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Farmers' Rights

Daniel Webster stated:

> Let us never forget that the cultivation of the earth is the most important labor of man . . . . When tillage begins, other arts follow. The farmers, therefore, are the founders of human civilization.[1]

The rise of intellectual property rights afforded to plant varieties and breeders has come at the expense of the farmers' rights to save, use, exchange, and sell seed. These traditional farmers' rights have given way to breeders' rights by the grant of utility patent protection to sexually produced plant varieties in the U.S. and in Europe. In response, the countries possessing the vast majority of plant genetic diversity have asserted sovereign rights over the plant material within their borders.[2] Ironically, this assertion of sovereign rights in the name of "farmers' rights" extends patent-like protection to all plant material not already held as common heritage by international seed banks. The condition of "farmers' rights" in the International Treaty on Plant Genetic Resources (ITPGR) effectively prohibits farmers' rights to save seed.

Farmers have been, and continue to be, the end users of plant varieties, but are also an important part of the innovation cycle of plant variety development. Since agriculture began, farmers have bred plants through mass seed selection.[3] Steve Brush explained, "[t]he exchange of seed among farmers and the lack of explicit proprietary rules governing specific crop types, traits, or germplasm appear[ed] to be common to agriculture before the 20th century, and it remains the dominant approach to seed management for the large

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1 HARVEST: AN ANTHOLOGY OF FARM WRITING 101-02 (Wheeler McMillen, ed., 1964). Webster made his comments in an address on January 14, 1840 at the Boston State House. Neil D. Hamilton, *Feeding Our Future: Six Philosophical Issues Shaping Agricultural Law*, 72 NEB. L. REV. 210, 257 n.218 (1993).

2 *See* Convention on Biological Diversity, June 5, 1992, Preamble 1, 1760 U.N.T.S. 76, *available at* http://www.biodiv.org/doc/legal/cbd-en.pdf (last visited Feb. 6, 2005) (entered into force on Dec. 23, 1993) [hereinafter CBD].

3 *See* Mark Hannig, *An Examination of the Possibility to Secure Intellectual Property Rights for Plant Genetic Resources Developed by Indigenous Peoples of the NAFTA States: Domestic Legislation under the International Convention for Protection of New Plant Varieties*, 13 ARIZ. J. INT'L & COMP. L. 175, 185 (1996).

majority of farmers around the world."[4] "Both farmer seed exchange and international crop germplasm flows evolved originally as common heritage regimes, allowing free exchange of plant genetic resources among seed banks, researchers, and farmers."[5] The exchange of crop material among farmers within and between communities and diffusion of domesticated plant varieties has been "ubiquitous throughout human history" and a necessary part of agriculture.[6] Even farmers in the (Vavilov) centers of crop diversity depend on the exchange of plant material from seed banks in developed countries.[7] Plant varieties do not suffer from a tragedy of the commons.[8] Instead, their conservation depends upon farmers developing the varieties and those varieties being broadly used.

The rise of private and public breeders and the ensuing concerns over intellectual property rights is a relatively recent phenomenon.

> The science of modern plant breeding developed after Leibig's postulate of nitrogen, phosphate and potassium as the basic elements of plant nutrition, after Darwin's natural selection theories, and after Gregor Mendel's work on applied genetics was rediscovered in 1900. As agricultural external inputs intensified in response to technological development that changed farming practices, so did the need for plant development to meet the effects of those inputs[.][9]

Prior to the rediscovery of Mendel's work, farmers themselves were responsible for the development of plant varieties. In the green revolution, seeds were recognized as technological delivery systems. Plant varieties bred for local needs that were resistent to native pests and diseases were replaced with so called "high yielding varieties"

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4 Stephen B. Brush, *The Demise of 'Common Heritage' and Protection for Traditional Agricultural Knowledge* 11, *available at* http://law.wustl.edu/centeris/confpapers/PDFWrdDoc/StLouis1.pdf (last visited Feb. 15, 2005) (paper prepared for conference on biodiversity, biotechnology, and the protection of traditional knowledge, St. Louis, Mo, April 4-5, 2003).

5 Rudiger Wolfrum, *The Principle of Common Heritage of Mankind*, 43 HEIDLEBERG J. INT'LL. 312 (1983).

6 Keith Aoki, *Weeds, Seeds & Deeds: Recent Skirmishes in the Seed Wars* 11, CARDOZO J. INT'L & COMP. L. 247, 261 (2003).

7 *See* Brush, *supra* note 4, at 15.

