health Canada and was permitted to grow 37 marihuana plants indoors during winter months and 10 plants outdoors during summer months. The license further allowed her to possess 3,750 grams (8.5 lbs) of dried marihuana on behalf of another individual. The homeowner and her family were the victims of a home invasion. Her common-law spouse confronted the two suspects who subsequently shot him in the leg and fled. During the course of the investigation, police located 510 marihuana plants, 14.24 pounds of dried marihuana, digital scales, and $350.00 cash. (OPP RM07016758) (A)

On March 17, 2009, police executed a search warrant at a residence in Prince George, British Columbia. A MMAR grow operation consisting of 21 plants was located in a room adjacent to a child's bedroom. The electrical wiring and connections that powered the grow operation were deemed to be of substandard quality and a fire hazard. The ventilation was poor, likely exposing the kid(s) to chemical fertilizers and mould spores. (Prince George RCMP 2009-6097) (A)

On July 24, 2009, police attended a residence in Windsor, Ontario on an unrelated incident. When police arrived they were approached by an employee of the neighbouring daycare who complained about marihuana plants being grown next door. Police investigated the matter and found marihuana plants growing in the backyard neighbouring the daycare's play yard. The owner of the marihuana plants had a MMAR license to produce 25 indoor plants and was not allowed to grow marihuana plants outdoors. (Windsor Police Service 2009-44525) (A)

13 The term grow-rip refers to a marihuana grow operation which is targeted by criminals who commit a home invasion in order to steal or destroy the crop.

In August, 2009, Kelowna RCMP received a complaint from a neighbourhood appointed spokesperson of the suspicion of a marihuana grow operation in their area. The community was concerned for the potential criminal activity and safety risks associated with the grow operation. Police investigated and found the person living at the location had a MMAR licensed grow operation in the back shed/garage that was accessible to her children. The license holder was allowed to grow 273 marihuana plants and store over 12 kg of dried marihuana for two medical users. Her children were known to brag to local kids at school about their marihuana grow operation. (Kelowna RCMP 2009-4052) (A)

Violence

The MMAR stipulates that it is the responsibility of the licence holder to safeguard the marihuana supply from potential loss or theft in a satisfactory manner. The applicant must provide a description of the security measures that will be implemented at the potential production site as well as the proposed site for the dried marihuana to be stored. This is to ensure that a marihuana supply does not somehow find its way to individuals intending to use it for profit and also to protect the licensee and his/her family from violence. The regulations can work only if the MMAR grower respects the regulations; however, in many reported cases, MMAR licence holders are themselves illegally trafficking the excess marihuana, failing to make any attempts to conceal its presence (i.e. the smell), or growing it openly which may attract violence. (A)

The drug trade is often found to be surrounded by violence or the threat of violence. Weapons such as firearms and knives are known to be used by drug traffickers to protect their drug operations and/or steal someone else's supply. This was reflected in this review as there were cases involving the presence of weapons (16) or that included attacks and home invasion (16). The review also found a few (2) cases where individuals were shot during a home invasion. (A)

These home invasions or "grow-rips" often lead to the violent victimization of the medical grower, or in some cases, the violent victimization of unrelated bystanders. Neighbours who reside close to a grow operation are at an elevated risk of a home invasion, possibly due to a mistaken address. As a result of these violent home invasions there is the potential for legally grown marihuana ending up in the illicit drug market. The difference for a licensed medical marihuana grower is that they are able to contact law enforcement for protection and support in the event of a home invasion. (A)

In 2006, police investigating a residence in Vancouver were confronted by a man with a machete who thought that his legal grow was being "ripped". Police determined that the individual with the machete had a legal grow operation. The MMAR grow operation was located near an elementary school, and was within the limit for the number of plants but failed the electrical inspection. (VPD GO 2006-148108) (A)

In 2009, two individuals living at a residence in Dartmouth, Nova Scotia, were being investigated by Integrated Drugs (IDU) due to information received that one of them had a grow and was trafficking. The investigation revealed that the individual in question held a valid personal licence to grow 25 plants, store 1,025 grams, and hold 150 grams on his person. The two subjects were victims of a home invasion where the license holder was shot. Police executed a search warrant at this location. Police located approximately 49 plants with dried marihuana and limited evidence of trafficking (scales and score sheet). (Halifax Regional Police 09-139935) (A)

On May 26, 2009, Surrey RCMP received a call from a subject reporting that he had been attacked by masked intruders at his residence. The complainant was walking towards his truck behind his home when he was confronted by three masked men. One of them claimed to be police and was holding a piece of nylon rope. The other two men came around him and the complainant fled. The complainant's girlfriend observed the events unfold from inside the house and reported that one of the masked men was holding a black handgun. The three suspects fled on foot. Police followed the tracks and recovered a backpack filled with break and enter tools, and a pack of three foot zap straps. Police did not locate the suspects. The complainant was uncooperative other then mentioning he had a MMAR license to grow marihuana which was located in his rear outbuilding, the same direction as where the suspects had been. The complainant did not want police near his residence or the outbuilding. (Surrey RCMP 2009-61224) (A)

