

Patents and Plant Breeders' Rights: Approaches to Intellectual Property Overlaps

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This article addresses overlaps between patents and plant breeders' rights. To do so, it examines language that judges in the United States and Canada have used in deciding whether to allow cumulative protection for the same subject-matter by both kinds of intellectual property rights. Distilling the core arguments from a series of judgments during the last four decades, the article explains three themes underpinning the case law on overlaps among patents and plant breeders' rights. Majority and dissenting opinions consider overlaps in terms of: the adequacy of incentives, the potential for inconsistency, and/or the historical logic of legislative drafting. These considerations may determine the outcome of future cases in which overlapping protection is at issue.

Dans cet article, l'auteur traite des chevauchements entre les brevets et la protection des obtentions végétales. Pour ce faire, il examine le langage utilisé par les juges aux États-Unis et au Canada au moment de décider s'il y a lieu d'autoriser que le même objet reçoive une protection cumulative en vertu des deux types de droits de propriété intellectuelle. Résumant les principaux arguments d'une série d'arrêts rendus au cours des quatre dernières décennies, l'auteur explique trois thèmes qui sous-tendent la jurisprudence sur les chevauchements entre les brevets et la protection des obtentions végétales. La majorité et les opinions dissidentes considèrent les chevauchements en ce qui concerne l'adéquation des mesures incitatives, du risque d'incohérence et de la logique historique de la rédaction législative. Ces considérations peuvent déterminer le résultat d'affaires futures dans lesquelles le chevauchement de la protection est en cause.

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“Multiple protection is usually overprotection.”¹

– David Vaver, O.C.

Many kinds of intellectual property rights overlap with one another. Signs may be protected by copyrights and trademarks. Know-how may be protected by trade secrecy and patents. Plants may be protected by patents and plant breeders’ rights: “[S]tates may let plant breeders acquire patent and plant breeder rights cumulatively if they wish,” writes Professor Vaver, “so long as the product may be described in a way that falls within the subject-matter definition of both statutes.”² But why?

This article looks at the language judges in the United States and Canada have used in deciding whether to allow cumulative protection under both patents and plant breeders’ rights. It distills from a series of judgments over the last 40 years several core arguments repeated in opinions about overlaps amongst these particular rights. While the legislative schemes and even naming of these rights — patents, utility patents, plant patents, plant breeders’ rights, and plant variety protection — vary, there are deeper differences among majority and dissenting opinions about the merits of overlapping protection.

The article proceeds by narrating a chronology of case law considering overlaps between patents and plant breeders’ rights. It then explains that underpinning the arguments described (or made) by judges are, in essence, three principled approaches. Whether to allow cumulative protection depends on judges’ views about the adequacy of incentives, the potential for inconsistency, and/or the historical logic of legislative drafting. The article concludes with reflections on the wisdom and implications of these approaches, and recommendations for resolving future disputes.

¹ David Vaver, *Intellectual Property Law: Copyright, Patents, and Trade-Marks (Essentials of Canadian Law)*, 2nd ed. (Toronto: Irwin Law, 1997) at 15.

² (“Alternatively, they may (as in the EU) allow partial cumulation: a patent if the technology applies to more than one variety, a plant breeder right where the technology produces only a single new variety of plant.”).

1. ANYTHING UNDER THE SUN

The overlap among utility patents, plant patents, and plant variety protection was a key aspect of the United States Supreme Court's landmark decision in *Diamond v. Chakrabarty*.³ The case now stands famously for the proposition that Congress intended “anything under the sun that is made by man”⁴ to be patentable subject-matter. Less famous is the disagreement between a narrowly split court over the relevance of overlapping rights in reaching that decision.

Inventor Al Chakrabarty genetically engineered bacteria that were capable of degrading crude oil spills. The issue was whether the bacteria could qualify as patentable subject-matter based on the patent criteria provided in 35 USC § 101, which covers any “process, machine, manufacture, or composition of matter.”

Chief Justice Burger, writing for the five-member majority, looked at the language and history of the statute to support a broad interpretation that protects living things, including bacteria.⁵ According to the majority, the “relevant distinction was not between living and inanimate things, but between products of nature, whether living or not, and human-made inventions.”⁶

The minority of four judges, led by Justice Brennan, also relied on the legislative history but came to the opposite conclusion. In dissent, Brennan cited subsequent intellectual property statutes, namely the 1930 *Plant Patent Act (PPA)*, which protects certain asexually reproduced plants, and the 1970 *Plant Variety Protection Act (PVPA)*, which protects certain sexually reproduced plants: In these two Acts Congress addressed the general problem of patenting animate inventions and chose carefully limited language granting protection to some kinds of discoveries, while specifically excluding others. These *Acts*, in the dissenting judges' opinion, “strongly evidence a congressional limitation that excludes bacteria from patentability.”⁷

³ *Diamond v. Chakrabarty*, 447 U.S. 303 (1980), Burger C.J. [*Diamond*].

⁴ *Ibid.* at 309.

⁵ *Ibid.* at 308-09.

⁶ *Ibid.* at 313.

⁷ *Ibid.* at 319, Brennan J.

