

Percy Schmeiser and Schmeiser Enterprises Ltd. (*Appellants*) (*Defendants*)

v.

Monsanto Canada Inc. and Monsanto Company (*Respondents*) (*Plaintiffs*)

Indexed as: Monsanto Canada Inc. v. Schmeiser (C.A.)

Court of Appeal, Isaac, Noël and Sharlow JJ.A.-- Saskatoon, May 15, 16; Ottawa, September 4, 2002.

Patents -- Infringement -- Respondents owner, licensee of patent "Glyphosate-Resistant Plants" -- Trial Judge finding patent infringed -- Grounds of appeal relating to infringement, remedies -- Infringement function of scope of statutory monopoly -- Principles applicable to construction of patent claims reviewed -- Trial Judge correctly applying those principles -- Neither misapprehending evidence nor considering inadmissible evidence.

Agriculture -- Appellants allegedly infringing Monsanto's Canadian patent by planting crop of glyphosate-resistant canola having patented genetic insert -- Canola seed containing Monsanto gene produced in Canada since 1996 under licence from Monsanto, marketed to farmers under trade-name "Round Ready Canola" -- Monsanto not waiving right to assert patent rights against appellant by allowing glyphosate-resistant canola to be released into environment -- Cultivation of crop of canola grown from seeds of glyphosate-resistant canola plants infringing patent.

Damages -- Compensatory -- Under Patent Act, s. 55(1), person infringing patent liable for all damages sustained by patent holder by reason of infringement -- Injunction preventing use of seeds appellants "knows to or ought to know" contain patented genes not overly broad -- Award of damages not excessive -- Costs considered in accounting of profits those directly associated with infringing activity -- Award of profits as remedy for patent infringement equitable remedy -- Trial Judge making no error in reducing award to reflect reasonable allowance for farmer's labour.

This was an appeal and cross-appeal of a Trial Division decision finding that certain claims of Monsanto's Canadian patent had been infringed and granting Monsanto an injunction, an order for delivery up, damages, pre- and post-judgment interest and costs. Monsanto Company and Monsanto Canada Inc. are the owner and licensee respectively of a patent for the invention of a genetic insert which, when introduced into the DNA of canola cells by a transformation vector, produces a variety of canola with a high level of resistance to glyphosate. Most plants sprayed with a glyphosate-based herbicide do not survive. However, a canola plant grown from seed containing the modified gene will survive if sprayed with a glyphosate-based herbicide. The modified gene (the "Monsanto gene"), is the subject of the Monsanto patent. Since 1996, canola seed containing the Monsanto gene has been produced in Canada under licence from Monsanto and marketed to farmers under the trade-name "Roundup Ready Canola". The latter reflects its resistance to a herbicide sold under the trade-name "Roundup", a glyphosate-based herbicide. A farmer who wishes to grow Roundup Ready Canola must enter into a licensing agreement called a Technology Use Agreement (TUA) and must pay a licensing fee for each acre planted with Roundup Ready Canola. Mr. Schmeiser, one of the appellants, has grown canola since the 1950s but has never purchased Roundup Ready Canola and has never signed a TUA relating to Roundup Ready Canola. In 1996 a neighbour grew Roundup Ready Canola on a field diagonally adjacent to Schmeiser's field. In 1997, Mr. Schmeiser noticed that a large number of canola plants from seeds saved from the field survived his normal spraying with Roundup for weed control along road allowances. He tested a section of the field by spraying it with Roundup, and 60% of the plants survived. Seed from that crop was used to plant all of his fields in 1998. Tests revealed the presence of the Monsanto patented gene in the plants that survived the spraying with Roundup. The Trial Judge found that, on the balance of probabilities, the appellants had infringed a number of the claims under the respondents' patent by planting, in 1998, without leave or licence, canola fields with seed saved from the 1997 crop which was known, or ought to have been known by the appellants to be Roundup tolerant and, when tested, was found to contain the gene and cells claimed under said patent. Four issues were raised on appeal: (1) was the patent infringed if Mr. Schmeiser did not use Roundup in the 1998 crop? (2) did it matter how the Monsanto gene came to be in the 1998 Schmeiser crop? (3) did the Trial Judge misapprehend the evidence or consider inadmissible evidence? (4) did the Trial Judge err in the relief granted?

Held, the appeal and the cross-appeal should be dismissed.

(1) It was argued that Mr. Schmeiser could not be held to have infringed Monsanto's patent rights by growing a canola crop that is resistant to glyphosate unless he also took advantage of its glyphosate resistant quality by spraying Roundup to control weeds within the crop. Section 42 of the *Patent Act* gives the holder of a patent the right to exclude others, for the term of the patent, from making, constructing or using the invention, or selling it to others to be used. This is a monopoly that Parliament gives an inventor for disclosing the invention to the public. To determine whether a certain act amounts to infringement, the scope of the statutory monopoly must be determined by construing the claims of the patent. The construction of a patent claim is a question of law. A patent claim must be given a purposive construction rather than a purely literal one derived from applying to it a meticulous verbal analysis. A patent claim construction should be reasonable and fair to both the patent holder and the public, which is another expression of the purposive approach to the construction of patent claims, emphasizing the statutory bargain represented by the grant of a patent. In construing the claims of a patent, recourse to the disclosure portion of the specification is permissible to assist in understanding the terms used in the claims, but unnecessary where the words are plain and unambiguous, and improper to vary the scope or ambit of the claims. The only characteristic added to a plant by the presence of the Monsanto gene is resistance to glyphosate, and the desire for glyphosate-resistance was what motivated the work that led to the invention. However, it does not follow that the use of Roundup is essential to a finding of infringement. The argument made for Mr. Schmeiser on this point was flawed in two respects. First, it incorrectly relied on the disclosure in the patent to import a limitation that is not found in the words of the claims themselves. Second, it proposed a construction of the patent claim that was defined or limited by the alleged infringement. The Trial Judge correctly applied the principles applicable to the construction of patent claims. Having found no ambiguity in the claims that would justify recourse to the disclosure, he concluded that the essence of each claim was the presence of the Monsanto gene. His construction was correct.

(2) It was argued that, in the absence of any evidence that Mr. Schmeiser caused the glyphosate-resistant canola plants to grow on or near his property in 1997, the resulting 1998 crop should not be burdened with a patent claim. Alternatively, Monsanto should be held to have waived or surrendered its patent rights when it permitted glyphosate-resistant canola to be released into the environment. These arguments were dealt with under three headings. First, concerning the conflict of rights, there is no authority for the proposition that ownership of a plant must necessarily supersede the rights of the holder of a patent for a gene found in the plant. On the contrary, there are a number of examples in which the rights of ownership of property were compromised to the extent required to protect the patent holder's statutory monopoly. Generally, the existence of such a conflict of rights is not relevant to the determination of infringement, but only when fashioning the remedy if infringement is found. The second set of arguments related to the innocent infringer. According to counsel for Mr. Schmeiser, it would be unfair to grant Monsanto a remedy for infringement where volunteer Roundup Ready Canola grows in a farmer's field but its resistance to glyphosate remains unknown. It has often been said that intention is not material to a finding of infringement. In most cases of patent infringement, to allow a defence of ignorance or lack of intention to infringe would destroy the efficacy of the patent, because the actual content of any particular patent is known to very few people. In this case, Mr. Schmeiser cultivated glyphosate-resistant canola plants. The Trial Judge found as a fact that Mr. Schmeiser knew or should have known that those plants were glyphosate-resistant when he saved their seeds in 1997 and planted them the following year. It was the cultivation, harvest and sale of the 1998 crop in those circumstances that made Mr. Schmeiser vulnerable to Monsanto's infringement claim. Finally, counsel for Mr. Schmeiser invoked the effect of unconfined release. They argued that Monsanto, by permitting farmers to plant Roundup Ready Canola without undertaking steps to limit its spread by means of the movement of pollen and through accidental spillage, waived any exclusive rights it may have had. The Trial Judge correctly rejected that argument. There was no waiver by Monsanto of its patent rights. There was even less justification for concluding that Monsanto had waived the right to assert its patent rights against Mr. Schmeiser who was found to be cultivating a crop of canola that he knew or ought to have known was grown from seeds of glyphosate-resistant canola plants.

(3) The Trial Judge erred when he said that there was no evidence that seed was saved in 1996 to be used as seed for his 1997 crop. However, this error was inconsequential because the source of the seed for the 1997 crop was irrelevant. An appellate court cannot interfere with the findings of fact made by a trial judge unless there is a palpable and overriding error that affected the assessment of the facts. There was no such error underlying the Trial Judge's factual findings as to the proportion of glyphosate-resistant canola on the Schmeiser fields. The Trial Judge correctly concluded that Monsanto had not breached the August 12, 1998 court order by taking crop samples from Mr. Schmeiser's fields for testing. Mr. Schmeiser admitted that he had been advised of the sampling before it was done, and the evidence disclosed no reason to believe that

he could not have accompanied the Monsanto representatives if he had wished to do so. Moreover, the Trial Judge did not err in admitting the testing evidence from the roadside samples or the samples from the Humboldt Flour Mill obtained without Mr. Schmeiser's consent.

