

Supplemental Forms of Intellectual Property Protection for Plants*

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I. INTRODUCTION

A new hierarchy of intellectual property protection for plant innovation is emerging. Utility patent protection is poised to become the dominant intellectual property mechanism for plants in the U.S. and perhaps elsewhere. Plant breeder's rights systems continue to garner a dedicated following, especially in developing countries, as a means for complying with international intellectual property treaty obligations. But while utility patent and plant breeder's rights regimes have come to occupy the first tier of the intellectual property hierarchy for plants, other forms of intellectual property protection remain important, albeit in a supplemental role. This article surveys supplemental intellectual property strategies for plants in three areas: trade secrets (Section II); trademarks and unfair competition (Section III); and post-sale license restrictions (Section IV).

II. TRADE SECRETS

Trade secret protection has long been used in the seed industry. In this section, after briefly reviewing the general legal standards and sources of law for trade secret protection, I will analyze the leading decision on the use of trade secret protection to protect germplasm – the *Pioneer v. Holden's* case, and then consider some key determinants influencing the choice between patent protection and trade secret protection for plant-related innovation.

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A. INTERNATIONAL AND DOMESTIC STANDARDS

Trade secret protection is possibly the least formalized of all types of intellectual property protection. It entails no registration process, nor any official government document memorializing the existence or subject matter of the protection.

Trade secret protection operates on the theory that (1) a firm's secret information may have commercial value, and (2) the law should intervene against competitors who seek to appropriate that value through improper practices.¹ This theory may be understood both as a matter of preserving fair competition so that competitors do not become unjustly enriched and as a matter of securing a firm's intangible property so that a firm will have an incentive to generate additional valuable information.

The obligation to protect trade secrets is now established as a matter of international law, through Article 39 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).² Article 39 requires the World Trade Organization (WTO) members to protect undisclosed information pursuant to the more general obligation to protect against unfair competition.³

In general, TRIPS Article 39 leaves WTO members considerable discretion to shape national law on the details of trade secret protection. TRIPS Article 39 defines the concept of trade secret broadly but conventionally, sweeping in all manner of confidential information that has value as a consequence of its secrecy, where the owner of the information has taken reasonable steps to maintain secrecy.⁴ Article 39 also defines misappropriation broadly, as encompassing acts that are "contrary to honest commercial practices."⁵

Article 39 also includes one special provision that may be

1. See RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. a (1995).

2. See Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, LEGAL INSTRUMENTS – RESULTS OF THE URUGUAY ROUND, 33 I.L.M. 81 (1994) [hereinafter TRIPS], available at http://www.wto.org/english/tratop_e/trips_e/t_agm0_e.htm (last visited Oct. 14, 2004).

3. See *id.* art. 39.1.

4. See *id.* art. 39.2.

5. *Id.*; TRIPS footnote 10 lists illustrative acts that may be deemed contrary to honest commercial practices, including such behavior as breach of contract, and breach of a confidential relationship. *Id.* art. 39.2 n.10.

of future interest to plant biotechnology firms. Article 39.3 requires that WTO members protect trade secrets from disclosure and commercial use when the secret is required to be submitted to a government agency for market approval.⁶ Currently, the requirement applies only to trade secrets concerning pharmaceuticals and agricultural chemical products.⁷ If nations enact elaborate regulatory approval schemes for transgenic plants, firms may wish to press for expansion of Article 39.3's protections.

In the United States, the TRIPS Article 39 obligations are implemented through state law. While the precise character of trade secret protection may vary from state to state, many states have adopted the Uniform Trade Secrets Act (UTSA).⁸ The following general comments reflect the approach followed in UTSA jurisdictions.⁹

First, consistent with the international standard, the UTSA defines trade secret broadly, to embrace such subject matter as formulas, compilations of information, techniques, and processes, where the subject matter derives independent economic value from its secrecy, and where the subject matter is the subject of reasonable efforts to maintain secrecy.¹⁰ The subject matter need not be novel in the patent law sense.¹¹

Second, the UTSA defines misappropriation in terms analogous to those used in TRIPS Article 39. Misappropriation may occur in a variety of ways – e.g., through breach of a confidential relationship, or when a trade secret is otherwise acquired via “improper means.”¹² Critically, independent discovery, through analysis of publicly-available information or through reverse engineering, does not constitute “improper means,” a feature that distinguishes trade secret protection

6. *See id.* art. 39.3.

7. *Id.* art. 39.3.

8. UNIFORM TRADE SECRETS ACT (1985) [hereinafter UTSA], available at <http://www.law.upenn.edu/bll/ulc/fnact99/1980s/utsa85.htm> (last visited Nov. 17, 2004); *see also* ROGER M. MILGRIM, MILGRIM ON TRADE SECRETS §1.01[2][a] (2004).

9. I have largely limited these comments to trade secret law in the United States. For a survey of trade secret law in a European jurisdiction, *see*, for example, Jon Lang, *The Protection of Commercial Trade Secrets*, 25 EUR. INTELL. PROP. REV. 462 (2003).

10. *See* UTSA § 1(4) (1985).

11. *See* RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. e (1995).

12. *See* UTSA § 1(2).

from utility patent protection.¹³

Third, trade secret protection is not subject to a fixed term of protection. Trade secret protection endures as long as the subject matter remains secret.¹⁴ However, suits for trade secret misappropriation are likely to be subject to a two- or three-year statute of limitations (commencing from the time when the misappropriation was discovered, or would have been discovered through the exercise of reasonable diligence).¹⁵

B. LESSONS FROM *PIONEER V. HOLDEN*

The leading case on the application of trade secret law to plant germplasm is *Pioneer v. Holden*.¹⁶ The case involved an assertion of trade secret protection that is considered to be typical in the seed industry: trade secrets in the identity and genetics of the inbred parents of a commercially-distributed hybrid. In particular, Pioneer asserted that it owned a trade secret in inbred lines (including a line designated H3H) used as male parents for certain valuable corn hybrids.¹⁷ The court upheld Pioneer's claim for liability under both trade secret and unfair competition theories.

Others have written in detail about the complex facts and principal arguments in the case.¹⁸ This article will forego a lengthy discussion and concentrate instead on examining three

13. See RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 43 (1995).

14. In *Advanta USA, Inc. v. Pioneer Hi-Bred Int'l, Inc.*, the court considered whether the issuance of a plant variety protection certificate on a given variety resulted in disclosure barring any subsequent assertion of trade secret protection with respect to that variety. No. 04-C-238-S, slip op. (W.D. Wisc. Oct. 27, 2004) (summarized in *Plant Variety Protection Act Does Not Preempt State Law Trade Secret Action*, PAT. TM. & COPYRT. J., Nov. 19, 2004, at 43). Advanta framed the argument as a preemption argument: whether the U.S. Plant Variety Protection Act preempted state law trade secret claims. The court rejected the argument. *Id.* Indeed, a plant variety certificate need not be accessible to the public. See Mark D. Janis & Jay P. Kesan, *U.S. Plant Variety Protection: Sound and Fury . . .?*, 39 HOUS. L. REV. 727, 747-48 (2002). Thus, the court was correct to reject the view that as a matter of law, the issuance of a plant variety protection certificate would necessarily exterminate trade secret protection.

15. For a trade secret case in the seed industry in which the statute of limitations came into issue, see *E.I. Du Pont de Nemours & Co. v. Monsanto Co.*, No. CIV.A. 00-359-SLR, 2001 WL 652019, at *1 (D. Del. 2001).

16. *Pioneer Hi-Bred Int'l, Inc. v. Holden Found. Seeds, Inc.*, 35 F.3d 1226 (8th Cir. 1994).

17. *Id.* at 1229.

18. See, e.g., Debra L. Blair, *Intellectual Property Protection and its Impact on the U.S. Seed Industry*, 4 DRAKE J. AGRIC. L. 297, 308-10 (1999).

lessons from the case that remain relevant in the current intellectual property environment.

