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It's Not Easy Being Green—Holding Manufacturers Of Genetically Modified Bentgrass Liable Under Strict Products Liability

Brady L. Montalbano*

Few people are aware that when they walk into a local grocery store to purchase corn on the cob, they are purchasing a crop that has been genetically altered. Genetic modification of organisms, especially of crops such as corn, soybeans, tomatoes, cotton, and canola has become commonplace. A number of household products and foods that are readily found in most refrigerators and pantries contain genetically modified organisms (GMOs[1]).[2] In the not so distant future, people may be able to walk out onto their lawn or onto the putting green at a golf course and find it totally weed-free as a result of genetic modification. Such weed-free environments will not, however, be the result of multiple applications of weed killing or inhibiting chemicals. Rather, you will be walking on grass that was developed in a laboratory by scientists injecting foreign genes into that grass' natural DNA (deoxyribonucleic acid).

This new development which is being pursued by Monsanto Company and partner the Scotts Company is an initiative to deregulate

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1. The phrase "genetically modified organism" is only one of the terms used when discussing products of biotechnology. Comparable phrasing used to identify such products are: genetically engineered organisms, transgenic plants, and living modified organisms.

2. MONSANTO CO., AGRICULTURAL BIOTECHNOLOGY: SCIENCE & TECHNOLOGY, PLANT BREEDING IN AGRICULTURE, http://www.monsanto.com/monsanto/layout/sci_tech/ag_biotech/default.asp (2004); *Genes From Engineered Grass Spread Far*, (National Public Radio broadcast Sept. 21, 2004).

the genetically altered version of creeping bentgrass (*Agrostis stolonifera* L.), which is resistant to the glyphosate herbicide Roundup. This kind of herbicide resistant grass is called "Roundup Ready," meaning that it can withstand the lethal effects of the commonly used herbicide Roundup.[3] Such a prospect would enable people who want green, weed-free lawns to spray their lawns with Roundup and eliminate essentially every other weed or plant in the vicinity of the Roundup application. Such resistance will allow only the creeping bentgrass to proliferate, creating the ideal lush green lawn.[4]

On April 14, 2003, Monsanto Company and the Scotts Company petitioned the Animal and Plant Health Inspection Service (APHIS) for the deregulation of creeping bentgrass under the Plant Pest Act.[5] In this petition, the manufacturers claimed that the genetically modified product did not present a pest risk and therefore should be deregulated and made available to consumers.[6] APHIS, the United States Department of Agriculture (USDA), and the Environmental Protection Agency (EPA) are currently performing various assessments under environmental laws such as the National Environmental Policy Act (NEPA), the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and the Plant Pest Act in an attempt to determine what potential risks deregulation may pose to the environment and human populations.[7] On January 5, 2004, APHIS solicited public comments concerning the potential risks that modified creeping bentgrass may pose.[8] After the notice and comment

3. MARGARET MELLON AND JANE RISSLER, UNION OF CONCERNED SCIENTISTS, FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, http://www.ucsusa.org/food_and_environment/biotechnology/page.cfm?pageID=1374 (2004). *See also* RURAL ADVANCEMENT FOUND. INT'L, SNAKES IN THE GM GRASS 1 (2000) (discussing the effect of developing herbicide tolerant strains that can withstand Roundup weedkiller spraying).

4. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3; *see also* MONSANTO CO., BACKGROUNDER: GLYPHOSATE AND DRIFT, http://www.monsanto.com/monsanto/content/products/productivity/roundup/gly_drift_bkg.pdf (2002) (indicating that herbicides such as Roundup Pro and Roundup UltraMAX are non-selective and since they can kill or affect many different species of plants, special care needs to be used to not expose non-target plants to either direct spray or spray drift).

5. Biotechnology Permits, 7 CFR § 340 (1997).

6. Monsanto Co. and The Scotts Co., Availability of Petition for Determination of Nonregulated Status for Genetically Engineered Glyphosate-Tolerant Creeping Bentgrass, Request for Information, 69 Fed. Reg. 315 (Jan. 5, 2004).

7. *See* Margaret Ross Grossman, *Biotechnology, Property Rights, and the Environment*, 50 AM. J. COMP. L. 215, 215-18 (2002); Charles A. Deacon & Emilie K. Paterson, *Emerging Trends in Biotechnology Litigation*, 20 REV. LITIG., 589, 597 (2001); Availability of Petition for Determination of Nonregulated Status for Genetically Engineered Glyphosate-Tolerant Creeping Bentgrass, *supra* note 6.

8. Joe Cummins, *Deregulation of Glyphosate Tolerant Creeping Bentgrass Out of the Question*, INSTITUTE OF SCIENCE IN SOCIETY, July 11, 2005, http://www.isis.org.uk/DGTCBOQ.php.

period elapses and a determination is made, if deregulation is achieved, creeping bentgrass would be available for commercial use by golf courses for turf management and for residential lawns.[9]

This is the first time that APHIS has ever considered deregulation of a genetically modified organism that is a widespread perennial with the ability to establish itself in various habitats including urban, agricultural, and wild habitats without cultivation.[10] Previous transgenic varieties considered for deregulation have been annual crops that are completely dependent on human efforts for cultivation and successful propagation.[11]

Creeping bentgrass has many native relatives in the United States.[12] It was noted in the USDA's preliminary risk assessment that creeping bentgrass has the ability to form hybrids with at least twelve (12) other U.S. naturalized or native species of bentgrasses and rabbit's-foot grasses.[13] Since grasses are some of the most common, aggressive, and harmfully invasive species, many scientists from the Union of Concerned Scientists, the USDA, and the EPA have expressed concern for the potential harm that this cross-hybridization may cause.[14]

Creeping bentgrass reproduces both sexually through seeds, and vegetatively through stems (called stolons).[15] These stolons produce

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9. *Genes From Engineered Grass Spread Far*, *supra* note 2. *See also* Phillip B.C. Jones, *Approval for Genetically Engineered Bentgrass Creeps Through Agency Turfs*, Jan. 2005, http://isb.vt.edu/articles/jan0504.htm.

10. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3; Availability of Petition for Determination of Nonregulated Status for Genetically Engineered Glyphosate-Tolerant Creeping Bentgrass, *supra* note 6; Jones, *supra* note 9.

11. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3.

12. *Genes From Engineered Grass Spread Far*, *supra* note 2; FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3; Availability of Petition for Determination of Nonregulated Status for Genetically Engineered Glyphosate-Tolerant Creeping Bentgrass, *supra* note 6; SNAKES IN THE GM GRASS, *supra* note 3; ROSIE HAILS, ECOLOGICAL RISK ASSESSMENT GROUP, NERC INST. OF VIROLOGY & ENVTL. MICROBIOLOGY, *Relative Risk*, (Oct. 1, 1998).

13. Availability of Petition for Determination of Nonregulated Status for Genetically Engineered Glyphosate-Tolerant Creeping Bentgrass, *supra* note 6.

14. Heather G. Davis, Caz M. Taylor, John G. Lambrinos & Donald R. Strong, *Pollen Limitation Causes an Allee Effect in a Wind-Pollinated Invasive Grass (Spartina alterniflora)*, PROCEEDINGS NAT'L ACAD. SCI. PROC. 13804-13807, http://www.pnas.org/cgi/content/full/101/38/13804 (2004); FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3; Availability of Petition for Determination of Nonregulated Status for Genetically Engineered Glyphosate-Tolerant Creeping Bentgrass, *supra* note 6. *See also Genes From Engineered Grass Spread Far*, *supra* note 2.

15. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3; TONY KOSKI, COLORADO STATE UNIVERSITY DEPARTMENT. OF HORTICULTURE & LANDSCAPE ARCHITECTURE, IDENTIFICATION AND MANAGEMENT OF PERENNIAL WEEDY GRASSES,

roots that form new bentgrass plants at various points along the stem.[16] Since the creeping bentgrass seed weighs very little, there is concern for the potential of transfer of the glyphosate-tolerant gene through wind pollination.[17] In field experiments in Oregon performed by scientists from the EPA, it was found that the genetically altered creeping bentgrass seed had traveled, within one year, as far as fourteen miles from the source.[18] Risk of genetic contamination by way of this pollen movement may not present itself as an immediate danger in instances of other genetically modified organisms such as corn, which has a heavier seed and is an annual requiring replanting.[19] However, the creeping bentgrass seed is wind pollinated and because of its light weight has the ability to travel far distances.[20] Recently, the EPA conducted a study and found evidence of "multiple instances at numerous locations of long-distance viable pollen movement from multiple source fields of genetically modified bentgrass."[21] The ability of bentgrass to travel extensive distances coupled with the presence of wild species of bentgrass or bentgrass relatives in the vicinity of the source site of the genetically altered bentgrass may have potentially disastrous effects. Such disastrous effects include the potential for ecosystem destruction, the risk of emergence of a superweed, the potential for contamination of the seed supply of non-genetically engineered bentgrass and related grasses, and other currently unknown harms resulting from genetic engineering.[22]

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http://csuturf.colostate.edu/pdffiles/Perennial%20Weedy%20Grasses%20ID%20and%20MGT.pdf (2002).

16. *See* KOSKI, *supra* note 15; FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3. Even grass clippings from treated genetically modified creeping bentgrass stands were toxic to unmodified grasses, necessitating that such clippings will require special handling. *See* Cummins, *supra* note 8.

17. *See Genes From Engineered Grass Spread Far*, *supra* note 2.

18. *Id.*

19. For example, soybeans are insect pollinated so the potential of the seeds being transported by the wind will not incite the risk of wind pollination. While corn can be wind pollinated, its seed is much heavier, making it increasingly difficult for wind to carry the seed. This heavier seed reduces the potential distance that the seed can carry and therefore contaminate other crops' genetic makeup. *Id.*

20. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3; *Genes From Engineered Grass Spread Far*, *supra* note 2.

21. CRAIG CULP, THE CENTER FOR FOOD SAFETY, EPA FINDS CONTAMINATION FROM GENETICALLY ENGINEERED TURF GRASS MILES FROM SOURCE 1 (2004), http://centerforfoodsafety.org/press_release9_20_2004.cfm; CRAIG CULP, THE CENTER FOR FOOD SAFETY, IMMEDIATE INJUNCTION SOUGHT ON FIELD TESTS OF GENETICALLY ENGINEERED TURF GRASS 1 (2004), http://www.centerforfooodsafety.org/press_release10_5_2004.

22. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3.

Despite the general controversial nature of the genetic modification of organisms, this particular initiative has many people in the scientific community on high alert. The unique nature of the risks posed by transgenic bentgrass and the lack of determinative testing concerning the short and long-term effects of this new kind of grass raises special concerns and interests in the scientific community that demand more testing.[23]

Looking carefully at all of the components of this initiative from a legal perspective, a solution to a potentially uncontrollable disaster comes to light. The effect of holding the manufacturers who develop and market this potentially dangerous and defective product liable under strict products liability could avert the release of foreign genes into the environment and avoid the irreversible consequences of disrupting the native grass' genetic makeup. From both an anthropocentric[24] and ecocentric[25] perspective, imposing such liability on manufacturers is essential to protect property rights and consumer rights, as well as the integrity of the environment.

I. Different Kinds Of Grasses

The creeping bentgrass that has been developed by Monsanto Company and the Scotts Company is a species of the genus *Agrostis* of the family *Gramineae* (otherwise known as the grass family), which was naturalized in Europe.[26] Species most common today in the United States are: creeping bentgrass (*Agrostis palustris*), which is used for lawns and putting greens; colonial bentgrass (*Agrostis terius*), which is most commonly found in lawn mixtures; and redtop bentgrass(*Agrostis alba*), which is used for pastures, hay, and erosion control in the northeastern United States.[27] At least one of these three varieties of bentgrass grows wild in almost every one of the fifty states.[28]

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23. *See Genes From Engineered Grass Spread Far*, *supra* note 2; SNAKES IN THE GM GRASS, *supra* note 3; FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3.

24. Anthropocentrism is defined as "regarding man as the center or purpose of the universe." THE NEW LEXICON WEBSTER'S DICTIONARY OF THE ENGLISH LANGUAGE 39 (1989).

