

THE ENOLA BEAN PATENT CONTROVERSY: BIOPIRACY, NOVELTY AND FISH-AND-CHIPS

Should traditional knowledge be patentable? As the number of patents filed by large corporations for native crops has increased, activists have become concerned about the economic effects of these patents on indigenous people. This iBrief discusses the attempts by one group of activists to test the validity of such patents in the United States and explores the issue of biopiracy in the Third World.

ActionAid, a charity that works to fight the injustice and inequity that causes poverty worldwide,¹ has become increasingly concerned with the effects of patent law on international poverty. Particularly, the group is concerned with the situation that many poor farmers face today: having to pay licensing fees to grow crops native to their regions and grown for generations that have been patented by large biotechnology and seed companies. To highlight the injustices of food patenting, ActionAid has filed an application to patent chips (as in “fish-and-chips.” Basically, French fries). If granted, ActionAid’s patent would cover a ready-salted chip, called the ActionAid Chip, with a scope broad enough to potentially cover any salted French-fried potato. Because their goal is solely to draw attention to these patenting injustices, the charity has no intention of collecting licensing fees from those who infringe the salted chip patent.

In particular, ActionAid protests U.S. Patent No. 5,894,079, the Enola bean, or yellow bean, patent. The patent was granted to John Proctor, the president of seed company PODNERS, LLC, after he brought the bean seeds back from Mexico. With the patent granted, Proctor has an exclusive monopoly on yellow beans and can exclude the importation or sale of any yellow bean exhibiting the yellow shade of the Enola beans. From this, Proctor makes 6 cents per pound in royalties.² The International Center for Tropical Agriculture (CIAT) is legally challenging the patent, arguing that the patent claims are invalid, failing to meet novelty and non-

¹ ActionAid’s website can be accessed at <http://www.actionaid.org>.

² *A Bean of a Different Color*, available at http://www.americanradioworks.org/features/food_politics/beans/5.html (last visited February 25, 2002).

obviousness requirements³ and disregarding available prior art.⁴ The United States Patent and Trademark Office (USPTO) has yet to rule on the re-examination.⁵

The Enola Bean Patent: Is It Valid?

The Enola bean patent issued in 1999 and has a filing date of 1996, two years after Proctor brought the beans to the United States.⁶ Proctor planted the yellow beans in Colorado and allowed them to self-pollinate. By selecting yellow beans in several generations, a segregating population resulted in which the color of the beans is uniform, stable and changes little by season.⁷ It is this distinctive yellow color that gives the bean its novelty. It is difficult for many to understand how this patent could have been granted when its novelty appears to be based solely on its color and on its previously never having been grown in the United States.⁸ Can a color be patented? How is the novelty requirement satisfied when these beans, the same ones Proctor bought while vacationing in Mexico, have been grown for centuries?

35 U.S.C.A. § 161 states that patents may be granted to one who “invents or discovers and asexually reproduces any distinct and new variety of plant” subject to the requirements of the Patent Act. In order to be granted a patent, the inventor must show that the invention: (1) is new or a new improvement on an already existing invention, (2) is novel, (2) has utility, and (3) is non-obvious.⁹ To determine if the Enola bean patent is invalid, we must analyze each of these criteria.

First, the subject matter of the plant patent must be valid under § 101 and § 161. The Enola bean was “invented” through asexual reproduction and can be seen as distinctive because of its yellow coloring. The bean may also be considered distinctive because such coloring exists throughout the seed coat and remains uniform and stable from season to season.¹⁰ Such changes could make the Enola bean a “new improvement”¹¹ on previously existing yellow beans and may

³ Patent Act, 35 U.S.C. §§ 102-103 (2002) (providing the statutory requirements for novelty and non-obviousness).

⁴ *Enola Bean Patent Challenged*, available at <http://www.etcgroup.org/article.asp?newsid=96> (last visited February 24, 2002).

