Canadian Centre on Substance Use and Addiction

Evidence. Engagement. Impact.

www.ccsa.ca • www.ccdus.ca

A Standard THC Unit and Its Value in Cannabis Research, Public Education and Regulation in Canada

Summary Report of a Virtual Session Held Oct. 19, 2022

Introduction

Speaker:
Dr. Alexander Caudarella
Chief Executive Officer, Canadian Centre on Substance Use and Addiction

Canada has provided legal and regulated access to cannabis for non-medical purposes since 2018. Cannabis is now the second most commonly used substance in the country (only alcohol is more popular), and there are many different cannabis products available for purchase. These products come with varying concentrations of tetrahydrocannabinol (THC), which is the primary psychoactive component of cannabis, and another cannabinoid called cannabidiol (CBD). THC is the cannabinoid that is most responsible for producing the intoxicating effects or "high" of cannabis.

Despite cannabis being a widely used substance, a single standard unit for measuring THC potency has not yet been implemented. Without such a standard, it is difficult to determine how much THC a person is consuming when using various cannabis products, which in turn impedes the assessment of cannabis' risks, benefits and harms.

Despite decades of research on cannabis, there is still a lot to learn about its therapeutic aspects as well as the effects and risks of the cannabis products now available on the legal market, which remain largely unstudied. The Canadian Centre on Substance Use and Addiction (CCSA) encourages constructive discussions, collaborations and sharing of ideas between researchers, policy makers and those with lived and living experience of substance use to bridge the research gap and shape solutions for people who use cannabis.

On October 19, 2022, CCSA hosted a stakeholder session to initiate the conversation on the utility of a standard THC unit in the Canadian context. The four presentations and moderated discussion, summarized in this report, explored the value that a standard THC unit can bring to research, public education and regulation in Canada.

Presentation 1: Introduction to the Concept of a Standard THC Unit

Cannabis consumption takes place in a newly regulated market, and often involves products that do not provide intuitive doses. For example, a pre-rolled joint containing 25 milligrams (mg) of THC could represent a very high dose for a novice user, but even a regular user might not be clear on how many doses such a joint would or should represent.

Speaker:
Dr. Tom Freeman
Director, Addiction and Mental Health Group, Department of Psychology, University of Bath

To guide safe consumption, consumers require clear, consistent and relevant product information. Such an approach has already been taken with alcoholic beverages, with the standard alcohol unit (i.e., 13.45 grams of pure alcohol or one 12 oz bottle of beer or one 5 oz glass of wine) serving as the foundation for Canada's guidance on alcohol and health. Similarly, there is value in implementing a standard THC unit for the various cannabis products available on the market in Canada. Being able to accurately determine the quantities of THC consumed is key to predicting and analyzing the health effects of cannabis, and is also needed to support comparable guidance on cannabis and health. A standard THC unit would be used to provide consumers with clearer direction on quantity of use.

Two key points need to be considered:

1. The standard THC unit should reflect the dose of the primary pharmacological constituent, THC, which is measured in milligrams.
2. The standard unit should apply to all products and modes of use.

With cannabis use, there is an added challenge of varying effects depending on how people consume cannabis. Whether cannabis is smoked or orally consumed, for example, influences the speed of the onset of effects on the body. However, the peak effects or "high" seem to reach the same level for both forms of consumption.

The standard THC unit must be relevant to the consumer and cannot be too low or too high. Typically, 5 mg of cannabis produces mild intoxicating effects with minimal risk of adverse consequences. This amount is also compatible with existing policies in the United States and Canada.

"The standard THC unit has to be relevant to the consumer and can't be too low or too high."

Dr. Tom Freeman

Presentation 2: THC Standard Units: Implications for Consumer Use and Understanding

In a well-regulated market, consumers should be able to identify and consume the amount of THC they desire. However, evidence suggests that most consumers have difficulties understanding the potency, dose and strength of cannabis. A national survey found that between 25% and 30% of cannabis consumers in Canada reported that the dose of their last use was too high, leading to avoidable adverse effects. In addition, 30% of

Speaker:
Dr. David Hammond
Associate Professor, School of Public Health Sciences, University of Waterloo

consumers said they experienced adverse effects over the course of the last 12 months and 5% reported seeking medical help. These difficulties in correctly dosing affect all modes of cannabis use.

