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Bracing for "El Nuña"

Andean Groups Hopping Mad About Popping -Bean Patent

Tales from a Tribunal: “The nuña bean is part of the Andean heritage. It is our treasure. For a company to patent a nuña cross, claiming the "bean-nut popping bean" as an "invention" with absolute world novelty is immoral and violates the rights of all indigenous groups,” said Elias Carreno, Coordinator of the "Stop Biopiracy in the Andes" Campaign of the Asociación Kechua-Aymara for Sustainable Livelihoods, ANDES (translated from Spanish).

Indigenous elders from six Andean communities that grow nuña beans met in late February for a traditional Quechua “tribunal” to deliberate on US Patent No. 6,040,503 on the “bean-nut popping bean” awarded to a US food processor, Appropriate Engineering and Manufacturing. The popping bean trait is found only in the Andean nuña bean, which the inventors claim in their patent. After hearing testimony from expert witnesses, the tribunal rendered their decision. Their verdict was unflinching in its criticism of intellectual property monopolies that are predatory on the knowledge, rights and resources of indigenous people.

“Ayahuasca, quinoa, and now nuña,” said Carreno, referring to controversial US patent claims on traditional Andean medicinal plants and food crops. (The ayahuasca and quinoa patents were subsequently overturned or abandoned due to the protests of indigenous peoples). “These plants represent the collective heritage and knowledge of our people, and we won’t sit back and allow our popping-bean to be appropriated by a monopoly patent.”

The tribunal issued a strongly worded public declaration promising to fight the popping bean patent, and demanded that CIAT - The International Center for Tropical Agriculture based in Cali, Colombia – uphold its obligation under a United Nations “trust agreement” to keep farmer-bred bean varieties in the public domain and off-limits to intellectual property.

“CIAT challenged the patent on Mexico’s yellow bean late last year, and we are asking them to defend our rights by taking similar action on the nuña patent,” said Moises Quispe Quispe of the Nuña Farmers Federation of Cusco, Peru.

The not-so-novel Nuña: The subject of the patent that has shocked bean breeders, indigenous peoples, and other civil society groups is an Andean bean that 'hops when it pops' and 'flies when it fries.’ The nuña bean (pronounced "*noonya*") is nutritious - with a faintly "peanut" taste. More importantly for farming communities in the arid Andes, cooking nuña requires little fuelwood. The bean is roasted not boiled. A few minutes over the fire and the beans literally "pop" out of their shells ready to munch.

Alejandro Argumedo, a Quechua of the Peruvian Andes and coordinator of the Indigenous Peoples' Biodiversity Network (IPBN), was astonished to learn that a US company had patented the bean he has enjoyed since childhood. "The bean has everything -- except novelty," says Argumedo. "My mother used to roast them for us," Argumedo recalls, "They were a favourite. I can't believe that anyone could pretend they invented a popping bean!" While virtually unknown to the snack addicted US market, the bean is an important part of Andean culture and a widely cultivated staple food in many regions.

"Patently" Ridiculous: The US patent was granted one year ago this week on March 21st, 2000 to Appropriate Engineering and Manufacturing through 'inventors' Mark Sterner and Jeffrey Ehlers of California. The inventors have also received what is known as a WIPO (World Intellectual Property Organization) patent (WO99/11115) under the Patent Cooperation Treaty and have indicated that they will apply for patents in as many as 121 countries. The patent gives Ehlers and Sterner exclusive monopoly ownership over nuña crosses with characteristics allowing it to grow outside the Andes. The patent encompasses crosses involving at least 33 Andean nuña varieties traditionally bred and developed for centuries in Peru, Bolivia, Ecuador, and Colombia. "Continued development of the nuña bean in the Andes and elsewhere is threatened by this patent" observes Lucía Gallardo of Acción Ecológica in Quito, Ecuador, " "Giving a US company this much control over an Andean resource is absurd!"

