Journal of Environmental and Sustainability Law

Missouri Environmental Law and Policy Review
Volume 10
Issue 1 *2002-2003*

Article 2

2002

Should Missouri Farmers of Genetically Modified Crops be Held Liable for Genetic Drift and Cross-Pollination?

Stephen M. Scanlon

COMMENT

SHOULD MISSOURI FARMERS OF GENETICALLY MODIFIED CROPS BE HELD LIABLE FOR GENETIC DRIFT AND CROSS-POLLINATION?

I. INTRODUCTION

Recent controversy erupted in Mexico when corn researchers in the southern state of Oaxaca reported that their studies detected modified genes in local corn.[1] Mysteriously, these genes were detected despite Mexico's ban on planting genetically modified seeds.[2] The local community was outraged by this study.[3] One local activist suggested that the invasion of modified genes into local crops is "a worse attack on our culture than if they had torn down the Cathedral of Oaxaca and built a McDonald's over it."[4] Such sentiments are indicative of the strong feelings people harbor on the issue of biotechnology and its use in agriculture. Although the results of these studies are disputed,[5] they raise an interesting issue. What recourse is available to farmers who take every precaution to avoid genetically modified organisms (GMOs) in their crops and yet still have their crops test positive for a GMO?

New methods and technologies are currently being used to make genetic modifications in plants and agricultural crops that would not be possible with traditional plant breeding methods.[6] These modifications occur by mechanically inserting genetic material from one species into another.[7] Naturally, there is a great deal of controversy surrounding the use of GMOs in agricultural products. Many of the potential concerns with GMOs are centered on unknown human health effects. Despite being banned in several countries, including Mexico and Great Britain, the use of these technologies has been rampant in the United States. As of 1999 genetically modified crops occupied approximately one-fourth of all U.S. cropland.[8]

As a result of suspicions and concerns related to the unknown human health risks of GMOs, markets have developed both within the U.S. and outside of its borders for non-GMO or "organic" products.[9] Farmers who cultivate organic crops stand to earn a substantial premium in these markets if their crops can pass a rigorous testing procedure for GMOs.[10] It is the market premium available on organic crops that makes the concept of "genetic drift" such a significant threat to organic farmers.[11] Genetic drift is defined as "pollen drift from genetically engineered crop varieties."[12] Essentially, genetic contamination occurs when GMO crops release pollen into the air, which then

---

[1] Mark Stevenson, *Accidental Spread of Modified Corn is Seen as Cultural Attack; Mexicans are Angered about Contaminated Crops*, St. Louis Post-Dispatch C (Jan. 1, 2002).
[2] *Id.*
[3] *Id.*
[4] *Id.* (quoting Hector Magallone, an activist with Greenpeace).
[5] Intl. Maize & Wheat Improvement Center, *Initial Tests Find Mexican Landraces in CIMMYT Gene Bank Free of Promoter Associated with Transgenes*, <http://www.cimmyt.org/whatiscimmyt/init_test.htm> (accessed Jan. 28, 2002).
[6] 57 Fed. Reg. 22984, 22984 (May 29, 1992).
[7] Richard A. Repp, Student Author, *Biotech Pollution: Assessing Liability for Genetically Modified Crop Production and Genetic Drift*, 36 Idaho L. Rev. 585, 588 (2000).
[8] *Id.*
[9] *Id.* at 593.
[10] *Id.* at 594
[11] *Id.*
[12] *Id.*at 620 n. 12 (quoting Remarks Prepared for Kathleen Merrigan, Administrator Agricultural Marketing Service <http://www.ams.usda.gov/nop/nop2000.kathleensresponse1.htm> (accessed Mar. 31, 2000)).

drifts to an organic farmer's land contaminating the organic crops through cross-pollination.[13] Genetic contamination creates the risk that despite taking every precaution available to ensure organic status, the organic farmer's crops will test positive for GMOs.[14] Thus, the risk of genetic contamination is the most serious in situations where an organic farmer's property is adjacent to property containing GMO crops.[15] Contamination of organic crops can result in several different economic injuries, such as a reduced demand for crops or increased costs associated with segregating organic crops from GMO contaminated crops in the hope of preventing further contamination.[16] Once organic crops are contaminated, the organic farmer has arguably suffered significant harm.[17] Thus, the issue becomes whether the organic farmer should be compensated for this harm.