The THC and CBD values included on cannabis product labels are often misleading and lack real value for consumers. Research suggests that current numerical information on product labels does not change consumption behaviour. By expressing the same numerical information as a formally recognized standard unit, consumers would have a much better idea of the THC amounts in the products they consume.

A formally recognized THC unit would also give consumers guidance and consistency concerning serving amounts and potency across all modes of cannabis use.

"A standard unit has a particularly high impact for users of products such as edibles or oils that don't have an intuitive and concrete consumption amount."

Dr. David Hammond

Presentation 3: THC Standard Unit: Public Education, Risk Messaging, Surveillance and Research

The main objective of Canada's *Cannabis Act* is to protect public health and safety, and this involves, among other things, enhancing awareness of the health risks associated with cannabis use. To meet these objectives, Health Canada gathers information about how Canadians consume cannabis, and documents and communicates the health risks of cannabis use to the public. A standard THC unit would therefore help support the goals and objectives set out in the *Cannabis Act*.

Speaker:

Dr. Hanan Abramovici

Director, Office of Cannabis Science and Surveillance, Controlled Substances and Cannabis Branch, Health Canada

Currently, Health Canada does not ask for or collect detailed information about the amount of THC users consume. However, it is important to collect such information because it enables a better understanding of the potential health risks to consumers.

In the context of surveillance and research, a standard THC unit would help generate new and more consistent knowledge about cannabis consumption habits. It would also help support exposure assessments (i.e., analyzing the amount of THC consumed), and provide a better understanding of the health risks and effects of cannabis. In addition, a standard unit would contribute to more accurate reporting from consumers on the amount of THC they consume.

With a standard THC unit, researchers could collect more reliable and standardized exposure information, and develop better public education and awareness tools. In turn, these tools can then improve consumer understanding and reporting of THC dosing, and potentially help shift consumer behaviour toward lower-risk cannabis use.

"Knowing the actual amount of THC consumed is important because it helps better understand the potential health effects and risks to consumers."

Dr. Hanan Abramovici

Presentation 4: Canada's Lower Risk Cannabis Use Guidelines and a THC Standard Unit

Speaker:

Dr. Bernard Le Foll

Head, Translational Addiction Research Laboratory, Campbell Family Mental Health Research Institute, Centre for Addiction and Mental Health

Among cannabis users, there are some who will display hazardous use and some who will transition to cannabis use disorder. These users are influenced by a variety of risk factors.

By implementing lower-risk cannabis use guidelines, some of these risk factors can be modified. In turn, this would decrease the number of users who transition from cannabis use to cannabis use disorder. Similar approaches have been successfully adopted for alcohol use.

The following evidence-based recommendations have been widely published and disseminated:

1. The most effective way to avoid any risks of cannabis is to abstain from use.
2. The later cannabis use is initiated, the lower the risks will be for adverse effects.
3. Users should know the nature and composition of the cannabis products they use.
4. The use of synthetic cannabinoids should be avoided.
5. Users should avoid routes of administration that involve smoking combusted cannabis material.
6. Users should use legal and quality-controlled cannabis products and devices.
7. Users who experience impaired cognitive performance should consider temporarily suspending or substantially reducing the intensity (e.g., frequency and potency) of their cannabis use.
8. Users should refrain from driving for at least six hours after cannabis (or longer based on the user and the specific product used). The use of both cannabis and alcohol should be avoided entirely.
9. Individuals who intend to procreate and women who are pregnant or breastfeeding should abstain from cannabis use.
10. Users should exercise general caution in combining other psychoactive substances with cannabis use.

Several of these recommendations would benefit from a clear definition of a standard THC unit. In particular, a standard THC unit would help consumers choose low-dose and quality-controlled products. It would also be instrumental to assessing impairment, and reducing transitions to hazardous cannabis use or cannabis use disorders.

Key Takeaways

During the four presentations, the following key points were raised:

- A standard THC unit is essential to predicting and analyzing the health effects of cannabis use, and is needed to enhance the existing lower-risk consumption guidelines for cannabis.
- THC literacy is very low because consumers have been getting inconsistent and difficult-to-understand guidance on THC content and strength.
- A standard THC unit could help support the goals and objectives of the *Cannabis Act*, which is intended to protect public health and safety.
- Adding further clarity to the lower-risk cannabis use guidelines could help decrease the number of users who transition from cannabis use to cannabis use disorder.