On March 15, 2010, Chilliwack RCMP responded to a report of a home invasion at a residence. The homeowner was a MMAR licence holder with a marihuana grow operation of approximately 50 plants. Two unknown males entered the licence holder's residence stating they were the RCMP and threatened to shoot the victim who fled to the neighbour's. The suspects fled in a vehicle driven by a third male. (Chilliwack RCMP 2010-7517) (A)

On April 2nd, 2010, Langley RCMP responded to a home invasion involving five suspects wearing black clothing, balaclava, and gloves. The male victim awoke to his house alarm and when he went to investigate he found five males in his home. The victim was ordered to kneel on the floor and a gun was put to his head. The individual's wife and seven year old daughter were located by the suspects and ordered to sit by the victim. The suspects then went searching through the residence. Several males remained in the residence and several more tried to gain entry into a shed located at the rear of the residence. This shed contains three medicinal grows each licensed for 50 plants. Attempts to force entry into the shed failed and the alarm to the shed went off, the suspects then fled. The victims had just moved into the residence and had no ties to the shed containing the grow. (Langley RCMP 2010-9910) (A)

See Appendix E for a summary of an incident that occurred in Seattle, Washington.

Health Concerns

The health issues and concerns reviewed with regards to child endangerment are fairly consistent with the risks to the general population, law enforcement, and first responders exposed to marihuana grow operations. Canadian law enforcement agencies have strict policies and procedures in place in order to protect the health and safety of police officers who investigate and dismantle marihuana grow operations. These policies are specifically concerned with protecting officers and emergency workers from the inherent health hazards encountered at marihuana grow sites. (See Appendix F) (A)

The main health hazard encountered in a grow operation is the exposure to mould and chemical contamination including pesticides and fertilizers. Improper ventilation is often an issue at marihuana grow sites as it leads to elevated levels of humidity. The high levels of moisture as a result of the humidity within grow operations expose individuals within the site to mould.[xxiv] (U)

In December, 2009, a public safety team conducted an inspection of a MMAR grow operation. The licensee was wheelchair bound and could not access two of the three grow rooms, indicating other persons were involved in tending to the operation. The public safety team determined the residence was full of mould and presented significant safety hazards. The occupancy permit for the residence was revoked. The residence was owned in part by a member of the Hells Angels who resided next door. (Coquitlam RCMP 2009-39103) (A)

Fire/Electrocution

There is an increased risk of fire associated to marihuana grow operations due to the modifications to the electrical systems that are often made by unqualified individuals. The large amounts of electricity and the illegal tampering with electrical systems can increase the risk of fire or electrocution. The hazard is not only to the dwelling containing the marihuana grow operation but also to the neighbouring buildings. In June, 2009, the Ontario Fire Marshal's office and the OPP reported that over a period of six months they had been called to a fire involving either a marihuana grow operation or illegal drug lab approximately every 15 days.[xxv] It is these types of fires that pose a serious risk to the health and safety of first responders as well as the overall community. (U)

Marihuana grow operations are being set up with lighting and hydroponic growing equipment, and are being unsafely installed without the proper permits or inspections, most often in a residential setting. These operations are being set up by unqualified licence holders, which increases the risk of fires and electrocutions to the entire neighbourhood.[xxvi] An inspection of a MMAR grow operation is not required prior to the issuance of a licence in order to ensure provincial safety codes such as fire, building, or electrical will be met. Some research estimates that marihuana grow operations are at a 24 times greater risk of residential fire than a regular home.[xxvii] The possibility of electrocution when entering a marihuana grow operation, whether it is legally permitted or otherwise, is always a concern and a risk for law enforcement. (U)

In this assessment there were 23 files that specifically mentioned electrical hazards due to unsafe electrical work completed within the residence; there were two cases where an actual fire occurred. Several cases had electrical/fire inspections at the time the search warrant was executed and power was subsequently shut off to the residence due to building code safety violations and potential hazards. (A)

Police were required to respond to three separate complaints (September 2008, October 2009, and March 2010), at an apartment which contained a MMAR grow operation. In September, 2008, authorities had to shut the electricity to the apartment as the altered electrical wiring of the grow operation presented a fire hazard. In March, 2010, police found that the grow operation was unsafe and posed a safety risk to neighbouring apartments. The licensee was charged under the fire code. (Toronto Police file no. unavailable) (A)

On November 20, 2009, Maple Ridge Fire Department responded to a report of smoke emitting from a warehouse complex. Upon arrival, the Fire Department determined the fire came from a marihuana grow operation located in the upper floor of the warehouse complex. It appeared faulty electrical wiring used in the grow site was the cause of the fire. Police determined the two individuals responsible for the grow operation had recently expired MMAR licences allowing a total of 15 plants and 735 grams of dried marihuana. Police found 185 marihuana plants growing in three rooms. The entire unit where the grow operation was located was transformed to accommodate a marihuana grow operation and measured 100' by 60'. The investigator stated the following: "...their intentions were to grow marihuana for illegal purposes. The warehouse they had leased was suitable for an operation far exceeding their allotted limits and had a monthly rental fee of $3,000 dollars a month." (Ridge Meadow RCMP 2009-26815) (A)