First, *Pioneer v. Holden* provides a helpful illustration of the concept of “reasonable measures” to maintain secrecy, as applied to the enterprise of plant breeding. For example, Pioneer had imposed express confidentiality restrictions in agreements with its contract growers, had forbidden the use of signage in fields, and had used coded labels on its seed bags.¹⁹ The court concluded that this combination of safeguards satisfied Pioneer’s obligation to undertake reasonable measures to maintain secrecy.²⁰

Second, *Pioneer v. Holden* rejects the proposition that the possible existence of selfs in a seed bag destroys trade secret protection.²¹ The court was satisfied that Pioneer’s practices had greatly limited the prospect that male inbreds would accidentally appear in bags of hybrid seed.²² Importantly, however, the court did not resolve the question whether the act of “chasing the selfs” constitutes proper reverse engineering or “improper means.”²³

Third, *Pioneer v. Holden* delivers a mixed message on the issue of the difficulty of proving misappropriation in a trade secret case involving biological subject matter. On the one hand, on the basis of very close similarity between the Pioneer and Holden seeds, the court was willing to infer probable misappropriation, and shift to Holden’s the burden of coming forward with evidence of independent development.²⁴ On the other hand, the court cited the peculiar facts of the case as support for drawing the inference of misappropriation.²⁵ The court pointed to allegations of a pattern of behavior by Holden’s involving alleged efforts to discover Pioneer’s trade secrets over a period of years, alleged discarding of information relevant to the parentage of its own product, and other facts that suggest that future litigants might find it easy to distinguish *Pioneer v.*

19. *Pioneer*, 35 F.3d at 1236.

20. *Id.* at 1236-37.

21. *See id.* at 1236.

22. *Id.*

23. *Id.* at 1238-41.

24. *See id.* at 1240-41. The burden shift issue continues to be litigated in trade secret cases in the United States. *See Moore v. Kulicke & Soffa Indus., Inc.*, 318 F.3d 561, 573-74 (3d Cir. 2003) (holding that when plaintiff presents evidence of product similarity, the burden of persuasion shifts to the defendant to come forward with evidence of independent development).

25. *See Pioneer*, 35 F.3d at 1239-40.

Holden.²⁶ Moreover, even after according weight to these facts, the court still found the misappropriation issue to be a close one, and obviously struggled with the complexity of the technical evidence.²⁷

C. PATENTS V. TRADE SECRETS: SOME KEY DETERMINANTS

In view of the general tenor of trade secret protection, and the specific illustration of trade secret protection applied to the seed industry in *Pioneer v. Holden*, what are the factors that might inform a firm's choice about whether to pursue trade secret protection (which forbids disclosure), as opposed to utility patent protection (which requires disclosure and thus eliminates future claims of trade secret protection for the disclosed subject matter)? Most observers would expect firms to favor utility patent protection over trade secret protection in any usual case. Indeed, when considering whether the federal patent regime preempted state trade secret law, the U.S. Supreme Court concluded that trade secret protection was generally so weak as compared to patent protection that, as a practical matter, there was little risk that firms would choose trade secret protection for any given invention if patent protection was likely available.²⁸ The relevant question, then, is whether there are trends in either patent law or trade secret law that might operate at the margins – for example, making trade secret protection even marginally more attractive as compared to utility patent protection.²⁹

Certainly, a number of recent trends in patent law run in precisely the opposite direction, bolstering utility patents as a preferred means of protection for plants over trade secrets. In *J.E.M. Ag. Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.*,³⁰ the U.S.

26. *Id.*

27. *Id.* at 1239. For more on the complexity of discovery in a germplasm misappropriation case, see, for example, *Pioneer Hi-Bred Int'l, Inc. v. Asgrow Seed Co.*, Nos. Civ. 4-98-CV-90577, Civ. 4-98-CV-90578, 2000 WL 33363188, at *3 (S.D. Iowa 2000) (referring to the prospect that discovery could involve multiple grow-outs extending over several Midwestern growing seasons and lamenting the sheer complexity of the case).

28. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 489-91 (1974).

29. For a general discussion of the topic, see, for example, Andrew Beckerman-Rodau, *The Choice Between Patent Protection and Trade Secret Protection: A Legal and Business Decision*, 84 J. PAT. & TRADEMARK OFF. SOC'Y 371 (2002).

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

Supreme Court upheld the U.S. Patent and Trademark Office's longstanding view that seed-grown plants constituted patent-eligible subject matter within the meaning of the U.S. utility patent statute.³¹ In *Monsanto Canada Inc. v. Schmeiser*,³² the Canada Supreme Court rejected a grower's argument that patent infringement could be excused if it was "innocent."³³ Although there is no comparable authoritative decision in the U.S., U.S. patent infringement law is founded on the premise that innocent or independent development is not a defense, whereas independent development is a defense to trade secret protection.³⁴ In *Monsanto Co. v. McFarling*³⁵ ("*McFarling II*"), the U.S. Court of Appeals for the Federal Circuit confirmed that utility patent infringement is not subject to a seed-saving exemption, notwithstanding the existence of such an exemption under plant breeder's rights schemes such as the U.S. Plant Variety Protection Act (PVPA).³⁶

A few trends do cut in favor of trade secret protection. Taken collectively, these trends could result in a reduction in the value of utility patents, and could make the patent versus trade secret decision a closer call in some situations. First, U.S. patent law continues to impose relatively rigorous standards for patent disclosures in the chemical and biotechnological arts.³⁷ One of the disclosure requirements,

31. *Id.* at 145-46.

32. *Monsanto Canada Inc. v. Schmeiser*, [2004] S.C.R. 902 (Can.)

33. *Id.*

34. To put the same point differently, utility patent infringement requires no showing of copying or derivation. For utility patents on plants, this rule is most advantageous to patent owners who claim by genotype or phenotype. Where patent claims are directed to specific varieties, as a practical matter, the patent claim is likely to be infringed only by someone who physically appropriates patented seed or plant matter. See Nicholas Seay, *Intellectual Property Rights in Plants*, in *CSSA SPECIAL PUB. NO. 21, INTELLECTUAL PROPERTY RIGHTS: PROTECTION OF PLANT MATERIALS* 61, 69 (1993).

35. See *Monsanto Co. v. McFarling*, 363 F.3d 1336, 1344 (Fed. Cir. 2004) [hereinafter *McFarling II*]. By the same reasoning, utility patent infringement in the U.S. would not be subject to a breeder's exemption, although this does not preclude the possibility that some types of breeding activity would be deemed to fall within the general, common law experimental use defense. See Mark D. Janis, *Rules v. Standards for Patent Law in the Plant Sciences* (forthcoming 2005).

36. See Plant Variety Protection Act of 1970, 35 U.S.C. §§ 2321-2582 (1994).

37. See, e.g., *Univ. of Rochester v. G.D. Searle, Inc.*, 358 F.3d 916, 929 (Fed. Cir. 2004) (applying the written description requirement to invalidate a patent claim in a pharmaceutical case).

enablement,³⁸ has proven to be a significant obstacle to broad claims to transgenic plants.³⁹

Second, the U.S. PTO's application of the nonobviousness requirement is under continual scrutiny in patent policy circles, especially in current debates, where arguments for more rigorous application of the requirement are commonplace.⁴⁰ The practice of granting of U.S. patents to conventionally-bred plant varieties, in which the claimed variety is a novel but predictable outcome of a well-known breeding technique, may be a candidate for reform if calls for a more robust non-obviousness standard are heeded.

Third, some patent law doctrines that have been the subject of recent legislative changes may be due for yet further reforms. Relatively new U.S. patent rules require that any pending patent application be published 18 months after its effective filing date, but patent applicants may opt out of publication under a variety of circumstances.⁴¹ Future legislation might restrict or eliminate opt-out opportunities, potentially prompting some patent applicants to abandon their applications prior to publication in favor of trade secrecy.⁴² Another relatively new U.S. patent rule allows a defense to infringement for prior users, typically prior users of trade secrets.⁴³ Current rules extend the defense only to business method patents, but future legislation might expand prior user rights to encompass all technologies.

38. Enablement refers to the requirement that the patentee provide a disclosure that enables one of ordinary skill in the art to make and use the claimed invention. 35 U.S.C. § 112 para. 1 (2000).

