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Death by Crosspollination: The Uncontrollable Natural Occurrence That Could Kill Organic Farming and the Legal Solutions to Save an Industry

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NOTES

DEATH BY CROSSPOLLINATION: THE UNCONTROLLABLE NATURAL OCCURRENCE THAT COULD KILL ORGANIC FARMING AND THE LEGAL SOLUTIONS TO SAVE AN INDUSTRY

AUSTIN WAREHIME*

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INTRODUCTION

American farmers are under attack by uncontrollable technology.¹ Patented genetically modified organisms (GMOs)² are contaminating organic crops in a process recognized by many, including the United States Supreme Court and GMO patent holding companies such as Monsanto.³ The process is called crosspollination. Crosspollination is a natural event in which pollen produced by one plant is carried by the wind or bees to another plant.⁴ Typically, crosspollination is beneficial because it helps nourish the plants;⁵ however, the process is nearly uncontrollable in nature.⁶ Crosspollination can lead to catastrophic ends for owners of small, organic farms in the era of patented GMOs. Before delving deeper into the problems caused by crosspollination, some preliminary explanations are warranted to understand the gravity of this situation.

The leader in genetic modification of crops is Monsanto.⁷ Monsanto created a crop that fundamentally changed the way farmers grow plants.⁸ There are many potential benefits to Monsanto's innovations.⁹ Monsanto's leading innovation was the creation of a crop that is resistant to its own

1. See CTR. FOR FOOD SAFETY & SAVE OUR SEEDS, SEED GIANTS VS. U.S. FARMERS 1 (2013), https://www.centerforfoodsafety.org/files/seed-giants_final_04424.pdf.

2. For the purposes of this article, "GMOs" and "GMO crops" will be referencing the most common GMO commodity crops in the United States, corn and soybeans.

3. *Organic Seed Growers & Trade Ass'n v. Monsanto Co.*, 718 F.3d 1350, 1357 (Fed. Cir. 2013) (quoting Monsanto's Motion to Dismiss stating that "Monsanto has explicitly stated its commitment not to take legal action against growers whose crops might inadvertently contain traces of Monsanto biotech genes (because, for example, some transgenic seed or pollen blew onto the grower's land)); *Bowman v. Monsanto Co.*, 569 U.S. 278, 287 (2013).

4. See *Crosspollination*, MERRIAM-WEBSTER DICTIONARY (2018); *Cross Pollination vs. Self-Pollination*, DIFFEN, https://www.diffen.com/difference/Cross_Pollination_vs_Self_Pollination [<https://perma.cc/L9ZJ-GDMW>].

5. DIFFEN, *supra* note 4.

6. See *Organic Seed Growers*, 718 F.3d at 1357.

7. *The World's Top 10 Seed Companies: Who Owns Nature?*, GMWATCH (Jan. 31, 2009), <https://www.gmwatch.org/en/gm-firms/10558-the-worlds-top-ten-seed-companies-who-owns-nature> [<https://perma.cc/T7TR-L5GR>]. This article will mostly discuss Monsanto. This is not to discount the innovations of other companies or to say that Monsanto is the only company causing the problems addressed in this note. It is simply a choice made for ease of discussion. In most instances "Monsanto" could be replaced with other industry leaders such as DuPont, Dow Agro, or Syngenta.

8. *Unlocking Hidden Potential: Biotechnology and GMOs*, MONSANTO, <https://monsanto.com/innovations/biotech-gmos/> [<https://perma.cc/MV7Y-FQDE>].

9. *Id.*

herbicide, Roundup.¹⁰ As will be explained later, Monsanto eventually gained a utility patent on the genetic make-up of its the herbicide resistant crops.¹¹ The patented genetic resistance allows farmers to spray Roundup directly onto a field full of their herbicide-resistant crops, killing any weedy undergrowth without causing any harm to the valuable plants.¹² Thus, the GMO crops will thrive as the sole living organisms in their respective area competing for nutrients from the soil.¹³ However, there are problems that can develop as unintentional consequences of Monsanto's original design.

When the natural process of pollination occurs, the pollen created by Monsanto's GMO crops carries the patented genetic make-up of Monsanto's plant to neighboring plants.¹⁴ When the "patented pollen" lands on non-GMO crops, a serious transformation may occur in the receiving plant through crosspollination. The non-GMO plant may adopt Monsanto's patented trait.¹⁵ Even if adoption does not occur, the plant may still test positive for "contamination."¹⁶ At this point in the example, under our current understanding of the law, Monsanto has full legal authority to protect its patent rights by suing the owner of the newly contaminated plant for patent infringement.¹⁷ This is only exacerbated by Monsanto's litigious streak and aggressive posture in protecting its innovations from "unlawful" intrusions.¹⁸

Monsanto's aggression, as described by one federal court judge, involves "scorched-earth" tactics to protect its "single use restriction."¹⁹ These tactics include "Monsanto sen[ding] 'agents' into the farming community to ensure that farmers were not purchasing Roundup Ready seed, harvesting it, saving seed from the crop and then planting second generation Roundup Ready seed the next season."²⁰ According to this particular judge,

The scorched-earth policies used by Monsanto in enforcing the single-use restriction against farmers in some instances altered the customary neighborly relationships for which

10. See Robert Langreth & Mathew Herper, *The Planet Versus Monsanto*, FORBES (Dec. 31, 2009, 4:40 PM), <https://www.forbes.com/forbes/2010/0118/americas-best-company-10-gmos-dupont-planet-versus-monsanto.html#4126263610dc> [<https://perma.cc/N35H-NPX2>].

11. J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc., 534 U.S. 124, 127 (2001).

12. William Neuman & Andrew Pollack, *Farmers Cope With Roundup-Resistant Weeds*, N.Y. TIMES (May, 3 2010), <https://archive.nytimes.com/www.nytimes.com/2010/05/04/business/energy-environment/04weed.html> [<https://perma.cc/G758-MBSB>].

13. *Id.*

14. Organic Seed Growers & Trade Ass'n v. Monsanto Co., 718 F.3d 1350, 1357 (Fed. Cir. 2013).

15. *Id.*

16. *Id.*

17. Commil USA, LLC v. Cisco Sys., Inc., 135 S. Ct. 1920, 1926 (2015) (citing Glob.-Tech. Appliances, Inc. v. SEB S.A., 563 U.S. 754, 760–61 n.2 (2011)).

18. See *Stratemeyer v. Monsanto Co.*, No. 02-CV-505, slip op. at 3–4 (S.D. Ill. Mar. 28, 2005).

19. *Id.*

20. *Id.*

farmers are known. Instead of helping each other with barn-raising and equipment sharing, those caught saving seed, a practice that is hundreds of years old, were turned into “spies” against their neighbors, replacing the atmosphere of cooperation with one of distrust and suspicion.²¹

These changes are a dramatic shift from our historical practices of agriculture, and our current policy structure certainly deserves some responsibility for this change.

Therefore, in addressing the issue described above, and others described later in this Note, created by our federal patent laws, this Note advances legally sound approaches to balance the scales between billion-dollar, multinational corporations and vulnerable organic farmers. More specifically this Note advances two policy changes; one of those changes at the federal level, the other at the state level. First, non-GMO farmers need to be given a fair shot in our legal system when their fields are unwantedly and unintentionally contaminated by crosspollination. To assist in giving non-GMO farmers that fair shot, Congress needs to require that Monsanto prove that non-GMO farmers intended to infringe its patents when non-GMO farmers claim they have been unwantedly contaminated. Second, states need to codify an agency relationship between Monsanto and its “growers,” which will give farmers a cause of action against the patent-holding multinational corporation when the organic and non-GMO farmers’ crops are unwantedly contaminated. Additionally, this codification will allow organic farmers to protect the integrity of their crops, diminish the losses they face because of the unwanted contamination, allow organic farmers to continue to offer their goods to citizens who desire organic products, and allow organic farmers to build the budding organic food sector of the economy. Such legislative changes level the legal playing field and institute causes of action for farmers whose crops are unwantedly contaminated by neighboring genetically modified crops.

Overall, this note’s objective is to advance legally sound approaches that protect the dignity of the farmer, preserve the integrity of their crops, and hold multinational agribusinesses accountable for crosspollination infringing upon private lands.

Part I briefly examines the history of agriculture from the discovery of domestication of plants to today, where humans are now able to manipulate genome structures in order to create crops that are resistant to chemical products and insects. In addition to the evolution of agriculture itself, Part I examines the accompanying evolution of law surrounding agriculture with emphasis placed on the evolution of laws related to the patenting of plants and GMOs. The goal of Part I is to provide a foundation to understand how far humans have come in growing food and how that has

21. *Id.*

affected the farmer. Part II explores the problems that existing GMO laws have created for organic-crop farmers and the farming community as a whole, while highlighting the need to protect the rights and integrity of the minority organic growing community. Part III further illustrates these problems with case examples that demonstrate the practical implications of our GMO laws. Part IV offers proposed legislative changes aimed at alleviating the problems that organic farmers now face. Suggested legal changes include: (1) Federal legislation modeled after California and Maine's agriculture codes, which create a requirement of intent for any patent infringement suit against organic farmers; and (2) State legislative action to codify the relationship between Monsanto and its growers as an agency relationship. Finally, Part V explains how the policies suggested in Part IV are legally and constitutionally sound and how they will help alleviate the problems for organic farmers, as explained in Parts II and III.

I. A BRIEF HISTORY OF AGRICULTURE

A. The Development of Agriculture

This section will walk through developments in agriculture, starting with its discovery and continuing all the way through the development of genetic modification. Instead of discussing the many vast accomplishments the human race has made in agriculture as a whole, this section will focus on advances made in the area of plant manipulation. This is not to discount the many advances that have been made in agriculture production and mechanization—such as the plow—it is simply to show how genetically modified crops came to exist through millennia of smaller advances in the science of plant manipulation.

