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**POST-SALE RESTRICTIONS ON PATENTED SEEDS:
WHICH LAW GOVERNS?**

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ABSTRACT

Since the agrichemical industry entered the business of creating genetically engineered (“GE”) seeds, farming in America has never been the same. Patents on these GE seeds have been reinforced with so-called “license” agreements that accompany their sale to farmers. Failure to abide the terms of these agreements can land a farmer in federal district court defending a patent infringement lawsuit. Several states have passed legislation relating to the terms of these contracts (known in the industry as “Technology Use Agreements” or colloquially as “bag-tag” agreements). This article explores whether state laws relating to these bag-tag agreements are enforceable, or whether the agreements are, as the industry claims, non-exclusive patent licenses governed by federal patent law. In order to resolve that question, one must first determine whether the transfer of the seeds to the farmer exhausts the patent-holder’s rights in the technology accompanying the seeds. Generally, when someone purchases a patented good she is free to use it, take it apart and rebuild it, and even re-sell it to another without infringing the patent through the “first sale” or exhaustion doctrine. The seed industry, however, characterizes the transfer of patented seeds to the farmer not as a sale, but rather as a license to use the patented genes embodied in the seeds.

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Are the recently-passed state laws – designed to protect farmers and their private property interests from these potentially over-reaching licenses – preempted by federal patent law? This article explores these timely and important issues.

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INTRODUCTION

For millennia, farmers have planted, cultivated, and harvested their crops, often saving seeds from one harvest to create the next. During the last half of the twentieth century, however, agrichemical corporations have entered the seed business, creating genetically engineered (“GE”) seeds and acquiring utility patents on their technologies. Yet personal property interests in something as fundamental to life as the right to grow seeds for food is in tension with seeds’ cultural past and inherent self-replicating nature.¹ In line with modern intellectual property practices, moreover, patent holders on GE seeds are using contracts in the form of technology licenses that impose significant post-sale terms and restrictions on end-users (farmers or “growers”). Several state legislatures, perhaps instinctively inclined toward consumer protection and accustomed to setting the rules for contracts accompanying the sale of goods, have contemplated and even occasionally adopted legislation relating to so-called “bag-tag” or “technology use” agreements and the tort consequences from escaped GE pollen.

This article examines what law governs the terms of these agreements and in particular whether the states’ attempts to legislate in this arena will be preempted by federal law. In anticipation of that discussion, this article first briefly explains the history of germplasm development in the United States and the roles of various federal intellectual property laws to encourage innovation in plant biology. Part II discusses the entrance into the market of major agrichemical companies and their use of license agreements to maximize their patents’ leverage. In Part III, this article outlines state laws proposed and adopted in an effort to curb the impact of these technology-licensing agreements on farmers. Part IV addresses the Supreme Court’s latest discussion of patent exhaustion principles in *Quanta Computer, Inc. v. LG Electronics, Inc.*² and the likelihood that these principles will apply to technology-licensing agreements accompanying the sale of patented GE seeds. Finally, Part V explores

¹ See DANIEL CHARLES, LORDS OF THE HARVEST, BIOTECH, BIG MONEY AND THE FUTURE OF FOOD 111 (2001) (“Seeds are a paradox at the heart of agriculture. They are precious and irreplaceable, yet cheap. They exist in a twilight world somewhere between private property (like the farmer’s tractor or the chemical herbicides he buys every year) and the public good (like sunlight and rain). The life they hold is the stuff of myth and metaphor. Companies that sell seed do not completely own it, because the seed, by nature, multiplies in the hands of the customer. Just as the Iroquois and Apache once considered it ridiculous and unnatural for individuals to own land, so farmers and lawmakers around the world have resisted laws that would convert a kernel of grain into intellectual property.”).

² 128 S. Ct. 2109 (2008).

the law of preemption and the application of state law to bag-tag contracts.

I. GERMPLASM AS PERSONAL PROPERTY

A. THE ROLE OF FARMERS AND THE FEDERAL GOVERNMENT IN U.S. CROP DEVELOPMENT

Farmers have long engaged in artificial selection and adaptation of plants to help maximize their utility in agriculture.³ As human populations migrated into new geographic areas, they transplanted seed germplasm⁴ and labored to adapt those crops to their new environment.⁵ Germplasm proved invaluable to colonial powers as they moved into North and South America.⁶ Because plant germplasm reproduces itself, “a single ‘taking’ of germplasm could provide the material base upon which whole new sectors of production could be elaborated.”⁷

American farmers were actively engaged in developing a base of germplasm in the United States even before the Revolutionary War.⁸ Of course, a few wealthy landowners tended to be those most successful at importing and adapting seeds to American soil and climate conditions.⁹ Thomas Jefferson, for instance, was an avid seed collector who belonged to seed exchange societies that shared seeds and information and worked to introduce new varieties in various geographic areas.¹⁰ These societies sought help from the federal

³ Nathan A. Busch, *Jack and the Beanstalk: Property Rights in Genetically Modified Plants*, 3 MINN. INTELL. PROP. REV. 1, 7-8 (2002).

⁴ *Id.* at 8 n.21 (“The collective genetic stock of a species of plant is called its germplasm.”) (citing JOHN MILTON POEHLMAN, BREEDING FIELD CROPS 4 (3d ed. 1987)).

⁵ Keith Aoki, *Weeds, Seeds & Deeds: Recent Skirmishes in the Seed Wars*, 11 CARDOZO J. INT’L & COMP. L. 247, 261 (2003).

⁶ *Id.* at 261-62.

⁷ JACK R. KLOPPENBURG, JR., FIRST THE SEED: THE POLITICAL ECONOMY OF PLANT BIOTECHNOLOGY 154 (2d ed. 2004).

⁸ Busch, *supra* note 3, at 8 (“The process of germplasm development, and the farmer’s role in that process, was well established before the independence of the United States, even though the product of the process was nowhere near mature in nature.”).

⁹ *Id.* at 8-9; Aoki, *supra* note 5, at 264.

¹⁰ Busch, *supra* note 3, at 9 (“As a result, members of agricultural societies were able to develop successful farms and plantations while simultaneously broadening the germplasm available in the United States.”). Thomas Jefferson wrote that “[t]he greatest service which can be rendered any country is to add a useful plant to its culture.” Thomas Jefferson, Memorandum of Services, in JEFFERSON: WRITINGS 702 (Merrill D. Peterson ed., 1984).

government in their aim to “determine which varieties of crops were capable of surviving in the American climate.”¹¹

The federal government soon acknowledged, however, that “neither individual altruism nor individual wealth could sustain plant collection over the time and at the scale needed to provide the country with the adapted base of germplasm it required for rapid agricultural development.”¹² Because the common farmer was not in a position to join the exclusive agricultural societies, moreover, he had limited access to varieties of germplasm and could not meaningfully participate in the expansion of agricultural productivity in the United States.¹³ Beginning with an initiative of the Secretary of the Treasury in 1819, the federal government became engaged in the collection of plant germplasm from around the world, and expanded its role in 1836 when the United States Patent Office (“PTO”) established a repository for germplasm samples from the Navy’s global plant expeditions.¹⁴ In the 1840s, the PTO had an established program for sending seeds to farmers across the county.¹⁵ As described by agricultural historian Jack Kloppenburg:

The development of the adapted base of germplasm on which American agriculture was raised is the product of thousands of experiments by thousands of farmers committing millions of hours of labor in thousands of diverse ecological niches over a period of many decades. Introductions might or might not be successful, but in any case they had an opportunity to cross naturally with established land races, so that, even where they failed, they might leave a useful legacy of genetic variability.

. . . [T]he nation’s farmers employed simple mass selection to improve the land races of the crops they grew by screening out poorly adapted types and saving superior individuals and populations for seed.¹⁶

A hallmark of the federal government’s early seed distribution program was that farmers received the seeds free of charge.¹⁷

¹¹ Aoki, *supra* note 5, at 264.

¹² KLOPPENBURG, *supra* note 7, at 54.

¹³ Busch, *supra* note 3, at 9.

¹⁴ Aoki, *supra* note 5, at 264-65.

¹⁵ *Id.* at 265.

¹⁶ KLOPPENBURG, *supra* note 7, at 56-57.

¹⁷ See Aoki, *supra* note 5, at 266-67; Busch, *supra* note 3, at 19 (“The underlying purpose of the government’s gratuitous seed program was to expand the germplasm available and to allow farmers to develop varieties that were particularly well suited

Although a small private seed industry existed at the time, it was primarily limited to vegetable and flower seeds enjoyed by home gardeners.¹⁸ Commercial farmers generally acquired seeds from the government, and produced their own next generation of seeds for trading to other farmers or planting themselves the next year.¹⁹

B. THE RISE OF THE COMMERCIAL SEED
INDUSTRY AND AN INTELLECTUAL
PROPERTY REGIME FOR PLANTS

At least three major factors have been identified as contributing to the rise of the commercial seed industry in the twentieth century. One was the termination of the federal government's gratuitous seed program in 1924, which took the government out of competition with the private sector.²⁰

Another was the "re-discovery" of Gregor Mendel's plant genetics studies and the rapid growth and acceptance of hybridization. At this point in history, hybridization meant that "two varieties would be cross-bred, producing new genetic variability . . . and single line selection was then applied to the progeny of the cross,' thereby transferring individual characteristics from one variety to another."²¹ Although publicly-funded land grant universities and private seed associations had previously dominated the research field in plant hybrids, private seed companies began to invest more resources in

for the local environment. . . . The government's intention of expanding the available germplasm base, of increasing the number or varieties of exotic and native seeds used by farmers, and of adapting new varieties to the local environments found in the United States, was a resounding success.").

¹⁸ See Aoki, *supra* note 5, at 267; see also Busch, *supra* note 3, at 22 (noting that during the last forty years of the nineteenth century the seed manufacturing industry made "substantial inroads into the flower and vegetable seed markets" because the seed sets in such plants tend to mature after crops are harvested so that "the home gardener was disinclined to produce . . . seeds for himself").

¹⁹ See Aoki, *supra* note 5, at 267; Busch, *supra* note 3, at 22 ("By the beginning of the twentieth century, the seed manufacturing industry had gained only a small fraction of the market for field crop seeds, a market that was almost exclusively dominated by on-farm production of seed and sale of the seed through inter-farm commerce.").

²⁰ See Busch, *supra* note 3, at 24, 31.

²¹ Aoki, *supra* note 5, at 269 (quoting KLOPPENBURG, *supra* note 7, at 79) (quotation marks omitted). The techniques of selective breeding and cross-breeding are credited with creating the modern food crops we know today, which "have been altered to such an extent that their wild ancestors are unrecognizable, and in some cases they are unknown altogether." H.R. SUBCOMM. ON BASIC RESEARCH OF J.R. COMM. ON SCIENCE, SEEDS OF OPPORTUNITY: AN ASSESSMENT OF THE BENEFITS, SAFETY, AND OVERSIGHT OF PLANT GENOMICS AND AGRICULTURAL BIOTECHNOLOGY, COMM. PRINT 106-B, at 10, 14 (2000).

improving existing plant varieties to express desirable traits such as disease or drought resistance, or higher yield.²² This, in turn, led private capital to invest in seed germplasm generation.²³ One attractive characteristic of hybrids for investors was their first generation's tendency to produce very high yields, while the second and third generations produced drastically lower yields.²⁴ This encouraged farmers to return each year to the seed company for the next season's high-yield crop.²⁵ Seed manufacturers maintained the first generation inbred seed lines as trade secrets, moreover, selling only their progeny to the farmer.²⁶ Thus any farmer wishing to remain productive and competitive was compelled to "abandon his traditional practice of saving seed to plant in the next crop cycle and instead become reliant on the seed manufacturing industry."²⁷

A third development in the U.S. seed industry was the growing role of federal intellectual property law to encourage innovation in plant varieties and plant genetics. The first Patent Act was passed in 1790 pursuant to Article I, section 8, clause 8 of the U.S. Constitution.²⁸ Section 101 of the Patent Act provides that patents may be granted for inventions or discoveries of "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof."²⁹ Patents issued under this section of the Patent Act are known as "utility patents."³⁰ In 1930, Congress passed the Plant Patent Act ("PPA"),³¹ which for the first time expressly brought plants within the scope of useful things subject to

²² See Aoki, *supra* note 5, at 269-70. See also JORGE FERNANDEZ-CORNEJO, ECON. RESEARCH SERV., U.S. DEPT. OF AGRIC., AGRIC. INFORMATION BULLETIN NO. 786, THE SEED INDUSTRY IN U.S. AGRICULTURE: AN EXPLORATION OF DATA AND INFORMATION ON CROP SEED MARKETS, REGULATION, INDUSTRY STRUCTURE AND RESEARCH AND DEVELOPMENT 41, 42 (from 1960 to 1965 U.S. private research and development (R&D) expenditures increased by around \$514 million while public R&D expenditures remained flat, resulting in a marked "shift of more R&D activity to the private sector").

²³ Aoki, *supra* note 5, at 271.

²⁴ *Id.*

²⁵ *Id.*

²⁶ Busch, *supra* note 3, at 29.

²⁷ *Id.*

²⁸ 1 CHISUM ON PATENTS, § 1.01, at 1-9 (2004); See *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225, 228 (1964) ("Pursuant to [Article I, section 8, clause 8 of the U.S. Constitution], Congress in 1970 enacted the first federal patent and copyright law, 1 Stat. 109, and ever since that time has fixed the conditions upon which patents and copyrights shall be granted.").

²⁹ 35 U.S.C. § 101 (2006).

³⁰ 1 CHISUM ON PATENTS, § 1.01, at 1-7 (2004).

³¹ Now codified, as amended, at 35 U.S.C. §§ 161-164 (2006).

patents.³² The PPA amended the general utility patent provision as follows:

Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvements thereof, or who has invented or discovered and asexually reproduced any distinct and new variety of plant, other than a tuber-propagated plant, not known or used by others in this country, before his invention or discovery thereof, . . . may . . . obtain a patent therefor.³³

Congress later amended the patent statute to place plant patents into a separate chapter of Title 35 entitled “Patents for plants.”³⁴ The Supreme Court has characterized this change as “merely a housekeeping measure that did nothing to change the substantive rights or requirements for a plant patent.”³⁵ Protection under the plant patent provisions was still limited to asexual reproduction of a plant, which “occurs by grafting, budding, or the like, and produces an offspring with a genetic combination identical to [its] parent.”³⁶

In 1970, Congress passed the Plant Variety Protection Act (“PVPA”) to extend “patent-like protection to novel varieties of sexually reproduced plants.”³⁷ Specifically, “the PVPA provides plant

³² See *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int’l, Inc.*, 534 U.S. 124, 132 (2001); see also Mark Janis & Jay Kesan, *U.S. Plant Variety Protection: Sound and Fury . . . ?*, 39 HOUS. L.REV. 727, 736-37 (2002).

³³ *J.E.M. Ag Supply*, 534 U.S. at 132 (quoting Act of May 23, 1930, §1, 46 Stat. 376).

³⁴ 35 U.S.C. §§ 161-164 (2006); *J.E.M. Ag Supply*, 534 U.S. at 133.

³⁵ *J.E.M. Ag Supply*, 534 U.S. at 133.

³⁶ *Id.* at 132. The *J.E.M. Ag Supply* Court explained the timing of the PPA in light of the government’s “extensive free seed program” through 1924, and seed companies’ interests as of 1930 in trying to successfully commodify seeds. “There was no need to protect seed breeding because there were few markets for seeds.” *Id.* at 136 (citing KLOPPENBURG, *supra* note 7, at 71). Meanwhile, “nurseries at the time had successfully commercialized asexually reproduced fruit trees and flowers. These plants were regularly copied, draining profits from those who discovered or bred new varieties. Nurseries were the primary subjects of agricultural marketing so it is not surprising that they were the specific focus of the PPA.” *Id.* at 136-37 (citing Cary Fowler, *The Plant Patent Act of 1930: A Sociological History of its Creation*, 82 J. PAT. & TRADEMARK OFF. SOC’Y 621, 634-35; Orville H. Kneen, *Patent Plants Enrich Our World*, NATIONAL GEOGRAPHIC, Mar. 1948, at 357, 363).