39. See, e.g., *Monsanto Co. v. Bayer Bioscience N.V., Ltd.*, 363 F.3d 1235 (Fed. Cir. 2004) (disclosing transformation of dicots with truncated Bt gene in late 1980s may not have enabled transformation of all plant cells, including monocots); *Plant Genetic Sys. N.V. v. DeKalb Genetics Corp.*, 315 F.3d 1335 (Fed. Cir. 2003) (disclosing transformation of dicots with bar gene in 1980s did not enable transformation of all plant cells, including monocots); *Adang v. Fischhoff*, 286 F.3d 1346 (Fed. Cir. 2002) (disclosing transformation of tobacco plants with Bt gene in 1980s does not enable interference count directed to transformation of tomato plants with Bt gene).

40. See, e.g., COMM. ON INTELLECTUAL PROP. RIGHTS IN THE KNOWLEDGE-BASED ECON., NAT'L RESEARCH COUNCIL: A PATENT SYSTEM FOR THE 21ST CENTURY 72-78 (Stephen A. Merrill et al. eds., 2004); FEDERAL TRADE COMM'N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY ch. 4 (2003).

41. 35 U.S.C. § 122.

42. See, e.g., COMM. ON INTELLECTUAL PROP. RIGHTS, *supra* note 40, at 52-53 (discussing the shortcomings of the current regime).

43. See 35 U.S.C. § 273 (2000) (effective 1999).

These trends make trade secrecy potentially more attractive, and thus bear watching. They must be coupled with considerations of product life cycles, the cost of obtaining patent protection, and the technical feasibility of reverse engineering. Overall, it seems likely that trade secrecy will remain no more than a supplemental option for plant breeders, and for inventors in many other technology areas as well.

III. TRADEMARKS AND UNFAIR COMPETITION

In a time when product differentiation is becoming more important in the seed industry, it seems likely that trademark and unfair competition laws will become more relevant than ever before as a supplemental means for protecting goodwill associated with particular seed products. Interestingly, trademark protection was one of the earliest forms of plant-specific intellectual property regimes proposed in the United States. Legislation proposed in 1906 would have created special trademark-like protection for plant names.⁴⁴ The proposal failed to become law, perhaps because it purported to use trademark law as a way to incentivize innovation in plant breeding, a task better suited for the patent laws. Trademark and unfair competition laws could provide important incentives for plant breeding today, but only as a supplement to patent law, not as a surrogate for it. In this section, I first discuss general principles of trademark and unfair competition law, then consider issues relating to the acquisition of registered trademark rights for seed and plant biotechnology products, and next look at the enforcement of unfair competition laws against germplasm misappropriation and other false representations, focusing on U.S. law.

A. GENERAL PRINCIPLES OF TRADEMARK AND UNFAIR COMPETITION LAW

The basic premises underlying trademark law are well-established.⁴⁵ Trademark law seeks to protect the goodwill, and assurance of consistent quality, that a producer builds up in a mark through investing in promotion of that mark in

44. See H.R. 13570, 59th Cong. (1906) (authorizing the Registration of the Names of Horticultural Products and to Protect the Same). For a discussion, see Mark D. Janis & Jay P. Kesan, *U.S. Plant Variety Protection: Sound and Fury. . .?*, 39 HOUS. L. REV. 727, 731-33 (2002).

45. In the U.S., the Lanham Act governs trademark and unfair competition causes of action. See Lanham Act, 15 U.S.C. §§ 1051-1127.

connection with particular products or services. By granting producers exclusive rights in the use of marks in connection with particular products or services, the law provides producers with security for further investments in maintaining goodwill and quality, and it ensures that potential new market entrants will not be able to free-ride on that goodwill by adopting the same or a confusingly similar mark.⁴⁶ Trademark law also seeks to protect consumers by reducing their search costs and reducing the possibility that consumers will be misled by firms that attempt to pass off their goods as those of their competitors.

Trademark and unfair competition laws seek to effectuate producer and consumer protections in two somewhat different ways. Under traditional trademark law, the producer gets weak property rights to exclude newcomers from using confusingly similar marks on similar products and services.⁴⁷ That is, the focus is on granting property rights, albeit limited ones, to the producer. Under unfair competition law, the focus is on the nature of the newcomer's actions. If the newcomer makes false representations in the marketplace that cause harm to the established producer, the producer may bring an unfair competition cause of action, even if the newcomer's false representations do not interfere with any registered trademark rights of the producer.⁴⁸

B. REGISTERED TRADEMARK RIGHTS FOR PLANTS AND PLANT BIOTECHNOLOGY

The U.S. trademark law generously defines "trademark" to encompass both verbal and non-verbal source designations.⁴⁹ One of the principal prerequisites for obtaining trademark protection is that the mark be distinctive.⁵⁰ Distinctiveness is a

46. For an overview of these basic themes, see GRAEME B. DINWOODIE & MARK D. JANIS, TRADEMARKS AND UNFAIR COMPETITION: LAW AND POLICY 3-46 (2004).

47. By "traditional" trademark law, I mean to refer to the core trademark infringement liability theory, "a likelihood of consumer confusion." Other theories, such as trademark dilution, arguably give trademark owners much stronger property rights that are not necessarily limited to the use of the mark in connection with particular goods and services.

48. See 15 U.S.C. § 1125(a) (2000).

49. *Id.* § 1127.

50. *Id.* § 1125(c)(1). Marks must also be non-functional, and must meet requirements for adoption and use under the U.S. system. *Qualitex Co. v. Jacobson Products Co., Inc.*, 514 U.S. 159, 164-65 (1995) (discussing the

term of art in trademark law meaning, in rough terms, that the mark does not merely restate the genus to which the products or services belong.⁵¹ Marks can be deemed distinctive because of their inherent attributes, or because they acquire distinctiveness through use in the marketplace.⁵²

Seed firms have employed trademark protection in many fairly predictable, and some less predictable, ways. Monsanto has registered the word mark ROUNDUP READY for seeds and herbicide-tolerant genes.⁵³ Pioneer has also registered its famous logo. Seed companies undoubtedly consider features such as the combination of color and graphics on seed bags to constitute distinctive product packaging trade dress. Firms might employ other strategies as well, such as impregnating a seed product with a particular distinctive color and claiming trademark protection in that color as used in connection with seed products. Under U.S. law, such a claim is viable if the firm can show that the color has acquired distinctiveness through use in the marketplace.⁵⁴

A more difficult issue is whether seed companies should be entitled to assert trademark rights in the names of plant varieties. The answer as a matter of black-letter law is straightforward: plant variety designations are deemed generic, and hence are unprotectable as trademarks. However, the justifications for this rule are not entirely consonant with standard trademark law, and deserve close scrutiny.

Plant variety designations are subject to regulations that do not apply to other product designations. In the U.S., the Federal Seed Act⁵⁵ imposes various “truth-in-labeling” requirements on seed firms who desire to market seeds in U.S. commerce. In international law, Article 20 of International Convention for the Protection of New Varieties of Plants (UPOV)⁵⁶ specifies that plant varieties that are the subject of

functionality doctrine).

51. *Abercrombie & Fitch Co. v. Hunting World, Inc.*, 537 F.2d 4, 9 (2d Cir. 1976).

52. *Wal-Mart Stores, Inc. v. Samara Bros., Inc.*, 529 U.S. 205, 210-12 (2000).

53. *See, e.g.*, U.S. Tm. Reg. 1,889,104 (ROUNDUP READY for “herbicide-tolerant genes for use in the production of agricultural seed”).

54. *See Qualitex Co. v. Jacobsen Prods. Co.*, 514 U.S. 159 (1995) (holding a color of a product protectable as a trademark if a secondary meaning can be shown).

55. *See* 7 U.S.C. §§ 1551-1611 (1939).

