

Monsanto Canada Inc v Schmeiser, 2004

SCC 34

McLachlin CJC and Fish J:—

I. Introduction

[1] This case concerns a large scale, commercial farming operation that grew canola containing a patented cell and gene without obtaining licence or permission. The main issue is whether it thereby breached the *Patent Act*, R.S.C. 1985, c. P-4. We believe that it did.

[2] In reaching this conclusion, we emphasize from the outset that we are not concerned here with the innocent discovery by farmers of “blow-by” patented plants on their land or in their cultivated fields. Nor are we concerned with the scope of the respondents’ patent or the wisdom and social utility of the genetic modification of genes and cells — a practice authorized by Parliament under the *Patent Act* and its regulations.

[3] Our sole concern is with the application of established principles of patent law to the essentially undisputed facts of this case.

II. The Salient Facts

[4] Percy Schmeiser has farmed in Saskatchewan for more than 50 years. In 1996 he assigned his farming business to a corporation in which he and his wife are the sole shareholders and directors. He and his corporation grow wheat, peas, and a large amount of canola.

[5] In the 1990s, many farmers, including five farmers in Mr. Schmeiser’s area, switched to Roundup Ready Canola, a canola variety containing genetically modified genes and cells that have been patented by Monsanto. Canola containing the patented genes and cells is resistant to a herbicide, Roundup, which kills all other plants, making it easier to control weeds. This eliminates the need for tillage and other herbicides. It also avoids seeding delays to accommodate early weed spraying. Monsanto licenses farmers to use Roundup Ready Canola, at a cost of \$15 per acre.

[6] Schmeiser never purchased Roundup Ready Canola nor did he obtain a licence to plant it. Yet, in 1998, tests revealed that 95 to 98 percent of his 1,000 acres of canola crop was made up of Roundup Ready plants. The origin of the plants is unclear. They may have been derived from Roundup Ready seed that blew onto or near Schmeiser’s land, and was then collected from plants that survived after Schmeiser sprayed Roundup herbicide around the power poles and in the ditches along the roadway bordering four of his fields. The fact that these plants survived the spraying indicated that they contained the patented gene and cell. The trial judge found that “none of the suggested sources [proposed by Schmeiser] could reasonably explain the concentration or extent of Roundup

Ready canola of a commercial quality” ultimately present in Schmeiser’s crop (*Monsanto Canada Inc. v. Schmeiser* (2001), 202 F.T.R. 78 (Fed. T.D.), at para. 118).

[7] The issues on this appeal are whether Schmeiser infringed Monsanto’s patent, and if so, what remedies Monsanto may claim.

III. Analysis

A. The Patent: Its Scope and Validity

[8] Canola is a valuable crop grown in Canada and used to make edible oil and animal feed. The respondents are the licensee and owner, respectively, of Canadian Patent No. 1,313,830. This patent, titled “Glyphosate-Resistant Plants” was issued on February 23, 1993, and expires on February 23, 2010. It discloses the invention of genetically engineered genes and cells containing those genes which, when inserted into plants (in this case canola), dramatically increase their tolerance to herbicides containing glyphosate. Ordinarily, glyphosate inhibits an enzyme essential for plant survival. Most plants sprayed with a glyphosate herbicide do not survive, but a canola plant grown from seed containing the modified gene will survive.

[9] Since 1996, canola seed containing the patented gene and cell has been produced in Canada under licence from the respondents; this seed has been marketed to farmers under the trade name “Roundup Ready Canola”, reflecting its resistance to the glyphosate herbicide “Roundup” manufactured by the respondents. Roundup can be sprayed after the canola plants have emerged, killing all plants except the canola. This eliminates the need for tillage and other herbicides. It also avoids delaying seeding to accommodate early weed spraying.

[10] In 1996, approximately 600 Canadian farmers planted this Roundup Ready Canola on 50,000 acres. By 2000, approximately 20,000 farmers planted 4.5 to 5 million acres — nearly 40 percent of all canola grown in Canada.

