
ORGANIC CROPS, GENETIC DRIFT, AND
COMMINGLING: THEORIES OF REMEDY AND
DEFENSE

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I. INTRODUCTION

On February 24, 2012, the U.S. District Court for the Southern District of New York dismissed a lawsuit brought against agribusiness titan Monsanto, owner of over twenty-three patents on genetically modified seed varieties, by the Organic Seed Growers and Trade Association (OSGTA) and eighty-two other

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grassroots organizations, farmers, and non-profits.¹ Plaintiffs filed suit stipulating that they had no desire to possess or use Monsanto's patented Roundup Ready seeds, but feared patent infringement liability should such seeds be carried into their fields by wind (an act known as "drift") or other inadvertent means.² Plaintiffs requested a declaratory judgment from the court granting protection from liability in such circumstances.³ The court, however, found no evidence of actual infringement by the plaintiffs and dismissed the case for lack of subject matter jurisdiction.⁴

While not all of the farmers involved in *OSGTA v. Monsanto* were certified organic growers, the Monsanto Corporation's history of prosecuting patent infringers—including those who never actively sought out infringing technology, but whose seeds and fields were contaminated by patented seeds—as well as the heightened financial losses organic farmers might face if their crop were found to be contaminated with genetically modified (GM) material, give organic farmers cause for alarm.⁵ Should Monsanto's patented seeds ever be found in their fields, not only would these organic farmers have to pay damages for patent infringement, but they would suffer market loss of their organic crops, meaning the best case scenario would involve selling their organically raised goods at the lower prices paid for conventional goods.⁶

This Article contemplates this plight of the organic farmer, and seeks to outline the best legal arguments that such growers might employ to (1) recoup economic losses caused by genetic drift and (2) avoid infringement liability following episodes of genetic drift. Part II begins this analysis by providing a brief overview of patent law, focusing the discussion on the evolution of a law which allows for patenting plants and on the requirements for finding patent infringe-

1. *Organic Seed Growers & Trade Ass'n et al. v. Monsanto*, 851 F.Supp.2d 544, 544–49 (S.D.N.Y. 2012).

2. *See* Memorandum and Order at 7, *Organic Seed Growers & Trade Ass'n v. Monsanto*, 851 F.Supp.2d (S.D.N.Y. 2012) (No. 1:11-cv-02163-NRB).

3. *Organic Seed Growers & Trade Ass'n*, 851 F.Supp.2d at 547.

4. *Id.* at 556 (“Even were there credible threats of suit from defendants, there is no evidence that plaintiffs are infringing defendants’ patents, nor have plaintiffs suggested when, if ever, such infringement will occur. Taken together, it is clear that these circumstances do not amount to a substantial controversy and that there has been no injury traceable to defendants. We therefore do not have subject matter jurisdiction over this action . . .”).

5. Dennis Crouch, *Monsanto Wins Again in Federal Circuit: Organic Farmers Have No Standing to Challenge Patent*, PATENTLYO (June 10, 2013), <http://www.patentlyo.com/patent/2013/06/monsanto-wins-again-in-federal-circuit-organic-farmers-have-no-standing-to-challenge-patent.html>; Richard A. Repp, *Biotech Pollution: Assessing Liability for Genetically Modified Crop Production and Genetic Drift*, 36 IDAHO L. REV. 585, 593 (2000).

6. Crouch, *supra* note 5; Repp, *supra* note 5, at 593.

ment. Part III provides further background into what organic certification entails, why organic farmers are threatened by genetic drift, and includes a focused discussion on the heightened potential losses organic farmers face in instances of innocent transport or pollen drift by GM plants. Part IV discusses the legal alternatives available to organic farmers who might find themselves in such an unenviable position, beginning with a discussion of common law claims arising out of market loss, then discussing possible defenses against patent infringement liability. This section also proposes the incorporation of an intent element into the patent infringement analysis whenever the patent concerned is for a gene incorporated into a self-propagating living thing. It is argued that the incorporation of an intent element into the infringement analysis is appropriate given that patent law did not evolve with an eye towards controlling living matter, and that organic farmers, in particular, should be able to use their completion of the demanding USDA organic certification process as evidence of clear intent *not* to infringe genetically modified organism (GMO) patents. Finally, Part V presents a restatement of these themes, concluding that, while some claims may appear strong on paper, organic farmers will remain in a precarious position until states unify their rules on common law property claims and Congress sees fit to incorporate an intent element into select patent infringement procedures.

II. A PATENT LAW PRIMER

This Article does not seek to argue whether or not living organisms should be patentable. The reality is that patent law has evolved in such a way as to allow the patenting of GM seeds and plants, and that these patents presently enjoy such widespread use that they are unlikely to disappear from farms and fields. This section, therefore, seeks only to provide readers with the necessary background in plant patent history and patent infringement analysis to understand the ongoing controversy between organic farmers and GM seed producers.

A. *Patenting Plants*

The drafters of the Constitution envisioned the patent system as a mechanism “[t]o promote the Progress of Science and the useful Arts”⁷ This statement was given life in the Patent Act of 1790,⁸ which has evolved into the present Patent Act.⁹

7. U.S. CONST. art. I, § 8.

8. Patent Act of 1790, 1 Stat. 109-112 (Apr. 10, 1790).

9. Patent Act of 1790, 1 Stat. 109-112 (codified as amended at 35 U.S.C. §§ 1-376 (2006 & Supp. IV 2010)).

Historically, patentable subject matter was primarily limited to mechanical inventions and processes, and the availability of patents for plants and other living matter was legally uncertain.¹⁰ However, in more recent years, courts have demonstrated a dramatic willingness to expand the scope of patent eligible subject matter.¹¹ The Supreme Court endorsed this expansion in its seminal decision *Diamond v. Chakrabarty*, which held that patents are not available for products of nature, but once such a product has been modified to become a nonnaturally occurring manufacture, a patent for that manufacture may be issued.¹² *Diamond* was confirmed and expanded in *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc.*, which held that utility patents were proper vehicles for protecting the intellectual property found in hybrid and otherwise engineered plant seeds.¹³