Discussion: Why Do We Need a Standard Unit?

During the group discussion, where session participants were able to submit questions to the presenters in the chat, it was emphasized that there is much diversity in the modes of use and most consumers in Canada use more than one cannabis product. The cannabis market also continues to diversify. For example, infused products (e.g., pre-rolled joints infused with hash or cannabis extracts) are now available and may have a significantly increased potency, making it very difficult for users to predict the strength and effects of the products they are consuming. With poly-use being so prevalent, the risk of overconsumption is significant. Consistent communication across the different modes of use could help users navigate the complex cannabis market.

Having a standard unit would also help consumers more accurately report when surveyed the amount of THC they consume. Due to the confusing and inconsistent information currently being communicated to consumers, surveys are challenged with incomplete or incorrect reporting, at times causing researchers to ask participants to provide packaging or labels to verify their responses. A standard unit and improved THC literacy among consumers would translate into better data quality, analysis and reporting, which in turn would improve researchers' ability to communicate, educate and mitigate cannabis-related risks.

"As Canada reviews its legalization of cannabis, it is the perfect moment to reflect on a standard unit for cannabis."

Dr. Bernard Le Foll

What Should the Recommended THC Amount Be?

Varying amounts of THC are being proposed to be adopted as a standard unit of dose. The most often mentioned and currently used is 5 mg, but that unit measure is not consistent across countries or literature. When considering what the precise standard dose should be, one needs to be mindful of the fact that cannabis is consumed for both medical and non-medical purposes. Another important consideration is the fact that any proposed standard unit could be mistaken as a recommended dose.

"The current situation is imperfect, and we need to change it. Ideally, we'd see consistency across provinces, but we need to set the standard first."

Dr. Tom Freeman

It is also important to keep in mind that a standard THC unit is not the same thing as package requirements for THC. A package may, for example, contain several standard THC units. The standard THC unit serves as a reference point for consumers to understand the potential effects they could experience by consuming a certain amount of the packaged product.

Alcohol guidelines and a standard drink offer a useful comparison. One standard drink might not make all users feel intoxicated, but it is still a useful unit precisely for that reason. Similarly, a standard THC unit needs to be meaningful but low enough that it is tolerable across all modes of cannabis use and across all types of cannabis users. While it would be beneficial to use the same unit measure of THC as other countries or institutes, for Canada the number one priority should always be consumer health and safety. Therefore, a lower unit measure might be advisable.

"It is important to distinguish between what's a standard unit and what's maximally allowed in a package. These two shouldn't be conflated. A standard unit is a reference point by which to help users dose and understand the potential effects from the products they consume."

Dr. Hanan Abramovici

What Is Standing in the Way of a Standard Unit?

At the moment, different institutions, provinces or territories each have their own guidelines around dosing. The multi-jurisdictional aspect of this discussion reflects one of the main challenges. But even within jurisdictions, there is not one consistent standard across retailers, manufacturers or products. Getting everyone around the table to agree on a change will be necessary to get consistency across the board. And while this is necessarily a collaborative process, it will have to be initiated at the federal level. Regulations — whether they are for tobacco, alcohol or cannabis — will always be more effective when there is alignment across both federal and provincial levels.

"The first part was setting up a legal market. The next part is figuring out how to regulate within this legal market. This is one of the key priorities for what I think of as legalization 2.0."

Dr. David Hammond

Questions? Comments?

To provide feedback or receive more information, please contact us at cannabis@ccsa.ca.

ISBN 978-1-77871-038-4
© Canadian Centre on Substance Use and Addiction 2023

Canadian Centre on Substance Use and Addiction

CCSA was created by Parliament to provide national leadership to address substance use in Canada. A trusted counsel, we provide national guidance to decision makers by harnessing the power of research, curating knowledge and bringing together diverse perspectives.

CCSA activities and products are made possible through a financial contribution from Health Canada. The views of CCSA do not necessarily represent the views of Health Canada.