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Mexican Bean Biopiracy

US-Mexico Legal Battle Erupts over Patented "Enola" Bean

Plant Breeders' Wrongs Continue…

Summary: A US-based company, POD-NERS, L.L.C, is suing Mexican bean exporters, charging that the Mexican beans (*Phaseolus vulgaris*) they are selling in the US infringe POD-NERS' US patent on a yellow-colored bean variety. It's not surprising that the Mexican beans are strikingly similar to POD-NER's patented bean. That's because POD-NERS proprietary bean, "Enola" originates from the highly popular "Azufrado" or "Mayocoba" bean seeds the company's president purchased in Mexico in 1994. The Mexican yellow beans have been grown in Mexico for centuries, developed by generations of Mexican farmers and more recently by Mexican plant breeders. Last year RAFI released a report, *Plant Breeders' Wrongs*, which documents 147 suspected cases of institutional biopiracy. In RAFI's opinion, the Enola bean patent is a textbook case of biopiracy, and it confirms – once again -- that the plant intellectual property system is predatory on the rights of indigenous peoples and farming communities.

Background

In 1994, Larry Proctor, the owner of a small seed company and president of POD-NERS, L.L.C., bought a bag of commercial bean seeds in Sonora, Mexico and took them back to the US. He picked out the yellow-colored beans, planted them and allowed them to self-pollinate. Proctor selected yellow seeds for several generations until he got what he describes as a "uniform and stable population" of yellow bean seeds. Proctor applied for a US patent on November 15, 1996, barely two years after he purchased the yellow beans in Mexico.

- On April 13, 1999 Larry Proctor won US patent no. 5,894,079 on the "Enola" bean variety. The patent claims exclusive monopoly on any *Phaseolus vulgaris* (dry bean) having a seed color of a particular shade of yellow.[1] POD-NERS claims that it is illegal for anyone to buy, sell, offer for sale, make, use for any purpose including dry edible or propagation, or import yellow *Phaseolus vulgaris* of that description.[2] (To be granted a patent, the inventor must meet three standard criteria. The invention must be new, useful and non-obvious.[3])

- On May 28, 1999 Larry Proctor won a US Plant Variety Protection Certificate (No. 9700027) on the Enola bean variety. The PVP certificate states that the Enola dry bean variety "has distinctly colored seed which is unlike any dry bean currently being produced in the United States…"[4] (To receive plant variety protection in the US, a variety must be new, stable, uniform and distinct.)[5]

In late 1999, armed with a US patent and a breeders' right certificate (double IP protection), Proctor brought legal suit against two companies that sell Mexican beans in the US, charging that they infringe his patent monopoly.[6] Proctor has initiated legal suits against two companies that buy yellow beans from Mexican farmers and sell them in the US: Tutuli Produce (Nogales, Arizona, US) and Productos Verde Valle (Guadalajara, Jalisco, Mexico). Rebecca Gilliland, President of Tutuli Produce, explains, "In the beginning, I thought it was a joke. How could he [Proctor] invent something that Mexicans have been growing for centuries?"[7] Tutuli Produce is a major buyer of two yellow bean varieties, "Peruano" and "Mayocoba" produced by an association of Mexican farmers, the Asociación de Agricultores de Rio Fuerte.

POD-NERS is demanding royalties of six cents per pound on the yellow beans entering the US from Mexico. According to Gilliland, because of the patent infringement charges, US customs officials are now inspecting Mexican beans at the US-Mexico border, taking samples from every shipment, at additional cost to her company. And because of the lawsuit, Gilliland says her company is already losing customers – which are important markets for Mexican farmers.[8]

Mexico Defends its Bean Heritage

Beans are the principal source of vegetable protein consumed by Mexicans, and one of Mexico's basic food staples. Yellow "Azufrado" beans are especially popular in the Northwest region of Mexico where 98% of surveyed Mexicans eat them.[9]

