

INTELLECTUAL PROPERTY RIGHTS IN THE RECREATIONAL CANNABIS MARKET: CRAFT OR COMMODITY?

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I. INTRODUCTION

The Government of Canada has taken significant steps towards legalizing the consumption of cannabis for recreational purposes, in particular by tabling the *Cannabis Act*.¹ Deloitte reports that the base market in Canada for recreational cannabis could be worth as much as \$8.7 billion per year, with the total economic impact exceeding \$22.6 billion annually.² This

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¹ See Office of the Prime Minister, "Minister of Health Mandate Letter" (Ottawa: Office of the Prime Minister, 2015); Office of the Prime Minister, "Minister of Justice and Attorney General of Canada Mandate Letter" (Ottawa: Office of the Prime Minister, 2015); Office of the Prime Minister, "Minister of Public Safety and Emergency Preparedness Mandate Letter" (Ottawa: Office of the Prime Minister, 2015); Bill C-45, *An Act respecting cannabis and to amend the Controlled Drugs and Substances Act, the Criminal Code and other Acts*, 1st Sess, 42nd Parl, 2017 (second reading 8 June 2017) [*Cannabis Act*].

² Mark Whitmore et al, "Recreational Marijuana: Insights and Opportunities" (Deloitte Touche Tohmatsu, 2016) at 5, online: <www2.deloitte.com/content/dam/Deloitte/ca/Documents/Analytics/ca-en-analytics-DELOITTE%20Recreational%20Marijuana%20POV%20-%20ENGLISH%20FINAL_AODA.pdf>.

lucrative opportunity could benefit both governments and businesses.³ Among the best ways to capitalize on the economic potential of recreational cannabis is asserting control over the market with exclusive intellectual property rights (IPRs).

Recent developments in the law on plant breeders' rights, patents, and trademarks will be relevant to the recreational cannabis market. The amended *Plant Breeders' Rights Act*⁴ (*PBRA*) provides significantly stronger protection than was previously available for this niche IPR, potentially increasing its prominence alongside patents and trademarks as a viable legal tool to protect plant varieties. While patents on higher life forms, including plants, are not available in Canada, it may be possible to patent modified cannabis genes and cells, as well as methods of breeding cannabis. Cannabis-related trademarks are also becoming popular. Companies are protecting not only corporate names and logos but also the names of special cannabis varieties.

Much of the writing about legalization of recreational narcotics derived from the cannabis plant uses slang, puns, and humour. Authors argue it is high time we pay attention to this budding industry, lament the hazy legal fog that blunts its growth, offer strategies to turn green (plants) into green (dollars), address sticky issues, burn through the arguments, roll up their recommendations, and so on.⁵ We too were tempted to coin a phrase like

³ Colorado's revenues from its marijuana taxes, licences, and fees totaled over \$18 million for April 2017 alone. See Colorado Department of Revenue, "State of Colorado: Marijuana Taxes, Licenses, and Fee Transfers and Distribution; Tax Revenue Remitted in May 2017 for Sales Primarily Made in April 2017", by Office of Research and Analysis (Denver: Colorado Department of Revenue, June 2017), online: <www.colorado.gov/pacific/sites/default/files/0417%20Marijuana%20Tax%2C%20License%2C%20and%20Fees%20Report%20PUBLISH.pdf>.

⁴ SC 1990, c 20 [*PBRA*].

⁵ See e.g. Stephen A Vitale, "'Dope' Dilemmas in a Budding Future Industry: An Examination of the Current Status of Marijuana Legalization in the United States" (2014) 23:1 U Miami Bus L Rev 131; Christopher B Erly, "High Times: Is the Federal Legalization of Marijuana Next? What the Food and Drug Administration Could Learn From its Existing Regulations" (2015) 23:4 Am UJ Gender, Soc Pol'y & L 659; Rosalie Winn, "Hazy Future: The Impact of Federal and State Legal Dissonance on Marijuana Businesses" (2016) 53:1 Am Crim L Rev 215.

weed breeders' rights, ganja growers' rights, or pot breeders' rights as a play on words for plant breeders' rights and other IPRs in the cannabis industry. Instead, the tone of this article reflects lawyers' and policymakers' need to address serious legal and economic issues.

The terms cannabis and marijuana (or marihuana) are often used loosely or interchangeably. However, we use the term cannabis to refer to species of cannabis plants (*sativa*, *indica*, and *ruderalis*) and cannabis products, including but not limited to derivatives, oils, resins, and fresh and dried forms. We use the term marijuana in contexts where that specific term is used in legal or policy documents.⁶ While the *Cannabis Act* does not refer to marijuana, some policy discourse and related laws do, such as the current *Access to Cannabis for Medical Purposes Regulations* (ACMPRs).⁷

In this article, we explore the relationship between the evolving legal regimes governing recreational cannabis and relevant IPRs. Part II of this article explores Canada's new legal framework for the recreational cannabis market, and situates this new framework in light of stakeholder interests, the constitutional division of powers, and the historical context of initial criminalization and later decriminalization for medical purposes. Part III surveys intellectual property regimes that may be most relevant to the recreational cannabis industry, including plant breeders' rights, patents, and trademarks.

Part IV superimposes the legal regimes governing recreational cannabis and relevant IPRs to reveal the issues likely to shape this industry. We consider legal-scientific issues, such as whether it is technically feasible to breed cannabis with protectable traits, and how inconsistencies in the nomenclature of law and science might be resolved. We also consider legal-commercial issues, such as whether demand exists among growers or consumers for genetically modified cannabis, and how restrictions on cannabis-related advertising might impact the use of trademarks in this industry.

⁶ See e.g. *Controlled Drugs and Substances Act*, SC 1996, c 19, Schedule II; *Access to Cannabis for Medical Purposes Regulations*, SOR/2016-230, s 1.

⁷ *Supra* note 6, s 1 (distinguishing between "cannabis," "cannabis oil," "dried marihuana," and "fresh marihuana").

We conclude, in Part V, that the use of IPRs to control the breeding, production, and distribution of recreational cannabis could lead to two plausible scenarios. A craft-based industry would have little use for patents or plant breeders' rights, instead using trademarks to provide quality assurance in a market with simple and direct supply chains. A commodity-based industry would rely more heavily on patents and plant breeders' rights to protect significant investments in cannabis breeding, and likely see separation between the roles of breeders and growers. We anticipate seeing elements of both kinds of cannabis markets in the near future. In the longer term, which industry materializes will depend, in part, on answers to the key legal questions we raise in this article.

II. THE LEGAL FRAMEWORK FOR CANADA'S RECREATIONAL CANNABIS MARKET

In this part, we describe the proposed *Cannabis Act* ("the *Act*") and highlight three significant characteristics. First, the *Act* delegates authority over several important matters to the Minister of Justice and Attorney General of Canada ("the Minister") to address through regulation. Second, the *Act* abstains from fully regulating cannabis distribution and sale, implicitly because aspects of these activities fall within provincial jurisdiction under the *Constitution Act, 1867*.⁸ And third, the *Act* continues to approach cannabis regulation as primarily a criminal law matter. We briefly summarize Canada's historical criminalization of cannabis and the existing medical cannabis regime to contextualize the *Act's* cautious approach to cannabis as a craft or commodity. Because this article concerns the commercialization of recreational cannabis, our analysis will focus on marijuana breeders, growers/producers, and distributors, rather than users.

A. MINISTERIAL REGULATORY POWERS

The Minister is empowered to expound certain fundamental details under the new *Cannabis Act*. For example, the Minister may establish a licensing

⁸ (UK), 30 & 31 Vict, c 3, reprinted in RSC 1985, Appendix II, No 5 [*Constitution Act, 1867*].

and permit regime to “authorize the importation, exportation, production, testing, packaging, labelling, sending, delivery, transportation, sale, possession or disposal of cannabis or any class of cannabis.”⁹ The Minister may also “establish and maintain a national cannabis tracking system”;¹⁰ and designate inspectors “to exercise powers or perform duties or functions in relation to any matter referred to in the designation.”¹¹ In effect, while the *Act* creates a legal foundation for a recreational cannabis market, the regime’s substance will largely be determined through regulations and ministerial orders.

Stakeholders anticipating liberalization have attempted to shape the cannabis market. For example, London Drugs and Shoppers Drug Mart proposed to introduce pharmacies as a distribution point for medical cannabis. London Drugs offered to prepare educational pamphlets for its pharmacists, advocating that they are the most qualified to administer the proper dosages of cannabis.¹² Shoppers Drug Mart held meetings with licensed growers.¹³ As early as 2015, *The Globe and Mail* reported that “[t]he mere entrance of the big pharmacies into the business is a threat to retailers who covet the recreational pot business, since the medical business could serve as a springboard into the eventual recreational market.”¹⁴ The *ACMPRs*, however, do not permit the distribution of medical cannabis through pharmacies, partly to avoid the price markups that exist for prescription drugs.¹⁵

⁹ *Cannabis Act*, *supra* note 1, cl 62(1).

¹⁰ *Ibid.*, cl 81.

¹¹ *Ibid.*, cl 84(1).

¹² See Grant Robertson et al, “Battle Looms in Canada over Lucrative Recreational Pot Market”, *The Globe and Mail* (25 February 2016), online: <www.theglobeandmail.com>.