56. *See* International Convention for the Protection of New Varieties of

plant breeder's rights must be marketed under an established "variety denomination."⁵⁷ Article 20(1)(a) requires that the designated variety denomination be deemed the generic designation for the plant variety.⁵⁸ Other provisions require that "no rights in the designation registered as the denomination of the variety shall hamper the free use of the denomination in connection with the variety, even after expiration of the breeder's rights,"⁵⁹ and that any party who markets propagating material for a protected variety must use the denomination, even after the expiration of the breeder's right in that variety.⁶⁰

These requirements are inconsistent with any assertion of trademark protection in plant variety denominations. Genericness is the antithesis of trademark distinctiveness. Thus, it is not surprising that the United States Patent and Trademark Office (PTO) has taken the position that it will refuse registration of any word mark for plants or seeds that "comprises a varietal or cultivar name,"⁶¹ on grounds of genericness.⁶²

The PTO's stance does not appear to have caused grave practical problems for seed companies. A seed company can

Plants, Dec. 2, 1961, 33 U.S.T. 2703, 815 U.N.T.S. 89, as amended on Mar. 19, 1991 [hereinafter UPOV], available at <http://www.upov.int/en/publications/conventions/1991/pdf/act1991.pdf>.

57. *Id.* art. 20.

58. *See id.* art. 20(1)(a).

59. *Id.* art. 20(1)(b).

60. *See id.* art. 20(7).

61. *See* UNITED STATES PATENT AND TRADEMARK OFFICE, TRADEMARK MANUAL OF EXAMINING PROCEDURE § 1202.12 (2003) [hereinafter TMEP], available at http://www.uspto.gov/web/offices/tac/tmep/1200.htm#_Toc2665947; *In re Delta & Pine Land Co.*, 26 U.S.P.Q.2d (BNA) 1157, 1159 n.4 (TTAB 1993) (stating there is "no question" that varietal designations are generic and unregistrable); *In re Hilltop Orchards & Nurseries, Inc.*, 206 U.S.P.Q. (BNA) 1034 (TTAB 1979) (affirming the rejection of COMMANDER YORK for apple tree on the ground that it would be perceived as "common descriptive name" of the goods); *In re Cohn Bodger & Sons Co.*, 122 U.S.P.Q. (BNA) 345, 346 (TTAB 1959) (concluding that "BODGER" is the trademark, and 'BLUE LUSTRE' is the varietal name designating a hybrid petunia of a specific variety and color rather than a brand-name identifying seeds sold only by applicant and distinguishing them from seeds sold by others").

62. These decisions precede U.S. accession to UPOV. Indeed, the early case precedes the creation of UPOV. UPOV compliance cannot have been the impetus for the U.S. rule. In any event, U.S. cases do not appear to limit the genericness rule to plant varieties that are the subject of Plant Variety Protection certificates.

choose a rather mundane designation (often a combination of letters and numbers) as the variety denomination, and then choose a more memorable “fancy” name to accompany the variety denomination on any product packaging and advertising. While the company must concede away any trademark rights in the variety denomination, the company should still be entitled assert rights in the accompanying fancy name. The UPOV scheme expressly provides that “[w]hen a variety is offered for sale or marketed, it shall be permitted to associate a trademark, trade name or other similar indication with a registered variety denomination.”⁶³ Unfortunately, this arrangement would seem to invite arguments over what really constitutes the unprotectable variety denomination as opposed to the protectable accompanying mark.

The problems with the PTO’s position relate, instead, to the rationales for denying trademark protection. The cases appear to espouse two rationales: genericness (as already discussed) and alleged duplicate protection due to a perceived conflict with patent and plant variety protection (PVP) law. As discussed further, the rationales are blended in some cases. In *Hilltop*, for example, the trademark examiner cited the applicant’s plant patent as “evidence that the goods on which the mark is used is indeed a variety,” supporting the genericness theory.⁶⁴ Similarly, the U.S. Trademark Manual of Examining Procedure instructs trademark examiners that:

Whenever an application is filed to register a mark containing wording for live plants or agricultural seeds, the examining attorney must inquire of the applicant whether the term has ever been used as a varietal name, and whether such name has been used in connection with a plant patent, a utility patent, or a certificate for plant variety protection.⁶⁵

Viewed purely as a matter of trademark policy, neither rationale is very compelling.

First, setting aside the UPOV and related truth-in-labeling requirements for seeds, it is not clear that plant breeders always use variety denominations as generic references.⁶⁶

63. UPOV, *supra* note 56, art. 20(8).

64. *Hilltop*, 206 U.S.P.Q. (BNA) at 1035.

65. TMEP, *supra* note 61, § 1202.12.

66. In other areas, model designations have sometimes been deemed registrable as trademarks without apparent negative consequences for competition. See, e.g., *In re Petersen Mfg. Co.*, 229 U.S.P.Q. (BNA) 466, 468 (TTAB 1986) (referring to letter-number combinations for locking hand tools and stating, “there is no question that such model designations can, through

Standard trademark law calls for a case-by-case assessment of genericness. While standard trademark law certainly can be altered by external rules such as truth-in-labeling requirements originating from UPOV, such alterations should be treated as exceptional, and the external rules should be narrowly construed.

Second, the argument that trademark protection would conflict with the goals of the patent or PVP regimes is flawed. In *Dixie Rose*,⁶⁷ the court reviewed the Trademark Office's refusal to register TEXAS CENTENNIAL (and design) for roses, scions, and cuttings under the 1905 Act, predecessor to the current U.S. trademark statute. In upholding the refusal, the court adopted the genericness rationale, but also asserted that offering trademark protection would give the applicant an "unfair advantage" because the applicant also had plant patent protection for the roses.⁶⁸ According to the court, the applicant trademark protection would "tend to prolong [the applicant's] monopoly, beyond the life of [the applicant's] patent, by making it difficult for a newcomer to break into the field."⁶⁹ Similarly, in the CHIEF BEMIDJI case,⁷⁰ the Trademark Trial and Appeal Board (TTAB)⁷¹ asserted that

[A]ny rights which applicant enjoys in the 'CHIEF BEMIDJI' plant derives from its [plant] patent since others are prohibited from growing and selling this variety during the life of said patent. To grant applicant a [trademark] registration of this designation with all the statutory presumptions accruing therefrom would be inconsistent with the right which others will have upon the expiration of the patent not only to grow and sell the plant but also to use 'CHIEF BEMIDJI' as the varietal name.⁷²

In support, the TTAB cited the famous "Shredded Wheat" case, *Kellogg Co. v. Nabisco Co.*⁷³

use and promotion, be perceived as marks indicating origin in addition to functioning as model designations").

67. See *Dixie Rose Nursery v. Coe*, Comm'r of Patents, 131 F.2d 446 (D.C. Cir. 1942), cert. denied, 318 U.S. 782 (1943).

68. See *id.* at 447.

69. *Id.*

70. *In re Farmer Seed & Nursery Co.*, 137 U.S.P.Q. (BNA) 231 (TTAB 1963).

71. The TTAB is an administrative body within the U.S. PTO that receives appeals from applicants who have been refused registration by a trademark examiner.

72. *Farmer*, 137 U.S.P.Q. (BNA) at 232.

73. See *id.* at 232 (citing *Kellogg Co. v. National Biscuit Co.*, 305 U.S. 111 (1938)).

But the *Kellogg* case cannot be fairly read to confer “an unlimited right to market” a formerly-patented product under a particular trademark.⁷⁴ More fundamentally, it is simply not clear that a patent owner enjoys a particular “advantage” in establishing trademark rights for its products that others would lack. A patent does not provide its owner any affirmative right to do anything. It only grants the owner the right to exclude others from commercially exploiting the claimed invention. If the patentee itself desires to exploit the invention, the patentee must invest capital, and if the patentee desires to associate a particular trademark with the patented product, the patentee must also invest in building up goodwill, just as any other mark owner would need to do.

It might be argued that a patent owner seeking to establish trademark rights still has an advantage over others: he or she need not invest in building up goodwill at the same level as others because competitors are precluded by the patent from producing the patented product under a different mark. But this argument begs for empirical evaluation. Some trademark owners do not have close competitors even in the absence of patents, yet we certainly do not use the absence of competitors as an excuse to take away their trademark rights. Additionally, some trademark owners who do have patents may have to invest more in securing their trademark rights – the existence of the patent might actually be disadvantageous – because of the risk that consumers will come to consider the firm’s trademark as the generic reference to the goods, since the firm is the only marketer of the goods.