Prior to *J.E.M.*, plants were not completely outside the realm of intellectual property; Congress had provided for plant patents and plant variety protection certificates in the Townsend-Purcell Plant Patent Act¹⁴ and the Plant Variety Protection Act (PVPA),¹⁵ respectively. These acts created protective regimes for new varieties of plants which were clearly distinguishable from conventional varieties.¹⁶ Additionally, the manner in which the protected plants reproduced determined the level of protection afforded: plants eligible for patents under the Townsend-Purcell Act reproduce asexually (as through cuttings or grafting), while seed-bearing plants and those which might reproduce sexually were only eligible for a protection certificate under the more restrictive PVPA.¹⁷ This protection certificate was not a patent, and its protection extended only to the first sale of the plant or seed.¹⁸ PVPA certification did not expose farmers to in-

10. See MARTIN J. ADELMAN ET AL., CASES AND MATERIALS ON PATENT LAW 25, 58 (3d ed. 2009).

11. *Id.* at 58. Patentable subject matter now includes such varied disciplines as a method of swinging a golf club, a method of swallowing a pill, and techniques of psychological analysis, leading Adelman and his colleagues to suggest that “under current law, if you can name it, you can claim it.” *Id.*

12. *Diamond v. Chakrabarty*, 447 U.S. 303, 309–10 (1980).

13. *J.E.M. Ag Supply, Inc. v. Pioneer High-Bred Int’l, Inc.*, 534 U.S. 124, 127 (2001).

14. Townsend-Purcell Plant Patent Act, 46 Stat. 376 (1930) (codified as amended at 35 U.S.C. §§ 161–64).

15. Plant Variety Protection Act, 7 U.S.C. §§ 2321–2582 (2006 & Supp. V 2011).

16. ADELMAN ET AL., *supra* note 10, at 25–26.

17. Tim Van Pelt, Note, *Is Changing Patent Infringement Liability the Appropriate Mechanism for Allocating the Cost of Pollen Drift?*, 31 J. CORP. L. 567, 575–577 (2006); 35 U.S.C. § 161 (2006); 7 U.S.C. §§ 2321–2582.

18. 7 U.S.C. § 2402.

fringement liability if seeds or pollen from a purchaser's land drifted into their fields.¹⁹

This kind of seed and pollen drift, often referred to as "genetic drift" in the case of GM crops,²⁰ is widespread, and lies at the heart of the farmers' complaint in *OSGTA v. Monsanto*.²¹ The transfer of genetic material from GM crops to organically-grown crops poses a foreseeable threat to organic farmers, who must be able to guarantee that their crops contain no engineered genes.²² Studies around the world have documented the natural and spontaneous occurrence of genetic drift,²³ and while crops able to outbreed, such as corn, are at the greatest risk from the spread of a genetically modified crop's pollen, "all organic farmers are at risk of genetic contamination."²⁴ A patent system created to incentivize patent holders, which was not designed to control the spread of sexual plants, is presently utilized to "protect" genetic material inserted in such plants, and operates parallel to the biological reality of genetic drift, exposes not just farmers, but all landowners, to infringement liability.

B. Patent Infringement

Patent rights are exclusive to the patent holder during the term of the patent.²⁵ Anyone who avails themselves of the patent holder's exclusive rights without permission during the term is guilty of patent infringement.²⁶ Accordingly, the question of infringement is based entirely on a comparison of the patent to

19. See *Organic Seed Growers & Trade Ass'n v. Monsanto*, 851 F.Supp.2d 544, 556 (S.D.N.Y. 2012).

20. See *Id.* at 548 (Genetic drift or "seed drift" is not a biology term; it is merely the language contrived by courts and scholarly legal articles to describe the migration of genetic material through pollination and seed drift).

21. See *Id.* at 549.

22. Miguel A. Altieri, *The Myth of Coexistence: Why Transgenic Crops Are Not Compatible With Agroecologically Based Systems of Production*, 25 BULL. OF SCI., TECH. & SOC'Y, 361, 363-64 (2005).

23. Carey Gillam, *U.S. Organic Food Industry Fears GMO Contamination*, REUTERS (Mar. 12, 2008), <http://www.reuters.com/article/2008/03/12/us-biotech-crops-contamination-idUSN1216250820080312> ("contamination of conventional crops by biotech crops has been reported around the world. There were 39 cases of crop contamination in 23 countries in 2007, and more than 200 in 57 countries over the last 10 years . . .").

24. Altieri, *supra* note 22, at 365.

25. Patent Act, 35 U.S.C. § 261 (2006).

26. 35 U.S.C. § 271(a). Infringement is addressed directly in section 271 of the Patent Act, which reads "[e]xcept as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefore, infringes the patent." *Id.*

the accused infringer's technology.²⁷ A defendant's intent is irrelevant to a literal infringement query; indeed, the defendant need not have any knowledge of a patent, or knowledge that his possession violates a patent, to be found guilty of infringement.²⁸

III. THE DOUBLE THREAT TO ORGANIC FARMERS

The commingling of GM crops and organics can occur at many different phases of planting, harvest, and storage or shipment of goods, and commingling at any of these stages may have adverse impacts on organic farmers.²⁹ This Article focuses on adverse impacts which arise as drifting pollen and other natural forces contaminate organically-grown crops after planting, but prior to harvest. Following such contamination, farmers who believe in good faith that they have grown organic goods discover in quality control testing that their crops do not satisfy the United States Department of Agriculture's (USDA) organic guidelines, giving rise to two primary concerns: (1) economic injury and (2) possible patent infringement liability.

A. *Loss of Market*

Only food products meeting strict National Organic Program (NOP) requirements may carry the USDA organic label.³⁰ Among requirements prohibiting the use of certain pesticides, sewage, and many conventional farming methods,³¹ the NOP mandates that farmers develop comprehensive production and handling practices which avoid the commingling of organic and nonorganic foods, including genetically modified crops.³² Such commingling would be easy to detect and avoid if GM crops appeared different than conventional or organic crops in any way; unfortunately, the genetic differences occur at such a level that only laboratories are capable of detection.³³

A conventional farmer might be forced to sell his crop at a reduced price if it is found to have GMO contamination, as some food providers (such as those with large exports to Europe) have refused to purchase even conventional crops

27. ADELMAN ET AL., *supra* note 10, at 654.

28. *See Id.*

29. *See* Gillam, *supra* note 23.