Challenges to Law Enforcement

The Privacy Act

The *Privacy Act* presents significant obstacles for law enforcement in dealing with the MMAR. The *Privacy Act* does not permit HC officials to proactively provide law enforcement with a list of those licensed to grow or possess marihuana for medical purposes within the communities that they serve. However, HC can and does provide law enforcement, upon request, with the licence details for specific cases. (A)

Lack of Inspection Capabilities by Law Enforcement

Under the current MMAR system, law enforcement agencies have no authority to conduct an inspection to ensure licence compliance. Police can only inspect a licence holder residing within their jurisdiction if they have reasonable grounds that criminal activity is taking place. Only through investigation, intelligence gathering, tips received, the presence of unusually high electrical consumption, among other factors, are police then able to obtain a search warrant and inspect a MMAR grow operation. Upon inspection, if a licence holder is found to be breaking the terms of the licence by producing over their limit for example, typically police will be directed to simply seize any excess plants and leave the remaining legal amount untouched. Darryl Plecas, a Criminologist at the University of the Fraser Valley, believes it is the inability to monitor the situation due to a lack of inspectors that "in effect, amounts to virtually no enforcement".[xxviii] (A)

Although many law enforcement agencies may feel it is not their responsibility, or may not want the permanent obligation to inspect and monitor MMAR licensed grow operations, it could be a short term option. Police departments already have specially trained units who have experience entering marihuana grow operations. Police have policies and procedures in place that could be used in order to inspect MMAR licensed grow operations. However, designating police officers as inspectors would require the use of already strained police resources, therefore, may not be practical as a long term remedy. Police could use their knowledge and expertise of marihuana grow operations in order to train HC inspectors so they may safely and effectively monitor licensees going forward. (A)

Communication Between Health Canada and Law Enforcement Agencies

There is a lack of communication between HC and law enforcement agencies which has associated costs in terms of time for investigations and the needless seizures and arrests of individuals. (A)

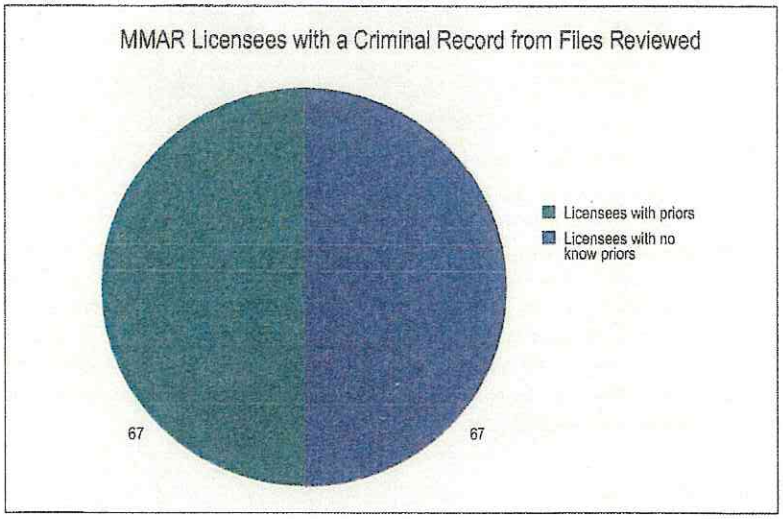
Some positive advances have been made with the establishment of the 24-hour pager system available to law enforcement to obtain licensee information. In most cases a HC official will respond within an hour to the police inquiry with the desired information on the presence of a MMAR licence and its terms. Continued communication between both parties will increase enforcement of, and compliance with, MMAR licences. However, more law enforcement agencies need to be made aware of this resource. If police fail to contact HC, valuable resources can be spent in the processing of files and executing search warrants unnecessarily. (A)

Other Potential Considerations

Criminal Record of MMAR Licensees

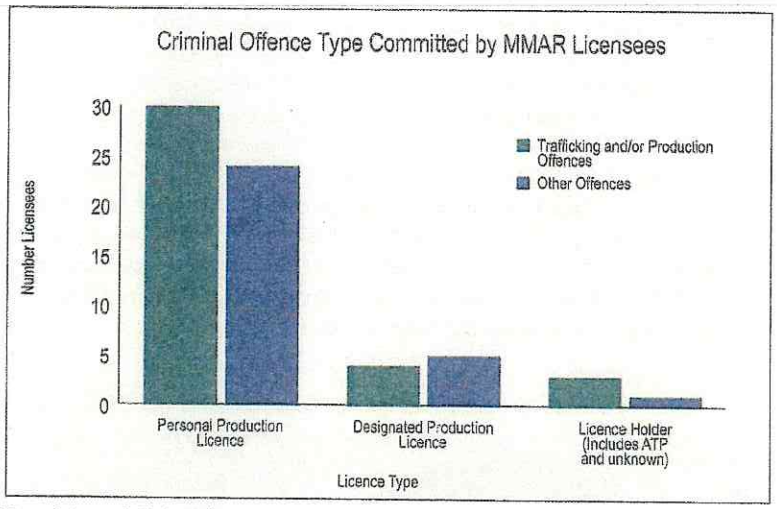
As per the existing MMAR system, criminal record checks are done for those applying for a DPPL[14] but are not completed for PPL or ATP applicants. In order to obtain a licence to produce marihuana on behalf of another individual, a DPPL applicant needs to demonstrate that within the 10 years preceding their application, they have not been convicted as an adult of a designated drug offence. (U)