Breeding concern: The patent is not only outraging the Andean indigenous and farming community. Bean breeders are also concerned about the patent. Carl Jones, a graduate student in Plant Breeding and Genetics at Oregon State University who has worked extensively with Andean crops, believes that the patent is a serious threat to bean breeding. "The patented claim is really just an attempt to patent the "nuña" characteristic which has been developed and preserved by the Andean peoples for centuries. The claim severely limits improvements in this crop; many of these changes could be useful to the Andean peoples from which it comes."

Jim Myers, a bean breeder at Oregon State University, has been working on adapting nuñas for many years. "Technically, the patent prevents any research [in countries where the patent has been accepted] on the nuñas without permission from the 'inventors.' If I make available any of the varieties I have been working on, and someone else develops a commercial use for them, there would have to be concern about possible patent infringement," he notes. Of course, it is unlikely that the inventors would actively prevent research, since any research that helps to develop new uses for the bean could be of great economic benefit to them. Myers told RAFI that he is hoping to work something out with the 'inventors' so that he can get his varieties to the public without infringing the patent, but he observed that "the patent will certainly have a dampening effect on any research related to this bean."

If the patent dampens research on nuña, it could have negative consequences for developing countries in particular. Toasting nuñas uses less fuel than boiling beans, a feature important to economic and environmental conditions in areas of the world where fuel is scarce. Bean breeders at Centro Internacional de Agricultura Tropical (CIAT), one of the 16 international research centres under the auspices of the Consultative Group on International Agricultural Research (CGIAR) - believe that the nuña bean could contribute to economic development in the region. Last year, USDA officials forwarded to RAFI email correspondence from a senior CIAT scientist expressing his concerns about the patent. "We hoped that popping beans grown in the Andes could be a good substitute for illicit crops, and indeed that was part of the rationale on which USDA supported [work on the bean]. With large acreages planted in the USA with that variety, how will Peruvian farmers

produce nuñas for export?" He also worried that the patent could restrict bean breeding in developing countries. "The business of bean breeding, considering the United States first, would be at risk in my view if other bean breeders cannot produce other popping beans using other original Peruvian or Bolivian landraces and US varieties already adapted to northern latitudes. My concern is about the limitations to bean breeding and the benefits to society at large, for instance, farmers and rural inhabitants of Africa."

An Obvious Claim?: Some bean breeders have also argued that the patent should be rejected because the method used by the breeders was 'obvious' -- which should have excluded it from patentability. Improving a variety involves crossing the parents to bring together different traits and then selecting the progeny having the combination of desirable traits. In the case of the nuña bean, the crosses were "obvious" to any one skilled in the art of bean breeding. While the inventors may have done painstaking breeding work, the results are not necessarily "inventive." Bean breeders had, in fact, already written about the nuña bean suggesting how to adapt the breed. "The patent does exactly what we recommended in some of our publications," wrote Dr Dan Debouck, Head of the Genetic Resources Unit at CIAT. Experts acknowledge that Ehlers and Sterner did serious breeding work on this bean, however, many people question whether or not the bean meets the criteria of a patentable invention.

Breach of "Trust": The patent is particularly offensive to Andean farmers and indigenous people because it extends to crosses involving at least 33 Andean nuña varieties traditionally bred and developed over centuries in Peru, Bolivia, Ecuador and Colombia. US Patent 6,040,503 lists all 33 accessions of nuña bean held in the USDA's national germplasm collection. All of the nuña bean varieties listed in the patent were freely provided by Andean farming communities, who allowed their bean varieties to be put into the public realm in order to ensure the continued maintenance of the world's seed biodiversity. In 1994, mounting concern over public collections being privatized led the Food and Agriculture Organization of the United Nations to declare designated germplasm in CGIAR gene banks to be "in trust," meaning that the germplasm cannot be restricted by monopoly patents. Of the 33 nuña bean varieties listed in the patent, nine are also held in CIAT's international bean collection. All are designated in-trust accessions and all are farmers varieties collected in Peru.