30. *See* 7 C.F.R. §§ 205.100, .102, .300 (2013).

31. 7 C.F.R. § 205.105.

32. 7 C.F.R. § 205.201.

33. *See* Repp, *supra* note 5, at 590–92 (discussing various instances of scientific testing finding existence of GMOs).

with GMO presence.³⁴ For organic farmers, financial loss in such a situation is a certainty. As mentioned, USDA standards prohibit any organic food from containing GMOs, meaning that any crop grown using organic methods, but unwittingly contaminated by drift or other means, cannot carry the organic label.³⁵ Disqualifying a farmer's crops from carrying the organic label causes economic harm because a two-tiered market has developed for many goods, offering a premium price for organics, while providing lower compensation for the sale of conventional or genetically modified goods.³⁶ Indeed, courts have formally recognized this two-tier market, requiring that organic farmers suffering crop losses be compensated at a higher rate per acre than conventional farmers subject to the same misfortune.³⁷

B. Patent Infringement Liability

In *Monsanto Canada, Inc. v. Schmeiser*, the Canadian Supreme Court imposed infringement liability on a conventional (non-organic) canola farmer who had saved and replanted seed after discovering that his field had been inadvertently contaminated with Monsanto's patented Roundup Ready Canola.³⁸ Though the farmer had not sought out the genetically modified canola—he claimed it had drifted into his field when trucks transporting the seeds took a nearby road—the Court found he knew or should have known of the contamination, and that by saving and replanting seeds which he knew to contain the Roundup Ready gene, he “used” the patent without permission.³⁹ The Canadian Supreme Court indicated that if the farmer had not continued to harvest, save, and replant the modified seeds, intent might have become a relevant factor in the infringement analysis.⁴⁰ This language echoed the Canadian Federal Court of Appeal's prior opinion that an infringer's intent or knowledge of infringement might become relevant in cases where a patented gene is capable of proliferation independent of human assistance.⁴¹ Unfortunately for farmers falling victim to

34. *Id.*

35. *See* 7 C.F.R. §§ 205.301.

36. *See* Repp, *supra* note 5, at 593 (discussing the creation of such a two-tier market for non-GM corn and soybeans).

37. *See, e.g.,* Partlo v. Johanns, 2006 U.S. Dist. LEXIS 43071, at *7 (D.D.C. 2006), *aff'd*, 224 Fed. Appx. 7 (D.C. Cir. 2007) (citing Pringle v. United States, 1998 U.S. Dist. LEXIS 19378, at *22 (E.D. Mich. 1998)) (recognizing that organic and non-organic crops are subject to dramatic differences in market value and end uses, and holding that disaster coverage must therefore compensate organic crop farmers at a higher rate per acre than conventional crop farmers).

38. *Monsanto Can., Inc. v. Schmeiser*, [2004] 1 S.C.R. 902, para. 80 (Can.).

39. *Id.* para. 97.

40. *Id.* paras. 50, 86, 92.

41. *Monstanto Can. Inc. v. Schmeiser*, [2003] 2 F.C. 165, para. 57 (Can. Ont., Fed. Ct.).

genetic drift, the Canadian Supreme Court's analysis stopped here, for the farmer in *Schmeiser* was found not to be an "innocent bystander."⁴²

The present patent system in the United States has not been presented with a case analogous to *Schmeiser*; however, the present U.S. patent framework would require finding infringement under similar facts.⁴³ As in Canada, intent is not an element of patent infringement in the United States, and information concerning how the patented material came into the possession of the infringer, or even if the infringer is aware of the patented material's presence, is presently extraneous to the infringement analysis.⁴⁴ This uncompromising approach to infringement cases seems especially ill-suited to the case of the organic farmer who has, through a long and costly certification process, evidenced intent not to utilize GM plants, but finds himself subject to GMO contamination via genetic drift.⁴⁵

IV. LEGAL OPTIONS FOR ORGANIC FARMERS

Organic farmers are uniquely vulnerable to adverse effects following genetic drift. This section first seeks to apply a variety of common law liability theories which organic farmers might employ to recoup losses following genetic contamination, highlighting the merits and insecurities of each argument. It then discusses the feasibility of incorporating an intent element into genetic patent infringement cases, as well as an overview of affirmative defenses which might arise for organic farmers under this modified scheme.

A. Common Law Claims

The success of any common law claim will prove dependent on the specific language of the given state's statute governing trespass, nuisance, or strict liability. As a result, organic farmers in some states may succeed where others fail, and cases provide limited precedential value outside of the state in which they were tried. Even so, there have been instances where the following claims, applied in an agricultural context, have led to holdings and dicta which provide substance to an organic farmer's case following an instance of genetic drift. A

42. *Monsanto Can., Inc. v. Schmeiser*, [2004] 1 S.C.R. 902, para. 95 (Can.).

43. 35 U.S.C. § 271(a) (2006); *Van Pelt*, *supra* note 17, at 578.

44. *Monsanto Can., Inc. v. Schmeiser*, [2004] 1 S.C.R. 902, para. 86 (Can.); *Van Pelt*, *supra* note 17, at 578.

45. *See e.g.*, Gillam, *supra* note 23 (after an organic farmer found out a third of his dairy herd had been contaminated with biotech food, he began testing all grain to ensure it was free from biotech material).

discussion of the elements of each claim, and the most common interpretations of those elements, are discussed below.