³⁷ *Asgrow Seed Co. v. Winterboer*, 513 U.S. 179, 181 (1995). See Plant Variety Protection Act, Pub. L. No. 91-577, § 1, 84 Stat. 1542 (1970) (codified as amended at 7 U.S.C. § 2321 (2006)). Janis and Kesan explain: “Also reflecting the progression of European thought, the PVPA emerged not because it was necessarily compelling on its own merits, or because it was an inevitable complement to existing patent protection, but because it appeared to be the politically least objectionable

variety protection for: “[t]he breeder of any sexually reproduced or tuber propagated plant variety (other than fungi or bacteria) who has so reproduced the variety. . . .”³⁸ Novel variety developers may obtain a certificate of protection from the Plant Variety Protection Office.³⁹ Someone infringes a PVPA certificate if he, among other things, “sells or markets the protected variety, sexually multiplies the variety as a step in marketing, uses the variety in producing a hybrid, or dispenses the variety without notice that the variety is protected.”⁴⁰

The PVPA contains important liability exemptions. Under the so-called “brown-bag” exemption, farmers were allowed to save, replant, or resell to their neighbors PVPA-protected seeds.⁴¹ Congress, in 1994, eliminated “the exemption from infringement liability for farmers who sell PVPA-protected seed to other farmers for reproductive purposes”⁴² but the exemptions for saving and replanting seed remain. The Supreme Court has held that “saved seed” under the PVPA exemption applies to seed a farmer saves for replanting:

Farmers generally grow crops to sell. A harvested soybean crop is typically removed from the farmer’s premises in short order and taken to a grain elevator or processor. Sometimes, however, in the case of a plant such as the soybean, in which the crop is the seed, the farmer will have a portion of his crop cleaned and stored as seed for replanting his fields next season. We think it clear that this seed *saved for replanting* is what the provision [in the PVPA] means by “saved seed”—

alternative when no consensus could be found for including plants explicitly in the utility patent statute. For example, an American Seed Trade Association (ASTA) position paper indicates that ASTA enthusiasm for proposing a *sui generis* system arose only after the failed effort in 1968 to amend the utility patent statute to recognize expressly the eligibility of sexually reproduced plants.” Janis & Kesan, *supra* note 32, at 743-44 (citations omitted).

³⁸ *J.E.M. Ag Supply*, 534 U.S. at 138 (quoting 7 U.S.C. § 2402(a) (2006)).

³⁹ See 7 U.S.C. §§ 2421, 2422, 2481-2483 (2006). To acquire a PVP certificate, an applicant must demonstrate to an examiner that the variety is new, distinct, uniform and stable. See Janis & Kesan, *supra* note 32, at 746 (citations omitted). The PVP regime differs from the utility patent regime in that it does not require applicants to demonstrate nonobviousness or meet the stringent enablement description of section 112 of the Patent Act. *Id.* at 748 (citations omitted).

⁴⁰ *J.E.M. Ag Supply*, 534 U.S. at 139 (citing 7 U.S.C. § 2541(a) (2006)).

⁴¹ Aoki, *supra* note 5, at 284 (citing 7 U.S.C. § 2543 (2001)). “A brown-bag sale occurs when a farmer purchases seeds from a seed company, . . . plants the seeds in his own fields, harvests the crop, cleans it, and then sells the reproduced seed to other farmers (usually in nondescript brown bags) for them to plant as crop seed on their own farms.” *Asgrow Seed Co.*, 513 U.S. at 182.

⁴² *Asgrow Seed Co.*, 513 U.S. at 184 n.2 (citing Plant Variety Protection Act Amendments of 1994, Pub. L. 103-349, 108 Stat. 3136, 3142).

not merely regular uncleaned crop that is stored for later market sale or use as fodder.⁴³

In addition to the brown-bag exemption, the PVPA also has a research exemption which provides: “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 chapter.”⁴⁴

In summary, the PPA and the PVPA represent intellectual property laws specifically tailored to novel developments in plants and seeds, taking into account societal needs specific to the agricultural industries. These statutes do not, as demonstrated below, offer as much protection to innovators of genetically engineered plants as they would like; thus, they have turned to utility patents and contracts to carve out the broadest possible property interests. These instruments, in turn, offer farmers fewer options to save, replant, and sell their seeds.

C. TRANSGENIC PLANTS AND UTILITY PATENTS

In the 1970s, Asgrow Corporation developed a variety of soybeans called Asgrow 3127 that “out-produced all other soybean varieties on the market, and gradually took over great sections of the Midwestern corn/soybean belt.”⁴⁵ Although Asgrow was able to take some advantage of the PVPA to hold on to market share, the law did not prevent its rivals from crossbreeding 3127 with their own varieties and producing “copies,” nor did it “prevent farmers from planting their fields full of 3127, saving perhaps one percent of the harvest, cleaning the grain, and planting it right back in the field as [saved] seed the following year.”⁴⁶ This may have seemed natural to the farmers, but it put them in competition with Asgrow.⁴⁷

Asgrow’s lawsuit against Iowa farmers Denny and Becky Winterboer helped to clarify the saved seed exemption under the PVPA and amounted to a win for plant breeders. The Supreme Court clarified what Congress intended to be the liabilities and exemptions

⁴³ *Id.* at 188-89 (emphasis in original).

⁴⁴ 7 U.S.C. § 2544 (2006). *See* Janis & Kesan, *supra* note 32, at 751 (“The presence of a research exemption separate from the noncommercial acts exemption may suggest that a competing plant breeder can appropriate a protected variety without authority, use it in a breeding program to develop new commercial varieties (that are not ‘essentially derived varieties’), and be free of any PVPA liability.”).

⁴⁵ CHARLES, *supra* note 1, at 111.

⁴⁶ *Id.*

⁴⁷ *Id.*

for farmers under the PVPA. In particular, Congress created a property right for breeders of plant varieties who qualified for a PVPA certificate.⁴⁸ Farmers who purchased seed protected under the PVPA in an authorized sale were allowed to plant the seed, and either sell the offspring for non-reproductive purposes (as a crop), or save some of the seed for replanting and sell the offspring of the saved seed as a crop.⁴⁹ They were not allowed, the Supreme Court held, to harvest the offspring for the purpose of selling it to others for replanting, as that infringed the statutory rights of the PVPA-certificate holder.⁵⁰

Asgrow's case signaled a shift in enforcement of plant intellectual property rights from litigation against corporate competitors to lawsuits against the end-user farmer.⁵¹ The case also marks the "transformation of the seed as a good that was purchased with no strings attached into a good subject to numerous statutory and contractual conditions. The seed is not only a commodity, but may also be licensed, as opposed to only purchased."⁵² Meanwhile, as the advances in biotechnology were changing the seed business from a service business⁵³ to an immensely profitable, high-technology industry, new opportunities and conflicts arose from patent law and licensing.

The product that best illustrates these technological and legal developments is the ROUNDUP READY soybean produced by Monsanto Corporation.⁵⁴ Monsanto is one of the world's largest agrichemical corporations.⁵⁵ In the 1970s, Monsanto brought to market an herbicide made of a chemical known as glyphosate⁵⁶ and

⁴⁸ *Asgrow Seed Co.*, 513 U.S. at 188 n.3.

⁴⁹ *Id.* at 187-88.

⁵⁰ *Id.* at 188-89.

⁵¹ Aoki, *supra* note 5, at 292.

⁵² Keith Aoki & Kennedy Luvai, *Seed Wars: Controversies over Access to and Control of Plant Genetic Resources*, in 2 INTELLECTUAL PROPERTY AND INFORMATION WEALTH: ISSUES AND PRACTICES IN THE DIGITAL AGE 265 (Peter K. Yu ed., 2007).

⁵³ CHARLES, *supra* note 1, at 111-12 ("It was a service business; seed companies mainly saved farmers the work of cleaning, storing and testing seed.").

⁵⁴ *Id.* at 113-14.

⁵⁵ See, e.g., Haley Stein, *Intellectual Property and Genetically Modified Seeds: The United States, Trade, and the Developing World*, 3 NW. J. OF TECH. & INTELL. PROP. 160, 164 (2005) ("Since the early nineties, Monsanto has purchased Holden's Foundation Seed for \$1.2 billion, acquired a forty percent hold on the seed company Dekelo, and gained full ownership of Asgrow, Agracetus, and Global Calgene--all major players in the global seed industry.").

⁵⁶ See CHARLES, *supra* note 1, at 61-62; see also *Monsanto Co. v. McFarling*, 363 F.3d 1336, 1338 (Fed. Cir. 2004) (Glyphosate is "a chemical that indiscriminately kills vegetation by inhibiting the metabolic activity of a particular enzyme, 5-enolpyruvyl-shikimate-3 phosphate synthase ('EPSPS'). EPSPS is necessary for the

sold under the trademark ROUNDUP.⁵⁷ The product was unique in its ability to kill “almost everything that was green and growing” and then “degrade[] quickly when exposed to sunlight and rain.”⁵⁸ Through genetic manipulation, Monsanto produced genetically engineered soybeans seeds that would not die when sprayed with glyphosate.⁵⁹ Monsanto also produced genetically engineered cotton, canola, and other species amenable to direct applications of its ROUNDUP herbicide and marketed them all as “a comprehensive high-yield seed technology system.”⁶⁰ These products were commonly sold under the ROUNDUP READY trademark.⁶¹

After the United States Patent and Trademark Office Board of Patent Appeals and Interferences had held in 1985 that plants were within the definition of “manufacture” or “composition of matter,”⁶² Monsanto confidently obtained several utility patents under section 101 of the Patent Act to cover its genetically engineered seeds.⁶³ For instance:

United States Patent No. 5,633,435 (“the ‘435 patent”) relates to the gene encoding the modified EPSPS enzyme, and sweepingly claims, *inter alia*, the “isolated DNA molecule” encoding it, . . . “[a] glyphosate-tolerant plant cell comprising” that DNA molecule . . . ;

conversion of sugars into amino acids—and thus for growth—in many plants and weeds.”).

⁵⁷ U.S. Trademark Registration No. 847,249 (filed June 29, 1967) (second renewal Apr. 2, 2008) (for use on “herbicides” in International Class 005).

⁵⁸ CHARLES, *supra* note 1, at 61.

⁵⁹ *McFarling*, 363 F.3d at 1338-39 (“In soybean seeds, the ROUNDUP READY® technology operates by inserting the gene sequence for a variant of EPSPS that is not affected by the presence of glyphosate but that still performs the sugar-conversion function required for cell growth. Thus, ROUNDUP READY® soybean seeds produce both a ‘natural’ version of EPSPS that is rendered ineffective in the presence of the glyphosate in ROUNDUP® herbicide, and a genetically modified version of EPSPS that permits the soybean seeds to grow nonetheless. ROUNDUP®, or other glyphosate-based herbicides, can thus be sprayed over the top of an entire field, killing the weeds without harming the ROUNDUP READY® soybeans.”).

⁶⁰ *See Aoki*, *supra* note 5, at 253.

⁶¹ U.S. Trademark Registration No. 1,889,104 (filed May 28, 1993) (first renewal July 7, 2005) (for use on “herbicide-tolerant genes for use in the production of agricultural seed”).

⁶² *In re Hibberd*, 227 U.S.P.Q. (BNA) 443, 444 (B.P.A.I. 1985).

⁶³ Monsanto and other plant technology developers had confidently sought utility patents under section 101 for their genetically engineered plants and seeds. *See J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int’l, Inc.*, 534 U.S. 124, 127 (2001) (by 2001 when the case was decided, the U.S. Patent and Trademark Office had “issued some 1,800 utility patents for plants, plant parts and seeds pursuant to 35 U.S.C. § 101.”).

“[a] glyphosate-tolere [sic] plant comprising” that plant cell . . . ; “[a] seed of a glyphosate-tolerant plant,” . . . ; a particular “transgenic soybean plant,” . . . ; and “[a] method of producing genetically transformed plants which are tolerant toward glyphosate herbicide,”⁶⁴

The Supreme Court made clear in 2001 that utility patents appropriately applied to plants in *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc.*⁶⁵ There, the U.S. Supreme Court considered whether the PPA and PVPA were the exclusive federal statutory rights available “to exclude others from reproducing, selling, or using plants or plant varieties.”⁶⁶ It noted that in spite of the special protections Congress afforded asexually reproduced plants in the PPA and sexually reproduced plants in the PVPA, “plants have always had the *potential* to fall within the general subject matter of § 101, which is a dynamic provision designed to encompass new and unforeseen inventions.”⁶⁷ It held that “newly developed plant breeds fall within the terms of § 101, and that neither the PPA nor the PVPA limits the scope of § 101’s coverage.”⁶⁸

Seeds are now commonly the subject of federal intellectual property laws, but their ownership as a form of personal property remains at odds with their history in American agriculture and their ability to self-replicate. The patent regime, moreover, turns out to be an imperfect means by which to control how seeds are made, used, and sold. Seed manufacturers and patent owners have therefore relied heavily on contracts in the form of technology licenses to create the broadest protection for their property interests.

II. “BAG-TAG” AGREEMENTS AND THEIR ENFORCEMENT

Long before *J.E.M. Ag Supply* confirmed the application of section 101 of the Patent Act to genetically engineered seeds, major agrichemical companies like Monsanto enhanced their intellectual property position through the use of licenses, with both the manufacturers of their patented seeds and the end-user farmers. Monsanto’s basic strategy was to become “the Microsoft of agriculture”⁶⁹ by licensing its genetic engineering technologies to seed

⁶⁴ *McFarling*, 363 F.3d at 1338-39 (errors and additions in original).

⁶⁵ 534 U.S. 124 (2001).

⁶⁶ *Id.*

⁶⁷ *Id.* at 135.

⁶⁸ *Id.* at 145.

⁶⁹ CHARLES, *supra* note 1, at 124.

companies who could then sell seeds to farmers at a higher price, sharing the profit with Monsanto.⁷⁰

Journalist Daniel Charles explains in his book, *Lords of the Harvest*, how Monsanto and its licensees arrived at a business model to charge farmers a technology fee and require them to sign a “license agreement.” Monsanto realized not long after ROUNDUP READY seeds hit the market that farmers could not get their hands on enough of them.⁷¹ The company had failed, however, in its early licensing arrangements to secure royalties worth nearly what it believed could be charged for the ROUNDUP READY technology, and “[m]ost of the seed industry seemed incapable of charging farmers what Monsanto thought the genes were worth.”⁷²

[W]hen Monsanto licensed its genes to seed companies, it turned over control of these treasures, in Monsanto’s view, to weak-kneed enterprises with self esteem problems. There had to be a better way, Monsanto’s executives said to each other, a way for Monsanto to maintain control over these genes, to capture for itself more of their value. . . . The solution, as it finally took shape, was praised by some as a masterstroke of business strategy and condemned by others as a perfidious scheme to turn farmers into serfs.⁷³

Concerned that if they simply quadrupled the price of a bag from \$30 to \$120 “the farmers would get mad,” seed company executives “got the idea of the farmer paying for the insecticidal portion separately.”⁷⁴

Lights flashed in the heads of executives . . . ; bells rang. Perhaps farmers could pay a separate ‘technology fee’ to Monsanto, in effect buying the new genes in a separate transaction from the seed purchase. Indeed, perhaps Monsanto could *license* its patented genes directly to each farmer! The arrangement would make Monsanto the sole supplier of these genes to every farmer, allowing Monsanto to set and maintain a standard price for its genes. Even more important,

⁷⁰ See *id.* at 120-24 (explaining Monsanto’s negotiations with Pioneer Hi-Bred Company to license Monsanto’s ROUNDUP READY technology, and its negotiations with Pioneer and other seed companies to license its Bt technology, which produced plants that killed corn borers and other pests).

⁷¹ *Id.* at 151.

⁷² *Id.*

⁷³ *Id.* at 152.

