Beware of the Genetically Modified Crop: Applying Animal Liability Theory in Crop Contamination Litigation

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BEWARE OF THE GENETICALLY MODIFIED CROP: APPLYING ANIMAL LIABILITY THEORY IN CROP CONTAMINATION LITIGATION

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Genetically modified crops offer vast potential economic and social benefits to farmers and society, but also threaten the profits and harvests of conventional crop farmers through genetic crop contamination. On one hand, genetically modified crops increase farming efficiency, decrease the cost of food, and provide solutions for global hunger. On the other hand, genetically modified crops may contaminate the crops of organic and conventional farmers through genetic drift, resulting in injury to both farmers and an apprehensive public.

Litigation over crop contamination is an unsettled area of the law, even after four major crop contamination incidents. While courts have held that certain tort causes of action can survive dispositive motions in such cases, juries have only found liability for crop contamination under a negligence theory thus far. At this point, litigation strategy in this growing field largely revolves around inducing settlements from seed manufacturers due to uncertainty over the viability of tort claims. Accordingly, the uncertain and unsettled current tort liability law regarding crop contamination is inadequate for representing the needs of both farmers and society.

A statutory cause of action modeled upon animal liability may provide some clarity in crop contamination cases. If a plaintiff can prove a genetically modified seed had “dangerous propensities,” the manufacturer or farmer of the seed could be held strictly liable for damages resulting from its development or cultivation. However, if the seed is deemed safe—akin to a “domesticated animal”—the burden will be on the plaintiff to show that the farmer or manufacturer unreasonably breached its duty of care to prevent genetically modified crop contamination. The proposed statutory cause of action will provide a framework for crop contamination cases in the future and will ensure that the interests of both farmers and society are properly represented in the judicial system.

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INTRODUCTION

Genetically modified ("GM") crops offer vast economic and social benefits to farmers and society, but also threaten the profits and plants of conventional crop farmers through genetic crop contamination. On one hand, GM crops increase farming efficiency, decrease the cost of food, and provide solutions for global hunger. On the other hand, an organic farmer may lose his organic plants if pollen from a GM crop contaminates his fields, and a conventional crop farmer might lose significant profits if an unapproved GM crop enters the grain supply and consumers stop purchasing the grain out of fear.

Consequently, GM crop cultivation presents a difficult balancing question to courts: how should the law impose liability on the developing GM crop industry in order to protect the competing interests of seed manufacturers, farmers, and consumers? Over the past fifteen years, courts have considered only a few crop contamination cases in which a GM crop contaminates other farmers' fields or the food supply, and thus far have struggled in defining a clear route for tort liability for crop contamination. As a result, the outcomes of tort cases for genetic contamination are difficult to predict, and the liability both GM seed manufacturers and GM crop farmers face is uncertain. While farmers hurt by crop contamination have recovered successfully through settlements with GM seed manufacturers, both manufacturers and farmers may have less incentive to settle as courts grow increasingly skeptical of GM contamination cases. Accordingly, courts need a more definite

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3 See infra Part I.a (discussing potential problems arising from GM crop cultivation).

4 See infra Part II.a (discussing cases involving crop contamination).

5 See generally infra Part II (analyzing uncertain nature of current crop contamination liability).

6 See infra Part II.a (discussing settlements in recent crop contamination cases).
framework for adjudication of crop contamination tort cases going forward.\textsuperscript{7}

Part I of this paper provides an overview of genetically modified organisms and discusses the potential benefits and dangers of GM crops. Part II analyzes the current state of genetic drift liability law through a comprehensive discussion of environmental tort causes of action viewed in the context of recent crop contamination incidents. Part III argues that while the current legal framework for genetic drift liability adequately provides remedies for crop contamination harm through settlement, courts should consider adopting a precise statutory solution for GMO liability modeled upon domestic animal liability law.

I. THE SEEDS OF CHANGE: AN OVERVIEW OF GENETICALLY MODIFIED CROPS

Genetically modified organisms ("GMOs") are "organisms . . in which the genetic material (DNA) has been altered in a way that does not occur naturally."\textsuperscript{8} Scientists develop GMOs by altering the fundamental genetic material of a preexisting naturally-occurring food in order to give the genetically-modified variant desirable attributes that do not naturally occur.\textsuperscript{9} GMOs first appeared for sale in 1992 and GMO production has since proliferated.\textsuperscript{10} GMOs are now widespread, with nearly 70\% of all food sold in grocery stores containing at least some genetically modified material.\textsuperscript{11}

\textsuperscript{7} See infra Part III (summarizing uncertain nature of crop contamination liability).
\textsuperscript{9} Food, Genetically Modified, WORLD HEALTH ORGANIZATION, http://www.who.int/topics/food_geneticallymodified/en/ (last visited Apr. 22, 2016) (providing example of how food can be modified "through the introduction of a gene from a different organism").
\textsuperscript{10} Margie Kelly, Top 7 Genetically Modified Crops, HUFFPOST GREEN BLOG (Oct. 30, 2012, 5:05 PM), http://www.huffingtonpost.com/margie-kelly/genetically-modified-food-b-2039455.html (stating that 93\% of soybeans and 88\% of corn is now genetically altered).
\textsuperscript{11} Frankenfood: Does It Deserve the Name?, CBS NEWS, http://www.cbsnews.com/pictures/frankenfood-does-it-deserve-the-name/ (follow URL link;
Genetically modified crops ("GM crops") are by far the most prevalent genetically-engineered food. Most GM crops currently available are improved versions of staple crops targeted at farmers for cultivation.\(^\text{12}\) These GM crops include improved strains of commodities like corn, canola, soybeans, cotton, and sugarbeets, and are developed and sold by large seed manufacturers like Monsanto.\(^\text{13}\) GM crops typically offer advantages over non-GM crops that help improve a farmer’s crop yield, such as increased resistance to plant diseases, greater tolerance to pesticides and herbicides, and improved drought resistance.\(^\text{14}\) For example, one of the most successful GM crop ventures is Monsanto’s “Roundup Ready” line of Roundup-resistant crops, which provides farmers with herbicide-tolerant variants of soybeans, alfalfa, corn, cotton, spring canola, sugarbeets, and winter canola.\(^\text{15}\)

A. Economic and Social Advantages of GM Crops

Despite public perception of GMOs as dangerous “Frankenfoods,”\(^\text{16}\) GM crops offer wide-ranging economic and social benefits. In general, increased crop yields from GM crops translate into greater profits and higher crop production levels for farmers.


\(^{13}\) Id. (follow URL link in note 11; then click through slides to slide 2/10); see also Frankenfood, supra note 11 (noting that Monsanto is the largest developer of GM foods).


\(^{16}\) See Frankenfood, supra note 11 (follow URL link in note 11; source on slide 1/10).
For consumers, increased crop output results in lower food costs. The economic benefit of GM crops to farmers is substantial: studies show that farmers who use GM crops experience significant yield increases and drastically higher profits in spite of the higher cost of genetically modified seeds. Further, because GM crops can survive in worse conditions and stave off disease and pests, they may require less maintenance than conventional crops, resulting in more efficient cultivation and higher profit margins, as a GM crop farmer may not have to attend to genetically modified crops at the same level as he would with conventional crops.

Moreover, the use of genetically modified crops may also benefit the environment. Herbicide-resistant GM crops reduce the levels of chemicals used by farmers, so the cultivation of GM crops reduces soil and water contamination. Additionally, GM crops may resist pests, allowing farmers to reduce pesticide use and decrease pesticide drift and contamination. According to Monsanto, its herbicide-resistant GM Roundup Ready crops “ha[ve] allowed farmers to conserve fuel and decrease the overall amount of herbicides used,” while also “maximizing profit opportunity.”

Genetic modification can also bolster the nutritional value of staple crops, resulting in foods that can better feed the growing U.S. and world population. Additionally, genetic modification may allow food to stay fresh and ripe longer, thereby increasing food shelf life and reducing food waste. Increased production of food,
along with improved nutritional value, could potentially alleviate hunger issues by making food cheaper, more nutritious, and more readily available.