[11] Monsanto requires a farmer who wishes to grow Roundup Ready Canola to enter into a licensing arrangement called a Technology Use Agreement (TUA). The licensed farmers must attend a Grower Enrollment Meeting at which Monsanto describes the technology and its licensing terms. By signing the TUA, the farmer becomes entitled to purchase Roundup Ready Canola from an authorized seed agent. They must, however, undertake to use the seed for planting a single crop and to sell that crop for consumption to a commercial purchaser authorized by Monsanto. The licensed farmers may not sell or give the seed to any third party, or save seed for replanting or inventory.

[12] The TUA gives Monsanto the right to inspect the fields of the contracting farmer and to take samples to verify compliance with the TUA. The farmer must also pay a licensing fee for each acre planted with Roundup Ready Canola. In 1998, the licensing fee was \$15 per acre.

[13] A Roundup Ready Canola plant cannot be distinguished from other canola

plants except by a chemical test that detects the presence of the Monsanto gene, or by spraying the plant with Roundup. A canola plant that survives being sprayed with Roundup is Roundup Ready Canola.

[14] The trial judge found the patent to be valid. He found that it did not offend the Plant Breeders' *Rights Act*, S.C. 1990, c. 20, and held that the difficulty of distinguishing canola plants containing the patented gene and cell from those without it did not preclude patenting the gene. The trial judge also rejected the argument that the gene and cell are unpatentable because they can be replicated without human intervention or control.

[15] The scope of the patent is largely uncontroversial.

[16] The trial judge found that "it is the *gene* and *the process for its insertion* ... and *the cell derived from that process*" that comprise the invention (para. 88 (emphasis added), see also para. 26). The Federal Court of Appeal likewise endorsed the claims as being for "genes and cells which are glyphosate-resistant" (*Mosanto Canada Inc. v. Schmeiser* (2002), [2003] 2 F.C. 165 (Fed. C.A.), at para. 40).

[17] Everyone agrees that Monsanto did not claim protection for the genetically modified plant itself, but rather for the genes and the modified cells that make up the plant. Unlike our colleague, Arbour J., we do not believe this fact requires reading a proviso into the claims that would provide patent protection to the genes and cells only when in an isolated laboratory form.

[18] Purposive construction of patent claims requires that they be interpreted in light of the whole of the disclosure, including the specifications: *Whirlpool Corp. v. Camco Inc.*, [2000] 2 S.C.R. 1067, 2000 SCC 67 (S.C.C.); *Consolboard Inc. v. MacMillan Bloedel (Sask.) Ltd.*, [1981] 1 S.C.R. 504 (S.C.C.). In this case, the disclosure includes the following:

Abstract of Disclosure

Plant cells transformed using such genes and plants regenerated therefrom have been shown to exhibit a substantial degree of glyphosate resistance. (AR 235)

Background of the Invention

The object of this invention is to provide a method of genetically transforming plant cells which causes the cells and plants regenerated therefrom to become resistant to glyphosate and the herbicidal salts thereof. (AR 238)

Detailed Description of the Invention

Suitable plants for the practice of the present invention include, but are not limited to, soybean, cotton, alfalfa, canola, flax, tomato, sugar beet, sunflower, potato, tobacco, corn, wheat, rice and lettuce. (AR 240-241)

[19] A purposive construction therefore recognizes that the invention will be practised in plants regenerated from the patented cells, whether the plants are located inside or outside a laboratory. It is difficult to imagine a more likely or more evident purpose for patenting “a method of genetically transforming plant cells which causes *the cells and plants* regenerated therefrom to become resistant to glyphosate” (trial judgment, para. 20 (emphasis added)).

[20] More particularly, the patented claims are for:

1. A *chimeric gene*: this is a gene that does not exist in nature and is constructed from different species.
2. An *expression vector*: this is a DNA molecule into which another DNA segment has been integrated so as to be useful as a research tool.
3. A *plant transformation vector*: used to permanently insert a chimeric gene into a plant’s own DNA.
4. Various species of *plant cells* into which the chimeric gene has been inserted.
5. A *method of regenerating a glyphosate-resistant plant*. Once the cell is stimulated to grow into a plant, all of the differentiated cells in the plant will contain the chimeric gene, which will be passed on to offspring of the plant.