⁷⁴ *Id.*

Monsanto could use that license to enforce a ban on farmers using part of their ROUNDUP READY harvest as seed for the following year.⁷⁵

Monsanto had to convince licensed seed companies to give up their rights to Monsanto's genes, which many readily did once they realized Monsanto would be doing "the dirty work" of suing farmers.⁷⁶ Pioneer Hi-Bred, which had negotiated royalty-free rights to the ROUNDUP READY technology, also was able to match Monsanto's prices "and quietly insist on similar terms for its ROUNDUP READY soybeans, without taking much of the heat or surrendering any of the profits."⁷⁷

In fact, Monsanto's licensing scheme has had two components. First, Monsanto licenses its patented genes to seed manufacturing companies who gain the right to insert Monsanto's patented genetic traits into the germplasm of their seeds.⁷⁸ Monsanto receives a royalty, or "technology fee," every time a bag of seed containing its technology is sold to a farmer.⁷⁹ Seed manufacturers are prevented from selling seed to farmers, also known as "growers," unless the farmer signs a license agreement.⁸⁰

The current version of Monsanto's bag-tag agreement is titled "Monsanto Technology/Stewardship Agreement (Limited Use License)."⁸¹ This detailed form has been characterized by Monsanto and by federal courts as a license to use Monsanto's patented technology, as opposed to an "unconditional sale" of the seeds as goods.⁸² The farmer/grower receives the right to "purchase and plant [s]eed"⁸³ as well as "the right to use the Monsanto Technologies"⁸⁴

⁷⁵ *Id.*

⁷⁶ *Id.* at 152-53.

⁷⁷ *Id.* at 154.

⁷⁸ *See* *Monsanto Co. v. McFarling*, 363 F.3d 1336, 1339 (Fed. Cir. 2004).

⁷⁹ *Id.*

⁸⁰ *Monsanto Co. v. Scruggs*, 459 F.3d 1328, 1333 (Fed. Cir. 2006) ("The licenses also impose certain restrictions on seed sellers, including that seed companies may not sell seed containing Monsanto's technology to growers unless the grower signs one of Monsanto's license agreements; and that seed so sold may be used by growers to grow only a single commercial crop."); *see also* *Monsanto Co. v. Trantham*, 156 F. Supp. 2d 855, 865-66 (W.D. Tenn. 2001) (licensing agreements between Monsanto and seed producers require farmers purchasing seed grown with Monsanto's technology to sign licensing agreements prohibiting farmers from saving seed).

⁸¹ *See* 2010 Monsanto Technology/Stewardship Agreement (Limited Use License), available at <http://www.doeblers.com/08/2010%20Monsanto%20Technology%20Stewardship%20Agreement%20-%20Downloadable%20version.pdf> (last visited Apr. 1, 2010) [hereinafter *Monsanto Technology Agreement*].

⁸² *See* *McFarling*, 363 F.3d at 1339.

⁸³ *Monsanto Technology Agreement*, *supra* note 81.

subject to several conditions. Those conditions require, among other things, that the farmer agrees:

To use Seed containing Monsanto Technologies solely for planting a single commercial crop.

Not to save or clean any crop produced from Seed for planting and not to supply Seed produced from Seed to anyone for planting other than to a Monsanto licensed seed company.

Not to transfer any Seed containing patented Monsanto Technologies to any other person or entity for planting.

To plant and/or clean Seed for Seed production, if and only if, Grower has entered into a valid, written Seed production agreement with a Seed company that is licensed by Monsanto to produce Seed. . . . Grower may not plant and may not transfer to others for planting any Seed . . . for crop breeding, research or generation of herbicide registration data.⁸⁵

This version of the agreement, as well as prior versions, contains a forum selection clause specifying the U.S. District Court for the Eastern District of Missouri and provides that the contract shall be governed by Missouri law.⁸⁶ Some of Monsanto's earlier agreements with farmers allegedly contained provisions allowing Monsanto agents to enter the farmers' land to test for infringement,⁸⁷ and liquidated damages of up to 120 times the technology fee per bag of seed.⁸⁸

Monsanto has not been shy about suing its customers. According to Monsanto's website, it has filed 138 lawsuits against U.S. farmers since 1997, averaging about 10 per year.⁸⁹ In these cases, Monsanto asserts patent infringement claims as well as breach of contract claims. The three examples that follow were selected for the impact they have made: first, on society's awareness of

⁸⁴ The "Monsanto Technologies" are defined to include several varieties of soybeans, corn, cotton, sugarbeets, canola and alfalfa bearing Monsanto's trademarks and containing its patented genes. *Id.*

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ See, e.g., Copy of Technology User Agreement, Apr. 27, 2003, available at http://www.non-gm-farmers.com/news_print.asp?ID=310 (last visited Jan. 12, 2010).

⁸⁸ The Federal Circuit struck down the 120 multiplier as invalid under Missouri law. *McFarling*, 363 F.3d at 1347.

⁸⁹ See "Why Does Monsanto Sue Farmers Who Save Seeds?", available at http://www.monsanto.com/monsanto_today/for_the_record/monsanto_saved_seed_lawsuits.asp (last visited Jan. 12, 2010).

Monsanto's investigation practices and litigiousness; and second, on the development of patent licensing law.

A. *MONSANTO V. SCHMEISER*

One of the most visible cases Monsanto brought was to enforce its Canadian patent on glyphosate-resistant canola.⁹⁰ Monsanto sued Percy Schmeiser, a long-time Saskatchewan farmer, for growing canola containing Monsanto's patented gene without signing a Technology Use Agreement.⁹¹ Among the controversial aspects of the case was Monsanto's method of discovering Schmeiser's infringing conduct. Monsanto hired an investigation agency to conduct random audits of local canola crops; the agency investigated Schmeiser's farm specifically after receiving a tip that unlicensed ROUNDUP READY canola was growing there.⁹² Based on suspicion raised by positive tests of Schmeiser's crops, Monsanto eventually obtained a court order to enter Schmeiser's fields for additional testing.⁹³

Schmeiser repeatedly maintained that he did not intentionally plant Monsanto's ROUNDUP READY canola and that Monsanto's patented gene had drifted onto his field without his knowledge or consent.⁹⁴ Monsanto prevailed in the case, which was sufficiently publicized in the United States to have influenced the proposed state laws discussed in this article's next section.

B. *MONSANTO V. MCFARLING*

Mississippi soybean farmer Homan McFarling purchased 1,000 bags of ROUNDUP READY soybeans in 1998 and signed a Technology Agreement with Monsanto.⁹⁵ He saved 1,500 bushels of his 1998 harvest and replanted them in 1999.⁹⁶ When McFarling sent his saved seed to be cleaned, Monsanto took samples and analyzed

⁹⁰ *Monsanto Canada Inc. v. Schmeiser*, [2004] 1 S.C.R. 902, 2004 SCC 34 (Can.).

⁹¹ *Id.* ("Monsanto requires a farmer who wishes to grow ROUNDUP READY Canola to enter into a licensing arrangement called a Technology Use Agreement ("TUA"). . . . 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.")

⁹² *Id.*

⁹³ *Id.* ¶ 63-64.

⁹⁴ *Id.* ¶ 6.

⁹⁵ *Monsanto Co. v. McFarling*, 363 F.3d 1336, 1339 (Fed. Cir. 2004).

⁹⁶ *Id.*

their genetic makeup.⁹⁷ Monsanto then sued McFarling for patent infringement and breach of the Technology Agreement.⁹⁸

McFarling argued that the Technology Agreement's restrictions against saving seed amounted to patent misuse, a doctrine intended "to prevent a patentee from using a patent to obtain market benefit beyond that which inures to the statutory patent right."⁹⁹ The classic formulation of the patent misuse test is "whether, by imposing conditions that derive their force from the patent, the patentee has impermissibly broadened the scope of the patent grant with anticompetitive effect."¹⁰⁰ McFarling argued that "by prohibiting seed-saving, Monsanto ha[d] extended its patent on the gene technology to include an unpatented product—the germplasm—or God-made soybean seed which is not within the terms of the patent."¹⁰¹

The Federal Circuit dismissed McFarling's arguments that Monsanto impermissibly "tied" the patented genetic trait to the tangible seed and germplasm.¹⁰² The court noted that it considered for the first time whether a patent misuse argument could apply where the licensed goods *made* additional goods that were not incorporated in the underlying license agreement.¹⁰³ It held that the Technology Agreement's

restrictions on the use of goods produced by the licensed product are not beyond the scope of the patent grant at issue: The licensed and patented product (the first-generation seeds) and the goods made by the licensed product (the second-generation seeds) are nearly identical copies. Thus, given that . . . Monsanto's patent reads on the first-generation seeds, it also reads on the second-generation seeds.¹⁰⁴

Monsanto did not, therefore, misuse its patent rights¹⁰⁵ by preventing the replanting of the second generation of ROUNDUP READY seeds.¹⁰⁶

⁹⁷ *Id.* at 1340.

⁹⁸ *Id.*

⁹⁹ *Id.* at 1341 (quoting *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 704 (Fed. Cir. 1992)).

¹⁰⁰ *Id.* (quoting *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1372 (Fed. Cir. 1998)).

¹⁰¹ *Id.*

¹⁰² *Id.* at 1342.

¹⁰³ *Id.* at 1343.

¹⁰⁴ *Id.*

¹⁰⁵ 35 U.S.C. § 271 (2006) ("Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within

C. *MONSANTO V. SCRUGGS*

Eddie and Mitchell Scruggs purchased ROUNDUP READY soybean and cotton seeds from seed companies licensed by Monsanto to incorporate Monsanto's technology into their seed's germplasm.¹⁰⁷ These licenses prevented the seed companies from selling "seed containing Monsanto's technology to growers unless the grower signs one of Monsanto's license agreements."¹⁰⁸ The Scruggs purchased the seed without signing a license agreement, planted them, harvested their crop and planted the saved seed again the next year.¹⁰⁹

In the subsequent patent infringement case Monsanto brought against them, the Scruggs family argued that they were entitled to use the saved seed under the doctrine of patent exhaustion.¹¹⁰ The exhaustion doctrine, also known as the "first-sale" doctrine, will be explored in more detail later in this paper. In short, it "establishes that the unrestricted first sale by a patentee of his patented article exhausts his patent rights in the article."¹¹¹ The Federal Circuit dismissed the Scruggs' argument with one citation:

The doctrine of patent exhaustion is not applicable in this case. There was no unrestricted sale because the use of the seeds by seed growers was conditioned on obtaining a license from Monsanto. Furthermore, the "first sale doctrine of exhaustion of the patent right is not implicated, as the new seeds grown from the original batch had never been sold." *Monsanto v. McFarling*, 302 F.3d 1291, 1299 (Fed. Cir. 2002). Without the actual sale of the second generation seed to Scruggs, there can be no patent exhaustion. The fact that a patented technology can replicate itself does not give a purchaser the right to use replicated copies of the technology. Applying the first sale doctrine to subsequent generations of self-replicating technology would eviscerate the rights of the patent holder.¹¹²

the United States, or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.").

¹⁰⁶ *McFarling*, 363 F.3d at 1343.

¹⁰⁷ *Monsanto Co. v. Scruggs*, 459 F.3d 1328, 1333 (Fed. Cir. 2006).

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *Id.* at 1335.

¹¹¹ *Id.* at 1336 (citing *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 701 (Fed. Cir. 1992)).

¹¹² *Id.*

The Federal Circuit also rejected the Scruggs' argument that they had an implied license to use Monsanto's patented technology. "It is undisputed that Monsanto requires all licensees to place a notice on all bags of ROUNDUP READY seeds stating that the seeds are covered by U.S. Patents, that the purchase of the seeds conveys no license, and that a license from Monsanto must be obtained before using the seeds."¹¹³ The court found no circumstances surrounding the sale of the seeds that granted the Scruggs an implied license, nor authority on behalf of the seed distributors "to confer a right to use Monsanto's biotechnology" or "any sort of license to use the seeds."¹¹⁴

Since the *Scruggs* case was decided, the U.S. Supreme Court broadened the patent exhaustion doctrine in *Quanta Computer, Inc. v. LG Electronics, Inc.*,¹¹⁵ reversing the Federal Circuit's narrow application of the doctrine. Whether the doctrine applies to the sale of patented, self-generating technology like seeds remains an open question this article will explore in Part IV. Should the doctrine snuff out the patent rights upon sale to the grower, then the Technology Agreement the grower signs is not really a license conveying rights under the patent. It is, instead, a contract accompanying the sale of goods, subject to interpretation under state law. Indeed, several states have already considered or passed legislation pertaining to aspects of the contractual relationship between farmers and owners of biotech patents on seeds. The next section of this article briefly discusses those initiatives in order to illustrate the various states' interests in so-called "farmers' rights."

III. STATES CONSIDER "FARMERS' RIGHTS" LEGISLATION

Monsanto's aggressive pursuit of farmers to enforce its patent rights and bag-tag agreements prompted proposed legislation in several states to protect local farmers' private property interests, prevent them from being haled into distant courts to defend themselves, provide them with defenses to patent infringement suits if they were unwitting victims of inadvertent pollen drift onto their fields, and invalidate certain provisions of Technology Use Agreements as contrary to state law.

For instance, Article 2.6 of the California Seed Law, titled "Genetically Engineered Plants," sets forth certain procedures that must be followed "[b]efore a person or his agent holding a patent on a genetically engineered plant, may enter upon any land farmed by

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ 128 S. Ct. 2109 (2008).

another for the purpose of obtaining crop samples to determine whether breach of contract or patent infringement has occurred.”¹¹⁶ It further provides that “[a] farmer shall not be liable based on the presence or possession of a patented genetically engineered plant on real property owned or occupied by the farmer when the farmer did not knowingly buy or otherwise knowingly acquire the genetically engineered plant, the farmer acted in good faith and without knowledge of the genetically engineered nature of the plant, and when the genetically engineered plant is detected at a *de minimis* level.”¹¹⁷ North Dakota and South Dakota have similar laws with regard to the responsibilities of patent holders of genetically modified seeds wishing to enter a farmer’s land for investigation of patent infringement.¹¹⁸

Maine law requires “the manufacturer or seed dealer of genetically engineered plants, plant parts or seeds” to “provide written instructions to all growers on how to plant” the parts or seeds so as “to minimize potential cross-contamination.”¹¹⁹ It also declares that if a farmer possesses on his property a genetically engineered product in either *de minimis* quantities or without his intent, “the farmer is not liable for breach of a seed contract nor for any damages claimed by the manufacturer.”¹²⁰ In addition, Maine’s agriculture law provides that any infringement lawsuit brought against a farmer not currently operating under a technology use agreement with a seed manufacturer shall be brought “where the farmer resides or where the disputed crop was grown,”¹²¹ rather than the Eastern District of Missouri where Monsanto’s form agreement requires that suit be brought.¹²²

Indiana law defines a “seed contract” as “a written contract between a seed supplier and a farmer that a farmer must sign to obtain the seed or the right to plant the seed.”¹²³ Under the law, seed contracts “may not give or be interpreted to give a seed supplier or an agent of a seed supplier the right to enter real property owned or occupied by the farmer to acquire samples of the crop grown” unless several enumerated conditions are met.¹²⁴ Failure to follow the required steps may give rise to a cause of action by the farmer against

¹¹⁶ CAL. FOOD & AGRIC. CODE § 52301(a) (West 2009).

¹¹⁷ *Id.* § 52305.

¹¹⁸ N.D. CENT. CODE § 4-24-13(2)(a) (2009); S.D. CODIFIED LAWS § 38-1-45 (2009).

¹¹⁹ ME. REV. STAT. ANN. tit. 7, § 1052(1) (2009).

¹²⁰ *Id.* § 1053(2).

¹²¹ *Id.*

¹²² See Monsanto Technology Agreement, *supra* note 81.

¹²³ IND. CODE ANN. § 15-15-7-6 (2008).

¹²⁴ *Id.* § 15-15-7-10(b). A “seed supplier” is defined as “a person engaged in commercial production or supply of either” a seed or “technology engineered into a seed.” *Id.* § 15-15-7-7.

the seed supplier.¹²⁵ The statute further requires that notice be given to the director of Indiana's agriculture department when a seed supplier files suit to enforce a seed contract.¹²⁶ Provisions within the seed contract that conflict with or purport to waive Indiana's law are unenforceable against the farmer.¹²⁷

Many of these laws and bills proposed in other states were promoted by the Center for Food Safety.¹²⁸ The national trade association for biotechnology industries, Biotechnology Industry Organization, or BIO,¹²⁹ routinely submitted statements in opposition to the legislation. BIO's successful opposition to Montana's House Bill 445,¹³⁰ a law similar to California's Article 2.6, argued that, among other things, the bill would "improperly restrict federal patent and plant variety protection rights established by the U.S Constitution and federal intellectual property law" and would likely "be preempted by federal law."¹³¹

Whether BIO is right will be addressed in Part V. Because pre-emption questions will turn in part on whether the Technology Use Agreements are to be interpreted under federal law as non-exclusive patent licenses or instead as mere contracts for the sale of goods, we first address the patent exhaustion doctrine as it applies to the commercial distribution of patented seeds.