In the 190 files reviewed for this assessment, there was a total of 134 licensees, as several licensees appeared in multiple files. Of the 134 licensees, 67 (ATP, DPPL and PPL) were found to have a criminal record which included production, trafficking, and importing and exporting of controlled substances. Of the 67 licensees with prior criminal offences one had an ATP, nine had DPPL, 54 had PPL, and the licence information for three licensees was not available. Fifty percent of the 134 licensees captured in this report have a criminal record, the majority of which were PPLs. A criminal record check of all MMAR growers would be needed in order to establish an exact percentage of licensed producers with criminal records. However, based on these findings, the percentage of licensed producers with a criminal record, specifically those individuals with PPLs, would likely be higher than the approximately 12.88%[xxix] of Canadian adults in the general population that have a criminal record. (A)



14 The DPPL applicant must supply a document issued by a Canadian police force establishing that, within the ten years preceding the application, they have not been convicted, as an adult, of a designated drug offence.

As noted above, the largest number of licensees with a criminal record, from the files reviewed in this assessment, are those licensed as PPL. These are the individuals who are given the authority to produce without having a criminal record check as their marihuana is for personal medical use. Consequently, their previous criminal history, particularly designated drug offences committed within the last ten years, is not taken into consideration by HC when granting a MMAR licence. Having a history of designated drug offences could indicate a potential licensee's tendency towards further criminal involvement and lead to a potential misuse of a MMAR licence. Those with such a history would likely be considered a risk and this information should therefore factor into the issuance of a medical marihuana licence. In this review, 54 personal production licensees had a criminal record, 30 had drug related charges and convictions of trafficking and/or production. (A)



Revoking a MMAR licence is not a simple process. HC will revoke a licence only if the licence holder has been convicted of a designated drug offence. However, law enforcement agencies do not always follow-up with HC to inform them that a licensee has received a criminal conviction. There is no formal process in place to notify HC when a case has been concluded and a conviction received. The difficulty in revoking a licence once one has been obtained demonstrates the need to conduct more rigorous background checks prior to licensing. It should also be noted that even after a conviction, HC must allow the licence holder to maintain their authorization to possess marihuana for medical purposes as it was supported by a physician. (A)

Organized Crime

Marihuana production and trafficking is one of the most lucrative activities for Canadian OC groups. The demand for marihuana, both in Canada and in the United States, creates opportunities to generate large profits. The MMAR lacks checks and balances[xxx] leaving the system open to exploitation by OC groups enabling them to hide illegal grow operations behind HC exemptions. MMAR licences would enable OC groups to avoid detection and increase their profits. There is current information suggesting at least three OC groups in Canada are trafficking large amounts of marihuana and abusing the MMAR to facilitate their operations.[xxxi] In this review four of the cases mentioned an association between a MMAR licensee and a known OC organization. (A)

Lack of Resources

Investigating the presence of a potential grow operation involves a good deal of law enforcement time and resources. These resources are often used unnecessarily on legal grow operations as the presence of a licence is not discovered until well into an investigation. A tip can be received from a concerned community member detailing the potential presence of what they believe to be an illegal marihuana grow operation, and police, unaware it is a MMAR licensed grow operation, will commence an investigation in order to ensure community safety. (A)

Many law enforcement agencies feel having access to a list of those licensed to grow in their communities would alleviate potential safety risks to those first responders as well as save valuable resources needed for other law enforcement priorities. (A)

> *"The providing of this information would allow for the respective agencies to quickly rule out suspected grow operations that are licensed and allow for our limited resources to be put towards illicit grow operations" (PC Richard KITELEY, Drugs & Guns Enforcement Unit, Windsor Police Services) (A)*

Compassion Clubs

Since the inception of the MMAR there has been an emergence of clubs or stores that are known to sell marihuana and marihuana-based products allegedly for medical purposes. These establishments are commonly known as "compassion clubs". (See Appendix G) (A)

Some MMAR licence holders are using their MMAR authorizations to open compassion clubs. In some cases, police have received information that MMAR licensed producers are supplying compassion clubs with their excess marihuana. Compassion clubs portray themselves as non-profit organizations which sell medicinal marihuana to doctor-recommended persons with medical conditions. These clubs are a means for criminals to illicitly traffic marihuana for personal gain under the guise of selling for medicinal purposes. In the province of Quebec, a large portion of the population believes that compassion clubs are legal, monitored, and regulated by the Federal Government.[xxxii] (A)

Contrary to the general public's belief, compassion clubs are illegal in Canada — the owners and operators are contravening not only the MMAR but the CDSA as well. Police departments and the general public need to be better educated on the MMAR and its application. (A)

Compassion clubs continue to appear in Canadian communities and Canadian internet sites due in part to the reasons mentioned above. Currently, there are at least 16 known compassion clubs in Canada.[xxxiii] The emergence of compassion clubs is a problem that will precipitate the criminal abuses of medicinal marihuana principles. (A)

Lack of Rules Regarding Transportation

The MMAR does not have clearly defined rules regarding the transportation, by various methods, of medical marihuana by licence holders. This was illustrated by a recent incident at an airport in the province of Quebec. (A)

Sgt. Suzanne DE LAROCHELLIÈRE, Drug Specialist, Sûreté du Québec, raised the following issues:

1) The authorized person is not obligated to declare the transportation of an excess supply of medical marihuana he/she may need for extended absences from home. This may cause police to believe the licence holder possesses a controlled substance for the purpose of trafficking contrary to Section 5(2) of the CDSA.