The dissenting opinion continues with an argument based on the principle of statutory interpretation that the point of enacting new legislation was to change the existing law:

If newly developed living organisms not naturally occurring had been patentable under § 101, the plants included in the scope of the 1930 and 1970 Acts could have been patented without new legislation. . . . I cannot share the Court's implicit assumption that Congress was engaged in either idle exercises or mere correction of the public record when it enacted the 1930 and 1970 Acts. And Congress certainly thought it was doing something significant. . . . Because Congress thought it had to legislate in order to make agricultural "human-made inventions" patentable and because the legislation Congress enacted is limited, it follows that Congress never meant to make items outside the scope of the legislation patentable.⁸

The majority rejected that argument, offering two alternative explanations for the 1930 and 1970 statutes protecting plants.⁹ First, Congress was responding to the belief (mistaken, in the majority's view) that plants were otherwise unpatentable products of nature. And second, Congress was addressing the practical problem that, at the time, patents were thought (again, mistakenly it seems) not amendable to the written description requirement of patent law. The *PPA* of 1930 addressed both of these concerns in respect of asexually reproducing plants. The 1970 *PVPA* simply extended this protection to all plants. "There is nothing in its language or history to suggest that it was enacted because § 101 did not include living things."¹⁰

2. A NEW VARIETY OF PLANT PROTECTION

Chakrabarty had planted the seed of cumulative protection with its broad interpretation of patentable subject-matter. Yet it was not until two decades later, in *JEM Ag Supply v. Pioneer Hi-Bred International*, that the court specifically confirmed the availability of rights under both utility patent and plant variety protection schemes.¹¹ The issue in this case was whether Pioneer's newly

⁸ *Ibid.* at 320-21.

⁹ *Ibid.* at 311-12, Burger C.J.

¹⁰ *Ibid.* at 313.

¹¹ *J.E.M. Ag Supply v. Pioneer Hi-Bred International*, 534 U.S. 124 (2001), Thomas J. [*JEM Ag Supply*].

developed plant seeds fell within the scope of the utility patent. The seeds, patented under § 101, were sold to JEM Ag Supply, who was doing business as Farm Advantage, under a license exclusively to produce grain. Farm Advantage resold these seeds without authorization from Pioneer. As a result, Pioneer sued Farm Advantage for infringing its patent. The petitioner argued that the patent was invalid on the basis that sexually reproducing plants are not patentable under § 101.

The result resembles the outcome in *Chakrabarty* — a broad interpretation upholding the patentability of the claimed subject-matter.¹² But, also like *Chakrabarty*, the Justices had different opinions about the overlapping aspects of patent and plant variety protection.

The majority opinion, written by Justice Thomas, concluded that neither the *PPA*, nor the *PVPA*, precluded utility patent coverage for plants.¹³

By passing the *PVPA* in 1970, Congress specifically authorized limited patent-like protection for certain sexually reproduced plants. Petitioners therefore argue that this legislation evidences Congress' intent to deny broader § 101 utility patent protection for such plants. Petitioners' argument, however, is unavailing for two reasons. First, nowhere does the *PVPA* purport to provide the exclusive statutory means of protecting sexually reproduced plants. Second, the *PVPA* and § 101 can easily be reconciled. Because it is harder to qualify for a utility patent than for a Plant Variety Protection (PVP) certificate, it only makes sense that utility patents would confer a greater scope of protection.¹⁴

The majority found that utility patents and the two plant protection statutes can operate in parallel. They contain different requirements and offer different degrees of protection:

To be sure, there are differences in the requirements for, and coverage of, utility patents and PVP certificates issued pursuant to the *PVPA*. These differences, however, do not present irreconcilable conflicts because the requirements for obtaining a utility patent under § 101 are more stringent than those for obtaining a PVP certificate, and the protections afforded by a utility patent are greater than those afforded by a PVP

¹² *Ibid.* at 130.

¹³ *Ibid.* at 132.

¹⁴ *Ibid.* at 138.

certificate. Thus, there is a parallel relationship between the obligations and the level of protection under each statute.¹⁵

The principled focus of this aspect of the majority opinion is on consistency. Citing previous case law, the majority held it was clear there is no “positive repugnancy” between utility patents and plant variety protection, and that the two statutes are “capable of coexistence.”¹⁶ Notably, however, consistency seemed only to be seen from the perspective of the rights holder. Other opinions discussed later in this article, such as the dissent in *JEM Ag Supply* and the dissent in the Supreme Court of Canada case of *Monsanto v. Schmeiser*, make clear from the perspective of persons other than the intellectual property owner, such as farmers, that there are significant inconsistencies between the users’ rights available under different schemes.

The majority in *JEM Ag Supply* also raised an argument regarding incentives: “Certainly the patent policy of encouraging invention is not disturbed by the existence of another form of incentive to invention.”¹⁷ While it is obvious that, from the owner’s perspective, more protection is better than less, the majority made no mention of the need for, or implications of, *over*protection. The majority merely noted that the court had allowed dual protection in other cases, involving patents and trade secrets and patents and copyrights. The implication was that permitting dual protection in this case was nothing new.

Justice Scalia’s concurring opinion would have disposed of the issue on the pragmatic basis that *stare decisis* prevents the court from repealing by implication the ruling in *Chakrabarty* that living things are patentable. Interestingly, Scalia’s opinion implies that he might have sided with the dissent in *Chakrabarty*. Had he been on the bench at that time, he might have swung the court and altered the course of patent history in the life sciences. Citing one of the “cannons of interpretation,” he noted that “statutes must be construed in their entirety, so that the meaning of one provision sheds light upon the meaning of another.”¹⁸ He went on to state essentially the same argument advanced at the heart of Justice Brennan’s *Chakrabarty* dissent: “The newly enacted provision for

¹⁵ *Ibid.* at 142.

¹⁶ *Ibid.* at 143-44.

¹⁷ *Ibid.* at 144.