B. Actual and Potential Dangers of GM Crops

In spite of their benefits, GM crops also present numerous risks to farmers and society, primarily through the drift of modified GM crop DNA. Genetic drift is the “migration of genes from GM plants into conventional crops or related species in the wild,” and occurs when pollen from a GM crop travels to a conventional or organic crop and alters the conventional crop’s DNA through cross-pollination and subsequent reproduction. For example, pollen from a GM corn crop approved only for animal consumption may inadvertently travel to a neighboring farm (whether by wind, pollen-carrying insect, or some other mode of transport) and cross-pollinate with corn intended for human consumption, thereby contaminating the farmer’s crop and human food supply. Such genetic drift threatens the farmer’s harvest, the integrity of the public food supply, and the health and safety of consumers who eat food prepared with the inedible GM animal corn. Genetic drift may also harm an organic farmer if GM pollen travels to his farm and cross-pollinates with his organic crops, destroying the organic nature of his grain harvest and forcing the affected farmer to exit the organic food industry.

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26 Id.
29 See Johnson v. Paynesville Farmers Union Coop. Oil Co., 817 N.W.2d 693, 696 (Minn. 2012) (alleging that conventional pesticide used on nearby farm drifted onto organic field and destroyed its organic value). While the facts of Johnson deal with pesticide drift and not genetic drift, the situation is analogous.
In addition to the dangers of genetic drift, GM crops may also directly harm the health of human consumers of GM products through allergenic effects or gene transfer, where GM genetic material transfers into the DNA of human cells. While the World Health Organization emphasizes that no study has shown human allergic effects related to GM crops currently available on the market, the debate over potential harmful effects of GM crops continues. Recent animal studies suggest that GMOs may cause serious health effects like infertility, intestinal damage, immune system damage, and changes in the liver, kidney, and spleen.

However, the scientific community maintains that GM crops approved for human consumption are completely safe and devoid of adverse human health effects, and that purported GM health dangers are unsupported by scientific evidence. Consequently, this paper does not discuss potential liability associated with the speculative health effects from GM crops, and instead focuses on liability related to the genetic drift of GM crops.

in that the polluting pesticide destroyed the organic nature of the farmer’s crop in the same manner GM pollen drift could destroy his organic crop. Id.

See Frequently Asked Questions on Genetically Modified Foods, supra note 8.

Id.

Freedman, supra note 2.

See Amy Dean & Jennifer Armstrong, Genetically Modified Foods, AMERICAN ACADEMY OF ENVIRONMENTAL MEDICINE (May 8, 2009), https://www.aaemonline.org/gmo.php (stating that “several animal studies indicate serious health risks associated with GM food consumption including infertility, immune dysregulation, accelerated aging . . . and changes in the liver, kidney, spleen, and gastrointestinal system”).

See Jon Entine, Exposing the Anti-GMO Legal Machine: The Real Story Behind the So-Called Monsanto Protection Act, FORBES (Apr. 2, 2013, 5:55 PM), http://www.forbes.com/sites/jonentine/2013/04/02/exposing-the-anti-gmo-legal-machine-the-real-story-behind-the-so-called-monsanto-protection-act/#22ced16cdfe (stating that “no court has ever held that a [GM] crop presents a risk to health, safety, or the environment”); see also Freedman, supra note 2 (noting that there is “overwhelming evidence that GM crops are safe to eat,” and that “researchers produced a stream of exonerating evidence” showing there are no health risks from GM crops).

Unless definitive studies show harmful health effects from GM crops, GM litigation in the human safety area will likely continue to revolve around improper and false labeling claims. See Kryzkwa v. Campbell Soup Co., 946 F. Supp. 2d 1370, 1371–72 (S.D. Fla. 2013) (alleging marketing products containing GM corn as “all natural” constituted false advertising and that
II. STUNTED GROWTH: AN ANALYSIS OF THE UNSETTLED CURRENT LAW ON CROP CONTAMINATION LIABILITY

Farmers who discover contamination within their crops or who face reduced profits due to the contamination of other farmers’ crops must decide upon a legal theory to recover damages. Frequently, farmers turn to tort liability, bringing suits on tort theories such as trespass, conversion, nuisance, strict liability, and negligence. Farmers may also proceed under civil remedies provided in federal and state statutes, although such statutes have been of limited use to private farmers seeking compensation for harm from genetic drift. As a result, genetic drift lawsuits are generally based on tort liability and litigation typically revolves around a theory of wrongful contamination of crops. This section first discusses four significant crop contamination incidents, then analyzes various tort liability theories and defenses in the context of the four lawsuits.

A. Contamination Exemplified: Significant Genetic Drift Incidents

Due to the nascent nature of the genetic crop engineering industry, there are only a few court cases based on GM crop contamination, and none involving a farmer as a defendant. While consumption of GMOs may be harmful to consumer health). However, should studies show that GM crops are toxic, injured parties will likely pursue strict products liability claims against GM seed manufacturers and growers for unreasonably dangerous products, although causation will remain a barrier to successful claims. See Debra M. Strauss, Liability for Genetically Modified Food: Are GMOs a Tort Waiting to Happen?, THE SCI TECH LAWYER, Volume 9, Number 2 Fall 2012.

37 See infra Part II (briefly discussing statutory remedies).
38 Strauss, supra note 35, at 10.
40 Id. However, an organic farmer in Australia sued a neighboring GM canola farmer for damages resulting from genetic contamination of his organic crops from his neighbor’s cultivation of GM canola. See Marsh v. Baxter [2014] WASC 187 (Austl.). In Marsh, the Supreme Court of Western Australia rejected the organic farmer’s claims of negligence and private nuisance against his GM-
the case law is limited, it provides guidance on how courts may handle genetic contamination cases in the future, including cases in which a farmer sues another farmer.

1. StarLink Corn

In the late 1990s, bioengineering company Aventis developed an insect-resistant GM corn seed (marketed as “StarLink” corn) that acted as an insecticide. The EPA, which regulates all insecticides under FIFRA, determined that StarLink corn was not fit for human consumption because of allergenic effects on humans. Despite StarLink corn’s human safety issues, the EPA permitted cultivation of StarLink corn from 1998 through 2000 strictly for animal feed use only; as part of this limited approval, the EPA set strict farming guidelines to prevent genetic contamination of human corn through cross-pollination, including a 660-foot buffer zone between StarLink crops and non-StarLink corn crops.

However, Aventis instructed farmers to disregard the EPA’s cultivation guidelines, believing that the EPA would eventually allow human consumption of StarLink corn. Consequently, because farmers did not follow the EPA’s buffer suggestions upon Aventis’s advice, StarLink corn contaminated commercial cornfields and entered the human food supply. In response, numerous foreign countries banned imports of U.S. corn and U.S. food producers imported foreign corn instead of relying on domestically-grown corn. Thereafter, fifteen farmers filed a class action complaint against Aventis on behalf of all corn farmers nationwide for crop growing neighbor, holding that genetic contamination of organic crops was not unreasonable interference under private nuisance and that damages were barred by the economic loss doctrine.