(4) Under subsection 55(1) of the *Patent Act*, a person who infringes a patent is liable for all damages sustained by the patent holder by reason of the infringement. The Court may also, under subsection 57(1), grant other remedies, including an injunction and, in lieu of damages, an accounting of the profits from the infringement. The Trial Judge quantified the profit from the sale of the 1998 crop at \$19,832 and granted Monsanto an injunction. This injunction was not overly broad since it would not preclude Mr. Schmeiser from saving canola seeds unless he knew or ought to know because of the use of Roundup or some means of chemical testing that the seeds were glyphosate resistant. Monsanto was entitled to some assurance that Mr. Schmeiser would not repeat the actions that have been established to be an infringement of the Monsanto patent. The injunction granted by the Trial Judge gave that assurance. The Trial Judge was correct in saying that it is the profit from the sale of the infringing crop that Monsanto may claim, not the difference between that profit and the profit from the sale of an alternative crop that was not grown. In an accounting of profits for patent infringement, the patent holder has the onus of proving the amount of the gross revenue made from the acts of infringement. The infringer has the onus of proving the costs incurred to obtain the profits. Generally, the only costs to be taken into account are those directly associated with the infringing activity. The award of profits as a remedy for patent infringement is an equitable remedy. If the application of accounting principles in a mechanical fashion results in a quantum that does not reflect the economic profit from the infringement, it is open to the Trial Judge to adjust the quantum provided he does so on a principled basis. The Trial Judge did not err in principle in reducing the award to reflect a reasonable amount as an allowance for Mr. Schmeiser's labour. He made no error in the quantification of the accounting of profits that warranted the intervention of the Court.

statutes and regulations judicially

considered

Canadian Charter of Rights and Freedoms, being Part I of the *Constitution Act, 1982*, Schedule B, *Canada Act 1982*, 1982, c. 11 (U.K.) [R.S.C., 1985, Appendix II, No. 44], s. 24.

Copyright Act, R.S.C., 1985, c. C-42, s. 38(1) (as am. by S.C. 1997, c. 24, s. 20).

Federal Court Act, R.S.C., 1985, c. F-7, ss. 20(2) (as am. by S.C. 1990, c. 37, s. 34), 27(1)(a).

Patent Act, R.S.C., 1985, c. P-4, ss. 27 (as am. by S.C. 1993, c. 15, s. 31), 42 (as am. by R.S.C., 1985 (3rd Supp.), c. 33, s. 16), 54(1),(2), 55(1) (as am. by S.C. 1993, c. 15, s. 48), 57(1)(a),(b),(2).

cases judicially considered

applied:

Whirlpool Corp. v. Camco Inc., [2000] 2 S.C.R. 1067; (2000), 194 D.L.R. (4th) 193; 9 C.P.R. (4th) 129; 262 N.R. 88; *Catnic Components Limited and Another v. Hill & Smith Limited*, [1982] R.P.C. 183 (H.L.); *Consolboard Inc. v. MacMillan Bloedel (Sask.)*, [1981] 1 S.C.R. 504; (1981), 122 D.L.R. (3d) 203; 56 C.P.R. (2d) 145; 35 N.R. 390; *Reading & Bates Construction Co. v. Baker Energy Resources Corp.*, [1995] 1 F.C. 483; (1994), 58 C.P.R. (3d) 359; 175 N.R. 225 (C.A.).

distinguished:

Reymes-Cole v. Elite Hosiery Co. Ltd., [1965] R.P.C. 102 (C.A.).

considered:

Pope Appliance Corporation v. Spanish River Pulp and Paper Mills, [1929] A.C. 269 (P.C.); *Lishman v. Eron Roche Inc.* (1996), 66 C.P.R. (3d) 72; 111 F.T.R. 44 (F.C.T.D.); aff'd (1996), 71 C.P.R. (3d) 146 (F.C.A.); *Diversified Products Corp. v. Tye-Sil Corp.* (1988), 21 C.I.P.R. 70; 25 C.P.R. (3d) 347 (F.C.T.D.); *Théberge*

v. Galerie d'Art du Petit Champlain inc. (2002), 210 D.L.R. (4th) 385; 17 C.P.R. (4th) 161; 23 B.L.R. (3d) 1; 285 N.R. 267 (S.C.C.).

referred to:

Forget v. Specialty Tools of Canada Inc., [1996] 1 W.W.R. 12; (1995), 11 B.C.L.R. (3d) 183; 62 B.C.A.C. 211; 62 C.P.R. (3d) 537 (C.A.); *Steers v. Rogers*, [1893] A.C. 232 (H.L.); *Dableh v. Ontario Hydro*, [1996] 3 F.C. 751; (1996), 68 C.P.R. (3d) 129; 199 N.R. 57 (C.A.); leave to appeal to S.C.C. denied [1997] 1 S.C.R. x; *Stiga Aktiebolag and Noma Outdoor Products Inc. v. S.L.M. Canada Inc.* (1990), 39 F.T.R. 13 (F.C.T.D.); *Computalog Ltd. v. Comtech Logging Ltd.* (1992), 44 C.P.R. (3d) 77; 142 N.R. 216 (F.C.A.); *Stead v. Anderson* (1847), 2 Web. P.C. 151; 72 R.R. 730; *Wright v. Hitchcock* (1870), L.R. 5 Ex. 37; *Young v. Rosenthal* (1884), 1 R.P.C. 29 (Q.B.); *Skelding v. Daly et al.* (1941), 57 B.C.R. 121; [1942] 1 D.L.R. 355; [1942] 1 W.W.R. 489; 1 C.P.R. 266 (C.A.); *Housen v. Nikolaisen* (2002), 211 D.L.R. (4th) 577; [2002] 7 W.W.R. 1; 219 Sask. R. 1; 10 C.C.L.T. (3d) 157; 286 N.R. 1 (S.C.C.); *RWDSU v. Dolphin Delivery Ltd.*, [1986] 2 S.C.R. 573; (1986), 33 D.L.R. (4th) 174; [1987] 1 W.W.R. 577; 9 B.C.L.R. (2d) 273; 38 C.C.L.T. 184; 87 CLLC 14,002; 25 C.R.R. 321; [1987] D.L.Q. 69; *R. v. Collins*, [1987] 1 S.C.R. 265; (1987), 38 D.L.R. (4th) 508; [1987] 3 W.W.R. 699; 13 B.C.L.R. (2d) 1; 33 C.C.C. (3d) 1; 56 C.R. (3d) 193; 28 C.R.R. 122; 74 N.R. 276.

authors cited

Fox, Harold G. *The Canadian Law and Practice Relating to Letters Patent for Inventions*, 4th ed. Toronto: Carswell, 1969.

APPEAL and CROSS-APPEAL from a Trial Division decision ((2001), 12 C.P.R. (4th) 204; 202 F.T.R. 78) finding that certain claims of Monsanto's patent had been infringed and granting Monsanto an injunction, an order for delivery up, an award of damages, pre- and post-judgment interest and costs. Appeal and cross-appeal dismissed.

appearances:

Terry J. Zakreski and *Robert Stack* for appellants (defendants).

Roger T. Hughes, Q.C., Arthur B. Renaud and *L. E. Trent Horne* for respondents (plaintiffs).

solicitors of record:

Priel, Stevenson, Hood & Thornton, Saskatoon, for appellants (defendants).

Sim, Hughes, Ashton & McKay LLP, Toronto, for respondents (plaintiffs).

The following are the reasons for judgment rendered in English by

[1]Sharlow J.A.: This is an appeal and cross-appeal of the decision of Mr. Justice MacKay of the Trial Division rendered on March 29, 2001, reported as *Monsanto Canada Inc. v. Schmeiser* (2001), 12 C.P.R. (4th) 204.

[2]At trial, Monsanto Canada Inc. and Monsanto Company (collectively, Monsanto) alleged that Schmeiser Enterprises Ltd. and Percy Schmeiser had infringed Monsanto's Canadian Patent No. 1313830 in 1998 by planting for harvest a crop of glyphosate-resistant canola having a gene or cell that is the subject of the patent. The Trial Judge found that certain claims of the patent had been infringed and granted Monsanto an injunction, an order for delivery up, an award of damages (only against Schmeiser Enterprises Ltd.) in the amount of \$19,832, pre-judgment interest, post-judgment interest, and costs.

[3]Schmeiser Enterprises Ltd. and Mr. Schmeiser appealed the finding of infringement, the award of damages and the granting of the injunction. Monsanto cross-appealed on a number of grounds, but at the hearing relied only on the argument that the award of damages was too low.