8 James O. Odek, *Bio-Piracy: Creating Proprietary Rights in Plant Genetic Resources*, 2 J. INTEL L. PROP. L. 141, 149 (1994). The tragedy of the commons is "the situation in which unowned and unmanaged common resources are available to all, with the consequence that entrants crowd onto these resources, overusing them and underinvesting in their maintenance and improvement." Carol M. Rose, *The Several Futures of Property: Of Cyberspace and Folk Tales, Emission Trades and Ecosystems*, 83 MINN. L. REV. 129, 129 (1998).

9 Hannig, *supra* note 3, at 185 (citation omitted).

requiring a concomitant package of synthetic fertilizers and chemical crop protectants.[10]

Sixty-five years of congressional activity protected the farmer's right to save, use, exchange, and sell seed.[11] Luther Burbank, iconoclast breeder of hundreds of varieties of vegetable and tree fruit, developed the Burbank Russett Potato from a potato berry picked from his grandmother's garden and was credited for contributing $14 billion to the U.S. economy in the first decade of the 20th century. But he never received a royalty on his plant invention.[12] His appeal gave rise to the Plant Patent Act of 1930 (PPA).[13] The PPA only extended to asexually propagated plants, not seed plants, and ironically not potatoes. Recognizing the obstacles patent monopolies would pose to farmers, the Senate clarified "the patent right granted is a right to propagate a new variety by asexual reproduction. It does not include the right to propagate by seeds."[14]

In 1965, a presidential commission reviewed the role of plant patents and concluded that patents did not fall into §101 subject matter for utility patents. The commission focused directly on the question of patenting sexually reproducing plants and stated: "While the [Commission] acknowledges the valuable contribution of plant and seed breeders, it does not consider the patent system the proper vehicle for the protection of such subject matter, regardless of whether the plants reproduce sexually or asexually."[15]

In 1968, Congress proposed an amendment to insert the words "or sexually" in sections 161 and 163 of the PPA. The amendment was

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10 The "green revolution" was a term coined by U.S. Agency to International Development director William Gaud to describe a movement to increase yields using new crop cultivars in concert with irrigation, fertilizers, pesticides, and mechanization. *See* THE NORMAN BORLANG INSTITUTE FOR PLANT SCIENCE RESEARCH, THE GREEN REVOLUTION & DR. NORMAN BORLANG: TOWARDS THE "EVERGREEN REVOLUTION," *at* http://www.agbioworld.org/biotech_info/ topics/borlaug/green-revolution.html (last visited Feb. 6, 2005).

11 Joseph Mendelson III, *Patently Erroneous: How the U.S. Supreme Court's Decision in* Farm Advantage *Ignores Congress and Threatens the Future of the American Farmer*, 32 ENVTL. L. REP. 10698 (2002).

12 *See* Cary Fowler, *The Plant Patent Act of 1930: A Sociological History of its Creation*, 82 J. PAT. & TRADEMARK OFF. SOC'Y 621, 639 (2000).

13 Townsend-Parnell Plant Patent Act of 23 May 1930, Pub. L. No. 245 (71st Congress).

14 S. REP. NO. 71-315, at 4 (1930); H.R. REP. NO. 71-1129, at 1 (1930).

15 Report of the President's Commission on the Patent System, To Promote The Progress of Useful Arts In An Age Of Exploding Technology 1-3 (1966).

defeated.[16] Congress again refused to extend patent protection to sexually propagated plants.

Instead, in 1970, Congress specifically crafted a new and distinct intellectual property regime for sexually reproducing plants—the Plant Variety Protection Act (PVPA).[17] The PVPA was created in the wake of the Southern Corn leaf blight that devastated as much as 50 percent of the corn crop in the south (a blight attributed to genetic uniformity). With the PVPA Congress created a sui generis statute extending patent-like protection to sexually propagated seed plants, while carefully preserving a farmer's right to save seeds.[18]

The PVPA is distinct from a utility patent in two important ways: (1) it preserved a farmer's right to save, use, exchange, and sell seeds; and (2) it provided for a research and breeding exemption allowing breeders or farmers to use any protected variety to develop a new variety.[19] Finally, plant variety protection certificates are issued by the United States Department of Agriculture (USDA), not the United States Patent and Trademark Office (PTO).[20]