The risk that GMO crops will cross-pollinate with organic crops of the same species raises some interesting legal questions.[18] There are several theories that could be used by an organic farmer as a basis of recovery against a GMO farmer, including nuisance, trespass, negligence, and strict liability.[19] This Comment will focus on the theories of nuisance and trespass, ultimately concluding that it is in the public's best interest to prevent organic farmers from recovering substantial damages from farmers who cultivate GMO crops. Since tort law is generally state specific, the discussion will center primarily on Missouri's law, but in several instances will highlight differences in other states.

II. NUISANCE

An organic farmer whose crops have tested positive for GMOs as a result of genetic drift may have a claim against his neighbor based upon the common law tort of nuisance. The law of nuisance recognizes two conflicting rights: (1) property owners have a right to control their land and use it to benefit their best interests; and (2) the public and neighboring land owners have a right to prevent unreasonable use that substantially impairs the peaceful use and enjoyment of their land.[20] One commentator describes the law of nuisance as the "common law backbone of modern environmental and energy law."[21]

There are two types of nuisance actions. A "public" nuisance involves an unreasonable interference with a right common to the general public.[22] The court considers whether the conduct involves a significant interference with public health, safety, peace, comfort, or convenience.[23] Conversely, a "private" nuisance is the unreasonable, unusual or unnatural use of one's property that substantially impairs the right of another to peacefully enjoy his property.[24] The elements of a private nuisance are (1) intentional or negligent conduct (2) that unreasonably interferes with a plaintiff's use and enjoyment of his land, and (3) causes significant harm.[25] To constitute a private

[13] Neil D. Hamilton, *Legal Issues Shaping Society's Acceptance of Biotechnology and Genetically Modified Organisms*, 6 Drake J. Agric. L. 81, 104 (2001).
[14] *Id.*
[15] *Id.*
[16] Repp, 36 Idaho L. Rev. at 593-94.
[17] *Id.*
[18] Hamilton, 6 Drake J. Agric. L. at 103-104.
[19] *Id.* at 104.
[20] *Tichenor v. Vore*, 953 S.W.2d 171, 176 (Mo. App. S.D. 1997).
[21] William H. Rodgers, Jr., *Handbook on Environmental Law* § 2.1, at 100 (1977).
[22] *Cox v. City of Dallas*, 256 F.3d 281, 289 (5th Cir. 2001).
[23] *Id.*
[24] *McCombs v. Joplin 66 Fairgrounds, Inc.*, 925 S.W.2d 946, 950 (Mo. App. S.D. 1996).
[25] W. Page Keeton, *Prosser and Keeton on Torts* § 88, at 622-23 (5th ed. 1984).

nuisance, a defendant's interference must be both substantial and unreasonable.[26] There is no definite rule that can be applied in all cases to determine the existence of a nuisance.[27] Each case ultimately comes down to its own particular facts and circumstances.[28]

At the outset, it is important to point out that proximate cause is an issue that must be resolved before establishing a nuisance.[29] Proximate cause in the GMO setting is particularly difficult because of the unique nature of GMOs.[30] The organic farmer must first establish that genetic drift is the cause of his crop contamination.[31] Then the farmer must show that the neighbor's crops are the cause of the genetic drift.[32] Proving these theories will take a great deal of scientific testing and expert testimony.[33] This Comment proceeds under the assumption that an organic farmer can demonstrate proximate cause and narrow the culprit to his neighbor who grows GMO plants.

The first element of a nuisance, intentional or negligent conduct, is slightly deceiving since most courts hold that nuisance liability is based on the interest invaded rather than the intentions or culpability of the defendant's conduct.[34] The GMO farmer acts in an intentional manner by planting GMO seeds on his farmland with knowledge that cross-pollination with a neighbor's crops is a likely possibility. Because the first element of a nuisance is relatively straightforward, the two most contentious aspects of a nuisance claim are typically significant harm and unreasonable interference.