As a prelude, consider the following short example before delving into the history. The human race only discovered the ability to domesticate and cultivate plants about 10,000 years ago.²² Over thousands of years, humans learned how to breed plants to enhance characteristics such as size, taste, and hardiness.²³ Today, 92% of all corn and 94% of all cotton and soybeans in the United States contain at least three genes that have been genetically transplanted from one organism to another and which exist unnaturally in their new host plant.²⁴ To fully understand how this dramatic transition came to be, we must consider the history of agriculture, beginning with the process of domestication.

22. MARCEL MAZOYER & LAURENCE ROUDART, A HISTORY OF WORLD AGRICULTURE FROM NEOLITHIC TO THE CURRENT CRISIS 28 (James H. Membrez trans., 2006).

23. *Id.* at 93.

24. *Adoption of Genetically Engineered Crops in the U.S.*, U.S. DEP'T OF AGRIC., <https://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-us.aspx> (last updated Sept. 18, 2019) (follow the link then click on "Genetically engineered varieties of corn, upland cotton, and soybeans, by State and for the U.S., 2000-2018") [<https://perma.cc/HV9M-BE3T>].

Agriculture has its historical roots in an area of the Middle East commonly known as the Fertile Crescent.²⁵ Historians generally believe that humans first discovered the ability to grow plants where they wanted them by accident.²⁶ It is likely “that the first sowing took place in an accidental manner, close to dwellings, where the shelling and cooking of wild grains took place.”²⁷ Once humans realized they could plant seeds and grow them where they wanted, they began to alter the genetic make-up of plants in a process called domestication.²⁸ Even simply cultivating plants made them different from their fellow, wild cousins.²⁹ While agriculture in the Fertile Crescent may have begun over 10,000 years ago, it only reached modern-day America 4,000 to 1,800 years ago.³⁰ The “North American Center” for the development of agriculture appears to have been in the “middle Mississippi basin,” near modern-day Arkansas, Mississippi, Missouri, and Tennessee.³¹ However, it took many millennia before humans took the next significant step in altering crops: hybridization.³²

While plants may have been improved through the process of natural selection early in the history of agriculture, hybridization—the “cross-breeding [of] two different species of natural plants or animals”—did not appear on the world agricultural stage until at least 4,000 years ago.³³ Plant hybridization can be more easily understood as humans forcing two plants, which normally would not “breed,” to crosspollinate with each other.³⁴ This crosspollination, or forced breeding, creates an entirely new plant species that hopefully adopts the best characteristics of each of its parent plants. This method of genetic “improvement” or genetic selection is responsible for the transition of an ancient crop, like maize, to its modern-day cousin, corn.³⁵ Corn, a staple of the American diet, “looks and tastes entirely different than the parent plant,” maize.³⁶

Hybridization has not only been used in foodstuffs to alter the taste and appearance of many crops, but the same process has also been used with dogs to create 161 different breeds recognized by the American Kennel Club.³⁷ Each of these breeds was “created” with the hope that it would be

25. MAZOYER & ROUDART, *supra* note 22, at 75.

26. *Id.* at 78.

27. *Id.*

28. *Id.* at 92.

29. *Id.* at 93.

30. *Id.* at 75.

31. *Id.* 72–73, 75.

32. DAVID NEWTON, *GMO FOODS 4* (2014).

33. *Id.*

34. *Plant Hybridization*, NATURE.COM, <https://www.nature.com/subjects/plant-hybridization> [<https://perma.cc/47DQ-PNDR>].

35. *Id.*

36. *Id.*

37. NEWTON, *supra* note 32, at 4.

helpful in completing different jobs.³⁸ Additionally, hybridization has given us over 2,000 varieties of roses recognized by the American Rose Society.³⁹ The ultimate goal of hybridization is to “improve the overall quality of the species” being altered.⁴⁰ Humans realizing that they could change a plant by forcing it to take on the qualities of different species of plant was a major step towards genetic modification.

While many “agricultural revolutions” improved yields and agricultural productivity, perhaps no agricultural innovation has made as large an impact as genetic modification.⁴¹ In just the last eighteen years, the sowing of genetically modified varieties of corn with three genetic modifications—insect resistance, herbicide resistance, and “stacked genes”—has increased from 25% of all corn planted to a whopping 92% of all corn planted.⁴²

The first successful insertion of a new, foreign gene into a plant took place in 1983.⁴³ However, the first commercial planting of a GMO crop for human consumption did not take place until 1994.⁴⁴ That crop was a delayed-ripening tomato known as FlavrSavr.⁴⁵ In the last twenty-four years, the use of GMO crops has exploded for several reasons.

One reason farmers turned to GMOs so quickly due to claims that they increased yields. In the years since their introduction, some studies have claimed that genetically modified crops have not effected yields, or even have decreased yields, others have concluded that genetically modified crops increase yields. One study in particular found that GMOs have led to a 22% increase in yields.⁴⁶

Another reason farmers turned to GMOs was in an effort to reduce pesticide usage. For example, one study found that, in places where GMO cotton was planted, the use of pesticides fell “between 60 and 80 percent in

38. *Evolution of the Dog*, PBS, https://www.pbs.org/wgbh/evolution/library/01/5/1_015_02.html [<https://perma.cc/D532-RBL8>].

39. NEWTON, *supra* note 32, at 5–6.

40. *Id.* at 5.

41. MAZOYER & ROUDART, *supra* note 22, at 338.

42. *Adoption of Genetically Engineered Crops in the U.S.*, U.S. DEP’T OF AGRIC., <https://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-us.aspx> (last updated Sept. 18, 2019) (follow the link then click on “Genetically engineered varieties of corn, upland cotton, and soybeans, by State and for the U.S., 2000-2018”) [<https://perma.cc/B344-ACHK>].

43. STUART SMYTH ET AL., *REGULATING THE LIABILITIES OF AGRICULTURAL BIOTECHNOLOGY* 7 (2004).

44. *Id.*

45. *Id.*

46. Wilhelm Klümper & Matin Qaim, *A Meta-Analysis of the Impacts of Genetically Modified Crops*, PLOS ONE, Nov. 2014, at 5; *Do GM Crops Increase Yield?*, MONSANTO, <https://monsanto.com/innovations/biotech-gmos/articles/gmo-crop-yields/> [<https://perma.cc/UJ6A-NCT2>]; Cf. Geoffrey Lean, *Exposed: The Great GM Crops Myth*, INDEP. (Apr. 20, 2008, 12:00 AM), <https://www.independent.co.uk/environment/green-living/exposed-the-great-gm-crops-myth-812179.html> [<https://perma.cc/3R5N-TH66>].

comparison with pre-GM use.”⁴⁷ However, as will be addressed later, studies are less optimistic when it comes to the use of herbicides.⁴⁸

Additionally, GMO crops can be engineered to grow in regions where conditions are less conducive to plant growth.⁴⁹ For example, researchers have been working on crops that are tolerant to heat, frost, and—in areas where fresh water is not readily available—salt water.⁵⁰ Proponents of GMO crops point to these innovations and tout their potential to greatly benefit developing nations with expanding populations.⁵¹

Finally, many farmers switched to GMO crops believing the new breeds would impact yields and allow the farmers to make more money. A study financed by Monsanto⁵² and conducted by Graham Brookes and Peter Barfoot found that the adoption of GMO crops increased farm incomes across the globe \$98.2 billion since 1996.⁵³ Additionally, the study found that U.S. farmers saw the biggest positive impact, “realizing over \$43.6 billion in extra income between 1996 and 2011.”⁵⁴ However, income increases in the United States were due to cost savings, rather than increased crop yields.⁵⁵ Considering these potential benefits, especially when the farmer could see the difference in his bank account, the quick adoption of GMO crops makes more sense.

Despite all these positives, there are still many people opposed to the expansion of GMO crops, and they cite many reasons for their position.⁵⁶ First, the total amount of herbicide used on GMO crops has greatly increased.⁵⁷ For example, between the years of 2001 and 2010, the use of herbicides increased by 81.2 million pounds, a 26% jump.⁵⁸ Additionally, the total volume of the most popular herbicide, glyphosate, the active ingredient in Roundup, increased from 15 million pounds of usage in 1996 to 159 million pounds in 2012.⁵⁹ A concern resulting from this increased use of herbicide is the emergence of “superweeds,” or weeds that are resistant to the glyphosate.⁶⁰ Superweeds develop because glyphosate is a post-emergence

47. NEWTON, *supra* note 32, at 82.

48. *Id.* at 84.

49. *Id.* at 79–81.

50. *Id.* at 80–81.

51. *Id.* at 81.

52. Graham Brookes & Peter Barfoot, *The Global Income and Production Effects of Genetically Modified (GM) Crops 1996-2011*, 4 *GM CROPS & FOOD* 74, 82 (2013), <https://www.tandfonline.com/doi/pdf/10.4161/gmcr.24176?needAccess=true> [<https://perma.cc/Y264-LF43>].

53. *Id.* at 77.

54. *Id.*

55. *Id.*

56. *See* NEWTON, *supra* note 32, at 88–97.

57. FOOD & WATER WATCH, *SUPERWEEDS: HOW BIOTECH CROPS BOLSTER THE PESTICIDE INDUSTRY 2* (2013), <https://www.foodandwaterwatch.org/sites/default/files/Superweeds%20Report%20July%202013.pdf> [<https://perma.cc/Y264-LF43>].