¹⁸ *Ibid.* at 146, Scalia J.

plants [in the 1930 *PPA*] invited the conclusion that this term [manufacture, or composition of matter] which preceded it did not include living things.”¹⁹ He accepted, however, that the court is prevented from re-opening this question, and given the then-accepted view that living things are patentable, declined to repeal the ruling by implication.

Justice Breyer, joined by Justice Stevens, dissented in *JEM Ag Supply*. His opinion is animated by the basic principle that more specific rules supersede more general ones: “Congress intended the two more specific statutes to exclude patent protection under the utility patent statute for the plants to which the more specific Acts directly refer.”²⁰ He began by distinguishing the issue in *Chakrabarty*, which involved a bacterium, not a plant. Because bacteria are not protectable subject-matter under the two special plant statutes — the 1930 *PPA* and the 1970 *PVPA* — any overlaps or inconsistencies were only indirectly relevant in *Chakrabarty*.

According to Justice Breyer, the purpose of the *PPA* and *PVPA* demonstrates legislative intent to deny coverage under utility patent statute to plants which the specific plant statutes refer to. In essence, the dissenting opinion rests on the principle of statutory interpretation that, “a later, specific statute trumps an earlier, more general statute.”²¹ This reasoning is similar to the principles underlying Justice Brennan’s dissent in *Chakrabarty* and even Justice Scalia’s concurrence in *JEM Ag Supply*. “[A] prescient court,” meaning a court knowing in advance the ruling in *Chakrabarty*, “would have had to say, as of 1931, that the 1930 *Plant Patent Act* had, in amending the Utility Patent Statute, placed the subject matter of the *PPA* — namely, plants — outside the scope of the words ‘manufacture, or composition of matter.’” Neither the recodification of patent law in 1952, which gave the *PPA* its own place in the *United States Code*, nor the enactment of the *PVPA* in 1970 changed Justice Breyer’s conclusion.²²

While the majority ignored inconsistencies between the limitations on rights under utility patents and plant patent/variety protection, Justice Breyer considered these limits important. These limits include separate exceptions under the *PVPA* for seed-saving

¹⁹ *Id.*

²⁰ *Ibid.* at 147, Breyer J.

²¹ *Ibid.* at 152-53.

²² *Ibid.* at 153-54.

and for research. “The Court has advanced no sound reason why Congress would want to destroy the exemptions in the PVPA that Congress created. And the Court’s reading would destroy those exemptions.”²³

3. EXHAUSTING THE SEED PATENT DEBATE

The issue of patentability of plant seeds arose again in *Bowman v. Monsanto*. Monsanto patented a genetic modification creating soybeans resistant to glyphosate herbicide. Monsanto only sold the seed for these soybeans to growers who agreed to a license. The license allowed growers to sell the harvest but forbade replanting. Vernon Bowman bought soybeans from a grain elevator and sprayed them with glyphosate herbicide. He planted the surviving soybeans. Bowman successively harvested and replanted them for eight harvests.²⁴ Monsanto sued for patent infringement. Bowman pled the defence of patent exhaustion — that Monsanto’s patent rights were exhausted at the first authorized sale of the invention (the seeds) and did not apply to subsequent generations of plants. The District Court, and later the Federal Circuit, held the defence did not apply.²⁵

Bowman v. Monsanto builds on the overlapping framework for plant patents and plant variety protection set up in *JEM Ag Supply*. *Bowman* was the first patent case involving plants to reach the Supreme Court since *JEM Ag Supply* and is the only Supreme Court case to address the issue of overlaps from a defendant farmer’s perspective. The court held that the farmer’s rights under the *PVPA* are irrelevant when considering the possible exhaustion of the plaintiff’s patent rights.

Most notable here, we explained that only a patent holder (not a certificate holder) could prohibit “[a] farmer who legally purchases and plants” a protected seed from saving harvested seed “for replanting.” . . . That statement is inconsistent with applying exhaustion to protect conduct like Bowman’s. If a sale cut off the right to control a patented seed’s progeny, then (contrary to *J. E. M.*) the patentee could *not* prevent the buyer from saving harvested seed. Indeed, the patentee could not stop the buyer from *selling* such seed, which even a PVP certificate

²³ *Ibid.* at 155.

²⁴ *Bowman v. Monsanto*, 569 U.S. 278 at 280-82 (2013), Kagan J. [Bowman].

²⁵ *Ibid.* at 282-83.

owner (who, recall, is supposed to have fewer rights) can usually accomplish. . . Those limitations would turn upside-down the statutory scheme J. E. M. described.²⁶

The Supreme Court's decision in *Bowman* shows that the fundamental premise of the majority opinion in *JEM Ag Supply* — that there is no inconsistency between patent and plant variety protection — is false. The *Bowman* Court could have mitigated this concern by interpreting the scope and limits of patent rights in plants, specifically the exhaustion doctrine, to give protection commensurate with the rights and defences that would have been available under the plant variety protection scheme. Instead, the Supreme Court premised overlapping protection on the basis of consistency between schemes but, when faced less than 15 years later with clear contradictions, ruled that the stricter scheme must prevail.

4. THE CHAKRABARTY QUESTION COMES TO CANADA

In Canada, the first case to confront the overlaps among intellectual property rights in plants was *Pioneer Hi-Bred Ltd. v. Canada (Commissioner of Patents)*.²⁷ The facts of the case are as follows: The applicant sought a patent for a new soybean variety developed from artificial cross breeding but cultivated naturally. To fulfil the patent disclosure requirements, the applicant deposited seed samples with the Patent Office. At that time, Canada did not have any legislation analogous to the *PVPA* in the United States. Thus, in order to protect a new plant variety in Canada, an applicant would have to meet the requirements under the *Patent Act*.