Although CGIAR has not taken a public position on the popping bean patent, CGIAR officials expressed concern about the popping bean patent at the Global Forum on Agricultural Research in Dresden in May 2000.

Repeat Offender: One of the nuña's two 'inventors' is not new to RAFI. In 1996 Jeffery Ehlers won a US plant variety protection certificate (plant breeders' rights) on "Kunde Zulu," a cowpea variety he said he developed from breeding research he initially undertook as an employee of the International Institute for Tropical Agriculture (IITA - CIAT's sister institute in Nigeria) using African cowpea germplasm. Although this claim conflicted with the institute's trust agreement with FAO, to RAFI's knowledge, IITA has not challenged the claim. IITA's failure to challenge the claim constitutes a breach of the trust agreement. "This time Ehlers has a broad utility patent, and he has teamed up with Mark Sterner who owns a company that can really bring the bean to market," says Julie Delahanty of RAFI, who has been tracking the case, "Inland Empire Foods, owned by Sterner, is a food processor concentrating on dehydrated legumes for the natural foods market in the US. Clearly, they hope to turn the popping bean patent into a commercial product with a novel taste and an interesting history."

High Nuña: Not if Alejandro Argumedo of IPBN, Lucía Gallardo of Acción Ecológica, and the other Andean organizations who have vowed to challenge the patent have their way.¹ Groups in Latin America are also anxious to challenge the World Intellectual Property Organization (WIPO) for their part in this case. "WIPO is allowing this patent to go for adoption in other patent offices around the world. Yet WIPO says it wants to support the conservation and development of indigenous knowledge. Its time to put up or shut up," Gallardo states.

Ehlers and Sterner believe they have done everything legal in the eyes of the US PTO and WIPO and that they have not violated any international agreements. "Even if that were true, this patent would remain morally unacceptable," says Pat Mooney, Executive Director of RAFI. "The patent usurps the genius of Andean farmers for the commercial gain of a US company. Taking the genius of Andean farmers without compensation is bad enough, but the patent also makes it difficult or impossible for Andean farmers to develop a potentially lucrative export crop for the world market -- a crop which belongs to the people of the Andes." Indigenous groups in the region agree. "This is a fight the people of the Andes are going to win," Argumedo concludes.

The following table gives further information on nine of the accessions listed in the patent that are held in CIAT's international bean collection. All are designated in-trust accessions. All are farmers' varieties collected in Peru. Source: CGIAR Systemwide Information System for Genetic Resources (SINGER) database (<http://singer.cgiar.org>) and personal correspondence with CIAT staff.

Accession Name	USDA Accession # (as listed in patent)	CGIAR Singer #	Origin	FAO Trust?
Nuna 2	PI 298 820	G18 897	Peru	Yes
Nuna Ploma	PI 577 677	G12 575	Peru	Yes
Nuna Aroma	PI 577 678	G12 578	Peru	Yes
Nuna Mani Roja	PI 577 679	G12 582	Peru	Yes
Nuna Frontina Negra	PI 577 680	G12 585	Peru	Yes
Nuna Condorcita	PI 577 682	G19 645	Peru	Yes
Nuna Pava	W6 4296	G19646	Peru	Yes
Nuna Limona	W6 4297	G19673	Peru	Yes
Nuna Blanca Pequena	W6 4298	G19716	Peru	Yes

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¹ Organizations opposing the patent include among others: Asociación Regional de Productores Ecológicos del Cusco (ARPEC); Asociación Nacional de Productores Ecológicos (ANPE); Municipalidad Distrital de Maras; Municipalidad Provincial de Chumbivilcas; Instituto Nacional de Investigación Agraria (INIA); Programa Nacional de Cultivos Andinos; the Peruvian Society for Environmental Law (SPDA); and the Asociación Qechua Aymara para la Conservación de la Naturaleza y el Desarrollo Sostenible (ANDES).