In any event, loose rhetoric about overlaps between intellectual property regimes is particularly dangerous in the seed industry, where a multiplicity of intellectual property regimes may be invoked for any given product.⁷⁵ Even if the trademark rules do not present immediate practical concerns for the seed industry, the industry should challenge the use of flawed rationales concerning conflicts among intellectual property regimes, lest those rationales be applied by analogy to

74. See, e.g., Graeme B. Dinwoodie, *Kellogg Co. v. Nabisco Co.*, in *INTELLECTUAL PROPERTY LAW STORIES* (forthcoming 2005) (noting that the Court granted defendant the right to copy only on the condition that the defendant identify its product so that consumers could distinguish it from the plaintiff(s)).

75. I develop this point in more detail in Mark D. Janis, *Interface Measures and Collision Norms for Intellectual Property* (forthcoming).

other intellectual property interfaces, such as that between the utility patent and plant breeder's rights regimes.⁷⁶

C. UNFAIR COMPETITION PROTECTION AGAINST GERMPLASM MISAPPROPRIATION

Unfair competition law is another supplemental mechanism for protecting intellectual assets associated with plant breeding technology. Unfair competition claims might be relevant in cases of germplasm misappropriation, brown bag sales, and other false representations about seed products.

Unfair competition law is a standard component of modern intellectual property systems. It is an established principle of international intellectual property law,⁷⁷ and is implemented domestically in a variety of ways. The Lanham Act § 43(a)⁷⁸ is the principal basis for federal unfair competition claims. In its usual manifestations, § 43(a) is similar to a trademark infringement cause of action, except that a § 43(a) action does not require any registered trademark rights, and theoretically contemplates a broader array of unfair commercial practices than technical trademark infringement – practices that may include a variety of false representations about one's own or another's products or services.⁷⁹

76. For a slightly different, but still sympathetic, argument, see Stanley D. Schlosser, *The Registration of Plant Variety Denominations*, 29 IDEA 177 (1988). Schlosser argues that when the patent or plant breeder's certificate expires, competitors should be free "to commercialize the formerly protected variety" but the competitor "is not automatically free, however, to utilize the patent owner's trademark in his marketing"; this instead should be a matter for case-by-case adjudication on the merits of the trademark claim. *Id.* at 184. Schlosser also asserts that the relationship between trademark rights and variety denominations should be left to national law, and that the relevant UPOV provision on variety denominations (now Article 20) should be eliminated. *Id.* at 188-89. For a contrary view, taking the position that trademark law should be amended to make explicit the prohibition against trademark protection for variety denominations, see Paul van der Kooij, *Is Something Rotten in the Member States*, 22 EUR. INTELL. PROP. REV. 189 (2000). Van der Kooij would extend this prohibition to all variety denominations, irrespective of whether the variety has been the subject of a plant breeder's certificate. *Id.*

77. See Paris Convention for the Protection of Industrial Property, Mar. 20, 1883, as last revised at Stockholm, July 14, 1967, art. 10*bis*, 21 U.S.T. 1583, 828 U.N.T.S. 305 [hereinafter Paris Convention].

78. See 15 U.S.C. § 1125(a).

79. The language of the statute amply supports a broad conception of unfair competition:

(1) Any person who, on or in connection with any goods or services, or any container for goods, uses in commerce any word, term, name,

Courts adjudicating unfair competition cases in the U.S. have sometimes employed the labels “passing off” and “reverse passing off” to designate two separate categories of unfair competition claims.⁸⁰ Suppose that a local seed producer places its own, low-quality seeds in bags that use the same distinctive color scheme, graphics, and perhaps use even the same brand as a multinational seed company. The local seed producer has probably violated § 43(a) by attempting to “pass off” its own product as that of the multinational. This is a mundane type of violation in unfair competition law, wherein a producer simply misrepresents its own products as a competitor’s.

By contrast, suppose that the local seed producer appropriates another seed company’s germplasm by unauthorized means and produces seed. The local producer then sells the seed under its own label (without, of course, any acknowledgment of its actual origin). This is the passing off scenario in reverse: the local producer is now trying to pass off another’s product as the product of the local producer. That is, a producer is misrepresenting someone else’s products as his own.

In theory, a § 43(a) reverse passing off cause of action should be valuable as a supplemental intellectual property mechanism for use against misleading commercial practices in the seed industry. As applied to cases involving the misappropriation of germplasm, a § 43(a) reverse passing off claim could serve as an alternative claim to a trade secret misappropriation claim. Indeed, a reverse passing off claim succeeded in the *Pioneer v. Holden* case.⁸¹ A reverse passing off claim might be more attractive than a trade secret claim in

symbol, or device, or any combination thereof, or any false designation of origin, false or misleading description of fact, or false or misleading representation of fact, which-

(A) is likely to cause confusion, or to cause mistake, or to deceive as to the affiliation, connection, or association of such person with another person, or as to the origin, sponsorship, or approval of his or her goods, services, or commercial activities by another person, or

(B) in commercial advertising or promotion, misrepresents the nature, characteristics, qualities, or geographic origin of his or her or another person's goods, services, or commercial activities,

shall be liable in a civil action by any person who believes that he or she is or is likely to be damaged by such act.

15 U.S.C. § 1125(a)(1).

80. See, e.g., *Creeden v. Infosoft, Inc.*, 326 F.Supp.2d 876 (N.D. Ill. 2004); *Pioneer Hi-Bred Int’l v. Holden Found. Seeds, Inc.*, 35 F.3d 1226 (8th Cir. 1994).

81. *Pioneer Hi-Bred Int’l.*, 35 F.3d at 1241-42.

that reverse passing off is a federal claim, requires no showing of secrecy, and may call for less complex proofs than those necessary to show trade secret misappropriation.⁸²

Similarly, a § 43(a) reverse passing off action could theoretically be brought against parties who save a firm's seed and sell it via "brown-bag" sales. United States plant variety protection law already proscribes brown-bag selling of saved PVP-protected seed.⁸³ However, if the subject seed does not enjoy PVP protection, or the certificate is invalid or expired, the proscription does not apply.⁸⁴ In such circumstances, a seed firm could conceivably rely on a § 43(a) reverse passing off action.⁸⁵ Under § 43(a) law, behavior of this type has been designated "implied" reverse passing off – that is, the act of "removing or obliterating the name of the source and then selling the product in an unbranded state."⁸⁶

While these features would seem to signify that § 43(a) reverse passing off actions are to be taken seriously as vehicles for IP protection, § 43(a) actions are also subject to important limitations. The scope of injunctive relief in a § 43(a) case – and in most other Lanham Act cases – is likely to be more limited than the injunctive relief that might issue in a utility patent or PVP case. The remedy in a § 43(a) case is designed to address the consequences of the false representation. Ordinarily the remedy is aimed simply at alleviating consumer confusion.⁸⁷ This means that even if a firm prevails in a § 43(a) action, the injunction may not, as a practical matter, prevent the enjoined competitor from marketing the product at issue. The competitor might, for example, include disclaimers on the label and thereby proceed free of the injunction.

In addition, some in the U.S. are questioning the viability

82. For example, in a reverse passing off case, it might be sufficient to prove that the germplasm did not originate with the local producer, without proving exact parentage, whereas ideally more direct evidence of misappropriation would be offered in a trade secret case.

83. 7 U.S.C. § 2543 (2000).

84. *Id.* § 2541.

85. There is no time limit on §43(a) actions, although in cases of unreasonable delay in commencing the action, § 43(a) might be limited by the equitable doctrine of laches.

86. *Lamothe v. Atlantic Recording Corp.*, 847 F.2d 1403, 1406 (9th Cir. 1998).