The Supreme Court of Canada had ruled that the deposit of a plant sample with the Patent Office does not satisfy the disclosure requirements of Canada's *Patent Act*.²⁸ In reaching this conclusion, the Supreme Court of Canada resolved the question that had been raised speculatively by the majority in *Chakrabarty* less than a decade earlier, *i.e.*, why the United States Congress had enacted special statutes governing the protection of plants (which Justice Burger answered: to address the challenges of written description,

²⁶ *Ibid.* at 286.

²⁷ *Pioneer Hi-Bred Ltd. v. Canada (Commissioner of Patents)*, [1989] 1 S.C.R. 1623, 60 D.L.R. (4th) 223, Lamer J. [*Pioneer*].

²⁸ *Patent Act*, R.S.C. 1985, c. P-4.

rather than to limit the subject-matter of utility patents, as Justice Breyer's dissenting opinion in *JEM Ag Supply* would later suggest). The Supreme Court of Canada held that the soybean variety did not meet the disclosure requirements under what was then s. 36(1)²⁹ of the *Patent Act*, requiring the inventor to set out the steps required to make the "composition of matter, in such full, clear, concise and exact terms as to enable any person skilled in the art or science to which it appertains, or with which it is most closely connected, to make . . . it."

Having found insufficient disclosure of the invention as grounds to dismiss the appeal, the Supreme Court declined to speculate in *obiter* about whether a plant is an invention as defined in the *Patent Act*. Earlier at the Federal Court of Appeal, however, Justice Marceau had expressed the view that the Canadian patent legislation does not allow patenting plants:

[G]iven that plant breeding was well established when the [Patent] Act was passed, it seems to me that the inclusion of plants within the purview of the legislation would have led first to a definition of invention in which words such as "strain", "variety" or "hybrid" would have appeared, and second to the enactment of special provisions capable of better adapting the whole scheme to a subject-matter, the essential characteristic of which is that it reproduces itself as a necessary result of its growth and maturity.³⁰

The principle underlying Justice Marceau's opinion is similar to that accepted by Justice Breyer (and, to an extent, Justice Scalia) in *JEM Ag Supply*, although the context was different. In *JEM Ag Supply*, Justice Breyer drew from the existence of special plant-related intellectual property legislation the conclusion that plants are not covered by the more general patent legislation. In *Pioneer Hi-Bred*, Justice Marceau drew from the absence of special plant-related intellectual property legislation the conclusion that plants could only be covered by such special provision.

Accepting that those who develop new plant varieties should receive some type of intellectual property protection, Justice Marceau held that such protection requires a legislative change:

²⁹ Now s. 27(3) of the *Patent Act*.

³⁰ *Pioneer Hi-Bred Ltd. v. Canada (Commissioner of Patents)*, [1987] 3 F.C. 8, 14 C.P.R. (3d) 491 at para. 10, Marceau J.

[I]t seems to me that the inclusion of plants within the purview of the legislation would have led . . . to the enactment of special provisions capable of better adapting the whole scheme to a subject matter, the essential characteristic of which is that it reproduces itself as a necessary result of its growth and maturity. I do not dispute the appellant's contention that those who develop new types of plants by cross-breeding should receive in this country, as they do elsewhere, some kind of protection and reward for their efforts but it seems to me that, to assure such result, the legislator will have to adopt special legislation, as was done a long time ago in the United States and in many other industrialized countries.³¹

Justice Lamer, writing for the Supreme Court, also acknowledges that other countries offer special protection to producers of new plant varieties:

It is true that most countries give the producers of new plant varieties special protection; even in Canada, several legislative proposals for this purpose have appeared over the years. Though this kind of legislation might act as a catalyst in the development of scientific research in Canada, I consider that this Court does not have the right to stretch the scope of patent protection beyond the limits of existing legislation. Accordingly, since the contains no provisions relating directly to biotechnological inventions and new forms of life in particular, this new soybean variety will only be patentable if it meets the traditional conditions and requirements for a patent.³²

Immediately following the Supreme Court's decision in *Pioneer*, in 1990 Parliament enacted the *Plant Breeders' Rights Act*,³³ which is specifically tailored to plants and contains less onerous requirements than those under the *Patent Act*.³⁴

5. A GAME OF CAT AND MOUSE

Between 2002 and 2004, just after *JEM Ag Supply* was decided by the United States Supreme Court, the Supreme Court of Canada played a game of "cat and mouse" on the question of patentability

³¹ *Ibid.*

³² *Pioneer Hi-Bred Ltd. v. Canada (Commissioner of Patents)*, [1989] 1 S.C.R. 1623 at para. 34, 60 D.L.R. (4th) 223, Lamer J. [*Pioneer*].

³³ *Plant Breeders' Rights Act*, S.C. 1990, c. 20.