58. *Id.*

59. *Id.*

60. *Id.* at 4–6.

weed killer,⁶¹ which means some plants are able to reach sexual maturity and produce seeds prior to being sprayed with the herbicide.⁶² Since some of these weeds grow to be stronger and hardier prior to herbicide application, the weeds develop an herbicide resistance, which is passed on to their offspring when their seeds are deposited in the soil.⁶³ As a result, more and more herbicide must be used to kill the weeds that grow stronger and stronger.⁶⁴

Another concern is the health risks associated with the increased use of herbicides. Courts and science have recently found that glyphosate-based Roundup may cause cancer.⁶⁵ Following the plaintiff's verdict by a California jury in *Johnson v. Monsanto*, approximately 8,000 cases have been filed in both state and federal courts against Monsanto alleging that its glyphosate-based Roundup caused the respective plaintiffs to develop cancer.⁶⁶ Not only does Roundup probably cause cancer,⁶⁷ glyphosate has been found in our cereal products, which many Americans eat every morning and often feed to their children.⁶⁸ It is logical to believe that the finding of this cancer-causing substance in our food is directly linked to the increased use of Roundup. When more herbicide must be used to kill the increasingly resistant "superweeds," glyphosate becomes more prevalent on our crops, thereby making it harder and harder to remove the herbicide from the finished product.⁶⁹

However, synthetic herbicides—such as glyphosate and other similar herbicides—cannot be used if a farmer wishes to get their crops certified as USDA Organic.⁷⁰ Therefore, to avoid potential contamination of their

61. "Post-emergence" means it is applied after the weeds sprout.

62. FOOD & WATER WATCH, *supra* note 57, at 4.

63. *Id.*

64. *Id.* at 7 fig.6 (showing the increase in the use of glyphosate).

65. INT'L AGENCY FOR RES. ON CANCER, SOME ORGANOPHOSPHATE INSECTICIDES AND HERBIDES 398 (2017), <http://publications.iarc.fr/publications/media/download/4894/1e4a0fc739c4f63deba9f6d9583ebd2a677dc0ac.pdf> [https://perma.cc/2V66-FLYR] ("Glyphosate is probably a carcinogenic to humans."); *Monsanto Ordered to Pay \$289 Million in Roundup Cancer Trial*, N.Y. TIMES (Aug. 10, 2018), <https://www.nytimes.com/2018/08/10/business/monsanto-roundup-cancer-trial.html> [https://perma.cc/Q222-DSJB].

66. Ludwig Burger, *Bayer's Monsanto Faces 8,000 Lawsuits on Glyphosate*, REUTERS (Aug. 23, 2018, 8:34 AM), <https://www.reuters.com/article/us-bayer-glyphosate-lawsuits/bayers-monsanto-faces-8000-lawsuits-on-glyphosate-idUSKCN1L81J0> [https://perma.cc/79MW-4HS5].

67. INT'L AGENCY FOR RES. ON CANCER, *supra* note 65, at 78 ("Glyphosate is probably a carcinogenic to humans.").

68. Mihir Zaveri, *Report Finds Traces of a Controversial Herbicide in Cheerios and Quaker Oats*, N.Y. TIMES (Aug. 15, 2018), <https://www.nytimes.com/2018/08/15/health/herbicide-glyphosate-cereal-oatmeal-children.html> [https://perma.cc/QV9L-V6WC].

69. Charles M. Benbrook, *Trends in Glyphosate Herbicide Use in the United States and Globally*, 28 ENVTL. SCI. EUR., Feb. 2016, at 1, 12–13, <https://enveurope.springeropen.com/track/pdf/10.1186/s12302-016-0070-0> [https://perma.cc/K5RQ-XSUL].

70. 7 C.F.R. § 205.105 (2019).

families and children, many people have chosen to err on the side of caution and choose organic products to feed to their families.⁷¹

Some countries are even moving toward banning glyphosate-based herbicides all together.⁷² In January 2019, a “French court canceled the license for one of Monsanto’s glyphosate-based weed killers . . . over safety concerns”⁷³ The French court ruled that the French agency, ANSES, similar to the United States Environmental Protection Agency (EPA), failed to consider potential health risks when it approved Roundup Pro 360.⁷⁴ In addition to an immediate ban on Roundup, its active ingredient—glyphosate—“is due to be phased out in France within three years under a pledge by President Emmanuel Macron, who stopped short of an outright ban.”⁷⁵

In Mexico, “a diverse coalition made up of fifty-three individuals and non-governmental organizations representing scientists, small farmers, beekeepers, consumers, and human rights activists banded together to file an innovative class action lawsuit to halt further genetically modified corn cultivation. Their case, the *Collective Action Protecting Native Mexican Corn From Genetic Modification*, will make critical law for environmental and social justice in Mexico.”⁷⁶ When large, modernized countries, such as France and Mexico, are taking notice of the potentially harmful effects of glyphosate, it may be time for other countries to follow suit and reevaluate our current agricultural system.

B. Development of GMO Laws

Protections for GMOs in patent law have dramatically increased since the 1930s. The first real protection offered to innovators of new plant varieties was the Plant Patent Act of 1930 (PPA).⁷⁷ However, the PPA made patentable only those plants that reproduced asexually.⁷⁸ The limited nature

71. *Organic Market Overview*, U.S. DEP’T OF AGRIC. (Oct. 9, 2019), <https://www.ers.usda.gov/topics/natural-resources-environment/organic-agriculture/organic-market-overview.aspx> [<https://perma.cc/8JUC-CKDG>].

72. Sudip Kar-Gupta et al., *French Court Cancels Monsanto Weedkiller Permit on Safety Grounds*, REUTERS (Jan. 15, 2019, 6:37 AM), <https://www.reuters.com/article/us-bayer-monsanto-france/french-court-cancels-monsanto-weedkiller-permit-on-safety-grounds-idUSKCN1P91F6> [<https://perma.cc/2FCJ-K94U>].

73. *Id.*

74. *Id.*

75. *Id.*

76. David Nahmias, *Native Corn In Mexico Takes On Big Ag in Epic Environmental Justice Battle, Trailblazing A Path For Collective Actions*, IMPACT FUND: SOC. JUST. BLOG (May 2, 2019), <https://www.impactfund.org/social-justice-blog/mexico-gmo> [<https://perma.cc/9W7B-MVAR>].

77. Tim Van Pelt, *Is Changing Patent Infringement Liability the Appropriate Mechanism for Allocating the Cost of Pollen Drift?*, 31 J. CORP. L. 567, 575 (2006).

78. 35 U.S.C. § 161 (2004); see also *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int’l, Inc.*, 534 U.S. 124, 132 (2001) (“Asexual reproduction occurs by grafting, budding, [cutting,

of the PPA provided little protection for plant breeders who produce their crops through hybridization, which is a form of sexual reproduction and the method of production discussed earlier in this note.⁷⁹

No additional patent protections were added for plant breeders until the Plant Variety Protection Act of 1970 (PVPA).⁸⁰ The PVPA protects those who develop a plant that is “clearly distinguishable from any other variety”⁸¹ by not allowing others to

(1) sell or market the protected variety, or offer it or expose it for sale, deliver it, ship it, consign it, exchange it, or solicit an offer to buy it, or any other transfer of title or possession of it; (2) import the variety into, or export it from, the United States; (3) sexually multiply, or propagate by a tuber or a part of a tuber, the variety as a step in marketing (for growing purposes) the variety; (4) use the variety in producing (as distinguished from developing) a hybrid or different variety therefrom; (5) use seed which had been marked “Unauthorized Propagation Prohibited” or “Unauthorized Seed Multiplication Prohibited” or progeny thereof to propagate the variety; (6) dispense the variety to another, in a form which can be propagated, without notice as to being a protected variety under which it was received; (7) condition the variety for the purpose of propagation, except to the extent that the conditioning is related to the activities permitted under section 2543 of this title; (8) stock the variety for any of the purposes referred to in paragraphs (1) through (7); (9) perform any of the foregoing acts even in instances in which the variety is multiplied other than sexually, except in pursuance of a valid United States plant patent; or (10) instigate or actively induce performance of any of the foregoing acts.⁸²

The biggest change from the PPA to the PVPA was the inclusion of those plants that were produced by sexual reproduction, which included hybridization.

While PVPA protection may have been much stronger than the previous protections under the PPA, it still came with an exception that allowed seed purchasers to save seed “descended from seed obtained, by authority of the owner of the variety. . . and use such saved seed in the

layering, division,] or the like, and produces an offspring with a genetic combination identical to that of the single parent—essentially a clone.”).

79. *Pioneer*, 534 U.S. at 132 n.3 (“By contrast, sexual reproduction occurs by seed.”).

80. Plant Variety Protection Act of 1970, 7 U.S.C. §§ 2321–2582 (2018).

81. 7 U.S.C. § 2402(a).

82. 7 U.S.C. § 2541(a)(1)–(10).

production of a crop for use on the farm of the person, or for sale as provided in this section.”⁸³ In other words, farmers were still able to save seed and avoid buying new seed every year.

The Supreme Court’s decision in *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc.* marked a decisive change for plant innovators by ruling that plants were eligible for utility patents.⁸⁴ Utility patents obtained under 35 U.S.C. § 101.⁸⁵ 35 U.S.C § 101 have remained largely unrevised since 1952.⁸⁶ The section states that “whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”⁸⁷ The Court in *Pioneer* reasoned that, “in choosing such expansive terms as ‘manufacture’ and ‘composition of matter’ modified by the comprehensive ‘any,’ Congress plainly contemplated that the patent laws would be given wide scope.”⁸⁸ Additionally, in previous cases, the Court had held that “living things were patentable under § 101.”⁸⁹ Moreover, the United States Patent and Trademark Office (PTO) had authorized utility patents to plants for at least 16 years prior to the *Pioneer* decision, resulting in the issuance of some 1,800 utility patents for plants.⁹⁰ Therefore, the Court held that new varieties of plants could obtain utility patents.⁹¹

Utility patent protection is an incredibly powerful tool for those who wield its power. 35 U.S.C. § 271 states that:

[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 therefor, infringes the patent.⁹²

Additionally, subsection (b) holds that “whoever actively induces infringement of a patent shall be liable as an infringer.”⁹³ The Supreme Court

83. 7 U.S.C. § 2543.

84. *Pioneer*, 534 U.S. at 127 (“We hold that utility patents may be issued for plants.”).

85. *Id.*

86. See *General Information Concerning Patents*, U.S. PAT. AND TRADEMARK OFF. (Oct. 2015), <https://www.uspto.gov/patents-getting-started/general-information-concerning-patents> [<https://perma.cc/54Q4-LDQ4>].

87. 35 U.S.C. § 101 (2012).