Statutory framework

[4]The provisions of the *Patent Act*, R.S.C., 1985, c. P-4, that are most relevant to this appeal are as follows [ss. 42 (as am. by R.S.C., 1985 (3rd Supp.), c. 33, s. 16), 54(1), (2), 55(1) (as am. by S.C. 1993, c. 15, s. 48), 57(1)(a), (b), (2)]:

42. Every patent granted under this Act shall contain the title or name of the invention, with a reference to the specification, and shall, subject to this Act, grant to the patentee and the patentee's legal representatives for the term of the patent, from the granting of the patent, the exclusive right, privilege and liberty of making, constructing and using the invention and selling it to others to be used, subject to adjudication in respect thereof before any court of competent jurisdiction.

...

54. (1) An action for the infringement of a patent may be brought in that court of record that, in the province in which the infringement is said to have occurred, has jurisdiction, pecuniarily, to the amount of the damages claimed and that, with relation to the other courts of the province, holds its sittings nearest to the place of residence or of business of the defendant, and that court shall decide the case and determine the costs, and assumption of jurisdiction by the court is of itself sufficient proof of jurisdiction.

(2) Nothing in this section impairs the jurisdiction of the Federal Court under section 20 of the *Federal Court Act* or otherwise.

55. (1) A person who infringes a patent is liable to the patentee and to all persons claiming under the patentee for all damage sustained by the patentee or by any such person, after the grant of the patent, by reason of the infringement.

...

57. (1) In any action for infringement of a patent, the court, or any judge thereof, may, on the application of the plaintiff or defendant, make such order as the court or judge sees fit,

(a) restraining or enjoining the opposite party from further use, manufacture or sale of the subject-matter of the patent, and for his punishment in the event of disobedience of that order, or

(b) for and respecting inspection or account,

and generally, respecting the proceedings in the action.

(2) An appeal lies from any order made under subsection (1) in the same circumstances and to the same court as from other judgments or orders of the court in which the order is made.

[5]The jurisdiction of the Federal Court in this matter is based on the following provisions of the *Federal Court Act*, R.S.C., 1985, c. F-7 [ss. 20(2) (as am. by S.C. 1990, c. 37, s. 34), 27(1)]:

20. . . .

(2) The Trial Division has concurrent jurisdiction in all cases . . . in which a remedy is sought under the authority of any Act of Parliament or at law or in equity respecting any patent of invention

...

27. (1) An appeal lies to the Federal Court of Appeal from any

(a) final judgment,

...
of the Trial Division.

Facts

[6]Canola is a valuable crop for western Canadian farmers because of the development, mainly by Canadian scientists, of high yield varieties. The utility of canola lies in its seeds, which are crushed to extract oil for human consumption. The part of the seed that remains after the extraction of the oil is used for animal feed.

[7]Monsanto Company and Monsanto Canada Inc. are the owner and licensee respectively of Canadian Patent No. 1313830, entitled "Glyphosate-Resistant Plants". The patent was issued on February 23, 1993 and will expire on February 23, 2010.

[8]The Monsanto patent discloses the invention of a genetic insert which, when introduced into the DNA of canola cells by a transformation vector, produces a variety of canola with a high level of resistance to glyphosate. Glyphosate inhibits an enzyme required to produce a particular amino acid essential for the growth and survival of a broad range of plants. Most plants sprayed with a glyphosate-based herbicide do not survive. However, a canola plant grown from seed containing the modified gene will be comprised of cells with the modified gene, and for that reason will survive if sprayed with a glyphosate-based herbicide. The modified gene, which I will refer to as the "Monsanto gene", is the subject of the Monsanto patent.

[9]Since 1996, canola seed containing the Monsanto gene has been produced in Canada under licence from Monsanto and marketed to farmers under the trade-name "Roundup Ready Canola". The trade-name reflects its resistance to a herbicide sold under the trade-name "Roundup", a glyphosate-based herbicide manufactured by Monsanto.

[10]Farmers who grow Roundup Ready Canola are said to do so because Roundup can be sprayed after the canola plants have emerged, killing all plants except the canola. This is said to avoid the need to delay seeding to accommodate early weed spraying, and to avoid the need for other special types of herbicides. It is also said to preserve moisture in the ground by eliminating the need for extensive tillage.

[11]In 1996, approximately 600 farmers in Canada planted Roundup Ready Canola on some 50,000 acres. In 2000, approximately 20,000 farmers in Canada planted it on approximately 4.5 to 5 million acres, producing nearly 40% of the canola grown in Canada.

[12]A farmer who wishes to grow Roundup Ready Canola must enter into a licensing agreement called a Technology Use Agreement (TUA), and must attend a Grower Enrollment Meeting conducted by Monsanto representatives, who describe the technology and its licensing terms. By signing the TUA, the farmer becomes entitled to purchase Roundup Ready Canola from an authorized seed agent but must promise to use the seed for planting only one crop, to sell the crop for consumption to a commercial purchaser authorized by Monsanto, and not to sell or give seed to any third party or save seed for replanting or inventory. 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]Mr. Schmeiser has been farming near Bruno in the Rural Municipality of Bayne, Saskatchewan for approximately 50 years. He has grown canola since the 1950s. Schmeiser Enterprises Ltd. is a corporation of which Mr. Schmeiser and his wife are the only shareholders and directors. Mr. Schmeiser's farming business was assigned to Schmeiser Enterprises Ltd. in 1996. For convenience, I will sometimes refer to farming activities as being those of Mr. Schmeiser, but it is to be understood that Mr. Schmeiser's farming activities are undertaken on behalf of Schmeiser Enterprises Ltd.

[15]In 1997 and 1998, the Schmeiser farm property consisted of nine fields, designated for the purposes of the trial as fields 1 through 9. A map of the area (Exhibit P-53 at trial) shows all of the Schmeiser fields and surrounding fields for a considerable distance. The map also shows the town of Bruno, located mostly on the east side of a road that runs north and south (I will call that the Bruno road).

[16]The most southerly Schmeiser field is field 9. It does not border any other Schmeiser field and is approximately 1/2 mile south of Bruno. It is adjacent to the Bruno road on the east side. Field 6 is approximately 1/2 mile north of Bruno and is adjacent to the Bruno road on the west side. Field 6 is the home quarter, and is the location of the granaries. Fields 1, 2, 3 and 4 are next to each other, north of Bruno and adjacent to the Bruno road on the east side. Of those four, field 1 is the furthest north and field 4 the furthest south. The southern boundary of field 4 is approximately 4 and 1/2 miles north of field 6. Field 5 is next to field 4, the east boundary of which is the west boundary of field 5. Fields 7 and 8 are northwest of Bruno and are next to each other approximately 2 miles west of the Bruno road. The south boundary of field 7 is the north boundary of field 8.

[17]Mr. Schmeiser explained his farming practices in some detail at trial. He testified that the crops normally grown on the Schmeiser fields are canola, wheat and peas. Mr. Schmeiser said that he routinely saves part of his canola harvest for future planting, and that the last time prior to the trial he purchased canola seed was 1993.

[18]The uncontradicted evidence of Mr. Schmeiser was that he has never purchased Roundup Ready Canola and has never signed a TUA relating to Roundup Ready Canola. Monsanto had initially alleged that Mr. Schmeiser had somehow acquired Roundup Ready Canola in 1997 but that allegation was withdrawn along with all claims of infringement with respect to Mr. Schmeiser's 1997 canola crop.

[19]Mr. Schmeiser testified that he avoids tilling potentially diseased plants back into the ground in fall, thus reducing the risk of disease infecting the next crop. He sometimes grows canola in the same field for a period of up to four years (referred to as back-to-back planting) because he believes this makes more efficient use of fertilizer applied to that field. Mr. Schmeiser believes that his farming practices have led to the development of his own strain of canola that is relatively resistant to various diseases. He said that he produces better than average canola yields for the Bruno area.

[20]Mr. Schmeiser also testified that he uses various herbicides and routinely uses Roundup to clear weeds from summerfallow fields or along road allowances adjacent to his property. He prefers to spray his fields for weeds early in the spring, before planting. Roundup is not intended to be used that way. Rather, it is intended to be sprayed after the crop has emerged, a practice referred to as "in-crop spraying". Mr. Schmeiser does not favour in-crop spraying. His view is that in-crop spraying does nothing to stop the weeds from consuming fertilizer in the ground, and entails some risk of damage to the crop from the spraying machinery. He also testified as to his belief that Roundup sprayed on a growing crop leaves a residue that kills bacteria in the soil, reducing the yield from back-to-back planting and increasing the possibility of root diseases in canola.

[21]In 1996, there were five growers in the Rural Municipality of Bayne who grew Roundup Ready Canola under license. One was Mr. Huber, who grew Roundup Ready Canola on a field north and west of, and diagonally adjacent to, Schmeiser field 6. In that year Mr. Schmeiser had a total of 370 acres of canola planted in all or part of the Schmeiser fields 1, 4, 6 and 7. In 1997, a total of 780 acres of canola were planted in all or parts of six Schmeiser fields (that is, all of them except fields 4, 7 and 9). Mr. Schmeiser testified that he believed that field 2 was planted with canola seed saved in 1996 from fields 1 and 6.