1 Id. in re StarLink Corn Products Liab. Lit., 212 F. Supp. 2d 828 (N.D. Ill. 2002) [hereinafter StarLink].
2 Id. at 834–34.
4 StarLink, supra note 41, at 834.
damages from the corn supply contamination, alleging negligence, strict liability for failure to warn, private nuisance, public nuisance, and conversion.\textsuperscript{49}

The StarLink class action survived the motion to dismiss phase, with the court accepting the farmers’ negligence and nuisance claims as plausible but rejecting the conversion and strict liability claims.\textsuperscript{50} As a result, StarLink provided an early signal that nuisance may be a viable legal theory for addressing genetic contamination cases in the courtroom.\textsuperscript{51} However, driven by the fear of large jury verdicts on nuisance claims, Aventis chose not to litigate the StarLink suit and instead settled the class action out of court, creating a $110 million fund for damages to farmers for injury from revenue loss due to decreased corn prices and property damage from contamination of fields and farm equipment.\textsuperscript{52}

2. LibertyLink Rice\textsuperscript{53}

The second major crop contamination lawsuit reinforced the notion from StarLink that farmers may be able to recover from GM seed manufacturers in court for negligent practices that damaged crop market prices. In the early 2000s, Bayer developed and tested an herbicide-resistant genetically modified rice seed (called LibertyLink rice).\textsuperscript{54} LibertyLink rice was never approved for human consumption or sale by federal agencies, nor was it ever made commercially available for cultivation.\textsuperscript{55} However, the USDA detected trace amounts of LibertyLink rice in the domestic rice supply in

\textsuperscript{49} Id. at 833.
\textsuperscript{50} Id. at 852.
\textsuperscript{53} In re Genetically Modified Rice Litig., 666 F. Supp. 2d 1004 (E.D. Mo. 2009) [hereinafter \textit{LibertyLink}].
\textsuperscript{54} Id. at 1014–15.
\textsuperscript{55} Id. at 1015.
2006, and numerous foreign countries subsequently banned U.S. rice imports, citing health and safety concerns.\textsuperscript{56}

In response, U.S. rice farmers brought individual suits against Bayer for rice supply contamination, alleging damages resulting from decreased market price for rice, economic losses planting new crops the next growing season, and cleaning expenses related to eradicating LibertyLink rice from equipment and property.\textsuperscript{57} The alleged damages were significant: the contamination purportedly caused rice prices to drop 14\% internationally, resulting in over $150 million in losses for rice farmers.\textsuperscript{58} Consequently, farmers brought claims against Bayer for negligence, negligence per se for statutory violations, and public and private nuisance.\textsuperscript{59} Bayer contended that the farmers’ claims were all barred by the economic loss doctrine.\textsuperscript{60}

The farmers’ private nuisance and negligence claims survived summary judgment, but the court rejected the private nuisance and negligence per se claims, finding that the contamination posed no risk to public health and that Bayer had complied with all federal statutory regulations.\textsuperscript{61} In a surprising move, the court rejected the economic loss doctrine, finding that Missouri state law would allow “tort claims even where the only damages sought were economic.”\textsuperscript{62}

However, after four years of failed “bellwether” test trials and several large jury verdicts premised on negligence claims,\textsuperscript{63} Bayer lost five straight “bellwether” jury trials for negligence ordered by an MDL panel. See Margaret Fisk & Joe Whittington, Bayer Loses Fifth Straight Trial over U.S. Rice Crops, BLOOMBERG (July 14, 2010), http://www.bloomberg.com/news/articles/2010-07-14/bayer-loses-fifth-straight-jury-trial-over-u-s-rice-crop-contamination.

\textsuperscript{56} Id.

\textsuperscript{57} Id.


\textsuperscript{60} LibertyLink, 666 F. Supp. 2d at 1015.

\textsuperscript{61} Id. at 1014.

\textsuperscript{62} Id. at 1016.

\textsuperscript{63} Bayer lost five straight “bellwether” jury trials for negligence ordered by an MDL panel. See Margaret Fisk & Joe Whittington, Bayer Loses Fifth Straight Trial over U.S. Rice Crops, BLOOMBERG (July 14, 2010), http://www.bloomberg.com/news/articles/2010-07-14/bayer-loses-fifth-straight-jury-trial-over-u-s-rice-crop-contamination.
Bayer settled the remaining GM rice contamination litigation with a $750 million fund that provided money for farmers who suffered market losses, as well as money for those who incurred expenses resulting from physical contamination of equipment and crops.\textsuperscript{64} The LibertyLink rice contamination jury verdicts remain the only court-ordered judgments in genetic contamination cases, and suggest that negligence may be a viable tort liability theory for crop contamination.\textsuperscript{65}

3. Roundup Ready Wheat\textsuperscript{66}

Between 1994 and 2005, Monsanto tested an unapproved GM wheat seed resistant to its “Roundup” weed-killing herbicide, but later abandoned the Roundup Ready wheat (“RR wheat”) development efforts.\textsuperscript{67} However, in 2013 a farmer in Oregon discovered the unapproved and discontinued RR wheat growing on his farm, prompting South Korea and Japan to briefly halt purchases of U.S. wheat due to safety concerns.\textsuperscript{68} Wheat farmers in Oregon, Washington, Kansas, and Idaho sued Monsanto in a class action lawsuit, alleging negligence per se through violation of the Plant Protection Act, negligence, public nuisance, private nuisance, and strict liability for ultra-hazardous activity.\textsuperscript{69}

\begin{footnotesize}

\textsuperscript{65} See Appellants’ Opening Brief, Deshotels v. Bayer Cropscience LP, No. 10-3755 (8th Cir. Feb. 10, 2011) (stating that jury found for farmers on negligence claim in LibertyLink rice contamination case).

\textsuperscript{66} In re Monsanto Co. Genetically-Engineered Wheat Litig., 978 F. Supp. 2d 1373 (J.P.M.L. 2013) [hereinafter RR Wheat].


\textsuperscript{68} Id.

\textsuperscript{69} See, e.g., First Amended Class Action Complaint, Dreger Land Co., Inc. v. Monsanto Co., No. CV-13-211 (E.D. Wash. Aug. 18, 2013) [hereinafter Dreger Complaint].
\end{footnotesize}
Before rulings on dispositive motions, Monsanto settled the class action with the farmers in Washington, Oregon, and Idaho, creating a $2.125 million fund to provide payments to farmers who grew soft white wheat in 2013. 70 In the settlement, Monsanto refused to accept liability for the contamination, arguing that it properly destroyed all experimental Roundup Ready wheat after testing ended in 2005. 71

Despite the settlement, other litigation regarding Roundup Ready wheat contamination is still pending for cases in which the farmers did not grow soft white wheat. 72 Monsanto has moved to dismiss these pending cases, arguing inter alia that the farmers lack standing to bring suit because their fields were not actually contaminated by Roundup Ready wheat and, because the import bans were quickly lifted, there was no actual injury to support negligence or nuisance claims. 73

4. Foreign Bans on Viptera Corn 74

The most recent GM crop contamination battle involves a strain of GM corn approved by the U.S. government but not yet approved in major overseas markets. 75 Since 2010, U.S. farmers have grown and sold Viptera corn, an insect-resistant GM corn seed developed by Syngenta and approved by U.S. regulators for commercial cultivation and human consumption. 76 Due to its widespread use by farmers, Viptera corn now comprises a substantial part of the U.S. corn supply. 77 However, other countries have not approved

71 Id.
72 Bayer Pays $750 Million to Settle Rice Contamination Cases, supra note 63.
73 See, e.g., Defendant’s Motion to Dismiss, Center for Food Safety v. Monsanto Co., No. CV-13-213 (E.D. Wash. Aug. 12, 2013).
75 Id.
77 Id.
Viptera corn for use as human food; most notably, China has not approved Viptera and has banned importation of all U.S. corn possibly containing any Viptera corn, alleging Viptera corn is unsafe for human consumption.78 As a result of the ban, corn farmers brought individual suits against Syngenta, alleging significant economic losses resulting from China’s ban on Viptera corn.79

The individual farmers in the Viptera litigation assert counts of negligence, public nuisance, private nuisance, and strict liability for an unreasonably dangerous product.80 A proposed class action against Syngenta for losses stemming from Viptera corn contamination includes additional counts of false advertising, trespass to chattels, strict liability for ultra-hazardous activity, and strict liability for failure to warn.81 The farmers in the Viptera litigation claim losses over $1 billion due to substantially depressed corn prices and reduced overseas demand resulting from foreign import bans on contaminated U.S. corn.82