A. Significant Harm

Recovery for a nuisance requires the plaintiff to demonstrate that the defendant's conduct has resulted in a significant harm.[35] Missouri defines significant harm as harm "involving more than slight inconvenience or petty annoyance, determined by the standard of normal persons or property in the particular locality."[36] Thus, if normal persons in the community would find the defendant's conduct offensive and unreasonably intrusive, the harm would be considered significant.[37]

It should not be difficult for the organic farmer to prove that genetic contamination causes a significant harm. When the defendant's conduct affects the physical condition of the plaintiff's land, the significant character of the interference is not in doubt.[38] This is essentially what has occurred via the genetic drift. When a farmer takes every precaution to grow purely organic crops, and those crops later test positive for GMOs, then genetic contamination has affected the physical condition of the crops. Because it is the GMO farmer's conduct of planting GMO crops that results in the genetic contamination, it is the GMO farmer's conduct that results in the physical invasion of his neighbor's organic crops. Genetic contamination prevents the organic farmer from taking advantage of the market premium on organic crops. In addition, the organic farmer was unable to recognize benefits of producing GMO crops, such as lower production costs and higher yields. Thus, the organic farmer clearly suffers a significant economic harm.

---

[26] *Id.*
[27] *Tichenor*, 953 S.W.2d at 177.
[28] *Id.*
[29] Repp, 36 Idaho L. Rev. at 607.
[30] *Id.* at 603.
[31] *Id.*
[32] *Id.*
[33] *Id.*
[34] *Lunda v. Matthews*, 613 P.2d 63, 66 (Or. App. 1980).
[35] Keeton, *supra* n. 26. § 88. at 623.
[36] *McCombs*, 925 S.W.2d at 950.
[37] *Id.*
[38] Keeton, *supra* n. 26. § 88. at 627.

B. Unreasonable Interference

In addition to proving that the defendant's conduct has resulted in a significant harm, the plaintiff must also demonstrate that the defendant's conduct constitutes an unreasonable interference.[39] In Missouri, the unreasonable interference element of a nuisance usually results in weighing the rights of adjoining property owners.[40] The court determines whether the plaintiff is entitled to relief by weighing the "'utility of the [defendant's] conduct' against the 'gravity of the harm.'"[41] This is a different approach than that taken by the Restatement (Second) of Torts § 826(b), which would hold a defendant liable for a nuisance regardless of the conduct's utility, so long as the harm is "serious" and the payment of damages is "feasible" without jeopardizing the continuance of the conduct.[42]

The first step in establishing a nuisance requires the organic farmer to demonstrate an unreasonable interference with the use of his land. There is a great deal of confusion in the law of nuisance surrounding the terms "unreasonable use" and "unreasonable interference."[43] It is not always the case that an unreasonable interference is the result of an unreasonable use.[44] For example, planting GMO crops can result in more productive use of farmland, a reduction in the use of pesticides, and conservation of soil and water.[45] Even the Food and Drug Administration (FDA) takes the position that the technology is safe, finding that there is no evidence to support health concerns from eating GMOs, and no evidence of environmental harm.[46] In the face of such evidence, a GMO farmer who takes advantage of GMO technology is arguably engaging in reasonable conduct. This argument is strengthened further if the GMO farmer follows certain recommended safety precautions. However, it is important to keep in mind that the focus of a nuisance is on the interests invaded, not on the culpability of the defendant's conduct.[47] So it is possible that the GMO farmer's conduct is perfectly reasonable, yet ultimately results in an unreasonable interference with the organic farmer's land. The issue then becomes who should bear the loss.