[21] The appellant Schmeiser argues that the subject matter claimed in the patent is unpatentable. While acknowledging that Monsanto claims protection only over a gene and a cell, Schmeiser contends that the result of extending such protection is to restrict use of a plant and a seed. This result, the argument goes, ought to render the subject matter unpatentable, following the reasoning of the majority of this Court in *Harvard College v. Canada (Commissioner of Patents)*, [2002] 4 S.C.R. 45, 2002 SCC 76 (S.C.C.) (“*Harvard Mouse*”). In that case, plants and seeds were found to be unpatentable “higher life forms”.

[22] This case is different from *Harvard Mouse*, where the patent refused was for a mammal. The Patent Commissioner, moreover, had allowed other claims, which were not at issue before the Court in that case, notably a plasmid and a somatic cell culture. The claims at issue in this case, for a gene and a cell, are somewhat analogous, suggesting 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*.

[23] Further, all members of the Court in *Harvard Mouse* noted in *obiter* that a fertilized, genetically altered oncomouse egg would be patentable subject matter, regardless of its ultimate anticipated development into a mouse (at para. 3, *per* Binnie J. for the minority; at para. 162, *per* Bastarache J. for the majority.).

[24] Whether or not patent protection for the gene and the cell extends to activities involving the plant is not relevant to the patent’s validity. It relates only to the factual circumstances in which infringement will be found to have taken place, as we shall explain below. Monsanto’s patent has already been

issued, and the onus is thus on Schmeiser to show that the Commissioner erred in allowing the patent: *Apotex Inc. v. Wellcome Foundation Ltd.*, [2002] 4 S.C.R. 153, 2002 SCC 77 (S.C.C.), at paras. 42-44. He has failed to discharge that onus. We therefore conclude that the patent is valid.

B. Did Schmeiser “Make” or “Construct” the Patented Gene and Cell, Thus Infringing the Patent?

[25] The *Patent Act* confers on the patent owner “the exclusive right, privilege and liberty of making, constructing and using the invention and selling it to others to be used”: s. 42. Monsanto argues that when Schmeiser planted and cultivated Roundup Ready Canola seed, he necessarily infringed their patent by making the gene or cell.

[26] We are not inclined to the view that Schmeiser “made” the cell within the meaning of s. 42 of the *Patent Act*. Neither Schmeiser nor his corporation created or constructed the gene, the expression vector, a plant transformation vector, or plant cells into which the chimeric gene has been inserted.

[27] It is unnecessary, however, to express a decided opinion on this point, since we have in any event concluded that Schmeiser infringed s. 42 by “using” the patented cell and gene.

C. Did Schmeiser “Use” the Patented Gene or Cell, Thus Infringing the Patent?

(1) The Law on “Use”

[28] The central question on this appeal is whether Schmeiser, by collecting, saving and planting seeds containing Monsanto’s patented gene and cell, “used” that gene and cell.

[29] The onus of proving infringement lies on the plaintiff, Monsanto.

[30] Infringement is generally a question of fact (see *Whirlpool, supra*). In most patent infringement cases, once the claim has been construed it is clear on the facts whether infringement has taken place: one need only compare the thing made or sold by the defendant with the claims as construed. Patent infringement cases that turn on “use” are more unusual. In those rare cases where a dispute arises on this issue, as in this case, judicial interpretation of the meaning of “use” in s. 42 of the Act may be required.

[31] Determining the meaning of “use” under s. 42 is essentially a matter of statutory construction. The starting point is the plain meaning of the word, in this case “use” or “exploiter”. *The Concise Oxford Dictionary* defines “use” as “cause to act or serve for a purpose; bring into service; avail oneself of”: *The Concise Oxford Dictionary of Current English* (9th ed.1995), at p. 1545. This denotes utilization with a purpose. The French word “exploiter” is even clearer. It denotes utilization with a view to production or advantage: “tirer parti de (une chose), en vue d’une production ou dans un but lucratif; [...] [u]tiliser d’une manière avantageuse...”: *Le Nouveau Petit Robert* (2003), at p. 1004.