1. *Trespass*

A successful trespass claim traditionally hinges on the plaintiff's ability to prove two elements: (1) rightful possession of the property and (2) defendant's unlawful entry.⁴⁶ Many modern courts have rejected the historic notion that unlawful entry must satisfy a physical size requirement, instead reading trespass claims as encompassing invisible invasions of property with detectable physical effects.⁴⁷ In the first of such cases, the Oregon Supreme Court found that microscopic emissions from a defendant's aluminum reduction plant trespassed on the plaintiff's land, rendering it unfit for keeping livestock.⁴⁸ This move away from a visible trespass requirement gives organic farmers a reasonable basis for believing that a claim for genetic trespass might be viewed with favor despite its microscopic nature. Such hope is further supported by the recent decision of the Court of Appeals of Minnesota in *Johnson v. Paynesville Farmers Union Cooperative Oil Co.*⁴⁹

Oluf and Debra Johnson converted their farm to organic practices in the 1990s.⁵⁰ In addition to the USDA requirements for conversion, the Johnsons took affirmative steps to notify their neighbors and the defendant, a commonly-utilized commercial pesticide sprayer, of the transition.⁵¹ These affirmative steps included measures such as posting signs that the farm was chemical-free and specifically asking the defendant to avoid overspraying onto their land when employed by neighboring farms.⁵² Despite this notification, the defendant was found to have oversprayed pesticides and herbicides in adjacent fields in a man-

46. See, e.g., *Special Force Ministries v. WCCO Television*, 584 N.W.2d 789, 792–93 (Minn. Ct. App. 1998).

47. See Repp, *supra* note 5, at 600–604 (discussing *Martin v. Reynolds Metals Co.*, 342 P.2d 790, 797 (Or. 1959)). Note that Oregon is not alone in such extension. The Alabama Supreme Court held that lead particulates and sulfide from neighbors could warrant a trespass claim when the matter was deposited upon and caused damage to the plaintiff's property. *Borland v. Sanders Lead Co.*, 369 So.2d 523, 528 (Ala. 1979). Likewise, the Washington Supreme Court held that particulate matter emitting from a smelting plant and landing on another's land could support an action for trespass. *Bradley v. Am. Smelting & Ref. Co.*, 709 P.2d 782, 792 (Wash. 1985).

48. *Martin*, 342 P.2d at 797.

49. *Johnson v. Paynesville Farmers Union Coop. Oil Co.*, 802 N.W.2d 383, 385 (Minn. Ct. App. 2011) (holding that "pesticide drifting from one farm to another may in some circumstances constitute a trespass").

50. *Id.*

51. *Id.* at 385–86.

52. *Id.*

ner which not only violated Minnesota state law, but also caused pesticide drift in Johnson's fields.⁵³ This drift required Johnson to sell his crops at lower, non-organic prices and to remove the contaminated fields from organic production for another three years.⁵⁴ In one instance, Johnson was forced to burn the contaminated crop, preventing him from obtaining even conventional crop profits from the field contaminated by pesticide drift.⁵⁵ Another incident required Johnson to plow under a 175 feet wide strip of organically grown soybeans running the length of his field.⁵⁶ The Court of Appeals held that "unwanted pesticide drift from a targeted field to an adjacent otherwise organic farming operation can constitute a trespass."⁵⁷

Relying on *Johnson*, organic farmers could make a strong case that genetic drift, like pesticide drift, gives rise to a cause of action against those who plant GM crops near their fields. The *Johnson* court based its analysis of the trespass claim on two primary elements: (1) "that the liquid chemicals . . . drifted, landed, and remained on the Johnsons' organic crops in detectable form, contaminating them,"⁵⁸ and (2) that the "pesticide or herbicide being sprayed for agricultural purposes will [affect the composition of the land]; by design, it descends and clings to soil or plants."⁵⁹ Both of these elements are satisfied in an instance where GM pollen or seed drifts into an organic field. The very genetic modification that exposes organic farmers to patent infringement claims following such drift proves that the material "landed" in the field.⁶⁰ Because GM crops (and their patents) work by modifying the plant's genetic material, the mingling of such crops is irreversible and is sure to "remain," as well as to figuratively "cling," to the plants.⁶¹ If the GM pollen did not "affect the composition of the land," it seems unlikely the USDA would require fields to spend three years in the transition process from conventional to organic.⁶²

Additionally, though the Minnesota Court of Appeals limited its holding to pesticides which drift in "discern[ible] and consequential" amounts, it seems unlikely that any jury would find that the actual modification of an organism's physical genetic makeup was not "discern[ible] and consequential."⁶³ Such mod-

53. *Id.* at 386.

54. *Id.*

55. *Id.*

56. *Id.*

57. *Id.* at 387.

58. *Id.* at 388.

59. *Id.*

60. *Id.*

61. *Id.*

62. *Id.*

63. *Id.* at 389.

ification is quite serious (as evidenced by the strict USDA standards prohibiting such modification in organic crops) and irreversible.⁶⁴

This is not to say that organic farmers are guaranteed success on a common law trespass claim. A conservative court might find that the *Johnson* decision is limited to the spread of regulated pesticides, or to drifting matter which has been applied in a manner inconsistent with state law.⁶⁵ Further undermining the appeal of a trespass suit is the post-hoc nature of the action, meaning that the claim affords little protection to the organic farmer until after contamination of his fields has occurred.⁶⁶ In addition, any trespass suit must be filed against neighboring farmers growing GM crops—the claim does not reach back to the GM patent holder.⁶⁷

2. Nuisance

While trespass requires an invasion of the landowner's exclusive possession of his land, nuisance reaches a broader range of grievances, including anything which interferes with the owner's private use and enjoyment of his property.⁶⁸ In jurisdictions which have not adopted the modern interpretation of trespass, the intrusion of "invisible particles," such as smoke, gas, and likely pollen or genetic material, are properly considered traditional nuisance actions.⁶⁹

A successful nuisance claim is predicated on a showing of significant harm.⁷⁰ This element can be clearly demonstrated by organic farmers with crops subject to genetic drift, for the reasons discussed above.⁷¹ Nuisance claims, however, also contain an exacting causation element and limit liability to damages resulting from harms that "would be suffered by . . . property in normal condition

64. 7 C.F.R. § 205.272 (2013).

65. *Johnson*, 802 N.W.2d at 389 (the court limited its holding to the facts of the case).

66. *See Id.* at 386 (the plaintiff had to wait until his field had been contaminated before reporting the defendant to the MDA each time).

67. *See Id.* at 387 (the plaintiff brought suit against his neighbor who was spraying his fields).

68. *See* RESTATEMENT (SECOND) OF TORTS § 821D, cmt. (d) (1979) ("A trespass is an invasion of the interest in the exclusive possession of land, as by entry upon it . . . A nuisance is an interference with the interest in the private use and enjoyment of the land, and does not require interference with the possession.").