³⁴ Natalie M. Derzko, "Plant Breeders' Rights in Canada and Abroad: What are These Rights and How Much Must Society Pay for Them?" (1994) 30 McGill L.J. 144 at 157-59.

of higher life forms. When a five-four majority of the court made the move in 2002 case of *Harvard College v. Canada (Commissioner of Patents)*³⁵ to deny protection to higher life forms, a differently constituted five-four majority pounced on the chance to change the law in *Monsanto Canada Inc v. Schmeiser*³⁶ two years later.³⁷ The issue of overlapping protection for patents and plant breeders' rights was mentioned as relevant in both cases at the Supreme Court and/or lower courts. The issue in *Harvard College* was whether a genetically modified mouse that was susceptible to cancer could be patented. A primary concern was whether higher life forms could be patented in Canada. At the Federal Court of Appeal, Justice Rothstein, speaking for the majority of the court, had reversed the decision of the court below and held that the patent should be granted.³⁸ He found that the genetically modified mouse *is* a "composition of matter" and accepted the interpretive principles applied by the U.S Supreme Court in *Chakrabarty*.³⁹ In particular, he noted that, "[t]he language of patent law is broad and general and is to be given wide scope because inventions are, necessarily, unanticipated and unforeseeable."⁴⁰ Justice Rothstein further rejected the minority's argument that there is a "common understanding" that living things do not fall within the scope of patents.⁴¹

However, the dissenting Justice at the Federal Court of Appeal, Isaac JA, expressed the view that the Commissioner's decision to deny the patent should be accorded deference. In doing so, Justice Isaac expressly referred to the *Plant Breeders Act*, which was enacted by Parliament after the Supreme Court in *Pioneer* refused to accommodate soybean varieties within the definition of "invention." He wrote:

³⁵ *Harvard College v. Canada (Commissioner of Patents)*, 2002 SCC 76, [2002] 4 S.C.R. 45, 219 D.L.R. (4th) 577, Bastarache J. [*Harvard College*].

³⁶ *Monsanto Canada v. Schmeiser*, 2004 SCC 34, [2004] 1 S.C.R. 902, 239 D.L.R. (4th) 271, McLachlin C.J.C. [*Schmeiser*].

³⁷ Jeremy de Beer, "The Rights and Responsibilities of Biotech Patent Owners" (2007) 40 U.B.C. L. Rev. 346 at 356.

³⁸ *Harvard College v. Canada (Commissioner of Patents)*, [2000] 4 F.C. 528, 7 C.P.R. (4th) 1, Rothstein J.A.

³⁹ *Ibid.* at paras. 137-42 (F.C.).

⁴⁰ *Ibid.* at para. 116 (F.C.).

⁴¹ *Ibid.* at para. 138 (F.C.).

Following the refusal of the Supreme Court in *Pioneer Hi-Bred* to accommodate cross-bred soya bean varieties within the definition of “invention” in section 2 of the Act, Parliament enacted the *Plant Breeders' Rights Act*, within eleven months after the Supreme Court had dismissed the appeal. In all the circumstances of this case, including the limited role that our jurisprudence has assigned to the courts in this area and the serious moral and ethical implications of this subject-matter, it seems to me that Parliament is the most appropriate forum for the resolution of the issues in dispute here.⁴²

At the Supreme Court of Canada, the majority of five judges agreed with Justice Isaac, and allowed the appeal on the basis that higher life forms are not patentable because they do not fall within the definition of “invention” in s. 2 of the *Patent Act*. In stark contrast to the decision in *Chakrabarty*, the court held that higher life forms do not qualify as “manufacture” or “composition of matter” under s. 2.⁴³ Justice Bastarache, writing for the majority, referred to the existence of the *Plant Breeders Act* to determine whether parliament intended higher life forms to be patentable under the *Patent Act*:

It is a well-established principle of statutory interpretation that given ambiguity in the law, the substance and the form of subsequent legislation may be relevant . . . Of significance to the interpretation of the *Patent Act* and the issue of its applicability to higher life forms is the *Plant Breeders' Rights Act*, passed in 1990 subsequent to this Court's decision in *Pioneer Hi-Bred*, supra, in which it was determined that a crossbred soybean variety did not meet the disclosure requirements of the *Patent Act*.⁴⁴

Justice Bastarache's logic is identical to that underpinning Justice Brennan's dissent in *JEM Ag Supply*. He expressed the following arguments in support of that view:

First, it is argued that had plants been patentable under the *Patent Act*, it would have been unnecessary for Canada to pass a *Plant Breeders' Rights Act* to begin with. A related argument was put forward by the appellant, who submits that although Parliament passed “special legislation” to provide protection for plant breeders, it made no move to amend the *Patent Act* or to

⁴² *Ibid.* at para. 78 (F.C.), Isaac J.A.

⁴³ *Harvard College v. Canada (Commissioner of Patents)*, 2002 SCC 76, [2002] 4 S.C.R. 45 at para. 155, 219 D.L.R. (4th) 577, Bastarache J. [*Harvard College*].

⁴⁴ *Ibid.* at para. 188 (S.C.R.).

adopt other special legislation to provide for the protection of forms of animal life. In addition, in the face of Marceau J.A.'s opinion in *Pioneer Hi-Bred* (speaking for a majority of the Federal Court of Appeal) that the *Patent Act* had never been intended or understood to include crossbred plants — one form of higher life — in patentable subject matter, Parliament did nothing to alter that intention or understanding. A final point is that the *Plant Breeders' Rights Act* was passed in recognition that the *Patent Act* was not tailored to plants due to their unique characteristics.⁴⁵

The majority decision does acknowledge the counterpoint, which is the argument that prevailed in Justice Breyer's majority opinion in *Chakrabarty*.