[32] Three well-established rules or practices of statutory interpretation assist us further. First, the inquiry into the meaning of “use” under the *Patent Act* must be *purposive*, grounded in an understanding of the reasons for which patent protection is accorded. Second, the inquiry must be *contextual*, giving consideration to the other words of the provision. Finally, the inquiry must be attentive to the wisdom of the *case law*. We will discuss each of these aids to interpretation briefly, and then apply them to the facts of this case.

[33] We return first to the rule of purposive construction. Identifying whether there has been infringement by use, like construing the claim, must be approached by the route of purposive construction: *Free World Trust c. Électro Santé Inc.*, [2000] 2 S.C.R. 1024, 2000 SCC 66 (S.C.C.). “[P]urposive construction is capable of expanding or limiting a literal [textual claim]”: *Whirlpool, supra*, at para. 49. Similarly, it is capable of influencing what amounts to “use” in a given case.

[34] The purpose of s. 42 is to define the exclusive rights granted to the patent holder. These rights are the rights to full enjoyment of the monopoly granted by the patent. Therefore, what is prohibited is “any act that interferes with the full enjoyment of the monopoly granted to the patentee”: H. G. Fox, *The Canadian Law and Practice Relating to Letters Patent for Inventions* (4th ed. 1968), at p. 349; see also *Lishman v. Erom Roche Inc.* (1996), 68 C.P.R. (3d) 72 (Fed. T.D.), at p. 77.

[35] The guiding principle is that patent law ought to provide the inventor with “protection for that which he has actually in good faith invented”: *Free World Trust, supra* at para. 43. Applied to “use”, the question becomes: *did the defendant’s activity deprive the inventor in whole or in part, directly or indirectly, of full enjoyment of the monopoly conferred by law?*

[36] A purposive approach is complemented by a contextual examination of s. 42 of the *Patent Act*, which shows that the patentee’s monopoly generally protects its business interests. Professor D. Vaver, in *Intellectual Property Law: Copyright, Patents, Trade-marks* (1997), suggests that the common thread among “(making, constructing and using the invention and selling it to others to be used)”... is that the activity is usually for commercial purposes — to make a profit or to further the actor’s business interests ...” (p. 151). This is particularly consistent with the French version of s. 42, which uses the word “*exploiter*”.

[37] As a practical matter, inventors are normally deprived of the fruits of their invention and the full enjoyment of their monopoly when another person, without licence or permission, uses the invention to further a business interest. Where the defendant’s impugned activities furthered its own commercial interests, we should therefore be particularly alert to the possibility that the defendant has committed an infringing use.

[38] With respect for the contrary view of Arbour J., this does not require inventors to describe in their specifications a commercial advantage or utility for their inventions. Even in the absence of commercial exploitation, the patent holder is entitled to protection. However, a defendant’s commercial activities

involving the patented object will be particularly likely to constitute an infringing use. This is so because if there is a commercial benefit to be derived from the invention, a contextual analysis of s. 42 indicates that it belongs to the patent holder. The contextual analysis of the section thus complements — and confirms — the conclusion drawn from its purposive analysis. It is the reverse side of the same coin.

[39] We turn now to the case law, the third aid to interpretation. Here we derive guidance from what courts in the past have considered to be use. As we shall see, precedent confirms the approach proposed above and it is of assistance as well in resolving some of the more specific questions raised by this case.

[40] First, case law provides guidance as to whether patent protection extends to situations where the patented invention is contained within something else used by the defendant. This is relevant to the appellants' submission that growing *plants* did not amount to "using" their patented *genes* and *cells*.

[41] Patent infringement actions often proceed in a manufacturing context. Case law has for that reason focussed on situations where a patented part or process plays a role in production. As Professor Vaver states, *supra*, at p. 152:

"Use" applies both to patented products and processes, and also to their output. A patent that covers a zipper-making machine or method extends to zippers made by the machine or method. Each zipper sold without authority infringes the patent, even if the zippers themselves are unpatented. This expansive doctrine applies, however, only if the patent plays an important part in production.