B. An Introduction to GMO Regulation

Three federal agencies coordinate U.S. GMO regulation: the FDA handles human food safety issues for GM crops; the EPA handles environmental and health effects of GM crops; and the APHIS (an agency of the USDA) handles the planting, importation, or transportation of GM crops.83 Overall, minimal regulatory oversight governs GMOs, reflecting public policy and scientific consensus that “[GM] plants and animals [are] not significantly different from their conventional counterparts.”84 In general, GM crops are presumptively classified by the FDA as safe for human consumption

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78 Viptera, 65 F.Supp.3d at 1401.
79 Id.
82 Id. at 5.
83 Id.; see also Gregory N. Mandel, Gaps, Inexperience, Inconsistencies, and Overlaps: Crisis in the Regulation of Genetically Modified Plants and Animals, 45 WM. & MARY L. REV. 2167, 2216 (2004).
84 Mandel, supra note 83, at 2216.
unless they differ “significantly in structure, function, or composition” from conventional non-GMO foods.85

The Plant Protection Act,86 enforced by APHIS, regulates the cultivation of GM crops, and presumptively classifies GM crops as “plant pests” that require testing and approval before commercial cultivation.87 After APHIS tests new GM crops, it may decide to “approve” and deregulate the GM crop for commercial use. This deregulation typically involves issuing growing permits that specify certain growing restrictions to prevent crop contamination, such as the 660 foot buffer for StarLink corn.88 APHIS also controls the development of new GM crops, including mandating appropriate testing buffer zones to prevent genetic drift and fining agricultural companies for noncompliance with contamination prevention measures.89

Recently, APHIS deregulated Roundup Ready alfalfa and sugar beets despite challenges from farmers that the deregulation would inevitably lead to genetic contamination of conventional alfalfa and sugar beet plantings.90 These two deregulation decisions suggest that courts are willing to legalize GM seeds that have a low

89 See APHIS, Noncompliance History, USDA APHIS | Biotechnology (Apr. 8, 2014), http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/biotechnology/sa_compliance_and_inspections/ct_compliance_history/ (discussing remedial actions taken by APHIS to protect agriculture and food supply, including finding ProdiGene $250,000 in 2002 for planting corn on a former test site of a GM crop and risking contamination of the commercial corn with the GM crop).
90 See Monsanto Co. v. Geertson Seed Farms, 561 U.S. 139, 162 (2010) (rejecting permanent injunction barring deregulation of GM alfalfa because deregulation might be only allowed in region where conventional alfalfa is not grown, preventing irreparable harm); see also Center for Food Safety v. Vilsack, 636 F.3d 1136, 1173 (9th Cir. 2011) (holding that deregulated GM sugar beets “pose[s] a negligible risk of genetic contamination,” and finding that there are “no examples of contamination by pollination under the restricted conditions imposed by the [deregulation] permits”).
probability of contaminating other crops, and also indicate that GM seed manufacturers may be able to assert deregulation as a defense to the unreasonableness of GM crop development. The decisions also suggest that courts are actively weighing the potential benefits of GM crops against the potential for contamination and finding ways to get GM crops to markets.

C. Applying Tort Liability Theories to Crop Contamination Cases

1. Trespass to Land

Trespass to land creates liability for any intentional or negligent unauthorized entry upon the land of another.\(^{91}\) Traditionally, no harm to property was necessary for trespass, but many courts now require direct and immediate harm to the land at issue.\(^{92}\) Moreover, while trespass used to be a strict liability offense, courts now require some level of fault on the part of the trespasser, such as intentional or negligent conduct.\(^{93}\) In some states, the intent standard is easily met, and simply requires that the trespassing party “intended the act which amounted to or produced the entry onto the plaintiff’s land.”\(^{94}\) However, other courts adhere to a foreseeability definition of intent, only allowing trespass claims when a defendant “knows that his activities are substantially certain to result in an invasion of plaintiff’s interests.”\(^{95}\)

Although trespass claims seem logical when GM crop pollen migrates onto neighboring land and contaminates crops, these trespass claims face significant burdens. On a fundamental level, courts

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\(^{91}\) See Restatement (Second) of Torts §§ 158, 165 (Am. Law Inst. 1965)

\(^{92}\) See id. at § 158; see also A. Bryan Endres & Lisa Schlessinger, Pollen Drift: Reframing the Biotechnology Liability Debate, 118 Penn. St. L. Rev. 815, 831–32 (2014).


\(^{94}\) Endres & Schlessinger, supra note 92, at 831–32.

\(^{95}\) See Bradley v. Am. Smelting & Refining Co., 104 Wash. 2d 677, 685 (1985) (en banc); see also Martin v. Amoco Co., 679 N.E.2d 139, 147 (Ind. Ct. App. 1997) (holding that intent to refine oil was not enough to succeed on trespass claim arising from oil drift because it was not foreseeable that the oil would migrate if all safety procedures were followed).
may be hesitant to impose trespass liability for a natural phenomenon like pollen drift, as farmers have never before been liable for trespass resulting from the drift of pollen from their crops.\textsuperscript{96}

In addition, harm to crops from genetic drift is not often immediate and the invasion of farmland is often indirect, as the contaminated crops require time to grow post-contamination and wind typically carries the pollen from one farm to another.\textsuperscript{97} Moreover, because GM crop farmers and GM seed manufacturers may take numerous precautions to prevent genetic drift, it may be difficult to prove trespassory intent, especially when a state follows a foreseeability intent standard.\textsuperscript{98} As a result, some courts have altogether rejected trespass claims for particulate matter like pesticides or pollen.\textsuperscript{99} Consequently, due to the various difficulties in establishing trespass in the environmental context, farmers do not typically assert trespass to land claims in crop contamination cases, and it is unlikely that future lawsuits will include trespass claims against GM seed manufacturers or farmers.\textsuperscript{100}

\section*{2. Conversion / Trespass to Chattels}

Conversion is the “intentional exercise of dominion or control over a chattel which so seriously interferes with the right of another to control it that the actor may justly be required to pay the other the full value of the chattel.”\textsuperscript{101} Commingling or mixing different varieties of fungible goods may result in conversion if the

\textsuperscript{97} Endres & Schlessinger, supra note 92, at 831.
\textsuperscript{98} Faure & Wibisana, supra note 93, at 15.
\textsuperscript{99} See, e.g., Johnson v. Paynesville Farmers Union Coop. Oil Co., 817 N.W.2d 693, 704 (Minn. 2012) (holding that pesticide drift from neighboring farm that ruined organic crops did not constitute trespass because Minnesota does not recognize trespass by particulate matter even when physical damages exist). But see Martin v. Reynolds Metals Co., 221 Or. 86, 101 (1959) (finding trespass when airborne, intangible chemicals from metal plant polluted neighbor’s land and rendered it unfit for livestock).
\textsuperscript{100} See supra Part II a (indicating that no trespass claims have been brought in crop contamination cases).
\textsuperscript{101} RESTATEMENT (SECOND) OF TORTS § 222A (AM. LAW INST. 1965).
essential character of the good materially changes or its identity is
lost. Thus, in a genetic contamination lawsuit, the success of a
conversion claim turns on whether the court finds that a GM variant
of a crop still possesses the same “essential character” as a conven-
tional version of the same crop, and whether the contamination was
intentional.

The court in StarLink rejected the farmers’ claim that genetic
contamination of their corn crops amounted to conversion of their
property, holding that the contamination was unintentional, the
farmers still “retained possession and had total control over the
corn,” and the corn had not lost its identity or essential character as
corn by merely changing from human corn to GM animal com. The Viptera class action lawsuit also asserts a trespass to chattels
claim, arguing that the GM seed contamination “negatively impaired
the condition, quality, or value of the U.S. corn . . . supply” without
any further elaboration.

However, the trend in crop contamination litigation is to
abandon conversion claims, presumably because genetic contamina-
tion is usually unintentional and does not typically amount to
altering the “essential character” of a crop. Furthermore, farmers
who suffer only economic losses would have trouble with a
conversion claim due to a lack of physical “interference” with their
crops.