2) Public transportation companies and authorities are not aware, educated, or equipped to handle the MMAR. The detection of marihuana on a licence holder by public transportation staff will result in unnecessary police intervention. Further, it may well be public transportation policy to disallow any controlled drugs on their vehicles and in their buildings.

3) The MMAR does not require a licence holder to maintain control of his/her medicinal marihuana during transportation. This may cause a third party to take possession of the marihuana, which would equate to trafficking of a controlled substance contrary to Section 5(1) of the CDSA.

Conclusion

It should not be solely incumbent upon the MMAR licensed producer to abide by municipal, provincial, and federal laws. Medicinal marihuana is a controlled substance that requires strict oversight mechanisms in order to mitigate criminal abuses through the MMAR. Criminals have been found to be trafficking marihuana for decades. This analysis of national cases related to the MMAR has demonstrated that the current regulations are allowing criminal abuses to occur while increasing the risks to public safety. In the meantime, most police agencies are struggling to enforce the law on those individuals who are suspected of and/or caught abusing their MMAR licences.

The CACP is making recommendations to HC to change the MMAR in a manner that will meet the compassionate needs of the individual while ensuring that the general public's interest and safety are not compromised.

The CACP is presenting 10 principal recommendations for changes to the MMAR in a manner that is fair while minimizing its abuses by criminal elements. The CACP is aware that these principal recommendations may take some time to implement across Canada.

For that reason, the CACP is also presenting 12 additional provisional recommendations, which can be implemented in a short time frame in order to be in place during the transitional period between the current application of the MMAR and the newly proposed one.

Recommendations

Principal Recommendations:

1) The current regulation allowing for PPLs and DPPLs to grow marihuana themselves should be repealed.
2) PPLs and DPPLs should be given a reasonable time limit to cease their marihuana growing activities. This time limit should take into consideration the time it will take HC to have all its approved suppliers in place.
3) HC should contract reputable companies to produce a variety of medicinal marihuana throughout Canada to meet the needs and expectations of most medicinal marihuana users as well as the timely and reliable delivery of the product.
4) Approved medicinal marihuana companies should be located in areas where they are easily accessible to the majority of MMAR licensed users.
5) The approved medical marihuana companies would be subject to HC regulations and inspections; have the necessary standardized security and safety measures in place; have regulated quality control and safety standards for the medicinal marihuana; and, have the ability to deliver the marihuana in a reliable and timely manner. This recommendation will allow HC to conduct regular inspections on and maintain oversight of the MMAR program as the locations to visit will be reduced to a manageable size. This will also limit the criminal abuse of the MMAR and the public safety risks posed by some MMAR grow operations to their communities.
6) The daily amount of marihuana recommended by a physician should be based on recognized training encompassing scientific findings and literature versus the demand of the patient.
7) Physicians who recommend marihuana to their patients should receive an accreditation from their governing bodies who will in turn provide monitoring and compliance support on dispensation.
8) The regulations should have meaningful penalties assessed to MMAR violators which would include criminal prosecution and the immediate suspension and/or revocation of the licence of an individual and/or business believed to be committing abuses.
9) A regulation on the allowable methods of transport of medicinal marihuana should be incorporated in the MMAR to clearly dictate the rules for a licence holder to transport medicinal marihuana via all modes of transportation, whether it be from point A to point B, or for an extended absence from his/her residence.
10) HC and the CACP should improve cooperation, consultation, and communication between agencies to better draft and apply any future regulations or other laws that may cause conflict with the CDSA. Initial consultation and cooperation is vital to prevent the problems experienced today with the current MMAR.

Appendix A — Yield of Dried Marihuana per Plant

Section 30 of the MMAR allocates a yield of 30 grams of dried marihuana per plant grown indoors, which is significant in determining the maximum number of plants a medical grower is allowed to produce.

Health Canada uses the following formula to calculate the maximum number of marihuana plants allowed to be grown entirely indoors:

[(A x 365) / (B x3C)] x1.2 = D

Legend:

"A" is the daily amount of dried marihuana.

"B" is 30 grams expected yield of dried marihuana per plant as set in the MMAR.

"C" is a constant equal to 1, representing a growth cycle of a marihuana plant from seeding to harvesting.

"D" is the maximum number of marihuana plants allowed for growing.

Example:

A) A medical grower is allowed to use 5 grams a day.
[(5 x365)/ (30 x 3)] x1.2 = 24.33 or 25 marihuana plants (maximum allowed)

B) A medical grower is allowed to use 5 grams a day, but the expected yield per plant in "B" is now 90 grams (just over three ounces).
[(5 x365)/ (90 x 3)] x 1.2 = 8.11 or 9 marihuana plants (maximum allowed)

As noted above, the yield and consumption measurement determines the maximum number of plants allowed to be grown.