¹³ See *ibid.*

¹⁴ *Ibid.*

¹⁵ See Regulatory Impact Analysis Statement, (2016) C Gaz II, 3380 (*Access to Cannabis for Medical Purposes Regulations*) at 3406 [*ACMPRs* RIAS].

Provincial governments also voiced opinions on how cannabis should be distributed. For example, Ontario has pushed for the Liquor Control Board of Ontario, its exclusive spirits distributor, to also be its exclusive cannabis distributor.¹⁶ Numerous provincial departments, agencies, and offices in Ontario have coordinated work to explore options for dispensing cannabis in the province via the Ontario Legalization of Cannabis Secretariat.¹⁷

Municipalities across Canada have confronted practical issues, such as those surrounding cannabis dispensaries that distribute medical cannabis products without a licence from Health Canada.¹⁸ Vancouver enacted a bylaw to address this issue, and takes a hardline approach to those who do not comply.¹⁹ Ontario's Minister of Finance, Charles Sousa, asserted that "the era of storefront weed dispensaries is soon coming to an end."²⁰ However, until federal or provincial governments legislate otherwise, "it's ultimately the responsibility of the municipalities to control dispensaries."²¹

¹⁶ See Robertson et al, *supra* note 12. See also Cannabis Life Network, "Ontario Premier Continues to Push LCBO As Best Place for Cannabis" (22 June 2016), online: <cannabislifenetwerk.com>.

¹⁷ See Robert Benzie, "Queen's Park Gearing Up for Legalized Weed Sales", *Toronto Star* (18 June 2016), online: <www.thestar.com> [Benzie, "Queen's Park"]; Robert Benzie, "12 Provincial Departments Working on Ontario's Weed Strategy", *Toronto Star* (23 June 2016), online: <www.thestar.com>.

¹⁸ See Mike Hager, "Vancouver's Illegal Medical Marijuana Dispensaries Could Face Court Action", *The Globe and Mail* (26 April 2016), online: <www.theglobeandmail.com>; Michelle McQuigge, "Marijuana Dispensaries Surge Prompts Call for Regulation from Municipalities", *The Huffington Post* (24 April 2016), online: <www.huffingtonpost.ca>.

¹⁹ See generally City of Vancouver, by-law No 3575, *A By-law to Amend Zoning and Development By-law No 3575 Regarding Medical Marijuana-related Use*, online: <vancouver.ca/doing-business/medical-marijuana-related-business-regulations.aspx>; McQuigge, *supra* note 18; Amy Judd, "City of Vancouver Moving Ahead to Close More than 150 Pot Shops", *Global News* (23 April 2016), online: <globalnews.ca>.

²⁰ Benzie, "Queen's Park", *supra* note 17.

²¹ Cannabis Life Network, *supra* note 16.

A report of the Government of Canada's Task Force on Cannabis Legalization and Regulation²² ("the Task Force") deals with several of these issues. It recommends against distributing recreational cannabis via the same retailer as tobacco or alcohol to prevent overlapping substance abuse.²³ Instead, it suggests "[d]edicated storefronts with well-trained, knowledgeable staff" and "[a]ccess via a direct-to-consumer mail-order system."²⁴ It also recommends plain packaging, labelling requirements, and advertising restrictions for medical cannabis.²⁵

The Task Force's report also emphasizes that small-scale and Indigenous growers will be important participants in the recreational cannabis market, urging governments to facilitate this participation.²⁶ This recommendation aligns with the views of many small- and medium-sized businesses that consider themselves "craft cannabis" producers, including licensed producers.²⁷ For example, according to the Craft Cannabis Association of British Columbia, "to continue to have strong local economies, the legislative model needs to include [the craft cannabis] level of production."²⁸

In adopting regulations and making orders, the Minister may consider stakeholder opinions about the best model for distributing recreational cannabis. While federal regulations will provide substance to the *Cannabis Act* framework, the provinces also have a crucial role shaping the industry. Already, some provincial governments, such as Ontario's, have been more

²² Health Canada, *A Framework for the Legalization and Regulation of Cannabis in Canada: The Final Report of the Task Force on Cannabis Legalization and Regulation* (Ottawa: Health Canada, 2016), online: <www.canada.ca/en/services/health/marijuana-cannabis/task-force-marijuana-legalization-regulation/framework-legalization-regulation-cannabis-in-canada.html> [*Task Force Framework*].

²³ See *ibid* at 4.

²⁴ *Ibid*.

²⁵ See *ibid* at 2.

²⁶ See *ibid* at 4, 7.

²⁷ See e.g. Cannabis Growers of Canada, "Learn About Our Organization", online: <cannagrowers.ca/about-2>.

²⁸ Laura Kane, "'Craft Cannabis' Growers Fight for Legal Role", *Global News* (12 June 2016), online: <globalnews.ca>.

consultative about the legalization of recreational cannabis than the federal government was about the revised framework for medical marijuana.²⁹

B. PROVINCIAL JURISDICTION

Although the *Cannabis Act* does not mirror all of the Task Force's recommendations, both recognize that "the federal, provincial, and territorial governments would all share responsibility for overseeing the new system."³⁰ The federal government's responsibility is primarily manufacturing and production, but it will also "set industry-wide rules and standards."³¹ Meanwhile, distribution, sale, and any additional restrictions on access would fall to the provincial governments to regulate.³² Specifically, subsection 69(1) of the *Cannabis Act* allows a person to "possess, sell or distribute cannabis if the person is authorized to sell cannabis under a provincial Act."³³ That provincial act must contain "legislative measures", as set out in subsection 69(3), and must be in force.³⁴ In this way, the federal government maintains some control over the recreational cannabis regime while respecting the constitutional limits of its power.

Before the *Act* was proposed, commentators acknowledged that the division of powers would be an issue during the legalization process.³⁵ The

²⁹ See Lift, "Medical Marijuana Regulations: Consultations Gone Up in Smoke?" (27 July 2016), online: <news.lift.co/medical-marijuana-regulations-consultations-gone-smoke>; Government of Ontario, "Consultation Paper: Cannabis Legalization in Ontario" (Ottawa: Government of Ontario, 2017), online: <www.ontario.ca/page/consultation-paper-cannabis-legalization-ontario>.

³⁰ *House of Commons Debates*, 42nd Parl, 1st Sess, No 183 (30 May 2017) at 11648 (Hon Jody Wilson-Raybould); see also *Task Force Framework*, *supra* note 22 at 4.

³¹ *House of Commons Debates*, *supra* note 30 at 11648.

³² "Further, the provinces and territories, along with the municipalities, could create additional rules for growing cannabis at home, including the possibility of lowering the number of plants allowed for residents and restricting the places in which cannabis could be consumed": *ibid.*

³³ *Cannabis Act*, *supra* note 1, cl 69(1).

³⁴ *Ibid.*, cls 69(2)–(3).

³⁵ See generally Adam Goldenberg, "Is Trudeau's Pot Plan Constitutional?", *Policy Options* (18 November 2015), online: <policyoptions.irpp.org/2015/11/18/trudeau-pot>.

federal government historically controlled cannabis under its criminal law head of power.³⁶ This head of power authorizes the federal government to create laws with a prohibition, a penalty, and a typically criminal public purpose.³⁷ In the medical marijuana context, the *Controlled Drugs and Substances Act* seeks to protect public health, while preventing anyone outside the *ACMPR*s regime from (ostensibly) endangering public safety.³⁸ Regulating recreational cannabis production and distribution under the criminal law power may be harder to justify.

The provinces have jurisdiction to regulate the distribution and sale of recreational cannabis under the property and civil rights power.³⁹ This head of power has been used in the past to regulate “particular trades” and transactions inside a province.⁴⁰ Yet, as the *Cannabis Act* illustrates, the federal government may still play an active role in intraprovincial activity. Both alcohol and tobacco are governed by legislation at both levels of government,⁴¹ though not without constitutional controversy.⁴²

constitution>. See also Jim Bronskill, “Marijuana Legalization in Canada: Feds Should Consider 9 Factors, Health Canada Says”, *The Huffington Post* (6 March 2016), online: <www.huffingtonpost.ca>.

³⁶ See *Constitution Act, 1867*, *supra* note 8, s 91(27). See also *R v Malmo-Levine*; *R v Caine*, 2003 SCC 74, [2003] 3 SCR 571.

³⁷ See *ibid* at paras 73–74.

³⁸ See *ibid* at para 78.

³⁹ See *Constitution Act, 1867*, *supra* note 8, s 92(13); *Task Force Framework*, *supra* note 22 (“The Task Force recommends that the wholesale distribution of cannabis be regulated by provinces and territories and that retail sales be regulated by the provinces and territories in close collaboration with municipalities”: at 4); Goldenberg, *supra* note 35 (“Though the federal government has the power to decriminalize pot, the regulation of recreational cannabis will fall, at least in part, within provincial jurisdiction.”).

⁴⁰ *Labatt Breweries of Canada Ltd v Attorney General of Canada* [1980] 1 SCR 914 at 935, 939, 110 DLR (3d) 594 [*Labatt*] (the Supreme Court of Canada struck down a federal law regulating labeling for beer because it impacted only the beer industry).