3. Public Nuisance

A public nuisance is an “unreasonable interference with a
right common to the general public,” where such interference is
continuing or long-lasting in effect and involves significant inter-
ference with public health, peace, comfort, or convenience. Traditionally, in order to succeed on a public nuisance claim, a
private party must suffer a “special injury” not suffered by the

102 RESTATEMENT (SECOND) OF TORTS § 226 cmts. e, d (AM. LAW INST. 1965).
103 StarLink, 212 F. Supp. 2d at 844.
104 Trans Coastal Complaint, supra note 81, at 34–35.
105 The farmers in the LibertyLink rice and RR wheat cases did not pursue
conversion or trespass to chattels claims. See supra Parts II.a.ii–iii.
106 RESTATEMENT (SECOND) OF TORTS § 821B (AM. LAW INST. 1979).
public at large.\textsuperscript{107} As such, a farmer could bring a public nuisance claim in a genetic contamination case against either a seed manufacturer or a fellow farmer on grounds that the contamination of crops was an unreasonable interference with the public’s right to safe, uncontaminated food, and that the farmer-plaintiff suffered special injury because his crops were damaged.

The \textit{StarLink} and \textit{LibertyLink} cases offer contrasting views of how a court might handle a public nuisance claim when the contaminating GM crop poses a public health risk. The \textit{StarLink} court found the public nuisance argument persuasive, holding that the farmers stated a valid claim for public nuisance as “contamination of the food supply implicates health, safety, comfort and convenience,” and this contamination satisfied the court’s “permissive” standard for public nuisance.\textsuperscript{108} Moreover, the court found that farmers suffered special injury because they relied “on the integrity of the corn supply for their livelihood.”\textsuperscript{109} On the other hand, the \textit{LibertyLink} court adopted a stricter standard for public harm and rejected the farmers’ public nuisance claim, finding no evidence that LibertyLink GM rice was harmful to the general public, but rather that the LibertyLink rice contamination only harmed rice exchange markets.\textsuperscript{110}

The differing outcomes in \textit{StarLink} and \textit{LibertyLink} suggest the viability of a public nuisance claim in a genetic drift case will depend on whether the court finds the GM crop to be a public safety hazard and whether the farmer’s fields were actually contaminated. Accordingly, a court considering the public nuisance claim in the RR wheat litigation may find that unapproved RR wheat causes substantial adverse health effects on humans, and thus the wheat contamination constitutes a significant interference with public health.

However, even if plaintiffs in the wheat contamination cases can show RR wheat is a public health threat, the court would likely dismiss the public nuisance claim regardless because most of the


\textsuperscript{108} \textit{StarLink}, 212 F. Supp. 2d at 848.

\textsuperscript{109} Id.

\textsuperscript{110} \textit{LibertyLink}, 666 F. Supp. 2d at 1018.
farmers’ crops were not contaminated and thus the farmers did not suffer a special injury. In the context of the Viptera litigation, the public nuisance claims are likely to fail, as U.S. health and safety agencies already approved Viptera corn for human consumption. Consequently, there is no significant harm to the public when a corn product deemed safe by regulators enters the food supply.

4. Private Nuisance

A private nuisance is a “nontrespassory invasion of another’s interest in the private use and enjoyment of land.” The invasion must result in significant harm and should be either intentional and unreasonable, unintentional and negligent, or the result of ultra-hazardous activity. A farmer with contaminated fields could bring a private nuisance suit against either the GM seed manufacturer or another farmer, contending that the negligent sale and cultivation of GM seeds resulted in a substantial and unreasonable interference with the farmer’s use and enjoyment of his own farming land through crop contamination. Even if only a farmer’s use of GM seeds causes crop contamination, a GM seed manufacturer might still be liable by substantially helping the farmer with “carrying on” the nuisance.

Private nuisance claims are often the strongest causes of action in genetic contamination lawsuits. The StarLink court allowed the private nuisance claim to proceed past summary judgment, finding that contamination of crops could amount to a substantial interference with the use of a farmer’s land, and that “residue from a product drifting across property lines presents a

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111 See Ranii, supra note 76.
112 RESTATEMENT (SECOND) OF TORTS § 812D (AM. LAW INST. 1979).
113 RESTATEMENT (SECOND) OF TORTS § 822 (AM. LAW INST. 1979).
114 StarLink, 212 F. Supp. 2d at 845 (citing RESTATEMENT (SECOND) OF TORTS § 834 (1979)).
typical nuisance claim.” Likewise, the LibertyLink court found that contamination of crops could amount to substantial interference with a farmer’s use and enjoyment of land.

Nonetheless, there are limitations to a crop contamination private nuisance claim. While the StarLink court found that the seed manufacturer could be liable for private nuisance though mere sale of GM seeds alone, most states do not recognize manufacturer liability for nuisance, instead terminating the liability of manufacturers when an end-user possesses control over how the nuisance-causing products are used. Thus, when genetic contamination occurs due to a farmer’s actions, not the seed manufacturer’s actions, farmers may be limited in only bringing private nuisance suits against fellow farmers.

Further, farmers whose crops are not actually contaminated will likewise face difficulty with a private nuisance suit, as private nuisance typically requires physical harm to property. Additionally, state “right to farm” statutes that protect “normal agricultural practices” may bar recovery from other farmers in private nuisance suits by providing a new type of “coming to the nuisance” defense when contamination occurs in heavily agricultural localities.

The plaintiffs in both the RR wheat and Viptera corn lawsuits assert private nuisance claims against GM seed manufacturers for crop contamination. The Syngenta private nuisance suit will probably fail, as U.S. regulatory agencies approved Viptera corn for commercial sale and human consumption, thus making cultivation and sale of the crop reasonable. Further, as the seed manufacturer, Syngenta may be immune from a private nuisance suit under the theory that the farmers caused Viptera corn to enter the grain supply. Thus, a private nuisance claim in the Viptera litigation will probably only succeed against fellow farmers who planted Viptera corn. The facts of the RR wheat case are more favorable to a private nuisance claim against the manufacturer, as the RR wheat seed at issue was

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116 StarLink, 212 F. Supp. 2d at 845-47.
117 LibertyLink, 666 F. Supp. 2d at 1019.
118 Beebe, supra note 51, at 525.
119 See 58 AM. JUR. 2D Nuisances § 33 (2014).
120 See Endres & Schlessinger, supra note 92, at 840.
121 Ranii, supra note 76.
never approved nor offered for public sale. Accordingly, Monsanto could be liable for creating a private nuisance in its negligent disposal of unapproved wheat.

5. Common Law Negligence

Negligence is “conduct which falls below the standard established by law for the protection of others against unreasonable risk of harm.” Common law negligence claims typically require four elements: (1) duty of care; (2) breach of duty of care by defendant; (3) causation between breach and harm; and (4) actual harm to the plaintiff. Negligence per se, a type of negligence, holds a party liable for negligence for failing to abide by minimum statutory standards of care.

In the context of a genetic contamination lawsuit, a farmer might bring a negligence claim by alleging that a fellow GM crop farmer or seed manufacturer: (1) had a duty to handle GM seeds responsibly to prevent crop contamination; (2) the farmer or manufacturer breached its duty of care by negligently handling GM crops; (3) the negligent handling of the GM crops caused direct harm to the farmer; and (4) the farmer suffered harm in the form of physical damage to equipment and crops, as well as economic losses from lost profits.