Appendix B — Example of the Estimated Profit to be Made in Trafficking Marihuana

Example: A licensed grower is permitted to produce 25 plants for himself, but in this scenario the licensee produces an extra 50 plants for a total of 75 plants. The chart below details what the potential annual revenue would be for this licensed grower if he were to sell his excess dried marihuana for profit.

Estimates with MMAR yield amounts	Estimates with expert yield amounts
Yield: 30 grams of dried marihuana per plant	Yield: 28 to 56 grams dried marihuana per plant (two stage growing method)
3 crops a year	4 to 6 crops a year
Average price of marihuana sold in Canada in the illicit drug market: $2800.00 per pound	
30 grams x 50 plants = 1500 grams	28 grams x 50 plants = 1400 grams
1500 grams x 3 crops a year = 4500 grams	56 grams x 50 plants = 2800grams
4500 grams/ 454 grams (1 lbs) = 9.91 lbs	1400 grams x 4 crops = 5600 grams
9.91 pounds x $2800 = $27,753.30 of tax free profits a year if sold at the pound level (profits are higher as you sell in smaller allotments)	2800 grams x 6 crops = 16800 grams
	5600 grams / 454 grams (1 lbs) = 12.33 pounds
	16800 grams / 454 grams (1 lbs) = 37 pounds
	Annual profit potential: $33,600.00 (12 lb x $2800) to $103,600.00 if sold at the pound level.

Appendix C — Sample Yield Amounts of Dried Marihuana

The following table illustrates the yield of dried marihuana per plant sampled by police marihuana enforcement teams at illegitimate marihuana grow operations: (A)

Agency	File #	Plant Height	Yield of Dried Marihuana Per Plant (Indoors)
Edmonton Police Service	2003-36923	3.5 feet	224 grams (8 oz)
Edmonton Police Service	2003-92870	3 feet	68 grams (2.4 oz)
Edmonton Police Service	2003-92870	3 feet	61 grams (2.1 oz)
Edmonton Police Service	2003-174571	4 feet	472.9 grams (16oz+)
Edmonton Police Service	2004-60602	5.5 feet	454.8 grams (16oz+)
Edmonton Police Service	2005-155653	3.5 feet	185 grams (6.6oz)
Edmonton Police Service	2005-19513	2.5 feet	142.9 grams (5.1oz)
Edmonton Police Service	2007-181086	N/A	125 grams (4.4oz)
Edmonton Police Service	2007-181086	N/A	101 grams (3.5oz)
Edmonton Police Service	2007-181086	N/A	233 grams (8.2oz)
Duncan RCMP	2009-1578	6 feet	376 grams (13oz)
Duncan RCMP	2010-288	6.5 feet	703 grams (25oz)
New Brunswick CMET	2010-276011	8 feet	1386.5 grams (49 oz)
Nova Scotia CMET	2009-111060 (MMAR)	4 feet	363 grams (13oz)

Appendix D — Summaries of Experience of Court Recognized Experts in the Field

Sgt. Lorne ADAMITZ
RCMP Regular Member since 1988

- Has attended in excess of 400 active marihuana grow operations.
- Has assisted in growing marihuana in a controlled environment while working at EPS HQ - Det. Pete CHERNYOSKI had a licence.
- Has manicured seized marihuana plants and obtained yields from the plants.
- Has reviewed seized grow records and yields from accused individuals who recorded their yields. Most recently a 2009 case of an indoor marihuana grow operation of minimal sophistication of only 20 plants, in a very northern environment in a confined space. The grower identified the plant and separately dried the manicured marihuana bud from the plant. The yield per plant was 37.67 grams / plant = 1.345 oz / plant. This was not an experienced grower and the grow conditions were not ideal.
- Continues to attend grow operations with the Edmonton Green Team.
- Current duties are Drugs and Organized Crime Awareness Services which also requires he keep current on drug trends, intelligence, and research.

Sgt. Vincent J. ARSENAULT
RCMP Regular Member since 1978

- Provide instructional training on the history, horticulture, manufacture, usage, stability, toxicology and pharmacological effects of marihuana and cocaine. This course was being instructed jointly with Mr. Wayne JEFFERY, Forensic Toxicologist from the Vancouver Forensic Laboratory in Vancouver. Candidates are shown how to extract weed oil and manufacture "Freebase" and "Crack" cocaine. Current importation and trafficking trends are also discussed.
- Attended a course instructed by Mr. Richard LAING, Drug Analytical Specialist with the Health Protection Branch Laboratories in Burnaby, B.C. Received hands-on instruction on the scientific methodology for marihuana identification and quantitative analysis. Also conducted marihuana oil extractions using Isopropanol, Methanol, Naphtha and Toluene for marihuana resin yield and THC potency comparisons.
- A three-month training exercise which consisted of growing marihuana under licence from the Bureau of Dangerous Drugs in Ottawa. This involved growing marihuana from seeds and clones to maturity and experimenting with the different elements required for a successful crop, such as lighting, water and nutrients. This exercise also provided "hands on" experience on forcing marihuana plants to flower by modifying light cycles and sources.