69. *See Darney v. Dragon Prods. Co.*, 640 F.Supp.2d 117, 124–125 (D. Me. 2009) (certifying a question to the Maine Supreme Court concerning whether the state follows the "traditional" or "modern" view of trespass law).

70. RESTATEMENT (SECOND) OF TORTS § 821F (1979). "There is liability for a nuisance only to those to whom it causes significant harm, of a kind that would be suffered by a normal person in the community or by property in normal condition and used for a normal purpose." *Id.*

71. *See* Part III, *supra*, discussing the organic farmer's loss of organic market and the premium pricing that often accompanies it.

and used for a normal purpose.⁷² These provisions hold foreseeable difficulties for organic farmers. The causation element may be difficult to overcome when an organic farm is within range of more than one conventional or GM farmer's fields; indeed, fluctuations in weather and wind patterns make it difficult to ascertain what a pollen's travel range will be.⁷³ The identification of the proper defendant, and evidence that genetic material came from that defendant's fields, may be difficult to demonstrate and undermine the organic farmer's likelihood of success in establishing causation. Additionally, it is plausible that a court might find organic farms, with their myriad requirements and exclusions of common farming methods, are not "property in normal condition and used for a normal purpose."⁷⁴ Given the widespread use of GM plants and the approval of the regulatory process, a court would likely find that organic farming, rather than GM farming, is an unconventional use of land.⁷⁵ Such a decision would preclude the organic farmer's success on a nuisance claim.

There has been one agricultural case in which a court permitted a private nuisance claim to reach back to the GM crop manufacturer, rather than requiring the plaintiffs to identify which of their neighboring farmers were responsible for the genetic contamination of their fields.⁷⁶ In *In re Starlink Corn*, the plaintiffs were conventional farmers who alleged the manufacturer's instructions for keeping Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) regulated, not-approved-for-human-consumption corn out of the human food chain were insufficient, and brought a private nuisance claim against the manufacturer of the GM corn, Aventis, following the commingling of their crop with the GMO.⁷⁷ The court held the plaintiffs had stated a valid claim for private nuisance after finding that Aventis had an affirmative duty to control the spread of their corn's genetic material in compliance with EPA's FIFRA regulations.⁷⁸ The court believed these regulations "arguably gave Aventis some measure of control over Starlink's use, as well as a means to abate any nuisance caused by its misuse"⁷⁹ and

72. RESTATEMENT (SECOND) OF TORTS § 821F (1979).

73. See generally P.F. Byrne & S. Fromherz, *Can GM and Non-GM Crops Coexist? Setting A Precedent in Boulder County, Colorado, USA*, 1 FOOD, AGRIC. & ENV'T 258, 259–260 (2003).

74. See RESTATEMENT (SECOND) OF TORTS § 821F (1979).

75. See Van Pelt, *supra* note 17, at 578–79. Indeed, some states' right-to-farm laws may mandate this finding, affirmatively protecting GM farmers from a claim premised on unreasonable use of property.

76. *In re Starlink Corn Prods.*, 212 F.Supp.2d 828, 844–47 (N.D. Ill. 2002).

77. *Id.* at 833–35.

78. *Id.* at 847.

79. *Id.*

cited *Page County Appliance Center, Inc. v. Honeywell, Inc.*⁸⁰ as support for the finding that an ongoing service contract or other forms of control over a nuisance-causing product can create a question of fact as to the manufacturer's liability for the nuisance.⁸¹

The facts in *StarLink Corn* vary dramatically from our organic farmer hypothetical. In *StarLink*, the genetically modified product had explicitly not been approved for human consumption, and was subject to regulation by the EPA as a pesticide under FIFRA.⁸² These regulations were the basis of Aventis' affirmative duty to keep the GM corn out of the human supply chain, and this duty was the reason for the grower's agreements and contracts that gave Aventis a discernible "measure of control" over the corn's use, as well as a "means to abate" the nuisance.⁸³ It is critical to the success of the organic farmer's nuisance claim that there is a similar control relationship evidenced between the GM manufacturer and the farmer whose fields facilitated the genetic drift. Courts find these affirmative duties to exercise control in a limited number of specific situations: arising out of contracts, under statutes, or when a special relationship exists between the defendant and the cause of the injury.⁸⁴ Perhaps a forward-thinking court could find that the ongoing patent holder/licensee relationship between GM manufacturers and licensed farmers fulfills this requirement. By requiring that farmers purchase GM seeds anew each year, rather than saving seed, and through other contractual provisions, a court could find that GM patent holders have the requisite "measure of control" over their products, as well as a "means to abate" the nuisance of genetic drift.⁸⁵

Overall, a nuisance suit will present many of the same challenges to the organic farmer that a trespass suit presents: it is a retroactive cause of action, there may be difficulty identifying the proper defendant, and filing suit may expose the organic farmer to patent infringement claims. However, the holding of *In re Starlink Corn* suggests that, given the proper circumstances, the organic

80. *Page Cnty. Appliance Ctr., Inc. v. Honeywell, Inc.*, 347 N.W.2d 171 (Iowa 1984). The *Page County* plaintiff alleged that radiation from a neighbor's computer, manufactured by the defendant, was negatively affecting the appliances for sale in its store. *Id.* at 173–74. The defendant argued that it could not be liable for nuisance because it had sold the computer and no longer was in control of its use. *Id.* at 177. The court disagreed, noting that the defendant had a long-term contract to service the computer, and finding that this was enough to raise a question of fact concerning the defendant's ability to abate the nuisance. *Id.* at 180–82.

81. *Id.* at 180.

82. *See In re Starlink Corn Prods.*, 212 F.Supp.2d at 834.

83. *Id.* at 847.

84. *See Hilary Preston, Drift of Patented Genetically Engineered Crops: Rethinking Liability Theories*, 81 TEX. L. REV. 1153, 1170–72 (2003) (discussing the limited scenarios in which courts have imposed affirmative duties on a defendants).