¹²⁵ *Id.* § 15-15-7-12 (giving a farmer a right of action against a seed supplier for entering the farmer's real property in violation of the statute, and providing for recovery by the farmer of actual damages, attorney's fees and costs).

¹²⁶ *Id.* § 15-15-7-11.

¹²⁷ *Id.* §§ 15-15-7-8, 15-15-7-9.

¹²⁸ Personal communication with Kristina Hubbard (Nov. 6, 2009) (on file with author); *see* The Center for Food Safety, About Us, <http://truefoodnow.org/about> ("The Center for Food Safety works to protect human health and the environment by curbing the proliferation of harmful food production technologies and by promoting organic and other forms of sustainable agriculture.") (last visited Apr. 14, 2010).

¹²⁹ *See* About BIO, <http://bio.org/aboutbio/> ("BIO is the world's largest biotechnology organization, providing advocacy, business development and communications services for more than 1,200 members worldwide. Our mission is to be the champion of biotechnology and the advocate for our member organizations—both large and small.") (last visited Apr. 14, 2010).

¹³⁰ Montana's proposed legislation would have exempted from liability a farmer who possessed "a patented plant on real property owned or occupied by the farmer if the farmer did not knowingly buy or otherwise knowingly acquire the patented plant and if the farmer acted in good faith without knowledge of the patented nature of the plant." H.B. 445, 61st Leg. (Mont. 2009).

¹³¹ Statement in Opposition to H.B. 445 before the Montana House Agriculture Committee (Feb. 12, 2009) (on file with author).

IV. EXHAUSTION OF PATENT RIGHTS ON SELF-REPLICATING TECHNOLOGIES

As Part V explains, because they are contracts, patent licenses¹³² may be subject to interpretation under state law regardless of the application of first-sale principles to the patented goods at issue. If, however, a particular transaction accompanied by a so-called license exhausts the patent rights, then the agreement is nothing more than a mere contract.¹³³ Therefore, this section explores application of the exhaustion doctrine to the sale of patented seeds accompanied by a conditional license.

When the United States grants someone a patent on her invention, it grants the “right to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States.”¹³⁴ The patent exhaustion doctrine—also known as the first sale doctrine—is based on the notion that “[a]n incident to the purchase of any article, whether patented or unpatented, is the right to use and sell it.”¹³⁵ The patent holder receives consideration for its use upon selling the patented item, and thus “parts with the right to restrict that use.”¹³⁶ As the Supreme Court has held:

The purpose of the patent law is fulfilled with respect to any particular article when the patentee has received his reward for the use of his invention by the sale of the article, and . . . once that purpose is realized the patent

¹³² The licenses referred to here are Technology Stewardship Agreements, which are cast as non-exclusive licenses to make, use, and sell patented genetically engineered seeds. While not all contracts are licenses, all licenses are contracts.

¹³³ See *Gen. Talking Pictures Corp. v. W. Elec. Co.*, 305 U.S. 124, 128 (1938) (Black, J., dissenting) (“[W]hen an article described in a patent is sold and ‘passes to the hands of the purchaser, it is no longer within the limits of the monopoly. It passes outside of it, and is no longer under the protection of the act of Congress. Contracts in relation to it are regulated by the laws of the State, and are subject to State jurisdiction.’”) (quoting *Bloomer v. McQuewan*, 14 How. 539, 549-50 (1852)).

¹³⁴ 35 U.S.C. § 154(a)(1) (2006)

¹³⁵ *United States v. Univis Lens Co.*, 316 U.S. 249 (1942); see also *Adams v. Burke*, 84 U.S. 453, 455 (1873) (holding that “the sale by a person who has the full right to make, sell and use . . . a machine carries with it the right to the use of that machine to the full extent to which it can be used in point of time.”); *Bloomer v. McQuewan*, 55 U.S. 539, 549 (holding that “when the machine passes to the hands of the purchaser, it is no longer within the limits of the monopoly.”).

¹³⁶ *Adams*, 84 U.S. at 456 (“[W]hen the patentee, or the person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use.”).

law affords no basis for restraining the use and enjoyment of the thing sold.¹³⁷

Enter the patent license, an agreement between the patent holder and another party—a manufacturer of the patented goods, a distributor, even an end user/consumer—that transfers some or all of the rights to exclude and amounts to a promise not to sue the licensee for patent infringement. Our intellectual property regime fully supports maximizing the economic value of patent rights through exclusive and non-exclusive licenses, through field of use licenses and geographic territory licenses.¹³⁸ Indeed, a patent holder can license only some of the rights to exclude, such as the right to make and use a patented article, but withhold other rights to exclude, such as the right to sell the patented article.¹³⁹

But can a label on goods, containing post-sale restrictions on a purchaser's ability to make, use, or sell those patented goods, survive the exhaustion doctrine as a nonexclusive license to use the goods or the technology imbedded in them? The Federal Circuit in the *McFarling* and *Scruggs* cases held it can with regard to seeds.¹⁴⁰ The Supreme Court has never squarely addressed the issue. Its most recent patent exhaustion decision, *Quanta Computer, Inc. v. LG Electronics, Inc.*, broadened the application of the exhaustion doctrine beyond what the Federal Circuit had previously recognized, but did not expressly overturn Federal Circuit precedent in all respects.

A. PRE-*QUANTA COMPUTER* SUPREME COURT PATENT EXHAUSTION CASES

The Supreme Court's patent exhaustion jurisprudence demonstrates at once an appreciation for maximizing patent rights through licensing and a healthy skepticism of potentially over-reaching patent owners.

One of the earliest cases exploring the exhaustion doctrine involved an undertaker named Burke who lived in Natick, Massachusetts, some seventeen miles outside Boston.¹⁴¹ Burke had purchased coffin lids from a Boston-based company that was licensed to make and sell the patented lids in Boston and within a ten-mile radius of it.¹⁴² Another company had the license to make and sell the patented coffin lids outside of the ten-mile radius of Boston, a territory

¹³⁷ *Univis Lens Co.*, 316 U.S. at 249.

¹³⁸ *See* *Gen. Talking Pictures Corp. v. W. Elec. Co.*, 305 U.S. 124, 127 (1938).

¹³⁹ *United States v. Gen. Elec. Co.*, 272 U.S. 476, 490 (1926).

¹⁴⁰ *See supra* notes 95-115 and accompanying text.

¹⁴¹ *Adams*, 84 U.S. at 454.

¹⁴² *Id.*

that included the town of Natick.¹⁴³ That company sued Burke for using his coffin lids in their territory.¹⁴⁴ The Supreme Court in *Adams v. Burke* held that because Burke had purchased the coffin lids in Boston, the rights to use the patented lids was exhausted by that sale and he was free then to use them anywhere, even beyond ten miles of Boston.¹⁴⁵

[S]o far as the use of it was concerned, the patentee had received his consideration, and it was no longer within the monopoly of the patent. It would be to engraft a limitation upon the right of use not contemplated by the statute nor within the reason of the contract to say that it could only be used within the ten-mile circle.¹⁴⁶

The *Adams v. Burke* holding was analyzed and applied affirmatively in *Keeler v. Standard Folding-Bed Co.*,¹⁴⁷ another case involving purchase of goods within one territory and use of them in another patent licensee's territory.¹⁴⁸ The Supreme Court held that "one who buys patented articles of manufacture from one authorized to sell them becomes possessed of an absolute property in such articles, unrestricted in time or place."¹⁴⁹ Significantly, the Court went on to note:

Whether a patentee may protect himself and his assignees by special contracts brought home to the purchasers is not a question before us, and upon which we express no opinion. It is, however, obvious that such a question would arise as a question of contract, and not

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ *Id.* at 456 ("It seems to us that, although the right of [the Boston seller] to manufacture, to sell, and to use these coffin-lids was limited to the circle of ten miles around Boston, that a purchaser from them of a single coffin acquired the right to use that coffin for the purpose for which all coffins are used. That so far as the use of it was concerned, the patentee had received his consideration, and it was no longer within the monopoly of the patent.").

¹⁴⁶ *Id.* The Court in *Adams* was careful to distinguish between exhaustion of the right to *use* the invention and the ongoing restrictions on the ability to *make* and *sell* the patented invention. "Whatever, therefore, may be the rule when patentees subdivide territorially their patents, as to the exclusive right *to make* or *to sell* within a limited territory, we hold that in the class of machines or implements we have described, when they are once lawfully made and sold, there is no restriction on their *use* to be implied for the benefit of the patentee or his assignees or licensees." *Id.* at 456-457 (emphasis in original).

¹⁴⁷ 157 U.S. 659, 666 (1895).

¹⁴⁸ *Id.* at 660.

¹⁴⁹ *Id.* at 666.

as one under the inherent meaning and effect of the patent laws.¹⁵⁰

In a brief departure from its patent exhaustion jurisprudence, the Court in *Henry v. A.B. Dick Co.*¹⁵¹ upheld contributory patent infringement claims brought against an ink manufacturer who sold non-A.B. Dick ink for use on an A.B. Dick machine in spite of a prominent notice posted on the machines that prohibited use of non-A.B. Dick ink.¹⁵² The Supreme Court held that an *unconditional* sale of a patented article exhausts the patent-holder's rights to it; but if the right of use was restricted by the terms of a license agreement, use outside the bounds permitted by the license constitutes patent infringement.¹⁵³ Congress soon thereafter passed the Clayton Act,¹⁵⁴ however, and thereby made it unlawful to fix "by contract" a price for goods or otherwise "substantially lessen competition or tend to create a monopoly in any line of commerce" whether the goods were patented or unpatented.¹⁵⁵ The Supreme Court also expressly overruled *A.B. Dick Co. in Motion Picture Patents Co. v. Universal Film Manufacturing Co.*¹⁵⁶

The Court reaffirmed that patent licenses are permissible under patent law in *General Talking Pictures Corp. v. Western Electric Co.*¹⁵⁷ In that case, licenses to manufacture and sell patented amplifier technology were given by a patent pool to manufacturers in multiple fields of use, including the commercial field and the "private or home

¹⁵⁰ *Id.*

¹⁵¹ 224 U.S. 1, 13 (1912).

¹⁵² *Id.* at 51.

¹⁵³ *Id.* at 24-25 ("But if the right of use be confined by specific restriction, the use not permitted is necessarily reserved to the patentee. If that reserved control of use of the machine be violated, the patent is thereby invaded.")

¹⁵⁴ Clayton Act, 15 U.S.C. §§ 12-27, 29 U.S.C. §§ 52-53 (2006).

¹⁵⁵ 243 U.S. 502, 517 (1917) (quoting 15 U.S.C. § 14).

¹⁵⁶ 243 U.S. 502, 518 (1917). In *Motion Picture Patents*, owners of patents on motion picture projectors licensed the right to manufacture the machines and required their licensees to restrict purchasers from using the machines to project anything but the patent owner's own motion pictures and to pay additional royalties beyond the purchase price during the life of the patent. *Id.* at 506. These restrictions were posted on the machines themselves. *Id.* at 506-07. In holding that the restrictions went far beyond the permissible scope of the patent laws, *id.* at 509, the Court reaffirmed the limitations on a patent holder to the confines of the patent's claims as well as the purpose underlying patent law: "It is undeniably true, that the limited and temporary monopoly granted to inventors was never designed for their exclusive profit or advantage; the benefit to the public or community at large was another and doubtless the primary object in granting and securing that monopoly." *Id.* at 511 (quoting *Kendall v. Winsor*, 62 U.S. 322, 327-28 (1858)).

¹⁵⁷ 305 U.S. 124, 127 (1938).

field.”¹⁵⁸ One licensee for the “private or home field” manufactured and sold amplifiers for commercial use in violation of the terms of its license agreement.¹⁵⁹ The Court framed the issues presented by the parties as follows:

1. Can the owner of a patent, by means thereof, restrict the use made of a device manufactured under the patent, after the device has passed into the hands of a purchaser in the ordinary channels of trade, and full consideration paid therefor?
2. Can a patent owner, merely by a “license notice” attached to a device made under the patent, and sold in the ordinary channels of trade, place an enforceable restriction on the purchaser thereof as to the use to which the purchaser may put the device?¹⁶⁰

The Court avoided these issues:

Upon further hearing we are of opinion that neither question should be answered. For we find that, while the devices embody the inventions of the patents in suit, they were not manufactured or sold under the patent(s) and did not pass into the hands of a purchaser in the ordinary channels of trade.¹⁶¹

Instead, the licensee made amplifiers for commercial use when it had the rights to make them only for non-commercial use, and the purchaser ordered and purchased the amplifiers knowing the licensee was acting outside the scope of its license.¹⁶² The Court held that the “field of use” restrictions in a license were indeed legal, and the violation of them amounted to patent infringement.¹⁶³ Interestingly, the Supreme Court did not squarely address the enforceability of label notices as patent licenses in *General Talking Pictures*, although the case has been cited as if it affirms them.¹⁶⁴

In 1942, the Supreme Court weighed in again on the limitations of end user restrictions pursuant to a so-called “license” agreement in the context of an antitrust suit brought by the United States against the holder of patents on multifocal lenses.¹⁶⁵ The *Univis*

¹⁵⁸ *Id.* at 125-26.

¹⁵⁹ *Id.* at 126.

¹⁶⁰ *Id.* at 125.

¹⁶¹ *Id.* (internal quotations omitted).

¹⁶² *Id.* at 126.

¹⁶³ *Id.* at 127.

¹⁶⁴ See, e.g., *Chemagro Corp. v. Universal Chemical Co.*, 244 F. Supp. 486, 489-90 (E.D. Tex. 1965), cited in *Janis and Kesan*, *supra* note 32, at 773 n.162.

¹⁶⁵ *United States v. Univis Lens Co.*, 316 U.S. 241 (1942).

Lens Company had developed an ingenious and profitable licensing system, whereby it licensed a lens manufacturer to make blank lenses and then required wholesalers, finishing retailers, and prescription retailers (collectively “sellers”) to acquire a license to purchase the lens blanks from the manufacturer and finish them as necessary for their customers.¹⁶⁶ The licenses to the sellers allowed them to sell the finished lenses only at prices fixed by Univis.¹⁶⁷ The Court applied the exhaustion doctrine even though the patent owner parted initially not with goods that fully embodied the patent, but instead with an incomplete article requiring that the purchaser practice additional patented steps to create a complete, marketable product.¹⁶⁸ It held:

The first vending of any article manufactured under a patent puts the article beyond the reach of the monopoly which that patent confers. Whether the licensee sells the patented article in its completed form or sells it before completion for the purpose of enabling the buyer to finish and sell it, he has equally parted with the article, and made it the vehicle for transferring to the buyer ownership of the invention with respect to that article. To that extent he has parted with his patent monopoly in either case, he has received in the purchase price every benefit of that monopoly which the patent law secures to him.¹⁶⁹

In sum, the bulk of the Supreme Court’s pre-*Quanta Computer* patent exhaustion jurisprudence liberally applies the patent exhaustion principles to sales, for consideration, of patented goods in commerce even under licensing scenarios. As discussed below, the Court has not squarely addressed whether “label licenses” or other end-user agreements are properly construed under patent licensing law, the violation of which amounts to patent infringement, or instead are to be treated as contracts, the breach of which is a question of state contract law. The Federal Circuit, by contrast, has addressed these issues and has generally not applied the patent exhaustion doctrine to these carefully drafted licensing arrangements.

¹⁶⁶ *Id.* at 244.

¹⁶⁷ *Id.* at 245.

¹⁶⁸ *Id.* at 250-51 (“[W]here one has sold an uncompleted article which, because it embodies essential features of his patented invention, is within the protection of his patent, and has destined the article to be finished by the purchaser in conformity to the patent, he has sold his invention so far as it is or may be embodied in that particular article. . . . He has thus parted with his right to assert the patent monopoly with respect to it and is no longer free to control the price at which it may be sold either in its unfinished or finished form.”).

¹⁶⁹ *Id.* at 252.