- Wrote a paper on marihuana including research conducted on horticulture, cannabis preparations, THC degradation, toxicology, statistics, cultivation and exportation trends, investigative steps/safety procedures and possible solutions to the problem. This document was reviewed and published on the RCMP Infoweb as an educational and investigational tool to Law Enforcement officers nationwide.
- Conducted yield determination experiments and continues to do so on a regular basis by personally removing marihuana buds from plants and weighing the dry bud to determine the average plant yield. Has used this same method to determine the effects of "Lumen Ratio" and CO2 enrichment on marihuana plant yield.
- Weighed seized marihuana cigarettes to determine the average weight in order to ascertain the average number of cigarettes per gram. This has become especially useful in determining the rate of personal consumption.
- Has been involved in over 2,000 investigations of cultivation of Cannabis marihuana from several plants to over 23,000 plants being grown in soil and hydroponically using Rockwood and lava rock for root system support. Has also been involved in approximately 950 investigations involving the exportation and trafficking of marihuana from grams to the multi-pound level.

Cpl. Shawna BAHER

RCMP Regular Member since 1992

- First encountered marihuana, cocaine, and heroin in 1993 as a general duty police officer.
- Has personally been involved in hundreds of investigations concerning cannabis marihuana, cannabis oil (weed oil), cocaine, heroin, lysergic acid diethylamide (LSD), amphetamines (primarily methamphetamine and ecstasy), psilocybin mushrooms, and designer drugs such as GHB and ketamine.
- Has assisted in several undercover operations involving cocaine, heroin, and marihuana. Has personally been involved in the seizures of cocaine from the quarter-gram to the multi-kilogram level, seizures of heroin at the one-tenth of a gram level to the multi-ounce level, seizures of both dried marihuana and growing marihuana in the gram to multi-pound level.
- Has debriefed undercover operators and confidential informants concerning the use of drugs, trafficking trends, availability, prices, trafficking methods and use, packaging concealment methods, and jargon.
- Has and continues to cultivate and debrief confidential informants who specialize in cocaine, heroin, methamphetamine, and marihuana and rave drugs including ecstasy, GHB and ketamine.

- Has been in charge of three Marihuana Grow Operation "Green Teams" and also been involved in a total of five "Green Teams". Has investigated over 500 grow operations and has seen grows in all stages of growth, in all types of growing mediums. Has observed differences between clones and seedlings and have harvested in excess of 30 plants from different grow operations, which include clipping and drying the marihuana bud.

Sgt. Suzanne DE LAROCHELLIÈRE

Police officer with the Sûreté du Québec since 1988

- Has participated in more than 790 drug investigations. Gained extensive knowledge of the drug world by working for the Quebec Provincial Police as an undercover agent for a period of 10 years, from 1989 to 1999 and also as an investigator of organized crime from 1995 to 2006.
- Since 2006, as Drug specialist in the Operational Support Service (OSS), gives advice which requires maintaining a high level of knowledge in the field of drug criminality to support the field of drug investigations.
- Interactions with various police departments and stakeholders as a trainer promotes trade and knowledge of trends in drug use. Participates in conferences both nationally and internationally, in policing as well as for civil partners.
- Has been an expert witness in over twenty different criminal cases in trial before the Court of Quebec and the Superior Court. Has also contributed to/written more than a dozen expert reports on criminal activities in connection with the production and trafficking of narcotics.
- From 2006 has contributed to the development of the Sûreté du Quebec in its fight against crime by:
  - Acting as advisor to the Criminal Investigation Branch, in investigations and proceedings related to drugs;
  - Developing internal procedures and tools relative to drug detection, prevention and repression at the Sûreté du Québec;
  - Presenting and attending various conferences nationally and internationally in connection with enforcement of criminal activity related to drugs;
  - Producing and presenting training relative to drugs to officials of the justice system (from judges to attorneys) and other civilian partners. These courses have also been provided to the École nationale de police du Québec and the Canadian Police College (Ottawa), as well as with various police forces in Quebec;
  - Participating in the management of the Provincial Police bank of expert witnesses;
  - Representing the Sûreté du Quebec, on different round tables, symposiums, at the level of police services, at different companies or media, at the provincial, federal and international levels.

S/Sgt. Darren DERKO

Edmonton Police Service since 1988

- Has attended in excess of 400 marihuana grow operations.
- Has grown marihuana in a controlled setting under Health Canada licence #2003/7331.
- Undercover purchases of marihuana in an undercover capacity.
- Has manicured and recorded amounts and potential yields of marihuana plants.
- Qualified as an expert in Provincial and Queen's Bench Courts in marihuana use, packaging, distribution, consumption patterns, paraphernalia, jargon, practices and habits of users and traffickers, observable effects, production including practices and habits of producers.
- Member of the Joint Forces RCMP/Edmonton Police Service "Green Team" (2002-2009)
- Currently assigned to the Edmonton Drug and Gang Unit as the Staff Sergeant i/c drug/gang investigations including the "Green Team".