⁴¹ See e.g. *Tobacco Act*, SC 1997, c 13; *Smoke-Free Ontario Act*, SO 1994, c 10; *Tobacco Tax Act*, RSO 1990, c T.10; *Food and Drug Regulations*, CRC, c 870, Part B, Division 2 (Alcoholic Beverages); *Liquor Control Act*, RSO 1990, c L.18.

In sum, constitutional principles of federalism will significantly shape the recreational cannabis markets in each province and territory. These markets could conceivably be governed by many overlapping yet incongruent regimes. Therefore, aspects of the *Cannabis Act*, or its provincial analogues, may be constitutionally challenged.

C. THE CONTEXT FOR (DE)CRIMINALIZATION

The *Cannabis Act* has the dual purpose of “legalizing” and “strictly regulating” recreational cannabis in Canada.⁴³ For that reason:

Possession, production, distribution, importation, exportation, and sale outside the legal framework would be illegal and subject to criminal penalties. These penalties would be proportionate to the seriousness of the offence, ranging from ticketing up to a maximum penalty of 14 years’ imprisonment.⁴⁴

In other words, certain cannabis-related activities remain criminalized in the spirit and letter of the *Act*. Whether or not the federal government was motivated by the division of powers, understanding criminalization and decriminalization of cannabis in its historical context assists in anticipating the structure of the recreational market.

Canada first criminalized cannabis in *The Opium and Narcotic Drug Act, 1923*,⁴⁵ with no debate in the House of Commons of Canada and little to no scientific justification.⁴⁶ Therefore, recreational cannabis production in Canada has been mostly clandestine, which has consequences for the emerging industry. Criminalization often forced recreational cannabis

⁴² See e.g. *RJR-MacDonald Inc v Canada (Attorney General)* [1995] 3 SCR 199, 127 DLR (4th) 1; *Rothmans, Benson & Hedges Inc v Saskatchewan*, 2005 SCC 13, [2005] 1 SCR 188; *Labatt*, *supra* note 40.

⁴³ *House of Commons Debates*, *supra* note 30 at 11648.

⁴⁴ *Ibid.*

⁴⁵ SC 1923, c 22.

⁴⁶ See Edgar-André Montigny, “Introduction” in Edgar-André Montigny, ed, *The Real Dope: Social, Legal, and Historical Perspectives on the Regulation of Drugs in Canada* (Toronto: University of Toronto Press, 2011) 3 at 10–11.

breeders and growers to confine themselves to small-scale operations. Technical practices associated with breeding and production of cannabis were less sophisticated than practices with other agricultural products, with fewer companies applying advanced biotechnological tools and techniques. Government departments and funding agencies have not, historically, played an active role in scientific research benefiting cannabis breeders. Also, an economic infrastructure to support a cannabis industry, such as a viable venture capital market, has only begun to develop.

By contrast, Canada's medical cannabis framework enabled a group of licensed producers to develop expertise that will be readily transferrable to the recreational cannabis market. Several well-established medical cannabis companies have a competitive advantage in both scientific and commercial aspects of production as a result of their large-scale investment, risk-taking strategy, and first-mover position in the medical market.

The *ACMPRs* govern access to medical cannabis in Canada by attempting to balance constitutional rights, safety, and other concerns. These regulations have two parts: Part 1 governs commercial production and distribution, and Part 2 governs personal and designated production.⁴⁷ These parts are a marriage of the regulations' separate predecessors, the *Marihuana for Medical Purposes Regulations*⁴⁸ (*MMPRs*) and *Marihuana Medical Access Regulations*⁴⁹ (*MMARs*). The combined *ACMPRs* were the federal government's quick response to the 2016 *Allard v Canada* case ("*Allard*"), in which the Federal Court struck down the *MMPRs* for violating medical cannabis patients' *Charter*-protected right to grow their own medicine at home.⁵⁰

By merging the regulatory tools of the *MMPRs* and *MMARs*, the *ACMPRs* also attempt to marry the spirit of each regime. The *MMARs*, and the ability to grow marijuana at home, were products of Supreme Court of Canada rulings that barriers to accessing medical marijuana violated the

⁴⁷ See *ACMPRs* RIAS, *supra* note 15 at 3386.

⁴⁸ SOR/2013-119.

⁴⁹ SOR/2001-227.

⁵⁰ 2016 FC 236 at paras 289, 296, 394 DLR (4th) 694.

constitutionally protected rights of liberty and security of the person.⁵¹ Meanwhile, the *MMPRs* emphasized safety by restricting growing and distributing marijuana to government-approved, licensed producers, and imposing strict standards on production.⁵² An example of these principles coming together is the *ACMPRs*' restriction on the sale of propagating materials: a personal producer can only obtain these materials from a licensed producer.⁵³

The *ACMPRs* scheme governing medical cannabis, therefore, enables access while maintaining licensed producers' monopoly over marijuana production. Personal producers are, in theory, able to clone and tweak the varieties they buy, but in practice most individuals are probably confined to the strains that the licensed producers sell them. As the practice of plant breeding has a high cost of entry,⁵⁴ currently licensed producers of medical cannabis have an advantage in the recreational market. At the time of writing, 52 such producers are licensed in Canada.⁵⁵ Attempts to breed new cannabis varieties may also be encouraged or stifled by IPRs, depending on one's position in the industry.

⁵¹ See *Canadian Charter of Rights and Freedoms*, s 7, Part I of the *Constitution Act, 1982*, being Schedule B to the *Canada Act 1982* (UK), 1982, c 11. See e.g. *R v Parker* (2000), 188 DLR (4th) 385, 146 CCC (3d) 193 (Ont CA); *Hitzig v Canada (Attorney General)* (2003), 231 DLR (4th) 104, 177 CCC (3d) 449 (Ont CA); *Sfetkopoulos v Canada (Attorney General)*, 2008 FC 33, [2008] 3 FCR 399; *R v Beren*, 2009 BCSC 429, 192 CRR (2d) 79; *R v Smith*, 2015 SCC 34, [2015] 2 SCR 602.

⁵² See Regulatory Impact Analysis Statement, (2013) C Gaz II, 1720 (*Marihuana for Medical Purposes Regulations*) at 1720.

⁵³ *Supra* note 7, ss 16(2), 22(5).

⁵⁴ See e.g. Niels Louwaars et al, *Breeding Business: The Future of Plant Breeding in the Light of Developments in Patent Rights and Plant Breeder's Rights* (Wageningen: Centre for Genetic Resources, 2009) at 19 (referring to the costs that intellectual property protection adds to plant breeding technologies and inputs, which also applies to growing plants).

⁵⁵ See Health Canada, "Authorized Licensed Producers of Cannabis for Medical Purposes," *Government of Canada* (14 July 2017), online: <www.canada.ca/en/health-canada/services/drugs-health-products/medical-use-marijuana/authorized-producers/authorized-licensed-producers-medical-purposes.html>.

III. INTELLECTUAL PROPERTY PROTECTION FOR CANNABIS

In this part, we consider several IPRs that breeders, producers, and distributors might use to control the recreational cannabis market. We begin with a discussion of plant breeders' rights, then discuss patents on plants, and, finally, identify trademarks as a potential tool to protect cannabis branding.

A. PLANT BREEDERS' RIGHTS

Plant breeders' rights (also called plant variety protection) are a *sui generis* form of IPRs that protect new plant varieties. In this Part, we explain the *PBRA*, including its recent amendments. The *Agricultural Growth Act*⁶⁶ of 2015 implements provisions of a treaty on plant breeders' rights—the *International Convention for the Protection of New Varieties of Plants* of 1991 (“*UPOV 1991*” or, in general reference without respect to dates, “*UPOV*” or “the *Convention*”)—into domestic law.⁵⁷

The practice of plant breeding has carried on for centuries, however *breeding* as a practice separate from *growing* is unique to the 20th century.⁵⁸ Effective plant breeding requires large, front-end investments in scientific equipment and skilled labour, which has tended to consolidate private sector interests in the agricultural industry. Breeding a new plant variety, often through hybridization (combining genetically different plants to reproduce desirable qualities), used to take decades.⁵⁹ Now, new plant breeding methods like “marker-assisted breeding” and other forms of

⁵⁶ SC 2015, c 2.

⁵⁷ *International Convention for the Protection of New Varieties of Plants of December 2, 1961, as revised at Geneva on November 10, 1972, and on October 23, 1978*, 2 December 1961, Can TS 1991/5 (entered into force 4 March 1991).

⁵⁸ See generally Graham Dutfield, “Turning Plant Varieties into Intellectual Property: The UPOV Convention” in Geoff Tansey & Tasmin Rajotte, eds, *The Future Control of Food: A Guide to International Negotiation and Rules on Intellectual Property, Biodiversity and Food Security* (London, UK: Earthscan, 2008) 27.