The USDA opposed granting utility patents to sexually reproducing plants because such patents would threaten continuing development and introduction of new seed varieties.[21] More specifically, the USDA feared that seed patenting would severely limit free data exchange, restrict open research discussion, and diminish the exchange of experimental plants. The USDA argued that extending utility patents to sexually reproducing plants was scientifically and legally unsound in that such plants could not be reproduced true to type or be reasonably capable of identification.[22]

In 1985, an administrative agency dismissed sixty-five years of congressional effort. The PTO's Board of Patent Appeals ruled in *Ex parte Hibberd* that a corn plant containing an increased level of the amino acid tryptophan was patentable subject matter.[23] In 2000, in

16 *See Plant Variety Protection: Hearings on H.R. 13424, H.R. 13631, H.R. 14332, H.R. 15226, H.R. 13901 Before the Subcomm. on Departmental Operations of the House Comm. on Agriculture*, 91st Cong. 10 (1970).

17 Plant Variety Protection Act of 1970, Pub. L. No. 91-577, 84 Stat. 1542 (codified as amended at 7 U.S.C. §§ 2321-2583 (2000).

18 *See id.*

19 "The use and reproduction of a protected variety for plant breeding or other bona fide research shall not constitute an infringement of the protection provided under this [act]." *Id.* § 2544 (2000).

20 *See id.* §§ 2481-2486.

21 Mendelson, *supra* note 11.

22 *Id.*

23 227 U.S.P.Q. 443 (Bd. of Patent App. and Interferences, 1985).

J.E.M. v. Pioneer, the Supreme Court made *Hibberd* the law of the land and extended the scope of utility patents to sexually produced plants.[24] Justice Thomas, who wrote the opinion, left the attorney general's office in 1977 and became a corporate lawyer in the pesticide and agriculture division of the Monsanto Company.[25] When *J.E.M.* was being decided, Monsanto held over a thousand plant patents that stood to be overturned. Justice O'Connor, an outspoken critic of expansive intellectual property rights, recused herself in the *J.E.M.* decision because her family had fiduciary relationships with DuPont, who owned a significant share of Pioneer.[26]

In the wake of those decisions, a handful of corporations spent more than thirty-four billion dollars in mergers and acquisitions. In 2000, Monsanto purchased Holden Foundation Seeds for one billion dollars, the remaining 60 percent of DeKalb Genetics, Asgrow, Agracetus, and Cargill's seed division. Monsanto acquired or obtained an interest in DeKalb (1998), Calgene (1997), Asgrow (1996), First Line Seeds Limited (1998), Holden's Foundation Seed (1997), Plant Breeding International (1999), Agracetus, and Ecogen. DuPont paid $7.7 billion to acquire the remainder of Pioneer, making DuPont the world's largest seed company. Novartis, the merger of Ciba-Geigy and Sandoz, purchased Northrup King, Rogers Seed Co., Funk Seeds International, and then merged with Astra Zeneca to form Syngenta.[27]

As a result of extending utility patents to sexually produced plants, the farmer and research exemptions of the PVPA—the right to save seeds and the right to use any protected variety to develop new varieties—were eliminated. Furthermore, farmers would now be subject to liability for patent infringement, not only if they saved patented seed, but also if they saved seed contaminated by patented pollen from neighboring fields.

Internationally, during the negotiations over the Convention on Biological Diversity (CBD) Treaty of 1992, the notion of a farmer's right, as the right to save seeds and use protected varieties to develop new varieties, gave way to a new definition of "farmers' rights." Because of concerns of increasing "breeders' rights" through utility patents and concerns of "biopiracy" (the "unidirectional and

24 J.E.M. Ag. Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc., 534 U.S. 124 (2001).

25 Nathan W. Dean, *The Primacy of the Individual in the Political Philosophy and Civil Rights Jurisprudence of Justice Clarence Thomas*, 14 GEO. MASON U. CIV. RTS. L. J. 27, 30-31 (2004).

26 Mendelson, *supra* note 11, at 10702.

27 *Id*. at 10706.

uncompensated appropriation" of genetic resources), farmer advocates introduced the notion of "farmers' rights." In 1988, the Food and Agriculture Organization of the United Nations (FAO) defined Farmers' Rights as "rights arising from the past, present and future contributions of farmers in conserving, improving, and making available plant genetic resources, particularly those in centres of origin/diversity."[28] Gone were the rights to save, use, exchange, and sell seed. Instead, those rights were replaced by implied intellectual property rights attributable to farmers in diversity centers.