88. *Pioneer*, 534 U.S. at 130 (quoting *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980)).

89. *Id.*

90. *Id.* at 144–45.

91. *Id.* at 144–46.

92. 35 U.S.C § 271(a) (2012).

93. 35 U.S.C. § 271(b).

has held that direct patent infringement is a “strict-liability offence.”⁹⁴ “Under a strict liability standard, the infringer does not have to intend to infringe to be found liable; it is enough that they simply use the patented thing without the owner’s permission.”⁹⁵ Even trace amounts of a patented substance are considered to be infringement under the strict liability standard.⁹⁶

Protections for plant innovations have been heavily increased since the 1930s. However, these protections can lead to serious problems for all farmers. In practical application, organic and non-GMO farmers are especially susceptible to these problems.

II. PROBLEMS WITH THE CURRENT LAW

The current judicial interpretation of patent laws has created problems for farmers in general.⁹⁷ However, organic farmers face the brunt of these problems due to one major contributor—crosspollination.⁹⁸ This section will identify and explain the problems created by the current understanding of laws governing GMOs. To begin, this section will examine some general issues, such as farmers’ reduced ability to keep and save their seeds for replanting, as in traditional agriculture practice. Then, this section will address the control that GMO seed patent-holders have over their products and how this reduces the knowledge we have about GMO products. Finally, this section will explore the most important issue for the purposes of this paper: the endangerment of organic farmers caused by the crosspollination of organic crops by uncontrollable GMO-crop pollen.

The “[c]urrent judicial interpretations [of U.S. patent laws] have allowed utility patents on products of nature, plants, and seeds, without exceptions for research and seed saving.”⁹⁹ Seed saving was the traditional method of procuring seeds to plant the next season for thousands of years prior to the introduction of GMO crops, and this tradition is embedded deep in the roots of the United States.¹⁰⁰ As noted by George Washington, “[i]t is miserable for a farmer to be obliged to buy his Seeds; to exchange Seeds may, in some cases, be useful; but to buy them after the first year is disreputable.”¹⁰¹ The “revolutionary change” from saving seeds to plant for

94. *Commil USA, LLC v. Cisco Sys., Inc.*, 135 S. Ct. 1920, 1926 (2015) (citing *Glob.-Tech. Appliances, Inc. v. SEB S.A.*, 563 U.S. 754, 760–61 n.2 (2011)).

95. *Bonutti Skeletal Innovations, LLC v. Globus Med. Inc.*, No. CIV.A. 14-6650, 2015 WL 3755223, at *2 (E.D. Pa. June 15, 2015) (citing *Commil USA*, 135 S. Ct. at 1926.).

96. *Commil USA*, 135 S. Ct. at 1926.

97. *See generally*, CTR. FOR FOOD SAFETY, *supra* note 1, at 1.

98. Van Pelt, *supra* note 77, at 568.

99. CTR. FOR FOOD SAFETY, *supra* note 1, at 15.

100. *See* Letter from George Washington to Farm Manager William Pearce (November 16, 1794), <https://founders.archives.gov/documents/Washington/05-17-02-0115> [https://perma.cc/TY6W-SSQY].

101. *Id.*

the next year to making farmers buy anew each year “is contrary to centuries of traditional seed breeding based in collective community knowledge and reverses the established notion that seeds should remain in the public domain and for the public good.”¹⁰² Farmers’ inability to save their seeds lowers seed diversity and leaves many farmers with little choice but to jump on the transgenic bandwagon and purchase expensive GMO seeds, whether they want them or not.¹⁰³

Another important issue caused by current GMO laws is the restriction of independent scientific research. In 2009, twenty-six prominent university scientists sent a letter to the EPA to express their alarm at restrictions on independent scientific research due to both utility seed patents and industry technology agreements.¹⁰⁴ Some scientists have warned that, “if a company can control the research that appears in the public domain, they can reduce the potential negatives that can come out of any research.”¹⁰⁵ When discussing biotech companies’ control over research into their GMO seed products, one researcher has even gone as far as to say that “no truly independent research can be legally conducted on many critical questions” with the current patent-holder control structure.¹⁰⁶ The restrictions on research make it understandable why many people feel like they are left with more questions than answers when it comes to the safety of GMO crops.

However, the biggest issue, for the purposes of this note, is the problems that arise from crosspollination. Monsanto has already acknowledged that organic crops could be exposed to “crosspollination from nearby fields where biotech crops are grown,” and that the non-GMO plants “might inadvertently contain traces of Monsanto biotech genes (because, for example, some transgenic seed or pollen blew onto the grower’s land).”¹⁰⁷

There are actually two factors at play when it comes to crosspollination issues. Along with the utility patent’s strict liability standard, farmers are also facing the expansive scope of the technology agreements they are forced to sign when they decide to grow patented crops.¹⁰⁸ For example, “Monsanto, Dow, and Syngenta agreements allow the companies to access records cornering farmer’s activities held by third parties, such as the U.S. government.”¹⁰⁹ Access to “FSA forms help companies to determine how many bags of seed a farmer was sold and how many acres of a particular crop were planted, facts the companies use to draft

102. CTR. FOR FOOD SAFETY, *supra* note 1, at 15.

103. *Id.* at 18.

104. Andrew Pollack, *Crop Scientists Say Biotechnology Seed Companies are Thwarting Research*, N.Y. TIMES (Feb. 19, 2009), <https://www.nytimes.com/2009/02/20/business/20crop.html?%20r=0> [<https://perma.cc/LXS5-RP4C>].

105. *Id.*

106. *Id.*

107. *Organic Seed Growers & Trade Ass’n v. Monsanto Co.*, 718 F.3d 1350, 1357 (Fed. Cir. 2013).

108. CTR. FOR FOOD SAFETY, *supra* note 1, at 23.

109. *Id.*

complaints against farmers they suspect of saving seed.”¹¹⁰ Additionally, Monsanto works provisions into its agreements that allow it to “request invoices and records to confirm that fields in question have been planted with newly purchased seed” when it “believes that a grower has planted saved seed containing a Monsanto biotech trait.”¹¹¹ Monsanto requires that this information be provided within seven days after written request.¹¹² Additionally, Monsanto “may inspect and test all of the grower’s fields to determine if saved seed has been planted.”¹¹³

While it makes sense for GMO crop companies to have the power to protect their patents, there are many instances where organic and non-GMO farmers are contaminated by uncontrollable crosspollination. In fact, the instances of crosspollination are prevalent enough to warrant a website committed to tracking instances of crosspollination and contamination.¹¹⁴ When a farmer is infected or contaminated with GMO crops, there is a “direct economic and irreparable threat to farmer[s] growing organic crops in the forms of lost markets, reputation, crop certification, and ability to sow the crop of their choice.”¹¹⁵ The contamination also opens up the contaminated farmer to potential allegations of patent infringement; and since infringement is a strict liability offense, which does not require a showing of intent, the farmers are easily found liable for patent infringement.¹¹⁶

Additionally, the United States Code provides that

[u]pon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court. When the damages are not found by a jury, the court shall assess them. In either event the court may increase the damages up to three times the amount found or assessed.¹¹⁷

These violations and treble damages can be huge for small farmers who not have much capital.

110. *Id.*

111. MONSANTO, U.S. TECH. USE GUIDE AND INSECT RESISTANCE MGMT. OVERVIEW 1–2 (2018), https://monsanto.com/app/uploads/2018/04/2018_TUG_US.pdf [https://perma.cc/JZ8L-TQYM].

112. *Id.*

113. *Id.*

114. See GeneWatch U.K. & Greenpeace Int’l, *GM Contamination Register*, <http://www.gmcontaminationregister.org> (last updated May 26, 2016) [https://perma.cc/L5YF-ZDYB].

115. CTR. FOR FOOD SAFETY, *supra* note 1, at 25.

116. *Commil USA, LLC v. Cisco Sys., Inc.*, 135 S. Ct. 1920, 1926 (2015).

117. 35 U.S.C. § 284 (2018).

Thus, farmers face large economic losses when GMO crops contaminate their organic crops. For crops to be certified as USDA organic, they cannot be or contain genetically modified material.¹¹⁸ According to the USDA National Organic Grain and Feedstuffs Report from August 29, 2018, organic yellow corn was bringing about \$10.00 per bushel.¹¹⁹ Organic soybeans sold for an even higher price, averaging nearly \$20.00 a bushel.¹²⁰ In comparison, in July 2018, corn that was not certified as USDA organic only brought \$3.47 per bushel; \$6.53 less than its organic counterpart.¹²¹ Soybeans that were not certified as USDA organic were selling for only \$9.10 per bushel; over \$10 less than the organic equivalent.¹²² Clearly, organic farmers have a large interest in securing the purity of their organic crops, meeting the standards of the USDA organic certification program, and garnering higher per-bushel prices. Organic farmers are not the only people with a high interest in protecting organic crops. The general public is demanding organic products more every year.¹²³

The sale of organic products represents a quickly-growing sector of the U.S. economy.¹²⁴ As of 2016, the sale of organic products generated \$43 billion in annual sales.¹²⁵ The most popular organic items are fruits and vegetables, accounting for nearly 40% of organic sales each year.¹²⁶ These are economic interests we vitally need to protect, not only so that individual farmers can continue to garner higher prices and so that consumers have the ability to choose organics for a variety of health reasons, but also so that the nation's economy can continue to benefit from the budding organics industry. Additionally, regulating GMO-patent-holding companies through liability could create a more efficient market by forcing the companies to internalize the damage they are causing organic farmers.¹²⁷

118.7 C.F.R. § 205.2 (2018) (defining excluded methods to include genetic modification).

119. U.S. DEP'T OF AGRIC., NAT'L ORGANIC GRAIN AND FEEDSTUFFS REP. (2018).

120. *Id.*

121. U.S. Dep't of Agric., *Prices Received by Month: Corn 2009–2018*, https://www.nass.usda.gov/Charts_and_Maps/graphics/data/pricecn.txt (last updated Aug. 2019) [<https://perma.cc/Z3SQ-LLT9>].

