

The National Agricultural
Law Center



University of Arkansas · System Division of Agriculture
NatAgLaw@uark.edu · (479) 575-7646

An Agricultural Law Research Article

Of Straying Crops and Patent Rights

by

Drew L. Kershen

Originally published in WASHBURN LAW JOURNAL
43 WASHBURN L. J. 575 (2004)

www.NationalAgLawCenter.org

Of Straying Crops and Patent Rights

Drew L. Kershen*

I. INTRODUCTION TO PATENTS ON PLANTS AND PATENT INFRINGEMENT

The United States Supreme Court has twice faced the issue of whether living organisms are patentable subject matter under the general patent law, commonly called utility patents.¹ Both times the Court decided in favor of patents, with the *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc.*² case squarely holding for utility patents on plants. With utility patents on plants firmly established, patent lawyers are likely to turn their attention to issues of patent infringement as applied to plants.³

Infringement disputes relating to plants are not completely new in American jurisprudence. Plant patents, as distinct from utility patents, have existed since 1930;⁴ plant variety protection certificates, creating intellectual property rights in plants distinct from patent rights, have existed since 1970.⁵ Both of these laws granting intellectual property rights in plants have generated infringement litigation. However, the number of cases has been relatively few.⁶

In comparison to the small number of infringement cases under the Plant Patent Act or the Patent Variety Protection Act, infringement litigation in utility patents on plants is likely to generate a large number of cases.⁷ At least three generalized explanations portend

* Earl Sneed Centennial Professor of Law, University of Oklahoma, College of Law. © 2003 Drew L. Kershen, all rights reserved. The author thanks the two commentators at the Ahrens Tort Symposium and six other readers who commented on the Symposium paper. In revising this article for publication, the author carefully considered their comments, which thereby improved and clarified the analysis and argument.

1. *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124 (2001); *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).

2. 534 U.S. 124 (2001).

3. By implication, the issues discussed in this article also apply to patented animals. However, this article focuses on patents on plants and makes reference only to patent infringement relating to patents on plants.

4. Plant Patent Act of 1930, 35 U.S.C. §§ 161-164 (2000). "Whoever invents or discovers and asexually reproduces any distinct and new variety of plant . . . may obtain a patent therefor." *Id.* § 161.

5. Plant Variety Protection Act of 1970, 7 U.S.C. §§ 2321-2583 (2000). Plant variety protection certificates exist for new, distinct, uniform, stable, sexually reproduced or tuber-propagated plant varieties. *Id.* § 2402.

6. For infringement cases involving the Plant Patent Act, see, for example, *Imazio Nursery, Inc. v. Dania Greenhouses*, 69 F.3d 1560 (Fed. Cir. 1995), and *Yoder Brothers, Inc. v. California-Florida Plant Corp.*, 537 F.2d 1347 (5th Cir. 1976). For infringement cases involving the Plant Variety Protection Act, see, for example, *Asgrow Seed Co. v. Winterboer*, 513 U.S. 179 (1995), and *Delta & Pine Land Co. v. Sinkers Corp.*, 177 F.3d 1343 (Fed. Cir. 1999).

7. As of November 15, 2003, ten reported decisions relate to utility patent infringement involving plants in the United States. Eight cases have Monsanto Company as the plaintiff, claiming infringement against defendants. See *Monsanto Co. v. McFarling*, 302 F.3d 1291 (Fed. Cir. 2002); *Monsanto Co. v. Swann*, No. 4:00-CV-1481 CEJ, 2003 WL 1487095 (E.D. Mo. Jan. 8,

this outcome. First, utility patents give patent owners greater protection for their patent rights, and these utility patents can exist in any invented plant no matter how it is reproduced.⁸ Hence, seed developers now have stronger legal incentives to pursue infringement cases.⁹ Although utility patents are not dependent upon any particular technology,¹⁰ agricultural biotechnology companies are particularly likely to benefit from utility patents. Second, patented transgenic crops are now widely planted in Canada and the United States.¹¹ Despite this widespread planting of utility-patented seeds, farmers may not readily abide by the patent rights in seeds because of the tradition of saving seed from one crop as the seed for the crop to be grown in the following year.¹² Or, in contrast to tradition, farmers may simply want to avoid the annual seed expense for superior seeds by saving seed to produce more than one crop from the seed input purchased from the

2003); *Monsanto Co. v. Scruggs*, 249 F. Supp. 2d 746 (N.D. Miss. 2001); *Monsanto Co. v. Hartkamp*, No. 00-164-P, 2001 WL 34079482 (E.D. Okla. Apr. 19, 2001); *Monsanto Co. v. Trantham*, 156 F. Supp. 2d 855 (W.D. Tenn. 2001); *Monsanto Co. v. Byrd*, No. 7:99-CV-154-F1, 2000 WL 33952260 (E.D. N.C. Dec. 11, 2000); *Monsanto Co. v. Dawson*, No. 4:98CV2004 TCM, 2000 WL 33953542 (E.D. Mo. Nov. 24, 2000); *Monsanto Co. v. Mayfield*, No. 4:99-CV-538 CAS, 2000 U.S. Dist. LEXIS 22386 (E.D. Mo. July 13, 2000). These eight cases involve transgenic seeds. Two cases involve Pioneer Hi-Bred International, Inc. as the plaintiff. *J.E.M. Ag Supply, Inc.*, 534 U.S. 124; *Pioneer Hi-Bred Int'l, Inc. v. Ottawa Plant Food, Inc.*, 283 F. Supp. 2d 1018 (N.D. Iowa 2003). The *Pioneer* cases involved patents on non-transgenic seeds. See also *Monsanto Co. v. Nelson*, No. 4:00-CV-1636 CEJ, 2001 WL 34079479 (E.D. Mo. Sept. 10, 2001) (arising from infringement dispute, but the cited decision focuses on issues other than patent infringement).

Canada has one reported case. *Monsanto Canada Inc. v. Schmeiser*, 2001 FCT 256, *aff'd*, 2002 FCA 309, appealed to Supreme Court of Canada. On May 21, 2004, the Supreme Court of Canada decided the *Schmeiser* appeal. The Supreme Court upheld the lower court rulings favoring Monsanto Canada's patent in transgenic genes and cells in transgenic canola. *Schmeiser v. Monsanto Canada Inc.*, 2004 SCC 34.

8. Utility patents must enable one with skill in the art to make and use the invention. 35 U.S.C. § 112 (2000). This enablement requirement is usually satisfied for sexually reproduced plants by depositing seed. However, the enablement requirement becomes very difficult to satisfy when depositing seed is not an available alternative for the patent applicant.

9. See Mark D. Janis & Jay P. Kesan, *The Future of Patent Law: U.S. Plant Variety Protection: Sound and Fury . . . ?*, 39 HOUS. L. REV. 727, 776 (2002). The Janis & Kesan article focuses on the Plant Variety Protection Act with clear contrast to the stronger legal and economic incentives offered by utility patent law.

10. *J.E.M. Ag Supply, Inc.*, 534 U.S. 124; *Ottawa Plant Food, Inc.*, 283 F. Supp. 2d 1018. Both cases involve utility patented seed created by conventional breeding.

11. The United States grew 35.7 million hectares (78.5 million acres) of transgenic crops in 2001; Canada grew 3.2 million hectares (6.4 million acres) in the same year. CLIVE JAMES, GLOBAL REVIEW OF COMMERCIALIZED TRANSGENIC CROPS § 2.2 (ISAAA Briefs # 23, 2002), available at http://www.isaaa.org/publications/briefs/Brief_23.htm. Data from 2003 in the United States indicates the following about transgenic patented crops: 80% of soybeans (herbicide-tolerant); 58% of cotton (herbicide-tolerant); 40% of cotton (Bt insect-resistant); 30% of corn (Bt insect-resistant); 16% of corn (herbicide-tolerant). ECON. RESEARCH SERV., U.S. DEP'T OF AGRIC., ADOPTION OF GENETICALLY ENGINEERED CROPS IN THE U.S., <http://www.ers.usda.gov/data/BiotechCrops>. However, the acreage planted with utility patented seeds is higher than this acreage for transgenic crops because patented seeds also arise from nonbiotechnology techniques of breeding. The author does not know of figures relating to the total acreage of crops from utility patented seeds from all breeding techniques.

12. For contrasting views on the tradition of farmers saving seeds, compare Nathan A. Busch, *Jack and the Beanstalk: Property Rights in Genetically Modified Plants*, 3 MINN. INTELL. PROP. REV. 1 (2002), with Jeremy P. Oczek, Note, *In the Aftermath of the "Terminator" Technology Controversy: Intellectual Property Protections for Genetically Engineered Seeds and the Right to Save and Replant Seed*, 41 B.C. L. REV. 627 (2000).

seed dealer.¹³ Third, agricultural biotechnology, including its patented seeds, has been very controversial. Litigation is likely to be a regular feature of this broader controversy, extending to litigation about patent rights and their infringement.

Patents on seeds and the plants from those seeds obviously differ from patents on most inventions in a fundamental characteristic: reproduction.¹⁴ Companies that patent seeds and sell them to farmers clearly must intend farmers to plant those seeds to produce a crop. Consequently, companies are at risk that farmers will save seeds and reproduce the patented product. Companies have developed or are developing two responses to the reproduction risk on patented seeds. First, companies require farmers purchasing the patented seed to enter into a contractual relationship with the company whereby the farmer agrees to produce and market the crop from the patented seeds only for nonreproductive purposes.¹⁵ Second, companies are working on genetic trait protection systems that biologically prevent the harvested seeds of planted patented seeds from either being reproductively viable or reproductively expressing the patented trait. Depending on the trait protection system bred into the seeds, farmers could not or would not likely save seeds for replanting in the following crop year because either the saved seed would not grow or the saved seed would not express the desired patented trait.¹⁶

13. William W. Fisher, *The Impact of Terminator Gene Technologies on Developing Countries: A Legal Analysis*, in *BIOTECHNOLOGY, AGRICULTURE AND THE DEVELOPING WORLD* 137, 145 (Timothy Swanson ed., 2002). As part of his article, Professor Fisher provides an analysis of the economic advantage and subsidy that farmers saving seed gain in comparison to farmers who do not save seed.

14. Intellectual property rights, primarily copyright, in computer software, music tapes, music-video CDs, and movie DVDs are examples of other products that purchasers can easily reproduce with widely available, easy-to-use technologies. Hence, patents on plants are not unique in the legal issues created by the characteristic of reproduction.

15. For example, the 2004 Monsanto Technology/Stewardship Agreement states in part that grower agrees,

- To use Seed containing Monsanto Technologies solely for planting a single commercial crop.
- Not to supply Seed containing patented Monsanto Technologies to any other person or entity for planting. Not to save any crop produced from this Seed for planting and not to supply Seed produced from this Seed to anyone for planting.
- Not to use or to allow others to use Seed containing patented Monsanto Technologies for crop breeding, research, generation of herbicide registration data, or Seed production (unless Grower has entered into a valid, written production agreement with a licensed seed company).

Monsanto Technology/Stewardship Agreement 2004 (on file with author).

16. For two short, clear explanations of genetic trait protection systems, see Zac Hanley & Kieran Elborough, *Emerging Biotechnologies: Upgrading the Terminator*, ISB REPORT (Nov. 2002), at <http://www.seedquest.com/News/releases/2002/november/5009.htm>, and Zac Hanley & Kieran Elborough, *Re-Emerging Biotechnologies: Rehabilitating the Terminator*, ISB REPORT (June 2002), at <http://www.gene.ch/gentech/2002/Jun/msg00093.html>.

II. INADVERTENT PRESENCE

While companies are at risk of farmers saving patented seeds for reproductive purposes, farmers are at risk of the inadvertent presence of patented seeds on their farmlands. Inadvertent presence can occur through several events.

- Plants shed pollen. Pollen from patented plants can travel to the fields of neighbor farmers by wind or insects. Plants pollinated from this pollen flow will produce some number of seeds with the patented traits.
- Seed is mixed accidentally. Patented seed can mix with nonpatented seed. For example, seeds may be commingled during storage. This often occurs because the same equipment (such as seed drills or harvesting equipment) is used on several fields without the equipment being thoroughly cleaned, or through mistaken loading and handling of seed bags by seed dealers or farmers.
- Volunteer plants (i.e., plants that sprout and grow from seed of a previous crop) exist in farmers' fields. Several examples suffice to describe the source of volunteer plants. Farmers plant a patented crop on a field one year, and the following year the farmer finds volunteer plants of the patented variety. Farmers have fields next to roads where passing trucks create the conditions for patented seeds to be swept onto the roadside land. Farmers have tires, shoes, or clothes where trapped patented seed comes loose while in another field or on another farm. Wild and domesticated animals spread seed in their manures and from their feet or hair.

Of course, pollen flow, seed mixing, and volunteer plants occur with all seeds, not just patented seeds. Yet, these three common events create a unique legal issue when these events involve patented seeds. That unique legal issue may be phrased as follows: Does the farmer whose land has patented seeds by inadvertent presence infringe the patent rights of the patent holder?

This article addresses this legal issue relating to inadvertent presence and infringement in patent law. This article purposefully does not address the distinctly different issue of legal liability for inadvertent presence under legal liability regimes such as tort or environmental law. In order to think clearly and carefully, it is important to keep the ideas and issues relating to inadvertent presence and infringement in patent law separate from inadvertent presence and legal liability.¹⁷

17. For discussion of inadvertent presence and legal liability, see Drew L. Kershen, *Legal Liability Issues in Agricultural Biotechnology*, 6 ENVTL. LIAB. 203 (2002), available at <http://www.nationalaglawcenter.org>. The solution proposed to resolve the issue of inadvertent presence as infringement in patent law (the law of stray animals) may not be equally suitable as a solution to the issue of inadvertent presence and legal liability. *Id.* The fact that the law of stray animals may not equally fit the inadvertent presence/infringement issue and inadvertent presence/legal liability issues is another reason why this article only addresses the former issue to the exclusion of the latter issues. *Id.*

A. Inadvertent Presence: Scope

In light of pollen flow, seed mixing, and volunteer plants, inadvertent presence of patented seeds will be widespread and, as a practical matter, inevitable. However, the magnitude of that inadvertent presence can be gauged or even controlled.