87. See J. THOMAS MCCARTHY, TRADEMARKS AND UNFAIR COMPETITION LAW § 30.3 (2004) (collecting authorities on a variety of limitations to the scope of injunctions in trademark and unfair competition cases).

of § 43(a) reverse passing off claims in the wake of the U.S. Supreme Court's *Dastar* decision.⁸⁸ *Dastar* was distributing a videotape set on World War II that it had created by copying and editing the tapes of an old television series.⁸⁹ The series in turn was based on a book.⁹⁰ Neither *Dastar*'s packaging, nor its screen credits on the videotapes, made any reference to the television series or the book.⁹¹ Fox produced a competing set of videotapes based on the same television series and sued to enjoin *Dastar*.⁹² Fox had owned the television series copyright but failed to renew it, so its only copyright claim was a possible claim as licensee of the copyright in the underlying book.⁹³ Instead of relying solely on copyright law, Fox also asserted a § 43(a) reverse passing off claim, on the grounds that *Dastar*'s packaging misrepresented the videotapes as originating with *Dastar*, when in fact the underlying creative content of the videotapes was attributable to the producers of the television series and book.⁹⁴ The lower courts accepted *Dastar*'s theory, but the U.S. Supreme Court rejected it.⁹⁵ According to the Supreme Court, if a party produces a product, the party can represent that the product originates with it without violating § 43(a), even if someone else was responsible for the underlying creative content.⁹⁶

Dastar cannot properly be read to have eliminated the § 43(a) reverse passing off cause of action altogether. The Court's opinion acknowledges that "every Circuit to consider the issue found § 43(a) broad enough to encompass reverse passing off" and concludes that the "language [of § 43(a)] is amply inclusive . . . of reverse passing off – if indeed it does not implicitly adopt the unanimous court of appeals jurisprudence on that subject."⁹⁷

Moreover, the Court's opinion indicates that it intended to endorse claims of reverse passing off where the defendant has

88. *Dastar Corp. v. Twentieth Century Fox Film Corp.*, 539 U.S. 23 (2003).

89. *Id.* at 26.

90. *Id.* at 25-26.

91. *Id.* at 27.

92. *Id.* at 26-27.

93. *Id.* at 27.

94. *Dastar*, 539 U.S. at 27.

95. *Id.* at 27-28, 38.

96. *Id.* at 37-38. The Court relied in part on a narrow construction of the term "origin" in § 43(a).

97. *Id.* at 30.

done nothing more than literally repackage the plaintiff's goods.⁹⁸ The Court opined that Fox's claim against Dastar "would undoubtedly be sustained" if Dastar had simply bought Fox's videotapes and replaced the Fox packaging with Dastar packaging.⁹⁹ Presumably this means that if a firm buys another company's seeds and simply pours them into a different bag and resells them, *Dastar* would not preclude a § 43(a) reverse passing off claim.¹⁰⁰

Would *Dastar* preclude a § 43(a) reverse passing off claim against brown bag sales of saved seed? The brown bag seller would undoubtedly argue that he is not misrepresenting the "origin" of the goods because he produced the physical seeds that are being sold, even though the combination of valuable traits embodied in the seeds is the result of someone else's breeding program. The same argument would presumably be raised against a reverse passing off claim for misappropriation of germplasm, one of the theories in the *Pioneer v. Holden* case. A court in either case would need to determine whether to limit *Dastar* to its factual setting – in particular, whether to limit *Dastar* to cases involving unfair competition claims that seek to circumvent the limitations of copyright law. The perceived conflict between trademark law and copyright law animates the *Dastar* rule, but the Court's opinion also contains remarks that could be used to extend the rule beyond the trademark/copyright interface. In *Pioneer v. Syngenta*,¹⁰¹ the court invoked *Dastar* in analyzing a germplasm misappropriation allegation. Pioneer alleged that Syngenta had misappropriated Pioneer seed corn germplasm and used it in a Syngenta breeding program. Among other theories,

98. *Id.* at 31.

99. *Id.* Instead, Dastar had produced its tapes by copying from the master tapes of the television series. One may question whether the distinction between this behavior, and merely buying and repackaging tapes, is significant, given that the result is the same from the consumer's perspective. For a more thorough assessment and critique of *Dastar*, see Graeme B. Dinwoodie & Mark D. Janis, *Revitalizing Unfair Competition Law* (forthcoming).

100. For a post-*Dastar* ruling that is consistent with this position, see *Carroll v. Kahn*, 68 U.S.P.Q.2d (BNA) 1357, 1361 (N.D.N.Y. 2003) (citing *Dastar* for the proposition that if plaintiff claims that defendant merely repackaged the product at issue - a movie - as its own, plaintiff states a claim, whereas if plaintiff claims that defendant failed to give attribution to plaintiff, plaintiff's claim is barred).

101. *Pioneer Hi-Bred Int'l, Inc. v. Syngenta Seeds, Inc.*, 4:02-cv-90541 (S.D. Iowa filed Aug. 17, 2004).

Pioneer asserted § 43(a) passing reverse passing off. When the Supreme Court decided *Dastar*, Syngenta moved to dismiss the reverse passing off claim, asserting that *Dastar* foreclosed relief. With little discussion,¹⁰² the court agreed.

Pioneer v. Syngenta also discusses another important post-*Dastar* issue. A separate provision in § 43(a) governs causes of action for false advertising.¹⁰³ The Court in *Dastar* noted that a false advertising claim might serve as a viable alternative to reverse passing off.¹⁰⁴ It should be relatively easy of plaintiffs to reformulate their reverse passing off claims as false advertising claims as a temporary strategy for evading the limitations of *Dastar*.¹⁰⁵

Currently, there is no indication that European unfair competition law would countenance a restrictive rule like the rule of *Dastar*. In particular, there is no reason to expect that European unfair competition law will adopt the cramped notion that false representations about “origin” are only actionable if they are false representations about the origin of the actual physical product. Accordingly, unfair competition as a remedy for germplasm misappropriation in Europe should remain a viable supplement to other IP mechanisms.¹⁰⁶

IV. POST-SALE CONTRACT RESTRICTIONS

A discussion of supplemental forms of intellectual property protection for plants would be incomplete without an examination of the role of intellectual property license restrictions on breeding, resale, and other activities. In particular, two broad classes of post-sale contract restrictions are familiar in the seed industry. First, license provisions might restrict a grower’s use of purchased seed, prohibiting seed saving and replanting, and prohibiting resale outside the authorized distribution channels.¹⁰⁷ Second, license

102. Pioneer apparently conceded that *Dastar* precluded relief.

103. 15 U.S.C. § 1125(a)(1)(B) (2000).

104. *Dastar Corp. v. Twentieth Century Fox Film Corp.*, 539 U.S. 23, 38 (2003).

105. In *Pioneer v. Syngenta*, Pioneer was faced with the more difficult task of persuading the court that the reverse passing off claim actually stated a claim for false advertising. The court rejected this argument.

106. For an authoritative synthesis of European notions of unfair competition law, see INTERNATIONAL BUREAU, WORLD INTELLECTUAL PROPERTY ORGANIZATION, WIPO PUB NO. 725(E), PROTECTION AGAINST UNFAIR COMPETITION (1994).

107. Examples include Monsanto’s technology agreement for growers who

restrictions might prohibit or limit breeding activities, including using a protected variety in a breeding program, and/or subjecting a protected variety (e.g., a trade secret-protected variety) to reverse engineering.¹⁰⁸

The law of post-sale intellectual property contract restrictions invokes rules that are external to intellectual property altogether, as well as rules that are internal to it, but reside at the peripheries of its jurisprudence. The area is complex and volatile. Whether post-sale contract restrictions in an intellectual property license are enforceable generally may be understood as a matter of whether the restriction at issue conflicts with any of four sets of rules: (1) intellectual property rules on “exhaustion by sale”; (2) antitrust (competition) law rules; (3) general rules of contract enforcement; and (4) preemption rules (in particular, any rules that govern the interfaces between intellectual property regimes). In this section, I briefly sketch out some of the issues and rules arising under each of these categories, as those issues have arisen under U.S. law.

purchase ROUNDUP READY® seed and Pioneer’s bag tag restrictions appearing on its bags of hybrid seed corn. The Monsanto technology agreement litigated in *McFarling I* required that purchased seed be used “for planting a commercial crop only in a single season,” and required that the grower not “save any crop produced from [Monsanto’s patented] seed for replanting, or supply saved seeds to anyone for replanting.” *Monsanto Co. v. McFarling*, 302 F.3d 1291, 1293 (Fed. Cir. 2002) [hereinafter *McFarling I*]. One of the Pioneer bag tag licenses, litigated in the *Ottawa* case, included the following language:

One or more of the parental lines used in producing this product are proprietary to Pioneer Hi-Bred International, Inc. (“Pioneer”). Parental lines are U.S. Protected Varieties and may be protected under the laws of other countries; export or transfer of possession is prohibited. Pioneer intends to supply only hybrid seed. *Customer agrees that it is not acquiring the rights to use any parental line for any purpose other than production of forage or grain for feeding or processing. If the tag indicated this product is produced under one or more U.S. patents, customer is licensed thereunder only to produce forage or grain for feeding or processing.* All uses outside the U.S. are prohibited to the extent they result in infringement of U.S. patents.