The unreasonable interference element of a nuisance often boils down to a balancing of the interests of the GMO farmer and the organic farmer.[48] Making a determination of which party should bear the loss requires weighing the utility of the actor's conduct against the gravity of the harm.[49] The first step in the balancing process is determining the social utility of planting and growing GMO crops on farmland. When measuring the utility of an actor's conduct, the following factors are significant: (a) the social value that the law attaches to the primary purpose of the conduct, (b) the suitability of the conduct to the character of the locality, and (c) the impracticability of preventing or avoiding the invasion.[50]

---

[39] *Id.* at 623.
[40] *Tichenor*, 953 S.W.2d at 176.
[41] *McCombs*, 925 S.W.2d at 950 (quoting *Lee v. Rolla Speedway, Inc.*, 494 S.W.2d 349, 355 (Mo. 1973)).
[42] *Carpenter v. Double R Cattle Co., Inc.*, 701 P.2d 222, 225 (Idaho 1985).
[43] Keeton, *supra* n. 26, § 88, at 629.
[44] *Id.*
[45] Council for Biotechnology Information, *The Promise of Biotechnology: Helping to Protect the Environment*, <http://www.whybiotech.com/en/safety\con115.asp?MID=44> (accessed Feb. 26, 2002).
[46] 57 Fed. Reg. 22984, 22984 (May 29, 1992).
[47] *Lunda*, 613 P.2d at 66.
[48] *See Tichenor*, 953 S.W.2d at 176.
[49] *McCombs*, 925 S.W.2d at 950.
[50] *Lee v. Rolla Speedway, Inc.*, 494 S.W.2d 349, 355 (Mo. 1973).

The first factor for determining the utility of planting GMO crops requires an evaluation of their social value.[51] There are several environmental benefits attributed to GMO crops.[52] They allow for more productive use of land, thereby conserving land, soil, and water.[53] They reduce the use of pesticides and chemicals in agriculture by providing built-in protection from disease and insects.[54] Additionally, the ability to produce more food on less land could result in the preservation of rainforests and wetlands.[55]

The concept of social utility necessarily implies the inclusion of third party interests in the activity being conducted. One Missouri court stated that, "[i]n determining which way the balance of convenience lies, the resultant benefit and detriment to the parties litigant are not the only matters to be considered. The court will also consider the injuries which may be inflicted on strangers to the suit, and to the public generally."[56] GMOs have the ability to improve productivity in difficult farming areas, thereby increasing food production on lands that struggle with tough weather and poor soil conditions.[57] With the ability to increase food production, GMOs are seen as a potential answer to worldwide hunger problems.[58] The world population is growing at a rate of 250,000 people per day, while the natural resources to feed these people are declining.[59] Between 20-80% of the sweet potato harvest is lost every year to insects.[60] In Africa, a lack of refrigeration causes tons of food to rot before it even hits the market.[61] Biotechnology could solve this problem by producing crops that ripen more slowly.[62] Undoubtedly the ability to produce GMO crops has significant social value.

Another factor to consider is the suitability of the conduct to the character of the locality.[63] There is obviously nothing unsuitable about planting and growing crops on farmland. The organic farmer is therefore left with the burden of demonstrating that it is the GMO element of the crops that makes the GMO farmer's conduct unsuitable. Logically, a farmer who takes advantage of a more efficient and productive method to grow crops can hardly be considered as engaging in conduct that is unsuitable for farmland. It even seems plausible for a GMO farmer to argue that he is engaging in not only perfectly suitable conduct, but conduct that is beneficial for the environment and society at large.

The final factor to consider is the impracticability of preventing or avoiding the interference.[64] The situation these farmers face is peculiar. Both farmers are doing exactly what is expected of them; they are farming their land. Neither farmer engages in conduct that directly interferes with the other's use of his land. It is the indirect intrusion of genetic drift and cross-pollination that causes the interference. This means that, although the GMO farmer has indirectly caused the interference by planting GMO crops, it is nature itself that has directly interfered with the