B. THE FEDERAL CIRCUIT'S EXHAUSTION
JURISPRUDENCE

The Court of Appeals for the Federal Circuit¹⁷⁰ has adopted a favorable view of post-sale contractual restrictions cast as patent licenses. In the seminal decision *Mallinckrodt v. Medipart*, the Federal Circuit considered whether the manufacturer and patent owner of a medical device could, consistent with the Patent Act, restrict hospital-purchasers to a “single use only” through notices on the device.¹⁷¹ Hospitals had been flaunting the notice by sending the devices to defendant Medipart for reconditioning and then using the devices again.¹⁷² Patent-holder Mallinckrodt described the reuse restriction as “a label license for a specified field of use wherein the field is single (i.e. disposable) use.”¹⁷³ The Federal Circuit, relying on *General Talking Pictures*, upheld Mallinckrodt’s restrictive use license as a valid application of patent law¹⁷⁴ and distinguished other Supreme Court patent exhaustion cases, including *Univis*, as relying on some other law or policy, such as patent misuse or antitrust law.¹⁷⁵ It took pains to point out that “the enforceability of a restriction to a particular use is [not] determined by whether the purchaser acquired the device from a manufacturing licensee or from a manufacturing patentee” calling such distinctions “formalistic line drawing” of no economic or legal consequence.¹⁷⁶

Building on the *Mallinckrodt* opinion in the 1997 case *B. Braun Medical Inc. v. Abbott Laboratories*,¹⁷⁷ the Federal Circuit explained the exhaustion doctrine as follows:

[A]n *unconditional* sale of a patented device exhausts the patentee's right to control the purchaser's use of the device thereafter. The theory behind this rule is that in such a transaction, the patentee has bargained for, and received, an amount equal to the full value of the goods. This exhaustion doctrine, however, does not apply to an expressly conditional

¹⁷⁰ Congress established the Federal Circuit in 1982 to create a uniform body of patent law in the United States. See, e.g., Harold C. Wegner, *Post-Quanta, Post-Sale Patentee Controls*, 7 J. MARSHALL REV. INTELL. PROP. L. 682, 686 (2008) (citing S. REP. NO. 97-275, at 2 (1981), as reprinted in 1982 U.S.C.C.A.N. 11, 12).

¹⁷¹ *Mallinckrodt Inc. v. Medipart Inc.*, 976 F.2d 700 (Fed. Cir. 1992).

¹⁷² *Id.* at 702. The patented device was “an apparatus for delivery of radioactive or therapeutic material in aerosol mist form to the lungs of a patient, for diagnosis and treatment of pulmonary disease.” *Id.* at 701.

¹⁷³ *Id.* at 703.

¹⁷⁴ *Id.* at 709.

¹⁷⁵ *Id.* at 706-08.

¹⁷⁶ *Id.* at 705.

¹⁷⁷ 124 F.3d 1419, 1426 (Fed. Cir. 1997).

sale or license. In such a transaction, it is more reasonable to infer that the parties negotiated a price that reflects only the value of the ‘use’ rights conferred by the patentee.¹⁷⁸

The Federal Circuit further clarified its exhaustion jurisprudence in *Monsanto Co. v. McFarling*.¹⁷⁹ McFarling, as discussed briefly in Part II.B above, claimed the restrictions against saving and replanting seed in Monsanto’s Technology Use Agreement amounted to patent misuse because it “tied” the patented genetic trait to the physical seed itself.¹⁸⁰ The court restated McFarling’s argument as seeking “a compulsory license to use the patent rights in conjunction with the second-generation ROUNDUP READY® soybeans in his possession after harvest.”¹⁸¹ It held that the patent grant extended beyond use of the goods themselves to use of the goods produced by the patented product.¹⁸² The court stated: “Because [Monsanto’s] patent would read on all generations of soybeans produced, we hold that the restrictions in the Technology Agreement prohibiting the replanting of the second generation ROUNDUP READY® soybeans do not extend Monsanto’s rights under the patent statute.”¹⁸³

Monsanto v. Scruggs is the Federal Circuit’s most recent decision involving patent exhaustion as applied to self-generating technology.¹⁸⁴ As quoted in Part II above, the Federal Circuit found the doctrine inapplicable.¹⁸⁵ At issue was the farmer’s ability to save seeds from the harvest for replanting or sale in violation of Monsanto’s license agreement, which the farmer failed to sign.¹⁸⁶ As to the saved second-generation seeds, not the first-generation purchased seeds, the court found the patent applied as if no purchase had occurred for, indeed, the second generation seeds had never been sold.¹⁸⁷

The *Scruggs* decision was decided before the Supreme Court’s ruling in *Quanta Computer v. LG Electronics*, the latest in the Supreme Court’s apparent efforts to rein in the Federal Circuit’s

¹⁷⁸ *Id.* at 1426 (citing *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 706 (Fed. Cir. 1992)) (emphasis added).

¹⁷⁹ *Monsanto Co. v. McFarling*, 363 F.3d 1336 (Fed. Cir. 2004).

¹⁸⁰ *Id.* at 1342.

¹⁸¹ *Id.*

¹⁸² *Id.* at 1343.

¹⁸³ *Id.*

¹⁸⁴ *Monsanto Co. v. Scruggs*, 459 F.3d 1328 (Fed. Cir. 2006).

¹⁸⁵ *Id.* at 1336.

¹⁸⁶ *Id.* at 1333.

¹⁸⁷ *Id.* at 1336.

patent-friendly rulings and a decision with significant implications for the transgenic seed industry.

C. *QUANTA COMPUTER V. LG ELECTRONICS*

LG Electronics (LGE) owned a portfolio of computer technology patents including utility patents that described methods for retrieving certain types of data in an efficient manner and for prioritizing system users.¹⁸⁸ LGE entered into a license agreement with Intel Corporation permitting Intel “to manufacture and sell microprocessors and chipsets that use the LGE patents.”¹⁸⁹ The parties’ agreement further authorized Intel to “make, use, sell (directly or indirectly), offer to sell, import or otherwise dispose of its own products practicing the LGE Patents.”¹⁹⁰ Intel agreed to give written notice to its customers that they were not authorized to combine the Intel products they purchased with any non-Intel products in a manner that practiced LGE’s patents.¹⁹¹ Quanta Computer did just that, using Intel parts in combination with non-Intel parts in ways that practiced LGE’s patented methods.¹⁹² The Federal Circuit found in LGE’s favor on its patent infringement claims against Quanta Computer, holding that Intel’s sales to customers were “conditional” and thus did not trigger patent exhaustion.¹⁹³

LGE urged the Supreme Court to affirm, arguing in part:

[B]ecause method patents are linked not to a tangible article but to a process, they can never be exhausted through a sale. Rather, practicing the patent—which occurs upon each use of an article embodying a method patent – is permissible only to the extent rights are transferred in an assignment contract.¹⁹⁴

¹⁸⁸ *Quanta Computer, Inc. v. LG Elec., Inc.*, 128 S. Ct. 2109 (2008).

¹⁸⁹ *Id.* at 2114.

¹⁹⁰ *Id.* (internal quotation omitted).

¹⁹¹ *Id.*

¹⁹² *Id.*

¹⁹³ *LG Elecs., Inc. v. BizCom Elecs., Inc.*, 453 F.2d 1364, 1370 (Fed. Cir. 2006) (“The LGE-Intel license expressly disclaims granting a license allowing computer system manufacturers to combine Intel’s licensed parts with other non-Intel components. Moreover, this conditional agreement required Intel to notify its customers of the limited scope of the license, which it did. Although Intel was free to sell its microprocessors and chipsets, those sales were conditional, and Intel’s customers were expressly prohibited from infringing LGE’s combination patents. . . . The “exhaustion doctrine . . . does not apply to an expressly conditional sale or license,” so LGE’s rights in asserting infringement of its system claims were not exhausted.” (citations omitted)).

¹⁹⁴ *Quanta Computer*, 128 S. Ct. at 2117.

The Court disagreed, finding that exhaustion applies to method claims and that any other ruling would encourage inventors “to draft their patent claims to describe a method rather than an apparatus” and thereby make an “end run around exhaustion.”¹⁹⁵

Having rejected the notion that method patents deserve special treatment under the patent law, the Court considered “the extent to which a product must embody a patent in order to trigger exhaustion.”¹⁹⁶ Relying on *Univis*, the Court held that exhaustion can be triggered by sale of articles that may not themselves fully embody the patent if their “only reasonable and intended use” is to practice the patent and if they embody “essential features of the patented invention.”¹⁹⁷ Exhaustion was triggered when Intel sold Quanta Computer its products because even though the products themselves did not carry out the desired functions, they did so when attached to standard system components and without requiring Quanta Computer to “make any creative or inventive decision” in adding the components.¹⁹⁸

Lastly, the Court applied the exhaustion doctrine to the specific licensing scheme at issue in *Quanta Computer*. Rather than using the Federal Circuit’s language (“an *unconditional* sale of a patented device exhausts the patentee’s right to control the purchaser’s use of the device thereafter”)¹⁹⁹ the Court stated the test as follows: “Exhaustion is triggered only by a sale *authorized* by the patent holder.”²⁰⁰ LGE argued that Intel was not authorized under its license agreement with LGE “to sell its products for use in combination with non-Intel products to practice the LGE patents,” relying on *General Talking Pictures Corp. v. Western Electric Co.*²⁰¹ The Court rejected that argument, noting that the license agreement between LGE and Intel permitted Intel to “make, use or sell products free of LGE’s patent claims.”²⁰² Moreover, even though Intel was obliged by its contracts with LGE to give notice to its customers that they were not

¹⁹⁵ *Id.* at 2117-18.

¹⁹⁶ *Id.* at 2118.

¹⁹⁷ *Id.* at 2119 (citing and quoting *United States v. Univis Lens. Co.*, 316 U.S. at 249).

¹⁹⁸ *Id.* at 2120. The Court focused not on whether the final step in the process involved adding or deleting material but rather whether “the final step to practice the patent is common and noninventive” such as “grinding a lens to the customer’s prescription, or connecting a microprocessor or chipset to buses or memory.”

¹⁹⁹ *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1426 (Fed. Cir. 1997) (emphasis added).

²⁰⁰ *Quanta Computer*, 128 S. Ct. at 2121 (citing *United States v. Univis Lens Co.*, 316 U.S. 241 at 249 (1942)) (emphasis added).

²⁰¹ *Id.*; *Gen. Talking Pictures Corp. v. W. Elec. Co.*, 304 U.S. 175 (1938).

²⁰² *Quanta Computer*, 128 S. Ct. at 2121.

authorized to practice LGE's patents, LGE did not contend that this requirement was a condition of its patent license agreement.²⁰³ In sum, "[n]o conditions limited Intel's authority to sell products substantially embodying the patents. Because Intel was authorized to sell its products to Quanta Computer, the doctrine of patent exhaustion prevents LGE from further asserting its patent rights with respect to the patents substantially embodied by those products."²⁰⁴

The Supreme Court carefully applied its articulation of the exhaustion doctrine in *Quanta Computer* to LGE's particular licensing scheme with Intel. It previously had denied certiorari to the Federal Circuit in *Monsanto v. Scruggs*, leaving wide open the question of whether licensing systems like Monsanto's for ROUNDUP READY seeds would survive exhaustion. The next section explores whether the Federal Circuit's exhaustion analysis in *Monsanto v. McFarling* and *Monsanto v. Scruggs* are still good law after *Quanta Computer*.

D. ARE PATENTS IN TRANSGENIC SEEDS
EXHAUSTED UPON SALE WITH A
CONDITIONAL LABEL LICENSE?

Three aspects of the *Quanta Computer* opinion must be applied to the transgenic seed industry's licensing and distribution practices to determine if patent exhaustion is triggered. First, are self-replicating technologies in a category to themselves for purposes of applying the exhaustion doctrine? Second, when transgenic seeds are sold to a grower what patent rights are exhausted (if any) by that sale? And third, does the licensing scheme used by Monsanto (for example) mirror that of LGE such that *Quanta Computer*'s ruling directly applies or is it somehow distinguishable and therefore does not trigger exhaustion?

The Supreme Court carefully applied its articulation of the exhaustion doctrine in *Quanta Computer* to the LGE's particular licensing scheme with Intel. It previously had denied certiorari to the Federal Circuit in *Monsanto v. Scruggs*, leaving wide open the question whether licensing systems like Monsanto's for ROUNDUP READY seeds would survive exhaustion. The next section explores whether the Federal Circuit's exhaustion analysis in *Monsanto v. McFarling* and *Monsanto v. Scruggs* are still good law after *Quanta Computer*.

²⁰³ *Id.*

²⁰⁴ *Id.* at 2122.

1. Treating Self-Replicating Technologies Differently

The *Quanta Computer* Court categorically refused to create an exception to the exhaustion doctrine for method patents. A patent on a genetically modified plant is commonly a composition of matter patent, the embodiment of which is typically in an article or tangible thing (seed) and thus even more likely to fall under exhaustion principles upon sale than something more ephemeral like methods or processes. Nonetheless, because the particular embodiment of the patent right, the seed, is self-replicating, the Federal Circuit and others contend that it should fall outside the classic exhaustion principles into a category of its own. The Court did not address this issue in *Quanta Computer*, but self-replicating technologies like plants and other biological material, and even software, should be treated with the same exhaustion standards as all other subject matter under section 101 of the Patent Act.

Since the Supreme Court confirmed in 1980 that man-made life forms are proper subject matter of utility patents, and again in the *J.E.M. Ag Supply* case acknowledged that plant technology may properly be the subject of utility patents even though they may also enjoy the benefits of the Plant Variety Protection Act, the transgenic seed industry has taken advantage of section 101 protection. They must as well accept the consequences, which include being subject to the exhaustion doctrine. Arguments that innovation in plant technologies will be stifled if their self-replicating nature is not given special status for exhaustion purposes²⁰⁵ are not likely to carry the day with this Court. The *Quanta Computer* opinion reflects the Court's skepticism of creating exhaustion-free categories for patent protection, as they invite clever claims drafting in an attempt to "end run" around the doctrine.²⁰⁶

Another argument against applying exhaustion to patented seed technology is that the second-generation seed has not been sold to the farmer and thus patent rights in it could not be exhausted. The Supreme Court would likely treat this argument as it did LGE's

²⁰⁵ See, e.g., Brief Amicus Curiae of the American Seed Trade Ass'n in Support Of Neither Party at 4, *Quanta Computer, Inc. v. LG Electronics, Inc.*, 128 S. Ct. 2109 (2008) (No. 06-937).

²⁰⁶ *Quanta Computer*, 128 S. Ct. at 2117-18. The Court's decision was significantly influenced by a commentator's recommendations that claims drafters convert apparatus claims into method claims to "survive numerous transactions regarding the patented good, allowing the force of the patent to intrude deeply into the stream of commerce." *Id.* at 2118 n.5 (quoting Thomas, *Of Text, Technique, and the Tangible: Drafting Patent Claims Around Patent Rules*, 17 J. MARSHALL J. COMPUTER & INFO. L. 219, 252 (1998)).

attempts to convince the court that exhaustion “does not apply to postsale restrictions on ‘making’ an article.”²⁰⁷ The Court held: “[M]aking a product that substantially embodies a patent is, for exhaustion purposes, no different from making the patented article itself.”²⁰⁸ Thus, a farmer who makes a new seed that embodies the patented composition of matter claimed is not engaged in additional “making” or the exhaustion doctrine would never have meaning. In other words, if the Supreme Court refuses to create an exhaustion exemption for self-replicating technologies then it must, to be consistent, find that the progeny of these technologies do not practice the patent for exhaustion purposes.

The seed patent owners convinced the Federal Circuit in *Scruggs*, and argued passionately in an amicus brief to the Supreme Court in *Quanta Computer*, that economic concerns foreclosed application of the exhaustion doctrine to second-generation seeds. According to the American Seed Trade Association, the price charged for the original seed reflects only part of the value of the article sold, namely, the value of the first-generation seeds.²⁰⁹ It contends that patent owners can reap the reward of their significant research investments only in repeated sales of its technology to the same customers, that depriving them of these future sales by allowing farmers to save and replant the patented seed would force them to recoup their investment in a single transaction, and that the price for that transaction would be “so prohibitively expensive that few farmers could afford to purchase it.”²¹⁰

The Court has routinely emphasized, however, that the fundamental purpose behind patent law is not the enrichment of the inventor, but rather the encouragement of innovation for the public’s sake.²¹¹ Nearly a century ago, the Court applied the exhaustion doctrine to a restrictive licensing scheme with the following reminder:

A restriction which would give to the plaintiff such a potential power for evil over an industry . . . is plainly

²⁰⁷ *Quanta Computer*, 128 S. Ct. at 2122.

²⁰⁸ *Id.*

²⁰⁹ Brief Amicus Curiae, *supra* note 205, at 20.