⁵⁹ See Louwaars et al, *supra* note 54 at 12.

biotechnology have reduced the average time to about 10 years.⁶⁰ Breeders also need agricultural inputs, like fertilizers, pesticides, and irrigation, which add further costs.⁶¹

Therefore, plant breeders' rights were born out of a desire to provide exclusive rights that might enable a return on the breeders' investments.⁶² However, few corporations can afford to adopt the technological advances that enable faster and better breeding and, therefore, accumulation of IPRs.⁶³

Section 5 of the *PBRA* provides rights holders with a set of exclusive rights:

- (a) to produce and reproduce propagating material of the variety;
- (b) to condition propagating material of the variety for the purposes of propagating the variety;
- (c) to sell propagating material of the variety;
- (d) to export or import propagating material of the variety;
- (e) to make repeated use of propagating material of the variety to produce commercially another plant variety if the repetition is necessary for that purpose;
- (f) in the case of a variety to which ornamental plants belong, if those plants are normally marketed for purposes other than propagation, to use any such plants or parts of those plants as propagating material for the production of ornamental plants or cut flowers;
- (g) to stock propagating material of the variety for the purpose of doing any act described in any of paragraphs (a) to (f); and

⁶⁰ See *ibid*; Dutfield, *supra* note 58 at 28.

⁶¹ For further information on the concentration of control facilitated by intellectual property rights, see generally Catherine Phillips, "Canada's Evolving Seed Regime: Relations of Industry, State, and Seed Savers" (2008) 36:1 *Environments J* 5 at 10–11.

⁶² See Dutfield, *supra* note 58 at 33; Louwaars et al, *supra* note 54 at 19.

⁶³ See Dutfield, *supra* note 58 at 43; Louwaars et al, *supra* note 54 at 19.

- (h) to authorize, conditionally or unconditionally, the doing of any act described in any of paragraphs (a) to (g).⁶⁴

These rights subsist for a term of 25 years for a tree, vine, or variety listed in the regulations, and 20 years for any other plant.⁶⁵ If successfully registered, a cannabis variety would obtain a 20-year term of protection.

A plant variety must satisfy four requirements to be protected: it must be new, distinct, uniform, and stable.⁶⁶ New means the breeder has not sold the variety in Canada more than a year before filing for protection.⁶⁷ Distinct means having unique qualities unlike any other variety.⁶⁸ Uniform means that all individual plants in the variety share that unique characteristic.⁶⁹ And stable means that subsequent generations of the variety are substantially the same as the parent.⁷⁰

The protection provided by plant breeders' rights is distinguishable from that offered by other types of IPRs. For example, the *PBRA* exempts certain groups of people from paying royalties for using protected propagating materials. Growers are exempt from paying royalties for certain traditional practices like saving seeds from their crops (also called farmers' privilege);⁷¹ other breeders are exempt when they use a protected variety to develop a new variety;⁷² and researchers are exempt when they use protected varieties for their work.⁷³ Further, plant breeders' rights provide one right

⁶⁴ *Supra* note 4, s 5.

⁶⁵ See *ibid*, s 6(1).

⁶⁶ See *ibid*, s 4(2).

⁶⁷ See *ibid*, s 4(3)(ii). Before 2015, the newness requirement prohibited anyone from obtaining a right if the variety was sold in Canada at all before filing an application for protection. See *ibid*, s 4(2) as it appeared on 1 August 1990.

⁶⁸ See *ibid*, s 4(2)(b).

⁶⁹ See *ibid*, s 4(4).

⁷⁰ See *ibid*, s 4(2)(c).

⁷¹ See *ibid*, s 5.3(2).

⁷² See *ibid*, s 5.3(1)(c).

⁷³ See *ibid*, s 5.3(1)(b).

for one variety, rather than divisible rights on different portions or functions of the plant.⁷⁴

The *PBRA* was amended in 2015 to narrow such exemptions and expand the scope of protection. Subsection 5.3(2) now restricts farmers' privilege to "harvested material of the plant variety that is grown by a farmer on the farmer's holdings and used by the farmer on those holdings for the sole purpose of propagation of the plant variety."⁷⁵ This provision exempts growers of proprietary plants from paying royalties for replanting, but not selling or exchanging seeds.⁷⁶ This distinction may be especially relevant to cannabis, as the unauthorized exchange of cannabis products—including sharing between friends—is considered trafficking under the *Controlled Drugs and Substances Act*.⁷⁷

Another aspect of Canada's new plant breeders' rights regime is the potential for collection of "end point royalties."⁷⁸ Changes to the *PBRA* may enable owners of plant breeders' rights to create a contracting scheme where royalties are payable by growers to breeders at the time product is harvested and sold. The practice of collecting end point royalties for the use of plant varieties is distinct from the predominant business model based on patent protection in agriculture, through which patents lead to higher prices or recurring costs for *inputs* as opposed to royalties paid on *outputs*. Patent owners may use their monopoly powers to prohibit seed saving, thus charging growers for recurring seed purchases from year to year. Because plant breeders' rights owners cannot prevent growers from using farm-saved seeds on their own holdings, the end point royalty model offers a different mechanism to generate recurring royalties.

⁷⁴ See Dutfield, *supra* note 58 at 40.

⁷⁵ *Supra* note 4, s 5.3(2).

⁷⁶ See Chidi Oguamanam & Jeremy de Beer, "A Global Perspective on Plant Breeders' Rights in Canada: Implications for Growers, Breeders, and Agriculture Researchers" (2017) [unpublished, on file with authors].

⁷⁷ *Supra* note 6, s 2.

⁷⁸ Oguamanam & de Beer, *supra* note 76.

Further, plant breeders' rights now include protection for essentially derived varieties (EDVs).⁷⁹ This extends the breeders' scope of protection and prevents subsequent breeders from obtaining a new right for merely modifying a cosmetic aspect of the variety. Subsection 5.2(2) of the *PBRA* defines an EDV as follows:

For the purpose of paragraph (1)(a), a plant variety is essentially derived from another plant variety (in this subsection referred to as the "initial variety") if

- (a) it is predominantly derived from the initial variety or from a plant variety that is itself predominantly derived from the initial variety and it retains the essential characteristics that result from the genotype or combination of genotypes of the initial variety;
- (b) it is clearly distinguishable from the initial variety; and
- (c) it conforms to the initial variety in the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety, except for the differences that result from its derivation from the initial variety.⁸⁰

The interpretation of such protections of EDVs has been tested only outside of Canada. The Hague Court of Appeal in the Netherlands has interpreted Article 14 of *UPOV1991*, which subsection 5.2(2) is based on. The Dutch Court put a considerable burden on the initial rights holder by requiring the rights holder to prove all three elements to show that the impugned variety is an EDV of its protected variety.⁸¹ The implementation of *UPOV1991* in other jurisdictions may influence Canadian courts, which suggests a closer look at the *Convention* is warranted.

The *Convention* consists of three Acts, signed in 1961, 1978, and 1991, and prescribes a minimum standard of plant variety protection that

⁷⁹ See *PBRA*, *supra* note 4, s 5.2.

⁸⁰ *Ibid*, s 5.2(2).

⁸¹ See Court of Appeal, The Hague, 29 December 2009, *Danziger "Dan" Flower Farm v Astée Flowers BV*, 105.003.932/01 (Netherlands) aff'g District Court, The Hague, 13 July 2005, *Astée Flowers BV v Danziger "Dan" Flower Farm*, BIE 2006/60 (Netherlands).

member states must provide. *The Convention* is also incorporated by reference into the *Agreement on Trade-Related Aspects of Intellectual Property Rights*, whose member states have the option to protect plant varieties by patents and/or adhering to either *UPOV 1978* or *UPOV 1991*.⁸² Canada has recently joined many other industrialized countries by adhering to *UPOV 1991*.⁸³

Supporters of *UPOV 1991* assert that it has enabled the worldwide transfer of plant varieties, improving access to them for growers from all member states. Opponents claim that this regime alienates small-scale growers and consolidates the proprietary interests of multinational plant breeders. In practice, each member state may leverage the flexibilities in the *Convention* to accommodate the needs of their population, and some have done so.⁸⁴ The key question we explore in Part IV is whether Canada implemented *UPOV 1991* in a way that encourages the adoption of plant breeders' rights in the recreational cannabis market.

Before exploring other IPRs that might be relevant in the cannabis industry, we briefly mention a constitutional issue associated with the *PBRA*, which parallels constitutional issues associated with the *Cannabis Act*. Jurisdiction over plant breeders' rights is not enumerated as a separate head of power under the *Constitution Act, 1867*. The federal government has express constitutional authority to regulate patents and copyrights;⁸⁵

⁸² *Agreement on Trade-Related Aspects of Intellectual Property Rights*, art 27.3(b), being Annex 1C to the *Marrakesh Agreement establishing the World Trade Organization*, 15 April 1994, 1869 UNTS 299, 33 ILM 1197 (entered into force 1 January 1995). See also Dutfield, *supra* note 58 at 32.

⁸³ See International Union for the Protection of New Varieties of Plants, "Members of the International Union for the Protection of New Varieties of Plants", *UPOV* (15 April 2016), online: <www.upov.int/export/sites/upov/members/en/pdf/pub423.pdf>.

⁸⁴ India's *sui generis* regime accommodates farmers' privilege as far as possible while still adhering to the *UPOV 1978* regime. See e.g. Prabhaskar Ranjan, "Recent Developments in India's Plant Variety Protection, Seed Regulation and Linkages with *UPOV*'s Proposed Membership" (2009) 12:3 *J World Intellectual Property* 219; Dutfield, *supra* note 58 at 45.