[22]In late June or early July of 1997, Mr. Schmeiser and his employee Carlyle Moritz hand sprayed Roundup around power poles and in the ditches along the Bruno road where it bordered fields 1, 2, 3 and 4. This was part of his normal weed control practice. Several days after the spraying, he noticed that a large number of canola plants had survived the spraying. To determine why the canola plants had survived the Roundup spraying, Mr. Schmeiser conducted a test in field 2. Using a machine sprayer set to spray 40 feet, he sprayed Roundup on a section of field 2 in a strip along the road. He made two passes, the first weaving between and around the power poles and the second adjacent to the first pass, parallel to the power poles. He testified that by this means he sprayed a good three acres of field 2. According to Mr. Schmeiser's evidence, after some days, approximately 60% of the canola plants sprayed were still alive, growing in clumps that were thickest near the road and thinner as one moved into the field.

[23]At harvest time in 1997, Mr. Schmeiser, who was then recovering from a leg injury, instructed Mr. Moritz to swath and combine field 2. Mr. Moritz did so, harvesting the canola in the field as well as the surviving canola along the roadside. The harvested seed was put into the box of a 1962 Ford pickup truck. The box was covered with a tarp and the truck with its tarped load of canola seed was stored in one of Mr. Schmeiser's buildings over the winter.

[24]Mr. Schmeiser testified that in the spring of 1998 the seed from the Ford truck was transferred to another truck and taken to the Humboldt Flour Mill for treatment, a normal process to rid the seeds of disease before planting. The treated seed, mixed with untreated seed from his granary (bin-run seed), was planted in all or part of each of his nine fields, for a total of 1,030 acres.

[25]The 1998 Schmeiser canola crop was sold for \$142,625. All canola seed saved from the 1998 crop was destroyed as a result of legal advice Mr. Schmeiser received after the commencement of these proceedings.

[26]Experts for the parties conducted a number of tests on the canola plants growing beside field 2 in 1997, some seeds from those plants, and the canola plants growing in all the Schmeiser fields in 1998. These included "grow-out tests" in which canola seeds from the subject fields were planted and the resulting plants were sprayed with Roundup. The result of the tests was that the presence of the Monsanto patented gene was found in the plants that survived the spraying. The opinion of Dr. Downey, an expert called by Monsanto, was that the high rate of survival of plants that had germinated from the 1997 samples was consistent only with the presence in field 2 of canola grown from commercial Roundup resistant seed. The evidence of the various tests, as explained by the expert witnesses, led the Trial Judge to this conclusion (at paragraph 114 of his reasons):

Despite questions raised about particular aspects of the sampling and the handling of samples of the defendants' 1998 canola crop, subject to consideration of any defence raised, the balance of probabilities supports a conclusion that the growing and sale of Roundup tolerant canola by the defendants infringed the exclusive rights of the plaintiffs to use the patented gene and cell. I reach that tentative conclusion having also concluded on a balance of probabilities that the samples taken from the borders of nine fields in July 1998 and three samples taken at random from within each field in August 1998 are representative of the entire crop, bearing in mind that all of the nine fields were planted with seed that was saved in 1997 in field number 2, which seed was known to be Roundup tolerant.

[27]A number of submissions were made on behalf of Mr. Schmeiser to defend against the allegation of infringement. Some of the same issues are raised in this appeal. The Trial Judge rejected all of the suggested defences and found that the Monsanto patent had been infringed. His conclusions are summarized as follows at paragraph 2 of his reasons for judgment:

On consideration of the evidence adduced, and the submissions, oral and written, on behalf of the parties I conclude that the plaintiffs' action is allowed and some of the remedies they seek should be granted. These reasons set out the bases for my conclusions, in particular my finding that, on the balance of probabilities, the defendants infringed a number of the claims under the plaintiffs' Canadian patent number 1,313,830 by planting, in 1998, without leave or licence by the plaintiffs, canola fields with seed saved from the 1997 crop which seed was known, or ought to have been known by the defendants to be Roundup tolerant and when tested was found to contain the gene and cells claimed under the plaintiffs' patent. By selling the seed harvested in 1998 the defendants further infringed the plaintiffs' patent.

Points in issue

[28]Seventeen grounds of appeal are set out in the memorandum of fact and law submitted for Mr. Schmeiser and his corporation. At the hearing counsel for Mr. Schmeiser conveniently presented these under four categories, three relating to infringement and one relating to remedies. I will deal with each of the four categories of issues below, although not in the order in which they were presented at the hearing of the appeal. The discussion relating to the fourth category (remedies) will include a discussion of the issue raised by Monsanto on the cross-appeal.

(1) Is the patent infringed if Mr. Schmeiser did not use Roundup in the 1998 crop?

[29]The uncontradicted evidence of Mr. Schmeiser is that he did not spray Roundup on his 1998 canola crop. The Trial Judge did not say whether he believed Mr. Schmeiser on that point or not, because he concluded that spraying with Roundup was not an essential element of the alleged infringement. Counsel for Mr. Schmeiser argued that this conclusion was based on an incorrect construction of the Monsanto patent. He argued that Mr. Schmeiser cannot be held to have infringed Monsanto's patent rights by growing a canola crop that is resistant to glyphosate unless he also took advantage of its glyphosate-resistant quality by spraying Roundup to control weeds within the crop.

[30]To assess this argument, it is necessary to determine what Monsanto's patent rights are. The starting point is section 42 of the *Patent Act*, which gives the holder of a patent the right to exclude others, for the term of the patent, from making, constructing or using the invention, or selling it to others to be used: see *Forget v. Specialty Tools of Canada Inc.*, [1996] 1 W.W.R. 12 (B.C.C.A.), citing *Steers v. Rogers*, [1893] A.C. 232 (H.L.). This is a monopoly that Parliament gives an inventor for disclosing the invention to the public. The statutory bargain is described as follows by Viscount Dunedin in *Pope Appliance Corporation v. Spanish River Pulp and Paper Mills*, [1929] A.C. 269 (P.C.), at page 281:

. . . a patent represents a quid pro quo. The quid to the patentee is the monopoly; the quo is that he presents to the public the knowledge which they have not got.

[31]The same thought was expressed by Mr. Justice Binnie, writing for the Supreme Court of Canada in *Whirlpool Corp. v. Camco Inc.*, [2000] 2 S.C.R. 1067, at paragraph 42:

The content of a patent specification is regulated by s. 34 of the *Patent Act* [now s. 27 [as am. by S.C. 1993, c. 15, s. 31]]. The first part is a "disclosure" in which the patentee must describe the invention "with sufficiently complete and accurate details as will enable a workman, skilled in the art to which the invention relates, to construct or use that invention when the period of the monopoly has expired": *Consolboard Inc. v. MacMillan Bloedel (Sask.) Ltd.*, [1981] 1 S.C.R. 504, at p. 517. The disclosure is the *quid* provided by the inventor in exchange for the *quo* of a 17-year (now 20-year) monopoly on the exploitation of the invention. The monopoly is enforceable by an array of statutory and equitable remedies and it is therefore important for the public to know what is prohibited and where they may safely go while the patent is still in existence. The public notice function is performed by the claims that conclude the specification and must state "distinctly and in explicit terms the things or combinations that the applicant regards as new and in which he claims an exclusive property or privilege" (s. 34(2) [now s. 27(4) [as am. *idem*]]).

[32]Infringement is not defined in the *Patent Act*, but it has been said that infringement is any act that "interferes with the full enjoyment of the monopoly granted": *Lishman v. Eron Roche Inc.* (1996), 68 C.P.R. (3d) 72 (F.C.T.D.); affirmed by (1996), 71 C.P.R. (3d) 146 (F.C.A.). Counsel for Mr. Schmeiser argued that this definition of infringement is too broad because the words "full enjoyment" may imply that mere possession of a patented invention can be infringement. In my view, the definition of infringement stated in *Lishman* is intended to reflect the idea that what constitutes infringement in a particular case is a function of the scope of the statutory monopoly, so that any act that impairs the statutory monopoly is by definition "infringement". I do not read the *Lishman* definition as saying anything more than that.

[33]Thus, to determine whether a certain act amounts to infringement, the scope of the statutory monopoly must be determined by construing the claims of the patent. The construction of a patent claim is a question of law: *Whirlpool, supra*, at paragraph 76.