25. Ecocentrism embraces an ethic of interdependence and appreciation of all living things. ROBERT V. PERCIVAL, CHRISTOPHER H. SHROEDER, ALAN S. MILLER, & JAMES P. LEAPE, ENVIRONMENTAL REGULATION: LAW, SCIENCE AND POLICY, 35-40 (4th ed. 2003). For more discussion on ecocentric perspectives, *see* ROBERT PAEHLKE, ENIVRONMENTALISM AND THE FUTURE OF PROGRESSIVE POLITICS, 117-19, 137-45 (1989).

26. COLUMBIA ENCYCLOPEDIA (6th ed. 2001), http://www.bartleby.com.

27. *Id.*

28. *See Genes From Engineered Grass Spread Far*, *supra* note 2; FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3.

II. Plant Biotechnology

Plant biotechnology, also known as genetic engineering, is the transfer of a foreign gene or genes into the genetic makeup of a particular plant.[29] While traditional plant breeding and hybridization involves the combining of thousands of genes to create different species and can often take place in the wild without human intervention, plant biotechnology involves the highly controlled and specialized insertion of a limited number of genes into a plant's DNA (deoxyribonucleic acid) structure. This process can modify plants to produce and manifest a wide array of new traits.[30] Most easily described as a surgical procedure, the genetic alteration of an organisms' DNA occurs in steps. The researcher first removes the gene segment containing the desirable trait using enzyme "scissors."[31] These "scissors" are then used to cut an opening in one of the organism's plasmids, the ring of DNA often found in the bacteria outside the cell.[32] The gene segment containing the desirable trait is then pasted into the plasmid.[33] As a result of the cut, both the gene segment and the plasmid are chemically sticky and they attach to each other to form a new plasmid containing the new altered gene.[34] This altered gene is then incorporated into the genetic composition of the original organism, producing a new genetically modified organism with the desired trait.

III. Background and Prevalence of Genetically Engineered Crops in the United States

Genetically engineered agricultural products were planted on 4.3 million acres of U.S. farmland in 1996.[35] By 2001, transgenic varieties of crops composed a significant portion of agricultural products in the U.S.[36] In 2002, statistics indicated an increased use of transgenic crops: 51.3 million acres of soybeans[37]; 10.5 million acres of cotton[38]; and 25.3

29. AGRICULTURAL BIOTECHNOLOGY: SCIENCE & TECHNOLOGY, PLANT BREEDING IN AGRICULTURE, *supra* note 2.

30. Margaret Mellon & Jane Rissler, *Gone to Seed: Transgenic Contaminants in the Traditional Seed Supply*, UNION OF CONCERNED SCIENTISTS, 5, 6-7 (2003).

31. AGRICULTURAL BIOTECHNOLOGY: SCIENCE & TECHNOLOGY, PLANT BREEDING IN AGRICULTURE, *supra* note 2.

32. *Id.*

33. *Id.*

34. *Id.*

35. Grossman, *supra* note 7, at 216-217.

36. *Id.*

37. This composes 74 percent of the total U.S. acreage of planted soybeans. FOOD AND AGRICULTURE, BIOTECHNOLOGY INDUSTRY ORGANIZATION, http://www.bio.org/speeches/pubs/milestone03/foodag.asp (last visited Jan. 3, 2005).

38. This composes 71 percent of the total U.S. acreage of planted cotton. *Id.*

million acres of corn[39]. The persistent, continual increase in planting of transgenic crops will allow the U.S. to be the leader in analyzing the risks and benefits that growing these crops will have on the seed supply, human populations, other plants, and the environment.

With the increased prevalence of transgenic crops, some in the scientific community have started researching the issues surrounding the contamination of traditional crops and seed supply by means of genetic drift.[40] The Union of Concerned Scientists conducted a study that revealed traces of transgenic material appearing in traditional varieties of corn, soybeans, and canola.[41] Some publicized examples of this include: the contamination of domestic corn and grain by StarLink corn,[42] contamination of North Dakota's non-engineered natto soybeans by Roundup Ready soybeans,[43] and Monsanto's withdrawing of transgenic canola seeds, RT-200 from the Canadian market.[44] While genetic modification of organisms is widely used in the U.S., it remains a controversial issue that is now being discussed and debated on a global scale.

IV. The Cartagena Protocol—The World Addresses GMOs and Plausible Liability Schemes

At the Rio "Earth Summit," leaders from one hundred and fifty nations met and signed the United Nations Convention on Biological Diversity[45] in order to address issues concerning the world's needs, and ways to fulfill such needs in accordance with sustainable development principles.[46] From this convention the Cartagena Protocol on Biosafety[47]

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39. This composes 32 percent of the total U.S. acreage of planted corn. *Id.*

40. Elena R. Alvarez-Buylla, *Ecological and Biological Aspects of the Impacts of Transgenic Maize, Including Agro-Biodiversity*, Report for the Secrateriat of the Commission for Environmental Cooperation of North America, http://www.cec.org/files/pdf/Alvarez-Buylla-e.pdf (last visited Oct. 25, 2004); *Gone to Seed: Transgenic Contaminants in the Traditional Seed Supply*, *supra* note 30, at 8-9.

41. There are two possible sources for this contamination: physical mixing of traditional and transgenic seeds (such as in grain elevators) or movement of genes through cross-pollination of sexually compatible crops. *Gone to Seed: Transgenic Contaminants in the Traditional Seed Supply*, *supra* note 30, at 8-9.

42. *Id.* at 9-10. *See also* Linda Beebe, *In Re StarLink Corn: The Link Between Genetically Damaged Crops and an Inadequate Regulatory Framework for Biotechnology*, 28 WM. & MARY ENVTL. L. & POL'Y REV. 511 (2004).

43. Mikkel Pates, *Seed Contamination Raises Control Issues,* AGWEEK, Nov. 12, 2002, http://www.grandforks.com.

44. Monsanto Press Statement, Quest Canola Seed Replacement Offered, Apr. 25, 2001, http://www.monsanto.com/monsanto/layout/media/01/04-25-01b.asp.