122. U.S. Dep't of Agric., *Prices Received by Month: Soybeans 2009–2018*, https://www.nass.usda.gov/Charts_and_Maps/graphics/data/pricesb.txt (last updated Aug. 2019) [<https://perma.cc/JEZ9-G8QW>].

123. Zlati Meyer, *Organic Food is Pricier, but Shoppers Crave It*, USA TODAY (July 27, 2017, 4:37 AM), <https://www.usatoday.com/story/money/2017/07/27/organics-popularity-higher-than-ever-43-billion-2016/500129001> [<https://perma.cc/6CEE-8YDE>].

124. *Id.*

125. *Id.*

126. *Id.*

127. See Fabricio Eidelwein, et. al., *Internalization of Environmental Externalities: Development of a Method for Elaborating the Statement of Economic and Environmental Results*, 170 J. OF CLEANER PROD. 1316 (2017).

III. CASES THAT EXEMPLIFY THE PROBLEMS

A. The Source of Discussion

The discussion about crosspollination and its interplay with patent laws can be traced back to one defining case in Canada. In the first widely publicized case of a farmer being prosecuted by Monsanto, a folk legend was born: his name is Percy Schmeiser.¹²⁸ In 1996, Schmeiser grew canola near Bruno, Saskatchewan.¹²⁹ At the same time, five neighboring farmers grew Roundup Ready canola.¹³⁰ The next year, Schmeiser planted seed saved from the previous year's harvest.¹³¹ During the 1997 growing season, Schmeiser conducted a field test in one of his fields and found that approximately 60% of the plants were resistant to Roundup herbicide.¹³² Also during the 1997 growing season, a Monsanto field investigator took a sample from the same field that Schmeiser positively tested.¹³³ These samples tested positive for Roundup resistance and the Roundup Ready gene.¹³⁴

Without thinking anything of it, and as per usual practice for a farmer, Schmeiser saved seed from the 1997 harvest and planted it at the beginning of the 1998 growing season.¹³⁵ Monsanto's 1998 tests of Schmeiser's fields showed approximately 95% to 98% resistance to Roundup.¹³⁶ Monsanto then sued Schmeiser for patent infringement, claiming that Schmeiser had grown and sold canola plants containing its patented Roundup Ready gene without consent from Monsanto.¹³⁷ Schmeiser argued that the patented seeds ended up on his farm by accident.¹³⁸ Therefore, Schmeiser argued that he "own[ed] the progeny of the Roundup Ready canola that came onto his field" because of the "ancient common law property rights of farmers to keep that which comes onto their land."¹³⁹ Schmeiser, in his own words, was "fighting for the fundamental right for the farmer to save his seed and use it year after year."¹⁴⁰ The Supreme Court of

128. This case is becoming so famous that a movie is being made with award-winning actor Christopher Walken playing the lead role as Percy Schmeiser. See Carmel Kilkenny, *Christopher Walken in Winnipeg Shooting GMO Drama*, RADIO CAN. INT'L (last updated Sept. 6, 2018, 20:05), <http://www.rcinet.ca/en/2018/09/06/christopher-walken-in-winnipeg-shooting-monsanto-movie/> [<https://perma.cc/5UHA-35LA>].

129. *Monsanto Canada Inc. v. Schmeiser*, 2001 FCT 256, ¶ 34 (Can.).

130. *Id.* ¶ 33.

131. *Id.* ¶ 32.

132. *Id.* ¶ 39.

133. *Id.* ¶ 41.

134. *Id.* ¶¶ 43, 44.

135. *Id.* ¶ 32.

136. *Id.* ¶ 58.

137. *Id.* ¶ 33.

138. *Percy Schmeiser's Battle*, CBC NEWS (May 21, 2004), https://www.cbc.ca/news2/background/genetics_modification/percyschmeiser.html [<https://perma.cc/SB7P-LQTQ>].

139. *Monsanto Canada Inc. v. Schmeiser*, 2004 SCC 34, ¶ 96 (Can.).

140. *Percy Schmeiser's Battle*, *supra* note 138.

Canada shot down this argument with one simple sentence: “Ownership is no defense to a breach of the Patent Act.”¹⁴¹

While the facts of this case and Schmeiser’s intent were never completely cleared through litigation, the Supreme Court of Canada made it clear that farmers are subject to Monsanto’s control, even those without a Monsanto contract.

B. Monsanto Owns the Beans in the Silos, Too

Back in the United States, Monsanto fought a battle with an Indiana farmer who bought seeds from a third-party grain elevator and planted them late in the planting season.¹⁴² The case that followed stands for the proposition that Monsanto controls its patented technology, even after it has been sold to a third party and potentially mixed with other types beans in a silo. The Indiana farmer, Vernon Bowman, came up with a plan to help with “risky” late season planting without having to enter into another technology use agreement with Monsanto.¹⁴³ Instead of purchasing from Monsanto, he purchased “commodity soybeans” intended for human or animal consumption from a local grain elevator and planted those for his second planting of the year.¹⁴⁴ Then, he applied Roundup to the crops in his field, which killed weeds and anything that was not resistant to Roundup.¹⁴⁵ Bowman thought he could save these seeds as his own development and believed “Monsanto could not control his use of the soybeans because they were the subject of a prior authorized sale (from local farmers to the grain elevator).”¹⁴⁶ When the seeds turned out to be patented technology, Monsanto filed suit and the case eventually made its way to the Supreme Court.¹⁴⁷ Bowman challenged Monsanto’s control over its Roundup Ready soybeans on the basis of patent exhaustion.¹⁴⁸

The Supreme Court, in a narrow holding, held that Bowman had unlawfully infringed Monsanto’s patent through his activities.¹⁴⁹ Bowman primarily argued that exhaustion should have applied to his case because “seeds are meant to be planted.”¹⁵⁰ Since “[t]he exhaustion doctrine typically prevents a patentee from controlling the use of a patented product following an authorized sale,” and Bowman was “merely using them in the normal way farmers do,” Bowman argued that “allowing Monsanto to interfere with that

141. *Schmeiser*, 2004 SCC ¶ 96.

142. *Bowman v. Monsanto Co.*, 569 U.S. 278, 282 (2013).

143. *Id.*

144. *Id.*

145. *Id.*

146. *Id.* at 283.

147. *Id.* at 289.

148. *Id.* at 280.

149. *Id.* at 289.

150. *Id.* at 287.

use would ‘creat[e] an impermissible exception to the exhaustion doctrine’ for patented seeds and other ‘self-replicating technologies.’”¹⁵¹

The Court reasoned that Bowman did make a “new product” when he reproduced the plants.¹⁵² However, the Court articulated that the boundaries of the exhaustion doctrine allow patent holders to retain “an undiminished right to prohibit others from making the thing [its] patent protects.”¹⁵³ Thus, since Monsanto had already patented Bowman’s “newly created” product, he infringed upon its patent regardless of his intent to do so.¹⁵⁴

Justice Kagan’s majority opinion nevertheless leaves some room and hope for future claims that are brought before the Supreme Court. Justice Kagan wrote that the Court “recognize[s] that such inventions are becoming ever more prevalent, complex, and diverse” and that in other cases “the article’s self-replication might occur outside the purchaser’s control. Or it might be a necessary but incidental step in using the item for another purpose.”¹⁵⁵ These two sentences seem to indicate that the Court would be open to hearing cases dealing with inadvertent crosspollination or cases dealing with restrictions on research.

C. Monsanto on the Attack

As previously mentioned, Monsanto has quite a litigious streak. It not only goes after farmers who unintentionally infringe its patents, but it also attacks those who it feels threaten its interests. Seed cleaners happen to be one of those groups. The traditional purpose of seed cleaners was to prepare seed so farmers could replant it the next growing season.¹⁵⁶ However, it is apparent from Monsanto’s Technology Stewardship Agreements that it is not fond of this traditional farming practice.¹⁵⁷ Accordingly, Monsanto has even brought suit against seed cleaners who it felt were encouraging others to infringe on its patents.¹⁵⁸ *Monsanto v. Parr* puts Monsanto’s litigious streak and protective nature on full display. It is also an example of the destructive nature that Monsanto’s “scorched earth tactics” can have on farming communities.¹⁵⁹

151. *Id.*

152. *Id.*

153. *Id.*

154. *Id.* at 289.

155. *Id.*

156. *Monsanto Co. v. Parr*, 545 F. Supp. 2d 836, 839 (N.D. Ind. 2008).

157. See MONSANTO, *Monsanto Technology/Stewardship Agreement*, *supra* note 111, at 1.

158. See *Parr*, 545 F. Supp. 2d at 839.

159. See Mem. and Order, *Stratemeyer v. Monsanto Co.*, No. 02-CV-505 (S.D. Ill. Mar. 28, 2005).

In *Monsanto v. Parr*, the defendant, Maurice Parr, operated a mobile seed cleaning business in Indiana.¹⁶⁰ Parr traveled to his customers to clean their seeds so they could replant the seeds the next year.¹⁶¹ After supplying his services, Parr supplied his customers with an invoice that stated,

As of the date this ticket was printed, the U.S. Congress, through federal seed laws, has expressly protected the rights of farmers to save grain that they have produced for use to seed land that they own, lease or rent. Some seed/chemical companies attempt to circumvent those rights by requiring farmers to sign agreements giving up those rights in order to purchase certain brands/types of seed. Custom seed cleaning is not a party to such agreements and will, in no way, hold itself responsible for compliance or enforcement of said agreements.