[34]It is a fundamental principle that a patent claim must be given a purposive construction. Purposive construction of a patent claim is explained as follows by Lord Diplock in *Catnic Components Limited and Another v. Hill & Smith Limited*, [1982] R.P.C. 183 (H.L.), at pages 242-243:

My Lords, a patent specification is a unilateral statement by the patentee, in words of his own choosing, addressed to those likely to have a practical interest in the subject matter of his invention (i.e. "skilled in the art"), by which he informs them what he claims to be the essential features of the new product or process for which the letters patent grant him a monopoly. It is those novel features only that he claims to be essential that constitute the so-called "pith and marrow" of the claim. A patent specification should be given a purposive construction rather than a purely literal one derived from applying to it the kind of meticulous verbal analysis in which lawyers are too often tempted by their training to indulge.

[35]In *Whirlpool, supra*, Mr. Justice Binnie endorsed the above quotation and added this (at paragraph 45):

The key to purposive construction is therefore the identification by the court, with the assistance of the skilled reader, of the particular words or phrases in the claims that describe what the inventor considered to be the "essential" elements of his invention. This is no different, I think, than the approach adopted roughly 40 years earlier by Duff C.J. in *J. K. Smit & Sons, Inc. v. McClintock*, [1940] S.C.R. 279.

[36]Shortly before *Catnic*, Mr. Justice Dickson [as he then was] had said in *Consolboard Inc. v. MacMillan Bloedel (Sask.) Ltd.*, [1981] 1 S.C.R. 504, at page 520, that a patent claim construction should be reasonable and fair to both the patent holder and the public. As I understand it, this is simply another expression of the purposive approach to the construction of patent claims, emphasizing the statutory bargain represented by the grant of a patent. I reach this conclusion because of the following comments of Mr. Justice Binnie in *Whirlpool, supra*, at paragraph 49(g):

While "purposive construction" is a label introduced into claims construction by *Catnic, supra*, the approach itself is quite consistent, in my view, with what was said by Dickson J. the previous year in *Consolboard, supra*, on the topic of claims construction, at pp. 520-21:

We must look to the whole of the disclosure and the claims to ascertain the nature of the invention and methods of its performance, (*Noranda Mines Limited v. Minerals Separation North American Corporation*, [1950] S.C.R. 36), being neither benevolent nor harsh, but rather seeking a construction which is reasonable and fair to both patentee and public. There is no occasion for being too astute or technical in the matter of objections to either title or specification for, as Duff C.J.C. said, giving the judgment of the Court in *Western Electric Company, Incorporated, and Northern Electric Company v. Baldwin International Radio of Canada*, [1934] S.C.R. 570, at p. 574, "where the language of the specification, upon a reasonable view of it, can be so read as to afford the inventor protection for that which he has actually in good faith invented, the court, as a rule, will endeavour to give effect to that construction".

Not only is "purposive construction" consistent with these well-established principles, it advances Dickson J.'s objective of an interpretation of the patent claims that "is reasonable and fair to both patentee and public".

[37]It is also well settled that in construing the claims of a patent, recourse to the disclosure portion of the specification is (1) permissible to assist in understanding the terms used in the claims, (2) unnecessary where the words are plain and unambiguous, and (3) improper to vary the scope or ambit of the claims: *Dableh v. Ontario Hydro*, [1996] 3 F.C. 751 (C.A.), at paragraph 30; leave to appeal refused, [1997] S.C.R. x.

[38]In this case, the claims of the Monsanto patent that were said to be infringed include the following (Appeal Book, at pages 304-308):

1. A chimeric plant gene which comprises
 - (a) a promoter sequence which functions in plant cells;
 - (b) a coding sequence which causes the production of RNA, encoding a chloroplast transit peptide/5-enolpyruvylshikimate-3-phosphate synthase (EPSPS) fusion polypeptide, which chloroplast transit peptide permits the fusion polypeptide to be imported into a chloroplast of a plant cell; and
 - (c) a 3' non-translated region which encodes a polyadenylation signal which functions in plant cells to cause the addition of polyadenylate nucleotides to the 3' end of the RNA;

the promoter being heterologous with respect to the coding sequence and adapted to cause sufficient expression of the fusion polypeptide to enhance the glyphosate resistance of a plant cell transformed with the gene.

2. A chimeric gene of Claim 1 in which the promoter sequence is a plant virus promoter sequence.

...

5. A chimeric gene of Claim 1 in which the coding sequence encodes a mutant 5-enolpyruvylshikimate-3-

phosphate synthase (EPSPS).

6. A chimeric gene of Claim 1 in which the EPSPS coding sequence encodes an EPSPS from an organism selected from the group consisting of bacteria, fungi and plants.
7. A chimeric gene of Claim 1 in which the chloroplast transit peptide is from a plant EPSPS gene.

...

22. A glyphosate-resistant plant cell comprising a chimeric plant gene of Claim 1.
23. A glyphosate-resistant plant cell of Claim 22 in which the promoter sequence is a plant virus promoter sequence.

...

26. A glyphosate-resistant plant cell of Claim 22 in which the coding sequence encodes a mutant 5-enolpyruvylshikimate-3-phosphate synthase.
27. A glyphosate-resistant plant cell of Claim 22 in which the coding sequence encodes an EPSPS from an organism selected from the group consisting of bacteria, fungi and plants.
28. A glyphosate-resistant plant cell of Claim 22 in which the chloroplast transit peptide is from a plant EPSPS gene.

...

45. A glyphosate-resistant oil seed rape cell of Claim 22.

[39]A chimeric plant gene is one that has been molecularly engineered using multiple sources that may include plant, viral and bacterial DNA.

[40]The Trial Judge construed the claims as follows (at paragraph 26 of his reasons):

Claims 1, 2, 5, 6 and 7 each claim a chimeric plant gene with characteristics as specified in the claim. Claims 22, 23, 26, 27, and 28, each concern a glyphosate-resistant plant cell comprising a chimeric plant gene of claim 1, with other specified characteristics of the cell specified for claims other than claim 22. Finally, claim 45 claims simply a glyphosate-resistant oil seed rape cell of claim 22. The presence of the chimeric plant gene described in claim 1 is essential for all of the claims. The claims relate to genes and cells which are glyphosate-resistant. Obviously the invention has utility in resistance to glyphosate, but none of the claims specifies this utility nor does it require the use of glyphosate, such as Roundup herbicide, for the invention claimed.

[41]Counsel for Mr. Schmeiser argued that if merely planting a crop of Roundup Ready Canola is infringement, then the patent claims have been too broadly construed because the patented invention, the Monsanto gene, has no function if it is present in a plant that has not actually survived an application of Roundup. Echoing Mr. Justice Dickson in *Consolboard*, it is argued that the construction propounded by Monsanto and accepted by the Trial Judge is unfair to the public, as represented by Mr. Schmeiser, because if it stands Mr. Schmeiser could find himself liable for infringement simply by following his normal farming practices.

[42]It is true that the only characteristic added to a plant by the presence of the Monsanto gene is resistance to glyphosate, and that the desire for glyphosate resistance was what motivated the work that led to the invention. The latter point is clear from the following statements in the disclosure in the patent (Appeal Book, at page 238):

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.

...
This invention involves a cloning or expression vector comprising a gene which encodes 5-enolpyruvylshikimate- 3-phosphate synthase (EPSPS) polypeptide which, when expressed in a plant cell contains a chloroplast transit peptide which allows the polypeptide, or an enzymatically active portion thereof, to be transported from the cytoplasm of the plant cell into a chloroplast in the plant cell, and confers a substantial degree of glyphosate resistance upon the plant cell and plants regenerated therefrom.

[43]However, it does not follow that the use of Roundup is essential to a finding of infringement. It seems to me that the argument made for Mr. Schmeiser on this point is flawed in two respects. First, it incorrectly relies on the disclosure in the patent to import a limitation that is not found in the words of the claims themselves (see *Dableh, supra*). Second, it proposes a construction of the patent claim that is defined or limited by the alleged infringement. Mr. Justice Binnie said in *Whirlpool, supra*, at paragraph 49(a), that such a result oriented approach to patent construction is incorrect.

[44]Counsel for Mr. Schmeiser cited *Reymes-Cole v. Elite Hosiery Co. Ltd.*, [1965] R.P.C. 102 (C.A.) in support of his argument. That case involved a number of patents for the manufacture of nylon stockings. One of the patents was for a stocking with a certain tuck made in the toe seam. The evidence was that such a tuck was often found in manufactured nylon stockings but usually the tuck was present accidentally, because of momentary inattention by the sewing machine operator, and when discovered it was considered a flaw. The patent holder found the tuck to have a certain advantage, and obtained a patent for stockings with the tuck made deliberately. Lord Diplock, speaking for the majority, said this at pages 117 to 118:

... If this patent were valid, as the judge held, then I should have been inclined to hold that the plaintiff could establish infringement even though the tucks in the infringing stockings were accidental. But with great respect to the learned judge, I do not think that he was right in holding, as he did, that this patent was valid.

It would seem an odd result of patent law if the plaintiff, by patenting as he has purported to do in the product claims of the specification stockings containing small tucks of this kind, could prevent manufacturers from continuing a process of manufacture which they had previously used in which such tucks were produced accidentally, and from marketing the products of such process which contained an unintentional tuck. In my view, the law does not entail this consequence. The plaintiff may have been the first to recognise that a physical characteristic which was already well-known, but regarded as an accidental imperfection in a stocking, was an advantage, but such recognition, without more, is not an invention, and does not involve any inventive step.