The magnitude of pollen flow depends upon the identity of the crop, the environmental conditions at the time of pollen shed, and the geographical distance between the fields. Scientific studies on three major transgenic crops indicate the following:

- Adjacent fields of commercial canola will have much less than 1% gene flow;¹⁸
- A non-transgenic canola field at five meters or more from a transgenic field will have less than 0.14% transgenic seed; at thirty meters, less than 0.03% transgenic seed;¹⁹
- In a soybean experiment with twelve rows of white-flowered beans flanked on each side by four rows of purple-flowered beans, the cross-pollination was 0.41% at .9 meters and 0.03% at 5.4 meters;²⁰ and
- A field study on maize pollen dispersal showed that pollen deposition averaged 89% at 5 meters, 95% at 10 meters, and 98% at 25 meters.²¹

Seed mixing and volunteer plants present questions of proper farm and seed business management. Mistakes and inattention could result in a few patented seeds being dispersed onto a neighboring farm or could result in full bags of seeds being substituted in a purchase from a dealer or in a planting of a field. Everyday activities such as driving on roads, using farm equipment, and moving animals will spread seeds unintentionally. Consequently, the percentage of inadvertent presence from these events cannot be predicted as precisely as pollen flow.²² However, farmers have long experience with land use

18. Mary A. Rieger et al., *Pollen-Mediated Movement of Herbicide Resistance Between Commercial Canola Fields*, 296 SCI. 2386, 2387 (2002).

19. B.K. Staniland et al., *Assessing the Effectiveness of Border Areas in Confining the Spread of Transgenic Brassica Napus Pollen*, 80 CAN. J. PLANT SCI. 521, 521-26 (2000), available at <http://www.nbiap.vt.edu/brarg/brasym96/staniland96.htm>; see also Graham Brookes, *Co-Existence of GM and Non GM Crops: Economic and Market Perspective* (June 2003), <http://www.bioportfolio.com/pgeconomics>. Mr. Brookes' survey of the scientific literature shows that the recommended separation distances for nonGM seed crops is as follows:

Oilseed rape (canola): 1% at 1.5 meters; 0.5% at 10m; 0.1% at 100m;

Corn for grain: 1% at 200 meters; 0.5% at 300m;

Corn for silage: 1% at 130 meters; 0.5% at 200m; 0.1% at 420m.

Id. at 6.

20. Jeffery D. Ray et al., *Soybean Natural Cross-Pollination Rates Under Field Conditions*, 2 ENVTL. BIOSAFETY RES. 133 (2003).

21. KATIE EASTHAM & JEREMY SWEET, EUR. ENV'T. AGENCY, GENETICALLY MODIFIED ORGANISMS (GMOs): THE SIGNIFICANCE OF GENE FLOW THROUGH POLLEN TRANSFER, ENVIRONMENTAL ISSUE REP. NO. 28, at 7, 39 (2002) (discussing a Canadian study and reproducing an informational table).

22. For a general discussion relating to inadvertent presence, see GM SCI. REVIEW PANEL, GM SCIENCE REVIEW: FIRST REPORT (July 2003), <http://www.gmsciencedebate.org.uk/report/pdf/gmsci-report1-full.pdf>. Subchapters 7.1 Introduction and 7.2 Gene flow between crop varieties at pages 195-214 are especially helpful. Cf. F.J. Sundstrom et al., *Identity Preservation of*

practices (such as isolation distances and border rows) and agronomic practices (such as crop rotation, roguing, detasseling, seed segregation, and weed control) for producing certified seed crops. Through land use and agronomic practices, the Association of Official Seed Certifying Agencies confidently sets the purity standards for seeds at 95% or above for various crops.²³

What these scientific studies on pollen flow and the seed certification standards indicate is that inadvertent presence, in the vast majority of instances, will constitute a small percentage of a particular seed lot, either in the field or in the bin. While the specific percentage of inadvertent presence will obviously vary, it is probably accurate to predict that inadvertent presence percentage will be 5% or less (usually significantly less) of a particular seed lot in all but very rare circumstances.²⁴

B. *Inadvertent Presence: Definition*

By definition, inadvertent presence does not exist when a farmer intends the patented seeds to be in his field. Farmers who save patented seeds from one crop year to plant crops in the following year do not have the patented seed by inadvertent presence.²⁵ Additionally, farmers who allow volunteer patented seeds in a field to sprout and grow to maturity as a volunteer crop do not have the patented seed by inadvertent presence. In both these instances, the farmers intend the patented seed to be their seed stock for a crop. These farmers are not

Agricultural Commodities (Agric. Biotechnology in Cal. Series Publ'n No. 8077, 2002), at <http://www.anrcatalog.ucdavis.edu/pdf/8077.pdf>.

23. ASSOC. OFF. SEED CERTIFYING AGENCIES, GENETIC AND CROP STANDARDS (2001). The seed purity standards for hybrid corn are 98%; cotton, 98%; soybean, 98%. *Id.* at 2-29, 2-31, 2-98.

24. In light of the fact that inadvertent presence will be at a very low percentage in a particular field or particular bin, patent holders are very unlikely to institute infringement proceedings against a farmer for inadvertent presence.

In its legal factum (brief) in the Supreme Court of Canada, Monsanto Canada Inc. and Monsanto Company (the respondents) wrote,

In such instances [inadvertent presence], the evidence is that the quantity of unintended or 'volunteer' Roundup Ready canola on the farmer's fields is insignificant, and issues regarding such undesired presence are quickly and satisfactorily resolved by Monsanto and the farmer, without any allegations of patent infringement.

Memorandum of Fact & Law of Respondents ¶ 5 (Oct. 23, 2003), *Schmeiser v. Monsanto Canada Inc.*, Court File No. 29437, Supreme Court of Canada.

Patent holders are likely to institute infringement proceedings against a farmer only when the patent holder believes that it can prove that the farmer does not have the patented gene, cell, or plant in the farmer's field or bin through acts creating inadvertent presence.

25. Whether farmers should be allowed to save seeds from patented crops as seed stock for future crops is a policy debate of significant importance. *E.g.*, Scott Wegner, *The Plant Variety Protection Act: Has the Farmer Exemption Swallowed the Act?*, AGRIC. L. UPDATE, Apr. 1992, at 4-6; Oczek, *supra* note 12. However, the United States utility patent law does not have a statutory exemption from infringement allowing farmers to save seed for replanting. By contrast, the Plant Variety Protection Act has a statutory exemption from infringement for farmers who save seeds to replant on their own farm. 7 U.S.C. § 2543 (2000). These farmers saving seeds cannot sell the seed for reproductive purposes to any other person. *Id.* This article is not about this policy debate concerning whether farmers should be allowed to save seeds from patented crops.

innocent possessors of the patented seed. Rather, these farmers are intentionally using patented seed to produce a crop and, thereby, violate the patent holder's rights unless, of course, the farmer complies with the patent and any accompanying contractual restrictions.²⁶

Similarly, assuming that a farmer's field has patented seed by inadvertent presence, the farmer no longer has the seeds by inadvertent presence if he intentionally identifies, propagates, and saves the patented seeds as seed stock for a crop in a future year. This farmer is not an innocent possessor of the patented seed. Intentionally identifying, propagating, and saving patented seeds as a seed stock for a future crop is an infringement of the patent.²⁷

Inadvertent presence, as discussed in this article, involves *innocent possessors* of the patented seed. Farmers who intentionally and nonmistakenly plant, grow, harvest, or sell a patented crop, without

26. Of the ten United States cases previously noted, all of the defendants, except for Dawson, admitted that they intentionally saved or sold patented seed. Hence, the *Swann*, *McFarling*, *Scruggs*, *Hartkamp*, *Trantham*, *Mayfield*, *Byrd*, *Ottawa Plant Food*, and *J.E.M. Ag Supply, Inc.* cases do not factually involve inadvertent presence. See *supra* note 7. In each of these cases, the court found that the defendants had infringed the utility patent. The *Swann* court explicitly ruled planting and harvesting to be infringing "use" under 35 U.S.C. § 271(a) (2000). *Monsanto Co. v. Swann*, No. 4:00-CV-1481 CEJ, 2003 WL 1487095, at *3 (E.D. Mo. Jan. 8, 2003).

In *Monsanto Co. v. Dawson*, the defendant farmer, at one point in the litigation, asserted that twelve bags of patented seed had been planted mistakenly and against express instructions. *Monsanto Co. v. Dawson*, No. 4:98-CV-2004 TCM, 2000 WL 33953542, at *2 (E.D. Mo. Nov. 24, 2000). While the court expressed skepticism at this assertion in light of evidence of 1992.2 acres of patented crops, the court ruled that mistaken planting is an infringing use under 35 U.S.C. § 271(a). *Id.* The court held that mistaken planting would be relevant on the issues of damages for patent infringement but not liability for patent infringement through unauthorized use by planting. *Id.* The *Dawson* case thus presents a fact pattern that may involve disputed inadvertent presence.

27. The *Schmeiser* case from Canada involves this fact pattern. *Schmeiser* defended on the basis that the patented seed had first been on his farm by inadvertent presence. *Monsanto Canada Inc. v. Schmeiser*, 2001 FCT 256 ¶¶ 11, 29-35, 117. *Monsanto* contested *Schmeiser's* assertion of inadvertent presence. However, Mr. *Schmeiser* also admitted that in 1997 he sprayed suspected Roundup Ready canola with Roundup herbicide, that he harvested the seed from the surviving canola, segregated the harvested seed, and used this segregated seed as the seed stock for his 1998 crop. *Id.* ¶¶ 38-40. Taking into account these facts, the Canadian federal trial court ruled,

Yet the source of the Roundup resistant canola in the defendant's 1997 crop is really not significant for the resolution of the issue of infringement which relates to the 1998 crop. It is clear from Mr. *Schmeiser* himself that he retained seed grown in 1996 in field number 1 to be his seed for the 1997 crop. In 1997, he was aware that the crop in field number 2 showed a very high level of tolerance to Roundup herbicide and seed from that field was harvested, and retained for seed for 1998.

I find that in 1998 Mr. *Schmeiser* planted canola seed saved from his 1997 crop in his field number 2 which seed he knew or ought to have known was Roundup tolerant, and that seed was the primary source for seeding and for the defendants' crops in all nine fields of canola in 1998.

Id. ¶¶ 119-120.

The Canadian Federal Trial Court specifically found that Mr. *Schmeiser's* case did not factually involve inadvertent presence. *Id.* ¶¶ 124-125. As for *Schmeiser's* infringement relating to the 1998 crop, the Canadian court wrote, "Growth of the seed, reproducing the patented gene and cell, and sale of the harvested crop constitutes taking the essence of the plaintiffs' invention, using it, without permission. In so doing the defendants infringed upon the patent interests of the plaintiffs." *Id.* ¶ 123.

authorization from the patent holder, have straightforwardly infringed the patent and cannot qualify as innocent possessors.²⁸

C. *Inadvertent Presence: Proposed Solutions for Patent Law*

Three approaches—damages, interpreting the words “makes, uses,” and intent—are discussed initially as proposed solutions for inadvertent presence and infringement under patent law. These three initial approaches may be considered internal to patent law inasmuch as these three approaches discuss proposed interpretations of the federal patent statutes. The author rejects each of these three internal approaches as not adequately resolving the issue. Consequently, the author continues by discussing two additional approaches—accession/confusion of goods and the law of stray animals—as proposed solutions. These latter two approaches are considered external to patent law inasmuch as they draw on other bodies of case law for the proposed solutions. The federal courts have sufficient equitable powers and analogous case precedents within patent law that federal courts should be able to use these two external bodies of case law as a possible solution to inadvertent presence and infringement under patent law.

1. Damages

While skeptical that inadvertent presence was factually true, the court in *Monsanto Co. v. Dawson*²⁹ held that inadvertent presence did not protect the innocent possessor from liability for infringement. Rather, the court held that the inadvertent presence is relevant to the amount of damages that the jury or judge should award.³⁰ The *Dawson* opinion does not explain the reasoning for the court’s holdings, but it is possible to develop the rationale for the result.

Patent law section 271(a) in the United States Code does not have a mental element for direct infringement.³¹ For example, a person is liable for infringement even if the person independently developed the identical product, as patented, and did so without any

28. The Canadian Federal Court of Appeal states clearly the distinction between a farmer who may qualify as an innocent possessor (using the term “innocent infringer”) through inadvertent presence and a farmer who by intentional, nonmistaken actions infringes a patent. The Canadian Federal Court of Appeal set forth this distinction in its opinion affirming that Schmeiser had infringed Monsanto’s patent. *Schmeiser v. Monsanto Canada Inc.*, 2002 FCA 309 ¶¶ 55-58.

29. No. 4:98-CV-2004 TCM, 2000 WL 33953542 (E.D. Mo. Nov. 24, 2000). For a brief discussion of the *Dawson* case, see *supra* note 26.

30. *Dawson*, 2000 WL 33953542, at *2.

31. 35 U.S.C. § 271(a) (2000). Section 271(a) states, “Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.” *Id.*

knowledge that a patent existed or was about to issue. Patent law gives patent holders a monopoly for their patented product during the life of the patent against everyone. Innocent manufacture, use, or sale are not defenses to an infringement action.³² Similarly, the *Dawson* court likely considered innocent possession through inadvertent presence to be irrelevant because there is no mental element for direct infringement.

At the same time, the *Dawson* court knew that a truly innocent possessor may be protected from unjust harm through the awarding of damages.³³ The United States Code allows courts significant equitable discretion to award reasonable royalties, lost profits, or treble damages to patent holders who prove infringement.³⁴ If Dawson proved inadvertent presence, the court knew that it could award Monsanto Company a reasonable royalty as if Dawson had purchased the seed that he inadvertently used. Moreover, the court also knew that it might be able to invoke 35 U.S.C. § 287³⁵ to award damages *only* after Monsanto Company notified Dawson of the infringement, if Dawson was factually an innocent possessor of the patented seed.