²¹⁰ *Id.* at 16.

²¹¹ See Harry First, *Controlling the Intellectual Property Grab: Protect Innovation, Not Innovators*, 38 RUTGERS L.J. 365, 390 (2007) (“The principle of parsimony argues that the extraction of the rents in the first sale should be enough of an incentive for innovation. In the least, a ‘first sale’ should shift the burden to the patentee to justify in economic terms its restrictions on downstream use. Simple resort to property rights language, focusing on the ‘rights’ of the innovator to exclude others from use, as the Federal Circuit has done, should not be enough. ‘It is innovation, not innovators, that the [intellectual property] Acts protect.’”).

void, because wholly without the scope and purpose of our patent laws and because, if sustained, it would be gravely injurious to that public interest, which we have seen is more a favorite of the law than is the promotion of private fortunes.²¹²

Conceivably, application of the exhaustion doctrine may in fact promote innovation, rather than stifle it as the industry claims. Monsanto and other agrichemical companies may be encouraged to create new technologies that growers will want to buy each year, as opposed to saving seed embodying the old technology. Seed engineers may indeed pursue more aggressively so-called “terminator technologies” or genetic use restriction technologies (“GURTS”)—genetically modified seeds designed to produce sterile offspring.²¹³ The merits of these technologies from an environmental and public policy perspective are very much in debate, but they nonetheless belie the argument that patent exhaustion will stifle innovation in the seed industry.²¹⁴

²¹² *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 519 (1917).

²¹³ See, e.g., Jason Savich, *Monsanto v. Scruggs: The Negative Impact of Patent Exhaustion on Self-Replicating Technology*, 22 *BERKELEY TECH. L.J.* 115, 132 (2007) (“These technologies function by introducing genetic elements into the plants which produce a toxin late in seed maturation. The toxin kills the seed after the plant has matured, producing a safe but sterile crop for the farmer, forcing him to purchase new seeds each year because the seeds produced in growing the crop are not viable for replanting.”) (citations omitted); Neil D. Hamilton, *Legal Issues Shaping Society’s Acceptance of Biotechnology and Genetically Modified Organisms*, 6 *DRAKE J. AG. L.* 81, 106-07 (2001) (“[T]he technology would allow the sale of improved seeds in markets or countries where the legal protections for intellectual property rights on plant genetics are seen as inadequate or non-existent. It would also let companies avoid the necessity of requiring producers to sign contracts promising not to save seed and the related need to police farmers’ actions, such as Monsanto’s aggressive enforcement of “seed piracy” for ROUNDUP READY® soybeans.”); Jeremy P. Oczek, *In the Aftermath of the “Terminator” Technology Controversy: Intellectual Property Protections for Genetically Engineered Seeds and the Right To Save and Replant Seed*, 41 *B.C. L. REV.* 627, 627-28 (2000) (“On March 3, 1998, the United States Patent and Trademark Office granted Patent No. 5,723, 765, titled “Control of Plant Gene Expression,” jointly to the United States Department of Agriculture (“USDA”) and the Delta and Pine Land Co. (“D&PL”) for a technology that blocks genetically altered seeds from germinating after one season. This new technology, officially named the “Technology Protection System,” provides the ability to genetically alter seeds so that the crops produced from these seeds will in turn bear sterile seeds.”).

²¹⁴ Should the courts apply exhaustion to the sale of patented transgenic seeds, the industry would not be without property rights. The Plant Variety Protection Act remains applicable to sexually reproduced plants and creates a “patent-like” property right still available to and used by the transgenic seed industry. Indeed, the Supreme Court has recently confirmed that in spite of liability exemptions for seed saving and

2. What Rights are Exhausted by the Sale of Seeds?

Assuming patented seeds are not treated differently than other patented goods for exhaustion purposes, what rights of the patent owner are exhausted by the seeds' transfer to a grower? A patent allows its owner to exclude others from making, using, and selling the invention. By the time a farmer purchases seed from a distributor, it has been manufactured and sold at least once. The manufacturing may involve the actual insertion of the gene into the seed, a process that nature does not accomplish on its own, which is why the end result is appropriate subject matter for a utility patent. The farmer pays money to acquire the genetically engineered seed—consideration for acquiring from the patent owner the right to use the seed. According to *Quanta Computer*, a patented item carries with it the right to use it “to the full extent to which it can be used.” This includes any reasonable non-infringing use and steps which are common and non-inventive.²¹⁵

The seed industry characterizes the transaction of patented seeds into the hands of growers for consideration not as a sale, but as a license.²¹⁶ A fee is paid (to the distributor) for the tangible goods. According to the seed industry, this fee is less than what is necessary to fully compensate the patent owner for the costs of its innovation, or, put it another way, lower than necessary to encourage innovation in plant technology.²¹⁷ It is, at a minimum, less than a willing grower is willing to pay to acquire the seeds, since many willingly pay the technology fee separately to acquire the license.

After this transaction takes place, what does the grower own? It may depend on the qualities of the particular seed at issue. A seed

research expressly provided in the PVPA, the statute does not allow growers to sell their saved seed to third parties other than as feed. In fact, the careful consideration Congress gave to the relationship between farmers, seed saving practices, and the property rights of seed manufacturers demonstrates the need for legislation tailored to this unique industry. *Asgrow Seed Co. v. Winterboer*, 513 U.S. 175, 181 (1995). The utility patent provisions of the Patent Act, on the other hand, simply do not permit the fine-tuned remedies and exemptions appropriate to the seed industry and judges should not try to force a fit. Thus, even if the exhaustion doctrine prevents unlimited downstream distribution of seeds patented under the utility patent provisions of the Patent Act, application of the PVPA to seed technology puts an end to a farmer's ability to commercially distribute saved seed. This, ironically, may make the PVPA once again an attractive option for the seed industry.

²¹⁵ See Wegner, *supra* note 170, at 696-97.

²¹⁶ Personal interview with Prof. Jay Kesan, University of Illinois School of Law and expert witness to Pioneer Hi-Bred Seed Company, in December 2009.

²¹⁷ See Brief Amicus Curiae, *supra* note 205, at 16.

“treated” for planting may have no other function.²¹⁸ In that case, to plant the seed and harvest its progeny is to use the patented technology.²¹⁹ Alternatively, the seeds themselves may be used for myriad purposes depending on the plant species, so we would assume that without the license agreement the grower has acquired tangible goods he can use as feed or forage, fuel, or some other function. The transaction is designed to confer the right to plant the seed only upon signing a license agreement; “use” of the seed for purposes of growing a crop is not, according to the seed industry, inherent in the acquisition of the tangible goods. Instead, one may plant the seed and grow new ones only with a license from the patent holder granting permission to plant and restricting what can be done with the harvest.²²⁰

If, when the grower purchases the tangible seeds from a dealer, the transaction is a sale of goods limited, if at all, by contractual restrictions on the label, the analysis is different. Planting and harvesting—and even saving—the seeds would be embodied in the “use” of the goods. Such “use” would also, in some cases, result in the creation of new seeds genetically identical to the purchased ones, although not necessarily made in the same way as the first generation seeds.²²¹

All the money is bet on whether the patent owner also parts with the right to sell—or save and plant—the harvest. However, is that fairly embodied within the purchaser’s rights or does the right to

²¹⁸ See *Monsanto Canada Inc. v. Schmeiser*, [2004] 1 S.C.R. 902, 2004 SCC 34 (Can.) (noting that the defendant had his saved seed treated for replanting and “once treated, [the seeds] could be put to no other use”).

²¹⁹ See *id.* (finding defendant used the patented technology by saving seed containing the patented gene and replanting it).

²²⁰ See Busch, *supra* note 3, at 108 (Arguing that “[m]echanical and biological reproduction must be treated the same under patent law, therefore, the doctrine of exhaustion does not apply to biological reproduction and Jack, upon buying patented seed, does not acquire the right of production of the beans for sale, either for non-reproductive or for reproductive purposes. Jack only acquires the property right transfer, use, and waste of the beans that he originally purchased.”).

²²¹ Monsanto, at least, concerns itself through its “unique” licensing arrangement not so much with the initial planting “use” but instead with the “use” to which progeny seeds can be put. In an unpublished opinion limiting McFarling’s damages even after the jury found willful infringement, the district court judge remarked upon the unprecedented strategy Monsanto uses for seed distribution: “Monsanto’s selected marketing method appears unique. Monsanto decided to charge the seed companies a relatively low license fee per bag of seed sold by the seed companies, but then to restrict the end users—the farmers’—use of their own crops. In other words, ‘the Technology Agreement does not impose a restriction on the use of the *product purchased* under the license, but rather imposes a restriction on the use of the *goods made by* the licensed product.’” *Monsanto v. McFarling*, No. 4:00CV84 CDP, 2005 WL 1490051, at *4 (E.D. Mo. June 23, 2005) (quoting *McFarling v. Monsanto*, 363 F.3d 1336, 1342-43 (Fed. Cir. 2004)).

sell not transfer to the purchaser for purposes of patent law? Certainly it is understood that a farmer will at a minimum sell the crop produced. Historically, the farmer would also save a portion of the harvest for replanting. Nothing is inherently true of the patent in genetic material that separates the right to sell from the right to make or use. If a patent owner wishes to restrict that right, it should do so by contract and not rely exclusively on patent law or licenses.

3. Are Sales to Farmers
“Authorized” under the
Quanta Computer
Standard?

The Supreme Court has not precisely addressed whether a patent holder may, by requiring its licensees to place labels with conditions directed at a consumer’s post-sale behavior, avoid the exhaustion doctrine and sue consumers for patent infringement. In *General Talking Pictures* the Court expressly avoided that issue, finding instead that the licensee and the purchaser both infringed the patent because both knew that the manufacturing, sale and use of the product was outside the scope of the initial license.²²² Courts rely on this decision—and the Federal Circuit’s *Mallinckrodt* opinion—to uphold label licenses against exhaustion claims.

The *Quanta Computer* decision can be read not to address the issue squarely either, as the Court ultimately applied the exhaustion doctrine to the facts at issue and turned to the language of LGE’s licenses with *Quanta Computer*.²²³ The Supreme Court raised the issue of exhaustion as applied to patented seeds during the *Quanta Computer* oral argument, but did not address the issue in its opinion.²²⁴

²²² See generally *Gen. Talking Pictures Corp. v. W. Elec. Co.*, 305 U.S. 125 (1938).

²²³ See generally *Quanta Computer, Inc. v. LG Elecs., Inc.*, 128 S. Ct. 2109 (2008).

²²⁴ See Wegner, *supra* note 170, at 696 (“*Scruggs* is open to scrutiny based upon *Quanta*. Although not carried forward in the opinion itself, an issue raised during oral argument focuses upon whether a farmer can ‘now freely harvest, sell or replant the progeny seeds,’ freed from patent law restrictions, ‘assuming that the patent covers the seeds, themselves or the method of growing such seeds.’” (original emphasis omitted) (citing Transcript of Oral Argument at 15-16, *Quanta Computer*, 128 S. Ct. 2109 (question of Justice Kennedy) (“Are there cases where some downstream restrictions on use might be necessary to prevent the patent from becoming worthless, i.e., in the biological area for replication of seeds in agriculture and so forth?”))). The following exchange at oral argument also suggests the *Mallinckrodt* decision, on which McFarling and Scruggs relied, has been seriously undermined by *Quanta*:

Justice Stevens: Am I correct in understanding that you do not defend the *Mallinckrodt* decision?

Scholars contend Monsanto's seed licensing scheme avoids the *Quanta Computer* exhaustion ruling because it is distinguishable from LGE's licensing scheme.²²⁵ They further contend that because the Supreme Court in *Quanta Computer* was urged to overturn the Federal Circuit's *Mallinckrodt* opinion and did not, its principles and the cases relying upon it—including *Scruggs*—continue to uphold the validity of Monsanto-style technology agreements as patent licenses.²²⁶ In particular, the argument goes:

The Supreme Court's basis for reversal came down to something quite simple: the Federal Circuit found, in its

[LGE's Counsel]: I do not defend the *Mallinckrodt* decision, Justice Stevens, and clearly I don't believe I have to. All I need to do is have this Court recognize that the central limiting feature of *Univis* was the fact that it was all one patent and that all you were doing was fulfilling the rights that had been provided for you in that single patent, and that that's fundamentally—and that the Court recognized that if there were a separate patent involved and you were trying to enforce those rights, that would be a completely different matter.

Transcript of Oral Argument at 34, *Quanta Computer*, 128 S. Ct. 2109.

²²⁵ See Mary LaFrance, *The Supreme Court's Broad Interpretation of Patent Exhaustion in Quanta Computer, Inc. v. LG Electronics, Inc.*, 2008 U.S. LEXIS 4702 at *5 (June 9, 2008) (“*Quanta* does not appear to undermine the Federal Circuit’s decision in *Monsanto v. McFarling*, . . . which upheld a finding of patent infringement where a farmer saved and replanted seeds from a harvest that was grown from patented seeds, in violation of an express condition of his licensing agreement.”) (referring to *Monsanto Co. v. McFarling*, 488 F.3d 973 (Fed. Cir. 2007)); see also Jay Kesan, *Licensing Restrictions and Appropriating Market Benefits from Plant Innovation*, 16 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 1081, 1086-87 (2006) (“One may also ask, in the case of seeds, why not permit seed saving? This is the ‘God-made-germplasm’ argument. The simple problem is that it is just not true. The value chain in the modern food sector is enormously complicated. It begins with start-up agbiotech companies performing a great deal of research and development in genetics. University departments of agricultural-science and agricultural engineering have moved away from germplasm breeding toward work in genetics By the time we arrive at a farmer, we are much farther along in the value chain. He takes advantage of all the genetically modified technologies that the start-up agbiotech companies, universities, and large-life science companies have worked on, and the benefits that accrue to him do not derive from his labor, innovation, or investment alone We need a system where parties in the value chain in the modern food sector can share in the risks and benefits of R&D; then they can coordinate their activities as the product goes through the value chain, rather than enabling a system where one player takes all the risk, and another receives all the benefits. Allowing the farmer to save seed goes back to a simple principle: he is trying to reap where he did not sow This rationale may be exclusive to agricultural biotechnology. The same protection extended to Monsanto may not apply to other companies, such as Lexmark.”)

²²⁶ Robert W. Gomulkiewicz, *The Federal Circuit’s Licensing Law Jurisprudence: Its Nature and Influence*, 84 WASH. L. REV. 199, 237 (2009).

reading of the license agreements, conditions on Intel's ability to sell; and the Supreme Court, in its reading, did not. This decision is not the grand, course-altering ruling that many had asked for. Instead, by its approach, the *Quanta Computer* decision quietly affirmed *Mallinckrodt* and its progeny. The fundamental teaching of *Mallinckrodt* (drawing on earlier Supreme Court precedent) is that an intellectual property holder may place conditions on a license or sale. That remains the law after *Quanta Computer*.²²⁷

This argument has merit. It allows patent owners more control over their property rights through strategic contracts called “licenses.” It allows them to avoid, in essence, a “sale” event by calling the transaction the licensing of technology that happens to be transported through a tangible item—either a disc for software, or a soybean for glyphosate-resistant traits, and so on.

Applying the holding of *Quanta Computer* to Monsanto's licensing scheme is still meaningful, although it warrants mention that whether exhaustion applies in any case is a highly fact-specific question impossible to answer unflinchingly in the abstract. With that caveat: Monsanto's licensing regime appears to resemble LGE's in that both Monsanto and LGE licensed to manufacturers the right to make and sell to others the patented technology. Monsanto and LGE also apparently require of their manufacturers that they notify end-users/customers of the patents, and restrict their post-sale behavior. Monsanto expressly requires that customers (farmers) enter a “technology agreement” with Monsanto in order to have the right even to use (plant) the first-generation seeds, extracting an additional payment from farmers in the form of a technology fee at that time.²²⁸

²²⁷ *Id.*

²²⁸ Monsanto's agreements with licensed seed manufacturers have not been litigated as its lawsuits are typically brought against its customers. A similar licensing system employed by Pioneer Hi-Bred might aid in the analysis: “[D]istribution of Pioneer® brand seed corn to Pioneer authorized Sales Representatives or dealers . . . were conditioned by the terms of the representatives' or dealers' limited licenses to resell the patented products, which prohibited sales representatives from selling to individuals or groups for resale, and permitted dealers to resell only to other licensed dealers or persons who would use the seed to produce grain or forage.” *Pioneer Hi-Bred Int'l, Inc. v. Ottawa Plant Food, Inc.*, 283 F. Supp. 2d 1018, 1024 (N.D. Iowa 2003). It appears that like LGE, the holders of patented seeds authorize their licensees to sell manufactured seeds to farmers albeit with notice of restrictions. Monsanto does not, after all, sue its licensees for breach of contract indicating that sales to farmers are “authorized” for *Quanta* exhaustion purposes. *See Wegner, supra* note 170, at 694 (“At first blush, particularly when reading the opinion of the Federal Circuit below, it would appear that the question of patent exhaustion may have been

This same agreement restricts the use of progeny seeds as well. Courts applying *Quanta Computer* to this type of transaction will have to determine whether the patent holder's strategy successfully maintains the transfer of tangible goods from its licensee to the farmers as merely a license to use patented goods or instead is the sale of goods accompanied by terms enforceable, if at all, under contract law.