Outraged by the appropriation of Mexican germplasm and legal attempts to block Mexican bean exports to the US, the Mexican government announced in early January that it will challenge the US patent on the "Enola" bean variety. "We will do everything necessary, anything it takes, because the defense of our beans is a matter of national interest," declared Jose Antonio Mendoza Zazueta, under-secretary of Mexican rural development.[10] The patent challenge will cost at least US$200,000 in legal fees.[11]

Mexico's National Research Institute for Agriculture, Forestry and Livestock (INIFAP) recently conducted a DNA analysis of POD-NERS' patented bean. The results indicate that the Enola variety is genetically identical to Mexico's "Azufrado" bean.[12]

Nothing New

Larry Proctor, the "inventor" of the Enola variety, readily admits that his Enola bean is of Mexican origin. On his application to the PVP office, Proctor wrote, "The yellow bean, 'Enola' variety is most likely a landrace from the azufrado-type varieties." In his patent application, Proctor explains that he bought a bag of commercial beans in Mexico, planted them in Colorado (US), and did several years of selection. But Proctor claims that the Enola variety he developed is unique because of its distinctive yellow color and also because it was not grown previously in the US.[13]

Plant breeding experts disagree. Professor James Kelly, a bean breeder at Michigan State University and President of the Bean Improvement Cooperative, believes that the Enola patent is "inappropriate, unjust and is not based on the scientific evidence or facts." [14]

> "This yellow color described in the patent is typical of the yellow beans that have been grown for centuries in Mexico. The yellow beans in Mexico are widely grown and known under the names of *Mayocoba, Azufrado* or *Sulfur, Peruano, Canaria* and *Canario,* names that are all suggestive of the yellow color." [15]

There is ample documentation in genebank databases that bean varieties commonly known as *Azufrado, Canario* and *Peruano* are farmers' varieties collected in Mexico. RAFI's initial database search reveals that scores of Mexican bean varieties identified by those names are held by the International Center for Tropical Agriculture (Cali, Colombia), and virtually all of them are designated "in-trust" materials. Under the terms of the 1994 agreement between the Consultative Group on International Agricultural Research and the UN Food and Agriculture Organization, "in trust" germplasm is maintained in the public domain and is not allowed to be included in any intellectual property claim (see list of Azufrado bean varieties – Appendix 1).

Professor James Kelly dismisses the implication that the patented yellow color bean was not known, grown or recognized in the US prior to 1994. Kelly provides documented evidence that yellow beans (of Mexican origin) similar to Enola were grown and consumed in the US as far back as the 1930s.[16]

Kelly also questions the technical validity of the breeding and selection work described in the Enola patent:

> "On a scientific level, I would challenge the procedure they used as not being unique since beans are highly self-pollinating and they (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.** The inventors state 'a segregating population of plants resulted.' This is incorrect. They simply observed different plant and seed types since they planted a mixture of different beans that exhibited morphological, phenological and seed color differences. This is not a segregating population which must result from a cross pollination. **Simply growing and selfing a specific seed color type hardly implies novelty or invention."** (emphasis added).[17]

" All he [Proctor] did," Kelly told RAFI, "was multiply something that already existed. It's nothing unique in any sense of the word. To patent a color is absolute heresy." [18]

The Bottom Line: RAFI Commentary

The Enola bean patent is technically and morally unacceptable. It is tragic that Mexico is now forced to devote scarce financial resources to challenge a patent that should never have been granted. It's difficult to decide who is more at fault: Is it the patent owner who claims that Mexican beans are infringing his US monopoly patent on seeds of Mexican origin? Or is it the US patent examiners who determined that Proctor was eligible to win an exclusive monopoly patent?

It is tempting to dismiss the Enola bean patent as an "aberration", as nothing more than an absurdly ridiculous patent. Unfortunately, the patent demonstrates more than the fallibility of a single patent examiner. Last year RAFI released a report, "Plant Breeders' Wrongs" which documents 147 suspected cases of institutional biopiracy. Industry and Plant Breeders' Rights officials from Canberra to Geneva dismissed the charges, asserting that plant intellectual property abuses are remote and isolated cases. The reality is that the Enola patent is only the most recent example of a long line of abuses – of "systemic biopiracy." Mexican beans, South Asian basmati, Bolivian quinoa, Amazonian ayahuasca, Indian chickpeas – all have been subject to intellectual property claims that are predatory on the knowledge and genetic resources of indigenous peoples and farming communities.