---

[51] *Id.*
[52] Council for Biotechnology Information, *supra* n. 45.
[53] *Id.*
[54] *Id.*
[55] *Id.*
[56] *Johnson v. Independent School Dist. No. 1, Buffalo*, 199 S.W.2d 421, 424 (Mo. App. 1947).
[57] Council for Biotechnology Information, *supra* n. 45.
[58] Monsanto Biotech Knowledge Center, *The Biotech Advantage*, Week of Dec. 5, 2001 <http://www.biotechknowledge.monsanto.com/biotech/knowcenter.nsf/MainKnowCenter?OpenFrameSet&Frame=Content&Src=_25th6irrkclhmgbrbdpnneor5dpq6ashedppmcbq98gnjgdhi6kr62pb560o3acpo70qjce1m68qjcohkc4o30db66crjgp9v8li6it24dthnarb5dpq2cgblehnkcsj1dlim80_> (accessed Feb. 26, 2002).
[59] *Id.*
[60] *Id.*
[61] *Id.*
[62] *Id.*
[63] *Lee*, 494 S.W.2d at 355.
[64] *Id.*

organic farmer's crops. The wind blows GMO pollen from one property to the other, subsequently allowing the genes to cross-pollinate causing genetic contamination in the organic crops. A GMO farmer certainly cannot control the wind or cross-pollination. Assuming the GMO farmer takes the recommended safety precautions, it seems impossible to argue that the GMO farmer could have prevented or avoided the interference at issue without discontinuing the cultivation of GMO crops altogether.

After evaluating the social utility of a farmer's ability to plant and grow GMO crops, the next step involves weighing that utility against the gravity of the harm.[65] The following factors are important in measuring the gravity of harm: (a) the extent of the harm, (b) the character of the harm, (c) the social value of the use that is interfered with, (d) the suitability of the use interfered with to the character of the locality, and (e) the burden of avoiding the harm.[66] The first two factors are an assessment of the harm caused. It has already been established that the organic farmer suffers significant harm. Crops testing positive for GMOs obviously cannot be marketed as organic, so the farmer is prevented from recognizing a substantial premium on the sale of his crops.[67] In addition to the economic loss, the organic farmer may be forced to halt production of organic crops, grow different crops, or stop farming altogether.[68] Each of these alternatives results in a substantial interference with the use and enjoyment of the organic farmer's land. The social value of farming and producing food cannot be contested. The act of farming is clearly a suitable use of the farmland, and the interference with the use of the land is with the farmer's ability to grow and market organic crops. Consequently, for the same reasons that it is nearly impossible for GMO farmers to prevent the interference, it is equally impossible for organic farmers to avoid the interference.

Clearly, the ultimate decision regarding which party should bear the loss is a very difficult one. However, holding the GMO farmer liable would have a substantial chilling effect on the production of GMO crops. For reasons set forth above, the production of GMO crops has significant social value including more productive use of land, a reduction in pesticide use, and a possible solution to worldwide hunger.[69] In contrast, since the use and sale of GMO crops in the U.S. is so prevalent, the organic farmer can still sell his product. The organic farmer is economically left with crops that, although unmarketable as organic crops, still have the potential to be sold, albeit through different markets and to different consumers. Arguably then, the social utility of GMO crops outweighs the gravity of the harm suffered by the organic farmer. The organic farmer is in a better position to absorb the loss as a necessary consequence of farming in a country that recognizes the value of biotechnology in the agricultural industry. As stated by one Missouri court, the balancing process ultimately comes down to "the immeasurable value of the health and comfort of the public on the one hand as compared to a few dollars on the other."[70]

III. TRESPASS

A trespass is defined as a direct physical interference with the person or property of another.[71] Although seemingly straightforward, there is some confusion over what constitutes a direct physical interference. Specifically, there is a continuing debate among the states over whether

[65] *Id.*
[66] *Id.*
[67] *See* Repp, 36 Idaho L. Rev. at 593.
[68] *See id.* at 607-608.
[69] *See* Council for Biotechnology Information, *supra* n. 45.
[70] *Johnson*, 199 S.W.2d at 425 (quoting *Horine v. People's Sever Co.*, 204 S.W. 735, 736 (Mo. App. 1918)).
[71] *Maryland Heights Leasing, Inc. v. Mallinckrodt, Inc.*, 706 S.W.2d 218, 224 (Mo. App. E.D. 1985).

airborne particles, typically invisible to the naked eye, can result in a direct physical interference. On this issue states have adopted different approaches. Because GMO pollen fits the description of an airborne particle, resolution of this issue is essential.