Using damages as a solution to the inadvertent presence issue makes sense within the parameters of patent law infringement. However, two objections are easily articulated about this possible solution. First, the damages solution allows the farmer to be held liable as an infringer. Second, although costs of litigation likely mean that a patent holder would not sue for infringement if inadvertent presence were factually true, the damages solution allows the patent holder significant discretion about whether to sue for infringement.³⁶ Farmers

32. ROBERT L. HARMON, PATENTS AND THE FEDERAL CIRCUIT § 6.2(a) (3d ed. 1994 & Supp. 1996).

33. *Id.* § 12.1(a) (Compensatory Damages, General), § 14.2 (Willful Infringement).

34. 35 U.S.C. § 284 provides,

Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court.

When the damages are not found by a jury, the court shall assess them. In either event the court may increase the damages up to three times the amount found or assessed.

35 U.S.C. § 284 (2000).

35. Under 35 U.S.C. § 287(a),

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

35 U.S.C. § 287(a)

36. For the costs of infringement litigation and the possibility and likelihood of recovering attorney fees in an infringement action, see PETER D. ROSENBERG, PATENT LAW FUNDAMEN-

probably prefer a solution to inadvertent presence, which avoids the negative connotations of being determined an infringer and lessens the discretion of the patent holder about pursuing an infringement action.

2. Interpreting the Words "Makes" and "Uses"

A person infringes a patent whenever that person "without authority makes, [or] uses . . . any patented invention."³⁷ One author on patented crops argues that farmers do not make or use a patented plant by the acts of planting and growing the crop.³⁸ This author argues that farmers cannot make a patented seed and its crop, unlike the developer of the plant in the laboratory, because planting only allows the seed to grow. Nature makes the plant, not the farmer. Further, this author argues that farmers do not "use" the patented crop if it is a patented herbicide-resistant crop, unless the farmer uses a herbicide that takes advantage of the patented characteristic of herbicide-resistance.³⁹

Courts that have ruled on patent infringement disputes between farmers and seed companies have flatly rejected the interpretations of the words "makes" and "uses" set forth in the preceding paragraph. Courts have explicitly held that planting, growing, and harvesting a patented crop is a use of the patented invention.⁴⁰ Moreover, the Canadian courts have explicitly ruled that the planting and growing of the crop is a use regardless of whether a herbicide is or is not used on the crop. The patented invention is the gene, the cell, or the whole plant (depending upon the patent claims), and this invention is unrelated to whether a farmer applies a herbicide to the crop and, if so, which brand.⁴¹

Courts are unlikely to misinterpret the words "makes" and "uses" (so as to exclude planting, growing, and harvesting as infringing uses of patented seeds) to solve the inadvertent presence issue. Construing the words "makes" and "uses" to exclude planting, growing, and harvesting as infringing actions, in reality, is to deny the validity of patents in crops. If courts desire to deny the validity of patents in plants, courts can construe the patent statutes to exclude plants from patenta-

TALS § 17.08 (2d ed. 2001). Of course, if the patentee does not believe that the farmer inadvertently possessed the patented seed, the patentee has stronger reasons to sue. The farmer would defend by claiming inadvertent presence, thereby turning the issue of inadvertent presence into a factual dispute as occurred in the *Dawson* case. See *supra* note 26.

37. 35 U.S.C. § 271(a) (2000).

38. Busch, *supra* note 12, at 134-47.

39. *Id.*

40. *E.g.*, *Monsanto Co. v. Swann*, No. 4:00-CV-1481 CEJ, 2003 WL 1487095, at *3 (E.D. Mo. Jan. 8, 2003); *Monsanto Canada Inc. v. Schmeiser*, 2001 FCT 256 ¶ 123.

41. *Schmeiser*, 2001 FCT 256, ¶¶ 121-123, *aff'd*, 2002 FCA 309 ¶¶ 42-43, 46.

ble subject matter.⁴² In addition, to construe the word “use” to require the utilization of the specific patented characteristic may make sense to protect farmers when the trait is herbicide-resistance to which the farmer may or may not apply a herbicide. But that definition of “use” offers no protection to farmers when the trait, for example, is insect-resistance or virus-resistance to which the farmer need not apply any additional input. Indeed, when farmers think of these three traits (pesticide-resistance, insect-resistance, and virus-resistance), farmers know they are purchasing better risk-management—risk of weeds, risk of insect infestations, and risk of viral infections—on their farms. By planting and growing patented seeds, farmers use the patented traits in the seeds themselves irrespective of any additional agronomic practices.

3. Intent

Inadvertent presence will be a common occurrence for patented plants. Inadvertent presence then raises the issue of patent infringement because patent law does not recognize “intent” as an element of infringement. Infringement occurs if the defendant, “without authority makes, uses, offers to sell, or sells . . . any patented invention during the term of the patent.”⁴³ This is true regardless of the mental state of the person who does the infringing acts.⁴⁴

Obviously, one possible solution to infringement by inadvertent presence would be to propose that legislatures should add “intent” as an element of infringement. Alternatively, courts could interpolate “intent” into infringement cases involving patented plants.

One author has proposed that courts interject an intent element into cases involving patented plants.⁴⁵ She argues that patented plants, particularly transgenic patented plants, are so fundamentally different from all other patented inventions, because of their reproductive capabilities, that courts should develop different standards for

42. *E.g.*, *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124, 147 (2001) (Breyer, J., dissenting); *Diamond v. Chakrabarty*, 447 U.S. 303, 318 (1980) (Brennan, J., dissenting); *see also* *Harvard Coll. v. Canada (Commissioner of Patents)*, 2002 SCC 76 (holding transgenic animals are not patentable subject matter within the Canadian patent statutes). When the Supreme Court of Canada issues its opinion in the *Schmeiser* appeal, the Supreme Court will assuredly focus on whether transgenic plants are patentable subject matter and will most probably not focus on the words “makes” and “uses” to exclude planting, growing, and harvesting as actions of patent infringement.

The Busch article, *supra* note 12, is an extended argument against the validity of patents in crops, particularly transgenic crops. The Busch article's interpretation of the words “makes” and “uses” in the infringement statutes of patent law is part of this extended argument.

43. 35 U.S.C. § 271(a) (2000).

44. For discussion of patented plants and the fact that patent infringement does not have a mental element, *see* Brad Sherman, *Biological Inventions and the Problem of Passive Infringement*, 13 AUSTL. INTELL. PROP. J. 146 (2002).

45. Hilary Preston, Note, *Drift of Patented Genetically Engineered Crops: Rethinking Liability Theories*, 81 TEX. L. REV. 1153 (2003).

patented plants than for other patented inventions.⁴⁶ Specifically, she argues that courts should interpret infringement statutes to have an "intent-to-acquire" element for patents involving patented plants.⁴⁷

Courts are unlikely to adopt an "intent-to-acquire" standard to solve the inadvertent presence issue in infringement for three reasons. First, patented plants obtained through modern techniques of plant breeding are not the only patented inventions with the characteristic of reproducibility. Plant patents on asexually reproduced plants have existed in United States law for more than seventy years.⁴⁸ Patented asexually reproduced plants are easily reproducible through, for example, cuttings. As another example, computer programs have been copyrighted since the 1960s.⁴⁹ Computer programs are easily reproducible through copying on any standard computer. Hence, patented plants are not fundamentally different from other inventions because of the reproductive characteristic. Rather than responding by introducing a mental element into plant patent and computer software infringement actions, courts have responded sensibly that the unauthorized acts of cutting⁵⁰ and copying⁵¹ are acts of infringement that deprive the inventor of her invention. Similarly, courts will sensibly respond that planting, growing, or harvesting a patented plant without authority infringes the patent rights in the plant.

Second, the proposed "intent-to-acquire" standard is overly broad as a solution for inadvertent presence. As proposed, the "intent-to-acquire" standard is meant to protect persons from infringement actions if they can prove that they did not have the "intent-to-acquire" the patented invention at the time they initially came into possession. Thus, if a person found an asexually-reproducible plant in her garden, a software program on her computer, or a utility patented plant on her farm, the "intent-to-acquire" standard would allow that person forever after to engage in the volitional actions of cutting, copying, or growing without liability for patent infringement. Obviously, the "intent-to-acquire" standard would significantly deprive patent holders of their limited monopoly rights under patent law. Indeed, as applied to utility patented plants, the "intent-to-acquire" standard is meant to allow the saving of seed by farmers for future crops.⁵² Thus,

46. *Id.* at 1157-58, 1167-73.

47. *Id.* at n.45.

48. Plant Patent Act of 1930, 35 U.S.C. §§ 161-164 (2000).

49. Note, *Computer Programs and Proposed Revisions of the Patent and Copyright Law*, 81 HARV. L. REV. 1541, 1548 (1968).

50. *E.g.*, *Yoder Bros., Inc. v. Cal.-Fla. Plant Corp.*, 537 F.2d 1347, 1382-84 (5th Cir. 1976); *Armstrong Nurseries, Inc. v. Smith*, 170 F. Supp. 519 (E.D. Tex. 1958).

51. *E.g.*, *Bucklew v. Hawkins, Ash, Baptie & Co.*, 329 F.3d 923 (7th Cir. 2003); *Beckman Instruments, Inc. v. Cincom Sys., Inc.*, 232 F.3d 893 (9th Cir. 2000).

52. Preston discusses inadvertent presence but in the context of an argument that is actually directed at justifying the saving of seeds by farmers for crops in future years. Preston, *supra* note

the “intent-to-acquire” standard is not directed narrowly (or even primarily) at the issue of inadvertent presence in infringement actions. Neither legislatures nor courts are likely to adopt an “intent-to-acquire” standard for infringement actions because that standard radically deprives the patent owner of its limited monopoly and basically destroys the economic incentive patent law offers for inventive creativity.⁵³

Third, the utility patent statutes do not distinguish between technologies. Hence, there is no statutory basis for treating infringement in plant breeding technologies differently from infringement in any other technology. As for inventions by all other technologies, “intent” is not an element of infringement. Consequently, courts have no statutory basis for adding “intent” as an element of infringement for plant breeding technologies.

4. An Inadvertent Presence Exception to the Infringement

In light of the factual reality that inadvertent presence will exist for patented crops, the patent statutory provisions on infringement could be amended to provide for an explicit exception from infringement liability for inadvertent presence.⁵⁴ Obviously, a statutory exception could be a solution to the inadvertent presence issue. However, political difficulties exist with this legislative solution.

Whether the legislature is motivated to adopt an exception for inadvertent presence is likely contingent on both constituencies (the inventor community and the farmer community) agreeing to support a specific proposal. These two constituencies may have difficulty in reaching agreement on a specific proposal due to differing interests about the precise language and scope of the exception and about who should bear the burden of proof relating to inadvertent presence.⁵⁵

45. She does not carefully and clearly distinguish the issue of inadvertent presence in infringement actions as a separate issue. The policy debate about whether farmers should be allowed to save seed under various intellectual property laws is distinct from the issue of inadvertent presence and infringement. See *supra* note 25.

53. Professor Sherman also understands that an “intent” element in infringement risks depriving the patentee of a “property right of sufficient strength.” Sherman, *supra* note 44, at 153 n.44 and accompanying text.

54. The Canadian Biotechnology Advisory Committee (CBAC) recommended a legislative solution to the inadvertent presence issue—called the innocent bystander—in a report to the Government of Canada. CAN. BIOTECHNOLOGY ADVISORY COMM., PATENTING OF HIGHER LIFE FORMS AND RELATED ISSUES Recommendation 4: Innocent Bystanders (June 2002), <http://cbac-cccb.ca/epic/internet/incbac-cccb.nsf/vwGeneratedInterE/ah00188e.html> [hereinafter CBAC]. For a general discussion of Canadian intellectual property law on plants and seeds, see Stan Benda, *The Sui Generis System for Plants in Canada: Quirks and Quarks of Seeds, Suckers, Splicing & Brown-Bagging for the Novice*, 20 CAN. INTELL. PROP. REV. 323 (2003).

55. Although CBAC did not present a specific proposal for legislative enactment, the CBAC wording of its recommendation might serve as a rough draft of a legislative proposal. The CBAC Recommendation 4 states, “We recommend that the Patent Act include provisions that protect innocent bystanders from claims of patent infringement with respect to adventitious

D. Accession and Confusion of Goods⁵⁶

Accession and confusion of goods are closely related legal concepts.⁵⁷ Courts use both concepts to determine the title to and ownership of personal property when the personal property of two persons becomes intermingled or commingled. Courts use the concepts of accession and confusion of goods to answer the following question: Which of the two owners of personal property that has become intermingled or commingled has title to the intermingled or commingled item or mass?⁵⁸

While the legal concepts of accession and confusion of goods are closely related, definitions allow conceptual separation. *American Jurisprudence, Second* defines these terms. Accession "generally signifies the acquisition of title to personal property by its conversion into an entirely different thing by labor bestowed on it or by its incorporation into a union with other property."⁵⁹ Confusion of goods is defined as a common law doctrine that

deals with the method by which one may get title to personal property that has been indistinguishably or inseparably intermingled with one's own property. As a general rule, the confusion of goods theory attaches only when the commingled goods of different parties are so confused that the property of each cannot be distinguished, or when the goods and services contributed create a new thing with an identity separate from the component parts.⁶⁰

Accession fits a fact pattern in which the personal property of two owners becomes incorporated or united into one new item of personal property that is different in kind from the initial items of personal property. For example, if a lawful possessor of land uses the clay from the land to make bricks, but is then lawfully dispossessed of the land by the true owner, who owns the bricks (the maker of the bricks or the true owner of the land)? In 1829, the Court of Appeals of Kentucky used the concept of accession to hold that the true owner of the land owned the unburnt bricks while the dispossessed possessor of the land

spreading of patented seed or patented genetic material or the insemination of an animal by a patented animal." CBAC, *supra* note 54.

56. The concepts of accession and confusion of goods are legal concepts known to United States jurisprudence. In other nations (both common law and civil law), these American concepts of accession and confusion of goods may be embedded conceptually in what is known as the law of admixture. This author uses the terminology of American jurisprudence.