The Enola controversy starkly illustrates the danger of life patenting and the power of exclusive monopoly patents to block agricultural imports, to disrupt or destroy export markets for Third World farmers, and to legally appropriate staple food crops or sacred medicinal plants that represent the cultural heritage of millennia. Hopefully, the Enola patent will be easily challenged and promptly abandoned. But next time, it may not be so simple. The patent owner could be a corporate powerhouse with deeper pockets and a fleet of lawyers.

Mexico and other nations of the South should bear in mind that the Enola patent is the product of precisely the same intellectual property regime that the US government aggressively promotes as a model for the rest of the world, through bilateral and multilateral channels. At the World Trade Organization, the US consistently pushes for stronger IP protection for plant varieties under the Trade-Related Intellectual Property (TRIPs) agreement. It is a tragic irony if Mexico and other governments react to biopiracy by rushing to patent and PBR every plant variety in sight. In doing so, they will put in place the very same predatory IP regimes that undercut the rights of farmers to save seeds, promote genetic uniformity, and threaten food security.

Action Needed

- US Patent 5,894,079 should be legally challenged and revoked.

- US Patent 5,894,079 and US PVP # 9700027 may involve "in trust" germplasm. Under the terms of the 1994 agreement between the Consultative Group on International Agricultural Research and the UN Food and Agriculture Organization, "in trust" germplasm is maintained in the public domain and is not allowed to be included in any intellectual property claim. To insure the integrity of designated germplasm, FAO and CGIAR should take immediate steps to investigate, and, if necessary, to offer legal and financial support to defend the in-trust germplasm.

- The long-overdue review of WTO TRIPs Article 27.3(b) is ultimately the most important forum for halting predatory practices. Governments should rescind the current requirement under Article 27.3(b) to permit intellectual property protection for plants and microorganisms on the grounds that WIPO and UPOV regimes are predatory upon the knowledge of farming communities and indigenous peoples and upon the sovereignty of states over their living resources.

- Governments, civil society organizations and other stakeholders convening at the Global Forum on Agricultural Research in Dresden in May should urgently review the impact of plant intellectual property on plant breeding and innovation, farming communities and biological diversity.

Appendix 1

Does the 'Enola' *patent and PBR violate the FAO In-Trust Agreement?*

"The yellow bean, 'ENOLA' variety, is most likely a landrace from the azufrado-type varieties." -- From the application for US Plant Variety Protection Certificate # 9700027 on the Enola bean variety.

The following table gives only a *partial* sampling of AZUFRADO varieties held in CIAT's international bean collection. All are designated in-trust accessions. All are farmers' varieties collected in Mexico. Source: CGIAR Systemwide Information System for Genetic Resources (SINGER) database (http://singer.cgiar.org)