[45]I see no useful analogy between this case and *Reymes-Cole*. *Reymes-Cole* is not authority for the proposition that a patent should be narrowly construed if a broad construction could result in accidental infringement. On the contrary, Lord Diplock appeared to recognize that accidental infringement of a valid patent can occur. The point of *Reymes-Cole* is that something as common as a tuck in the toe seam of a stocking is not novel. Monsanto is not claiming a monopoly over any farming practice or technique, however common or well known.

[46]In my view, the Trial Judge correctly applied the principles applicable to the construction of patent claims. He was presented with expert evidence to assist in understanding the claims through the eyes of persons skilled in the art. Having heard that evidence, he found no ambiguity in the claims that would justify recourse to the disclosure, and concluded that the essence of each claim was the presence of the Monsanto gene. In my view, his construction is correct. It is also a complete answer to the argument of counsel for Mr. Schmeiser that the claims of the patent cannot be infringed by someone who cultivates plants containing the Monsanto gene but does not spray them with Roundup.

(2) Does it matter how the Monsanto gene came to be in the 1998 Schmeiser crop?

[47]Only the Schmeiser canola crop for 1998 was found to infringe the Monsanto patent. That crop came mainly from seed saved from the glyphosate-resistant canola found on and adjacent to the Schmeiser property in 1997. However, the Trial Judge did not reach any conclusion as to how glyphosate-resistant canola came to be there in 1997, because in his view it did not matter. He explains why it did not matter at paragraphs 119 and 120 of his reasons:

Yet the source of the Roundup resistant canola in the defendants' 1997 crop is really not significant for the resolution of the issue of infringement which relates to the 1998 crop. It is clear from Mr. Schmeiser himself that he retained seed grown in 1996 in field number 1 to be his seed for the 1997 crop. In 1997 he was aware that the crop in field number 2 showed a very high level of tolerance to Roundup herbicide and seed from that field was harvested, and retained for seed for 1998.

I find that in 1998 Mr. Schmeiser planted canola seed saved from his 1997 crop in his field number 2 which seed 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.

[48]It was submitted for Mr. Schmeiser that the Trial Judge was wrong to say that the source of the 1997 glyphosate resistant canola is irrelevant, because infringement could not have been found if Mr. Schmeiser took no steps to cause glyphosate- resistant canola plants to grow on or adjacent to his property in 1997.

[49]The argument for Mr. Schmeiser on this point is a combination of interrelated points, which I summarize as follows. The seed of the glyphosate resistant canola plants that appeared in 1997 on and adjacent to the Schmeiser property became the property of Mr. Schmeiser by operation of law. Those plants could have resulted from canola seed spilled from a passing truck or carried from neighbouring fields by wind or flood water. In the absence of any evidence that Mr. Schmeiser somehow caused those glyphosate-resistant canola plants to grow on or near his property in 1997, the resulting 1998 crop should not be burdened with a patent claim. To find otherwise is an unjustified intrusion on Mr. Schmeiser's property rights, in particular the ownership of his crops and his right to harvest whatever is growing on his land and to save the seed for cultivation in subsequent years. Alternatively, Monsanto should be held to have waived or surrendered its patent rights when it permitted glyphosate-resistant canola to be released into the environment.

[50]I will deal with these arguments under three headings, (a) conflict of rights, (b) the innocent infringer, and (c) the effect of unconfined release.

(a) Conflict of rights

[51]I am prepared to assume, without deciding, that the owner of real property has legal title to any volunteer plant found on his land, and generally has a right to save the seed from such a plant, and to plant and harvest the seed for profit in subsequent years. However, there is no authority for the proposition that ownership of a plant must necessarily supersede the rights of the holder of a patent for a gene found in the plant. On the contrary, the jurisprudence presents a number of examples in which the rights of ownership of property are compromised to the extent required to protect the patent holder's statutory monopoly. Generally, the existence of such a conflict of rights is not relevant to the determination of infringement, but only when fashioning the remedy if infringement is found.

[52]The closest analogy is found in the cases where there is a conflict between the rights of an owner of a machine and the rights of the holder of a patent for a component of the machine. Absent the consent of the patent holder to that particular use of the invention, the owner of the machine may be ordered to remove the infringing component or, if that cannot be done, to deliver the machine to the patent holder: *Stiga Aktiebolag and Noma Outdoor Products Inc. v. S.L.M. Canada Inc.* (1990), 39 F.T.R. 13 (F.C.T.D.), and *Diversified Products Corp. v. Tye-Sil Corp.* (1988), 21 C.I.P.R. 70 (F.C.T.D.). Mr. Justice Cullen explained these remedies as follows in *Diversified Products* (at page 72):

The law is quite clear that: "an order for delivery up is ancillary to the grant of an injunction, and is granted by way of protection to the patentee against the use or sale of infringing articles by the defendant who has been found guilty of infringement, and is not by way of punishment to the infringer" H. Fox, *Canada Patent Law* (4th ed. 1969), at 505. To the same effect is a comment by Blanco-White, T.A. *Patents for Inventions* 4th ed, at 429. "Delivery up will be confined to what is reasonable to safeguard the patentee against further infringement; thus where a small part of a complicated machine infringed a valid patent, only the infringing parts were ordered to be delivered up." There is of course the necessity to protect the patentee from any use after the expiry of the patent from a machine made during its currency.

Secondly, ownership does not flow to the patentee, Fox, at 505: "In this sense the defendant is not deprived of his property in the articles so long as they can be rendered non-infringing" [Emphasis added.]

[53] Counsel for Mr. Schmeiser cited *Théberge v. Galerie d'Art du Petit Champlain inc.* (2002), 210 D.L.R. (4th) 385 (S.C.C.), as an example of a situation where intellectual property rights were not permitted to supersede the rights of the owner of property. I do not read that case as establishing the principle propounded by counsel for Mr. Schmeiser.

[54] In *Théberge*, an artist created certain paintings and assigned to a publisher the right to make posters and other copies of his works on paper. A gallery purchased some of the authorized posters, and chemically moved the ink from the paper to canvas, leaving the paper blank. The artist applied for an injunction, accounting and damages in the Quebec Superior Court, and also obtained a writ of seizure before judgment under subsection 38(1) [as am. by S.C. 1997, c. 24, s. 20] of the *Copyright Act*, R.S.C., 1985, c. C-42, with respect to all canvas-backed copies of his work. Subsection 38(1) authorizes the seizure of infringing copies of a work. Mr. Justice Binnie, speaking for the majority, held that what the gallery had done with the posters was not a reproduction of the work at all, and therefore it was something it was entitled to do as the legal owner of the posters. The artist's real objection to the gallery's acts was that the gallery had infringed his moral rights, but subsection 38(1) of the *Copyright Act* does not authorize a pre-trial seizure of goods to enforce an artist's moral rights.

(b) The innocent infringer

[55] Counsel for Mr. Schmeiser submitted that a finding for Monsanto in this case would be highly prejudicial to any farmer who does not wish to grow Roundup Ready Canola. That is because glyphosate-resistant canola can appear in a field without having been planted there, but a farmer cannot detect it without spraying Roundup, thereby killing any conventional canola in the field.

[56] There is considerable force to the argument that it would be unfair to grant Monsanto a remedy for infringement where volunteer Roundup Ready Canola grows in a farmer's field but its resistance to glyphosate remains unknown, or if that characteristic becomes apparent but the seeds of the volunteer plants are not retained for cultivation. It is often said that intention is not material to a finding of infringement: H. Fox, *The Canadian Law and Practice Relating to Letters Patent for Inventions*, 4th ed. (1969), at page 381; *Computalog Ltd. v. Comtech Logging Ltd.* (1992), 44 C.P.R. (3d) 77 (F.C.A.). That principle was developed in the context of patents for conventional inventions: see, for example, *Stead v. Anderson* (1847), 2 Web. P.C. 151; 72 R.R. 730; *Wright v. Hitchcock* (1870), L.R. 5 Ex. 37; *Young v. Rosenthal* (1884), 1 R.P.C. 29 (Q.B.); *Skelding v. Daly et al.* (1941), 57 B.C.R. 121 (C.A.). Clearly, in most cases of patent infringement, to allow a defence of ignorance or lack of intention to infringe would destroy the efficacy of the patent, because the actual content of any particular patent is known to very few people.

[57] However, it seems to me arguable that the patented Monsanto gene falls into a novel category. It is a patented invention found within a living plant that may, without human intervention, produce progeny containing the same invention. It is undisputed that a plant containing the Monsanto gene may come fortuitously onto the property of a person who has no reason to be aware of the presence of the characteristic created by the patented gene. It is also reasonable to suppose that the person could become aware that the plant has that characteristic but may tolerate the continued presence of the plant without doing anything to cause or promote the propagation of the plant or its progeny (by saving and planting the seeds, for example). In my view, it is an open question whether Monsanto could, in such circumstances, obtain a remedy for infringement on the basis that the intention of the alleged infringer is irrelevant. However, that question does not need to be resolved in this case.