57. Whether the concepts of accession and confusion of goods should be treated as one or as separate may best be illustrated by how the two major American legal encyclopedias handle these concepts. *American Jurisprudence, Second* combines these concepts into one entry. 1 AM. JUR. 2D *Accession and Confusion* §§ 1-25 (1994). By contrast, *Corpus Juris Secundum* separates them into two entries. 1 C.J.S. *Accession* §§ 1-12 (1985); 15A C.J.S. *Confusion of Goods* §§ 1-16 (2002).

58. Of course, third parties (such as secured creditors) may also have a claim to the intermingled or commingled item or mass. See U.C.C. §§ 9-335, -336 (2001).

59. See AM. JUR. 2D *Accession and Confusion*, *supra* note 57, § 1.

60. *Id.* § 2.

owned the burnt bricks.⁶¹ The Court of Appeals opined that the unburnt bricks were still clay (the land) and belonged to the landowner.⁶² The Court of Appeals also opined that the burnt bricks were no longer clay because "the inherent qualities of the clay have been transmuted by burning."⁶³

If the Kentucky court's opinion was applied to cross-pollinated seed, the Kentucky court could use the concept of accession to decide who (the patentee of a plant or the farmer of a field) owns seed that develops from the pollen drift of a patented crop onto the plants of a farmer growing a nonpatented crop. Accession fits the fact pattern of pollen-drift seeds.

Confusion of goods fits the fact pattern in which the personal property of two owners is combined into one item or mass to become unidentifiable or indistinguishable even though the personal property of the two owners has not become one new item of personal property different in kind from the original items of personal property. For example, a logger cut timber from his own land and, due to confusion about boundaries, the land of a neighbor. The logger worked the timber into staves, which were identical and indistinguishable regardless of whether the timber came from the logger's land or came from the neighbor's land. In 1902, the Supreme Court of Arkansas used the legal concept of confusion of goods to rule that both the logger and the neighbor had ownership claims to a determinative share of the staves.⁶⁴

If the Arkansas court's opinion was applied to plants, the Arkansas court could use the concept of confusion of goods to determine who (the patentee of a plant or the farmer of a field) owns volunteer plants and the harvested seed from those volunteer plants that are on the farmer's field by inadvertent presence. Confusion of goods fits the fact pattern of inadvertent presence from volunteer plants and mixed seeds (as contrasted to pollen-drift seeds).

61. *Lampton's Ex'rs v. Preston's Ex'rs*, 24 Ky. (1 J.J. Marsh.) 454 (1829).

62. *Id.* at 458.

63. *Id.* at 467; *see also* *Carpenter v. Lingenfelter*, 60 N.W. 1022 (Neb. 1894) (describing an ownership dispute about grass cut and turned into hay).

64. *Rust Land & Lumber Co. v. Isom*, 66 S.W. 434 (Ark. 1902). The Supreme Court of Arkansas wrote,

The parties are not tenants in common. The plaintiff [Rust Land & Lumber Co.] owns a certain number of staves, which without its fault have been mixed by defendant [Isom] with other staves of his own. Conceding that this was innocently done, yet if the staves mingled are of the same kind, quality, and value, a majority of us are of the opinion that the plaintiff can recover its staves, or an equal number to be taken from the common mass, if the separation can be made without injury.

Id. at 437-38.

For another example of a court using the concept of the confusion of goods, *see Reeves v. Reeves*, 92 So. 551 (Ala. 1922) (discussing an ownership dispute about a commingled bin of corn, which was grown by two joint tenants).

Two authors who have addressed the issue of inadvertent presence and infringement liability have urged courts to adopt the law of accession and confusion of goods (in English legal terminology, the law of admixture) as a solution to the issue.⁶⁵ These authors urged that "judicial creativity in this area is precisely the sort of intervention that will be needed to deal with an almost entirely new form of technology, and the problems flowing from it, which a patent law still rooted in concepts designed to deal with mechanical inventions seems unable to anticipate."⁶⁶

This author agrees that the law of accession and confusion of goods could serve as legal concepts by which to resolve the issue of inadvertent presence and patent infringement. However, there are several drawbacks to using these legal concepts as the conceptual solution.

The law of confusion of goods developed from necessity to resolve disputes between competing owners of property when the intermingled or commingled properties were unidentifiable and indistinguishable. If the property of the two owners can be separated (i.e., identified and distinguished), the law of confusion of goods does not apply.⁶⁷ With respect to volunteer plants and mixed seeds, scientific tests exist that can accurately identify and distinguish, at the genetic level, patented plants/seeds from the nonpatented plants/seeds,⁶⁸ even though to the human eye these plants and seeds are exactly the same. Consequently, it is doubtful that parties to a patent infringement dispute could invoke the law of confusion of goods to resolve the issue of inadvertent presence.

The law of accession attempts to resolve disputes between competing property owners by looking at factors that compare the essence of the original item of tangible property with the essence of the new intermingled or commingled item of tangible property. Using the con-

65. Maria Lee & Robert Burrell, *Liability for the Escape of GM Seeds: Pursuing the 'Victim'?*, 65 MOD. L. REV. 517, 525-27 (2002).

66. *Id.* at 526. Professors Lee and Burrell discuss the law of admixture after concluding that neither case-law doctrines nor presently available statutory exceptions in patent law have a satisfactory solution for inadvertent presence. *Id.* at 523-25.

Professor Brad Sherman implies that the law of admixture is the solution that he too would favor to resolve the issue of inadvertent presence and infringement. Sherman, *supra* note 43, at 153-54.

67. See 1 AM. JUR. 2D *Accession and Confusion*, *supra* note 57, §§ 2, 16; 15A C.J.S. *Confusion of Goods*, *supra* note 57, § 6.

68. The author is aware of three scientific tests: bioassay (substance effect on a living system), polymerase chain reaction technology (DNA), and enzyme-linked immunosorbent assay technology (protein). For brief explanations of these bioassay, PCR, and ELISA tests, see KIMBALL R. NILL, GLOSSARY OF BIOTECHNOLOGY TERMS 75, 194-95 (2d ed. 1998).

For a fuller discussion of testing for genetically-modified content, see AGRIC. & ENV'T BIOTECHNOLOGY COMM'N, GM CROPS? COEXISTENCE AND LIABILITY (Nov. 2003), http://www.aebc.gov.uk/aebc/reports/coexistence_and_liability_aebc_1.pdf.

cept of accession, courts attempt to answer questions about the essence of the tangible property, like the following:

- What is the principal portion and what is the accessory portion of the new item of property;⁶⁹
- Has there been a change in identity (species) between the original item of property and the new item of property;⁷⁰
- Which is the greater, primary, dominant chattel and which is the lesser, secondary, subordinate chattel;⁷¹
- What is the relative value or relative worth of the original item of property as compared to the new item of property;⁷²
- What is the moral blameworthiness of the competing owners (for example willful trespass, innocent trespass, accidental trespass) so as to protect the innocent owner?⁷³

These essence questions do not give clear and consistent guidance to courts as to how to resolve ownership disputes about intermingled or commingled property. The questions appear to call forth highly subjective responses from the judges handling the property dispute. Any answers to these questions will almost assuredly guarantee differences of opinion that will not create predictable results that treat like-cases alike.⁷⁴

Additionally, the doctrines of accession and confusion of goods are designed for tangible personal property. It is not clear how these

69. See 1 AM. JUR. 2D *Accession and Confusion*, *supra* note 57, § 8; 1 C.J.S. *Accession* § 4 (1985).

70. See 1 AM. JUR. 2D *Accession and Confusion*, *supra* note 57, § 6; *Accession*, *supra* note 69, § 8(b).

71. See 1 C.J.S. *Accession*, *supra* note 69, § 5. Professors Lee and Burrell wrote, "Rather, the law of admixture also comes into play in cases of 'accession,' that is, where one chattel has become attached to a dominant chattel, with the consequences that the whole becomes the property of the owner of the principal goods . . . [t]he question would then be whether the tangible or the intangible should be treated as the 'dominant' property—ultimately a question of policy. Lee & Burrell, *supra* note 65, at 526.

72. See 1 AM. JUR. 2D *Accession and Confusion*, *supra* note 57, § 8; 1 C.J.S. *Accession*, *supra* note 69, § 8(c).

73. See 1 AM. JUR. 2D *Accession and Confusion*, *supra* note 57, §§ 5-6; 1 C.J.S. *Accession*, *supra* note 69, §§ 7-8.

74. As Melissa K. Stull, author of *Accession and Confusion*, writes, "No definite rule exists regarding what constitutes a change of identity within the meaning of the rules stated, and differences of opinion exist." 1 AM. JUR. 2D *Accession and Confusion*, *supra* note 57, § 6. Ms. Stull also writes, "It is not the excess of the artificial over the natural value, but the degree of such excess, that is the controlling principle in such cases. Since this degree may not be precisely ascertained, the decisions do not conform to any well-defined principles." *Id.* § 8.

The author of C.J.S. *Accession* writes, "There is a conflict among authorities as to what constitutes a change of identity, and no satisfactory test for determining the question applicable to all situations has yet been developed." 1 C.J.S. *Accession*, *supra* note 69, § 8(b). The same author also writes, "The rule for these cases [on relative value] is arbitrary, since it must depend on a sound discretion, exercised in the peculiar circumstances of each individual case, and a decision in one case cannot be conclusive authority for any other case of different circumstances." *Id.* § 8(c).

Professors Lee and Burrell write, "Given the dearth of English case law on the law of admixture, the confused terminology, the conceptual disagreements and the long shadow cast by Roman law in this area, any discussion of how the [inadvertent presence] argument would have fared in England and Wales is fraught with difficulty." Lee & Burrell, *supra* note 65, at 525.

To gain an impression of how confusing and unintelligible the law of accession can be, see JOHN CHIPMAN GRAY, 1 LAW OF PROPERTY § 7 (1888).

doctrines can be adapted easily, or sensibly, to patents that are intangible personal property.

In light of these drawbacks to the law of confusion of goods and the law of accession, these two legal concepts are not good candidates for a satisfactory resolution of the issue of inadvertent presence in patent infringement.⁷⁵ Yet, both legal concepts enfold ideas that are worth pursuing to gain a satisfactory resolution of the inadvertent presence issue. The law of stray animals enfolds the worthwhile ideas from the law of confusion of goods and the law of accession without their drawbacks. I propose that the law of stray animals is a very helpful guide to judges as they grapple with the issue of inadvertent presence in patent infringement. As a very helpful guide, the law of stray animals is the best candidate for a satisfactory resolution, in most fact patterns, of the issue of inadvertent presence in patent infringement cases.

III. THE LAW OF STRAY ANIMALS

This next section will provide a discussion of the legal principles of the law of stray animals. After describing these principles, this article will end by applying the law of stray animals to several scenarios in which inadvertent presence in infringement actions may be an issue.

The law of stray animals consists of three strands—the law of estrays rooted in common law as supplemented by statutes;⁷⁶ the law of animals running at large rooted in various state statutes as supplemented by court decisions;⁷⁷ and the common law action of distraint that allows one person to seize the personal property (in this instance, animals) of another person in specified circumstances.⁷⁸ The law of

75. In *Schmeiser v. Monsanto Canada Inc.*, the Canadian Court of Appeals used concepts similar to accession and confusion of goods in four paragraphs of its opinion. 2002 FCA 309 ¶¶ 51-54. The court opined, "Generally, the existence of such a conflict of rights is not relevant to the determination of infringement, but only when fashioning the remedy if infringement is found." *Id.* ¶ 51.

76. 4 AM. JUR. 2D *Animals* § 56 (1995); 3B C.J.S. *Animals*, §§ 123-136 (2003).

77. 4 AM. JUR. 2D *Animals* §§ 48-55 (1995); 3B C.J.S. *Animals* §§ 138-169 (2003). The law of animals running at large is rooted in statutory enactments because, under American common law and custom, owners of animals did not have a duty to confine their animals. The American common law and custom allowed animals to roam with owners being at risk of liability, especially through an action of trespass on the private lands of others, if their animals caused damage to the person or property of another. Statutes about animals running at large restrict and regulate the American common law and custom of free roaming animals. See 4 AM. JUR. 2D *Animals*, *supra*, § 48; see, e.g., *Kimple v. Schafer*, 143 N.W. 505 (Iowa 1913) (holding that fowl are free commoners that are allowed to roam freely; injunction not available to a landowner seeking to force a neighbor to confine and control flock of 200 chickens). *Contra* *Tate v. Ogg*, 195 S.E. 496 (Va. 1938) (holding that common law in Virginia is that owners of domestic animals must confine animals; however, plaintiff-landowner not entitled to injunctive remedy against neighbor whose turkeys trespassed only occasionally and not willfully and whose turkeys caused, at most, trivial and inconsequential damages). See also RESTATEMENT (SECOND) OF TORTS: LIABILITY FOR TRESPASS BY LIVESTOCK § 504 (1977) (trespass liability for freely roaming animals).

78. 4 AM. JUR. 2D *Animals* § 65 (1995); 3B C.J.S. *Animals* §§ 265-273 (2003); see also BAL-LENTINE'S LAW DICTIONARY 361 (3d ed. 1969). "Distrain" is defined as the seizure of "animals

estrays differs conceptually from the law of animals running at large in that estrays are animals of unknown ownership while animals running at large are most often animals of known ownership running free from the control of the owner.⁷⁹ The action of distraint applies to both estrays and to animals running at large.⁸⁰ In particular factual circumstances, especially as to whether a specific statute applies to the factual circumstances in dispute, the differences between these three strands may be legally significant. However, for the purposes of this article, the melding of these three strands into one strand—as the law of stray animals—does no harm and, in fact, allows for clarity of concept and understanding with regards to proposed solution for the issue of inadvertent presence in patent infringement.⁸¹ The law of stray animals balances competing interests of two persons—the interests of the person who suffers damage caused by the roving animal and the interests of the person who owns the stray animal.⁸²

The person who suffers a trespass to land by a roving animal has the legal right to protect person and property from damage. The person who acts to protect against damage by a roving animal acts from necessity and has no obligation to suffer patiently and passively as the damage occurs. In the usual fact pattern, the person acting to protect against damage has two physical options with respect to the roving animal—seize the animal or drive it away.⁸³

or goods of another, as to take up or withhold the cattle or goods of a tenant for the non-payment of rent, or other duties due the landlord . . . To seize and impound a trespassing animal . . . A 'distraint' involves the actual seizure of the property distrained." *Id.* (emphasis added).