⁸⁵ See *Constitution Act, 1867*, *supra* note 8, ss 91(22)–(23).

and, the Supreme Court of Canada has acknowledged that the authority to regulate trademarks falls under the trade and commerce head of power.⁸⁶ However, the federal government does not have the blanket authority to regulate all IPRs. This jurisdictional grey area has led to constitutional questions regarding a range of other IP issues, including: confidential data protection, patented medicines pricing controls, geographic indications on agricultural products, wines and spirits, and indigenous traditional knowledge protection.⁸⁷ The lack of precedent regarding jurisdiction over plant breeders' rights, combined with the complexity of jurisdictional authority over the regulation of recreational cannabis, triggers numerous uncertainties regarding the potential use of this form of IPRs in the industry.

B. PATENTS

Patents are among the most sought-after forms of IP protection. The process of applying for a patent can be complex and expensive, especially internationally. However, patents are particularly valuable because they provide a full monopoly over an invention for a 20-year term. In order to obtain protection, an applicant must demonstrate that the subject matter claimed is new, useful, and inventive.⁸⁸ Being new, as the term is used in section 2 of the *Patent Act*, means that the subject matter has not previously been disclosed to the public in a way that enables a person skilled in the

⁸⁶ See *ibid*, s 91(2); *Kirkbi AG v Ritvik Holdings Inc*, 2005 SCC 65, [2005] 3 SCR 302.

⁸⁷ See generally Jeremy F de Beer, "Constitutional Jurisdiction Over Paracopyright Laws" in Michael Geist, ed, *In the Public Interest: The Future of Canadian Copyright Law* (Toronto: Irwin Law, 2005) 89; Jeremy F de Beer, "Copyrights, Federalism, and the Constitutionality of Canada's Private Copying Levy" (2006) 51:4 McGill LJ 735; Jeremy de Beer & Craig Brusnyk, "Intellectual Property and Biomedical Innovation in the Context of Canadian Federalism" (2011) 19 Health LJ 45; Jeremy de Beer, "Implementing International Trade Agreements in Federal Systems: A Look at the Canada-E.U. CETA's Intellectual Property Issues" (2012) 39:1 LIEI 51; Jeremy de Beer & Daniel Dylan, "Traditional Knowledge Governance Challenges in Canada" in Matthew Rimmer, ed, *Indigenous Intellectual Property: A Handbook of Contemporary Research* (Cheltenham: Edward Elgar Publishing, 2015).

⁸⁸ See *Patent Act*, RSC 1985, c P-4, s 2 "invention".

art to practice the invention.⁸⁹ Being useful, another term in section 2, means that the subject matter has a relevant use, practical purpose, and actual result.⁹⁰ Being inventive means that the invention was not obvious at the application filing date.⁹¹

The patentability of plants and associated biotechnological inventions is governed by the Supreme Court of Canada's somewhat contradictory decisions in the *President and Fellows of Harvard College v Canada (Commissioner of Patents)*⁹² and *Monsanto Canada Inc v Schmeiser*⁹³ cases. Higher life forms are not patentable, but the building blocks of life—genes and cells—are.⁹⁴ Patenting cannabis-related inventions could elicit these doctrinal complexities during prosecution or litigation.

In *Harvard Mouse*, the Court ruled that “higher life forms” cannot be patented. According to the majority, excluding higher life forms from the definition of “invention”, precludes the patenting of “all plants and animals, and not just human beings.”⁹⁵ Among the majority's reasons for reaching this conclusion was the fact that a special scheme to protect plant breeders' rights exists: “the *Plant Breeders' Rights Act* is better tailored than the *Patent Act* to the particular characteristics of plants, a factor which makes it easier to obtain protection. The *quid pro quo* is that a narrower monopoly right is granted.”⁹⁶

By the time of *Schmeiser*, two years later, the composition of the Supreme Court of Canada had changed and so did the result. In this case, a

⁸⁹ See *ibid*, s 28.2. See also *Apotex Inc v Sanofi-Synthelabo Canada Inc*, 2008 SCC 61 at paras 30-37, [2008] 3 SCR 265 [*Apotex*].

⁹⁰ See *AstraZeneca Canada Inc v Apotex Inc*, 2017 SCC 36 at paras 52, 54.

⁹¹ See *Patent Act*, *supra* note 88, s 28.3. See also *Apotex*, *supra* note 89 at paras 61–71.

⁹² *President and Fellows of Harvard College v Canada (Commissioner of Patents)*, 2002 SCC 76, [2002] 4 SCR 45 [*Harvard Mouse*].

⁹³ *Monsanto Canada Inc v Schmeiser*, 2004 SCC 34, [2004] 1 SCR 902 [*Schmeiser*].

⁹⁴ See Jeremy de Beer, “The Rights and Responsibilities of Biotech Patent Owners” (2007) 40:1 UBC L Rev 343 at 356.

⁹⁵ *Harvard Mouse*, *supra* note 92 at para 206.

⁹⁶ *Ibid* at para 194.

five–four majority acknowledged the Court’s previous ruling that “plants and seeds were found to be unpatentable”⁹⁷ but held that “to find a gene and a cell to be patentable is in fact consistent with both the majority and the minority holdings in *Harvard Mouse*.”⁹⁸ The majority also explained that “[w]hether or not patent protection for the gene and the cell extends to activities involving the plant [which the Court later held it does] is not relevant to the patent’s validity.”⁹⁹

The practical implication for the cannabis industry is that applicants should be able to obtain effective patent protection through proper drafting. Claims in respect of a variety of cannabis plants could be invalidated, based on *Harvard Mouse*, but claims in respect of a variety’s genetic and cellular materials and associated traits would likely be upheld, based on *Schmeiser*. Whether patent claims covering genes per se—in their natural, unmodified state—are valid in Canada remains an open question.¹⁰⁰ If valid, claims for isolated or modified genetic materials from cannabis would effectively cover making, using, or selling either the materials or the entire plant. Claims for methods of modifying, breeding, or perhaps even business methods of marketing cannabis could also be upheld.

At the same time, however, there is a movement emerging to promote open innovation in cannabis breeding. The Open Cannabis Project is collecting cannabis DNA samples for publication in an online database.¹⁰¹ The openly accessible resource for classifying strains would have the effect

⁹⁷ *Schmeiser*, *supra* note 93 at para 21.

⁹⁸ *Ibid* at para 22.

⁹⁹ *Ibid* at para 24.

¹⁰⁰ See Sarah E Ali-Khan & E Richard Gold, “Gene Patents Still Alive and Kicking: Their Impact on Provision of Genetic Testing for Long QT Syndrome in the Canadian Public Health-Care System” (2017) *Genetics in Medicine*, online: <www.nature.com/gim/journal/vaop/ncurrent/pdf/gim201743a.pdf>. Courts in the United States and Australia have held that naturally occurring genetic material cannot be patented. See e.g. *Association for Molecular Pathology v Myriad Genetics, Inc*, 133 S Ct 2107 (USSC 2013); *D’Arcy v Myriad Genetics Inc*, [2015] HCA 35.

¹⁰¹ See Greg Walters, “What a Looming Patent War Could Mean for the Future of the Marijuana Industry,” *Vice News* (20 April 2016), online: <news.vice.com/canada>.

of preventing patents on strains that are not truly novel, i.e. those that are already in the public domain. One of the project's board members was quoted as saying: "[t]here's a polarization in the grower community between people who are terrified of Monsanto and who want to stop them from patenting things, and other people who are terrified of Monsanto but want to patent their own strains before Monsanto does."¹⁰²

The challenge of cannabis patenting is not only legal, but also scientific and commercial: could breeders invent cannabis that has new, useful, and non-obvious traits? Are there inventive methods of doing useful things with cannabis that have not been done before? And, is there a market for such inventions? Those types of questions are explored in our discussion in Part IV.

C. TRADEMARKS

Trademarks are also an attractive addition to cannabis breeders' IPRs portfolios, as they provide perpetual protection for brands that distinguish one business from another.¹⁰³ More specifically, cannabis breeders would likely want to protect their strain names and trade names to ensure that their specific product is associated with their business and to avoid brand dilution. Already, the *Trade-marks Act* explicitly prohibits registering a plant denomination (the name of a right under the *PBRA*) as a mark.¹⁰⁴ This is one of numerous relevant trademark issues for the recreational cannabis industry.

To obtain protection, the mark itself must meet certain criteria. For example, marks must not be "clearly descriptive or deceptively misdescriptive."¹⁰⁵ Overcoming this threshold may be more complex than avoiding marks that feature the words green, weed, or any other moniker for cannabis. Theoretically, breeders would have trouble registering marks that describe the type of high that a user would feel—especially if different users

¹⁰² *Ibid.*

¹⁰³ *Trade-marks Act*, RSC 1985, c T-13, s 2 "trade-mark".

¹⁰⁴ *Ibid.*, s 10.1.

¹⁰⁵ *Ibid.*, s 12(1)(b).

respond to different strains differently, or if subsequent generations exhibit different properties.