Monsanto caught wind of these activities and contacted Parr, requesting that he cease cleaning Monsanto's patented seed and/or advising clients that they can save Monsanto's seed and replant it.¹⁶² Parr responded that he would give all his customers a copy of Monsanto's notice and ask the farmers to sign the statement confirming that they were not asking Parr to clean a Roundup Ready patented product.¹⁶³ However, even after Parr complied with Monsanto's request, Monsanto sued Parr for inducing patent infringement.¹⁶⁴

The case lasted over a year and a half and ended in a stipulated settlement after unsuccessful attempts by each side to end the case on summary judgment.¹⁶⁵ The lawsuit took a great toll on Parr. In an interview with CBS news, Parr said that he felt "there was no way [he] could be held responsible. There's no way that [he] could look at a soy bean and tell you if it's Roundup Ready."¹⁶⁶ Due to Monsanto's suit against him, many of Parr's customers "stopped talking to him."¹⁶⁷ This "really broke [Parr's] heart and he could "hardly hold a cup of coffee that morning" when the company subpoenaed his bank records and filed suit.¹⁶⁸

160. *Parr*, 545 F. Supp. 2d at 839.

161. *Id.*

162. *Id.*

163. *Id.*

164. *See generally id.*

165. Exhibit: Monsanto Seed and Settlement Agreement and Release of Liability, *Monsanto Co. v. Parr*, No. 4:07CV00008, 2008 WL 8166393 (N.D. Ind. Mar. 21, 2008).

166. Armen Keteyian, *Agricultural Giant Battle Small Farmers*, CBS NEWS (Apr. 26, 2008, 7:58 PM), <https://www.cbsnews.com/news/agricultural-giant-battles-small-farmers/> [<https://perma.cc/T5X8-NTZ6>].

167. *Id.*

168. *Id.*

D. Organic Farmers' Defense Mimics Swiss Cheese

Organic farmers have made many attempts to protect themselves from Monsanto's aggressive pursuit to protect its patents. One of the most notable attempts was made by a coalition of organic farmers who sought declaratory judgment that they had not infringed Monsanto's patent rights as long they could show compliance with organic farming practices.¹⁶⁹ In *Organic Seed Growers & Trade Association v. Monsanto Co.*, the crux of the coalition's problem was that, if their farms became contaminated with GMO seed, they could be accused of patent infringement by the holder of the patent on the contaminating GMO crop.¹⁷⁰ The coalition expressed that they had to take expensive precautionary measures to avoid contamination and explained that if they did not take these precautions, they would be contaminated and sued by Monsanto or another company with similar standing.¹⁷¹ However, Monsanto asserted that it would not sue any farmers with "trace amounts of [its] patented seeds or traits" in their fields as a result of inadvertent crosspollination or other forms of contamination.¹⁷² Monsanto reasoned that it would have no incentive because it could not collect *significant* damages in such cases.¹⁷³

However, Monsanto's understanding of an inadvertent infringer was quite narrow.¹⁷⁴ Monsanto's definition only excluded from suit "those growers whose crops become accidentally contaminated, and who [did] not treat their fields with Roundup."¹⁷⁵ Monsanto declined to exclude those "who, knowing of the contamination, harvest[ed] and replant[ed] or [sold] the seeds."¹⁷⁶ Clearly, this definition of inadvertent infringer seems incomplete. What about those farmers who unknowingly harvest and replant contaminated seeds? Or those who diligently test for contamination to ensure they comply with the USDA Organic standards? The diligent farmers in this second group could discover they are contaminated, but they would still need to make some profit off of their crops to feed their family. However, selling the crops while knowing of contamination would plant them firmly in the scope of suit under Monsanto's pledge.¹⁷⁷ The court generally ignored this ominous and incomplete pledge of absolution.

The United States Court of Appeals for the Federal Circuit held that it lacked jurisdiction in the declaratory judgment action because there was no

169. *Organic Seed Growers & Trade Ass'n v. Monsanto Co.*, 718 F.3d 1350, 1352 (Fed. Cir. 2013).

170. *Id.* at 1353.

171. *Id.* at 1354.

172. *Id.*

173. *Id.*

174. *Id.*

175. *Id.* at 1356.

176. *Id.*

177. This example will be further addressed in Section III.E below.

case or controversy to be determined.¹⁷⁸ The court reasoned that, even though it was not satisfied with Monsanto's lack of clarification on its "trace" amounts standard, none of the appellants made sufficient "allegations that they fall outside Monsanto's representations."¹⁷⁹ Thus, the court felt comfortable issuing an opinion that relied on Monsanto's representation of absolution and binding Monsanto "as a matter of judicial estoppel" to its declaration not to sue those who inadvertently infringe its patent.¹⁸⁰ Since none of the farmers brought up any harms they had suffered, the case was ruled moot, the Supreme Court denied certiorari, and none of our burning questions about crosspollination and patent infringement were answered.¹⁸¹

E. Monsanto's Paper Tiger Pledge from *Organic Seed Growers* Exemplified

As previously alluded to, Monsanto's judicially bound pledge of absolution is something of a paper tiger. Recall the language of Monsanto's pledge from *Organic Seed Growers*: "those growers whose crops become accidentally contaminated, and who do not treat their fields with Roundup, [will not be sued] but [those] who, knowing of the contamination, harvest and replant *or* sell the seeds" may be subject to suit.¹⁸² This scheme, to which the Federal Circuit acquiesced, raises major issues.¹⁸³ For example, what is a certified organic farmer supposed to do when they know their crops have been "inadvertently contaminated"?

As the plaintiffs in *Organic Farmers* indicated, prudent organic farmers test their fields to ensure that their farms are not contaminated so that they can keep their certification.¹⁸⁴ Thus, many organic farmers will *know* when their crops have been contaminated. The first problem is that the organic farmers would not be able to sell their crops as organic crops because the USDA Organic standards do not allow for any genetic modification.¹⁸⁵ The second problem is that, based on Monsanto's framework, the

178. *Organic Seed Growers*, 718 F.3d at 1356.

179. *Id.* at 1359.

180. *Id.*

181. *Organic Seed Growers & Trade Ass'n v. Monsanto Co.*, 571 U.S. 1126 (2014), *cert. denied*.

182. *Organic Seed Growers*, 718 F.3d at 1356.

183. *Id.* at 1359 ("One problem with Monsanto's disclaimer, however, is that it has limited scope: it applies only to growers or sellers of 'trace' amounts of seed. At oral argument, Monsanto resisted our efforts to clarify whether it would assert its patents against a conventional grower who inadvertently uses or sells greater than trace amounts of modified seed, but who, for example, does not make use of the Roundup Ready trait by spraying the plants with glyphosate. Thus, we cannot conclude that Monsanto has disclaimed any intent to sue a conventional grower who never buys modified seed but accumulates greater than trace amounts of modified seed by using or selling contaminated seed from his fields."). Nevertheless, the court held that the issues were moot because of Monsanto's disclaimer. *Id.*

184. *Id.* at 1354.

185. 7 C.F.R. § 205.2 (2018).

contaminated farmers cannot sell them as crops without risking a patent infringement suit.¹⁸⁶ This leaves the farmer with only two options: first, the farmer could sign a technology-use agreement with Monsanto, which would probably mean paying a number of fees; second, a farmer could bite the bullet and keep the crop to feed themselves or livestock, leaving him with no money from his work. Neither option allows for any source of mitigation. This is the bind that organic farmers are left in today.

IV. LEGISLATIVE REFORM AGENDA

Listed below are proposed laws based on the concerns raised in section III. Ideally, these policies would work together to provide the best and most extensive protection for organic farmers while balancing the interests of those who choose to grow genetically modified crops. However, each individual policy would help to offer some level of protection to the farmers and could stand on its own if the other policies were not adopted.

A. Adding an Intent Requirement to Pollen-Drift Patent Infringement Cases

The first and biggest policy change would be adding a requirement of intent to patent infringement suits involving crosspollination of organic plants. Some states have already implemented laws with language that could be useful on a national scale.¹⁸⁷ For example, the California Code, in an effort “to provide protections for farmers whose crops are contaminated by genetically engineered plants through cross pollination from neighboring fields,”¹⁸⁸ supplies 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. The authority of a court to determine the presence of de minimis levels of a genetically engineered plant is intended solely for the purpose of assisting in adjudicating claims relating to the possession or use of a patented genetically engineered plant in which the

186. *Organic Seed Growers*, 718 F.3d at 1356.

187. CAL. FOOD & AGRIC. CODE § 52305 (2019); ME. STAT. tit. 7, § 1053 (2019).

188. AGRIC. POLICY COMM. OF THE ASSEMB. COMM. ON APPROPRIATIONS, ANALYSIS OF AB 541 (HUFFMAN), at 1 (Cal. 2008) (prepared by Julie Salley-Gray).

seed labeler, patentholder, or licensee, has rights. Nothing in this section is intended to do any of the following:

- (a) Establish, or be used as the basis for establishing, an acceptable level at which a patented genetically engineered plant may be present.
- (b) Be used to alter or limit liabilities or remedies for personal injury or wrongful death.
- (c) Be used outside or beyond the scope or context of a legal dispute regarding genetically engineered plants.¹⁸⁹

For clarification on the de minimis standard of the California statute, lawmakers explained that,

pursuant to [the] bill, should litigation occur, the courts will likely apply a reasonable care standard to establish whether the presence was de minimis. In a case where a party owes a duty of care to another, such as a patent holder, the court may determine whether the party failed to exercise ordinary care.¹⁹⁰

Similarly, Maine has adopted stronger protections for its farmers by supplying that farmers are “not liable for breach of contract or any damages claimed by the manufacturer” when the farmer did not intend the presence of GMOs, *or* GMOs are only present by de minimis value.¹⁹¹ Maine even included venue protection that presumptively negates any contractual provision in a technology-use agreement that establishes venue on the company’s home turf.¹⁹² The statute states that “[a]n infringement case brought against a grower who does not have a current technology use agreement with a manufacturer must be brought in a venue where the farmer resides or where the disputed crop was grown.”¹⁹³

Combining the California and Maine statutes would create a fantastic framework for any state looking “to protect farmers from charges of patent infringement or breach of seed contract if their fields have been contaminated by genetically engineered plant materials.”¹⁹⁴ However, as discussed below,

189. CAL. FOOD & AGRIC. CODE § 52305.

190. CAL. ASSEMB., CON. IN SEN. AMENDS. TO AB 541 (HUFFMAN), at 3 (2008) (prepared by Dawn Clover.)

191. ME. STAT. tit. 7, § 1053.

192. *Id.*

193. *Id.*

194. AGRIC. POLICY COMM. OF THE ASSEMB. COMM. ON APPROPRIATIONS, ANALYSIS OF AB 541 (HUFFMAN), at 1 (Cal. 2008) (prepared by Julie Salley-Gray).

these laws are likely preempted by federal law when enacted at the state level. Nevertheless, these laws would be excellent additions to federal patent law.