Under *Mallinckrodt*, the mere notice of use restrictions on bags of patented seeds makes such sales "conditional" and therefore impervious to exhaustion. As *Mallinckrodt* has not been overturned it remains good law. Note, however, that the Supreme Court suggested that post-sale restrictions on consumers would be enforceable, if at all, under contract law in *Keeler Folding Bed*,²²⁹ avoided the issue in *General Talking Pictures*,²³⁰ and came close to expressly so holding in *Quanta Computer*.²³¹ If the Court should face the issue again in a case involving patented seeds, it may well confirm that when consumers purchase patented goods, or tangible goods containing patented technology within them, the transaction is a sale, and label licenses will be enforced under contract law, not patent law.²³²

subservient to contractual provisions in the license from LGE to Intel. But, the Court reached its conclusion of freedom from patent liability strictly keyed to patent exhaustion principles, *without* resorting to any contractual proscriptions in the license agreement.").

²²⁹ See *supra* notes 147-150 and accompanying text.

²³⁰ See *supra* notes 157-164 and accompanying text.

²³¹ See *supra* notes 199-204 and accompanying text.

²³² See *Intel Corp. v. ULSI Sys. Tech., Inc.*, 995 F.2d 1566, 1569 (Fed. Cir. 1993). In that case, Intel entered a cross-licensing agreement with Hewlett Packard under which they each granted to the other licenses to patents and patent applications "having an effective date prior to January 1, 2000." *Id.* at 1567. ULSI Systems Technology hired HP to produce a math coprocessor (the 'C87 coprocessor), using ULSI's design and specifications, which competed with Intel's patented coprocessor. *Id.* HP produced and sold to ULSI the 'C87 coprocessor, after which Intel sued ULSI for patent infringement. *Id.* Noting "an authorized sale of a patented product places that product beyond the reach of the patent," *id.* at 1568, the court continued: "Intel does not dispute that HP was authorized under the broad terms of the licensing agreement to sell the chips at issue. To the extent that Intel had a patent covering the chips, HP's conceded right to sell the chips deprives Intel of any claim of infringement, as long as HP sold the chips. If it had not granted that license or if the license had been limited in some relevant way, that would be a different case from the one before us. Intel might thereby have retained its right to proceed against those who entered into foundry agreements such as the present one. While Intel may not in retrospect be pleased with the deal that it made permitting HP to make unrestricted sales, it nevertheless granted HP that right in 1983, presumably for consideration it believed to be of value at that time. It cannot now renege on that grant to avoid its consequences." *Id.* at 159. This holding simply underscores the importance to the exhaustion analysis of the precise language of the patent holder's licensing

The next section, therefore, examines the role of state law in such contracts, with and without patent exhaustion's application to the transaction.

V. APPLICATION OF STATE LAW TO POST-SALE RESTRICTIONS ON PATENTED SEEDS

Should courts apply *Quanta Computer* to prevent patent holders from enforcing post-sale restrictions on the use of patented seeds, agreements between patent holders and end users/farmers are likely to be labeled "contracts" and therefore interpreted under state law. Should the holding in *Scruggs* continue to apply, would state law nonetheless govern certain provisions of the non-exclusive license agreements between seed-patent holders and end users/farmers? State law generally applies to contract construction, even of agreements purporting to license rights arising under federal patent law, but federal common law may override state common law that interferes with underlying purposes of the Patent Act. Specifically, several federal courts have held that federal common law governs the issue of assignability of nonexclusive patent licenses, preempting application of state law.²³³ These rulings are subject to question, however, and it may be argued that the contractual issues state legislatures seem eager to address are different from assignability matters and remain fully within the province of state law. On the other hand, state law may not allow patent owners to expand their rights beyond what federal patent law would permit, an outcome which typically encourages courts to apply federal common law. As the *Quanta Computer* opinion will likely embolden already eager state legislatures to affirmatively legislate the terms of so-called technology licensing agreements between agriculture innovators and farmers purchasing their goods, this issue grows ever more important.

A. FEDERAL INTELLECTUAL PROPERTY LAW PRE-EMPTION OF STATE LAW

Federal law preempts state law, pursuant to the Supremacy Clause of the U.S. Constitution,²³⁴ when either the field is one within exclusive federal control ("field preemption") or federal law explicitly

arrangements with manufacturers who later sell patented products to end users, and reinforces the notion of "authorized" sales.

²³³ *Everex Sys. v. Cadtrak Corp. (In re CFLC, Inc.)*, 89 F. 3d 673, 679 (9th Cir. 1996); *PPG Indus., Inc. v. Guardian Indus. Corp.*, 597 F.2d 1090, 1093 (6th Cir.), *cert. denied*, 444 U.S. 930 (1979); *Unarco Indus., Inc. v. Kelley Co.*, 465 F. 2d 1303, 1306 (7th Cir 1972).

²³⁴ U.S. CONST. art. vi, cl. 2.

or implicitly conflicts with state law (“conflict preemption”).²³⁵ Conflict preemption may arise in either a case of direct federal-state law conflict or when the state law stands as an obstacle to the purposes of federal law (either statutory, regulatory, or constitutional in derivation).²³⁶

State law traditionally governs construction and enforcement of commercial agreements, even those relating to intellectual property.²³⁷ “[S]tates are free to regulate the use of . . . intellectual property in any manner not inconsistent with federal law.”²³⁸ The Patent Act, unlike the Copyright Act,²³⁹ lacks a preemption provision.²⁴⁰ Thus, to determine if federal patent law preempts state law, courts consider whether a state’s law “stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress,” and if not the state law governs.²⁴¹

The Supreme Court has articulated three purposes behind the federal patent system to aid in preemption analysis:

First, patent law seeks to foster and reward invention; second it promotes the disclosure of inventions, to stimulate further innovation and to permit the public to practice the invention once the patent expires; third, the stringent requirements for patent protection seek to assure that ideas in the public domain remain there for the free use of the public.²⁴²

A leading case involving a state statute held preempted by the Patent Act is *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*,²⁴³ in which the Supreme Court struck down on preemption grounds a Florida statute that made it “unlawful for any person to use the direct molding process to duplicate for the purpose of sale any manufactured vessel hull or component part of a vessel made by another without the written permission of that other person.”²⁴⁴ These vessel hulls and

²³⁵ Arthur Miller, *Common Law Protection of the Mind: An “Idea” Whose Time Has Come*, 119 HARV. L. REV. 703, 744-45 (2006).

²³⁶ *Id.* at 745.

²³⁷ See *Aronson v. Quick Point Pencil Co.*, 440 U.S. 257, 262 (1979).

²³⁸ *Id.* (citing *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 479 (1974)).

²³⁹ 17 U.S.C. § 301 (1998).

²⁴⁰ See generally, Miller, *supra* note 235, at 752 (“[I]n the grand scheme of federal preemption of state idea protection regimes, the Patent Act is all bark and no bite. This is because the Act lacks a preemption provision, patents protect only a subset of expressions of applied ideas (those that are novel, useful, and nonobvious), and common law idea protection is far less exclusive or comprehensive than patent.”).

²⁴¹ *Aronson*, 440 U.S. at 262 (quoting *Hines v. Davidowitz*, 312 U.S. 52, 67 (1941)).

²⁴² *Id.* (citing *Kewanee Oil Co.*, 416 U.S. at 480-81).

²⁴³ 489 U.S. 141 (1989).

²⁴⁴ *Id.* at 145 (quoting FLA. STAT. § 559.94 (1987)).

their parts would not otherwise have qualified for protection under patent law. Thus, the Court held:

[A] state law that substantially interferes with the enjoyment of an unpatented utilitarian or design conception which has been freely disclosed by its author to the public at large impermissibly contravenes the ultimate goal of public disclosure and use which is the centerpiece of federal patent policy. Moreover, through the creation of patent-like rights, the States could essentially redirect inventive efforts away from the careful criteria of patentability developed by Congress over the last 200 years.²⁴⁵

A common theme in contract preemption cases arising under patent law is that the patent owner seeks to acquire, by contract, rights not otherwise provided by federal patent policy. For instance, in *Lear v. Adkins*,²⁴⁶ the Supreme Court rejected on preemption grounds a contract that required a patent licensee to give up his rights to challenge a patent's validity.²⁴⁷ The Court found that "overriding federal policies would be significantly frustrated if licensees could be required to continue to pay royalties during the time they are challenging patent validity in the courts."²⁴⁸ Contracts that extend a patent licensor's control over a licensee beyond the patent's term or scope are also generally upheld, or invalidated, under federal patent policies, not state contract law.²⁴⁹

Another controversial area where federal common law has been evoked to preempt state law is in determining whether nonexclusive patent licenses may be assigned to other parties absent

²⁴⁵ *Id.* at 157. Although applying preemption to a state statute in *Bonito Boats*, the Court was eager to assuage concerns that its preemption jurisprudence, and in particular the decision in *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225 (1964), to strike down application of state misappropriation law on preemption grounds, was absolute and rigid: "[W]hile *Sears* speaks in absolutist terms, its conclusion that the States may place some conditions on the use of trade dress indicates an implicit recognition that all state regulation of potentially patentable but unpatented subject matter is not *ipso facto* pre-empted by the federal patent laws." *Bonito Boats*, 489 U.S. at 154.

²⁴⁶ 395 U.S. 653 (1969).

²⁴⁷ Mark A. Lemley, *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 CAL. L. REV. 111, 126-27 (1999).

²⁴⁸ *Lear*, 395 U.S. at 673.

²⁴⁹ See Lemley, *supra* note 247, at 127. Patentees may attempt to exert control over their licensees "by granting licenses that: (1) extend the term of the patent beyond [the statutory maximum]; (2) tie patented to unpatented products in an attempt to capture the market for both; (3) require that the licensee grant back the rights to any improvement patents; or (4) employ other means." *Id.*

language expressly permitting assignment in the contract. Cases concluding that nonexclusive patent licenses may not be assigned, contrary to state law, which generally encourages the alienability of personal property, assume that under federal common law allowing assignment would materially erode the incentive to innovate underlying the Patent Act's monopoly grant. The Seventh Circuit's opinion in *Unarco Industries v. Kelley Co.*²⁵⁰ illustrates the analysis. At issue was whether, without Kelley's consent, Unarco Industries could assign to Overhead Door Company the nonexclusive patent license Unarco Industries had received from Kelley. The district court applied the law of Illinois to the question of contract assignability,²⁵¹ but the Seventh Circuit reversed, finding the issue to fall within one of the exceptions to *Erie Railroad v. Tompkins*²⁵² and requiring the application of federal common law.²⁵³ The court made the sweeping conclusion that the patent "monopoly conferred by federal statute as well as the policy perpetuating this monopoly, so affects the licensing of patents, and the policy behind such licensing is so intertwined with the sweep of federal statutes, that *any question* with respect thereto must be governed by federal law."²⁵⁴

Most courts refuse to go as far as the Seventh Circuit in *Unarco* with regard to applying federal common law to *all* issues arising under a patent license. Indeed, the Ninth Circuit in the federal bankruptcy case *CFLC, Inc. v. Cadtrak Corp.* commented that the *Unarco* conclusion quoted above is "insupportably broad given the general rule that most questions with respect to the construction of patent licenses are governed by state law."²⁵⁵ The court nonetheless

²⁵⁰ 465 F.2d 1303 (7th Cir. 1972).

²⁵¹ *Id.* at 1305.

²⁵² 304 U.S. 64, 78 (1938) ("Except in matters governed by the Federal Constitution or by Acts of Congress, the law to be applied in any case is the law of the state.").

²⁵³ *Unarco*, 465 F.2d at 1305, 1306.

²⁵⁴ *Id.* at 1306 (emphasis added). The court cited no authority for this proposition and the breadth of this holding has been challenged. See Aaron Xavier Fellmeth, *Control Without Interest: State Law of Assignment, Federal Preemption, and the Intellectual Property License*, 6 VA. J.L. & TECH. 8, ¶ 36 (2001) ("[T]he court did cite three Supreme Court cases at least eighty years old by that time, two Eighth Circuit cases at least fifty years old, and a treatise, to support its blanket assertion that no license agreement is assignable absent the licensor's express consent. These cases were not controlling of the issue before the court; none of them had applied this theory to an exclusive license. Three applied to a nonexclusive license . . . which is intuitively more personal because it is essentially an agreement by a licensor not to sue the licensee for particular conduct that would otherwise infringe the licensor's intellectual property."), <http://www.vjolt.net/vol6/issue1/v6i1a08-Fellmeth.html>.

²⁵⁵ *Everex Sys. v. Cadtrak Corp. (In re CFLC, Inc.)*, 89 F.3d 673, 679 (9th Cir. 1996).

found an exception to the *Erie* doctrine appropriate with regard to assignment of patent licenses, summarizing its analysis as follows:

Allowing free assignability—or, more accurately, allowing states to allow free assignability—of nonexclusive patent licenses would undermine the reward that encourages invention because a party seeking to use the patented invention could either seek a license from the patent holder *or* seek an assignment of an existing patent license from a licensee. In essence, every licensee would become a potential competitor with the licensor-patent holder in the market for licenses under the patents. And while the patent holder could presumably control the absolute *number* of licenses in existence under a free-assignability regime, it would lose the very important ability to control the *identity* of its licensees. . . . Thus, federal law governs the assignability of patent licenses because of the conflict between federal patent policy and state laws, such as California's, that would allow assignability.²⁵⁶

The most notable case reaching the contrary result is the California Supreme Court's 1957 opinion in *Farmland Irrigation Co. v. Dopplmaier*, in which Justice Traynor discussed at length the circumstances in which state law governed, even though the action involved a United States patent.²⁵⁷ The court recited the "established U.S. Supreme Court practice of applying state law to many aspects of patent licenses"²⁵⁸ unless the dispute "'arise[s] under' or 'depend[s] upon the construction' of a federal statute."²⁵⁹ Because the Patent Act "makes no reference to the free assignability *vel non* of a license

²⁵⁶ *Id.* The Ninth Circuit's opinion has been criticized as avoiding conflict between state law and federal bankruptcy law rather than federal patent law. See Carol A. Quinn and R. Scott Weide, *Violation of the Erie Doctrine: Application of a Rule of Federal Common Law to Issues of Patent License Transferability*, 32 CREIGHTON L. REV. 1121, 1142 (1999). The authors contend that federal patent law allows a patentee to transfer her exclusive rights to make, use, sell and offer for sale a patented invention, but "does not ensure that a patentee receives adequate compensation, whether in the form of royalties or other compensation, any more than it protects the patentee from making a bad decision involving the transfer of the patentee's rights." *Id.*

²⁵⁷ *Farmland Irrigation Co. v. Dopplmaier*, 308 P.2d 732, 737 ("Every action that involves, no matter how incidentally, a United States patent is not for that reason governed exclusively by federal law.").

²⁵⁸ *Fellmeth*, *supra* note 254 ¶ 47 (citing *Dopplmaier*, 308 P.2d at 738 (quoting *Wilson v. Sandford*, 51 U.S. 99 (1850))).