[I]t may well be that the *Plant Breeders' Rights Act* was passed not out of recognition that higher life forms are not a patentable subject matter under the *Patent Act*, but rather out of recognition that plant varieties deserve some form of intellectual property protection despite the fact that they often do not meet the technical criteria of the *Patent Act*.⁴⁶

However, on balance, the majority decision in *Harvard Mouse* concludes:

Far more significant, in my view, is that the passage of the *Plant Breeders' Rights Act* demonstrates that mechanisms other than the may be used to encourage inventors to undertake innovative activity in the field of biotechnology . . . For example, the monopoly right relates only to the propagating material (the seed and the cuttings) and not to the actual plant.⁴⁷

The dissent in *Harvard Mouse*, written by Justice Binnie, rejects the majority's conclusion and views plant breeder rights as a narrow way to protect plant intellectual property rights. Justice Binnie's views are consistent with the majority opinion of the Federal Court of Appeal, written by Justice Rothstein, and the United States Supreme Court's approach in *Chakrabarty*. Quoting Professor Vaver, Justice Binnie writes:

[T]here is nothing in the *Plant Breeders' Rights Act* that expressly bars an application under the *Patent Act*, which confers much more exclusive and valuable rights. The *Plant Breeders' Rights Act* grants protection for 18 years on the sale

⁴⁵ *Ibid.* at para. 189 (S.C.R.).

⁴⁶ *Ibid.* at para. 192 (S.C.R.).

⁴⁷ *Ibid.* at para. 194 (S.C.R.).

and propagation for sale of enumerated new plant varieties — cultivars, clones, breeding lines, or hybrids that can be cultivated. The plant breeder pays “annual maintenance fees and [must] provide propagating material throughout the term of [protection]. The right does not prevent the development of different varieties from protected plants or the use of seeds taken from protected varieties”: D. Vaver, *Intellectual Property Law: Copyright, Patents, Trade-marks* (1997), at p. 126.⁴⁸

Binnie also rejects the argument that had been accepted by Justice Marceau when *Pioneer* was before the Federal Court of Appeal. Recall, in that case, Justice Marceau expressed that if Parliament intended to include plants in the *Patent Act*, the term “invention” would have been defined in s. 2 such that “words such as ‘strain’, ‘variety’ or ‘hybrid’ would have appeared.”⁴⁹ In response to Justice Marceau’s comment, Justice Binnie wrote: “use of specific terms such as ‘strain’ or ‘hybrid’ would undermine the generality that s. 2 seeks to achieve by use of the term ‘composition of matter’.”⁵⁰

Justice Binnie’s dissent in *Harvard Mouse* also echoes the point made by Justice Scalia in *JEM Ag Supply* about repealing settled law by implication, and by Justice Thomas in *JEM Ag Supply* regarding the consistency of patent and plant breeders’ rights protection:

[T]he Patent Act language reaches back (as stated) prior to Confederation. This particular argument suggests that a “negative inference”, arising when the plant legislation was enacted in 1990, should somehow be read back to narrow a definition that had at that time been in effect more than a century. This would amount to a repeal by implication, and would necessarily require an inconsistency between the two pieces of legislation. There is no such inconsistency. Rights acquired under both Acts can live together.⁵¹

6. THE ANSWER STOPS BLOWING IN THE WIND

The Supreme Court revisited the controversy over patenting higher life forms — specifically plants — just two years later in

⁴⁸ *Ibid.* at para. 61 (S.C.R.), Binnie J.

⁴⁹ *Pioneer Hi-Bred Ltd. v. Canada (Commissioner of Patents)*, [1987] 3 F.C. 8 at para. 13, 14 C.P.R. (3d) 491, Marceau J.

⁵⁰ *Supra* note 43, at para. 62 (S.C.R.), Binnie J.

⁵¹ *Ibid.* at para. 63 (S.C.R.).

Monsanto Canada Inc. v. Schmeiser.⁵² Again, the issue of overlap between patents and plant breeders' rights was relevant to the judges' reasoning.

In this case, Monsanto claimed patent protection for the genes and modified cells that make up a plant. Monsanto sued Schmeiser for the "use" of canola plants which contained the patented genes and cells. Schmeiser argued that the subject-matter of the patent was unpatentable following the majority's reasoning in *Harvard College*, which found plants to be patentable "higher life forms."⁵³ The court split five-four, with the majority upholding patent protection. First, the majority had to distinguish the case from *Harvard College*, which it did by suggesting the earlier case was about an entire mammal, while this case was about plant cells and genes.

The majority opinion, co-authored by Chief Justice McLachlin (who dissented in *Harvard Mouse*) and Justice Fish (a then-new appointee to the court), ignored several inconvenient points. It ignored the extensive discussion throughout *Harvard Mouse* regarding the patentability of higher life forms, the question of whether plants, plant cells, or plant genes are higher life forms, the fact that Monsanto's patent was titled "Glyphosate-resistant plants," and the fact that its ruling protecting Monsanto's cells and genes in effect protects the entire plant and all its progeny. The majority opinion also ignored the existence of the *Plant Breeders' Rights Act*, and did not mention the issue of overlap at all.

However, the dissenting opinion written by Justice Arbour (who like Chief Justice McLachlin had joined Justice Bastarache's dissent in *Harvard Mouse*) did reference the problem of overlapping protection: "Canada has a sui generis system of protection for plants. The *Plant Breeders' Rights Act*, S.C. 1900, c. 20, represents a nuanced statutory regime that takes into consideration the rights of both the developers of new plant varieties and users."⁵⁴ Citing Professor Vaver, she wrote:

While the "rights available under the Plant Breeders' Rights Act fall well short of those conferred by patent, both in comprehensiveness and in duration" . . . they may be all that Monsanto is

⁵² *Monsanto Canada v. Schmeiser*, 2004 SCC 34, [2004] 1 S.C.R. 902, 239 D.L.R. (4th) 271, McLachlin C.J.C. [*Schmeiser*].