[42] By analogy, then, the law holds that a defendant infringes a patent when the defendant manufactures, seeks to use, or uses a patented part that is contained within something that is not patented, provided the patented part is significant or important. In the case at bar, the patented genes and cells are not merely a "part" of the plant; rather, the patented genes are present throughout the genetically modified plant and the patented cells compose its entire physical structure. In that sense, the cells are somewhat analogous to Lego blocks: if an infringing use were alleged in building a structure with patented Lego blocks, it would be no bar to a finding of infringement that only the blocks were patented and not the entire structure. If anything, the fact that the Lego structure could not exist independently of the patented blocks would strengthen the claim, underlining the significance of the patented invention to the whole product, object, or process.

[43] Infringement through use is thus possible even where the patented invention is part of, or composes, a broader unpatented structure or process. This is, as Professor Vaver states, an expansive rule. It is, however, firmly rooted in the principle that the main purpose of patent protection is to prevent others from depriving the inventor, even in part and even indirectly, of the monopoly that the law intends to be theirs: only the inventor is entitled, by virtue of the patent and as a matter of law, to the *full* enjoyment of the monopoly conferred.

[...]

[44] Moreover, as Lord Dunedin emphasized in *British United Shoe Machinery Co. v. Simon Collier Ltd.* (1910), 27 R.P.C. 567 (U.K. H.L.), *possession as a stand-by has “insurance value”*, as for example in the case of a fire extinguisher. The extinguisher is “used” to provide the means for extinguishment should the need arise. This is true, too, of a spare steam engine which is “intended in certain circumstances to be used for exactly the purpose for which the whole machine is being actually used” (p. 572). Exploitation of the stand-by utility of an invention uses it to advantage.

[45] In *Terrell on the Law of Patents* (15th ed. 2000), at para. 8.24, the authors observe that “[t]he word ‘use’... would ... seem to indicate making practical use of the invention itself”. In some circumstances, “practical use” may arise from the stand-by utility resulting from mere possession of the invention, or from some other practical employment with a view to advantage. Use, and thereby infringement, are then established.

[...]

(2) *Application of the Law*

[46] The trial judge’s findings of fact are based, essentially, on the following uncontested history.

[47] Mr. Schmeiser is a conventional, non-organic farmer. For years, he had a practice of saving and developing his own seed. The seed which is the subject of Monsanto’s complaint can be traced to a 370-acre field, called field number 1, on which Mr. Schmeiser grew canola in 1996. In 1996 five other canola growers in Mr. Schmeiser’s area planted Roundup Ready Canola.

[48] In the spring of 1997, Mr. Schmeiser planted the seeds saved on field number 1. The crop grew. He sprayed a three-acre patch near the road with Roundup and found that approximately 60 percent of the plants survived. This indicates that the plants contained Monsanto’s patented gene and cell.

[49] In the fall of 1997, Mr. Schmeiser harvested the Roundup Ready Canola from the three-acre patch he had sprayed with Roundup. He did not sell it. He instead kept it separate, and stored it over the winter in the back of a pick-up truck covered with a tarp.

[50] A Monsanto investigator took samples of canola from the public road allowances bordering on two of Mr. Schmeiser’s fields in 1997, all of which were confirmed to contain Roundup Ready Canola. In March 1998, Monsanto visited Mr. Schmeiser and put him on notice of its belief that he had grown Roundup Ready Canola without a licence. Mr. Schmeiser nevertheless took the harvest he had saved in the pick-up truck to a seed treatment plant and had it treated for use as seed. Once treated, it could be put to no other use. Mr. Schmeiser planted the treated seed in nine fields, covering approximately 1,000 acres in all.

[51] Numerous samples were taken, some under court order and some not, from the canola plants grown from this seed. Moreover, the seed treatment plant, unbeknownst to Mr. Schmeiser, kept some of the seed he had brought there for treatment in the spring of 1998, and turned it over to Monsanto. A series of independent tests by different experts confirmed that the canola Mr. Schmeiser planted and grew in 1998 was 95 to 98 percent Roundup resistant. Only a grow-out test by Mr. Schmeiser in his yard in 1999 and by Mr. Freisen on samples supplied by Mr. Schmeiser did not support this result.