B. Creating a Cause of Action Against the Deep Pockets

A more novel solution is the codification of an agency relationship between GMO patent-holding companies and their contracted growers; This would permit farmers to sue the deep-pocketed corporations rather than their fellow farmers. The theory of agency can be used in many tort actions.¹⁹⁵ These include three actions that would be applicable in the context of crosspollination: trespass, negligence, and nuisance.¹⁹⁶ While these causes of action already exist for organic farmers whose crops are contaminated, the agency theory will provide the organic farmers someone to collect against. Previous attempts to sue the corporations have been stymied by the GMO patent holding companies' successful filings of motions to dismiss due to the lack of agency connection between themselves and the GMO farmer. In this situation, the organic farmer is left with on their cause of action against the GMO farmer who, often times, does not have much to collect against and the organic farmer does not really want to sue because of the tight, communal relationships in many farming communities.

Therefore, states should codify the following definition of agency: any person entering into a "technology use agreement" or other agreement for the purchase of agricultural seeds or products, which restrict the purchasers' future use of the agricultural seeds or products according to patent laws, shall be considered the agent of the business, and the business shall be considered the principal of the purchaser.

V. REASONING FOR POLICY PROPOSALS

A. General Reasons for Shifting Policy

The policies outlined above help organic farmers fight patent infringement suits while protecting GMO farmers who inadvertently contaminate neighboring organic crops by allowing the GMO grower to pass the bill up to the corporate principal. Thus, these policies hold large companies accountable for their role in the destruction and loss that organic farmers suffer when they are stricken with crosspollination. To further break down how each of these reforms accomplish the objectives, each policy needs to be discussed. First, this section will discuss how adding an intent

195. *See, e.g.*, RESTATEMENT (THIRD) OF AGENCY §7.03 (AM. LAW. INST. 1997).

196. "Current legal theories such as negligence, strict liability, trespass, and private nuisance may work well if the organic farmer instituted an action against his neighbor. But this does not address the source of the problem—the GMO creator—who has remained shielded from direct liability." Sabrina Wilson, *Induced Nuisance: Holding Patent Owners Liable for GMO Cross-Contamination*, 64 EMORY L.J. 169, 198 (2014).

requirement to patent infringement suits addresses the problem. Then, this section will discuss how codifying an agency relationship helps to balance the scales.

B. Intent Requirement at the Federal Level

As discussed in section IV-A, the state-level statutes that were already implemented by Maine and California provide excellent protections to organic farmers. The Maine statute, which supplies affirmative defenses to GMO patent infringement suits where there is a lack of intent to infringe or where there is merely a *de minimis* trace of the patented product, is especially helpful to non-GMO farmers.¹⁹⁷ However, these state provisions have not been discussed by any court to date. Therefore, it remains to be seen if these statutes would be invalidated due to preemption by federal patent law.

The Supreme Court of Maine, a state offering some of the strongest protections to its farmers, has recognized that “the United States Court of Appeals for the Federal Circuit, the federal court with jurisdiction over patent law appeals, has determined that federal patent law neither fully occupies the field nor expressly preempts state patent law.”¹⁹⁸ Therefore, the court has held, “federal patent law preempts state law only when the state law directly conflicts with federal law.”¹⁹⁹ While this language sounds good on its face for states with statutes requiring intent or more than *de minimis* infringement, a potential conflict exists between state law and federal law when states require an element of intent in cases of patent infringement.²⁰⁰ The United States Supreme Court has interpreted patent protection to be a “strict liability offense” requiring no intent for infringement.²⁰¹ Also, other federal courts have directly held that *de minimis* infringement is nevertheless infringement.²⁰² Thus, statutes supplying affirmative defenses for lack of

197. ME. STAT. tit. 7, § 1053 (This statute offers more protection because the farmer only needs to prove a *de minimis* presence of the patented genes or a lack of intent. Thus, 99% of a farmer’s crops could contain a patented gene, but if he did not intend his crops to have the gene he is protected by this statute from suit. Likewise, if intent is in question or the lack thereof is too hard to prove, a farmer can simply show that there is on a *de minimis* value of the patented gene on the property. Therefore, this statutory language provides two avenues of protection.)

198. *Puritan Med. Prods. Co. v. Copan Italia S.P.A.*, 188 A.3d 853, 858 (Me. 2008) (citing *Ultra-Precision Mfg., Ltd. v. Ford Motor Co.*, 411 F.3d 1369, 1377 (Fed. Cir. 2005)).

199. *Id.*

200. CAL. FOOD & AGRIC. CODE § 52305.

201. *Commil USA, LLC v. Cisco Sys., Inc.*, 135 S. Ct. 1920, 1926 (2015).

202. *Organic Seed Growers & Trade Ass’n v. Monsanto Co.*, 718 F.3d 1350, 1356 (Fed. Cir. 2013) (“In *SmithKline Beecham Corp. v. Apotex Corp.*, we rejected the proposition that patent claims should be construed to avoid reading on ‘trace amounts’ of a patented compound, even though that compound’s self-replicating properties might ‘place potential infringers in the untenable position of never knowing whether their product infringes because even a single undetectable [molecule] would infringe.’” (quoting 403 F.3d 1331, 1336, 1339–40 (Fed. Cir. 2005))); *see also* *Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1299 (Fed. Cir.

intent and de minimis infringement would likely not survive a constitutional challenge on the basis of preemption.

However, Congress could easily adopt these statutes as amendments to the current patent law framework. All of the cases in section III are simply interpreting current patent law statutes. Since the Supreme Court's decisions are not based on an interpretation of the Constitution, the holdings can be overturned by simply changing the law; there is no need for a Constitutional amendment to override these decisions.²⁰³

Adding an intent requirement to patent infringement suits would solve one of the major problems in the current GMO patent law framework: the utility patent's strict liability standard. As indicated in *Bowman v. Monsanto Co.*, the Supreme Court has recognized that GMOs are "becoming ever more prevalent, complex, and diverse" and that there may be instances where strict liability would be too harsh, such as when "the article's self-replication might occur outside the purchaser's control. Or it might be a necessary but incidental step in using the item for another purpose."²⁰⁴ The Supreme Court hesitates to overturn its interpretation of a federal statute because a dissatisfied Congress could easily change the law.²⁰⁵ Accordingly, Congress should make these proposed changes, especially given that the Court, among many others, has already recognized the potential problems.

By adopting an intent requirement, Congress would allow for organic crops and GMO crops to exist in close proximity to each other, without farmers fearing crosspollination resulting in patent infringement suits. While this would not solve the crosspollination problem, as it would undoubtedly still happen, organic farmers would only lose the extra value that they could have collected from their organic crops rather than facing liability for patent infringement. Additionally, if states implement the codification of an agency relationship, in addition to the federal government adopting an intent requirement, organic farmers will be able to collect their lost profits from the large GMO corporations without hurting their fellow farmers in the process.

C. Codifying an Agency Relationship

Codifying an agency relationship would not only allow non-GMO farmers to recover lost profits caused by crosspollination contamination, it

2009) (noting that de minimis infringement can still be infringement); *Embrex, Inc. v. Serv. Eng'g Corp.*, 216 F.3d 1343, 1352–53 (Fed.Cir.2000) (Rader, J., concurring) ("[T]his court has not tolerated the notion that a little infringement—de minimis infringement—is acceptable infringement or not infringement at all.").

203. *The Court and Constitutional Interpretation*, SUP. CT. OF THE U.S., <https://www.supremecourt.gov/about/constitutional.aspx> [<https://perma.cc/DMU8-GJHY>].

204. *Bowman v. Monsanto Co.*, 569 U.S. 278, 287 (2013).

205. *John R. Sand & Gravel Co. v. United States*, 552 U.S. 130, 139 (2008) ("[S]tare decisis in respect to statutory interpretation has special force, for Congress remains free to alter what we have done.").

would also protect GMO farmers from trespass lawsuits brought by their organic farming neighbors because GMO farmers could “pass the bill” to the multinational GMO companies under an agency theory of liability.

This theory is legally sound. First, it is well established that “agency is a creature of state law.”²⁰⁶ Also, some states have codified statutes that define what establishes an agency relationship.²⁰⁷ The ability of a state to create and codify an agency relationship opens the door for tort actions, based on agency theory, by organic farmers affected by crosspollination. The theory of agency allows “principals” to be held accountable for the actions of their “agents.” As already explained, states are free to establish what constitutes an agency relationship.²⁰⁸

States not only have the power to define what constitutes an agency relationship, but Monsanto and its growers also already fit the general definition of an independent contractor, agency-type relationship. While every state has its own way of phrasing the requirements or factors for agency liability to exist in an independent contractor relationship, they are all relatively similar.²⁰⁹ For the purposes of this note, Monsanto’s relationship will be analyzed under the Tennessee standards. In Tennessee, the following factors are considered to determine if a principal can be held accountable for the actions of its independent contractor: “(1) the right to control the conduct of the work, (2) the right of termination, (3) the method of payment, (4) the freedom to select and hire helpers, (5) the furnishing of tools and equipment, (6) the self-scheduling of work hours, and (7) the freedom to render services to other entities.”²¹⁰ However, the most indicative factor is the right to control the conduct of the work.²¹¹

Sabrina Wilson, in her 2014 note, *Induced Nuisance: Holding Patent Owners Liable for GMO Cross-Contamination*, described the level of control that Monsanto holds over its growers beautifully.²¹² As she explained, “patent law entitles Monsanto to exclude others from making, using, or selling its

206. *Dakota Provisions, LLC v. Hillshire Brands Co.*, 226 F. Supp. 3d 945, 952 (D.S.D. 2016) (“Agency is a creature of state law and, in South Dakota, is governed by both statutory and common law.” (quoting *Babinski Props. v. Union Ins. Co.*, 833 F. Supp. 2d 1145, 1150 (D.S.D. 2011))).