45. U.N. Conference on Environment and Development: Convention on Biological Diversity, art. 19, (June 5, 1992) 31 I.L.M. 818, *available at* http://www.biodiv.org/doc/legal/cbd-en.pdf.

46. Since the United States did not ratify the United Nations Convention on

was created to address the need for international rules and procedures with regards to GMOs, and to specifically develop a liability and redress scheme for damage caused by transboundary movements and the accidental release of "living modified organisms."[48]

At the Cartagena Protocol negotiations, potential liability schemes were explored ranging from relying on existing domestic or national frameworks, to creating an independent legally binding instrument.[49] At the conclusion of the negotiations there was no consensus as to an exact liability and redress scheme; instead, the discussion focused upon the development and use of a legally binding instrument.[50] The parties of the Protocol examined three potential liability schemes: fault-based liability, strict liability, and absolute liability.[51] International law generally provides for legal redress where fault exists and the harm is attributable to an internationally recognized wrongful act by a state or private entity. With regards to hazardous activities, existing international structures have traditionally applied strict liability because of the difficulty in proving fault.[52]

Considering that plant biotechnology is a new technology with little scientific data available concerning its risks and benefits, particularly long-term risks and benefits, some of the parties at the convention suggested incorporating elements of strict liability to account for the difficulty in proving the fault of the manufacturer.[53] If using elements of

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Biological Diversity, they were unable to formally take part in the negotiations and vote in the ratification of the Cartagena Protocol. The U.S. was however an observer of these processes and did exert influence in the Miami Group, the leading producers of genetically engineered food commodities and major agricultural exporting countries (Australia, Argentina, Canada, Chile, and Uruguay). For more discussion on the U.S. role in the Convention on Biological Diversity and the Cartagena Protocol, *see* Frances B. Smith, *The Biosafety Protocol: The Real Losers are Developing Countries* (James DeLong ed. 2000); Elizabeth Duall, *A Liability and Redress Regime for Genetically Modified Organisms Under the Cartegena Protocol*, 36 GEO. WASH. INT'L L. REV. 173 (2004); Secretariat of the Convention on Biological Diversity, *Sustaining Life on Earth: How the Convention on Biological Diversity Promotes Nature and Human Well-being*, http://www.biodiv.org/doc/publications/guide.asp?id=action-nat (2000).

47. 2000 Cartagena Protocol on Biosafety, art. 27, 39 I.L.M. 1027, *available at* http://www.biodiv.org/biosafety/protocol.asp (Jan. 29, 2000).

48. "Living modified organism," a phrase with the same meaning as genetically modified organism, was the term that the members of the Cartagena Protocol agreed to use. Duall, *supra* note 46, at 174.

49. *Id.* at 188-89.

50. Report on the Workshop on Liability and Redress in the Context of the Cartegena Protocol on Biosafety, *United Nations Programme*, at 68-76, (2001), *available at* http://www.biodiv.org/doc/meeting.asp?wg=BSWSLR-01.

51. Duall, *supra* note 46, at 199.

52. *Id.* (citing *e.g.* Vienna Convention on Civil Liability for Nuclear Damage, May 21, 1963, 1063 U.N.T.S. 265, 2 I.L.M. 727).

53. Duall, *supra* note 46, at 200. For a discussion determining liability and redress on the national, regional, and international level, *see e.g.,* Basel Protocol on Liability and

strict liability on the global scale is integral to ensuring liability and redress where injury or damage has occurred, such a liability scheme for gene transfer and potential ecological destruction on the domestic scale makes perfect legal sense.

V. Holding Biotechnology Manufacturers Liable Under Strict Products Liability (The United States Model)

Strict liability, the dominant theory of liability under products liability, can be asserted by plaintiffs in forty-five states, the District of Columbia, Puerto Rico, and the Virgin Islands.[54] Massachusetts and Michigan have an almost indistinguishable cause of action called breach of implied warranty of merchantability.[55] Only the states of North Carolina and Virginia do not recognize strict liability claims.[56] A manufacturer, according to the Restatement (Second) of Torts § 402A, is strictly liable for injuries resulting from a product defect. The Restatement (Second) provides that:

> (1) One who sells any product in a defective condition unreasonably dangerous to the user or consumer or to his property is subject to liability for physical harm thereby caused to the ultimate user or consumer or to his property if:
>
> (a) the seller is engaged in the business of selling such a product, and
>
> (b) it is expected to and does reach the consumer without substantial change in the condition on which it is sold.
>
> (2) The rule stated in Subsection (1) applies although
>
> (a) the seller has exercised all possible care in the preparation and sale of his product, and
>
> (b) the user or consumer has not bought the product from or entered into any contractual relation with the seller.[57]

Compensation for Damage Resulting from the Transboundary Movements of Hazardous Wastes and Their Disposal: Review of Existing Instruments, (July 2001) http://www.basel.int/pub/Protocol.html; 2000 Cartagena Protocol on Biosafety, *supra* note 46.

54. FRUMER & FRIEDMAN, PRODUCTS LIABILITY, 1-8 Products Liability § 8.01[1] (2004).

55. *Id.*

56. *Id.*

57. RESTATEMENT (SECOND) OF TORTS § 402A, (1965).

In order to prevail on a claim under the cause of action of strict products liability under the Restatement (Second) of Torts, a plaintiff must prove each of the following elements: 1) proof of a defect which is unreasonably dangerous to the user or consumer, 2) proof that the defect existed when the product left the manufacturer, and 3) that the defect proximately caused plaintiff's injuries.[58] The user or consumer may be an individual who: acquired the product directly from the seller or from an intermediate dealer; did not in fact purchase the product but is a family member, employee, or guest of the purchaser;[59] or any other injured user, buyer, consumer or bystander.[60]

Biotechnology is a relatively new field and the products manufactured through these new technologies contain risks that may result in both short-term and long-term harms.[61] Since biotechnology products such as transgenic creeping bentgrass are manufactured and sold to consumers, it is natural to assume that general products liability law be applied if the harm incurred was a result of using such a product.[62] However, there is currently no special products liability law solely pertaining to harms caused by biotechnology products or organisms.[63]

As a general rule, under strict products liability the manufacturer has a duty to exercise due care in the design of products; to research, make and sell the product safely; and to warn of defects and dangers to consumers or users.[64] However, a manufacturer such as Monsanto may be held strictly liable without negligence if it is found that the biotech product contains a defect. Harms that are proximately caused by products that have been genetically modified will be redressable under strict products liability unless the genetically modified organism (GMO) is found to be "abnormally dangerous."[65]

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58. RESTATEMENT (SECOND) OF TORTS § 402A; FRUMER & FRIEDMAN, PRODUCTS LIABILITY, 1-8 Products Liability §8.01[5] (2004).