⁵ *Proctor's Gamble*, available at http://www.rafi.org/text/txt_article.asp?newsid=282 (last visited February 24, 2002).

⁶ U.S. Patent No. 5,894,079 (issued Apr. 13, 1999).

⁷ *Id.* Proctor's method is outlined in the “Detailed Description of the Invention” section.

⁸ *Mexican Bean Biopiracy*, available at <http://www.etcgroup.org/article.asp?newsid=31> (last visited February 24, 2002).

⁹ See Patent Act, *supra* note 3, at §§ 161, 101-103.

¹⁰ See Patent No. 5,894,079, *supra* note 6.

¹¹ See Patent Act, *supra* note 3, at § 101.

be sufficient for the Enola bean to satisfy the § 101 and § 161 subject matter prongs of our analysis.

Second, the invention must be novel under 35 U.S.C. § 102. Under § 102(a), the invention cannot be “known or used in this country, or patented or described in a printed publication in this or a foreign country.”¹² Mere use in Mexico without printed publication is insufficient to show a lack of novelty. Proctor argues the Enola bean is novel because it previously had not been grown in the United States.¹³ This suggests a belief that the bean was unknown and not used in the United States before the 1996 filing date. Professor James Kelly disagrees with this notion, suggesting that a document shows use in the United States of similar beans of Mexican origin dating back the 1930s.¹⁴ If this document anticipates the claims of the Enola patent, the patent would be invalid.¹⁵ Even if it does not show lack of novelty, this reference could be sufficient to show use and knowledge prior to the filing date. Mexico also claims that a bean registered in Sinaloa, Mexico in 1978 has the same genetic fingerprint as the Enola bean.¹⁶ If true and if such registration was made in a printed publication, this would invalidate the patent based on § 102(a). This genetic fingerprint could also invalidate the patent under § 101 because the invention would neither be new nor a new improvement on the 1978 beans. It is also argued that plant varieties, like the original Mexican beans, should qualify as prior art to disprove any inventiveness associated with the Enola bean.¹⁷

Proctor openly admits the Mexican origin of the beans.¹⁸ However, he believes they are patentable because a new yellow shade was obtained, and this shade coupled with the bean being grown in the United States for the first time, is sufficient to satisfy the novelty requirement.¹⁹

¹² See Patent Act, *supra* note 3, at § 102(a).

¹³ See *Mexican Bean Biopiracy*, *supra* note 8.

¹⁴ See *Mexican Bean Biopiracy*, *supra* note 8. Professor James Kelly suggests that similar beans are described elsewhere, citing *Beans of New York*, in *THE VEGETABLES OF NEW YORK*, Vol. 1, Part II (1931).

¹⁵ See, e.g., *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991). It is necessary for a single prior art reference to contain all of the elements and limitations of the claims for a finding of anticipation.

¹⁶ Timothy Pratt, *Patent on Small Yellow Bean Provokes Cry of Biopiracy*, N.Y. TIMES, March 20, 2001, at F5.

¹⁷ Jean English, *Genetic Engineering of Plants—A Review*, available at <http://www.mofga.org/gereview.html> (last visited February 26, 2002).

¹⁸ See Patent No. 5,894,079, *supra* note 6. In the “Detailed Description of the Invention,” Proctor describes purchasing a bag of beans and later planting the yellow beans in Colorado.

¹⁹ See *Mexican Bean Biopiracy*, *supra* note 8.

Others argue that the novelty requirement is not met because “growing and selling a specific seed color type hardly implies novelty or invention.”²⁰

Does the supposed difference in color between the original Mexican beans and Enola make Proctor’s bean a new variety? “With respect to plant patents, especially where the major distinguishing characteristic is color, a mere color distinction may be sufficient to distinguish over a related variety of plant. As previously noted, the plant patent claim does not have to delineate the principal distinguishing characteristic so long as it recites a new and distinct variety of the specified plant.”²¹ While this seemingly supports Proctor’s patent, can the color of Enola be considered a major distinguishing characteristic from other yellow beans? How far does the patent coverage of “Enola yellow” stretch to encompass other shades of yellow?