S/Sgt. Ian SANDERSON

RCMP Regular Member since 1980

- Has 26 years service with the RCMP, all of it in Northern Alberta. Has a varied background of experience including Drug Prevention Education, Media Relations, Detachment Policing and Forensic Identification. Joined the Edmonton Drug Awareness Service in July 2002, and is responsible for Drug Prevention Education, Awareness Programs and Prevention research and strategies for northern Alberta.
- Currently involved with the development of a methamphetamine prevention strategy, which includes work in the areas of Public Awareness, Community Mobilization, Awareness for Police, First Responders, Chemical Companies and Retailers. Has given in excess of 300 presentations in Alberta and across Canada to Police, Government and Community Leaders, Medical Professionals, Industry, Students and the general public.
- Currently the project leader for the Drug Endagered Children Protocol for Canada, a part of the methamphetamine strategy. Was involved in the development of the Alberta Drug Endangered Children Act, introduced in 2006 at the Alberta Legislature.
- Has studied the methamphetamine issue in Canada and the United States. Spoken on the subject across Canada to Police, Professionals and Community leaders. Was recently appointed to the Alberta Meth Task Force, chaired by Dr. Colleen Klein. Also a member of the Alberta Solicitor General's Inter-departmental working group on methamphetamine, and the First Nations and Inuit Health Branch Meth Task Force.

Cpl. Mike WICENTOWICH
RCMP Regular Member since 2000

- Has served as an expert witness in several court cases in British Columbia relating to the use, packaging, production, distribution, pricing, and yield from plants of cannabis marihuana between 2007 and 2009.
- Has conducted multiple investigations into indoor marihuana grow operations and been the main investigator in over twenty outdoor marihuana grow operations.
- Has seized over ten thousand marihuana plants including marihuana clones, juvenile plants, mature plants and moulded marihuana plants.
- Has clipped, dried and weighed marihuana bud from mature marihuana plants to gain experience with yields of marihuana bud.
- Has viewed, weighed, and analyzed drugs such as methamphetamine, heroin, cocaine, marihuana plants, marihuana bud, hash oil, marihuana oil, ecstasy, morphine, and prescription pills.
- Is knowledgeable concerning the equipment, supplies, tools, fertilizers, and chemicals that marihuana growers are currently using to produce marihuana plants outdoors.
- Has clipped marihuana bud from budded out marihuana plants and dried the marihuana bud to add to my knowledge on the potentials yields of marihuana bud produced by a single marihuana plant.
- Has attended the following courses related to controlled drug and substances designed and taught by police officers, civilian members of the RCMP and other field and laboratory personnel:

Basic Thermograph Operator Course	October 25, 2001
Drug Expert Witness Workshop	April 18, 2002
Drug Investigation Techniques Course	November 27, 2003
Drug Expert Witness Workshop	January 30, 2004

- These courses are taught by qualified leading experts in the field area of controlled drugs and substances. These courses are designed to enhance the knowledge, abilities, and technical skills of drug investigators. They are also designed to enhance the Drug Expert Witness's qualifications and credentials in order that they can provide well-informed and accurate expert opinions for court purposes.

Appendix E — Case Summary

Washington State medical marihuana incident

These reports of recent U.S. medical marihuana cases are included due to the proximity of these locations to Canada, and the seriousness of the violence involved.

http://www.nytimes.com/2010/03/17/us/17marihuana.html

Posted by King 5 News (Seattle, Washington), on March 15, 2010:

ORTING, Wash. — A 38-year-old Orting man died over the weekend while trying to protect his medical marihuana plants.

Michael Howard was hit in the head with a crow bar on March 9 by someone trying to break into a shed in his backyard where he was legally growing medical marihuana, according to his father. He died four days later.

Atkins says Howard grabbed a can of pepper spray and ran out to the shed when he heard his dogs barking.

"The intruder had a large iron crowbar in his hand which he was using to break into the shed," said Atkins. "When Mike came around the corner of his house, the perpetrator was waiting for him. He hit our son square in the head."

Posted by King 5 News (Seattle, Washington) on March 15-16, 2010:

SEATTLE - A well-known Washington state medical marihuana activist traded gunfire with robbers who invaded his home early Monday, suffering minor shotgun pellet wounds and sending one intruder to the intensive care unit of a hospital.

Activist Steve Sarich, 59, runs CannaCare, an organization that provides patients with marihuana plants and advice about Washington's law.

He indicated this was their eighth home invasion since last May.

A spokesman for the King County Sheriff's Office says deputies found 385 marihuana plants at the home of a medical marihuana activist who was in a shootout with robbers.

Appendix F — RCMP Policy on Officer Safety

An Excerpt from the RCMP Policy on Officer Safety — Bio-Hazards and Marihuana Cultivation

5. Threat Risk Assessment

1. 5. 1. Before initiating a search of a grow operation, ensure the safety of members and the public by conducting a threat and risk assessment (TRA) of the site.

5. 2. If you are unfamiliar with these types of investigations and dismantling procedures, contact your division drug section for direction or assistance. Be alert and prepared for the following dangers:

5. 2. 1. contaminated air,

5. 2. 2. booby traps,

5. 2. 3. incendiary devices,

5. 2. 4. volatile/poisonous chemicals,

5. 2. 5. potential eye damage from the high intensity bulbs,

5. 2. 6. fire hazards,

5. 2. 7. unsafe electrical modifications, and

5. 2. 8. possibly older (manufactured prior to 1978) ballast boxes (power transformers) that may contain PCBs.