59. As stated in § 402A, strict product liability is in tort and does not require any contractual relation or privity of contract between the plaintiff and the defendant. RESTATEMENT (SECOND) OF TORTS § 402A at cmt. l.

60. FRUMER & FRIEDMAN, PRODUCTS LIABILITY, 1-8 Products Liability §8.01[5]; *see also* RESTATEMENT (SECOND) OF TORTS § 402A at cmt. l.

61. Eleanor M. Fox & Michael Traynor, *Biotechnology and Products Liability*, C554 ALI-ABA 5, 7-8 (1990).

62. *Id.* at 8.

63. *Id.*

64. *Id.*

65. Considering the inherent ambiguity of the phrase "abnormally dangerous," courts have adopted factors listed in the § 520 of the RESTATEMENT (SECOND) OF TORTS:

> 1) whether the activity involves a high degree of risk of some harm to the person, land or chattels of others;
>
> 2) whether the gravity of harm which may result is likely to be great;
>
> 3) whether the risk can be avoided by the exercise of reasonable care;

VI. The Product

In order for a plaintiff to assert a strict products liability cause of action, the plaintiff must prove that injury was caused by a product. Courts generally define "product" broadly.[66] The product must have been introduced by a person or entity, such as Monsanto and the Scotts Company, into the stream of commerce.[67] This first element will be satisfied by any product sold in the condition or substantially the same condition in which it is expected to reach the ultimate consumer or user.[68] This standard has been applied to products such as cars, tires, airplanes, insecticides, animal food, and herbicides.[69] Some examples of objects that do not fall into the category of "product," thus making recovery under strict products liability unavailable are ideas, information, and symbolic manifestations.[70] The nature of the product must be inanimate or fixed when it leaves the control of the manufacturer or retailer.[71]

Genetically modified creeping bentgrass is a product that fulfills this first element of strict products liability. The bentgrass seed is sold by the manufacturer, Monsanto, to a user or consumer and is then planted on a golf course, lawn, or other grassy area. It is in a fixed state when it leaves the manufacturer, when it reaches the consumer, and up until the time that the seed is planted in the ground and germinates.

VII. The Defect

The second element necessary to sustain a strict products liability cause of action is that the product must contain a defect.[72] Under the

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4) whether the activity is a matter of common usage;

5) whether the activity is inappropriate to the place where it is carried on; and

6) the value of the activity to the community.

Koos v. Roth, 652 P.2d 1255, 1260 (Or. 1982) (quoting the RESTATEMENT (SECOND) OF TORTS §§ 519, 520 (1977)).

66. MARSHALL S. SHAPO, THE LAW OF PRODUCT LIABILITY § 7.03[1] (2d ed. 1990).

67. When a product is placed into the stream of commerce the profit motive of the manufacturer is apparent. The manufacturer who enters the product into the stream of commerce is better equipped to know, correct, and detect defects in the product and should therefore bear the risk of injury to prospective customers when the product enters into the market with an undetected defect. *See* First Nat'l Bank of Mobile v. Cessna Aircraft Co., 365 So. 2d 966, 968 (Ala. 1978) (court discussed stream of commerce and determined that an airplane that was solely used for demonstration was subject to strict liability); Thomas v. ABX Air, Inc., 290 F. Supp. 2d 532, 536 (E.D. Pa. 2003) (defendant entitled to summary judgment on strict liability count because there was no evidence that it sold, leased, marketed, or placed product into stream of commerce).

68. RESTATEMENT (SECOND) OF TORTS § 402A at cmt. d (1965).

69. *Id.*

70. SHAPO, *supra* note 66.

71. *Id.*

72. RESTATEMENT (SECOND) OF TORTS §402A at cmt. d; SHAPO, *supra* note 66; Fox

Restatement (Second) of Torts § 402A, there are currently three types of recognized product defects: manufacturing defect, failure to warn (inadequate warning of defect), and design defect.[73] In order for a strict products liability claim to be asserted the defective condition must be "unreasonably dangerous."[74] Unreasonably dangerous is defined in comment (i) of the Restatement as being "dangerous to an extent beyond that which would be contemplated by the ordinary consumer who purchases it, with the ordinary knowledge common to the community as to its characteristics."[75]

The first kind of defect is a manufacturing defect. This claim may be sustained when the product leaving the production line contains a deviation which makes this one particular unit different from other units and, as a result, exposes users to harm.[76]

The second defect is failure to warn or inadequate warning. A product that is unreasonably dangerous must contain a warning or direction disclosing information concerning the danger that an ordinary consumer may not know or reasonably expect to know. Failure to include an adequate warning or instructions concerning the products' inherent dangers will lead to the imposition of liability.[77] The majority rule, in accordance with comment (j) of § 402A of the Restatement, is that a seller may be required to give directions or warning to prevent the product from being unreasonably dangerous. Such a duty to warn exists only if the seller knew or should have known that such a risk existed.[78] Biotechnological products may be subject to liability under failure to warn or inadequate warning,[79] but that is a topic beyond the scope of this comment.

The final category of defect is design defect. A claim alleged under this category requires that the design of a product is defective, has created an unreasonable risk of harm, and that this unreasonable risk has caused injury.[80] A product has a design defect when "the specific

& Traynor, *supra* note 61, at 13-14; FRUMER & FRIEDMAN, PRODUCTS LIABILITY, 1-8 Products Liability §8.01[1] (2004).. *See also* Prentis v. Yale Mfg. Co., 365 N.W.2d 176, 181-82 (1984) (plaintiff must prove that the product is defective).

73. RESTATEMENT (SECOND) OF TORTS § 402A.

74. *Id.* at cmt. i.