A. The Dimensional Test

The traditional approach used to determine whether airborne particles can result in a direct physical interference is called the "dimensional" test, and requires that the invasion of the land be direct or immediate and in the form of a physical, tangible object.[72] Under this approach, when the substance is visible it is considered tangible and the intrusion is considered a trespass. However, when the substance is not visible it is considered intangible and the action lies in nuisance.[73]

The Michigan Court of Appeals adopted the dimensional test in *Adams v. Cleveland-Cliffs Iron Company*.[74] The *Adams* court stressed the importance of distinguishing a trespass cause of action from a nuisance.[75] A trespass "is an invasion of the plaintiff's interest in the exclusive possession of his land, while nuisance is an interference with his use and enjoyment of it."[76] Traditionally, a trespass was considered a direct or immediate invasion of land in the form of a physical tangible object, entitling the landowner to at least nominal damages even if actual injury was not shown.[77] A nuisance, however, required proof of actual and substantial injury and often called for balancing the disturbance complained of against the social utility of its cause.[78] Courts that recognize a trespass cause of action for indirect and intangible invasions have struggled with these damage principles.[79] In order to avoid holding a manufacturing plant liable "to every landowner on whose parcel some incidental residue of industrial activity might come to rest, these courts have grafted onto the law of trespass a requirement of actual and substantial damages."[80] The *Adams* court rationalized that requiring actual and substantial damages for a trespass strips the tort of its distinctive elements, commingling its identity with a nuisance.[81] The court concluded that the traditional elements of a trespass, the direct intrusion of a tangible, physical object, "serve as gatekeepers - safeguarding genuine claims of trespass and keeping the line between the torts of trespass and nuisance from fading into a 'wavering and uncertain' ambiguity."[82]

In jurisdictions that follow the dimensional test for a trespass, an organic farmer would be barred from recovering damages for the intrusion of GMO pollen onto his land if GMO pollen is considered an intangible object. This issue can arguably be resolved through an analogy. GMO pollen can most aptly be compared with dust particles. In *Adams*, the court addressed the issue of whether dust can be considered an intangible object and decided in the affirmative, stating, "dust must generally be considered intangible and thus not actionable in trespass."[83] In so holding, the court also stated that it realized "dust particles are tangible objects in a strict sense that they can be touched and are comprised of physical elements. However...for practical purposes...dust, along

---

[72] *Adams v. Cleveland-Cliffs Iron Co.*, 602 N.W.2d 215, 219 (Mich. App. 1999).
[73] *Id.* at 225.
[74] 602 N.W.2d 215 (Mich. App. 1999).
[75] *Id.* at 219.
[76] *Id.*
[77] *Id.*
[78] *Id.*
[79] *Id.* at 220.
[80] *Id.*
[81] *Id.*
[82] *Id.* at 223.
[83] *Id.*

with other forms of airborne particulate, does not normally present itself as a significant physical intrusion."[84] Once GMO pollen is labeled as intangible, it will no longer survive as the basis of a trespass cause of action in jurisdictions following the dimensional test.

B. Modified Dimensional Test

The majority of states do not follow the dimensional test in its strictest form. Some states have slightly modified the test requiring that the intrusion of intangible objects cause physical damage to the property before giving rise to a trespass cause of action.[85] Because a trespass action is based on interference with possession, this test focuses on direct physical damage. While maintaining the distinction between intangible and tangible objects, this approach also recognizes that intangible objects are equally capable of causing physical damage to property. Accordingly, if an intangible object does cause direct physical damage, there is no justification for barring a party from seeking a remedy in trespass.