85. *In re Starlink Corn Prods.*, 212 F.Supp.2d at 847.

farmer may be able to impose nuisance liability on the GM manufacturer, rather than on neighboring farmers, making the potential benefits from filing a nuisance claim dramatically more appealing.⁸⁶

3. Negligence/Strict Liability

Negligence actions require establishing a duty owed by the defendant and a breach of that duty as the proximate cause of injuries suffered by the plaintiff.⁸⁷ Strict liability is a narrow category of nuisance which allows for the imposition of liability where the defendant has created an “abnormally dangerous” activity.⁸⁸ The Restatement of Torts provides six factors to be considered by courts evaluating the alleged “abnormally dangerous” activity, including “the likelihood that the harm that results from it will be great,” the “extent to which the activity is not a matter of common usage,” and the “extent to which [the activity’s] value to the community is outweighed by its dangerous attributes.”⁸⁹ Though organic farmers may be able to demonstrate great harm resulting from the genetic drift of GMOs, the widespread usage of GM crops in the United States and the USDA policy decision that the benefits of GM crops outweigh the risks which may be associated with them make it unlikely an organic farmer would prevail on a negligence/strict liability claim against either a neighboring farmer or GM patent holders.

Though strict liability has been applied to cases of agricultural contamination and pesticide drift by courts, the applicability of those cases to modern genetic drift questions may be limited by the regulatory process and the widespread use of GM crops. For example, *Lagan v. Valicopters* involved an organic farmer plaintiff whose fields were subject to pesticide drift after the defendant sprayed his own crops.⁹⁰ The court’s evaluation of the Restatement factors led to a finding for the plaintiff on the strict liability claim; that holding, however, was predicated on the 1977 court’s ruling that aerial pesticide spraying was not a matter of common usage because only a small number of farmers utilized this meth-

86. See *Id.* at 844 (defendants would have to show the manufacturer distributed the product knowing it would contaminate neighboring farms and have a duty to prevent such contamination).

87. RESTATEMENT (SECOND) OF TORTS § 282 (1965).

88. RESTATEMENT (SECOND) OF TORTS § 520 (1977).

89. *Id.* “[I]n determining whether an activity is abnormally dangerous, the following factors are to be considered . . . (b) likelihood that the harm that results from it will be great . . . (d) extent to which the activity is not a matter of common usage; (e) inappropriateness of the activity to the place where it is carried on; and (f) extent to which its value to the community is outweighed by its dangerous attributes.” *Id.*

90. *Lagan v. Valicopters, Inc.*, 567 P.2d 218, 219 (Wash. 1977).

od.⁹¹ There is query whether a modern court would treat the highly regulated and publicly approved growth of GM crops with the same level of caution it treated a new and scarcely utilized method of pesticide application in the 1970s.

Additionally troubling to the organic farmer's claim is the potential that the court may find organic farming, with its myriad of regulations and restrictions, to be an activity of "abnormally sensitive character."⁹² Such a ruling would limit the award of damages to the amount that would have been suffered by a conventional farmer subject to the same genetic drift.⁹³

Negligence and strict liability seem the least promising of these common law claims for organic farmers situated similarly to those in *OSGTA*.⁹⁴ The use of GM crop technology is widespread, and organic farming itself might be an "abnormally sensitive" activity.⁹⁵ Most notably, courts are not likely to view the planting of an appropriately regulated GM crop in the same sinister light that highly toxic pesticides are cast.

B. *Incorporation of an Intent Element into the GM Patent Infringement Analysis*

Under current United States patent law, intent is not an element of patent infringement, meaning that a farmer who does not purchase, plant, or in any other way seek to avail himself of the benefits of patented crop technology is still guilty of infringement if the GM material finds its way into his field on the backs of animals, via pollen drift in wind gusts, or through other self-propagating methods.⁹⁶ Indeed, even the organic farmer who takes every available affirmative step to prevent such contamination, from testing his seeds for purity before planting to compliance with all NOP mandatory buffer zones, would be guilty of infringement if his field was contaminated by the patent holder's genetic material.⁹⁷

This conclusion offends all claims of equity and efficiency the legal system purports to further. Numerous courts, unsettled by the severe nepotism imposed under the present patent regime, have hinted at a desire to incorporate an

91. *Id.* at 223.

92. RESTATEMENT (SECOND) OF TORTS § 524A (1965). "There is no strict liability for harm caused by an abnormally dangerous activity if the harm would not have resulted but for the abnormally sensitive character of the plaintiff's activity." *Id.*

93. *See* Partlo v. Johanns, 2006 U.S. Dist. LEXIS 43071, at *111 (D.C. Cir. 2006), *aff'd*, 224 Fed. Appx. 7 (D.C. Cir. 2007) (holding separate rates will not be established for crops grown according to "different cultural practices").

94. *See* Organic Seed Growers & Trade Ass'n v. Monsanto, 851 F.Supp.2d 544, 556 (S.D.N.Y. 2012) (holding that summary judgment was appropriate after finding no substantial controversy between the parties).

95. RESTATEMENT (SECOND) OF TORTS § 524A (1965).

96. 35 U.S.C. § 271 (2006) (providing statutory elements of patent infringement).

97. *Id.*

intent element into the infringement scheme.⁹⁸ This section provides a synopsis of the positive and negative aspects of incorporating such an element into select subgroups of patent infringement cases, concluding that the use of an intent element is merited in the case of GM crops. The discussion continues with a broad overview of two possible defenses which would arise out of such accounting for intent: an innocent bystander defense and an affirmative defense for certified organic growers.

1. *The Arguments*

Intent is not an entirely foreign element to patent law; it is presently considered in cases of willful infringement and inducement to infringe.⁹⁹ In all other instances, though, an infringer need not even be aware of the existence of a patent to be found guilty.¹⁰⁰ Would the application of an intent element in patent infringement cases prevent this inequity?