75. *Id.*

76. Fox & Traynor, *supra* note 61, at 14.

77. RESTATEMENT (SECOND) OF TORTS § 402A at cmt. j; Annotation, *Failure to Warn as Basis of Liability Under Doctrine of Strict Liability in Tort*, 53 A.L.R. 3d 239 (1973 & Supp. 1989). *See also* Richter v. Limax Intern, Inc., 45 F.3d 1464, 1465, 1468-69 (10th Cir. 1995) (failure to warn of a foreseeable danger arising from a products normal use makes a product defective, and manufacturers had a duty to warn of foreseeable danger).

78. RESTATEMENT (SECOND) OF TORTS § 402A at cmt. j.

79. Fox & Traynor, *supra* note 61, at 17.

80. *Id.* at 14. *See also* Annotation, *Products Liability: Modern Cases Determining*

product unit conforms to its intended design but the intended design itself . . . renders the product not reasonably safe."[81] An essential aspect in proving this kind of case is that the injuries could have been avoided had the product been designed differently.[82]

Transgenic bentgrass contains a design defect- the very nature of the genetically modified grass itself. As mentioned in the description above, native creeping bentgrass is a perennial weedy grass.[83] The insertion of the gene which causes resistance to the herbicide glyphosate, by its intended design, creates an unreasonably dangerous product. The creeping bentgrass is unreasonably dangerous because it creates the potential for a number of harms to occur. These harms include genetic drift, the exacerbation of the harmful effects of existing bentgrass weeds, and the cross-hybridization of genetically modified bentgrass with naturally occurring species of bentgrass. Given that the effect that these harms may be irreversible, forever corrupting species' gene pools, the gravity of the harm is great. In addition, these harms cannot be avoided by exercising reasonable care. These factors demonstrate that the bentgrass contains a design defect and is not reasonably safe.

VIII. The Injury

The final element that a plaintiff must prove to sustain a strict products liability claim is that the defect proximately caused plaintiff's injury.[84] The plaintiff must prove physical harm or damage to the user's[85] land or chattels.[86] While the genetically modified creeping bentgrass has not yet been deregulated and released to the general public,[87] the following discussion of injury is in anticipation of such deregulation. If the USDA and APHIS allow for creeping bentgrass to

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Whether Product is Defectively Designed, 96 A.L.R. 3d 22 (1979 & Supp. 1989); Guilfore v. D.H. Holmes Co., Ltd., 631 So. 2d 491, 493 (La. Ct. App. 1994) (plaintiff must establish a defect, and must establish that the defect creates an unreasonable risk of harm); Luu v. Kim, 752 N.E. 547, 555, 256 Ill. Dec. 667 (2001) *appeal denied by* 196 Ill. 2d 544 (2001) (plaintiff must show injuries were derived from a distinct defect which subjected those exposed to an unreasonable risk of harm).

81. RESTATEMENT (THIRD) OF TORTS: Product Liability § 1, cmt. a (1998).

82. Fox & Traynor, *supra* note 61, at 14. *See generally*, Kristine C. Karnezis, Annotation, *Products Liability: Modern Cases Determining Whether Product is Defectively Designed*, 96 A.L.R. 3d 22 (2004).

83. KOSKI, *supra* note 15.

84. RESTATEMENT (SECOND) OF TORTS § 402A (1965)..

85. This includes virtually any injured user, buyer, consumer or bystander.

86. FRUMER & FRIEDMAN, PRODUCTS LIABILITY, 1-8 Products Liability §8.01[4] (2004).

87. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3; Availability of Petition for Determination of Nonregulated Status for Genetically Engineered Glyphosate-Tolerant Creeping Bentgrass, *supra* note 6.

be made available for commercial sale, it is probable that the injuries described below would occur to the user, fulfilling the final element necessary to prevail on a strict products liability claim.

Since plant biotechnology such as the genetic modification of creeping bentgrass is a relatively new technology, there is not definitive empirical evidence demonstrating the short and long-term harms that the introduction of creeping bentgrass would have on the environment.[88] However, there have been a number of risk assessments performed that have noted the potential harms that the deregulation of creeping bentgrass could cause.[89] A demonstration of actual harm will be necessary to state a cause of action for damages. The strengths of the scientific conclusion of negative risk may serve as evidence for injunctive relief against the manufacturer and sale.

The first injury that may occur with the deregulation of the glyphosate-resistant bentgrass is the exacerbation of the harmful effects of existing bentgrass weeds.[90] As noted above, bentgrass reproduces both sexually and vegetatively and is therefore a weed that is very difficult to contain and control.[91] The glyphosate-resistant characteristic may make the creeping bentgrass even more difficult to control because non-genetically engineered bentgrass is often killed and controlled by glyphosate herbicides such as Roundup.[92] Therefore, if the Roundup Ready (Roundup resistant) creeping bentgrass does make it's way into unintended lawns or parks, homeowners and managers will no longer be able to use Roundup or other glyphosate herbicides to control the weeds.[93]

The second potential harm found in the USDA's preliminary risk assessment is that a release of creeping bentgrass will lead to cross-hybridization with other native and naturalized grass species (*Agrostis* and *Polypogon*).[94] This would create hybrid weeds containing the glyphosate-resistant gene.[95] If the transgene does establish itself in other species of grass, the hybrid "superweeds" will be very difficult to

88. Deacon & Paterson, *supra* note 7, at 589-91; Grossman, *supra* note 7, at 215-18.

89. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3.

90. *Id.*

91. KOSKI, *supra* note 15; FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3.

92. KOSKI, *supra* note 15; FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3.

93. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3.

94. *Id.*; Grossman, *supra* note 7, at 219-20.

95. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3; *Genes From Engineered Grass Spread Far*, *supra* note 2.

control.[96] In fact, a transfer of glyphosate resistance may turn other species of bentgrass and bentgrass relatives that are not currently weeds into weeds.[97] These plants will become "weeds" because the new Roundup resistant trait will make them nearly impossible to kill, necessitating the development and application of different and more toxic herbicides.[98]

This sort of gene transfer was recently documented by researchers in Mexico.[99] DNA from genetically modified corn was found within the gene structure of native corn varieties, which were typically grown in remote regions.[100] Since commercial planting of genetically modified corn was not approved and hence not present in Mexico, researchers concluded that a gene transfer into the native corn had occurred.[101] Considering that this biotechnology is so new, definitive research has not yet been conducted to determine whether the transgene does in fact have the ability to become established in a natural environment.[102]

A third harm is the transfer of glyphosate resistance into non-relatives of bentgrass, creating a "superweed" that can tolerate the application of Roundup and other glyphosate herbicides.[103] Roundup Ready crops such as corn, soybeans, cotton, and canola were introduced into agricultural practices in the mid-1990's.[104] Since the year 2000 when glyphosate resistance was first detected on these farms, the number of acres contaminated with glyphosate resistant weeds has skyrocketed to over 2.3 million acres.[105] Considering this precedent, it is disconcerting

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96. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3; *Genes From Engineered Grass Spread Far*, *supra* note 2; Rosie Hails, *Assessing the Risks Associated with New Agricultural Practices*, NATURE 418, 685-88 (2002).

97. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3.

98. *Id.*

99. Stephen M. Scanlon, *Should Missouri Farmers of Genetically Modified Crops Be Held Liable for Genetic Drift and Cross Pollination?*, 10 MO. ENVTL. L. & POL'Y REV. 1, 2 (2003).

100. *Id.*

101. *Id.*; Grossman, *supra* note 7, at 219-20.

102. Grossman, *supra* note 7, at 219-20, citing from Carol K. Yoon, *Genetic Modification Taints Corn in Mexico*, N.Y. TIMES, Oct. 2, 2001 at D7. The original paper was published by NATURE 414, 541-43 (2001), who in April of 2002 concluded that "the evidence available is not sufficient to justify the publication of the original paper." NATURE 416, 601-02 (2002).

103. Grossman, *supra* note 7, at 219-20; FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3.

104. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3.

105. *Gone to Seed: Transgenic Contaminants in the Traditional Seed Supply*, *supra* note 30, at 6-7; SYNGENTA, RESIST RESISTANCE: IMMUNITY TO GLYPHOSATE A RISING THREAT, http://www.agweb.com/images/pubs/sm4001.pdf (last visited Dec. 27, 2004);

to imagine allowing another Roundup Ready plant, this time a perennial that does not require human cultivation for propagation, to be released into the environment with the potential of contaminating other non-related plants with the resistant trait.

It has been documented that growers of other Roundup Ready crops, with the persistent increase of glyphosate-resistant weeds, have needed to increase their reliance and use of alternative highly toxic herbicides such as paraquat and 2, 4-D.[106] These herbicides are documented to be associated with serious impacts on humans and non-target organisms.[107] Depending on the locations in which the genetically modified bentgrass is planted (typically golf courses, residences, and parks) and the distances that the wind can carry the seeds, people who frequent such locations could be exposed to increased levels of harmful herbicides.[108] While golf courses may in the short-term apply glyphosate herbicides less frequently because of the transgenic bentgrass' resistance, with gene transfer to other weeds or plants it may be reasonably expected that the use of the alternative toxic herbicide would in the long-term actually have to either increase or change in chemical composition altogether.[109]

A fourth potential harm is that releasing Roundup Ready bentgrass into the environment may contaminate the seed supply of non-genetically engineered bentgrass and its relatives.[110] If gene transfer of the resistance occurs in traditional bentgrass or other grass seeds, the Roundup Ready bentgrass will be perpetuated by plant breeders and could emerge in traditional varieties of bentgrass or other sexually compatible plants.[111] In recognition of the potential for seed contamination, Monsanto and the Scotts Company have indicated through warning labels that certain basic preliminary steps must be taken in order to prevent such contamination.[112] However, given the unique

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SYNGENTA, RESISTANCE MANAGEMENT, http://www.syngentacropprotection.com/prod/herbicide/gramoxonemax/index.asp?nav=resistmgmt (last visited Dec. 27, 2004).

106. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra*, note 4; RESISTANCE MANAGEMENT, *supra* note 105 (also describes techniques that growers can use to manage glyophosate-resistant weeds).

107. SHIRLEY A. BRIGGS, BASIC GUIDE TO PESTICIDES: THEIR CHARACTERISTICS AND HAZARDS, 124-74 (1992); KLAASEN, CASARETT & DOULL'S TOXICOLOGY: THE BASIC SCIENCE OF POISONS, 671-76 (5th ed. 1996).

108. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3.

109. *Id.*; Grossman, *supra* note 7, at 219-20.

110. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS, *supra* note 3.

111. *Gone to Seed: Transgenic Contaminants in the Traditional Seed Supply*, *supra* note 30, at 1-3.

112. FOOD AND ENVIRONMENT, TO USDA: COMMERCIALIZATION OF GE BENTGRASS,

circumstances of the wind blown nature of bentgrass pollen and the potential for human error, controlling the spread of such small, lightweight seeds will be extremely difficult, if not impossible.[113]

The final harms are the unknown harms that may result from genetic engineering.[114] As previously noted, genetic engineering of plants is less than two decades old. While there have been risk assessments and studies of the short-term effects of products of plant biotechnology upon people and the environment (many of which have been inconsistent), there have been no long-term ecological studies of the effects of modified organisms.[115] Since there are so few studies with conclusive results, there is very little information upon which to predict the harms and injuries that may be caused by the deregulation of Roundup Ready creeping bentgrass.[116] Nonetheless, such a deregulation would "launch an unprecedented experiment of wild populations, whose effects, some of which may be harmful, may not be known for years."[117]

Each of the three elements required to bring a valid claim under strict products liability: having a product; a defect; and an injury are satisfied in the case of genetically modified creeping bentgrass. Given the unreasonably dangerous nature of transgenic bentgrass, this new technology should not be deregulated.

IX. Potential Manufacturer Defenses

If confronted with a strict products liability claim, the manufacturers Monsanto Company and the Scotts Company will attempt to assert affirmative defenses in order to evade liability. The availability of these defenses depends on each particular state's judicial adoption or legislative enactment of the affirmative defense.[118] In the majority of jurisdictions, in order for one of these defense mechanisms to diminish or bar plaintiff's recovery, the defense must be specifically pleaded.[119] Some of the most common defenses raised in strict products liability claims are contributory negligence, comparative fault, and assumption of risk.[120] Since these three defenses are closely related, they will be

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supra note 3.