79. 3B C.J.S. *Animals* §§ 244, 263-65 (2003).

80. 4 AM. JUR. 2D *Animals* § 65 (1995).

81. This author uses the term "stray animal" to refer to any wandering, roving animal whether legally an estray or an animal running at large. The term "estrays" is the technical legal term for a wandering, roving animal whose ownership is unknown. This author's melding of the laws of estrays, animals running at large, and distraint into the law of stray animals is consonant with the sentiments expressed by the C.J.S. author who wrote,

At common law, the term "estrays" had the well defined meaning of animals found wandering at large whose ownership was unknown, and this is the meaning of the term under some of the statutes. However, in other statutes the term is used in the broader sense of any wandering or roving animal, whether its owner is known or not, and under the definitions it is immaterial how the animal escaped from the owner—whether by his voluntary act, by the act of a trespasser upon his premises, or by a thief.

3A C.J.S. *Animals* § 123 (1973).

82. The author commends the entries on *Animals* in *American Jurisprudence*, *Second* and *Corpus Juris Secundum*, cited in the preceding six footnotes, for general discussion of the law of stray animals and numerous citations to case authority. In the upcoming footnotes in this section of the article, the author will not cite specific sections from these legal encyclopedias. Rather, the author will cite specific, exemplary cases that support the author's statements in the text. If the reader desires to find additional case authority, the reader may consult the legal encyclopedias for an exhaustive set of citations to case law on stray animals.

83. *E.g.*, *Arnold v. Prange*, 541 S.W.2d 27 (Mo. Ct. App. 1976) (holding that a person whose property was invaded is allowed to capture and hold for immediate retrieval by owner; if owner fails to respond, person distraining may lawfully abandon distraint and drive the trespassing animals away); *Commonwealth v. Fourteen Hogs*, 1823 WL 2285 (Pa. Super. Ct. 1823) (holding that the remedy for persons whose property was invaded by roaming hogs was capture, not the killing of the domestic animals); *Tobin v. Deal*, 18 N.W. 634 (Wis. 1884) (holding that a person whose property is invaded by roving calves is allowed to capture, to abandon capture, and to

If the person acting to prevent damage seizes the animal, the seizing person gains the common law right of distraint to hold the animal as a pledge until the animal's owner compensates the seizing person for the damages the roving animal has caused.⁸⁴ Moreover, if the person seizing the animal incurs expenses in the care and custody of the animal before the animal's owner reclaims it, the person seizing the animal is legally entitled to compensation for these expenses from the animal's owner.⁸⁵ Ultimately, if the person seizing the animal does not receive proper compensation from the animal's owner, the person seizing the animal gains the legal authority to sell the animal to recover the damages and the expenses.⁸⁶

While the owner of the land trespassed by the roving animal can protect against the animal, the landowner also acquires obligations to the owner of the animal. The landowner's obligations can be stated as two general principles: (1) the landowner has the obligation of reasonable concern for the trespassing animals as the property of another; and (2) the landowner has the obligation to protect the title (ownership claims) of the owner of the trespassing animal.

When a landowner takes protective actions against the trespassing animals by driving the animals away, the landowner can use only reasonable force. Consequently, the landowner cannot kill a trespassing domesticated animal unless the trespassing animal is in the act of doing bodily harm to persons or animals lawfully occupying the land being trespassed.⁸⁷ The landowner cannot use excessive force to beat or injure the trespassing animal as the landowner drives the animal

drive away from property invaded; a person first exercising distraint may lawfully abandon distraint in favor of driving away).

84. *E.g.*, *Kelly v. Easton*, 207 P. 129 (Idaho 1922) (holding that a landowner is allowed distraint against trespassing horses and cattle as indemnity for damages to the land); *McPherson v. James*, 69 Ill. App. 337 (1896) (holding that a landowner invaded by trespassing turkeys is allowed to hold them for payment of damages to land); *Dickson v. Parker*, 4 Miss. 219 (3 Howard) (1839) (holding that an owner of land invaded by a roaming mule is allowed to seize the animal and hold it until owner pays for damages to the land invaded).

85. *E.g.*, *Hall v. Simmons*, 188 S.E. 597 (Ga. Ct. App. 1936) (holding that statutes on animals running at large grant a person capturing trespassing hogs recovery for damage to land and for expenses of keeping hogs after impoundment); *McPherson*, 69 Ill. App. at 337 (holding that owner of land trespassed upon by roaming turkeys can seize and hold for both damages to the land and for reasonable charges for care and upkeep); *Hall v. Marshall*, 27 P.2d 193 (Or. 1933) (holding that a distraining person is allowed to recover both damages to land and expenses for the care and upkeep of animals seized). *But see Kelly*, 207 P. at 129 (holding that distraint allowed indemnity for recovery of damages to the real property only and distraint did not exist for recovery of expenses for care and upkeep of the seized animals).

86. *Cf. Foland v. Malander*, 381 N.W.2d 914 (Neb. 1986) (quoting Nebraska herd laws, allowing a person seizing animals running at large to foreclose against the impounded animals by civil action, including sheriff sale, to recover for damages to land and cost of maintaining seized animals).

87. *Thompson v. State*, 67 Ala. 106 (1880) (distinguishing landowner's criminal liability for killing hog from civil liability for killing domestic hog); *State v. Churchill*, 98 P. 853 (Idaho 1909) (reversing conviction of landowner who killed trespassing dogs in the act of chasing his hogs and milk cows because such action does not satisfy the mens rea element of maliciousness for the crime charged); *Fourteen Hogs*, 1823 WL 2285 (holding that a person cannot kill roaming domestic hogs only doing property damage).

away from the property upon which the trespass is occurring.⁸⁸ The landowner driving trespassing animals away from his land cannot drive them excessive distances, or in a direction that exposes the trespassing animals to injury or emaciation.⁸⁹ Finally, the landowner seizing the trespassing animals must provide reasonable care for the animals during the time the landowner has the animals impounded.⁹⁰ Each of these landowner obligations of reasonable concern for the trespassing animals allows the landowner to protect his real estate from trespass while simultaneously preserving the trespassing animals as the property of another.

When a landowner seizes trespassing animals, the landowner cannot act towards the seized animals in a manner that violates the ownership claims of the owner of the animals. One purpose of statutes on estrays and animals running at large is to help identify and reunite the roving animals with their owners.⁹¹ Defendants who distrain roving animals should comply with these statutes so that the owner's title in the animals is protected.⁹² Consequently, the landowner may not claim the animals as his own and sell them as part of his own herd or

88. *E.g.*, *Cagle v. Monroe*, 221 S.W.2d 1 (Ark. 1949) (holding that a landowner used excessive force in driving away a neighbor's milch cow when landowner sicced his bulldog upon the trespassing cow).

89. *E.g.*, *Bolten v. Gates*, 100 P.2d 145 (Colo. 1940) (stating that plaintiff sued defendant for damages to pasture by trespassing cattle; defendant counterclaimed against plaintiff for excessive force in driving away the cattle because plaintiff used dogs and expelled cattle from adjoining public range for long distances at a rapid pace; jury verdict for defendant on counterclaim of excessive force to drive trespassing animals away); *Phillips v. City of Golden*, 14 P.2d 1013 (Colo. 1932) (allowing city to drive trespassing cattle from lands around city water supply while exercising care ordinarily observed by a prudent person); *Richards v. Sanderson*, 89 P. 769 (Colo. 1907) (permitting landowner to prudently drive off privately-owned land but landowner cannot drive off adjoining public range); *Tobin v. Deal*, 18 N.W. 634 (Wis. 1884) (discussing the distinction between necessary force and excessive force in driving animals away from land).

90. *E.g.*, *Dickson v. Parker*, 4 Miss. 219 (3 Howard) (1839) (holding landowner, even if landowner lawfully distrained trespassing mule, liable for injury to animal suffered while in landowner's care); *cf.* *Chasteen v. Childers*, 546 P.2d 935 (Kan. 1976). In *Chasteen*, the plaintiff brought suit against an owner of a horse for the care and upkeep while plaintiff held the animals. The court described the inadequate feed, shelter, and veterinary care plaintiff gave to the impounded horses. The inadequate care was the factual background for the ruling, on other legal grounds, that plaintiff was not entitled to recover for the expenses incurred. *Id.* at 942-43.

91. State courts have protected owners' property rights in stray animals by holding statutes on estrays, animals running at large, and distraint to be unconstitutional if the statutes failed to provide adequate notice and procedural due process to owners of the stray animals. *Greer v. Downey*, 71 P. 900 (Ariz. 1903); *Lacey v. Lemmons*, 159 P. 949 (N.M. 1916). These state court decisions protecting the property rights of owners of stray animals are similar to the United States Supreme Court decisions about the federal constitutional requirements for summary procedures in the seizure of personal property. *Mitchell v. W.T. Grant Co.*, 416 U.S. 600 (1974); *Fuentes v. Shevin*, 407 U.S. 67 (1972); *Snidach v. Family Fin. Corp.*, 395 U.S. 337 (1969).

92. *See generally, e.g., Chasteen*, 546 P.2d at 935; *Arnold v. Prange*, 541 S.W.2d 27 (Mo. Ct. App. 1976); *Worthington v. Brent*, 69 Mo. 205 (1878).

If the landowner acts against the ownership claims of the owner of the animal, the landowner has committed the tort of conversion. Conversion is defined as "[a] distinct act of dominion wrongfully exerted over another's personal property in denial of or inconsistent with his [the other's] title or rights therein, or in derogation, exclusion, or defiance of such title or rights." *BALLENTINE'S LAW DICTIONARY* *supra* note 78, at 269.

flock.⁹³ The landowner may not work the animals as his own, even if the landowner worked the animals as compensation for the trespassory damages or the expenses of care and upkeep.⁹⁴ The landowner cannot refuse to return the animals when the owner properly requests their return by identifying the animals and offering reasonable compensation for damages and expenses.⁹⁵ If the distraining landowner does any of the acts just described, the landowner commits the tort of conversion and loses the claim for damages and expenses relating to the distrained animal.

Although the owner of the land trespassed cannot violate the ownership rights of the owner of the stray animal, the stray animal's owner has the concurrent obligation to respond promptly to reclaim the stray animal. The owner of the stray animal cannot allow the animal to impose the burden of self-protection for the trespassed land, nor the burden of reasonable care for the stray animal, upon the owner of the lands trespassed.⁹⁶

93. *E.g.*, *Cutter v. Fanning*, 2 Iowa 580 (1856) (finding that two flocks of sheep, through no fault of the defendant, became mixed while the defendant was taking his flock to market; plaintiff was allowed to identify his sheep and, if identified, defendant converts plaintiff's sheep if defendant refuses to return them prior to selling the combined flocks); *Crabtree v. Ondell*, 235 N.W. 109 (S.D. 1931) (ruling that sufficient evidence was presented to allow a trial on plaintiff's claim of conversion against defendant who captured fourteen straying hogs and allegedly sold the hogs as defendant's own).

94. *E.g.*, *Weber v. Hartman*, 1 P. 230 (Colo. 1883) (noting that defendant impounded stray horses at his livery stable; defendant used the stray horses for two years in his livery business; plaintiff owner has stated a valid claim against defendant for conversion); *Watts v. Ward*, 1 Or. 86 (1854) (assuming defendant acquired the horses as horses running at large, the defendant cannot pay himself for the care and upkeep of the horses by using the horses as his own; plaintiff owner has a conversion claim for the value of the horses); *cf. Chasteen*, 546 P.2d at 942-43 (reversing plaintiff's judgment for expenses of care and upkeep given to defendant's horses because plaintiff failed to abide by statutes on strays about locating owner of stray animals and because plaintiff claimed the stray horses as his own in the face of defendant's evidence that defendant owned the horses).

95. *E.g.*, *Ark. Valley Land & Cattle Co. v. Mann*, 130 U.S. 69 (1889) (upholding verdict for plaintiff in conversion action against defendant on facts that plaintiff made proper demand for return of cattle that had strayed from Wyoming to defendant's Colorado ranch during a blizzard; defendant refused plaintiff's proper demand for return of cattle); *McPherson v. James*, 69 Ill. App. 337 (1896) (holding that after owner of impounded turkeys made tender of adequate payment for damages and expenses, landowner must return the turkeys or be held liable for conversion).

96. *E.g.*, *Foster v. Heitzman*, 294 N.E.2d 705 (Ill. App. Ct. 1973) (upholding jury verdict for defendant that defendant acted reasonably after receiving notice of his cattle straying as trespassers upon plaintiff's land); *Chasteen*, 546 P.2d at 935 (upholding defendant's counterclaim against plaintiff for conversion where defendant owners of trespassing horses made repeated attempts to reclaim the horses from plaintiff who had seized them); *Hall v. Marshall*, 27 P.2d 193 (Or. 1933) (noting that defendant was entitled to a first priority lien for feeding and care of flock of sheep from Oct. 8, 1932 through Apr. 8, 1933; plaintiff ignored defendant's notice to plaintiff to reclaim the roving sheep and improperly imposed upon defendant the burden of reasonably caring for the sheep throughout the fall and winter months); *see State v. Churchill*, 98 P. 853 (Idaho 1909) (noting that the accused drove dogs off his farm several times one day before the dogs returned again late in the afternoon on the same day; defendant then shot the dogs as the dogs were in defendant's corrals actively chasing his pigs and calves; court reversed conviction while emphasizing that the owner of the dogs had a duty to control them and that defendant did not have the duty to keep patiently driving the roving dogs away).