Third, § 103 calls for non-obvious subject matter. To show obviousness, “the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved.”²² The patent claims to isolate a segregating population with a uniform and stable yellow color by selecting for yellow seeds in several generations.²³ Would this be obvious to someone of ordinary skill in the art? Professor Kelly argues that the inventors “simply grew pure homozygous seed of yellow beans from a seed mixture which self-pollinated to reproduce itself. Nothing unique was invented, and this is a routine procedure used by bean breeders to maintain purity of genetic stocks and varieties.”²⁴ If yellow beans are found in prior art, the isolation of the Enola bean may be an obvious step for ordinarily skilled bean breeders, and it would fail the obviousness requirement.

These issues and others relating to the validity of the Enola bean patent will likely be addressed in the reexamination by the USPTO. Until then, the debate will continue.

Biopiracy and the Third World

In Northwest Mexico, yellow beans like azufrado and mayocoba have been cultivated for centuries. These are the beans Proctor purchased in Mexico and are Enola’s ancestors. Beans are a staple of the Mexican diet; 98% of Mexicans surveyed in the Northwest region eat yellow

²⁰ *Id.*

²¹ *See, e.g.,* *Jessel, Duffett and Mix v. Newland, Jessel and Duffett*, 195 U.S.P.Q. 678, 685 (Comm’r Pat. & Trademark 1977)..

²² *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

²³ *See* Patent No. 5,894,079, *supra* note 6.

²⁴ *See Mexican Bean Biopiracy, supra* note 8.

beans.²⁵ Customs officials at the US-Mexico border are now inspecting beans, searching for any patent infringing beans being imported into the United States.²⁶ Because of this bean alone and the threat of infringement, some export sales have dropped over 90%, also affecting the market for other non-yellow beans.²⁷

With the increase in granted patents based on biological and agricultural products from the Third World comes questions about the basis on which corporations can patent the knowledge and practices of indigenous people around the world. Agriculture is the primary source of employment and livelihood for 3 out of 4 people in poor countries.²⁸ How does the patenting of their livelihood affect these farmers? Farmers may be unable to grow the crops they have grown for generations without first paying royalties to patent holders. While some countries do not recognize patents on agriculture products, preventing their farmers from paying royalties, sweeping international trade agreements threaten this and could change the face of agriculture globally.

What benefits are there for the indigenous holders of such valuable knowledge? Very few, since they do not get paid for their knowledge, nor do they reap any profits from the patented products. This raises concern in the Third World that the patent system “is best suited to reward those with deep pockets, searching the world for genetic wealth.”²⁹ Some disagree with this position, suggesting that some companies have built plants in these Third World companies to process their agricultural products, in turn contributing to the local economy.³⁰ While that is a more positive approach, it does not adequately bridge the difference in profits.

Is it necessary to compensate the original holders of the knowledge? Some may argue that many of these Third World nations and their indigenous people do not have the resources or capabilities to develop the products and thus, should not get an equal share of profit. Many feel that the Third World pirates patented goods, resulting in annual losses of \$202 million for agricultural chemicals and \$2.5 billion for pharmaceuticals³¹ and therefore, do not deserve any

²⁵ *Mexican Bean Biopiracy* (citing Javier Castellanos, *Research Pinpoints Favorite Bean Flavors in Mexico*, 20 MICHIGAN DRY BEAN DIGEST 3, at 17-21 (1996)).

²⁶ *See Mexican Bean Biopiracy*, *supra* note 8.

²⁷ *See Enola Bean Patent Challenged*, *supra* note 4.

²⁸ *The ActionAid Chip*, available at <http://www.actionaid.org/newsandmedia/chip.shtml> (last visited March 2, 2002).

²⁹ *See A Bean of a Different Color*, *supra* note 2.