[58] In this case, Mr. Schmeiser cultivated glyphosate-resistant canola plants. His 1998 canola crop was mostly glyphosate resistant, and it came from seed that Mr. Schmeiser had saved from his own fields and the adjacent road allowances in 1997. Although the Trial Judge did not find that Mr. Schmeiser played any part initially in causing those glyphosate-resistant canola plants to grow in 1997, the Trial Judge found as a fact, on the basis of ample evidence, that Mr. Schmeiser knew or should have known that those plants were glyphosate-resistant when he saved their seeds in 1997 and planted those seeds the following year. It was the cultivation, harvest and sale of the 1998 crop in those circumstances that made Mr. Schmeiser vulnerable to Monsanto's infringement claim.

(c) The effect of unconfined release

[59]Counsel for Mr. Schmeiser argued that Monsanto, by permitting farmers to plant Roundup Ready Canola without undertaking steps to limit its spread by means of the movement of pollen and through accidental spillage, has waived any exclusive rights it may have had. This argument, if accepted, would have the effect of nullifying Monsanto's patent. The Trial Judge rejected this argument. I agree with his analysis and conclusions on this issue as stated at paragraphs 95 to 98 of his reasons for judgment:

On the basis of the evidence of pictures adduced by Mr. Schmeiser, of stray plants and of plants in fields, in Bruno and its environs, it is urged that unconfined release and lack of control of Monsanto over the replication of the plants containing their patented gene clearly demonstrates extensive uncontrolled release of the plaintiffs' invention. Indeed it is urged this is so extensive that the spread of the invention cannot be controlled and Monsanto cannot claim the exclusive right to possess and use the invention. It is further urged that it was the plaintiffs' obligation to control its technology to ensure it did not spread and that Monsanto has not attempted to do so.

That assessment places much weight on photographs of stray plants in Bruno, said to have survived spraying with Roundup, in addition to photographs of canola in fields which is said to be of canola, some with the potential gene incorporated. With respect, the conclusion the defendants urge would ignore the evidence of the licensing arrangements developed by Monsanto in a thorough and determined manner to limit the spread of the gene. Those arrangements require agreement of growers not to sell the product derived from seed provided under a TUA [Technology Use Agreement] except to authorized dealers, not to give it away and not to keep it for their own use even for reseeded. It ignores evidence of the plaintiffs' efforts to monitor the authorized growers, and any who might be considered to be growing the product without authorization. It ignores the determined efforts to sample and test the crops of the defendants who were believed to be growing Roundup Ready canola without authorization. It ignores also the evidence of Monsanto's efforts to remove plants from fields of other farmers who complained of undesired spread of Roundup Ready canola to their fields.

Indeed the weight of evidence in this case supports the conclusion that the plaintiffs undertook a variety of measures designed to control the unwanted spread of canola containing their patented gene and cell.

I am not persuaded that the plaintiffs have lost the right to claim exclusive use of their invention, or that they have waived any such claim. There clearly is no expressed waiver, and none can be implied from the conduct of the plaintiffs so far as that is a matter of record before the Court.

[60]Counsel for Mr. Schmeiser argues that it is physically impossible to control completely the spread of Roundup Ready Canola, that the existence of volunteer Roundup Ready Canola plants and cross-pollination of Roundup Ready Canola with other varieties is inevitable to some degree, that there are steps Monsanto could have taken but did not take to exercise better control, and that some of the steps that were taken by Monsanto were curative rather than preventive. Even if counsel for Mr. Schmeiser is correct on all of these points, these considerations may cause Monsanto some difficulty in defending its patent rights in certain situations, but they cannot be taken as a waiver by Monsanto of its patent rights. There is even less justification for concluding that Monsanto has waived the right to assert its patent rights against Mr. Schmeiser, who was found to be cultivating a crop of canola that he knew or ought to have known was grown from seeds of glyphosate-resistant canola plants.

(3) Did the Trial Judge misapprehend the evidence or consider inadmissible evidence?

[61]There are four arguments under this heading. I have concluded, for the following reasons, that none of these arguments disclose any error by the Trial Judge that warrants the intervention of this Court.

(a) Was there evidence that seed from field 6 was saved in 1996?

[62]Counsel for Mr. Schmeiser argued that the Trial Judge erred at paragraph 34 of his reasons for judgment when he said that there is no evidence that seed from Schmeiser field 6 was saved in 1996 to be used as seed for his 1997 crop. Mr. Schmeiser had testified to this fact, and so there was some evidence of it. However, in my view this error is inconsequential because, for the reasons stated above, the source of the seed for the 1997 crop is irrelevant.

(b) Evidence of crop sampling and testing

[63]Counsel for Mr. Schmeiser raised a number of criticisms of the plant testing undertaken by or on behalf of Monsanto, and argued that the Trial Judge erred in giving undue weight to evidence of that testing, which led him to an unwarranted conclusion as to the proportion of glyphosate-resistant canola that was present in the Schmeiser fields.

[64]An appellate court cannot interfere with the findings of fact made by a trial judge unless there is a palpable and overriding error that affected his assessment of the facts: *Housen v. Nikolaisen* (2002), 211 D.L.R. (4th) 577 (S.C.C.). Having reviewed the Trial Judge's reasons for judgment against the transcript and the documents, I can find no such error underlying his factual findings as to the proportion of glyphosate-resistant canola on the Schmeiser fields.

(c) Was evidence taken on behalf of Monsanto in breach of a court order?

[65]It is argued that the crop samples that Monsanto's representatives took from the Schmeiser fields for testing pursuant to the order of the Associate Senior Prothonotary dated August 12, 1998 should not have been admitted because the Monsanto representatives did not abide by the terms of a written undertaking submitted to the Court on the date of the order. According to the undertaking, Monsanto's representatives were to contact Mr. Schmeiser's then solicitor in Humboldt, Saskatchewan before taking the sampling, and they were to permit a representative of Mr. Schmeiser to accompany them during the sampling.

[66]No evidence was adduced from Mr. Schmeiser's former solicitor and so there is no evidence as to whether he was contacted by Monsanto's representatives prior to the sampling. However, it is clear that on the day the Monsanto representatives took the samples, and before they did so, they met Mr. Schmeiser on one of his fields where he was working. The Monsanto representative who spoke to Mr. Schmeiser testified that Mr. Schmeiser declined to accompany them and told them to go ahead and take the samples. Mr. Schmeiser testified that the Monsanto representatives did not permit him to accompany them.

[67]The Trial Judge did not attempt to resolve these conflicting recollections, as he described them, but he concluded that there had been no breach of the August 12, 1998 court order. In my view, he was right to reach that conclusion. Mr. Schmeiser admitted that he was advised of the sampling before it was done, and the evidence discloses no reason to believe that he could not have accompanied the Monsanto representatives if he had wished to do so.

(d) If there was illegally obtained evidence, should it have been excluded?

[68]In 1997, Monsanto obtained samples of Mr. Schmeiser's crops from the road allowances beside his fields. It was not established that any trespass occurred, but counsel for Mr. Schmeiser argued that nevertheless the samples taken were the property of Mr. Schmeiser, and the evidence of the tests from those samples should have been excluded because they were taken unlawfully. A similar argument is made for the results of tests of samples of canola seeds from Mr. Schmeiser's 1997 crop that Monsanto obtained from Humboldt Flour Mill. It appears that Humboldt Flour Mill routinely took "before and after" samples of seeds that they treat. They retained such samples from the seeds that Mr. Schmeiser brought for treatment in the spring of 1998. When Monsanto asked for those samples, Humboldt Flour Mill obliged them, without informing Mr. Schmeiser. Counsel for Mr. Schmeiser argued that those samples were the property of Mr. Schmeiser, and that Humboldt Flour Mill had no right to give them to Monsanto without his consent.

[69]Both of these arguments are based on the premise of seed ownership. The Trial Judge did not question that premise. I will not question it either, but will simply assume, without deciding, that Mr. Schmeiser was the legal owner of all of those samples.

[70]Counsel for Mr. Schmeiser acknowledged that at common law, illegally obtained evidence is generally admissible in a civil dispute, but he argued that this Court should change the common law on that point to reflect the values underlying section 24 of the *Canadian Charter of Rights and Freedoms* [being Part I of the *Constitution Act, 1982*, Schedule B, *Canada Act 1982*, 1982, c. 11 (U.K.) [R.S.C., 1985, Appendix II, No. 44]]:

24. (1) Anyone whose rights or freedoms, as guaranteed by this Charter, have been infringed or denied may apply to a court of competent jurisdiction to obtain such remedy as the court considers appropriate and just in the circumstances.