Because negligence suits provide for wide-ranging liability for unreasonable conduct, a negligence claim is likely the most viable tort theory for recovery from crop contamination. In fact, the only jury verdicts thus far in crop contamination suits were based on negligence claims, as five juries independently found the LibertyLink manufacturer liable for negligent testing and development of unapproved GM rice, leading to rice supply contamination. However, negligence cases are not guaranteed successes, as

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122 Mufson, supra note 67.
123 RESTATEMENT (SECOND) OF TORTS § 282 (AM. LAW INST. 1965).
124 Beebe, supra note 51, at 529.
125 LibertyLink, 666 F. Supp. 2d at 1022.
126 If the farmer did not suffer physical contamination, he may be barred from recovery under the economic loss doctrine. See supra Part II.d.ii (discussing economic loss doctrine).
127 See Fisk & Whittington, supra note 63.
plaintiffs might struggle finding an enforceable duty of care and may face difficulty showing that a seed manufacturer or farmer specifically or proximately caused crop contamination.

The plaintiff in a crop contamination negligence claim must first ascertain a legal duty of care binding on a GM seed manufacturer or farmer. In the LibertyLink litigation, the court found that Bayer had a “duty to introduce [GM] products without negligence” and had a general duty to prevent contamination of non-GM rice.128 While the court considered this duty of care reasonable in light of relevant industry practices and regulatory schemes, Bayer argued that it essentially amounted to “zero tolerance” liability for any adventitious GM pollen and was therefore unreasonable.129 Nonetheless, the negligence claims went to trial, after which several juries found Bayer liable for negligence in contaminating the crop supply.130 The farmers in the StarLink litigation contended that Aventis violated its regulatory duty of care by failing to monitor cultivation of StarLink corn in accord with the EPA’s regulatory guidelines, and the court found such duty and breach sufficient to survive a motion to dismiss.131

Both the Viptera corn and Roundup Ready wheat plaintiffs allege that GM seed manufacturers had a duty to prevent contamination through careful testing, growing, and selling of GM crops.132 They further contend that the manufacturers breached this duty when contamination occurred.133 Neither plaintiff class grounds the manufacturer’s duty of care in federal regulations, but rather both argue that GM seed manufacturers have a general duty to prevent harm and a duty to utilize “professional expertise” of an ordinary actor in the GM seed manufacturing business.134 Thus, in order for

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128 In re Genetically Modified Rice Litigation, No. 4:06-md-1811, 2010 WL 5070718, at *4 (E.D. Mo. 2010).
129 LibertyLink, 666 F. Supp. 2d at 1020, 1023–24, 1031.
130 Fisk & Whittington, supra note 63. However, Bayer appealed the verdict, arguing that the federal regulations did not create a “zero tolerance” duty of care for contamination; Bayer settled the suit before decision on the appeal. See Original Brief of Defendant, supra note 65, at 6.
131 StarLink, 212 F. Supp. 2d at 843.
132 See Trans Coastal Complaint, supra note 81, at ¶¶ 208–13; Dreger Complaint, supra note 69, at 31.
133 Id.
134 Trans Coastal Complaint, supra note 81, at 35.
the Viptera and Roundup Ready wheat farmers to succeed on their negligence claims, courts must accept that GM manufacturers and GM farmers had a duty to prevent crop contamination and the plaintiffs must convince the court that the manufacturers’ conduct in preventing contamination was unreasonable. This could be difficult in the absence of a statutorily-imposed duty of care for GM cultivation.

Furthermore, plaintiffs in crop contamination cases may face problems proving causation in a negligence claim. Although an injured farmer may prove factual causation easily using the “but-for” test (i.e., crop contamination would not have occurred but for the manufacturer developing the GM seed), proximate cause will likely be much harder to prove, especially in cases where the GM crop is already commercialized and widely cultivated by farmers. For example, when Farmer A grows organic soy and his neighbor Farmer B grows approved GM soy developed by a seed corporation, it will be far easier to prove Farmer B proximately caused contamination of A’s crops through pollen drift than it will be to prove the seed manufacturer proximately caused contamination through drift.

In any event, a party accused of crop contamination may still contend that an intervening cause or superseding act cut off the chain of causation and terminated its liability. For instance, a manufacturer could claim the sale of GM seed to a farmer cut off manufacturer liability, or a farmer could claim that natural movement of pollen by insects or wind cut off the farmer’s liability for genetic drift. In situations with unknown contaminators, plaintiff-farmers could try using alternative liability theories like joint and several liability or market share liability to hold entire classes of GM farmers or manufacturers liable for crop contamination, or partitioning liability based on relative market share.

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135 Beebe, supra note 51, at 529 n.169.
136 Beyranevand, supra note 39, at 798.
137 See, e.g., LibertyLink, 666 F. Supp. 2d at 1024 (noting that causation cuts off when “a new and independent force . . . so interrupts the chain of events that it becomes the responsible, direct, proximate, and immediate cause of the injury”) (quoting English v. Empire Dist. Elec. Co., 220 S.W.3d 849, 857 (Mo. Ct. App. 2007)).
6. Strict Liability

Strict liability imposes liability for damages caused by certain activities “without regard to the defendant’s negligence or intent to cause harm,” and is typically reserved for ultra-hazardous activities, defective or unreasonably dangerous products, or certain types of animals like wild animals or domestic animals with dangerous propensities.\textsuperscript{139} Ultra-hazardous activities involve certain characteristics, including: (1) a high likelihood of harm to property or land; (2) substantial potential harm; (3) inability to eliminate or lessen risk of harm through reasonable care; (4) uncommon activity; (5) the activity is inappropriate for its location; and (6) the risk of harm outweighs the activity’s public value.\textsuperscript{140}

Strict liability is also used in some jurisdictions for products liability. While the Third Restatement of Torts uses a negligence standard for unreasonably dangerous products, under the Second Restatement, a seller or manufacturer of a defective product that is unreasonably dangerous is strictly liable for any harm caused to a consumer or end user of the product regardless of the level of care taken by the seller.\textsuperscript{141} Accordingly, farmers damaged by crop contamination may bring strict liability claims under either a theory that (1) GM crop cultivation is an ultra-hazardous activity; or (2) GM crop seeds are unreasonably dangerous products.

However, courts have not been responsive to strict liability claims in genetic contamination lawsuits, especially those related to products liability and failure to warn. In StarLink, the court rejected a strict liability claim for failure to warn about a defective product, finding that the GM corn was not unreasonably dangerous or defective under federal law, and thus there was no duty to warn.\textsuperscript{142} The plaintiffs in LibertyLink dropped their strict liability claims during the early stages of litigation, indicating the claims had little chance of success.\textsuperscript{143} Most courts also reject strict liability claims in pesticide drift cases—perhaps the closest analogues to genetic drift

\textsuperscript{139} See Restatement (Third) of Torts: Liability for Physical and Emotional Harm ch. 4, scope note (Am. Law Inst. 2010); See id. at §§ 20–25.
\textsuperscript{140} See Restatement (Second) of Torts § 520 (Am. Law Inst. 1977).
\textsuperscript{141} Restatement (Second) of Torts § 402A (Am. Law Inst. 1965).
\textsuperscript{142} StarLink, 212 F. Supp. 2d at 852.
\textsuperscript{143} LibertyLink, 666 F. Supp. 2d at 1015.
cases—suggesting courts will be hesitant to uphold strict liability claims in future genetic drift cases.\footnote{144}

Despite the lack of success of strict liability claims, farmers continue to bring products liability and ultra-hazardous claims in crop contamination suits. For example, the farmers in the RR wheat and Viptera corn litigation alleged that the GM seed manufacturers should be held strictly liable for any damages resulting from the use of GM crops.\footnote{145} The wheat growers, suing on a products liability theory, claimed that RR wheat was a “defective and unreasonably dangerous” product and no exercise of reasonable care could have prevented the risk of contamination and damage.\footnote{146} The corn growers in the Viptera litigation claimed strict liability for both products liability and ultra-hazardous activity, arguing that GM Viptera corn is an unreasonably dangerous product and that the “testing, growing, storing, transporting, selling, [or] disposing” of Viptera corn is an ultra-hazardous activity because of its high risk of significant harm.\footnote{147} The Viptera plaintiffs also allege that any public benefit from the cultivation of the GM corn is outweighed by its potential harm.\footnote{148}