Pioneer Hi-Bred Int’l, Inc. v. Ottawa Plant Food, Inc., 283 F. Supp. 2d 1018, 1025 (N.D. Iowa 2003) (emphasis in original).

108. See, e.g., *Pioneer Hi-Bred Int’l, Inc. v. DeKalb genetics Corp.*, 51 U.S.P.Q. 1987 (S.D. Iowa 1999) (enforcing “bag tag” prohibiting purchasers of PVP-protected corn seed from using the seed for breeding or research purposes).

A. EXHAUSTION BY SALE

U.S. utility patent law, like the law of most intellectual property regimes, includes a principle that is variously called “exhaustion by sale,” the “implied license,” or, less often in patent law but more frequently in other areas of intellectual property, the “first sale” doctrine. Under this principle, when a customer purchases a patented product in an authorized sale, the customer is deemed to have received an implied patent license along with the physical product to use and dispose of the product in ordinary ways.¹⁰⁹ The patent owner’s patent rights are “exhausted” in the specific physical product that is the subject of the sale; the authorized “first sale” of the product from the patent owner to the customer triggers the exhaustion.¹¹⁰ The rule may be understood as a reflection of the probable intentions of the patent owner and customer: the patent owner sets a price, and the customer is willing to pay the price, on the understanding that the purchaser will use the patented product for its ordinary purposes. Because such use would require a patent license, the patent owner’s price must be understood to incorporate a patent license fee.

A threshold issue concerning exhaustion rules is whether the principle of exhaustion overrides express conditions that a patent owner may place on a sale of a patented good. In other words, the principle of exhaustion could, in theory, be viewed as an absolute rule, or merely as a default rule that a patentee can override by using express contract terms.

U.S. courts have treated patent exhaustion as a default rule that a patentee can override with express contract restrictions,¹¹¹ a sensible result if the exhaustion principle is treated as a consequence of an implied license reflecting the probable intention of the parties. When a patentee adds express conditions to a sale of a patented product, the purchaser presumably pays a lower price as a result.

This issue has arisen in litigation over the application of patent exhaustion principles to seed bag tags. In *Pioneer v.*

109. See, e.g., 17 U.S.C. § 109 (2000) (detailing “first sale” rights as they apply to sound recordings).

110. See *Jazz Photo Corp. v. Int’l Trade Comm’n*, 264 F.3d 1094, 1105 (Fed. Cir. 2001).

111. See, e.g., *Jazz Photo Corp.*, 264 F.3d at 1105 (“The *unrestricted* sale of a patented article, by or with the authority of the patentee, ‘exhausts’ the patentee’s right to control further sale and use of that article by enforcing the patent under which it was first sold.”) (emphasis added).

Ottawa, *Ottawa* sought to invoke patent exhaustion, but the seed bag tag at issue imposed express restrictions that were inconsistent with *Ottawa*'s claim of exhaustion.¹¹² The court held that the bag tag provisions operated as conditions on the sale of seed that overrode the general principle of exhaustion.¹¹³ Stated another way, only an unrestricted "first sale" triggers exhaustion. This ruling is consistent with the prevailing law.

A more difficult issue concerning the application of exhaustion principles to the plant breeding industry is how exhaustion should apply to self-replicating products.¹¹⁴ The question arose in *Monsanto v. McFarling*,¹¹⁵ (*McFarling I*) in which Monsanto sought to enforce patents on ROUNDUP READY® soybeans against a grower who had saved and replanted seed.¹¹⁶ The grower argued, in effect, that when he purchased Monsanto seeds, Monsanto's patent rights were exhausted not only in the purchased seeds, but also in subsequent generations of seeds harvested from crops that were grown from the purchased seeds.¹¹⁷

The grower had purchased the seeds subject to Monsanto's technology agreement, which expressly forbade seed saving and replanting.¹¹⁸ Reviewing the argument on appeal, the Federal Circuit could have concluded that the express conditions in the technology agreement governed over any contrary principles of exhaustion. Instead, the court took a more formalistic tack, pointing out that the patents included claims to the seed, not just the plant, and concluding that because there was never any authorized sale of the saved and replanted seed, exhaustion could not have been triggered as to the saved and replanted seed.¹¹⁹ In any event, the decision demonstrates that intellectual property exhaustion rules do not present a serious obstacle to standard post-sale restrictions in seed contracts.

112. *Pioneer v. Ottawa*, 283 F. Supp. 2d at 1031-32.

113. *Id.* at 1033.

114. For an early article analyzing this issue, see Scott A. Chambers, *Exhaustion Doctrine in Biotechnology*, 35 IDEA 289 (1995).

115. *McFarling I*, 302 F.3d 1291 (Fed. Cir. 2002).

116. *Id.* at 1293-94.

117. *Id.* at 1298.

118. *Id.* at 1293.

119. *Id.* at 1299 ("The original sale of the seeds did not confer a license to construct new seeds, and since the new seeds were not sold by the patentee they entailed no principle of patent exhaustion."); see also *Monsanto Co. v. Swann*, 308 F. Supp. 2d 937, 941-942 (E.D. Mo. 2003) (adopting the approach of *McFarling I* on the exhaustion issue without further analysis).

B. ANTITRUST/COMPETITION LAW

Post-sale contract restrictions in intellectual property licenses may raise competition concerns. While intellectual property licensing is pro-competitive in many circumstances, competition authorities have historically expressed concerns that intellectual property owners may use licenses as leverage to obtain market advantages exceeding those that the intellectual property laws contemplate.¹²⁰ In general, under the doctrine of patent misuse in the U.S., post-sale license restrictions will be rendered unenforceable where: (1) through the license restriction, the patentee has broadened the scope of the patent beyond its expected and ordinary scope; and, (2) the anti-competitive effects of the broadening outweigh the pro-competitive benefits under application of the rule of reason.¹²¹ Some types of licensing restrictions are deemed *per se* to broaden patent scope with net anti-competitive effect — for example, post-expiration royalty provisions.¹²² Other types of licensing restrictions are ordinarily upheld under this framework — for example, field-of-use restrictions.¹²³

U.S. courts have now begun to apply this framework to various post-sale restrictions in seed licenses, upholding the challenged restrictions in cases decided to date.¹²⁴ In *Pioneer v. Ottawa*, involving Pioneer's bag tag restriction against resale of patented seed, the court reasoned that a utility patent confers absolute rights to exclude others from using and selling, so a license restriction against resale of patented seed is an assertion of part of the package of exclusive rights, not an attempt to broaden the scope of those rights.¹²⁵ Accordingly, the court upheld the bag tag restriction as a matter of law — the court saw no need even to reach second part of the framework (the rule of reason question).

120. See HERBERT HOVENKAMP ET AL., IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW § 3.2b (2002) (stating that misuse occurs when the patent owner broadens the patent with anticompetitive effect).

121. *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700 (Fed. Cir. 1992) (upholding a single-use restriction). Post-sale restrictions might also be challenged affirmatively as violating the standards of the Sherman Act.

122. *Virginia Panel Corp. v. MAC Panel Co.*, 133 F.3d 860, 869 (Fed. Cir. 1997), *cert. denied*, 525 U.S. 815 (1998).