[52] Dr. Downey testified that the high rate of post-Roundup spraying survival in the 1997 samples was “consistent only with the presence in field number 2 of canola grown from commercial Roundup tolerant seed” (trial judgment, at para. 112). According to Dr. Dixon, responsible for the testing by Monsanto US at St. Louis, the “defendants’ samples contain[ed] the DNA sequences claimed in claims 1, 2, 5, and 6 of the patent and the plant cell claimed in claims 22, 23, 27, 28 and 45 of the patent”(trial judgment, at para. 113). As the trial judge noted, this opinion was uncontested.

[53] The remaining question was how such a pure concentration of Roundup Ready Canola came to grow on the appellants’ land in 1998. The trial judge rejected the suggestion that it was the product of seed blown or inadvertently carried onto the appellants’ land (at para. 118):

It may be that some Roundup Ready seed was carried to Mr. Schmeiser’s field without his knowledge. Some such seed might have survived the winter to germinate in the spring of 1998. However, I am persuaded by evidence of Dr. Keith Downey ... that none of the suggested sources could reasonably explain the concentration or extent of Roundup Ready canola of a commercial quality evident from the results of tests on Schmeiser’s crop.

[54] He concluded, at para. 120:

I find that in 1998 Mr. Schmeiser planted canola seed saved from his 1997 crop in his field number 2 which he knew or ought to have known was Roundup tolerant, and that seed was the primary source for seeding and for the defendants’ crops in all nine fields of canola in 1998.

[55] In summary, it is clear on the findings of the trial judge that the appellants saved, planted, harvested and sold the crop from plants containing the gene and plant cell patented by Monsanto. The issue is whether this conduct amounted to “use” of Monsanto’s invention — the glyphosate-resistant gene and cell.

[56] The preliminary question is whether this conduct falls within the meaning of “use” or “*exploiter*”. We earlier concluded that these words, taken together, connote utilization with a view to production or advantage. Saving and planting seed, then harvesting and selling the resultant plants containing the patented cells and genes appears, on a common sense view, to constitute “utilization” of

the patented material for production and advantage, within the meaning of s. 42.

[57] We turn next to whether the other considerations relevant to “use” support this preliminary conclusion.

[58] In this regard, the first and fundamental question is whether Monsanto was deprived in whole or in part, directly or indirectly, of the full enjoyment of the monopoly that the patent confers. And the answer is “yes”.

[59] Monsanto’s patent gives it a monopoly over the patented gene and cell. The patent’s object is production of a plant which is resistant to Roundup herbicide. Monsanto’s monopoly enabled it to charge a licensing fee of \$15 per acre to farmers wishing to grow canola plants with the patented genes and cells. The appellants cultivated 1030 acres of plants with these patented properties without paying Monsanto for the right to do so. By cultivating a plant containing the patented gene and composed of the patented cells without licence, the appellants thus deprived Monsanto of the full enjoyment of its monopoly.

[60] The complementary question is whether the appellants employed or possessed the patented invention in the context of their commercial or business interests. The initial answer must again be “yes”.

[61] One of the appellants’ businesses was growing canola. It used seeds containing the patented qualities in that business. Subject to the appellants’ argument discussed below that they did not use the patented invention itself (whether because they used only the plant or because they did not spray with Roundup), the appellants’ involvement with the disputed canola is clearly commercial in nature.

[62] The answers to the two questions of principle that lie at the heart of “use” under the *Patent Act* both thus suggest that the trial judge and the Court of Appeal were correct in finding that the appellants “used” the protected invention and hence infringed Monsanto’s patent. It is helpful as well, however, to consider the insights gained from the case law discussed above and their impact on arguments raised against this conclusion.

[63] First, it is suggested that because Monsanto’s claims are for genes and cells rather than for plants, it follows that infringement by use will only occur where a defendant uses the genes or cells in their isolated, laboratory form. This argument appears not to have been advanced in any detail at trial or on appeal, but is the position taken by our colleague, Arbour J.

[64] It is uncontested that Monsanto’s patented claim is only for the gene and cell that it developed. This, however, is the beginning and not the end of the inquiry. The more difficult question — and the nub of this case — is whether, by cultivating plants *containing the cell and gene*, the appellants used the patented components of those plants. The position taken by Arbour J. assumes that this inquiry is redundant and that the only way a patent may be infringed is to use the patented invention in isolation.