This distinction between farmers in the North and the South ignores the common activities and concerns of farmers worldwide. A more appropriate distinction would be between farmers large and small. "For example, small farmers often save seed from one season's crop rather than purchasing seed, whereas large-scale farmers often purchase their seed annually."[29] "Small farmers develop land races as they select seed and allow the accidents of open pollination to occur within their fields. They also work in an environment that incorporates both domesticated and wild species to ensure agricultural sustainability."[30] Finally, small and family farmers in the North and South face similar pressures from increasing agriculture concentration and commodification of agricultural production resources.

Due to pressure from developing countries' well-intentioned non-profit organizations, the common heritage principle has given way to a divided ownership regime to plant genetic resources.[31] In article 15 of the CBD, farmers' rights became synonymous with governments' sovereign rights over their plant genetic diversity.[32] Consequently, governments may charge farmers royalties for the use of any potential plant varieties derived from within their borders. In line with the

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28 Farmers' Rights, FAO Conf. Res. 5/89, 25th Sess., FAO (Nov. 1989), *available at* Ftp://ext-ftp.fao.org/ag/cgrfa/Res/C5-89E.pdf (last visited Feb. 13, 2005).

29 Hannig, *supra* note 3, at 181, *citing* Kevin Dahl & Gary Paul Nabhan, *From the Grassroots Up: The Conservation of Plant Genetic Resources by Grassroots Organizations – "Latter Day Noahs" of North America*, *in* DIVERSITY, Vol. 8, No. 2, 1992 at 28.

30 Hannig, *supra* note 3, at 191. *See generally* J. J. Hardon, *Biotechnology, Plant Breeding and Resource-poor Farmers in the Third World*, *in* HANS BROUWER ET AL., BIOTECHNOLOGY AND FARMER'S RIGHTS: OPPORTUNITIES AND THREATS FOR SMALL SCALE FARMERS IN DEVELOPING COUNTRIES 73, 76 (1992); LAWRENCE BUSCH ET AL., PLANTS POWER AND PROFIT: SOCIAL, ECONOMIC, AND ETHICAL CONSEQUENCES OF THE NEW BIOTECHNOLOGIES 58 (1991).

31 Laurence R. Helfer, *Regime Shifting: The TRIPS Agreement and New Dynamics of International Intellectual Property Lawmaking*, 29 YALE J. INT'L L. 1, 35 (2004).

32 CBD, *supra* note 2, at 9.

CBD, the ITPGR[33] limited the common heritage treatment of plants to those varieties already held by international seed banks and placed intellectual property rights on all plant materials not yet in the seed banks.[34] The farmers' right to save seed was suddenly transformed into intellectual property rights for all varieties held by a country, despite the varieties lack of distinctness, uniformity, or stability. This led to Otto Frankel's comment: "[A] litigious world community insisting on sovereign rights to what evolved long before the beginnings of civilization is likely to lose in the long run what it tries to exploit in the short run."

The task of resurrecting farmers' rights to save, use, exchange, and sell farm-saved seed is daunting because it goes to the heart of the problems within the PTO. In theory, a simple international registry where farmers, breeders, and curators could characterize a variety would establish that variety as prior art and defeat any subsequent patent claims for lack of novelty. However, in practice the PTO has granted patents on plants known to be traditional varieties.

In lieu of congressional action to narrow the scope of the utility patent, farmers are left with a limited common heritage and liability for exercising their former rights to save, use, exchange, and sell seed.

Thomas Jefferson, the father of the U.S. patent system once said, "[t]he greatest service which can be rendered [by] any country is to add a useful plant to its culture[.]"[35] One of his worst fears was the creation of a patent system that allows the "granting of monopolies which might withhold technological progress . . . from the general public."[36]

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33 *See* International Treaty on Plant Genetic Resources for Food and Agriculture, Nov. 3, 2001, *available at* ftp://ext-ftp.fao.org/ag/cgrfa/it/ITPGRe.pdf (last visited Feb. 17, 2005).

34 Otto H. Frankel, *Genetic Resources: Evolutionary and Social Responsibilities*, *in* SEEDS AND SOVEREIGNTY 19, 44 (Jack R. Kloppenburg, Jr. ed., 1988).

35 THE GARDEN AND FARM BOOKS OF THOMAS JEFFERSON 509 (Robert C. Baron ed., 1987).

36 Joshua C. Benson, *Resuscitating the Patent Utility Requirement, Again: A Return to* Brenner v. Manson, 36 U.C. DAVIS L. REV. 267, 296 (2002), *quoting* SILVIO A. BEDINI, THOMAS JEFFERSON STATESMAN OF SCIENCE 207 (1990).