⁵³ *Supra* note 50 at para. 49 (S.C.R.).

⁵⁴ *Supra* note 52 at para. 168 (S.C.R.), Arbour J.

entitled to. Indeed, Professor Vaver . . . recognizes that patents should not necessarily be available when other, more tailored intellectual property protection exists. Monsanto has since had the opportunity to come within its protection even though the Act was not in force when Monsanto was granted its patent.⁵⁵

In this way, Justice Arbour added herself to the list of judges who accepted the interpretative principle that the existence of a more specific statute addressing intellectual property rights in plants suggests exclusion of plants from the more general patent scheme. Justice Arbour also cited art. 27(3)(b) of the Agreement on Trade-Related Aspects of Intellectual Property (“TRIPS”), to support her conclusion.⁵⁶ Art. 27(3)(b) of *TRIPS* states:

Members may also exclude from patentability:

(b) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof.

The ultimate result of *Harvard Mouse* and *Monsanto v. Schmeiser* taken together is that although life is not patentable, life’s building blocks are, and patents over those building blocks can protect entire living organisms and their progeny.

7. THE OVERLAP DEBATE ISN’T OVER

The Supreme Courts of the United States and Canada have now clearly established that plants may be protected by patents, plant breeders/variety rights, or both. But none of the cases establishing this proposition were unanimous; all had compelling dissents. Reviewing the language used by judges across the cases, the arguments for and against overlapping protection boil down to different views on three issues: the adequacy of incentives; the potential for inconsistency; and/or the historical logic of legislative drafting.

Regarding incentives, opinions in favour of overlapping protection may rest on the basis that intellectual property protection is warranted for valuable contributions that fall short

⁵⁵ *Ibid.* at para. 169 (S.C.R.).

⁵⁶ *Ibid.* at para. 166 (S.C.R.).

of the threshold required for patent protection. This sentiment is most evident in Justice Thomas' majority opinion in *JEM Ag Supply*, which points out the broader protection commensurate with patent law's higher threshold and the relatively narrower protection offered by the easier-to-acquire rights under the *PPA* and *PVPA*. A different perspective underlies Justice Marceau's majority opinion for the Federal Court of Appeal in *Pioneer Hi-Bred*, Justice Bastarache's opinion for the majority of the Supreme Court in *Harvard Mouse*, and Justice Arbour's dissenting opinion in *Schmeiser*. All of them understood the value of intellectual property for plants, but would have deferred to legislators the task of specifying such protection.

Inconsistency, or the lack thereof, was a central focus of the majority in *JEM Ag Supply*. From the point of view of rights holders, there is no problem having patents and protection for plant varieties cumulatively. The dissenting opinion, however, highlights that there are significant inconsistencies when it comes to the defences available under the schemes for patent and plant variety protections. Although this was not discussed explicitly in Justice Arbour's dissent in *Schmeiser*, her opinion demonstrates a clear understanding of the relationship between the subject-matter and scope of protection. It is here where Professor Vaver's warning is most relevant: "multiple protection is usually overprotection."⁵⁷

The most influential arguments about overlapping protection are based on logic. Judges have looked at the legislative history of patents and plant breeders' rights in two contrasting ways. Justice Brennan's dissent in *JEM Ag Supply* articulates a principle echoed by Justice Scalia in the same case, by Justice Marceau and Justice Lamer in *Pioneer Hi-Bred* at the Federal Court of Appeal and Supreme Court, respectively, by Justice Bastarache in *Harvard Mouse*, and by Justice Arbour in *Schmeiser*. Where the legislature has enacted an intellectual property statute tailored specifically to plants, it is a sign that another, more general statute was believed or intended to not apply. This argument was rejected by Justice Thomas in *JEM Ag Supply* and, citing that opinion, by Justice Binnie dissenting in *Harvard Mouse*.

⁵⁷ Vaver, *supra* note 1.

Distilling these three themes even further, it is possible to summarize the opinions across 40 years of jurisprudence in the United States and Canada according to the high-level perspectives shown in Table 1.

The existence or potential availability of more specific protection suggests more general protection is not needed or intended.		Specific and general protection can coexist where each offers different benefits for different things, without inconsistency for rights holders.	
Majority	Dissent	Majority	Dissent
<i>Pioneer Hi-Bred</i> <i>Harvard Mouse</i> (FCA) <i>JEM Ag Supply</i> (<i>per</i> Scalia)	<i>JEM Ag Supply</i> <i>Schmeiser</i>	<i>Chakrabarty</i> <i>JEM Ag Supply</i>	<i>Harvard Mouse</i> (SCC)

Table 1: Perspectives on overlapping protection.

It is tempting to conclude from the cases reviewed in this article that questions about overlapping protection for patents and plant breeders' rights are now firmly settled. They are not. For one thing, the stark differences of opinions canvassed above show how small swings in the composition of a court can change the outcome of a case. Justice Scalia's comments in *JEM Ag Supply* regarding the logic (or illogic) of *Chakrabarty* hint at one example. The Supreme Court of Canada's about-face from *Harvard Mouse* to *Schmeiser* is another.