[65] This position flies in the face of century-old patent law, which holds that where a defendant's commercial or business activity involves a thing of which a patented part is a significant or important component, infringement is established. It is no defence to say that the thing actually used was not patented, but only one of its components.

[66] Professor Vaver, *supra*, observes that this is an "expansive doctrine". This is so because otherwise the inventor would be deprived of the full enjoyment of the monopoly that the law of patent confers on him or her. It is rare that patented components or processes are used in isolation; without this principle, an infringer could use the invention to his advantage, and take shelter in the excuse that he or she was not using the invention in isolation.

[67] Provided the patented invention is a significant aspect of the defendant's activity, the defendant will be held to have "used" the invention and violated the patent. If Mr. Schmeiser's activities with Roundup Ready Canola plants amounted to use interfering with Monsanto's full enjoyment of their monopoly on the gene and cell, those activities infringed the patent. Infringement does not require use of the gene or cell in isolation.

[68] Second, Mr. Schmeiser argued at trial that he should not be held to have "used" Monsanto's invention because he never took commercial advantage of the special utility that invention offered — resistance to Roundup herbicide. He testified that he never used Roundup herbicide as an aid to cultivation. (That he used it in 1996 in his initial gathering of the Roundup Ready seed is clear.)

[69] The trial judge dismissed this argument. He pointed out, at para. 122, that it "is the taking of the essence of the invention . . . that constitutes infringement", and that by growing and selling the Roundup Ready crop Mr. Schmeiser took that invention. Consequently, in the judge's view, "whether or not that crop was sprayed with Roundup . . . [was] not important" (para. 123).

[70] Perhaps the appellants' failure to spray with Roundup herbicide is a way of attempting to rebut the presumption of use that flows from possession. However, the appellants have failed to rebut the presumption.

[71] Their argument fails to account for the stand-by or insurance utility of the properties of the patented genes and cells. Whether or not a farmer sprays with Roundup herbicide, cultivating canola containing the patented genes and cells provides stand-by utility. The farmer benefits from that advantage from the outset: if there is reason to spray in the future, the farmer may proceed to do so.

[72] Although not directly at issue in this case, cultivating Roundup Ready Canola also presents future revenue opportunities to "brown-bag" the product to other farmers unwilling to pay the licence fee, thus depriving Monsanto of the full enjoyment of their monopoly.

[73] Further, the appellants did not provide sufficient evidence to rebut the presumption of use. It may well be that defendant farmers could rebut the presumption by showing that they never intended to cultivate plants containing

the patented genes and cells. They might perhaps prove that the continued presence of the patented gene on their land was accidental and unwelcome, for example, by showing that they acted quickly to arrange for its removal, and that its concentration was consistent with that to be expected from unsolicited “blow-by” canola. Knowledge of infringement is never a necessary component of infringement. However, a defendant’s conduct on becoming aware of the presence of the patented invention may assist in rebutting the presumption of use arising from possession.

[74] However, the appellants in this case actively cultivated canola containing the patented invention as part of their business operations. Mr. Schmeiser complained that the original plants came onto his land without his intervention. However, he did not at all explain why he sprayed Roundup to isolate the Roundup Ready plants he found on his land; why he then harvested the plants and segregated the seeds, saved them, and kept them for seed; why he next planted them; and why, through this husbandry, he ended up with 1030 acres of Roundup Ready Canola which would otherwise have cost him \$15,000. In these circumstances, the presumption of use flowing from possession stands unrebutted.

[75] Third, as in their submissions on validity, the appellants seek to rely on the decision of the majority of this Court in *Harvard Mouse*. They contend that the patent should be given a narrow scope for infringement purposes, since the plants reproduce through the laws of nature rather than through human intervention. Thus, they argue, propagation of Roundup Ready Canola without a licence cannot be a “use” by them because plants are living things that grow by themselves.