207. See, e.g., S.D. CODIFIED LAWS § 59-1-1 (2019).

208. *Dakota Provisions*, 226 F. Supp. 3d at 952 (“Agency is a creature of state law and, in South Dakota, is governed by both statutory and common law.” (quoting *Babinski*, 833 F. Supp. 2d at 1150)).

209. *Compare Forum Fin. Grp. v. President, Fellows of Harvard Coll.*, 173 F. Supp. 2d. 72, 101 (D. Me. 2001) (establishing agency liability for acts within an agent’s authority), with *Abshire v. Methodist Healthcare-Memphis Hosps.*, 325 S.W.3d 98, 105 (Tenn. 2010) (establishing agency liability when the agent’s acts were within the apparent scope of the agent’s authority).

210. *Beare Co. v. State*, 814 S.W.2d 715, 718 (Tenn. 1991).

211. *Youngblood v. Wall*, 815 S.W.2d 512, 517 (Tenn. Ct. App. 1991); RESTATEMENT (SECOND) OF AGENCY § 220(1) (AM. LAW INST. 1958); WARREN A. SEAVEY, HANDBOOK OF THE LAW OF AGENCY § 84C (1964).

212. See generally Sabrina Wilson, *Induced Nuisance: Holding Patent Owners Liable for GMO Cross-Contamination*, 64 EMORY L.J. 169 (2014).

genetically modified creations.”²¹³ The process of control begins when “Monsanto sells [its] seed to farmers under a Technology Stewardship Agreement (TSA).”²¹⁴ These TSAs are very restrictive on the farmer. For example, the farmer “may sell the crop [they] harvest from the purchased seeds as animal feed or as a commodity, but [they are] prohibited from saving, reselling, or sharing the purchased seeds.”²¹⁵ As a result, the TSA contracts give “Monsanto control over its licensees’ conduct.”²¹⁶ The problems begin when the farmer plants the seed.

It is obvious that the farmer plants the seed that eventually produces the contaminating pollen.²¹⁷ However, Monsanto’s TSAs clearly indicate that it intends to maintain control over its crops throughout their entire lifespan. Consider the broad scope of legal enforcement implemented by Monsanto to protect its patent rights, as already addressed in section III of this note. Furthermore, “the Supreme Court has tied up any loose ends by affirming that Monsanto’s patent rights further extend to seed progeny—self-replication is deemed to have birthed a new embodiment of the patented technology.”²¹⁸ As an example of such control over its patented seeds, recall *Bowman v. Monsanto*, where the Supreme Court even allowed Monsanto to control its patented seed after it had been sold to a local grain elevator and potentially mixed with other kinds of corn that Monsanto did not have patented.²¹⁹ As Wilson puts it, “if Monsanto is able to claim ownership of its patented genetic material, regardless of where it is or how it got there, shouldn’t Monsanto also be held responsible for the resulting damage?”²²⁰

Some courts have already considered placing liability on GMO companies. In the relatively recent *In re Syngenta Mass Tort Actions*, the United States District Court for the Southern District of Illinois wrote: “liability stemming from imposing a duty on Syngenta to take reasonable steps in commercializing its genetically-modified seeds, does not create unrestrained liability.”²²¹ Once an agency relationship has been established—which would be very easy with the codification of such relationships by states—the next battle would be establishing whether a tort has occurred. For the purposes of this note, the tort of trespass will be analyzed.²²²

213. *Id.* at 186.

214. *Id.*

215. *Id.*

216. *Id.* at 187.

217. *Id.*

218. *Id.* at 187–88.

219. *See generally* *Bowman v. Monsanto Co.*, 569 U.S. 278 (2013).

220. Wilson, *supra* note 212, at 188.

221. Poletti v. Syngenta AG (*In re Syngenta Mass Tort Actions*), 272 F. Supp. 3d 1074, 1090–91 (S.D. Ill. 2017).

222. There are many other torts that might be able to be alleged, including negligence or nuisance. However, to keep this note relatively brief, an analysis of a potential trespass claim should supply a solid example of how an agency theory will better balance the scales of justice in this area of jurisprudence.

Trespass is the unauthorized entry upon the property of another.²²³ Plaintiffs do not need to “show that the act was done of malice or any wrongful intent.”²²⁴ Instead, it is sufficient if the entry onto another’s land was accomplished “without a lawful or justifiable cause, though it may have been done accidentally or by mistake.”²²⁵ To establish a *prima facie* trespass claim, there must be an unauthorized entry by the defendant and damage to the plaintiff from the unauthorized entry.²²⁶ Most importantly, there is no intent requirement to establish *prima facie* case.

Although the lack of an intent requirement is helpful, there are, nevertheless, some obstacles to establishing a trespass cause of action. For example, “one hurdle that non-GMO plaintiffs must overcome in pollen drift cases is establishing the invasion by the trespasser.”²²⁷ Considering pollen is so small, how is a plaintiff supposed to establish that pollen drift is the culprit that caused the contamination of their non-GMO crops? Luckily for the presumed organic-farmer plaintiff, crosspollinating contamination has already been widely observed to occur frequently.²²⁸ Therefore, showing that there is no other way the contamination could have happened—with evidence of compliance with good organic farming practices and a lack of planted GMO species—should suffice to establish contamination by crosspollination. The damage will also be easy to establish because non-organic crops sell for much less than their certified organic counterparts.²²⁹

However, proving causation may be more difficult. The difficulty lies in proving exactly which neighboring farm the contaminating pollen came from. However, there are scenarios in which this will be easier. For example, consider an area where organic farming is predominantly practiced, with the exception of one neighboring farm. In this hypothetical situation, clearly any pollen contamination causing organic crops to change into a non-organic crop had to originate from the only non-organic farm in the area. However, this is not the landscape in which most non-GMO farmers live: in most areas, organic or non-GMO farmers are the minority.²³⁰

In the typical scenario, “with multiple GMO farming neighbors, the plaintiff must rely on circumstantial evidence to prove causation.”²³¹ The offered circumstantial evidence would “primarily consists of ‘testimony from

223. *Morrison v. Smith*, 757 S.W.2d 678, 681 (Tenn. Ct. App. 1988).

224. 24 TENN. JURIS.: TRESPASS § 3 (2018)

225. *Id.*

226. *See* 75 AM. JUR. 2D: TRESPASS § 2 (2019).

227. Austin Glascoe, *Genetically Modified Nuisance: Your Right to Recovery Is Barred, If You Catch My Drift*, 6 LSU J. ENERGY L. & RES. 533, 543 (2018).

228. *See id.* at 537–38.

229. *See supra* notes 117–23 and accompanying text.

230. Rachel Cernansky, *We Don’t Have Enough Organic Farms. Why Not?*, NAT’L GEOGRAPHIC (Nov. 20, 2018), <https://www.nationalgeographic.com/environment/future-of-food/organic-farming-crops-consumers/> [<https://perma.cc/WE7Y-8HSP>] (stating that only 1% of U.S. farm acreage is dedicated to organic farming).

231. Glascoe, *supra* note 227, at 544.

expert witnesses who are able to show the potential drift range of GMOs; evidence of the likely drift pattern in the given atmospheric conditions; and evidence of a [plaintiff's] growing practices”²³² While this would be helpful, it is also costly to bring in experts to prove a claim that may only be used to mitigate the damages from a patent infringement claim pursued by Monsanto. However, if a plaintiff farmer were able to establish their tort claim and combine the claim with the codified agency relationship, Monsanto would be on the hook for the damage caused by its crops crosspollinating neighboring farms.

While plaintiff farmers may still face issues in establishing their tort claims, codifying an agency relationship between “growers” and controlling GMO seed companies would alleviate one battle these farmers face. Additionally, it may help to start rebuilding some of the trust that has been lost in farming communities.²³³ If organic and non-GMO farmers were able to hold the large corporations accountable rather than their fellow farmers, no farmer would have to fear being reported by another for unintentional patent infringement.²³⁴ Instead, they could return to working together as a community.

Finally, establishing a claim or counterclaim against Monsanto for trespass or other applicable torts would allow farmers to fight off some of the unnecessary patent infringement claims filed by Monsanto.²³⁵ By giving farmers hope, the proposed scheme of tort liability may encourage farmers to pursue claims and incentivize attorneys to continue representation in search of a contingency fee resulting from a verdict against deep pockets. If a textbook case of pollen-drift “patent infringement” could get in front of a jury in Iowa, or any other farming-rich state, the jury may be willing to reimburse the farmer for the damage caused by the crosspollination. For example, it is completely logical that a jury could conclude that the crosspollination, caused by Monsanto on an agency theory, not only caused an organic farmer to lose profits from the sales of their organic crops, but also caused them to “infringe” on Monsanto’s patent. Thus, a jury may include the very damages Monsanto seeks for patent infringement into their ultimate award to the non-GMO farmer.

CONCLUSION

While there is no clear-cut way to ensure that non-GMO farmers and patent-holding companies’ rights are perfectly balanced, there are some very simple steps that can be taken to ensure that both methods of farming can exist in harmony. Cultivation of organic and genetically modified produce

232. *Id.* at 544.

233. *See* Mem. and Order, *Stratemeyer v. Monsanto Co.*, No. 02-CV-505 (S.D. Ill. Mar. 28, 2005).

234. *Cf. id.*

235. *See id.*

have benefits that cannot be ignored. Both methods contribute largely to the U.S. economy. Genetically modified farming could be the key to ending hunger in nations that historically struggle to grow enough food, and organic farming could help to combat environmental and health risks associated with the recent uptick in the use of herbicides. Therefore, governments at all levels—federal, state, and local—need to come together to revamp the current understanding of plant patent law and allow these two methods of farming to coexist.