IN BRIEF

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Intellectual Property Rights in Plants and the Farmer's Privilege

Since agriculture first began, farmers have manipulated and selected the plants they grow in order to improve their performance and the quality of crops. Research organizations have gradually taken over this role. More recently, intellectual property rights in new plant varieties have been introduced as a means to encourage innovation and the dissemination of information, and to protect the investment of the "discoverers." Recent progress in biotechnology and the desire to provide further protection for "inventions," however, have called into question certain long-standing practices such as the farmer's privilege to use part of his or her harvest as seed, and free access to genetic resources in the search for new varieties. This publication provides an overview of intellectual property rights relating to plants grown in Canada and their possible development in light of recent advances in biotechnology.

THE *PLANT BREEDERS' RIGHTS ACT*: PROTECTING AGRICULTURAL VARIETIES

Paragraph 27.3(b) of the World Trade Organization Agreement on Trade-Related Aspects of Intellectual Property Rights (the TRIPs Agreement) authorizes governments to exclude some types of invention such as plants and animals from patentability. However, it must be possible to protect plant varieties[(1)] by patents, or by a system created specifically for this purpose (*sui generis*) or by a combination of these.

In Canada, the *Plant Breeders' Rights Act* (PBRA) provides the necessary protection for new varieties. This Act, which came into force in 1990,[(2)] is based on the model established by the 1978 revised version of the International Convention for the Protection of New Varieties of Plants, of the International Union for the Protection of New Varieties of Plants (UPOV).

A plant breeder's right is a form of intellectual property granted to a breeder[(3)] of a new plant variety. This protection confers an exclusive right to produce and sell material for the propagation of this variety (for a period of up to 18 years in Canada); but a number of exceptions make it different from a patent. For example, according to the 1978 version of the UPOV Convention, the breeder's authorization is not required for use to be made of a protected variety in order to create and market a new variety (*breeder's exception*).[(4)] The Convention also implicitly recognizes[(5)] that a farmer may use part of his or her harvest to plant his or her fields (*farmer's privilege*).

THE 1991 UPOV CONVENTION: STRENGTHENING PROTECTION FOR VARIETIES

The UPOV Convention was revised in 1991 and signed by Canada in 1992. In order to ratify the Convention, Canada needs to amend the PBRA. These amendments were the subject of a bill that died on the *Order Paper* at the end of the 1st Session of the 36th Parliament in 1999. Since then, the Canadian Food Inspection Agency (CFIA) has resumed consultations, which were concluded in March 2005.

The 1991 Convention clarifies the question of the breeder's exception[(6)] and limits the farmer's privilege by including it explicitly in the text. The scope of the protection given to breeders in the 1978 Convention allowed the farmer's privilege to be given a broad interpretation and application. The 1991 Convention provides that the breeder's authorization is required to use harvested material as seed, but it includes an *optional* provision (para. 15(2)) stating that national states may authorize farmers to use seed from a protected variety for propagating purposes on their own holdings, within reasonable limits and subject to the safeguarding of the legitimate interests of the breeder.

Changes in the farmer's privilege in the United States illustrate this strengthening of the protection afforded to new varieties. Prior to 1994, farmers could keep and sell seed from protected varieties. In September 1994, Congress repealed the provision authorizing them to sell such seed. A legal battle followed and in January 1995, the U.S. Supreme Court limited the farmer's privilege to the quantity of seed the farmer needed for his or her own sowing purposes, with permission to sell seed being limited to the unused surplus of the retained seed.

In Canada, the PBRA does not prohibit farmers from keeping and using seed produced from a protected variety, although it does not contain an express provision to this effect. The CFIA has therefore proposed that such an exemption for the farmer's own use be included in the PBRA.

PATENTS ON PLANTS: AN INEVITABLE DEVELOPMENT?

The enforcement policy that applies to the *Patent Act* does not permit the patenting of higher life forms such as animals and plants. This policy was upheld by the Supreme Court in the "Harvard mouse" case.[7] However, patents on DNA sequences (one or more genes) may now be used to claim control over an entire plant. In *Monsanto Canada Inc.* v. *Schmeiser*,[8] the Supreme Court held in a majority five-to-four decision that even though plants may not be patented in Canada, a patent relating to a plant cell or a modified gene in a cell gives its holder the right to decide what others may do with the plant in question, since each plant cell contains the modified gene.