(2) Where, in proceedings under subsection (1), a court concludes that evidence was obtained in a manner that infringed or denied any rights or freedoms guaranteed by this Charter, the evidence shall be excluded if it is established that, having regard to all the circumstances, the admission of it in the proceedings would bring the administration of justice into disrepute.

[71]The Trial Judge noted that section 24 of the Charter has no application to a dispute between private parties in which no agency of government is a party: *RWDSU v. Dolphin Delivery Ltd.*, [1986] 2 S.C.R. 573, at pages 593-604. He went on to say that this is not an appropriate case in which to move to evolve the principles of the common law as suggested by counsel for Mr. Schmeiser, because under the principles in *R. v. Collins*, [1987] 1 S.C.R. 265, the admission of the evidence would not bring the administration of justice into disrepute. I agree with his reasoning on this point, and his conclusion. In my view, the Trial Judge did not err in admitting the testing evidence from the roadside samples or the samples from the Humboldt Flour Mill.

(4) Did The Trial Judge err in the relief granted?

[72]According to subsection 55(1) of the *Patent Act*, a person who infringes a patent is liable for all damages sustained by the patent holder by reason of the infringement. In this case, the damages would appear to be limited to \$15 for each acre of glyphosate-resistant canola in the 1998 Schmeiser crop (1030 acres), for a total of \$15,450. However, under subsection 57(1), the Court may also grant other remedies, including an injunction and, in lieu of damages, an accounting of the profits from the infringement.

[73]The Trial Judge held that Monsanto Canada Inc. and Monsanto Company could jointly elect a single award of an accounting of profits, rather than damages. He also held that the liability to account would be that of Schmeiser Enterprises Ltd. only, and that Mr. Schmeiser would not be held personally liable. It has not been suggested that the Trial Judge erred in permitting Monsanto to elect an accounting of profits, or in limiting the monetary liability to Schmeiser Enterprises Ltd.

[74]The Trial Judge quantified the profit from the sale of the 1998 crop at \$19,832, and also granted Monsanto an injunction in these terms:

3. The Defendant, Percy Schmeiser, and the officers, directors, employees of the Defendant, Schmeiser Enterprises Ltd., and all persons under their control are hereby enjoined until the end of the term of the Patent from:

- (a) planting or growing seeds which they know or ought to know contain genes or cells as claimed in claims 1, 2, 5, 6, 22, 23, 27, 28 and 45 of the patent;
- (b) cultivating or harvesting any plant grown from the seeds referred to in subparagraph (a) above; and
- (c) offering for sale, selling, marketing, distributing by any means any and all quantities of seed referred to in subparagraph (a) above and any and all quantities of plants grown from such seed.

(a) Appeal by Mr. Schmeiser: Is the injunction overly broad?

[75]Counsel for Mr. Schmeiser argues that the injunction is overly broad because Mr. Schmeiser knows that, despite replenishing his canola seeds in 1999, his canola fields are already contaminated by glyphosate-resistant canola. The nature of canola is such that he can reasonably anticipate the constant presence of volunteer glyphosate-resistant canola in his field at all times. Therefore, by the terms of this injunction, he cannot save his canola seed as is his normal practice and is compelled to buy new canola seeds every year.

[76]As I interpret the injunction, it would not preclude Mr. Schmeiser from saving canola seeds unless he knows or ought to know that the seeds are glyphosate-resistant. I do not construe the words "know or ought to know" in the injunction to mean the awareness of every Canadian farmer, including Mr. Schmeiser, that volunteer glyphosate-resistant plants may appear anywhere, or are likely to appear anywhere. It seems to me that the requisite knowledge would not be established unless Mr. Schmeiser, because of the use of Roundup or some means of chemical testing, knows or is wilfully blind to the presence of glyphosate-resistant canola plants on or near his property. If Mr. Schmeiser, having that degree of knowledge, saves and plants the seeds from those plants, he would be in breach of the injunction. Mr. Schmeiser would not

breach the injunction merely by saving seed from canola plants that have not survived spraying with Roundup and have not been subjected to any other test that would detect glyphosate resistance.

[77]It seems to me that Monsanto should be entitled to some assurance that Mr. Schmeiser will not repeat the actions that have now been established to be an infringement of the Monsanto patent. The injunction granted by the Trial Judge gives that assurance. I cannot conceive of a narrower injunction that would serve the same function.

(b) Appeal by Mr. Schmeiser: Is the award of damages excessive?

[78]It was argued for Mr. Schmeiser that he realized no financial benefit, and therefore no profit, from the fact that his 1998 crop included glyphosate-resistant canola. He did not sell his 1998 crop to another farmer to be used as glyphosate-resistant canola seed, but sold it to a commercial crushing plant to whom the presence of the Monsanto gene represented no value. Thus, the sale price of the 1998 Schmeiser crop would have been the same even if it had contained no glyphosate-resistant seeds.

[79]The Trial Judge rejected this argument because, as he said at paragraph 135 of his reasons, it is the profit from the sale of the infringing crop that Monsanto may claim, not the difference between that profit and the profit from the sale of an alternative crop that was not grown.

[80]In my view the Trial Judge was correct on this point. A somewhat similar question was considered in *Reading & Bates Construction Co. v. Baker Energy Resources Corp*, [1995] 1 F.C. 483 (C.A.), and was answered as follows by Mr. Justice Létourneau (at page 496):

On this accounting procedure, I believe one has to look at the profits that the appellant actually made through the infringing acts, not the profit that he could have made had he used a non-infringing method.

(c) Cross-appeal by Monsanto: Is the award of damages too low?

[81]In an accounting of profits for patent infringement, the patent holder has the onus of proving the amount of the gross revenue made from the acts of infringement. The infringer has the onus of proving the costs incurred to obtain the profits. Generally, the only costs to be taken into account are those directly associated with the infringing activity: *Reading & Bates, supra*, at pages 494-495.

[82]It is agreed that the revenue from the sale of the 1998 crop was \$142,625. An expert report adduced at trial for Mr. Schmeiser calculated the profit at \$35,034, but that apparently did not reflect any allowance for the value of Mr. Schmeiser's labour. It is agreed that the award of \$19,832 reflects a reasonable allowance for Mr. Schmeiser's labour.

[83]Initially, the argument for Monsanto on the cross-appeal was that the Trial Judge erred in concluding that any expenses in excess of \$36,690 should have been taken into account. Counsel for Monsanto submitted that Mr. Schmeiser's own accounting expert agreed that those were the only expenses directly attributable to the 1998 canola sale, but his evidence was misunderstood or improperly ignored by the Trial Judge. Thus, the argument for Monsanto was that the accounting of profits should have been quantified as \$105,935 (\$142,625 minus \$36,690).

[84]At the hearing of the appeal, counsel for Monsanto indicated that they would be content with an award of \$35,034, the amount stipulated in the expert's report. Thus, the only difference between the \$19,832 awarded by the Trial Judge and the \$35,034 calculated by the accounting expert was the allowance for Mr. Schmeiser's labour.

[85]The award of profits as a remedy for patent infringement is fundamentally an equitable remedy. In my view, if the application of accounting principles in a mechanical fashion results in a quantum that does not reflect the economic profit from the infringement, it is open to the Trial Judge to adjust the quantum provided he does so on a principled basis.

[86]The only party subject to the monetary award was Schmeiser Enterprises Ltd., a corporation controlled by Mr. Schmeiser. His practice was not to take a salary for his farm work, but to cause his corporation to pay

him in the form of dividends. That practice was motivated by tax considerations that are irrelevant to the matter of infringement. The Trial Judge recognized that, but for those irrelevant tax considerations, Mr. Schmeiser would have caused his corporation to pay him a salary rather than dividends. That would have reduced the corporation's profit and, proportionally, the corporation's profits attributable to the 1998 canola crop.

[87]In these circumstances, it is my view that, the Trial Judge did not err in principle in reducing the award to reflect a reasonable amount as an allowance for Mr. Schmeiser's labour. I conclude that the Trial Judge made no error in the quantification of the accounting of profits that warrants the intervention of this Court.

Costs

[88]In their written submissions both parties sought costs. In addition the respondent Monsanto sought "the opportunity to make further written submissions concerning the scale and quantum of those costs". However, we did not hear oral submissions from counsel on the issue of costs. In light of this and of the fact that Monsanto did ask to make written submissions on the subject of costs, the issue of the formal order in this appeal shall be deferred to permit the parties to make written submissions on costs. The submissions for Monsanto Canada Inc. and Monsanto Company are to be served and filed within ten days of the date of issue of these reasons. The submissions for Mr. Schmeiser and Schmeiser Enterprises Ltd. in response are to be served and filed within 15 days of issue of these reasons.

Conclusion

[89]For the foregoing reasons, the appeal and the cross-appeal should be dismissed.

Isaac J.A.: I agree.

Noël J.A.: I agree.