123. See, e.g., *Pioneer Hi-Bred Int'l, Inc. v. Ottawa Plant Food, Inc.*, 283 F. Supp. 2d 1018, 1045 (N.D. Iowa 2003).

124. See *generally id.*

125. See *id.* at 1045-46.

In *McFarling I*, McFarling challenged Monsanto's seed-saving prohibition in its technology agreement as an anticompetitive tying arrangement. Specifically, McFarling argued that Monsanto tied the purchase of its patented seed to purchases of second generation seed.¹²⁶ In the context of patent license transactions, tying is a strategy for extending the scope of the patent grant by conditioning the grant of a license on the licensee's purchase of additional, unpatented materials.¹²⁷ Tying is only impermissible under certain conditions: for example, the proponent of the tying allegation must show that the licensor applied actual coercion (forcing the licensee to accept the tied product as a condition of licensing the tying product), and that the licensor possesses market power sufficient to carry out the alleged coercion.¹²⁸

In *McFarling I*, the Federal Circuit took the view that there was no likelihood of success on the tying allegation based on a preliminary record because even though the seed saving restriction had the effect of forcing the grower to buy a fresh set of seeds for each new planting, the restriction did not force the grower to buy that fresh set of seeds from Monsanto, as opposed to buying them from one of Monsanto's competitors.¹²⁹ In *McFarling II*,¹³⁰ the court arrived at the same outcome, albeit via a slightly different analysis. Monsanto sought to characterize the seed-saving prohibition as a field-of-use limitation, a type of contract provision that routinely survives scrutiny under a rule of reason analysis.¹³¹ The court resisted that characterization, reasoning that the grower engages in the same use of the purchased seed whether or not the grower intends to save and replant the second generation of seed.¹³² Accordingly, the Monsanto technology agreement did not impose a restriction on the use of the licensed product per se; instead, it imposed a restriction on the use of goods "made by"

126. See *McFarling I*, 302 F.3d 1291, 1297 (Fed. Cir. 2002). McFarling also apparently advanced an alternative argument that the restriction illegally tied the natural soybean product and the patented genetic trait.

127. See *id.*

128. See HOVENKAMP, JANIS, & LEMLEY, *supra* note 120, at 21 (giving a precise rendering of the necessary elements of proof and a detailed discussion of relevant authorities).

129. See *McFarling I*, 302 F.3d at 1298 (Fed. Cir. 2002).

130. See *McFarling II*, 363 F.3d 1336 (Fed. Cir. 2004) (on appeal from a summary judgment that followed preliminary injunction proceedings).

131. See *id.* at 1342.

132. See *id.*

the licensed product.¹³³ The court considered this distinction immaterial because the patent claim to seed would encompass the second generation seed as it would the first. However, the court left open the possibility that a different rule might be appropriate for different circumstances.¹³⁴

In sum, cases to date have demonstrated no trend towards heightened competition law scrutiny of post-sale restriction clauses in seed contracts in the United States. Undoubtedly, such contracts will continue to be the subject of litigation in the U.S. and elsewhere.

C. CONTRACT ENFORCEMENT ISSUES

As litigants become convinced that courts will carefully circumscribe patent law and competition law challenges to the enforceability of typical seed contract provisions, litigants will begin to explore other avenues of relief, including general contract law. A full exploration of this issue is beyond the scope of this article, but guidelines are emerging in U.S. case law and legislation that address whether a standard label license will be treated as a binding contract. Under the Uniform Commercial Code (UCC), the terms in a label license can become part of a binding contract between “merchants” (a term that would include seed firms and growers) if the licensee fails to object within a reasonable time.¹³⁵ However, the UCC also provides that terms that “materially alter” the bargain between the parties does not become part of the contract.¹³⁶

In the context of seed contracts, courts have resolved the tension between these two rules by holding that where the potential licensee (e.g., the grower who receives the seed bag) has knowledge of the bag tag license and fails to object within a reasonable time, the license is enforceable.¹³⁷ Importantly, courts have also concluded that there need not be a direct showing of actual notification. The requisite knowledge on the part of the licensee can be inferred from announcements in general trade journals and the like.¹³⁸

133. *See id.* at 1342-1343.

134. *See id.*

135. *See* U.C.C. § 2-207(2)(c) (2004).

136. *See id.* § 2(b).

137. *See* Pioneer Hi-Bred Int'l, Inc. v. Ottawa Plant Food, Inc., 283 F. Supp. 2d 1018, 1047-48 (N.D. Iowa 2003) (citing *Monsanto v. Scruggs*, 249 F. Supp. 2d 746 (N.D. Miss. 2001)).

138. *See id.* at 1047.

The contract law relating to seed licenses is only in its infancy in the U.S. Many state legislatures are enacting legislation specifically tailored to regulate contracts between seed firms and growers. Litigation over foundational contract matters such as those discussed here, and over new state legislation, should be expected to increase substantially over the next several years.

D. PREEMPTION ISSUES

Finally, post-sale contract restrictions may raise questions that I will characterize as questions of “preemption.” Suppose that a provision in a patent license agreement conflicts with a statutory provision existing in a plant breeder’s rights statute. Should a court conclude that the provision in the plant breeder’s rights statute overrides (preempts) the patent license restriction? More generally, should a court engraft limitations from one intellectual property regime onto another regime?

I will only attempt to answer that question here in connection with two specific scenarios. In the first, suppose that the contract restriction precludes seed saving and replanting of seed patented in the U.S., and the preemption argument is founded on the existence of the statutory seed saving provision in the U.S. Plant Variety Protection Act.

In *McFarling I* and *II*, the Federal Circuit held that patent holders can enforce seed saving prohibitions in patent license agreements.¹³⁹ The statutory limitation on PVP rights allowing seed saving is just that: a limitation on rights conferred under the PVP regime. It cannot “impart the right to save seed of plants patented” under the utility patent statute, as the Federal Circuit put it.¹⁴⁰ A limitation on intellectual property rights in one regime cannot confer a “right” that applies to limit rights acquired under other intellectual property regimes.¹⁴¹

In a second scenario, suppose that a contract restriction precludes reverse engineering of trade secrets embodied in seed that is sold to a customer. Here, one preemption issue is

139. See generally *McFarling I*, 302 F.3d 1291 (Fed. Cir. 2002); *McFarling II*, 363 F.3d 1336 (Fed. Cir. 2004).

140. *McFarling I*, 302 F.3d at 1299.

141. The same general principle should apply to the PVP breeder’s exemption. That is, the PVPA does not impart a “right” to breeders to conduct commercial research on patented plant varieties; it only creates a limitation on PVP rights. A claim that a patent license restriction on breeding research “violates” the PVPA should be rejected.

whether the PVP research exemption preempts such a contract provision. In *Pioneer v. DeKalb*,¹⁴² the court appeared to reject such an argument, although the court cannot be considered to have decided the issue squarely because the seed at issue was not protected by a PVP certificate.¹⁴³ The same reasoning that was used in *McFarling* should also apply to this preemption argument. It is likely that this debate will be driven by litigation on shrinkwrap licenses under software copyrights.¹⁴⁴

In sum, cases decided to date have suggested that seed firms in the U.S. have considerable latitude to employ contract provisions to draft around limitations in intellectual property regimes. Future cases may clarify the precise scope of that latitude.

V. CONCLUSION

Intellectual property protection that supplements patent and plant breeder's protection will continue to be important in the seed industry. Trade secret protection has historically been an important mechanism for protecting the identity and genetics of inbreds, but in the future, utility patent protection is likely to be considered more attractive in most cases. Trademark and unfair competition protection are likely to become more important as the industry continues its shift towards differentiated seed products. Limitations on trademark protection for variety denominations are important to the extent that the rationales for those limitations spill over to other debates about overlapping intellectual property protection for plants. Limitations on unfair competition actions in the U.S. arising from the *Dastar* decision call for further elucidation. Finally, seed firms have succeeded in litigation so far in the U.S. over the enforceability of post-sale contract restrictions, though this case law has only begun to develop.

142. *Pioneer Hi-Bred Int'l, Inc. v. DeKalb Genetics Corp.*, 51 U.S.P.Q.2d (BNA) 1797 (S.D. Iowa 1999) (holding that Pioneer's claim for relief survives a motion to dismiss).

143. *See id.* at 1800.

144. *See Bowers v. Baystate Technologies, Inc.*, 320 F.3d 1317, 1324 (Fed. Cir. 2003) (holding that the U.S. Copyright Act did not preempt a shrinkwrap licensing agreement that prohibited reverse engineering).