Accession Identifier	CGIAR Singer #	USDA #	Origin	FAO Trust?
AZUFRADO	CIATBEAN-G91	PI150941	Mexico	yes
AZUFRADO	CIATBEAN-G817	PI197689	Mexico	yes
AZUFRADO	CIATBEAN-G862	PI1201940	Mexico	yes
AZUFRADO	CIATBEAN-G863	PI1201941	Mexico	yes
AZUFRADO	CIATBEAN-G1818	PI1309802	Mexico	yes
AZUFRADO	CIATBEAN-G1823	PI1309808	Mexico	yes
AZUFRADO	CIATBEAN-G1824	PI1309810	Mexico	yes
AZUFRADO	CIATBEAN-G1804	PI1309783	Mexico	yes
AZUFRADO	CIATBEAN-G1807	PI309787	Mexico	yes
AZUFRADO	CIATBEAN-G1808	PI1309788	Mexico	yes
AZUFRADO	CIATBEAN-G1814	PI1309797	Mexico	yes
AZUFRADO	CIATBEAN-G1815	PI1309799	Mexico	yes
AZUFRADO	CIATBEAN-G2250	PI1311895	Mexico	yes
AZUFRADO	CIATBEAN-G2254	PI1311899	Mexico	yes
AZUFRADO	CIATBEAN-G2843	PI1319649	Mexico	yes
AZUFRADO	CIATBEAN-G2868	PI1319678	Mexico	yes
AZUFRADO	CIATBEAN-G2877	PI11319687	Mexico	yes
AZUFRADO	CIATBEAN-G3456	none	Mexico	yes
AZUFRADO Mayo	CIATBEAN-G405	PI1312095	Mexico	yes
AZUFRADO del Yaqui	CIATBEAN-G2403	PI1312093	Mexico	yes
AZUFRADO Bolito	CIATBEAN-G2406	PI1312096	Mexico	yes
AZUFRADO Vallarta	CIATBEAN-G1804	PI1309783	Mexico	yes
AZUFRADO Amarillo	CIATBEAN-G21150	PI1309797	Mexico	yes
AZUFRADO Blanco	CIATBEAN-G1815	PI1309799	Mexico	yes
AZUFRADO del Rio	CIATBEAN-G2251	PI1311896	Mexico	yes
AZUFRADO de la Sierra	CIATBEAN-G2253	PI1311898	Mexico	yes

[1] Proctor claims that his patent provides protection for any dry bean having a seed color which is yellow in color from about 7.5Y 8.5/4 to about 7.5Y 8.5/6 in the Munsell Book of Color when viewed in natural light.
[2] Letter from POD-NERS, LLC to Tutuli Produce, 24 June 1999.
[3] There are three standard criteria of patentability: 1)Usefulness – basically that the invention does what it claims. 2) Newness or novelty – that the invention was not known previously to the public. 3)Non-obviousness or inventive step – the invention constitutes a notable extension of what was previously known. The inventive step must be more than a trivial modification of known products or processes.
[4] Plant Variety Protection Certificate, 9700027, Exhibit B, Statement of Distinctness.
[5] The U.S. Plant Variety Protection Act's requirement for distinctiveness is merely an "**identifiable** morphological, physiological or other characteristic" (PVPA, 7 U.S.C. sec.2401) (emphasis added).
[6] The lawsuit against Tutuli Produce Corporation was filed in US District Court, Central District of California, 5 October 1999.
[7] Personal communication with Rebecca Gilliland, Tutuli Produce, 13 January 2000.
[8] Personal communication with Rebecca Gilliland, Tutuli Produce, 13 January 2000.
[9] Javier Castellanos, 'Research pinpoints favorite bean flavors in Mexico," *Michigan Dry Bean Digest*, Vol. 20 (3): 17-21, 1996.
[10] Lourdes Edith Rudino, "A proceso judicial, los derechos de propriedad del frijol "Enola", *El Financiero*, 10 January 2000.
[11] Lourdes Edith Rudino, "A proceso judicial, los derechos de propriedad del frijol "Enola", *El Financiero*, 10 January 2000.
[12] Personal communication with Dr. Marciel Garcia Morteo, INIFAP.
[13] Personal communication with Larry Proctor, 5 January 2000.
[14] Letter from James D. Kelly, Professor of Crop and Soil Sciences, Michigan State University, to Mr. Humberto Valdivia, Manager, Productos Verde Valle, 15 December 1999.
[15] Letter from James D. Kelly, Professor of Crop and Soil Sciences, Michigan State University, to Mr. Humberto Valdivia, Manager, Productos Verde Valle, 15 December 1999.
[16] Kelly provides documentation from "Beans of New York," Vol.1 – Part II of the *Vegetables of New York* published in 1931 by J.B. Lyon Company, Printers, Albany, NY. This volume contains a detailed description of the sulfur beans and color photos. Kelly says that the book is a valid and accurate catalogue of beans grown and consumed in the United States in the 1930s.
[17] Letter from James D. Kelly, Professor of Crop and Soil Sciences, Michigan State University, to Mr. Humberto Valdivia, Manager, Productos Verde Valle, 15 December 1999.
[18] Personal communication with Dr. James Kelly, 12 January 2000.