113. *Id.*

114. *Id.*

115. *Id.*

116. *Id.*

117. *Id.*

118. LEXSTAT 1-8 Products Liability § 8.04, [5][a], Defenses to Strict Liability (2004).

119. *Id.* at § 8.04.

120. RESTATEMENT (THIRD) OF TORTS: Product Liability § 17, cmt. a (1998). In addition to these affirmative defenses, a manufacturer may also assert a RESTATEMENT (SECOND) OF TORTS comment (k) defense. *See supra* discussion pp. 14-15 and

discussed contemporaneously.

Most jurisdictions agree that when the plaintiff has conducted herself in a manner in which she voluntarily and unreasonably proceeds to encounter a known danger and becomes injured, she will have a diminished opportunity or may be completely barred from recovery of damages.[121] In some states the defense of contributory negligence still exists as an affirmative defense. Contributory negligence is defined by the Restatement (Third) of Torts as "conduct on the part of the plaintiff which falls below the standard to which she should conform for her own protection, and which is a legally contributing cause cooperating with the negligence of the defendant in bringing about the plaintiff's harm."[122] In the past, the overwhelming majority of courts treated contributory negligence as an absolute bar to recovery in a products liability claim. However, while today only a small minority of courts retain contributory fault as a total bar, it is still used to diminish a plaintiff's recovery.

The majority of jurisdictions in the United States have adopted either the assumption of risk defense,[123] or some form of the comparative responsibility doctrine: pure comparative fault,[124] or modified comparative fault[125]. Under an assertion of assumption of risk, the manufacturer will bear the burden of showing that: 1) the user had actual knowledge of the risks associated with the dangerous situation in order to bar recovery, and 2) that these risks were so obvious that the user must have known and appreciated the risk.[126] Alternatively, the comparative responsibility doctrine compares the fault of the user to the fault of the manufacturer.[127]

In the case of bentgrass, neither contributory negligence nor comparative fault affirmative defenses will be effective in barring or diminishing recovery by the user/consumer plaintiff. Given the nature and complexity of genetic drift and transgenic organisms in general, the standard to which the user must conform in order to protect herself must be set very low. This low standard will make it very difficult, if not impossible for the manufacturers to show that the bentgrass user's

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accompanying notes. This defense is applied on a case by case basis. Castrignano v. E.R. Squibb & Sons, Inc., 900 F.2d 455, 456058, 460-62 (1st Cir. 1990).

121. LEXSTAT 1-8 Products Liability § 8.04.

122. RESTATEMENT (THIRD) OF TORTS: Product Liability § 17 at cmt. a.

123. LEXSTAT 1-8 Products Liability § 8.04.

124. Pure comparative fault allocates responsibility to each actor in proportion to the actor's percentage of total fault.

125. One example that courts adopting the modified fault system is the "not greater than 50 percent rule." This completely bars a plaintiff's recovery if found to be more than 50 percent at fault.

126. LEXSTAT 1-8 Products Liability § 8.04[3][d].

127. *Id.* at § 8.04[5][a].

conduct offsets the manufacturer's liability.

Assumption of risk will also be very difficult for Monsanto and the Scott Company to prove. This defense focuses specifically on both the plaintiff's knowledge of the danger and the fact that the risk was so obvious that a person must have known and appreciated the risk. Given the nature and complexity of GMOs, and particularly the complex reproductive tendencies of creeping bentgrass, it is unreasonable to suggest that the risks associated with transgenic bentgrass are obvious to the common user. While a user may have some knowledge of the nature of the risks associated with the transgenic bentgrass, she will not have the requisite knowledge necessary to show that she in fact "assumed the risk."

Another possible affirmative defense that the manufacturers may assert is the "inherently risky" exception under comment (k) of § 402A of the Restatement (Second). This exculpatory exception provides for certain products which "in the present state of human knowledge, are quite incapable of being made safe for their intended and ordinary use."[128] This "inherently risky" or "unavoidably unsafe product" exception has been applied in the area of biotechnological products, specifically for vaccines and pharmaceuticals.[129] For example, this exception has been used with the rabies vaccine which not uncommonly leads to very serious and damaging consequences when injected.[130] This vaccine fits into the "unavoidably unsafe product" exception because the social benefits of the product are so great that such a products' marketing becomes justifiable despite its unavoidable risks.[131] However, comment (k) provides that such a product, properly prepared, accompanied by proper directions and warning, is neither defective nor unreasonably dangerous.[132]

The application of this exception may be warranted in the arena of pharmaceuticals and vaccines where there may be no safer alternative to saving human lives. However, the extension of such an exception to the realm of plant biotechnology in the case of creeping bentgrass, for which the purpose is purely aesthetic—to make putting greens and fairways on golf courses as well as residential lawns greener—is stretching the applicability of "unavoidably unsafe" too far.

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128. RESTATEMENT (SECOND) OF TORTS § 402A, cmt. k. (1965).
129. *Id.*; Fox & Traynor, *supra* note 60, at 14; Deacon & Paterson, *supra* note 7.
130. RESTATEMENT (SECOND) OF TORTS § 402A,, at cmt. k.
131. Fox & Traynor, *supra* note 61, at 15.
132. RESTATEMENT (SECOND) OF TORTS § 402A,, at cmt. k.

X. Conclusion

Genetic modification of living organisms and the impacts that these products have on the environment are relatively new concepts that present complex legal conundrums. Absent a particular law or statute which specifically addresses liability related to such biotech products, legal redress has to be borrowed from various other areas of the law.

Transgenic organisms such as creeping bentgrass pose serious environmental concerns that must be addressed before irreversible damage occurs. Legal redress under the strict products liability tort regime is crucial to ensure that manufacturers produce a safe product and provide proper disclosures about the risks therein. And most importantly, through imposed liability these manufacturers must be prevented from releasing a potentially hazardous organism that may have long-lasting, irreversible effects out into the environment.