This issue is further complicated by the proposed *Cannabis Act*, which prohibits promotion “that is likely to create an erroneous impression about [the cannabis’] characteristics, value, quantity, composition, strength, concentration, potency, purity, quality, merit, safety, health effects or health risks.”¹⁰⁶ Nevertheless, current licensed medical marijuana producers like The Hydropothecary Corporation have already registered a variety of names like Good Morning, Bed Time, and Lights Off, which indirectly suggest the type of feeling the variety is intended to produce.¹⁰⁷

To be protected, a mark must be used or proposed to be used. At a base level, “use” means that a mark is present on goods or packages, or associated with the goods, during a transfer of property.¹⁰⁸ An applicant must have used his or her mark or have made it known in Canada to register a trademark.¹⁰⁹ For cannabis, the Canadian Intellectual Property Office (CIPO) or the regulations might set out whether prelegalization use of a trademark constitutes use within the meaning of the *Trade-marks Act*. Even if use does not include illicit sales, this requirement may be surmountable for start-up recreational cannabis producers by proposing to use marks.¹¹⁰ An applicant who proposes to use a mark must simply notify the Registrar that he or she has used the mark within six months of the Registrar issuing notice, or within three years of the filing date.¹¹¹

¹⁰⁶ *Cannabis Act*, *supra* note 1, cl 18(1).

¹⁰⁷ “GOOD MORNING”, The Hydropothecary Corporation, Can No 1698093 (15 October 2014) registered; “BED TIME”, The Hydropothecary Corporation, Can No 1698096 (15 October 2014) registered; “LIGHTS OFF”, The Hydropothecary Corporation, Can No 1698101 (15 October 2014). See also The Hydropothecary Corporation, “Time of Day: Signature Product Line”, *Hydropothecary*, online: <www.thehydropothecary.com/products/time-of-day>.

¹⁰⁸ See *Trade-marks Act*, *supra* note 103, s 4(1).

¹⁰⁹ See *ibid*, s 16.

¹¹⁰ *Ibid*, s 30(a).

¹¹¹ See *ibid*, s 40(3). This notification requirement is subject to change with the coming into force of the *Economic Action Plan 2014 Act, No. 1*, SC 2014, c 20, s 339.

Excluding illicit use is likely to cause more significant problems for “acquired distinctiveness”, however. That is, an applicant may overcome the prohibition on marks that are merely a name or surname, clearly descriptive, or deceptively misdescriptive, if a mark has acquired distinctiveness.¹¹² In this situation, the applicant must demonstrate that consumers associate the mark with the applicant as a source of wares or services. Licensed medical cannabis producers will have a significant head start in meeting this threshold if recreational cannabis producers cannot rely on their current customer recognition.

Illicit use may also be relevant in determining whether cannabis marks are confusing against registered or previously-used marks.¹¹³ For example, cannabis variety names such as “Girl Scout Cookies” may be difficult to register as trademarks or vulnerable to trademark infringement themselves. Opposition and expungement procedures exist under the *Trade-marks Act* to allow prior users of trademarks to challenge pending applications as well as existing registrations.¹¹⁴ As noted, licensed medical producers are already taking advantage of trademark protection, and they may use these procedures to exclude newcomers to the industry. Nevertheless, if recreational producers are considered “previous users” of certain marks, proceedings may unfold differently.

At some point, a company in the cannabis industry will likely confront the prohibition against offensive trademarks. While cannabis per se would be difficult to challenge in light of its legalization, several strain names are unlikely to come up in polite conversation—“Green Crack” or “Alaskan Thunderfuck”, for example.¹¹⁵ The United States Supreme Court has declared the US analogue to the “offensive marks” prohibition unconstitutional, as it violates the First Amendment right to freedom of expression.¹¹⁶ However, in Canada the prohibition against offensive marks

¹¹² *Ibid*, s 12(2).

¹¹³ See *ibid*, ss 6, 12(1)(d), 16(1).

¹¹⁴ See *ibid*, ss 18, 45.

¹¹⁵ See generally Walters, *supra* note 101; Sirius J, “8 Most Offensive Marijuana Strain Names”, *High Times* (23 July 2015), online: <hightimes.com>.

¹¹⁶ See *Matal v Tam*, 137 S Ct 1744 (USSC 2017).

remains in effect.¹¹⁷ In 2015, CIPO rejected a registration for “Lucky Bastard Vodka”.¹¹⁸

While trademarks already provide the cannabis industry with valuable IPRs, and they seem the most accessible to breeders at this time, unresolved issues remain. The answers to the foregoing questions will determine whether licensed medical producers have an advantage over recreational producers, the types of cannabis trademarks that are registrable, and, therefore, the extent to which trademarks can shape the recreational cannabis industry. As with plant breeders’ rights and patents, even more complex issues arise when trademark law is considered alongside the new recreational cannabis regime, such as potential restraints on cannabis-related advertising.

IV. THE INTERSECTION OF RECREATIONAL CANNABIS AND IPRS

In this part, we explore issues that arise where recreational cannabis and IPR regimes come together. We structure this discussion in two sections: (A) issues at the intersection of law and science, and (B) issues at the intersection of law and business. Key legal-scientific issues include whether it is technically possible to cultivate varieties of cannabis that meet the standards for IP protection, and whether legal and scientific concepts related to cannabis species/strains/varieties are compatible with one another. Key legal-commercial issues include whether there is a market for genetically modified or cross-bred traits that sophisticated cannabis breeders might develop, and whether it will be legally permissible to use IP to distinctively brand and market more simply produced cannabis.

A. LEGAL-SCIENTIFIC ISSUES: CULTIVATING AND PROTECTING PARTICULAR CANNABIS VARIETIES

¹¹⁷ See *Trade-marks Act*, *supra* note 103, s 9(1)(j).

¹¹⁸ See Timothy Geigner, “Canada Too Has an Issue with Arbitrary Applications of Morality in Trademark Applications” (28 December 2015), *Techdirt* (blog), online: <www.techdirt.com/blog/?tag=lucky+bastard>; “Lucky Bastard Vodka”, LB Distillers Inc, Can No 1520805 (25 March 2011) abandoned.

Cannabis is a phenotypically plastic plant,¹¹⁹ a scientific fact that has significant legal consequences. In other words, cannabis plants with the same genotype may express genes differently, manifesting phenotypes with different characteristics such as size, colour, aroma, chemical makeup, and more. This plasticity could pose a barrier for unsophisticated cannabis breeders that seek IP protection for their plants. More specifically, cannabis breeders may have difficulty satisfying the stability requirement for plant breeders' rights, and the utility and nonobviousness requirement for patents.

Chemical compounds called cannabinoids give cannabis products their psychoactive and/or medicinal properties.¹²⁰ More than 100 cannabinoids are known to exist, although some of these are breakdown products or artifacts.¹²¹ Two of the more commonly discussed cannabinoids are cannabidiol (CBD) and delta-9 tetrahydrocannabinol (THC), which provide narcotic and psychoactive effects, respectively.¹²² Cannabis that exhibits higher levels of CBD is commonly referred to as *sativa*, while cannabis that exhibits higher levels of THC is commonly referred to as *indica*.¹²³

A cannabis plant's chemical composition is highly sensitive to environmental conditions; "[n]umerous biotic and abiotic factors affect cannabinoid production including the sex and maturity of the plant,

¹¹⁹ See Ernest Small, "Evolution and Classification of *Cannabis sativa* (Marijuana, Hemp) in Relation to Human Utilization" (2015) 81:1 Botanical Rev 189 at 199–202.

¹²⁰ See Zlatko Mehmedic et al, "Potency Trends of Δ^9 -THC and Other Cannabinoids in Confiscated Cannabis Preparations from 1993 to 2008" (2010) 55:5 J Forensic Science 1209 at 1209.

¹²¹ See Alline C Campos et al, "Cannabinoids as Regulators of Neural Development and Adult Neurogenesis" in Alice Pébay & Raymond CB Wong, eds, *Lipidomics of Stem Cells* (New York City: Springer International, 2017) 117 at 118.

¹²² See Small, *supra* note 119 at 240–41; *Task Force Framework*, *supra* note 22 at 15.

¹²³ See generally Karl W Hillig & Paul G Mahlberg, "A Chemotaxonomic Analysis of Cannabinoid Variation in *Cannabis* (Cannabaceae)" (2004) 91:6 American J Botany 966 ("plants with relatively high levels of THC were . . . common within [the two drug biotypes of *C. indica*]. In contrast, most plants assigned to *C. sativa* had relatively low levels of THC": at 972).

daylight length, ambient temperature, nutrient availability, and ultraviolet light intensity.”¹²⁴ For that reason, Hillig and Mahlberg refer to “discrete chemical phenotype[s]” or “chemotypes” to classify cannabinoid variations.¹²⁵ Further, a recent study has found that individual cannabis plants may exhibit different chemical properties than others from the same cultivar.¹²⁶ The authors suggested that “producing genetically homogeneous cultivars” would be difficult, and specifically noted that “a high uniformity is needed” to produce “cultivars used for the medical industry”.¹²⁷ Moreover “these cultivars may not be stable from a genetic point of view.”¹²⁸

From breeders’ point of view, if subsequent generations of a variety exhibit different chemical properties—and, therefore, produce different psychoactive and medicinal effects—an examiner is unlikely to find that the variety is stable and uniform enough for plant breeders’ rights protection. In respect of potential patent applications, one issue is whether a genetic or cellular trait that cannot be predictably replicated is useful subject matter. Another issue is whether a trait claimed to be stable, and therefore useful, is truly novel or nonobvious. Breeders with advanced scientific equipment, highly skilled technicians, and tightly controlled conditions would have a significant advantage in attempting to obtain either plant breeders’ rights or patents.