²⁵⁹ *Id.* ¶ 48.

agreement[,] patent licenses have no federal statutory basis” and the assignability question “must arise under and be governed by the general common law of contracts.”²⁶⁰ Of course state law is still preempted by federal common law if it conflicts with some federal policy.²⁶¹ The *Dopplmaier* court held, however, that no policy underlying federal patent law “requires a uniform federal rule of construction of license contracts to determine their assignability.”²⁶² State law applies so long as it “does not destroy the advantages of” the patent monopoly, significantly affect the patent’s value, or “hamper the patentee’s right to profit from his monopoly by licensing under it.”²⁶³

State contract law has also been held not to conflict with the underlying purposes behind intellectual property law in cases involving post-sale restrictions found in end-user license agreements. Indeed, the Supreme Court in *Keeler v. Standard Folding-Bed Co.* held that when a patent holder enters into contracts with purchasers of its patented products the validity and enforceability of those agreements “arise as a question of contract, and not as one under the inherent meaning and effect of the patent laws.”²⁶⁴

In the copyright context, the leading case is *ProCD v. Zeidenberg*.²⁶⁵ There, the Seventh Circuit considered whether an end user license agreement accompanying a computer database, which it concluded was a contract governed by the Uniform Commercial Code,²⁶⁶ was preempted by the Copyright Act.²⁶⁷ The license restricted the consumer’s use of the program to non-commercial purposes.²⁶⁸ Section 301(a) of the Copyright Act, a provision not mirrored in the Patent Act, preempts any “legal or equitable rights [under state law] that are equivalent to any of the exclusive rights within the general scope of copyright.”²⁶⁹ The court assumed the database was not protectable subject matter under the Copyright Act and went on to determine whether restrictions could be placed on their usage through contract where copyright law would commit them to the public domain. The court held that the rights created by the contract were not “equivalent to any of the exclusive rights within the general scope of

²⁶⁰ *Id.*

²⁶¹ *Id.*

²⁶² *Dopplmaier*, 308 P.2d at 739.

²⁶³ *Id.*

²⁶⁴ *Keeler v. Standard Folding-Bed Co.*, 157 U.S. 659 (1895); *see, supra* notes 147-150 and accompanying text.

²⁶⁵ 86 F.3d 1447 (7th Cir. 1996).

²⁶⁶ *Id.* at 1450.

²⁶⁷ *Id.* at 1453-54.

²⁶⁸ *Id.* at 1450.

²⁶⁹ 17 U.S.C. § 301(a) (2006).

copyright” in part because: “[a] copyright is a right against the world. Contracts, by contrast, generally affect only their parties; strangers may do as they please, so contracts do not create ‘exclusive rights.’”²⁷⁰ Noting that “Congress possesses power to preempt even the enforcement of contracts about intellectual property . . . courts usually read preemption clauses to leave private contracts unaffected.”²⁷¹ This is appropriate, according to *ProCD*, because “[t]erms and conditions offered by contract reflect private ordering, essential to the efficient functioning of markets.”²⁷²

The *ProCD* opinion and its progeny²⁷³ have been vigorously attacked by numerous scholars fearful that application of state contract law will override important federal public policies reflected in the Copyright Act, including fair use rights, the first sale doctrine, and even the subject matter of copyright itself.²⁷⁴ The primary concern is that the careful balance struck by Congress in creating intellectual property rights—providing adequate incentives to encourage innovation but stopping short of giving absolute control—would be obliterated by allowing intellectual property owners to, through contract, take away public rights granted by copyright and patent laws.²⁷⁵ Indeed, proposed Article 2B of the Uniform Commercial Code—and its later

²⁷⁰ *ProCD*, 86 F.3d at 1454.

²⁷¹ *Id.* at 1454.

²⁷² *Cf. id.* at 1455, with *Vault Corp. v. Quaid Software, Ltd.*, 847 F.2d 255 (5th Cir. 1988) (holding state law prohibiting all copying of a computer program is preempted by Copyright Act).

²⁷³ *See, e.g., Bowers v. Baystate Technologies, Inc.*, 320 F.3d 1317 (Fed. Cir. 2003) (holding Copyright Act did not preempt end user license agreement that prohibited reverse engineering of software program and citing cases holding parties may waive in a contract their affirmative defenses and statutory rights).

²⁷⁴ *See, e.g., Lemley, supra* note 247, at 129-33. *But cf. Fellmeth, supra* note 254, ¶ 5 (“[S]ome courts have allowed copyright owners to continue to control copies after sale by characterizing the sales agreement as a ‘license’ supposedly not subject to the First Sale Doctrine. By deferring to the language of the contract to override the congressional intent behind the First Sale Doctrine, courts have sometimes allowed copyright owners whose rights have been extinguished by the sale of their product to reach out beyond the grave to try to strangle statutory or common law rights of licensees.”).

²⁷⁵ *See Lemley, supra* note 247, at 125-26 (“As Larry Lessig has observed, ‘while we protect real property to protect the owner from harm, we protect intellectual property to provide the owner sufficient incentive to produce such property. ‘Sufficient incentive,’ however, is something less than ‘perfect control.’ Giving the parties unlimited power under contract law to vary the rules of intellectual property creates considerable tension with this balanced incentive structure. And permitting the parties to alter intellectual property law with a standard-form, unsigned ‘shrinkwrap license,’ in which even the fiction of ‘agreement’ is stretched to the vanishing point, exalts the (standard) form of contract law over the substance of intellectual property.”) (citing Lawrence Lessig, *Intellectual Property and Code*, 11 ST. JOHN’S J. LEGAL COMMENT. 635, 638 (1996)).

iteration, the Uniform Computer Information Transactions Act (“UCITA”)—were widely seen as endorsing *ProCD* and favoring information technology manufacturers to the detriment of the consuming public.²⁷⁶ Only two states adopted the act and many passed anti-UCITA statutes.²⁷⁷

In contrast to the reputation UCITA earned, state laws expressly relating to the terms of agreements accompanying the sale of seeds are protective of consumers and restrictive on seed sellers and manufacturers. They seek to limit a seed manufacturer’s ability, through a standard form contract, to gain permission for entry onto

²⁷⁶ J.H. Reichman and Jonathan A. Franklin, *Privately Legislated Intellectual Property Rights: Reconciling Freedom of Contract with Public Good Uses of Information*, 147 U. PA. L. REV. 875, 882 (1999) (“[D]igital technologies, when combined with mass-market contracts, enable information providers to alter the existing legislative balance between public and private interests in unexpected and socially harmful ways. . . . [T]he uniform state laws proposed to validate these private rights have been crafted without balancing the social costs of legal incentives to innovate against the benefits of free competition, and without regard for the constitutional mandate to ‘promote the [p]rogress of [s]cience and useful [a]rts.’ On the contrary, the drafters of Article 2B empower purveyors of digitized information goods to undermine, by contract, long-standing policies and practices that directly promote cumulative and sequential innovation as well as the public interest in education, science, research, competition, and freedom of expression.”).

²⁷⁷ See *I. Lan Sys., Inc. v. Netscout Serv. Level Corp.*, 183 F. Supp. 2d 328 (D. Mass. 2002). The court explained that although licenses for software do not neatly fall within the UCC’s rules for sales (Article 2) or leases (Article 2A), the UCC is a better fit for such transactions than the common law:

In Massachusetts and across most of the nation, software licenses exist in a legislative void. Legal scholars, among them the Uniform Commissioners on State Laws, have tried to fill that void, but their efforts have not kept pace with the world of business. Lawmakers began to draft a new Article 2B (licenses) for the UCC, which would have been the logical complement to Article 2 (sales) and Article 2A (leases), but after a few years of drafting, those lawmakers decided instead to draft an independent body of law for software licenses, which is now known as the Uniform Computer Information Transactions Act (“UCITA”). So far only Maryland and Virginia have adopted UCITA; Massachusetts has not. Accordingly, the Court will not spend its time considering UCITA. At the same time, the Court will not overlook Article 2 simply because its provisions are imperfect in today’s world. Software licenses are entered into every day, and business persons reasonably expect that some law will govern them. For the time being, Article 2’s familiar provisions--which are the inspiration for UCITA--better fulfill those expectations than would the common law. Article 2 technically does not, and certainly will not in the future, govern software licenses, but for the time being, the Court will assume it does.

Id. at 332 (citations omitted).

real property, or limit liability in tort, or sue in an inconvenient venue. Thus the preemption arguments typically leveled against proposed Article 2B as upsetting the balance Congress has struck between private property—copyright or patents—and the public interest do not apply to current state laws aimed at the sale of patented seeds.

B. DO STATE LAWS RELATING TO BAG-TAG AGREEMENTS CONFLICT WITH FEDERAL STATUTES OR FEDERAL PATENT POLICY?

Generally speaking, seeds are included within the Uniform Commercial Code's definition of "goods,"²⁷⁸ so that contracts that accompany the sale of seeds—patented or not—would be interpreted under UCC Article 2.²⁷⁹ If a bag-tag agreement, also known as a label license, is interpreted under the UCC, several issues arise. Is the grower a "merchant"?²⁸⁰ Is it an adhesion contract?²⁸¹ Are liability limitations valid and enforceable?²⁸² Do limited license labels

²⁷⁸ U.C.C. § 2-103(1)(k) (2003) ("Goods' means all things that are movable at the time of identification to a contract for sale. The term includes future goods, specially manufactured goods, the unborn young of animals, growing crops, and other identified things attached to realty as described in Section 2-107. The term does not include information, the money in which the price is to be paid, investment securities under Article 8, the subject matter of foreign exchange transactions, or choses in action.").

²⁷⁹ See Neil D. Hamilton, *Why Own the Farm If You Can Own the Farmer (And the Crop)? Contract Production and Intellectual Property Protection of Grain Crops*, 73 NEB. L. REV. 48, 68 (1994); Robert A. McEowen, *Legal Issues Related to the Use and Ownership of Genetically Modified Organisms*, 43 WASHBURN L.J. 611, 612 (2004).

²⁸⁰ See McEowen, *supra* note 279, at 612 ("The proliferation of GMOs in crop agriculture gives rise to numerous contract-based legal issues, especially those involving the existence in warranties in sales transactions. Article 2 of the Uniform Commercial Code (U.C.C.) governs the law of sales of goods. If a farmer is a "merchant" with respect to the sale of goods, liability may arise for breach of an implied warranty. However, an express warranty may be creative irrespective of whether the seller of goods is a merchant.") (footnotes omitted).

²⁸¹ *Id.* at 618 ("Producers may not be in a strong bargaining position with respect to GMO seed sale contracts. As a result, contracts may be offered on a 'take it or leave it basis.' The vulnerability of producers is evidenced in that many producers may be unable, as a practical matter, to do more than rely on labels and seed company representations as to what is GMO and non-GMO seed. Thus, consideration must be given to challenging such contracts on the basis that they constitute contracts of adhesion.").

²⁸² *Id.* ("[I]f contract language attempts to limit the company's liability to the cost of the seed purchased, the language may be challenged on the basis that it is unconscionable and unenforceable as an adhesion contract.").

“materially alter” the parties’ agreement and, if so, is notice of objection required?²⁸³

Certain terms are likely to be upheld under the UCC. For instance, the typical bag-tag agreement purports to limit the activities of the purchaser by relying on the patent monopoly held by the seed’s manufacturer (or its licensor). The agreement grants the grower the “right” to plant the purchased seed, and prevents many uses of the seeds’ progeny, including sale to others for replanting or research. These terms are generally upheld under a UCC Article 2 analysis.²⁸⁴

Several state laws²⁸⁵ have sought to dictate the terms of these technology licenses, voiding those agreements that do not comply. These laws are not, however, found under the sections of the states’ laws that adopt the Uniform Commercial Code, but rather are codified under different sections of the states’ various statutes. These statutes, among other things: create rules for notifying farmers in advance of entering their real property to test for alleged infringement or breach; address rights of due process and private property interests appropriately within the purview of states; do not limit the scope of the personal property rights conferred upon patent holders under federal law; do not reduce the patent law’s incentives to innovate and disclose the innovation; and do not create new rights within Congress’s exclusive domain. They do not defeat the underlying purposes behind the patent law. As such, they are not preempted by federal law.

More problematic are state laws that exempt from liability farmers who innocently or in *de minimis* quantities possess on their property genetically engineered plants. These laws attempt to actually create affirmative defenses to patent infringement as well as breach of contract claims. To the extent mere possession of a patented gene or sequence in the form of a living plant can constitute “use” or “making” of the patented material, and therefore infringement, these laws would be preempted by federal law. The Patent Act creates strict liability for infringers; knowledge, intent, and more than *de minimis* quantities are not factors a patent holder must prove to prevail.²⁸⁶ Accordingly, state laws that create affirmative defenses to patent infringement on these grounds conflict directly with the express language of the Patent Act. Further, they undermine the monopoly interests provided by Congress and therefore undermine the purposes and intent of the law. As such,

²⁸³ See *Pioneer Hi-Bred Int’l, Inc. v. Ottawa Plant Food, Inc.*, 283 F. Supp. 2d 1018, 1046 (N.D. Iowa 2003).

²⁸⁴ See *id.* at 1047-49 (N.D. Iowa 2003).

²⁸⁵ See, e.g., ME. REV. STAT. ANN. tit. 7, § 1053(2) (2009) (*De minimis* possession results in “the farmer [not being] liable for breach of a seed contract nor for any damages claimed by the manufacturer.”); IND. CODE § 15-15-7-8, 15-15-7-9 (2008).

²⁸⁶ 35 U.S.C. § 271 (2006).

they will likely fail to protect farmers from patent infringement liability even if the presence of pollen contaminating their crops is caused by pollen drift.²⁸⁷

As state legislatures consider additional proposed legislation, it bears noting that state laws directly permitting farmers to sell cultivated seed for replanting would conflict with the express terms of the PVPA, provided the seeds were protected under the Act. If patent exhaustion did not apply to the transaction in which the farmer acquired the seed from the owner of a utility patent, moreover, such laws would also conflict with federal utility patent law. If patent exhaustion did apply, such a state law would not conflict with any express provisions of the U.S. Patent Act because the harvest would no longer be subject to a federally sanctioned monopoly.

Given that terms accompanying the seed sale would be interpreted under the UCC, it is still possible for bag-tag agreements to prohibit farmers from selling seed for replanting under state contract law provided the agreements meet the other conditions required for enforceable agreements accompanying the sale of goods. Thus, states may pass statutes voiding contract provisions that eliminate the right to resell harvest for research or replanting purposes, but those statutes would have to apply only to seed not covered by a PVPA certificate or a utility patent, or rely upon exhaustion of the utility patent rights through sale. To date, however, no enacted state laws go that far.

CONCLUSION

Labeling patented goods—or goods embodying patented subject matter—with terms and conditions restricting their post-sale use is not a twenty-first, or even a twentieth-century phenomenon, although it became a ubiquitous practice with the software industry and now applies to some biotechnology as well. The Supreme Court has treated some of these restrictions as licenses under patent law and some of them as mere contracts. It has never conclusively held that such label agreements are always mere contracts due to exhaustion of the patent rights by sale. Instead, the Court studies each transaction before it to determine if the patent holder has cleverly orchestrated the transfer of tangible goods without transferring anything more than a

²⁸⁷ This does not mean, of course, that patent owners will aggressively pursue such claims, and does not address whether—as in the *Monsanto v. Schmeiser* case—damages will be based on unrealized profits and therefore amount to zero. It also does not mean that states cannot enact or enforce laws creating tort liability on behalf of GE seed producers for trespass, negligence, strict liability or nuisance and the resulting property damage associated with pollen drift. *See, e.g.* McEowen, *supra* note 279 at 618-25; Hamilton, *supra* note 213, at 103-04.

limited license to practice the patent. Whether the Supreme Court would find that Monsanto's system of requiring growers to sign technology use agreements avoids patent exhaustion—as the Federal Circuit has found—is an open question. Regardless of what Monsanto (or similarly situated agribusinesses) calls the agreement between itself and the farmers, the Court is likely to find that farmers have purchased the seeds and the right to use them, thereby exhausting the patent rights in those seeds, at least with regard to their use. Of course whether “use” includes making, saving, and replanting the progeny seeds is subject to debate and expert opinion.

States have boldly passed legislation relating to the terms of such label licenses anyway, confident that even as nonexclusive patent licenses, such agreements are subject to interpretation under state law. For the most part, they are. In some areas, however, the states have reached beyond their purview into the domain of federal intellectual property law. In particular, state laws creating affirmative defenses to patent infringement due to innocent or de minimis possession of patented plants conflicts directly with federal patent law. And state laws—which have yet to pass—creating a right to save, replant, or sell for planting the progeny of patented seeds would also likely be preempted by the PVPA, and by the utility patent provisions as well if exhaustion does not apply to the seeds' sale.