Practically, intent is a concept which is difficult to litigate.¹⁰¹ Though incorporated in other legal arguments (most notably in the criminal context), including intent as an element of patent infringement is certain to complicate and lengthen proceedings, diminishing the efficiency of an already overtaxed court system.¹⁰² Due to the difficult nature of determining a defendant's intent, some fear that including such a showing in patent cases would create prohibitive evidentiary hurdles, allowing intentional infringers to avoid accountability and undermining the incentive program the U.S. patent system is built on.¹⁰³ Additionally, creating a factor which is relevant to some, but not all, cases of infringement could create difficult line-drawing problems. One example centers on the use of genetically modified crops to create pharmaceutical products, asking "should [these infringing uses] be classified as plants (intent required) or drugs (no intent

98. See *Hughes Tool Co. v. G.W. Murphey Ind., Inc.*, 491 F.2d 923, 927 (5th Cir. 1974) (stating the court would "recognize that there may be times where literal infringement should be overlooked" and disregarding some minor infringements as "too trifling to justify judicial intervention"); *Thurber Corp. v. Fairchild Motor Corp.*, 269 F.2d 841, 845 (5th Cir. 1959) (stating that "courts are not blind" to an infringer's intent). Compare with, e.g., *Schnadig Corp. v. Gaines Mfg. Co.*, 620 F.2d 1166, n.3 (6th Cir. 1980) (holding that "an 'inventor' who produces something already patented infringes the patent regardless of his knowledge of its existence").

99. See *ADELMAN ET AL.*, *supra* note 10, at 654.

100. *Id.*

101. Van Pelt, *supra* note 17, at 582.

102. Mark D. Janis & Jay P. Kesan, *Intellectual Property Protection for Plant Innovation: Unresolved Issues After J.E.M. v. Pioneer*, 20 NATURE BIOTECH. 1161, 1162 (2002).

103. See Norman Siebrasse, *The Innocent Bystander Problem in the Patenting of Higher Life Forms*, 49 MCGILL L.J. 349, 383-89 (2004).

required)?¹⁰⁴ Courts would therefore be required to examine the applicability of the intent element on a case-by-case basis.

However, while the efficiency of the courts and the clarity of judicial decisions are serious concerns, the paramount charge of the legal system is to ensure even-handed and conscientious outcomes. In the case of genetically modified organisms, consideration of intent may be viewed as consistent with the language placing a no-notice limitation on damages for infringement found in 35 U.S.C. §§ 287,¹⁰⁵ even if it is not consistent with the present application of that provision.¹⁰⁶ The no-notice limitation on damages presently prohibits the recovery of damages for infringement whenever the patent holder has not placed a notice on the patented good to make users and potential infringers aware that the good is subject to protection.¹⁰⁷ The key difference between the current no-notice limitation and the proposed regimes is that, while organic farmers are presently held guilty of patent infringement but might pay reduced damages due to lack of notice that GMO technology had drifted into their fields, adoption of the proposed intent requirement would shield those organic growers from a finding of liability altogether.¹⁰⁸ The distinction is small, but could be psychologically critical to a minority group such as organic farmers.

2. *The Innocent Bystander Defense*

No federal circuit court has yet discussed the possibility of requiring intent in patent infringement cases. Before the federal circuit assumed control of all patent cases, however, the U.S. Court of Claims issued an opinion holding that when a defendant avoids patent use to the best of his ability, and when he

104. Van Pelt, *supra* note 17, at 582.

105. 35 U.S.C. § 287(a) reads, in relevant part:

Patentees . . . may give notice to the public . . . either by fixing thereon the word 'patent' or the abbreviation 'pat.', together with the number of the patent, or when, from the character of the article, this cannot be done, by fixing to it, or to the package wherein one or more of them is contained, a label containing a like notice. In the event of failure so to mark, no damages shall be recovered by the patentee in any action for infringement, except on proof that the infringer was notified of the infringement and continued to infringe thereafter, in which event damages may be recovered only for infringement occurring after such notice.

106. See Siebrasse, *supra* note 103, at 372–73 (discussing the difficulties plaintiffs face in the application of the damages limitation of section 287 and explaining that the provision was included in the Patent Act to encourage patent holders to mark their products with patent numbers more than to shield innocent users).

107. 35 U.S.C. § 287(a).

108. Siebrasse, *supra* note 103, at 364.

does not gain any benefit from occasional use which might slip by, he is not guilty of infringement.¹⁰⁹ This decision may be limited in precedential value, but the language therein is especially applicable to the case of organic farmers contaminated by genetic drift: not only has the certified organic farmer undertaken a long and expensive process to become certified, but rather than obtaining any advantage when patented GM crops appear in his field, he suffers quantifiable economic detriment.¹¹⁰

The Canadian Court of Appeal has also recognized, in dicta, that lack of intent should constitute a defense for farmers who had no knowledge of GMO presence in their fields.¹¹¹ Echoing this concern arising out of the patenting of life forms, the Canadian Biotechnology Advisory Committee proposed amendments to the *Patent Act* aimed at the protection of such “innocent bystanders.”¹¹²

The innocent bystander defense would only be applicable to farmers who did not have knowledge of GMO presence in their fields and could not prevent GMOs from entering their fields (that is, it would be unavailable to those who purposefully utilized GMOs in their field to their advantage).¹¹³ It therefore requires the farmer to demonstrate three key elements: lack of knowledge of the drift, compliance with ordinary preventative measures, and negligible to non-existent one-time advantage, if any advantage was realized at all.¹¹⁴

Lack of knowledge concerning the drift will have to be substantiated on a case-by-case basis, but organic farmers should be able to tangentially support this element through contracts to sell their organic goods and the subsequent loss of those contracts following tests finding drift. Some courts have interpreted this language as requiring that an infringer possesses the patent product and intends to profit from it.¹¹⁵ Such an interpretation would be a boon to organic farmers, who

109. Pratt v. United States, 43 F. Supp. 461, 476 (Ct. Cl. 1942).

110. See e.g., Johnson v. Paynesville Farmers Union Coop. Oil Co., 802 N.W.2d 383, 385–86 (Minn. Ct. App. 2011).

111. Monstanto Can. Inc. v. Schmeiser, [2003] 2 F.C. 165, para. 57 (Can. Ont., Fed. Ct.).

112. See Siebrasse, *supra* note 103, at 351 (discussing recommendation four in the report from the Canadian Biotechnology and Advisory Committee entitled *Patenting of Higher Life Forms and Related Issues: Report to the Government of Canada Biotech Ministerial Coordinating Committee* published in 2002).