Additional issues arise attempting to cross-reference the legal and scientific nomenclature of varieties, strains, and species. Scientists dispute whether marijuana derives from the plant species *Cannabis sativa* L., which includes the subspecies *sativa*, *indica*, and *ruderalis*, or whether these

¹²⁴ *Ibid* at 967 [citations omitted]. See also Mehmedic et al, *supra* note 120 at 1209.

¹²⁵ Hillig & Mahlberg, *supra* note 123 at 967.

¹²⁶ See Salvador Soler et al, “Genetic Structure of *Cannabis sativa* var. *indica* Cultivars Based on Genomic SSR (gSSR) Markers: Implications for Breeding and Germplasm Management” (2017) 104:1 *Industrial Crops & Products* 171.

¹²⁷ *Ibid* at 175.

¹²⁸ *Ibid* at 177.

subspecies are species in themselves.¹²⁹ Adding to the confusion, some refer to these species or subspecies as varieties.¹³⁰

Strain is also a potential synonym for variety. The word “strain” does not appear in either the *Cannabis Act* or the *PBRA*. However, the word does appear often in colloquial, scientific, and commercial cannabis discourse, for example, referring to kinds of cannabis that produce different effects on users and sport unique names like “Purple Kush”, “Pineapple Express”, or “Gorilla Glue #4”.¹³¹

The term has also been adopted with regrettable casualness in important legal decisions. In *Allard*, the Court insisted that a medical marijuana patient’s constitutional rights depended on affordable access to their preferred “strain”.¹³² In the *ACMPRs*’ Regulatory Impact Analysis Statement, the federal government explained that only personal producers, rather than designated producers, may purchase starting materials from licensed producers to “[allow] the registered person to have an active role in choosing the strain(s) of marihuana to use”.¹³³ But, neither the word strain nor the word variety appear in the *ACMPRs* themselves. The Task Force report also sprinkled the term strain throughout its final report. For example, it recommends that regulations for packaging and labelling recreational marijuana require distributors to list the “strain” name.¹³⁴ Neither the word strain nor the word variety appears in the *Cannabis Act*.

¹²⁹ See e.g. Small, *supra* note 119 at 264–65; Jason Sawler et al, “The Genetic Structure of Marijuana and Hemp” (2015) 10:8 PLoS ONE 1 at 1.

¹³⁰ See e.g. MedicalMarijuana.ca, “Cannabis Varieties”, online: <medicalmarijuana.ca/patients/cannabis-varieties-2>.

¹³¹ See Leafly, “Cannabis Strain Explorer”, online: <www.leafly.com/explore/sort-alpha>. See also Health Canada, *Information for Health Care Professionals: Cannabis (Marihuana, Marijuana) and the Cannabinoids*, by the Controlled Substances and Tobacco Directorate (Ottawa: Health Canada, February 2013), online: <www.canada.ca/en/health-canada/services/drugs-health-products/medical-use-marijuana/information-medical-practitioners/information-health-care-professionals-cannabis-marihuana-marijuana-cannabinoids.html>; MedicalMarijuana.ca, *supra* note 130.

¹³² *Supra* note 50 at paras 171, 173.

¹³³ *Supra* note 15 at 3403.

¹³⁴ *Supra* note 22 at 2, 19.

It is problematic that imprecise nomenclature is used to describe concepts with important legal consequences. For example, lawyers cannot be sure about the botanical taxon of cannabis medical cannabis patients have a constitutionally-protected right to grow according to *Allard*, the taxon individuals and businesses require licences to produce, distribute, sell, or consume under the *Cannabis Act*, or the taxon breeders and businesses could obtain IP protections for.

A court grappling with such language might apply the principle of statutory interpretation that presumes Parliament drafts legislation having regard to related statutes—comparing the *Cannabis Act* to the *PBRA*, for example.¹³⁵ The *PBRA* defines plant variety as “any plant grouping within a single botanical taxon of the lowest known rank”,¹³⁶ suggesting that a protectable plant variety cannot have further subdivisions. Adopting this interpretation, a strain could not be a lower taxon than a variety. Further, an EDV would have to be an extension, rather than a division, of its initial variety. As discussed above, the phenotype of an EDV must be different enough to distinguish itself as a separate variety.¹³⁷ However, an initial variety and an EDV may have different chemical compositions and effects on the user. Recognizing the term strain as equivalent to variety, whether an initial variety or an EDV, maintains a delicate balance.

B. LEGAL-COMMERCIAL ISSUES: DEVELOPING AND MARKETING CANNABIS THAT CONSUMERS DEMAND

While the recreational and medical cannabis markets are different in many significant respects, we anticipate they will share certain characteristics. The importance of brand protection via trademarks may become one commercial commonality between medical and recreational markets. The extent to which companies involved in recreational cannabis activities can rely on branding, however, will depend on the intersection of the trademark

¹³⁵ See Ruth Sullivan, *Statutory Interpretation*, 2d ed (Toronto: Irwin Law, 2007) at 149–50.

¹³⁶ *Supra* note 4, s 2 “plant variety”.

¹³⁷ For more on EDVs, see *supra* notes 65–67 and accompanying text.

and cannabis regulatory regimes. Trademark law may restrict marks that are deemed offensive, and still to be developed regulations under the *Cannabis Act* may restrict many trademark-related advertising activities.

Medical cannabis producers presently market varieties based not only on price and chemical composition, but also branding. Producers brand both their varieties and their businesses to attract customers. Canada's oldest medical cannabis producer, CanniMed, a subsidiary of Prairie Plant Systems, emphasizes its long history in the industry, including its record of research and safety.¹³⁸ Start-up producer The Hydropothecary Corporation portrays itself as an artisanal medical cannabis company, boasting uncompromising quality, premium service, and industry-leading innovation.¹³⁹ Unsurprisingly, such companies focus their IP portfolios on trademarks. The Hydropothecary Corporation protects its name, logo, and the names of its strains.¹⁴⁰ Prairie Plant Systems protects the name and logos for its medical marijuana subsidiary, CanniMed.¹⁴¹

Whether it is possible to exploit trademark protection in respect of certain recreational cannabis branding is an important question for businesses. The *Cannabis Act* proposes to limit cannabis branding in a number of ways. Cannabis may not be promoted in a way that is attractive

¹³⁸ CanniMed, "About Us: Learn About CanniMed Ltd", online: <www.cannimed.ca/pages/about-cannimed-ltd>.

¹³⁹ The Hydropothecary Corporation, "Our Difference", *supra* note 107.

¹⁴⁰ See "HYDROPOTHECARY", The Hydropothecary Corporation, Can No 1698092 (15 October 2014) registered; "H Design", The Hydropothecary Corporation, Can No 1698091 (15 October 2014) registered (for trademarked strain names, search for "Hydropothecary" under "Current owner name": Government of Canada, "Canadian Trademarks Database" (18 July 2017), online: <www.ic.gc.ca/app/opic-cipo/trdmrks/srch/home>. See also *supra* note 107).

¹⁴¹ See "CANNIMED", Prairie Plant Systems, Can No TMA616375 (6 August 2004) registered; "CANNIMED", Prairie Plant Systems, Can No TMA883957 (13 August 2014) registered; "CanniMed Application Icon LOGO", Prairie Plant Systems, Can No TMA943131 (13 July 2016) registered; "CanniMed Application Icon LOGO (RX)", Prairie Plant Systems, Can No TMA944782 (2 August 2016) registered; "CanniMed Application Icon LOGO", Prairie Plant Systems, Can No TMA944778 (2 August 2016) registered (search for "Prairie Plant Systems" under "Current owner name": Government of Canada, *supra* note 140).

or targeted towards children.¹⁴² Cannabis businesses may not use lifestyle branding, placement at sports or cultural events, testimonials, or similar marketing techniques that make consuming this product seem desirable.¹⁴³ Further, these restrictions are not only meant for Canadian-based businesses, as the *Cannabis Act* also prohibits these actions “in a publication that is published outside Canada, a broadcast that originates outside Canada or any other communication that originates outside Canada.”¹⁴⁴ The *Act* explicitly leaves room for further restrictions, as it prohibits the use of “any term, expression, logo, symbol or illustration specified in regulations”.¹⁴⁵ As the Supreme Court of Canada has already ruled that limits on tobacco advertising are justifiable restrictions of free speech, and the *Act* provides safety valves for “informational promotion or brand preference promotion”,¹⁴⁶ these provisions do not seem vulnerable to a constitutional challenge.¹⁴⁷ Yet, depending on the strictness of regulations to be adopted, these legal constraints could have a tremendous impact on the ability of cannabis-related trademark owners to exploit their protected brands.

Patents and other IPRs for cannabis-related products and processes are becoming significant, but not as quickly as some may have expected. For example, Prairie Plant Systems holds nine patents, including CBD esters and a process for preparing THC.¹⁴⁸ Neither Prairie Plant Systems, nor The Hydrophthecary Corporation hold plant breeders’ rights for their medical cannabis. At the time of writing, the Plant Breeders’ Rights Office lists one

¹⁴² See *Cannabis Act*, *supra* note 1, cls 17(1)(b), (d).