³⁰ Michael D. Lemonick, *Seeds of Conflict*, TIME, 50 (Sept. 25, 1995). While W.R. Grace was developing a pesticide derived from the Indian neem tree, the company locally built a plant and hired 60 Indians to work in it.

³¹ Keith Aoki, *Neocolonialism, Anticommons Property, and Biopiracy in the (Not-So-Brave) New World Order of International Intellectual Property Protection*, available at

royalties. Others suggest that while inspired by traditional knowledge, the patented products differ from the traditional products and are sufficiently novel.³² These may be satisfactory rationales for these companies, but they probably fall short of subduing the anger many feel towards the companies that have robbed them of their traditions and culture. By distancing themselves from the actual sources of knowledge, companies are clearly keeping a firm grasp on their profits.

Success of the Chip Patent

In light of these ongoing biopiracy issues and the continued plundering of the Third World, ActionAid will press onward with their chip patent. To determine if a ready-salted chip, or French fry, could be patented in the United States, we again must look to subject matter, utility, novelty, and non-obviousness.³³ Right off the bat, it seems clear that no patent will be granted unless the examiner conveniently missed the presence of McDonald's over the past 50 years.

Starting with subject matter and utility requirements under § 101, ActionAid would need to show that chips with added salt are new or are a new improvement to potatoes or to plain French fries. Chips are certainly no new and useful improvement on the potato; however, perhaps some crafty claims may convince the USPTO otherwise. ActionAid will have a much easier time showing utility since the average American eats four orders of French fries per week.³⁴

The chip patent almost certainly fails the § 102 novelty requirement. Whether they are called 'chips,' 'French fries' or 'papas fritas,' chips are both known and used in the United States and abroad. From my vast fast food knowledge, salted potatoes are also known and used. Extensive prior art, from Happy Meals to cookbooks, shows the violation of § 102(b) and would anticipate the ActionAid chip. The ActionAid chip, though surely delicious, cannot satisfy the novelty requirement.

The ActionAid chip also fails the § 103 non-obviousness requirement. The chip is certainly consumed by the scope and content of the available prior art. While adding salt may distinguish it from some prior art, this is insufficient to show non-obviousness. Those ordinarily

<http://ijgls.indiana.edu/archive/06/01/aoki.shtml> (quoting Vandana Shiva, *Biopiracy: The Plunder of Nature and Knowledge*, 56 (1996)).

³² Vandana Shiva, *The Neem Tree—A Case History of Biopiracy*, available at <http://www.twinside.org.sg/title/pir-ch.htm> (last visited February 26, 2002).

³³ See Patent Act, *supra* note 3, at §§ 101-103.

³⁴ Eric Schlosser, *Why McDonald's French Fries Taste So Good*, available at <http://www.mathaba.net/data/whymcdonalds.htm> (last visited March 2, 2002).

skilled in the art of cooking, or perhaps of frying potatoes, will show that adding salt is an obvious extension of prior art since salt has been flavoring food, and potatoes, for centuries. It appears that the ActionAid chip, in all of its fried and salted glory, may not stand a chance.

Conclusion

It remains to be seen if a CIAT's challenge to the Enola bean patent will be successful, as strong arguments lie on both sides. With new advances in biotechnology seemingly surfacing daily, the issue of biopiracy and to whom the traditional knowledge belongs is far from over, regardless of the outcome of the Enola patent challenge. It is clear that new attention will be garnered to the moral, political and legal arguments at work here. ActionAid's purpose for filing a patent for chips is to draw attention to biopiracy and may be a successful strategy: the idea of a chip patent was so outrageous that it caused *this* author to learn about "misappropriated"³⁵ beans. While some creative claims could help their patent application, the chip patent seems destined to fail and remain in the public domain. Of course, some would have said the same about a certain yellow bean of Mexican origin.

By: Gillian N. Rattray

³⁵ See *Enola Bean Patent Challenged*, *supra* note 4.