[76] This is also the perspective adopted by Arbour J. In support of the proposition that infringement of gene claims occurs only in a laboratory setting, she cites *Kirin Amgen Inc. v. Hoechst Marion Roussel Ltd.*, [2002] E.W.J. No. 3792 (Eng. C.A.). That case dealt with a protein useful in the diagnosis and treatment of blood disorders. The English court construed the claims to exclude the naturally occurring form of the DNA sequence in a human cell. However, this was done to accord with the provisions of a regulatory scheme that has no parallel in Canada: Article 5 of the European Parliament’s Directive 98/44/EC, which regulates patentability of biotechnological inventions. It states that the discovery of elements of the human body, including genes, is not patentable, although such elements are patentable when isolated or otherwise produced through technical means. The legislature has not enacted a comparable statutory scheme in Canada to narrow the scope of patent construction. Thus, *Kirin Amgen* is not applicable to the case before this Court.

[77] The appellants’ argument also ignores the role human beings play in agricultural propagation. Farming is a commercial enterprise in which farmers sow and cultivate the plants which prove most efficient and profitable. Plant science has been with us since long before Mendel. Human beings since time immemorial have striven to produce more efficient plants. Huge investments of energy and

money have been poured into the quest for better seeds and better plants. One way in which that investment is protected is through the *Patent Act* giving investors a monopoly when they create a novel and useful invention in the realm of plant science, such as genetically modified genes and cells.

[78] Finally, many inventions make use of natural processes in order to work. For example, many valid patents have referred to various yeasts, which would have no practical utility at all without “natural forces”. See *Abitibi Co., Re* (1982), 62 C.P.R. (2d) 81 (Can. Pat. App. Bd. & Pat. Commr.), in which the inventive step consisted of acclimatizing a known species of yeast from domestic sewage to a new environment, where it would then through its natural operation act to purify waste from pulp plants.

[79] The issue is not the perhaps adventitious arrival of Roundup Ready on Mr. Schmeiser’s land in 1998. What is at stake in this case is *sowing* and *cultivation*, which necessarily involves deliberate and careful activity on the part of the farmer. The appellants suggest that when a farmer such as Mr. Schmeiser actively cultivates a crop with particular properties through activities such as testing, isolating, treating, and planting the desired seed and tending the crops until harvest, the result is a crop which has merely “grown itself”. Such a suggestion denies the realities of modern agriculture.

[80] Inventions in the field of agriculture may give rise to concerns not raised in other fields — moral concerns about whether it is right to manipulate genes in order to obtain better weed control or higher yields. It is open to Parliament to consider these concerns and amend the Patent Act should it find them persuasive.

[81] Our task, however, is to interpret and apply the *Patent Act* as it stands, in accordance with settled principles. Under the present Act, an invention in the domain of agriculture is as deserving of protection as an invention in the domain of mechanical science. Where Parliament has not seen fit to distinguish between inventions concerning plants and other inventions, neither should the courts.

[82] Invoking the concepts of implied licence and waiver, the appellants argue that this Court should grant an exemption from infringement to “innocent bystanders”. The simple answer to this contention is that on the facts found by the trial judge, Mr. Schmeiser was not an innocent bystander; rather, he actively cultivated Roundup Ready Canola. Had he been a mere “innocent bystander”, he could have refuted the presumption of use arising from his possession of the patented gene and cell. More broadly, to the extent this submission rests on policy arguments about the particular dangers of biotechnology inventions, these, as discussed, find no support in the *Patent Act* as it stands today. Again, if Parliament wishes to respond legislatively to biotechnology inventions concerning plants, it is free to do so. Thus far it has not chosen to do so.

[83] The appellants argue, finally, that Monsanto’s activities tread on the ancient common law property rights of farmers to keep that which comes onto their land. Just as a farmer owns the progeny of a “stray bull” which wanders onto his land, so Mr. Schmeiser argues he owns the progeny of the Roundup Ready Canola

that came onto his field. However, the issue is not property rights, but patent protection. Ownership is no defence to a breach of the *Patent Act*.

[84] We conclude that the trial judge and Court of Appeal were correct in concluding that the appellants “used” Monsanto’s patented gene and cell and hence infringed the *Patent Act*.

[...]

IV. Conclusion

[85] We would allow the appeal in part, setting aside the award for account of profit. In all other respects we would confirm the order of the trial judge. In view of this mixed result, we would order that each party bear its own costs throughout.