These recent strict liability claims have little chance of succeeding. GM products that are approved by regulatory bodies—including Viptera corn—are hard to characterize as defective or “unreasonably dangerous,” and thus strict products liability claims will likely fail, as statutory approval of GM crops may preempt products liability claims.\footnote{149} While classifying GM crop farming as an “ultra-hazardous activity” sounds enticing, the law does not support characterizing GM cultivation as abnormally dangerous.\footnote{150} GM farming offers significant and demonstrable benefits to the public, is common and widespread, and the potential for crop contamination can be reduced by reasonable measures like crop buffer

\footnotesize{\begin{itemize}
\item \footnote{144} Beebe, \textit{supra} note 51, at 532.
\item \footnote{145} \textit{See supra} Part 2.a.iii–iv.
\item \footnote{146} Dreger Complaint, \textit{supra} note 69, at 35–36.
\item \footnote{147} Trans Coastal Complaint, \textit{supra} note 81, at 36–37.
\item \footnote{148} \textit{Id.}
\item \footnote{149} \textit{See infra} Part 2.d.iii (discussing preemption as a defense to products liability failure to warn claims).
\item \footnote{150} \textit{See Roger A. McEowen, Legal Issues Related to the Use and Ownership of Genetically Modified Organisms}, 43 \textit{WASHBURN L.J.} 611, 625 (2004).
\end{itemize}}
zones.\textsuperscript{151} Furthermore, seed manufacturers or farmers may be able to defend against strict products liability claims by arguing they complied with the state-of-the-art industry standards for handling GM seeds.\textsuperscript{152}

D. Defenses to Crop Contamination Liability

1. Article III Standing

If a farmer has no concrete injury-in-fact from crop contamination, he will not have standing to bring suit under Article III of the Constitution.\textsuperscript{153} Therefore, if genetic drift does not result in contamination of an individual farmer’s crops, or the contamination does not result in an overall decrease in crop prices, a GM seed company or GM farmer could argue that the farmer suffered no actual damages and thus lacks standing to bring suit.\textsuperscript{154}

2. Economic Loss Doctrine

The economic loss doctrine—the majority rule in U.S. state courts—prevents an individual from recovering in tort for pure economic losses without any harm to physical property.\textsuperscript{155} Economic losses include “diminution in value of [a] product because it is inferior in quality,” as well as lost profits, repair behind the economic loss doctrine endeavors to prevent open-ended tort liability for product manufacturers, especially when potential economic losses are not foreseeable and there is no physical injury.\textsuperscript{156} Accordingly, when a farmer suffers only lost profits as a result of crop contamination, he may be barred from tort recovery under the economic loss doctrine.

\textsuperscript{151} Id.

\textsuperscript{152} In re Genetically Modified Rice Litigation, No. 4:06-md-1811, 2010 WL 5070718, at *4 (E.D. Mo. 2010).


\textsuperscript{154} See, e.g., Defendant’s Motion to Dismiss, Center for Food Safety v. Monsanto Co., No. CV-13-213 (E.D. Wash. Aug. 12, 2013).

\textsuperscript{155} Endres & Schlessinger, supra note 92, at 840.

\textsuperscript{156} Id. at 451.
As a result, seed manufacturers always assert the economic loss doctrine as an affirmative defense in crop contamination cases involving lost profits.\(^{157}\) Generally, the economic loss doctrine bars suits from farmers who did not experience any contamination and only incurred lost profits,\(^{158}\) but will not bar suits from farmers who suffered a physical injury to their crops or equipment through genetic drift.\(^{159}\) However, some courts apply the economic loss doctrine more leniently, and may allow claims for economic damages alone to stand, even if unaccompanied by physical damage.\(^{160}\) Thus, farmers who experience no firsthand contamination may not necessarily be able to recover if they reside in one of the few states that permits recovery of pure economic damages alone.

3. Preemption

Federal preemption may broadly limit the ability of farmers to recover from GM seed manufacturers or GM crop farmers. Specifically, FIFRA and other federal statutes regulating GM crops may preempt strict liability claims for failure to warn about unreasonably dangerous products.\(^{161}\) FIFRA, which regulates insecticides, “prohibits states from imposing any labeling requirements beyond those imposed by the EPA,” and thus preempts failure to warn claims related to insecticidal GM crops such as the claims made in *StarLink*.\(^{162}\) As a result, product warning claims for GM seeds are likely to fail to the extent a relevant federal statute already speaks on labeling GM products. Courts may find other types of claims are preempted as well in future crop contamination litigation.

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\(^{157}\) See, e.g., *LibertyLink*, 666 F. Supp. 2d at 1015.

\(^{158}\) See *Sample v. Monsanto Co.*, 283 F. Supp. 2d 1088, 1093 (E.D. Mo. 2003) (holding that economic loss doctrine barred recovery of lost revenue from GM seed boycotts under any tort theory when farmers did not sustain any physical contamination or injury to their farmland or crops).

\(^{159}\) See *StarLink*, 212 F. Supp. 2d at 842.

\(^{160}\) *LibertyLink*, 666 F. Supp. 2d at 1016.

\(^{161}\) Beebe, *supra* note 50, at 534 (citing Cipollone v. Liggett Group, 505 U.S. 504 (1992)).

\(^{162}\) *StarLink*, 212 F. Supp. 2d at 835–36.
4. Class Actions

Nationwide class actions for genetic crop contamination are problematic due to inconsistent state tort law and varying damages to farmers based on the degree of contamination within their individual fields. For example, the court overseeing the LibertyLink MDL denied class certification for all rice farmers because it found that the rice farmers “suffered economic injury in several different ways . . . that could only be determined on an individual basis,” and thus common issues of law or fact did not predominate within the class. Accordingly, class actions are primarily useful for plaintiffs in crop contamination cases only in the sense that they increase plaintiff bargaining power for settlement. However, recent crop contamination litigation suggests that regional class actions limited in scope to a single state may pass class certification, as these smaller regional classes only have one choice of applicable state tort law.

III. INCREASING THE LITIGATION YIELD: THE FUTURE OF CROP CONTAMINATION LIABILITY

After fifteen years of litigation, tort liability for crop contamination remains convoluted and uncertain. Farmers hurt by genetic contamination continue to assert the same traditional tort claims against GM seed manufacturers despite no indication courts will accept the validity of such claims. For instance, courts reject trespass claims for particulate matter like pollen; courts dismiss

163 See Fed. R. Civ. P. 23(a) (stating that class actions require common questions of law and fact).
165 See supra Part II.a.i–iv (discussing settlements in class action contamination lawsuits).
166 See, e.g., Class Action Complaint at 24, Bentlage v. Syngenta, No. 3:14-cv-5151 (W.D. Mo. Nov. 13, 2014) (contending that regional class action for Viptera corn contamination restricted only to farmers in Missouri satisfies the requirements of Fed. R. Civ. P. 23(a)).
167 See generally supra Part II (showing that viability of different tort claims for crop contamination is uncertain).
168 See supra Part II.a.iii–iv (discussing recent claims brought in crop contamination lawsuits).
public nuisance claims because GM crops pose no threat to public health; “right to farm” statutes bar private nuisance claims; courts reject failure to warn claims as preempted by federal statutes; courts do not consider GM farming an ultra-hazardous activity; and courts struggle to find a clear duty of care for GM handling and cultivation in negligence claims.\(^{169}\)

Moreover, courts seem less inclined now to find that GM crops pose real dangers to farmers or consumers,\(^{170}\) and courts will likely posit new reasons to strike down crop contamination claims in order to promote GM crops.\(^{171}\) Consequently, the best route for farmer recovery from crop contamination losses in today’s legal environment is through the threat of large-scale class action litigation that induces a settlement.\(^{172}\) However, while this settlement strategy has been successful in the past, once GM seed manufacturers successfully defend a crop contamination suit, the class action threat will lose viability as a source of recovery.