Furthermore, there will likely be opportunities to revisit this issue as both patent and plant breeders' rights law continue to evolve. In fact, Canada has just made significant changes to the *Plant Breeders' Rights Act*. Implementing the most recent version of the *UPOV Convention*, the scope of farmers' seed-saving rights is now less narrow than it was under Canada's previous plant breeders' rights law. The scope of protection is broader, and the duration of rights is longer. Any of these features of the new law could lead to interpretative challenges, particularly if there is inconsistency in the scope of the users' rights granted to farmers, researchers, or others that must be balanced against the rights of intellectual property owners.

The problems created by overlapping protection have been discussed not only in North America but also around the world. A

2002 symposium organized by WIPO and UPOV focused squarely on this issue.⁵⁸ At least two papers included in the symposium proceedings examine ways to balance coexisting patent and plant breeders' rights by looking at flexibilities under international law and approaches in the United States and Europe.⁵⁹ Scholars have also looked at the issue of overlap in several African countries and on the continent as a whole.⁶⁰

One of the provocative ideas to come from empirical research in the United States is that plant variety protection plays only a marginal role in stimulating plant breeding, implying that experimentation with *sui generis* regimes may not be a high priority.⁶¹ However, there are certain crops, such as wheat, for which plant breeders' rights, not patents, are more readily acquired.

Crucially, the most severe consequences of overlapping protection are felt not by the owners who have multiple rights

⁵⁸ "Compilation of the 2002 & 2003 Joint Symposia Documents of the World Intellectual Property Organization (WIPO) and the International Union for the Protection of New Varieties of Plants (UPOV)" (N.p.: World Intellectual Property Organization & International Union for the Protection of New Varieties of Plants, n.d.), UPOV, online: http://www.upov.int/edocs/pubdocs/en/upov_pub_792.pdf.

⁵⁹ Charles McManis, "Are there TRIPS-Compliant Measures for a Balanced Co-Existence of Patents and Plant Breeders' Rights? Some Lessons from the United States of America's Experience to Date" in "Compilation of the 2002 & 2003 Joint Symposia Documents of the World Intellectual Property Organization (WIPO) and the International Union for the Protection of New Varieties of Plants (UPOV)" (N.p.: World Intellectual Property Organization & International Union for the Protection of New Varieties of Plants, n.d.) 63, UPOV, online: http://www.upov.int/edocs/pubdocs/en/upov_pub_792.pdf; Joseph Strauss, "Measures Necessary for the Balanced Co-Existence of Patents and Plant Breeders' Rights-A Predominantly European View" in "Compilation of the 2002 & 2003 Joint Symposia Documents of the World Intellectual Property Organization (WIPO) and the International Union for the Protection of New Varieties of Plants (UPOV)" (N.p.: World Intellectual Property Organization & International Union for the Protection of New Varieties of Plants, n.d.) 77, UPOV, online: http://www.upov.int/edocs/pubdocs/en/upov_pub_792.pdf.

⁶⁰ Ben Sihanya, "Plant Breeder's Rights in Kenya: Appropriate IP for Biodiversity and Biotechnology" (2015) 2015 E. Afr. L.J. 68; Bram De Jonge & Peter Munyi, "A Differentiated Approach to Plant Variety Protection in Africa" (2016) 19 J. World Intellectual Property 28; Chidi Oguamanam "Breeding Apples for Oranges: Africa's Misplaced Priority Over Plant Breeders' Rights" (2015) 18 J. World Intellectual Property 165.

⁶¹ Mark D. Janis & Jay P. Kesan, "U.S. Plant Variety Protection: Sound and Fury" (2002) 39 Hous. L. Rev. 727 at 776-77.

but by the users whose rights under one scheme are curtailed by the other. This was clearly recognized in one of the first scholarly articles, subsequently cited by the Supreme Court, about this topic in Canada:

[W]e should also examine what kind of effect dual protection would have on the delicate balance between the proper allocation of rights and residual liberties. At this more abstract level of analysis, it is clear that the balance created by the *Plant Breeders' Rights Act* would be destroyed if dual protection were allowed. The protection of plants would not be limited to the propagating material, nor would the exclusive right be subject to the farmer's and breeder's exemptions.⁶²

In such circumstances, scholars have proposed several different ways to protect users. One example is a proposal to permit courts to determine appropriate remedies based on context, rather than allowing (or forcing) rights holders to elect their preferred form of protection at the outset.⁶³ Another proposal is to apply to rights holders a “clean hands” or similar misuse test to determine the acceptability of overlaps.⁶⁴

Regardless of one's views about the appropriateness of overlapping protection, it is clear that the issue is serious and still lingering. This article has examined the language used by judges in Canada and the United States in a series of cases to explain the arguments for and against overlapping protection. By canvassing majority, concurring, and dissenting opinions in the case law, this article has sought to identify different views about the basic principles at the heart of this debate. These are the arguments that will be made in, and perhaps determine the outcome of, the next case in which the matter arises.

⁶² Natalie M. Derzko, “Plant Breeders' Rights in Canada and Abroad: What are These Rights and How Much Must Society Pay for Them?” (1994) 30 McGill L.J. 144 at 164. See also Jay Sanderson “Towards a (Limited) Cascading Right: What is the Appropriate Scope of Protection for Plant Breeding?” (2011) 34 U.N.S.W.L.J. 1104 at 1105.

⁶³ Laura A. Heymann, “Overlapping Intellectual Property Doctrines: Election of Rights Versus Selection of Remedies” (2013) 17 Stan. Tech. L. Rev. 239 at 273.

⁶⁴ Robert Tomkowicz, *Intellectual Property Overlaps: Theory, Strategies and Solutions* (Abingdon, Oxon: Routledge, 2012) at 177-81.