Straying male animals often stray in order to breed the female animals on neighboring lands. If the straying animal impregnates the female animals while trespassing, the owner of the female animal owns the offspring.⁹⁷ In addition, the owner of the female animal has two possible measures of damage arising from the trespassory breeding. First, in accordance with the greater number of authorities, the owner of the female animal is entitled to establish that the female animal has been injured or diminished in value by reason of the trespassory breeding.⁹⁸ Second, in a minority of jurisdictions, the owner of the female animal is also entitled to show the difference in value of the offspring born from the trespassory breeding as compared to the value of the offspring that the female would have produced if no trespassory breeding had occurred.⁹⁹

Shifting the focus from the rights and obligations of the owner of the land upon which the roaming animal trespassed to the liability exposure of the owner of the straying animal, the law of stray animals provides another set of legal rules. Courts do not allow persons who trespass willfully with their animals to benefit from their willful conduct. Consequently, owners may not herd animals onto another's land or across another's land for purposes of pasture, water, or passage. If an owner allows an animal to willfully trespass upon the land of another, the owner of the animal is strictly liable for all property and personal damages that occur.¹⁰⁰

97. *E.g.*, *Ark. Valley Land & Cattle Co.*, 130 U.S. at 69 (holding that conversion of stray cows would include conversion of the calves born to those cows); *see also* *Phipps v. Martin*, 33 Ark. 207 (1878) (a dispute as to ownership of a female mule that had given birth to two offspring during the several year intra-family dispute; the court ruled that whoever was legally determined to be the owner of the female also would be the owner of the offspring); *Johnson v. Stevens*, 91 S.E. 220 (Ga. Ct. App. 1917) (holding that plaintiff was entitled to recover both female dogs unlawfully taken from plaintiff and the puppies born to the female after the unlawful taking).

98. *E.g.*, *Fuchser v. Jacobson*, 290 N.W.2d 449 (Neb. 1980) (noting that straying purebred Angus bull bred neighbor's purebred Hereford cow; proper measure of damages is the difference in value of purebred cow immediately before trespassory breeding and immediately after trespassory breeding); *Hall v. Umiker*, 209 N.W.2d 361 (S.D. 1973) (finding that straying purebred Hereford bull bred neighbor's purebred Angus heifers; court adopts measure of damages as difference in value of heifers before and after the trespassory breeding; dissenting justice argued for measure of damages as difference in value between pedigreed offspring and cross-bred offspring); *Kopplin v. Quade*, 130 N.W. 511 (Wis. 1911) (noting that straying bull bred purebred Holstein-Friesian heifer; damages were the difference between the value of the heifer to the plaintiff before and after the trespass, in view of the uses, which the plaintiff intended to make of the heifer); *see also* *Hosley v. Bamber*, 165 N.W. 687 (Mich. 1917) (adopting the damages rule from *Kopplin v. Quade* where straying bull bred neighbor landowner's purebred heifer).

99. *E.g.*, *Matthews v. Langhofer*, 202 P. 634 (Kan. 1921) (finding that plaintiff whose purebred heifers were bred by defendant's straying bull was entitled to prove both damages to heifers resulting from premature breeding and loss in value of offspring because offspring could not be sold as purebred, registered animals); *see also* *Barnard v. Sweet*, 31 Pa. D. & C.2d 429 (1963) (entitling plaintiff to difference in value of puppies if bred, as contracted, by defendant's pedigreed male as opposed to value of puppies actually born to plaintiff's female from defendant's unpedigreed male).

100. The best discussion of what constitutes willful trespass may be found in the court decisions deciding disputes between ranchers in Wyoming as they attempted to control private lands interspersed sparsely among the vast public domain. In resolving these disputes about coexistence between competing ranchers (often, but not always, cattle ranchers versus sheep ranchers)

The owner of the animals has a different liability exposure if the animals trespass upon the lands of another by a nonwillful trespass. Straying animals that break free from confinement, that break into the fenced fields of neighbors, or that wander upon unenclosed lands are committing a nonwillful trespass.¹⁰¹ Indeed, if the neighbor has the duty to fence animals out, animals entering onto lands that the neighbor has not properly fenced do not commit a trespass at all.¹⁰²

In nonwillful trespass situations, courts often distinguish between damages to property and damages to persons.¹⁰³ Owners of straying animals are liable for property damages without regard to the owner's fault in allowing the animals to stray.¹⁰⁴ However, the owner of the lands upon which the nonwillful trespass has occurred must prove aggravating damages to fields, crops, or animals in order to recover more than the nominal damages that automatically accrue with the trespass itself.¹⁰⁵

using the public domain, the courts, especially the Supreme Court of Wyoming, developed a coherent, thorough body of law relating to stray animals. *E.g.*, *Healy v. Smith*, 83 P. 583 (Wyo. 1906); *Martin v. Platte Valley Sheep Co.*, 76 P. 571 (Wyo. 1904); *Cosgriff Bros. v. Miller*, 68 P. 206 (Wyo. 1902).

101. For more information, see the three cases cited in the preceding footnote. *See also* *Richards v. Sanderson*, 89 P. 769 (Colo. 1907) (finding that plaintiff's cattle committed a nonwillful trespass upon defendant's lands; defendant drove plaintiff's cattle off defendant's lands and completely outside the surrounding vicinity; plaintiff sued for damages against defendant for excessive force in driving the cattle away; upon jury verdict for plaintiff and in accordance with a state statute, the trial court properly trebled the damages amount awarded by jury).

102. *E.g.*, *Bolten v. Gates*, 100 P.2d 145 (Colo. 1940) (ruling that no trespass occurred when plaintiff sued defendant for damages caused by roaming cattle because plaintiff had obligation to fence its land); *Dickson v. Parker*, 4 Miss. 219 (3 Howard) (1839) (holding defendant liable to plaintiff for injury to plaintiff's straying mule because defendant had duty to maintain a lawful fence). Owners who do not fence their property when they have the duty to fence are legally bound by the common knowledge that domestic animals habitually stray without regard for the boundary lines between adjoining landowners. *Martin*, 76 P. at 575-76; *see also* *Hall v. Marshall*, 27 P.2d 193 (Or. 1933). The legislature cannot authorize a willful trespass by owner of animals upon the lands of another; however, the legislature may require landowners to fence their lands and, if a landowner does not erect a proper fence, deny to those non-complying landowners a remedy for nonwillful trespass by straying animals. *Id.* at 195.

103. James L. Rigelhaupt, Jr., Annotation, *Liability for Personal Injury or Death Caused by Trespassing or Intruding Livestock*, 49 A.L.R.4th 710 (1986). Although this annotation is limited in scope to personal injury or death, the annotation explains the historical and procedural reasons for why some courts distinguish between damages to property and damages to persons in nonwillful trespass situations involving animals. *Id.* at 717-21.

104. *E.g.*, *Carver v. Ford*, 591 P.2d 305 (Okla. 1979) (distinguishing the standard of liability for owners of animals causing personal injuries as contrasted with the standard of liability for property damage in a case involving claim for damages for personal injuries). For the general rule of strict liability for trespassing livestock, see *RESTATEMENT (SECOND) OF TORTS* § 504 (1977).

105. *E.g.*, *Cantou v. Walker*, 154 P.2d 530 (Wyo. 1945) (affirming nominal damages of one dollar for plaintiff; plaintiff proved trespass by defendant's sheep but presented no evidence of damage to pasturage or fences); *see also* *Tate v. Ogg*, 195 S.E. 496 (Va. 1938). Although the case involved plaintiff seeking an injunction against defendant to stop trespassing turkeys, in denying the injunctive remedy the court remarked that "the trespasses were only occasional and not willful, and that the damages at most were of a trivial and inconsequential nature"; the court sensed that the lawsuit related to bitter feelings between the parties. *Id.* at 501; *cf.* *Williams v. Goodwin*, 116 Cal. Rptr. 200 (Cal. Ct. App. 1974). Appellate court adopted a standard of strict liability for personal injuries inflicted by a trespassing bull but only after extended discussion explaining that strict liability imposes liability upon owner of trespassing animal only for damages within the scope of the risk created by the trespass. *Id.* at 501-07.

By contrast, courts have been much more reluctant to impose liability upon owners of straying animals for personal injuries.¹⁰⁶ Some courts adopt strict liability as the correct standard by which to impose liability upon owners of trespassing animals that cause personal injury.¹⁰⁷ Other courts have explicitly rejected strict liability as the standard for imposing liability for personal injuries. Many of these courts often require the injured party to prove that the owner of the trespassing animal was negligent in allowing the animal to become a trespasser.¹⁰⁸

In limited circumstances, owners of lands being trespassed upon by roaming animals are entitled to an injunction against the owner of the animals to make the owner control the animals. The courts have limited the remedy of injunction to trespassory situations in which the trespass is willful or continuing and the injunction is necessary to prevent great and irreparable injury. Even if the trespass from roving animals is likely to be continuing, most courts have refused to grant an injunction unless the damages from the continuous trespasses are significant in amount and impact.¹⁰⁹ Courts expect neighbors to understand the wandering nature of domestic animals. Consequently,

Although the *Restatement (Second) of Torts* imposes strict liability upon owners of trespassing livestock, the *Restatement* also adopts the requirement of aggravating damages for the landowner to recover anything more than nominal damages. *RESTATEMENT (SECOND) OF TORTS* § 163 cmt. e, § 166 cmt. b (1965); *RESTATEMENT (SECOND) OF TORTS* § 504 cmts. b, f, g, k, § 507 cmts. a-d (1977).

106. For example, if the straying animal is upon public streets or highways (as opposed to trespassing upon private property) when the straying animal causes personal injury, the courts almost unanimously require that the injured plaintiff prove the owner was negligent in allowing the animal to be upon the public area. James L. Rigelhaupt, Jr., Annotation, *Liability of Owner of Animal for Damage to Motor Vehicle or Injury to Person Riding Therein Resulting from Collision with Domestic Animal at Large in Street or Highway*, 29 A.L.R.4th 431 (1984); M.O. Regensteiner, Annotation, *Owner's Liability, Under Legislation Forbidding Domestic Animals to Run at Large on Highways, as Dependent on Negligence*, 34 A.L.R.3d 1285 (1954).

107. *E.g., Williams*, 116 Cal. Rptr. at 200; *Robinson v. Kerr*, 355 P.2d 117 (Colo. 1960).

108. *E.g., Clark v. Moore*, 341 So. 2d 116 (Ala. 1976); *Foland v. Malander*, 381 N.W.2d 914 (Neb. 1986); *Carver*, 591 P.2d at 305. For an excellent modern discussion of liability standards for owners of roaming animals, either trespassing upon the private lands of another or roving upon public lands such as highways, see *Byram v. Main*, 523 A.2d 1387 (Me. 1987) (discussing a collision between plaintiff's tractor-trailer rig and defendant's pet donkey that had escaped its pen and wandered onto the interstate highway in the middle of the night). In the opinion, the Supreme Court of Maine compared the common law liability of an owner of straying animals for personal injuries with the liability standards set forth in the *Restatement (Second) of Torts*. The court ultimately concluded, "We, as does the *Restatement*, leave the highway traveler who is injured by colliding with a stray domestic animal solely to his remedy in negligence." *Id.* at 1391.

109. *E.g., Tate*, 195 S.E. at 496 (denying injunction because the continuing trespasses by straying turkeys were minor and inconsequential in nature and trivial in the damages caused); *Cantou*, 154 P.2d at 530 (awarding damages of one dollar as nominal damages for the trespass by roving animals; the court ruled that an injunction would be inappropriate because the landowner presented no evidence of serious damage to landowner's pastures); *Healy v. Smith*, 83 P. 583 (Wyo. 1906) (denying injunction even with evidence that owner of the straying sheep knew that it was likely that sheep would stray onto private lands).

courts redirect neighbors to their remedy at law for damages and limit the remedy of injunction to the most egregious cases.¹¹⁰

From this survey of the law of stray animals, the law of stray animals has several qualities that may be important in the resolution of infringement matters involving inadvertent presence. Courts have created a set of rules for the law of stray animals that has been stable for almost two hundred years.¹¹¹ As a consequence of this stability, litigants in stray animal cases are likely to be able to understand the rules and to predict the legal rulings that courts would render in resolving the litigation. In addition, courts have created a set of rules for the law of stray animals that emphasize two underpinning values. Courts have sought commonsense rules that foster the peaceful co-existence of the owners of land with the owners of animals. Courts have devised a set of rules for stray animals that promotes accommodation (i.e., neighborliness) between landowners and owners of animals. The law of stray animals has the qualities of stability, predictability, common sense, and accommodation.

IV. APPLYING THE LAW OF STRAY ANIMALS TO INADVERTENT PRESENCE IN INFRINGEMENT ACTIONS

The Federal Trial Court of Canada addressed the law of stray animals briefly in its opinion in *Monsanto Canada Inc. v. Schmeiser*.¹¹² Federal Judge W. Andrew McKay wrote,

I do not agree that the situation is comparable to the "stray bull" cases that recognize that the progeny of stray bulls impregnating cows of another belong to that other, and that the owner of the straying bull may be liable in damages that may be caused to the owner of the cows. . . . Monsanto does have ownership in its patented gene and cell and pursuant to the *Act* it has the exclusive use of its invention. That is an important factor which distinguishes this case from the others on which the defendants [Schmeiser] rely.¹¹³

Judge McKay did not further develop the applicability of the law of stray animals.¹¹⁴

110. For a general discussion of neighbors resolving disputes about straying animals, see Robert C. Ellickson, *Of Coase and Cattle: Dispute Resolution Among Neighbors in Shasta County*, 38 STAN. L. REV. 623 (1986).

111. In its 1987 decision of *Byram v. Main*, the Supreme Court of Maine cited an 1857 Maine case as controlling precedent and commented, "In fact [the 1857 case] . . . is still a remarkably good statement of the common law as it remains today, as reflected by the *Restatement*." 523 A.2d at 1390.

In addition to recent secondary authority, the footnotes accompanying this portion of the article cite exemplary cases decided from the early 1800s to the late 1980s. The range of dates for the cited concurring authorities also provides evidence that the law of stray animals is stable.

112. 2001 FCT 256, *aff'd*, 2004 SCC 34.

113. *Id.* ¶ 93.

114. The stray bull analogy also was presented in several journalistic discussions of the *Schmeiser* case. See, e.g., Bruce Barcott, *Seeds of Discord*, LEGAL AFFAIRS, Jan.-Feb. 2003, at 59.