The Supreme Court of Colorado adopted this approach in *Public Service Company of Colorado v. Van Wyk*.[86] In *Van Wyk*, the plaintiffs brought a trespass action for alleged intangible intrusions in the form of noise, radiation, and electromagnetic fields.[87] This was the court's first opportunity to address the issue of whether an intrusion by an intangible object may form the basis of a trespass cause of action.[88] The court began by asserting that the central aspect of a trespass cause of action is interference with the possession of another's property.[89] When a landowner acts in a way that will, in the ordinary course of events, cause damage to another's property, the court ruled that action is sufficient to hold the landowner liable for a trespass.[90] Therefore, the court held that an intangible intrusion may give rise to a claim for trespass, but only when an aggrieved party can show physical damage to the property caused by the intrusion.[91]

In a jurisdiction applying the modified dimensional test, the issue of whether GMO pollen can constitute the basis of a trespass cause of action is not as difficult. An organic farmer must demonstrate physical damage as a result of GMO contamination to proceed under trespass. Demonstrating physical damage should not pose a significant problem. An organic farmer who cautiously plants only organic crops in order to take advantage of a market premium suffers an economic injury as a result of GMO contamination with his crops because he is unable to recognize the market premium. The farmer suffers this loss without recognizing the benefits of planting GMO crops, such as lower production costs and higher yields. Therefore, in a jurisdiction applying the modified dimensional test, an organic farmer has a viable chance of recovering damages for trespass caused by GMO pollen that cross-pollinates with organic crops.

---

[84] *Id.*
[85] *See e.g. Public Service Co. of Colorado v. Van Wyk*, 27 P.3d 377 (Colo. 2001); *Satterfield v. J.M. Huber Corp.*, 888 F. Supp. 1567 (N.D. Ga. 1995); *Maddy v. Vulcan Materials Co.*, 737 F. Supp. 1528 (D. Kan. 1990); *San Diego Gas & Elec. Co. v. Superior Court*, 920 P.2d 669 (Cal. 1996).
[86] 27 P.3d 377 (Colo. 2001).
[87] *Id.* at 381.
[88] *Id.* at 389-90.
[89] *Id.* at 390.
[90] *Id.*
[91] *Id.*

C. Martin v. Reynolds Metal Approach

Finally, some states have entirely rejected the dimensional approaches in favor of a bright-line rule recognizing a cause of action for trespass of intangible objects.[92] These states allow recovery under a theory of trespass where, despite no visible intrusion, some particulate is deposited upon the property.[93]

The Supreme Court of Oregon adopted this position in *Martin v. Reynolds Metals Co.*[94] In *Martin*, the plaintiffs brought a trespass action alleging that the defendant's caused fluoride compounds in the form of gases and particles to settle on their land, rendering it unfit for grazing purposes.[95] The defendants argued that since fluoride compounds are not visible to the naked eye, their release could be considered a nuisance at the most.[96] The court rejected this argument, setting forth the distinction between a trespass and a nuisance.[97] A trespass is the violation of the possessor's interest in the exclusive possession of his property.[98] A nuisance, on the other hand, is a violation of the possessor's interest in the property's use and enjoyment.[99] The court concluded that a trespass is any intrusion that "invades the possessor's protected interest in exclusive possession, whether that intrusion is by visible or invisible pieces of matter or by energy which can be measured only by the mathematical language of the physicist."[100] Therefore, the court held that the intrusion of fluoride particulates constitutes a trespass.[101]

Other courts have followed this rationale, allowing a trespass action for any particulate deposited on another person's property.[102] The Supreme Court of Alabama adopted the *Martin* rationale in *Borland v. Sanders Lead Co., Inc.*[103] In *Borland*, the plaintiffs alleged a trespass of lead particulates and sulfoxide gases emitted from the defendant's smelting operations.[104] The court stated that in order to recover in trespass for this type of invasion, a plaintiff must show (1) an interference with the plaintiff's exclusive possessory interest, (2) through the defendant's intentional conduct, (3) with reasonable foreseeability that the act done could result in an interference, (4) causing substantial damage.[105]