¹⁴³ See *ibid*, cls 17(1)(e), 21, 22.

¹⁴⁴ *Ibid*, cl 20.

¹⁴⁵ *Ibid*, cl 19.

¹⁴⁶ *Ibid*, cls 17(2)–(3).

¹⁴⁷ See Teresa Scassa, “Marketing Cannabis Under Bill C-45: Trying Plain Packaging without Inhaling?” (11 May 2017) *Teresa Scassa* (blog), online: <teresascassa.ca>.

¹⁴⁸ See “Cannabinoid Esters”, Can Patent No 2770448 (6 November 2003); “Process for the Preparation of (-)-Delta 9-Tetrahydrocannabinol”, Can Patent No 2751741, PCT Patent No PCT/US2009/032361 (29 January 2009).

registered and granted IPR for a marijuana (*Cannabis sativa subsp. indica*) variety.¹⁴⁹ It also lists six registrations for hemp varieties.¹⁵⁰

Despite the illegality of cannabis under federal law in the United States, the US Patent and Trademark Office has granted at least two utility patents on “specialty cannabis”, to Biotech Institute LLC.¹⁵¹ Cannabis-related compounds and methods have previously been protected, but no one had previously protected plants per se.¹⁵² Interestingly, the inventors of US Patent Nos. 9,095,554¹⁵³ and 9,370,164¹⁵⁴ did not prosecute what is called a plant patent in the US. Plant patent protection in the US is an IPR between plant variety protection and utility patent protection.¹⁵⁵ One inventor told Vice News that “[their] patent lawyers were really, really surprised that there weren’t more applications”.¹⁵⁶ The US Patent and Trademark Office confirmed that it is accepting cannabis-related applications.¹⁵⁷

Licensed medical cannabis producers’ competitive position—including first-mover advantage in the market, technological sophistication and skills, and experience with the regulatory system—may somewhat diminish the

¹⁴⁹ See “Big C”, Can Plant Breeders’ Rights No 13-8163 (24 December 2013).

¹⁵⁰ See “FINOLA”, Can Plant Breeders’ Rights No 99-1682 (26 May 1999); “Grace”, Can Plant Breeders’ Rights No 05-4644 (24 March 2005); “Grandi”, Can Plant Breeders’ Rights No 15-8601 (13 April 2015); “Katani”, Can Plant Breeders’ Rights No 15-8602 (13 April 2015); “Picolo”, Can Plant Breeders’ Rights No 15-8603 (13 April 2015); “X59”, Can Plant Breeders’ Rights No 11-7366 (8 September 2011).

¹⁵¹ See “Breeding, production, processing and use of specialty cannabis”, US Patent No 9095554 (17 March 2014).

¹⁵² See Tyler C Berg, David H Takagawa, & Jennifer A Marles, “Is a Marijuana IP Gold Rush Coming to Canada?” (20 June 2016) *Oyen Wiggs* (blog), online: <www.patentable.com/marijuana-ip-gold-rush-coming-canada>.

¹⁵³ *Supra* note 151.

¹⁵⁴ “Breeding, production, processing and use of specialty Cannabis”, US Patent No 9370164 (17 June 2015).

¹⁵⁵ See Joseph Dylan Summer, “Patenting Marijuana Strains: Baking Up Patent Protection for Growers in the Legal Fog of this Budding Industry” (2015) 23:1 J Intell Prop L 169 at 187–194.

¹⁵⁶ Walters, *supra* note 101.

¹⁵⁷ See *ibid.*

need to obtain patents and plant breeders' rights, and assist them to dominate filings of cannabis-related trademarks. As noted, although patients may produce their own cannabis, under the *ACMPRs* they may only purchase starting materials from licensed producers.¹⁵⁸ The *Act* would allow anyone who legally obtains cannabis to "alter the [plant's] chemical or physical properties."¹⁵⁹ Whether the limitation on starting materials for recreational cannabis mirrors that for medical cannabis will, therefore, depend on regulations that emerge under the *Act*. Due to the paucity of registered IPRs, it is difficult to assess whether existing breeders—illicit or otherwise—have the scientific sophistication to depart from purchased strains and breed protectable varieties. We can only infer that producers operating under regulated regimes with strict requirements are more likely to have this capacity. For that reason, new entrants may have difficulty navigating the regulatory system that incumbents have mastered. Thus far, incumbent breeders have seen little need to prosecute and enforce expensive patents and plant breeders' rights portfolios. The existing industry seems to prefer the cheaper, longer-lasting, and more easily enforced option of distinguishing products with trademarks.

Another factor affecting the popularity of patents and plant breeders' rights in the cannabis industry is the likelihood that commercially desirable traits will be developed. This factor depends on whether breeders may choose to cater to growers, or to consumers. For growers, it remains to be seen whether the agricultural biotechnologies that revolutionized the production of other crops such as canola, soy, and cotton will be popular in the cannabis industry. Given the characteristics of cannabis-growing operations described above, it is unclear whether there is a market for new varieties that are, for example, drought- or disease-tolerant. Perhaps growers would demand and pay premium prices for plant seeds that require less light, water, or other factors of production. One very desirable trait in the market, if it were scientifically and commercially viable to produce, would be a genetically modified or cross-bred plant that generates only female seeds. Female seeds produce cannabis with buds containing THC and

¹⁵⁸ *Supra* note 6, ss 16, 22(5).

¹⁵⁹ *Supra* note 1, cl 12(2).

CBD, while male seeds do not. A plant with such a trait could be valuable to growers. The popularity of biotechnological manipulation of cannabis may also depend on whether regulations impose strict cultivation conditions, such as requiring cannabis to be produced indoors, limiting permissible residues, applying sanitation standards, and so on.

For consumers, the biggest question is whether there is an appetite for genetically modified cannabis. Many consumers are already reluctant to accept, or are firmly opposed to, genetically modified food products. Somewhat ironically, there seems to be a strong desire amongst cannabis consumers to consume only pure and natural products. If the market were to evolve in a such way that demand for “organic” cannabis clearly outweighs demand for genetically modified cannabis, there would be relatively less value in patents or plant breeders’ rights portfolios protecting the traits of genetically modified cannabis plants.

V. CONCLUSIONS ON SCENARIOS FOR CANADA’S RECREATIONAL CANNABIS MARKET

How the legal framework for recreational cannabis and the legal regimes governing IPRs intersect will significantly impact the structure of this emerging industry. At the same time, the nature of the recreational cannabis market and key actors in it will impact the IPRs likely to be most relevant. We conclude from our analysis in this article that the relationship between recreational cannabis and IPRs is most likely to manifest in one or a combination of two scenarios: a craft industry or a commodity industry.

In a craft cannabis industry, actors in the recreational market would exploit trademarks more than patents or plant breeders’ rights. This scenario would be most likely to develop if relatively few restrictions are placed on the use of cannabis-related branding and it proves scientifically or commercially infeasible to breed cannabis plants that are eligible for IP protection. The fewer restrictions there are on cannabis-related branding, the more valuable trademark protection becomes. The more difficult stable cannabis breeding is, the less relevant patents and plant breeders’ rights will be.

We analogize this potential cannabis market to those that exist for fine wines and spirits, craft beer brewing, or certified local, organic, or fair trade agricultural products. Emphasis would be placed on the integrity of supply

chains, with little separation between breeders, growers, distributors, and consumers. The market in this scenario would value small-scale and artisanal production methods, and require the quality assurance that trademarks best provide.

A commodity cannabis industry would leverage trademarks to some degree, but would be controlled far more by the monopoly powers that patents and plant breeders' rights offer. This scenario is most likely to develop if breeders can overcome the scientific challenges particular to cannabis breeding to produce plants with valuable traits, and if markets develop for certain cultivation- or consumption-related traits. A commodity market would also require consumers to embrace sophisticated biotechnological breeding techniques, including genetic modification. In such a market, branding may still be important, but the market would better reward marks conveying scientific innovation than trendy reputation.

We analogize this commodity market to the existing pharmaceutical and agrochemical industries. Advanced technologies, skilled labour, and economies of scale would be needed to compete in a commodity-based cannabis market. It is easily imaginable in this scenario that cannabis breeding would be separated from the activities of growing and distributing the product, as we see with other agricultural commodities. Companies would be more likely to specialize in just one link of the cannabis supply chain. Commodity cannabis would likely accompany strictly enforced patents and associated civil litigation to prevent the saving or sharing of seeds. Further, rights holders are likely to develop a scheme of end point royalties based on plant breeders' rights, ensuring that revenues are linked to licensees' harvests and sales.

These scenarios are not, of course, mutually exclusive. We anticipate seeing aspects of both kinds of cannabis markets for the foreseeable future, as the recreational industry takes shape. Indeed, whether the industry takes on more craft-based or commodity-based characteristics may depend on the companies that enter it. If artisanal companies like The Hydrothecary Corporation continue to experience success, this could lure other businesses to use similar branding strategies. If a company like CanniMed were to build on its track record in the medical market, or if the large multinational pharmaceutical or agrochemical companies began investing significantly in this space, it is likely that patents and plant breeders' rights would become

important components of their IPR portfolios. Whether recreational cannabis becomes a craft- or commodity-based market, IP protection will certainly be among the most important tools in shaping this emerging industry.