The Canadian Federal Court of Appeal did not mention stray bulls or stray animals in its opinion in *Schmeiser v. Monsanto Canada Inc.*¹¹⁵ However, the Canadian appellate court articulated concern about inadvertent presence as a likely future issue in patent infringement actions. Judge Sharlow wrote that “[i]n my view, it is an open question whether Monsanto could, in such circumstances [inadvertent presence], obtain a remedy for infringement on the basis that the intention of the alleged infringer is irrelevant. However, that question does not need to be resolved in this case.”¹¹⁶ Judge Sharlow did not resolve the issue of inadvertent presence in the *Schmeiser* appeal because Mr. Schmeiser intentionally planted, grew, and harvested seed saved from his 1997 fields that he knew or should have known were Monsanto Canada Inc.’s patented seeds.¹¹⁷

The above analysis demonstrates that the law of stray animals is uniquely applicable to the issue of inadvertent presence as infringement. It is to this application of the law of stray animals that we will now turn by discussing the meaning and impact of the law of stray animals in several likely scenarios of inadvertent presence.

A. *Scenario One: Volunteer Plants and Mixed (Patented and Nonpatented) Seeds*

In the *Schmeiser* case, Schmeiser offered evidence that the patented plants came to be on his land because a neighbor spilled patented canola seed from a broken seed bag and drove past his land with harvested patented canola seed in uncovered truck beds.¹¹⁸ If the patented seeds had come onto Schmeiser’s land under these circumstances, Schmeiser would have a legitimate claim of inadvertent presence.¹¹⁹ This evidence is similar to the possibility of inadvertent presence arising from volunteer crops and the mixing of seeds. How would the law of stray animals address inadvertent presence from volunteer crops and the mixing of seeds?

115. 2002 FCA 309.

116. *Id.* ¶ 57.

117. *Id.* ¶ 58.

118. *Schmeiser*, 2001 FCT 256 ¶ 117.

119. Whether the patented seeds are on a farmer’s land by circumstances constituting inadvertent presence will be a factual dispute in each infringement action. As the patent holder has the burden of proof to establish infringement, the patent holder ordinarily has the burden of proof that the farmer does not have the patented seed on his land through inadvertent presence.

In light of the evidence Schmeiser offered of seed spillage, the percentage of patented plants on his land should have been a very small percentage of his canola crop. *See supra* notes 17-23 and accompanying text. However, test results showed a high concentration of patented plants in Schmeiser’s canola crop. In dicta, the court ruled for Monsanto Canada Inc. on the inadvertent presence issue when the court found “that none of the suggested sources could reasonably explain the concentration or extent of Roundup Ready canola of a commercial quality evident from the results of tests on Schmeiser’s crop.” *Id.* ¶ 118; *see also* *Monsanto Co. v. Dawson*, No. 4:98CV2004 TCM, 2000 WL 33953542 (E.D. Mo. Nov. 24, 2000) (expressing doubt that the patented seeds were on the farmer’s lands by inadvertent presence).

Farmers who find stray animals on their lands or mixed with the farmer's own animals have the right to seize the trespassing animals. Similarly, farmers who find patented plants from volunteers or the mixture of seeds on their lands should be entitled to seize the plants as trespassers. Once seized, the farmer can request the owner of the patented plants to reclaim them promptly.¹²⁰ If the owner of the patented plants does not promptly reclaim them, the farmer can take other appropriate measures, comparable to driving stray animals away, to clear his land of the trespassing plants. Appropriate measures to clear the land would include treating the trespassing plants as weeds. If the farmer incurred nontrivial expenses in containing or in clearing the land of the trespassing plants, the farmer would have a claim for damages against the owner of the patented plants to compensate for these expenses.

None of the farmers' actions described in the preceding paragraph should be considered infringement. Farmers exercising their rights to seize, request retrieval, clear the land, and seek compensation for expenses are not engaging in the statutory acts of infringement—i.e., making, using, selling, or offering for sale the patented plants.

While farmers have the right to seize trespassing animals, owners of the trespassing animals do not lose their ownership rights simply because the animals have strayed. The owners of straying animals keep their ownership rights but are subject to liability for damages. Likewise, the owners of patented plants should not lose their ownership rights in trespassing plants simply because the plants have strayed onto lands where the plants are not wanted.¹²¹ The owners keep their rights in the patented plants but become subject to liability for any damages caused by the trespass.¹²²

When farmers seize trespassing animals, the farmers may not claim the trespassing animals as their own nor use the trespassing animals in a manner that subverts the ownership claims of the animals' owners. If farmers claim or use trespassing animals, farmers commit the tort of conversion. Similarly, farmers who seize trespassing plants cannot exercise ownership rights over the trespassing plants. If these

120. Evidence presented in the *Schmeiser* case showed that Monsanto Canada Inc. took efforts to remove patented plants from the fields of farmers who informed Monsanto of the undesired spread of patented plants to their fields. 2001 FCT 256 ¶¶ 96-97.

121. More specifically in the *Schmeiser* case, the court ruled that Monsanto did not lose its ownership rights in patented genes and cells in plants on lands where the plants, for whatever reason, should not have been. The court held that Monsanto's patent gave Monsanto exclusive ownership of the patented genes and cells for the period of the patent. Furthermore, the court ruled that Monsanto had taken actions to control who grew its patented plants and where the plants grew. As a consequence, the court held that Monsanto had not waived its ownership claims either expressly or impliedly. *Id.* ¶¶ 91-100.

122. For general discussion of the liability issues, see Kershen, *supra* note 17.

farmers plant, grow, and harvest the trespassing patented plants, they have committed the tort of conversion. Translated into patent law, farmers who commit the tort of conversion against trespassing plants have engaged in acts of infringement for which the farmer is liable as an infringer.¹²³ Moreover, by engaging in tortious acts constituting infringement, farmers lose their claim for compensation for any damages incurred in containing or clearing the plants.¹²⁴

B. *Scenario Two: Cross-Pollination*

Inadvertent presence can also occur because of pollen flow from the patented plants to nonpatented plants on neighboring lands. Inadvertent presence from pollen flow is analogous to the stray bull cases. What are the legal implications of the stray bull cases for patent infringement actions?

Farmers whose female animals are bred by straying male animals are the owners of the offspring born of the trespassory breeding. Moreover, these farmers are entitled to damages to the female and, in some jurisdictions, for the reduced value of any offspring born from the trespassory breeding. Applying these legal rules to straying crops, farmers whose plants are pollinated as a result of pollen flow from patented plants would own the seed produced by the pollination.¹²⁵ If the seed produced by this trespassory pollination has a reduced value as a harvested crop, the farmer may have a damages claim for that reduction in value.¹²⁶

123. Mr. Schmeiser intentionally planted, grew, and harvested canola that he knew or should have known were patented seeds. Mr. Schmeiser thereby asserted ownership over Monsanto's patented seeds, and by applying the law of stray animals, he committed the tort of conversion towards the trespassing plants. By committing the tort of conversion, Mr. Schmeiser removed himself from being classified as a farmer with inadvertent presence of patented seeds in his fields. While the Canadian courts did not use the law of stray animals in resolving the *Schmeiser* litigation, if the Canadian courts had done so, the courts would have ruled correctly by holding that Schmeiser's tortious conduct constituted acts of infringement under patent law.

124. Stated in the terminology of the Canadian Biotechnology Advisory Committee, Mr. Schmeiser, by his actions, was not an innocent bystander. See *supra* note 54; see also *supra* notes 25-28 and accompanying text.

125. In almost all instances, plants containing the patented genes and cells will be visually indistinguishable from the plants in the farmer's fields that lack the patented genes and cells. While tests exist to distinguish which plants contain the patented genes and cells from those plants that do not, these tests are not practical for wide-spread use in farm fields. See *supra* note 68. Hence, farmers and patent owners will often not know whether any particular plant carries the patented genes and cells. Consequently, pollen flow between fields will mean that farmers will inadvertently harvest and sell patented genes, cells, and plants rather routinely.

126. Whether the farmer can prove reduced value for the cross-pollinated crop depends upon factors relevant to liability in torts, as opposed to factors relevant to infringement under patent law. As to liability in torts, relevant factors likely include whether the crop is a commodity crop or an identity-preserved crop, what is the acceptable tolerance for the identity-preserved crop, what is the tort standard for the imposition of liability (e.g., negligence or strict liability), what are the obligations of co-existence between neighboring farmers (e.g., is pollen flow considered open-range or closed-range activity), whether the trespass was willful or nonwillful, and proof of causation as to the source of the pollen flow. For discussion of tort liability issues, see Kershen, *supra* note 17. Moreover, the doctrine of economic loss may preclude farmers from

While by analogy to the law of stray animals the farmer whose plants have been cross-pollinated owns the seeds created, the law of stray animals involves a balance between the rights of the farmer whose land has been trespassed and the ownership rights of the owner of the straying animal. In other words, ownership of the cross-pollinated seeds does not necessarily mean ownership of the patented genes and cells within those cross-pollinated seeds. For purposes of infringement, courts are likely to distinguish between ownership in the tangible seeds created by cross-pollination and ownership in the intangible intellectual property contained within those seeds in the patented genes and cells.¹²⁷

Distinguishing between the farmer's ownership rights in the tangible seeds and the patent holder's ownership rights in the patented gene and cell should lead to the conclusion that the farmer who owns the tangible cross-pollinated seeds does not commit an infringement by ownership of the seeds alone. The farmer claiming ownership of the tangible seeds would claim protection against infringement by presenting the affirmative defense of implied license.¹²⁸ The patent holder with rights in patented seeds knows that pollen flow will occur and that farmers will have cross-pollinated plants in their fields. The law of stray animals, if applied, suggests that the farmer should have ownership rights in the tangible cross-pollinated seeds. In light of the reality of pollen flow and the analogy to the law of stray animals, the farmer who owns the cross-pollinated seeds should be allowed to prove an implied license, thus allowing a harvest of those seeds as the farmer's crop.¹²⁹

The implied license, in this context, is equivalent to an express license from the patent holder for patented seeds. Hence, the farmer

recovery if the farmer whose crops were cross-pollinated claims damages for unrealized market expectations only. *Cf. Sample v. Monsanto Co.*, 283 F. Supp. 2d 1088 (E.D. Mo. 2003).

127. The Federal Trial Court of Canada made this distinction between ownership of the tangible seeds and ownership of the intellectual property rights in the genes and cells. The federal judge wrote,

Thus a farmer whose field contains seed or plants originating from seed spilled into them, or blown as seed, in swaths from a neighbour's land or even growing from germination by pollen carried into this field from elsewhere by insects, birds, or by the wind, may own the seed or plants on his land even if he did not set about to plant them. He does not, however, own the right to the use of the patented gene, or of the seed or plant containing the patented gene or cell.

Monsanto Canada Inc. v. Schmeiser, 2001 FCT 256 ¶ 92.

128. See *Monsanto Co. v. Trantham*, 156 F. Supp. 2d 855, 870 (W.D. Tenn. 2001). Trantham argued for an implied license, but the court determined that the circumstances of acquisition of the patented seeds did not indicate the grant of an implied license. Trantham admitted that he used patented seed without obtaining a license to do so. *Id.* For a general discussion of implied license in infringement litigation, see ROBERT L. HARMON, *supra* note 32, § 6.2(c).

129. Farmers desiring to prove an implied license as a defense to infringement will likely be successful factually only if the cross-pollination is at a low level within the field. Farmers will have to present evidence about the cross-pollination as affected by the crop involved, distance between the fields from which the pollen flow could come, and the environmental conditions at the time of pollen discharge. See *supra* Part II.A.

who owns cross-pollinated seed has the license to harvest for a single commercial crop but is prohibited from saving seed for planting or for supplying seed to anyone for planting. The patent holder retains ownership of the genes and cells as the intangible intellectual property protected by the patent.¹³⁰

If the farmer exercises control over the tangible seeds beyond harvesting for sale as a commercial crop, the farmer is acting outside the scope of the implied license. For example, if the farmer segregated the cross-pollinated seed from seed not cross-pollinated, if the farmer saved and replanted the cross-pollinated seed, or if the farmer sold or offered for sale the cross-pollinated seed for reproductive purposes, the farmer would be liable for infringement. These actions of segregating, planting, selling, or offering for sale the cross-pollinated seeds for reproductive purposes are actions of infringement because the farmer is exercising ownership over the patented genes and cells without the authorization of the patent holder.

C. *Scenario Three: Farmers as Seed Growers*

In the two preceding scenarios about the inadvertent presence of patented plants, there is an implied assumption that the farmer is engaged in commodity crop production. However, what if the farmer is engaged in the production of a crop as a source of seed? How does analogizing to the law of stray animals affect patent infringement claims against a farmer who is a seed grower?

Farmers engage in the production of a crop for seed in three distinct ways.

- **Bin-run farmer:**¹³¹ A farmer grows seed for commodity production but saves some of the seed, often in the farmer's own bins, as the source of seed for the following year for the farmer's own fields.
- **Brown-bagging farmer:**¹³² A farmer grows a crop but saves much of the crop for sale as a seed supplier to other farmers. As standard operating procedure, the brown-bagging farmer saves seed from his crop, conditions the seed for sale to others, and packages the seed in brown bags for purchase by other farmers. The brown-bagging farmer often pays a commercial seed dealer for storage space, seed conditioning, packaging, bagging, and marketing services.¹³³ A brown-bagging farmer is a bin-run

130. These license terms come from the 2004 Monsanto Technology/Stewardship Agreement, *supra* note 15.

131. Utility patent law does not allow bin-run seed saving for patented crops. The Plant Variety Protection Act does allow bin-run seed saving for varieties for which a seed developer holds a PVPA certificate. 7 U.S.C. § 2543 (2000).

132. Brown-bagging is an infringement of intellectual property rights under both the utility patent law and the Plant Variety Protection Act.

133. This article focuses on the issue of inadvertent presence and infringement liability of farmers for direct infringement. 35 U.S.C. § 271(a) (2000). This article does not address the issue of infringement liability by commercial seed dealers who assist farmers in brown-bagging

farmer who has expanded the saving of seed into the commercial sale of seed to other farmers.¹³⁴

- **Contract Farmer:** A farmer may grow seed for a seed company under contract with the company. A contract farmer is the source of the seed company's seed inventory.