Thus, in order to ensure GM crop farmers and GM seed manufacturers are held commensurately liable for crop contamination and its resulting harm in the future, this paper proposes a concise statutory cause of action for GM seed contamination modeled upon animal liability. In essence, this statutory scheme divides crop contamination claims between two liability standards based on the nature of the GM seed at issue: (1) strict liability for GM seeds with “dangerous propensities,” and (2) negligence for GM seeds without dangerous propensities (akin to domestic animals). This liability scheme conforms to court precedent, as negligence claims have historically been the most viable tort causes of action for crop contamination.\(^{173}\)

\(^{169}\) See supra Part II (analyzing viability of tort claims in crop contamination lawsuits).
\(^{170}\) See supra Part II.b (discussing recent deregulation of GM crops).
\(^{171}\) Id.
\(^{172}\) See supra Part II.a.i–iv (discussing settlements in major genetic contamination cases).
\(^{173}\) See supra Part II.a.ii (discussing jury verdicts in LibertyLink cases).
A. Proposed Statutory Liability Scheme for Crop Contamination

This paper argues that Congress should adopt a federal statute that clearly delineates genetic drift liability for manufacturers or farmers who develop or use GM crop seeds in order to eliminate any uncertainty in the law and prevent discrepancies between different states. This proposed federal statute, the Genetically Engineered or Modified Seed Act ("GEMS"), bases liability for genetic drift largely on animal liability models.

In broad terms, GEMS provides for strict liability for genetic drift from GM seeds that have a "dangerous propensity," just as many states hold dog owners strictly liable for dogs with "vicious propensities" who harm others regardless of the level of care the dog owner took to prevent harm. On the other hand, with respect to GM seeds without "dangerous propensities," GEMS only provides liability if the GM seed owner intentionally caused crop contamination or was negligent in failing to prevent crop contamination, and creates a basic statutory duty of care in handling GM seeds based upon industry standards. Furthermore, like animal liability statutes, the burden under GEMS is on the plaintiff to establish that the seed had a "dangerous propensity" and the farmer or manufacturer knew or should have known about it.

The text of the proposed GEMS statute reads:

GEMS § 1. Strict Liability for Injury Caused by Genetic Drift from a Genetically Modified Crop Seed with Dangerous Propensities.

171 See 4 AM. JUR. 2D Animals § 67 (2014) (stating that in some jurisdictions "the owner of an animal is strictly liable for the injuries inflicted thereby where the owner knew or should have known of the animal's vicious tendencies").
175 Id. (stating that for animals with no dangerous propensities, the owner is only liable if he intentionally or negligently caused the harm).
176 See 4 AM. JUR. 2D Animals § 67 (2014).
177 Based on Strict Liability for Injury Caused by Domestic Animal with Dangerous Propensities, CAL. CIVIL JURY INSTRUCTIONS § 462 (Apr. 2007), available at https://www.justia.com/trials-litigation/docs/caci/400/462.html; see also RESTATEMENT (THIRD) OF TORTS: PHYS. & EMOT. HARM § 23 (AM. LAW INST. 2010) (providing strict liability only for abnormally dangerous animals, because most animals and livestock are "normally safe").
An individual who owns, keeps, or controls genetically modified seeds with unusually dangerous natures or propensities can be held responsible for the harm that his GM seeds cause to others, no matter how carefully they guard or restrain his GM seeds, provided that the Plaintiff shows that:

The Defendant owned, kept, or controlled a genetically modified seed;

The genetically modified seed had an unusually dangerous propensity, including an ability to cross-pollinate, an ability to harm human health, or a substantial and quantifiable ability to affect crop markets economics;

The Defendant knew or should have known that the genetically modified seed had this dangerous nature or propensity;

The Plaintiff was harmed, and suffered either economic loss or physical loss;

The genetically modified seed’s unusually dangerous nature or propensity was a substantial factor in causing the plaintiff’s harm.

GEMS § 2. Liability for Injury Caused by Genetic Drift from a Genetically Modified Seed without Dangerous Propensities. 178

An individual who owns, keeps, or controls a genetically modified seed that he does not know or does not have reason to know has a dangerous propensity is subject to liability for harm done by the genetically modified seed if, and only if,

He intentionally causes the genetically modified seed to do the harm, or,

He is negligent in failing to prevent the harm.

178 Based on RESTATEMENT (SECOND) OF TORTS § 518 (AM. LAW INST. 1977) (providing negligence standard for domestic animals who are not abnormally dangerous).
For purposes of this section, an individual must exercise a duty of care of a similarly situated reasonable person in handling a genetically modified seed so as to prevent crop contamination.

GEMS § 3. Definitions.

For purposes of this statute, “dangerous propensity” means “any propensity which is likely to cause injury under the circumstances in which the person controlling the genetic seed places it.”

B. Policy Behind the GEMS Statute

While other commentators have suggested strict liability as a potential solution to genetic crop contamination, no court thus far has acknowledged any type of strict liability—either ultra-hazardous or products-related—in a crop contamination case. The thought of labeling a widespread and beneficial activity as “ultra-hazardous” likely seems unappealing to a court from a policy standpoint. The GEMS statute differs from earlier strict liability solutions to GM crop contamination because GEMS creates a dichotomy between safe GM seeds and dangerous GM seeds—those seeds with “dangerous propensities.” The dichotomy provides strict liability for seeds with dangerous propensities, but only liability for negligence for seeds without dangerous propensities, and places the burden on the plaintiff to establish that the GM seeds at issue had “dangerous propensities.”

The strict liability standard for dangerous seeds incentivizes manufacturers to make sure their seeds are safe so they do not face strict liability for contamination caused by their use of GM seeds. The strict liability standard also imposes the costs of harm on the party who can best prevent contamination—the manufacturer or GM


180 See, e.g., Faure & Wibisana, supra note 92, at 27 (arguing for strict liability standard for GM cultivation).

seed farmer. Further, the statute eliminates the economic loss doctrine in cases involving seeds with dangerous propensities, allowing farmers who only suffered lost profits to recover from an abnormally dangerous crop contamination.

On the other hand, the negligence standard for GM seeds without “dangerous propensities” provides a reasonable liability standard for seeds that regulatory bodies have deemed “safe” in accord with the public policy favoring development and use of GM crops. The negligence standard ensures that plaintiff farmers will be able to bring suit against GM seed manufacturers and GM farmers, but allows defendants to argue they took reasonable measures to prevent contamination. In essence, manufacturers and farmers will only be held liable to the extent they intentionally contaminated other crops or acted grossly negligent, namely by failing to exercise reasonable care to prevent contamination as others “similarly situated” would have done. This negligence duty of care resists the hard-line “zero tolerance” standard for adventitious pollen espoused by the court in LibertyLink, and acknowledges that sometimes, even when due care is taken to prevent crop contamination, it may still occur by acts of nature.182

CONCLUSION

Litigation over crop contamination is an unsettled area of the law, even after four major crop contamination incidents. While courts have held that certain tort causes of action can survive dispositive motions, the only successful liability theory in front of a jury thus far for crop contamination is negligence, and the facts in that case involved the release of an unapproved GM crop with clear causation between manufacturer testing and grain supply contamination.183 At this point, litigation strategy in this growing field seems to largely revolve around inducing settlements from seed manufacturers due to uncertainty over the viability of tort claims.

A statutory cause of action modeled upon animal liability may provide some clarity in genetic contamination cases. If a plaintiff can prove a GM seed had “dangerous propensities,” the

182 See supra Part II.c.v (discussing duty of care imposed in LibertyLink case).
183 See supra Part II.a.ii (stating facts of LibertyLink case).
manufacturer or farmer of the seed could be held strictly liable for damages resulting from its development or cultivation. However, if the seed is deemed safe (akin to a “domesticated animal”), the burden will be on the plaintiff to show that the farmer or manufacturer unreasonably breached its duty of care to prevent GM crop contamination. This statutory right will provide a framework for crop contamination cases in the future and will ensure that the interests of both farmers and society are represented in the judicial system.