113. Monsanto Can., Inc. v. Schmeiser, [2004] 1 S.C.R. 902, para. 92 (Can.).

114. These elements are taken from Brennan Delaney’s analysis of scholarly proposals for an innocent bystander defense. See Brennan Delaney, *What Happens When the Gene Gets Out of the Bottle?: The Necessity of an Intent Element for Infringement of Patents Claiming Genetically Modified Organisms*, 76 UMKC L. REV. 553, 565 (2007).

115. See L.A. Gear, Inc. v. E.S. Originals, Inc., 859 F. Supp. 1294, 1298 (C.D. Cal. 1994) (holding that “as a matter of law mere possession of a product or machine covered by a patent does not constitute infringement, absent a ‘threatened or contemplated’ use or sale”); see also *Beidler v.*

can conclusively demonstrate there was no method for them to profit from continued possession of the patented genetic material.¹¹⁶

Requiring compliance with ordinary preventative measures also poses no hurdle to organic farmers' utilization of the defense, as NOP requirements place the burden on these farmers to employ portions of their otherwise arable land as buffer zones.¹¹⁷ Full compliance with those requirements should stand as evidence that organic farmers took all available steps to prevent cross-contamination via drift.

The final element—minimal to non-existent advantage—is often couched in terms of a “but-for” causality test, allowing the innocent bystander to keep the profits he earned, while paying any enhanced profits to the patent holder as damages.¹¹⁸ However, even in its strictest sense (whereby the defense would not be available to a defendant who obtained *any* advantage from the patent) this element is easily satisfied by organic farmers: while conventional farmers might employ GM technology to their future advantage, organic farmers suffer certain economic detriment and cannot benefit from the innocent acquisition of GMOs. Organic farmers therefore would find a strong defense in the innocent bystander framework, if the federal courts would see fit to entertain it.

3. *A New Proposal: Using Organic Certification as an Affirmative Defense*

To the extent that intent becomes relevant in patent infringement, actions evidencing a strong intent *not* to utilize or benefit from patented technologies should be given great weight. This Article proposes that the organic farmer's documented compliance with NOP standards and completion of the rigorous organic certification process, in conjunction with the entirely voluntary and economically sacrificial nature of these undertakings, should stand as an affirmative defense to actions alleging patent infringement.

Unfortunately, this solution is not a one-size-fits-all proposal. Utilizing organic certification as the basis for defense to GM patent infringement leaves small farmers who cannot afford to obtain NOP organic certification vulnerable to patent infringement liability. Others who follow organic growing principles but oppose NOP certification on ideological grounds remain similarly exposed.

Photostat Corp., 10 F. Supp. 628, 630 (W.D.N.Y. 1935) (holding that possession will not be infringement “in the absence of proof that the machine is held for purposes of profit”).

116. 7 C.F.R. § 205.202(b) (2013); *see e.g.*, Johnson v. Paynesville Farmers Union Coop. Oil Co., 802 N.W.2d 383, 386 (2011) (after finding out each time that their farm had been corrupted by GMOs, the plaintiffs had to destroy the crop and could not grow organic crops on the land for three years).

117. 7 C.F.R. § 205.202.

118. Siebrasse, *supra* note 103, at 354.

Providing organic farmers an additional protection against infringement liability resulting from unintentional and unavoidable genetic drift, however, is consistent with the notions of equity and fair play our justice system is founded on.

V. CONCLUSION

The use of GM crops continues to spread, and the size of the organic market continues to grow.¹¹⁹ Courts acknowledge that anywhere GM crops are found, “some unlicensed—and unintended—use of transgenic seeds is inevitable.”¹²⁰ As these enterprises continue their collision course, courts and legislatures will be forced to acknowledge the inconsistencies between the National Organic Program, the patent system, and the facts of biology. The possibility of the coexistence of GM crops and organic fields is a myth.¹²¹

Certified organic farmers find themselves feeling particularly vulnerable to genetic drift and largely without redress when such drift occurs. Presently, these farmers can bring the common law claims of trespass, nuisance, and negligence to seek recovery of their losses following loss of market and rejected shipments; however, the state-specific nature of these claims and the high evidentiary showings required by the plaintiffs may forestall recovery of damages by the farmer. Until Congress sees fit to overlay a federal scheme for common law property claims, or states adopt a uniform methodology for addressing such issues, organic farmers cannot widely depend on these traditional arguments to protect their investments. Additionally, even successful claims here afford no protection to the farmer who fears patent infringement liability.

A direct method of confronting the conflict between statutes and biology would require incorporating an intent element into the patent infringement analysis, at least in cases of living, independently reproductive patented “technologies.” Requiring demonstrable intent to infringe would allow both conventional and organic farmers to utilize the innocent bystander defense in cases of unlicensed growth resulting from genetic drift. Certified organic farmers could go one step further, utilizing the long and costly process of organic certification as

119. Altieri, *supra* note 22, at 362 (“Globally, the cropland area planted to GM crops grew from 67.7 million hectares [167.3 million acres] in 2003 to 81.0 million hectares [200.2 million acres] in 2004” while “[i]n California, organic foods are one of the fastest growing segments of the agricultural economy, with retail sales growing at [twenty percent] to [twenty-five percent] per year for the past [six] years.”).

120. Organic Seed Growers and Trade Ass’n v. Monsanto, 851 F.Supp.2d 544, 548 (S.D.N.Y. 2012).

121. Altieri, *supra* note 22, at 361. “The coexistence of genetically modified (GM) crops and non-GM crops is a myth because the movement of transgenes beyond their intended destination is a certainty, and this leads to genetic contamination of organic farms and other systems.” *Id.*

evidence of intent to avoid infringement. By choosing to grow crops with organic production methods, certified farmers have deliberately declined the convenience, time savings, and crop yield increases that GM crops offer. The very act of choosing to utilize a highly regulated and fragile farming method evidences a substantial intent *not* to utilize GM technology. Both equity and biology therefore require that courts and the legislature address the conflicts between the patent system and growing organic and GM markets, either through revision of the applicable statutes, adoption of an intent element for infringement of patents claiming GMOs, or another novel means.