If the bin-run farmer or the brown-bagging farmer is saving seed from plants that the farmer knew were patented plants, the farmer is clearly and unequivocally infringing the patent rights of the patent holder.¹³⁵ For farmers saving seed of patented plants that the farmer grew as patented plants, there is no inadvertent presence issue in the infringement litigation. If the contract farmer is growing patented seed for the seed company holding the patent rights, the farmer obviously has an express license to grow that particular patented seed. The contract farmer licensed to grow a particular patented plant has no inadvertent presence for that particular patented plant.

But what if the farmer were growing a nonpatented crop that legally can be used as a source of either bin-run, brown-bagged, or contract seed and the seed tested positive for the presence of a patented seed? Is this seed farmer liable for infringement if he uses the seed from his field?¹³⁶ So long as presence of the patented seed was inad-

operations. These commercial seed dealers may be liable for active inducement infringement or contributory infringement. *Id.* § 271(b)-(c). The author has not found any reported cases against commercial seed dealers for active inducement or contributory infringement of a patent in plants under the utility patent laws. Reported cases do exist discussing the infringement liability of commercial seed dealers for assisting brown-bagging farmers under the Plant Variety Protection Act. *Delta & Pine Land Co. v. Sinkers Corp.*, 177 F.3d 1343 (Fed. Cir. 1999); *Delta & Pine Land Co. v. Peoples Gin Co.*, 694 F.2d 1012 (5th Cir. 1983); *Delta & Pine Land Co. v. Sinkers Corp.*, 197 F. Supp. 2d 1184 (E.D. Mo. 2001); *Public Varieties of Miss., Inc. v. Valley Seed Co.*, 734 F. Supp. 250 (N.D. Miss. 1990).

For discussion of active inducement and contributory infringement, see HARMON, *supra* note 32, § 6.4.

134. For a brief discussion of the factors farmers consider in deciding to use bin-run or brown-bagged seed as opposed to seed developed by professional seed company, see N. C. DEP'T OF AGRIC. & CONSUMER SERVS., GROWERS SHOULD BE MINDFUL OF RESPONSIBLE SEED STEWARDSHIP, at www.ncagr.com/paffairs/articles/2002/10-02stewardship.htm (last visited Mar. 25, 2004); Michael D. Peel, *Answers to FAQs About Winter Kill, Using Bin-Run Seed*, PRAIRIE GRAINS (Feb. 2001), available at www.smallgrains.org/springwh/feb01/kill/kill.html; Wayne Board, *Monsanto May Take Legal Steps Against Catching Soybean Seeds*, LUBBOCK AVA-LANCHE J. (May 25, 1997), available at <http://www.lubbockonline.com/news/052597/monsanto.htm>.

135. See *supra* note 6.

136. With respect to the litigation involving Percy Schmeiser, one author has asserted that Mr. Schmeiser was a seed developer who had meticulously developed his own superior variety of canola over the period of fifty years. Consequently, the author argued that Mr. Schmeiser was deprived of more than bin-run seed when the Canadian courts found him guilty of infringing patent rights. Rather, the author asserted that Mr. Schmeiser had been deprived of his skills and efforts as a seed developer. Busch, *supra* note 12, at 116 n.467.

Mr. Busch's claims on behalf of Schmeiser are highly suspect. Mr. Schmeiser may have raised rapeseed for half a century, but he could not have raised canola for half a century. Canola as a high-value oil and protein crop did not become available in Canada until the 1970s. Indeed, Canadian researchers coined the term "canola" only in 1979. Moreover, Mr. Schmeiser testified that he grew an Argentine canola. *Monsanto Canada Inc. v. Schmeiser*, 2001 FCT 256 ¶ 30. Argentine canola is a *brassicae napus* variety. Alberta Powers Commission, D-9502, *Canola Variety Trials*, at www.canola.ab.ca/research/9502.shtml (last visited Apr. 21, 2004). Canadian researchers released the first commercially successful *brassicae napus* variety for the Canadian prairies (Westar) in 1982. In addition, Canadian researchers developed the Argentine canola

vertent, the law of stray animals (as described and applied in the two preceding scenarios) means that the farmer whose seed has tested positive for the presence of a patented seed has not committed an act of infringement. This is true even if a court were to consider passive, unknowing possession of the patented seed mixed with the farmer's seed stock as an infringement.¹³⁷ In this circumstance, courts should decline to award the patent holder any damages. Prior to the testing of the farmer's seed stock, the farmer almost assuredly would not have any knowledge that patented seed was mixed into his seed stock. Patent holders are not entitled to damages for patent infringement until the person charged with infringement has notice of the infringement.¹³⁸ Notice comes when the patent holder tests the seed and informs the farmer that the test shows the presence of patented seed.¹³⁹

Once the farmer learns that his seed has tested positive, however, the farmer has the notice required by the utility patent law. After the positive test, the farmer knows that he will commit infringement if he plants, grows, harvests, sells the seed, or offers the seed for sale. Hence, once a seed grower's seed tests positive for the presence of a patented seed, he cannot use the seed as a seed stock without becoming an infringer.

Yet, to limit the farmer who is a seed grower to selling the seed as a commodity grain does not properly balance the property rights of

varieties that are particularly resistant to blackleg disease. For information on the development of canola, see AgriCanada, *Historical Series on Saskatoon Research Station 1917-1985*, ch. 11, at <http://collections.ic.gc.ca/agrican/pubweb/hs200020.asp> (Apr. 6, 2001); Canola Council of Canada, *Rapeseed/Canola*, at http://www.fosfa.org/resources/res_seeds_rape.htm (last visited Apr. 21, 2004); B. Colton & T. Potter, The Regional Institute, Ltd., *History New Horizons for an Old Crop*, PROC. 10TH INT'L. RAPESEED CONG. (Canberra, 1999), available at <http://www.regional.org.au/au/gc/crc/canola/p-02.htm#TopOfPage>; Paul L. Raymer, *Canola: An Emerging Oilseed Crop*, in TRENDS IN NEW CROPS AND NEW USES 122-26 (J. Janick & A. Whipkey eds., 2002), available at <http://www.hort.purdue.edu/newcrop/ncnu02/v5-122.html> (last modified Dec. 10, 2002); SASKATCHEWAN AGRIC., FOOD & RURAL REVITALIZATION, BLACKLEG: A DISEASE OF CANOLA, at www.agr.gov.sk.ca/DOCS/crops/integrated_pest_management/disease/blackleg.asp (last modified Mar. 1996).

While Mr. Schmeiser testified that he believed that he had developed his own variety of canola, his testimony overall more reasonably leads to the conclusion that he was a bin-run farmer. *Schmeiser*, 2001 FCT 256 ¶¶ 29-31.

137. *Cf. Sinkers Corp.*, 197 F. Supp. 2d 1184 (holding that Sinkers Corp. was not an infringer because the proof showed Sinkers to be a passive, unknowing possessor of the PVPA-protected plant variety).

138. Notice can occur either through actual notice, proper marking, or the filing of an infringement lawsuit. 35 U.S.C. § 287 (2000). For inadvertent presence, the most likely form of notice will be actual notice after testing of the plants or seeds for the patented traits.

139. In the event of failure so to mark, no damages shall be recovered by the patentee in any action for infringement, except on proof that the infringer was notified of the infringement and continued to infringe thereafter, in which even damages may be recovered only for infringement occurring after such notice. Filing of an action for infringement shall constitute such notice.

35 U.S.C. § 287(a). *Cf.* 7 U.S.C. § 2567 (2000) (providing similar marking and notice obligations under the Plant Variety Protection Act); 7 U.S.C. § 2543 (2000) (providing that farmers can sell the harvested crop for commercial purposes, but the statutory provision adds, "A purchaser who diverts seed from such channels to seeding purposes shall be deemed to have notice under section 2567 of this title that the actions of the purchaser constitute an infringement").

the farmer in the seed and the patent holder's rights in the patented genes, cells, or seeds. To limit the farmer who is a seed grower to selling the seed as a commodity grain effectively deprives the farmer of his rights in the seed as seed stock. The proper balance would respect the ownership rights of both the farmer and the patent holder.

To strike the proper balance that protects the ownership rights of both the farmer and the patent holder, courts should utilize the injunctive power as set forth in 35 U.S.C. § 283. The section reads, "The several courts having jurisdiction of cases under this title may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable."¹⁴⁰

Under this statutory provision, the courts have discretion to grant injunctions in this scenario.¹⁴¹ Using the law of stray animals as the source of the principles of equity, the court should grant the patent holder an injunction to prohibit the farmer from further propagating the seed by planting on his own farm or by selling to other farmers. Furthermore, the court should specify in the injunction that the farmer must deliver the seed stock to the patent holder. However, the court should grant this injunction only on the reasonable terms that the patent holder compensates the farmer for the farmer's loss of his seed stock.

If the farmer could prove that he was a bin-run farmer for that crop year, the patent holder would have to pay the cost for comparable nonpatented seed for the bin-run farmer. If the farmer could prove that he was a seed supplier to other farmers through brown-bagging, the patent holder would have to compensate the brown-bagging farmer for the lost sales. If the farmer were a contract farmer, the patent holder would have to compensate the contract farmer for the value of the contract. Courts in patent infringement litigation, just as courts in stray animal cases, should use their injunctive power to achieve a commonsense, neighborly solution that protects both the farmer and the patent holder.¹⁴²

D. *Scenario Four: Organic Grower*

In the previous three scenarios, the farmers were assumed to be nonorganic farmers. What if the scenario involved an organic farmer?

140. 35 U.S.C. § 283 (2000).

141. For discussion of the remedy of injunction in patent law, see HARMON, *supra* note 32, § 13.1.

142. The court imposes this compensatory obligation, upon the patent holder to the seed-grower farmer as a seed grower, within the law of patents. This patent-based obligation to compensate is distinct from and unrelated to tort liability issues between the farmer and the patent holder.

How would the law of stray animals apply to organic farmers to resolve the inadvertent presence issue in infringement litigation?

Section 205.2 of the National Organic Program of the United States Department of Agriculture specifically states that among the excluded methods of product are "methods used to genetically modify organisms."¹⁴³ Therefore, organic farmers must not use transgenic crops for their organic crops nor their organic seed production or seed source. As long as the organic crop farmer or the organic seed farmer does not use transgenic plants or seeds, the organic grower does not lose organic certification for the organic crop or the organic seed. Specifically, comments to section 205.2 explain,

The presence of a detectable residue of a product of excluded methods alone does not necessarily constitute violation of this regulation. As long as an organic operation has not used excluded methods and takes reasonable steps to avoid contact with the products of excluded methods as detailed in their approved organic system plan, the unintentional presence of the products of excluded methods should not affect the status of an organic product or operation.¹⁴⁴

Once an organic farmer learns of the inadvertent presence of transgenic crops, the organic farmer has the obligation to take responsible steps to avoid the contact.

Using the law of stray animals, the courts should hold that organic farmers are taking responsible steps to avoid contact with the excluded method (transgenic plants and seeds) if they isolate the volunteer transgenic plants, the mixed seeds, or the harvested mixed seeds and request that the patent holder reclaim their patented seeds and plants. The patent holder would then have the duty to promptly respond to remove the transgenic plants and seeds from the organic farmers' fields.¹⁴⁵ Just as in Scenario Two, the organic farmer would not be an infringer solely because of the inadvertent presence of the patented transgenic crop.

If the organic farmer were a producer of organic seed, the courts should hold that the organic farmer is taking responsible steps if the organic farmer prevents the organic seed crop mixed with transgenic seeds from entering the market for organic seed supplies. The patent holder could reclaim the organic seed crop by asking for an injunction against further propagation or sale of the seed source. Just as in Sce-

143. National Organic Program, 65 Fed. Reg. 80,548, 80,639 (Dec. 21, 2000) (to be codified at 7 C.F.R. pt. 205).

144. *Id.* at 80,556.

145. Monsanto Canada, Inc. has had a program since 1996, the year transgenic crops first were grown, to remove volunteer plants from the fields of growers who request Monsanto to do so. Monsanto pays the cost of removal. Organic farmers who have requested Monsanto to remove volunteer transgenic plants will not lose organic certification. *The Conseil d'accréditation du Québec Launches Organic/GMO Investigation*, CANADIAN NEWSWIRE (Sept. 5, 2003); Karen Briere, *Organic Grower Will Keep Certification*, W. PRODUCER, Sept. 8, 2003, at 1.

nario Three, the patent holder should be awarded the injunction only if the patent holder compensates the organic seed grower for the loss of the seed crop.

While the organic farmer may be most concerned about patented transgenic seeds and plants due to concerns about complying with organic certification standards,¹⁴⁶ the organic farmer is assuredly equally concerned about protection from infringement liability for patented nontransgenic seeds and plants. The resolution of the inadvertent presence issue relating to patented transgenic seeds and plants, offered in the immediately preceding paragraphs, should be equally applicable to the inadvertent presence issue relating to patented nontransgenic seeds and plants. Patent law will draw no distinction between transgenic and nontransgenic crops insofar as patent rights are concerned. By using the law of stray animals as the source of precedent, the organic farmer scenario has a stable, predictable resolution to the inadvertent presence issue in infringement litigation for both patented transgenic and patented nontransgenic seeds and plants.

V. CONCLUSION

The issue of inadvertent presence in infringement cases is a significant issue in the law of utility patents for plants. Commentators have suggested a variety of possible solutions to this issue. This article has described and defined the inadvertent presence issue and discussed the possible solutions. More boldly, this article has proposed that the most viable solution to the inadvertent presence issue for utility patent law is found by using and analogizing to the law of stray animals. Courts can find in the law of stray animals the stable, predictable, common-sense, and neighborly rules that protect both the farmer who experiences inadvertent presence and the patent holder who has intellectual property rights in the straying seeds and plants.

146. These concerns about complying with organic certification standards are legal liability concerns. Inadvertent presence and legal liability is an important issue, but this article focuses only on inadvertent presence and infringement in patent law. See Kershen, *supra* note 17 and accompanying text.