The Missouri Court of Appeals adopted the *Martin* and *Borland* rationales in *Maryland Heights Leasing, Inc. v. Mallinckrodt, Inc.*[106] In *Maryland Heights*, the plaintiffs alleged tort liability for trespass due to damages caused to their property by low-level radiation emissions from Mallinckrodt's operations.[107] Although recognizing the difficult proof problems encompassing a trespass claim for radioactive emissions, the court held that radioactive emissions might nonetheless constitute a trespass.[108] Thus, *Maryland Heights* represents precedent in Missouri for the

---

[92] *See e.g. Borland v. Sanders Lead Co., Inc.*, 369 So.2d 523 (Ala. 1979); *Maryland Heights Leasing, Inc. v. Mallinckrodt, Inc.*, 706 S.W.2d 218 (Mo. App. E.D. 1985); *Martin v. Reynolds Metals Co.*, 342 P.2d 790 (Or. 1959), *cert. denied*, 362 U.S. 918 (1960).
[93] *Van Wyk*, 27 P 3d at 390.
[94] 342 P.2d 790 (Or. 1959) (en banc).
[95] *Id.* at 791.
[96] *Id.*
[97] *Id.* at 792.
[98] *Id.*
[99] *Id.*
[100] *Id.* at 794.
[101] *Id.*
[102] *See e.g., supra* n. 92.
[103] 369 So 2d 523 (Ala. 1979).
[104] *Id.* at 525-26.
[105] *Id.* at 529.
[106] 706 S.W.2d 218 (Mo. App. E D. 1985).
[107] *Id.* at 220.
[108] *Id.* at 226.

proposition that airborne particulates can invade a person's right to exclusive possession and constitute a trespass.

Following the rationale of *Maryland Heights*, it seems only logical to conclude that in Missouri, GMO pollen that drifts to a neighbor's land and cross-pollinates with organic crops will likely constitute a trespass. The invasion and resulting cross-pollination causes an alteration in the physical make-up of the organic farmer's crops and prevents the farmer from recognizing the market premium. Thus, the alteration causes the organic farmer to incur economic damages.

IV. CONCLUSION

Technological advancements inevitably lead to uncertainty, and uncertainty strikes fear in human beings. The law serves as an anchor to help allay the fear of the unknown and protect people from potentially damaging consequences. However, the law should balance this responsibility with the potential benefits that technology can create and avoid becoming a deterrent for socially useful advancements. Such is the case with GMOs in the agricultural industry. The social benefits of GMOs are universally recognized and, in the U.S., the FDA takes the position that they are perfectly safe. Yet, because of uncertainty, people criticize GMOs based on *potential* adverse consequences. As a result, markets exist for organic foods providing an incentive to farmers to grow organic crops. Ultimately the situation arises where one farmer chooses to plant organic crops while his neighbor chooses to grow GMO crops. Forces of nature then lead to contamination of the organic farmer's crops with GMO pollen from the neighbor's land. Should the organic farmer be able to recover damages for genetic contamination? Under the law of nuisance, the farmer could allege that the planting of GMO crops unreasonably interferes with his use and enjoyment and causes significant harm. But ultimately that harm is outweighed by the social utility of planting GMO crops and the organic farmer should be denied recovery. Under the law of trespass, the organic farmer may have better luck depending upon whether the jurisdiction recognizes a trespass for the indirect intrusion of intangible objects. If the jurisdiction adopts the dimensional test, the organic farmer will not recover since GMO pollen is an intangible object and represents an indirect intrusion. If the jurisdiction adopts the modified dimensional test, the organic farmer has a better chance so long as he can demonstrate physical damage. Finally, if the jurisdiction adopts the approach taken in *Martin v. Reynolds Metal Co.*, the organic farmer may be entitled to a recovery since the GMO pollen from the neighbor's land has settled on his land. In any event, when addressing these issues, courts should take care to fully consider the social utility of GMOs in the agricultural industry and avoid setting damaging precedents that may hinder technological development.

STEPHEN M. SCANLON