In practice, this means that transgenic (or genetically modified) varieties[9] would enjoy patent protection, because a patented gene or a patented gene sequence has been added to them. The farmer's privilege and the breeder's exception could not apply under these circumstances. Consequently, breeders that used genetic engineering would have an advantage over those that used traditional methods of plant selection, because the latter can rely only on the PBRA to protect their varieties. To eliminate this discrimination, the *Patent Act* could be amended to include provisions to protect plant varieties or, conversely, the PBRA could be amended so that the rights to plant varieties were strengthened and offered protection similar to that provided by patent.

The patentability of higher life forms raises many questions. Unlike other types of invention, higher life forms that might be patented could reproduce and acquire important characteristics that had nothing to do with the invention. Consequently, some people fear that the gradual addition of characteristics that could be patented in plants would allow the private sector to assume control of the genetic variety of plants.[10] According to the Canadian Biotechnology Advisory Committee (CBAC), "If patent rights were simply extended to higher life forms, the patent holder not only would be given rights that inhibit other useful activity, but would also gain rights [that are] disproportionate … over other inventions."[11]

Many voices, including that of the CBAC, have called for Parliament to determine whether – and to what extent – patent rights should be extended to include plants and animals. In 2002, the CBAC recommended, among other things, that the *Patent Act* be amended to make non-human higher life forms patentable, but only within certain limits in order to avoid providing disproportional protection, for example by including a recognition of the farmer's privilege.[12] The CBAC repeated its recommendations after the Supreme Court issued its judgments in 2002 (*Harvard* v. *Canada*) and 2004 (*Monsanto* v. *Schmeiser*).[13]

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(1) An "agricultural variety" is a group of plants that are distinguished from other varieties of the same species by their structural characteristics. "Plant variety" and "cultivar" are synonyms.

(2) The Act received Royal Assent on 19 June 1990 and came into force on 1 August 1990.

(3) According to s. 2(1) of the Act, a breeder is "*(a)* where any person acting within the scope of the person's duties as an officer, servant or employee of another person originates or discovers the plant variety, that other person, and *(b)* where any person not acting as described in paragraph (*a*) originates or discovers the plant variety, that person."

(4) Para. 5(3) of the 1978 Convention.

(5) Primarily because of the relatively limited extent of the protection. The 1978 Convention does not refer to this privilege.

(6) The breeder's exception still exists but no longer applies to "essentially derived" varieties. A variety is considered to be "essentially derived from another variety ('the initial variety') when … it is predominantly derived from the initial variety" (1991 Convention, para. 14(5)(b)). This clarification was added to avoid abuses because in the past, minor changes were sometimes sufficient for a new variety to be protected.

(7) *Harvard College* v. *Canada (Commissioner of Patents)*, [2002] 4 S.C.R. 45. In December 2002, in a majority five-to-four decision, the Supreme Court of Canada held that animals were not included in the definition of "invention" in the *Patent Act* and that they could not therefore be patented in Canada.

(8) [2004] 1 S.C.R. 902.

(9) The term "genetically modified organism" (GMO) generally refers to an organism – plant, animal or microorganism (bacterium, fungus, yeast, etc.) – that was created by means of genetic engineering, including recombinant DNA technology. For more information, see F. Forge, *Genetically Modified Organisms*, TIPS-2E, Parliamentary Information and Research Service, Library of Parliament, Ottawa, 11 June 2004.

(10) It is recognized that the success of the "Green Revolution" owes much to the international cooperation that facilitated the free exchange of genetic information and materials. Many discoveries were made possible thanks to genetic material from plants or animals from developing countries, where most of our planet's biological diversity is found. Scientists often relied on the traditional knowledge of the local peoples in choosing the plants and animals to study, but they did not generally offer their sources anything in return.

(11) It should be noted, however, that there are other ways for breeders to obtain protection identical to that conferred by patent: for example, contracts with farmers requiring the farmers not to use part of the harvest as seed; or devices included in the plant, such as a "terminator" gene that makes the harvested grain sterile.

(12) Canadian Biotechnology Advisory Committee, *Patenting of Higher Life Forms and Related Issues*, Report to the Government of Canada Biotechnology Ministerial Coordinating Committee, June 2002.

(13) See the advisory memoranda of the Canadian Biotechnology Advisory Committee: "Higher Life Forms and *The Patent Act*," February 2003, and "Rationalizing Patent Law in the Age of Biotechnology," September 2004.