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Assistant Commissioner for Patents  
Box Reexamination  
Washington  
DC 20231

18 December 2000

Attachment to Form PTO-1465  
Providing information of patent  
Number 5,894,079

Dear Sir or Madam:

Reexamination under 35 U.S.C. 302 –307 and 37 CFR 1.510 is requested of United States Patent No. 5,894,079 which issued on April 13, 1999 to Mr. Larry Proctor. A copy of this petition has been communicated to the patent holder via express mail service.

I. Claims for which reexamination is requested.

Reexamination is requested of claims 1-15 of the Proctor patent, that representing the entire patent. This request is made in view of a number of different factors that are addressed below with specificity. This request initially raises matters that impinge on all 15 claims, and then specifically raises the challenges to each of the individual claims.

As to the 15 claims in their entirety:

- (a) The first general point that affects all claims of this patent relates to the legitimacy of the declaration in the original application. We contend that this declaration was not exercised in good faith. The original starting materials from which this invention derives were brought into the United States without a required export permit from the country of origin of the material, which was Mexico. Under the terms of the International Convention on Biological Diversity (CBD) the original genetic materials from which this invention was derived is sovereign property of the country of Origin. To our knowledge the US Patent & Trademark Office has not addressed a situation where the starting biological material of an invention is title property of another nation, and where its removal, even for research poses a breach of an International Convention.
- (b) The second general point that relates to all the claims of the patent relates to the requirement to deposit with the American Type Culture Collection (ATCC) a sample of the biological material. In the patent under reexamination this materials is accession number ATCC 209549 and is deposited with The American Type Culture Collection, 12301 Parklawn Drive, Rockville MD, 20852. Again, since the original materials were introduced into the United States without clear title to the material, it is our position that the materials on deposit should be destroyed. This material was misappropriated from its true titleholder, the country of Mexico. Furthermore, the plant health status of this material is unknown, it could

contain seed-borne pathogens, poses a danger to American agriculture. We further contend that when the material on deposit is destroyed that the patent must be invalidated since the product that it claims is subsequently no longer in existence. We believe this question remains unanswered at this time and respectfully request a ruling on the matter.

(c) Substantial undisclosed prior art exists around this invention.

The patent under reexamination cites in the body of its text only a limited and highly selected sample of prior art. We outline here a substantial body of prior art that relates to improvement of beans in general and development of “yellow beans” in particular.

Yellow beans have a long and published history in Peru, Ecuador, Bolivia and Mexico. They were found in the Guitarrero cave in Peru and dated to 4,300 years ago (Kaplan, 1980; Kaplan & Lynch, 1999). Russian scientists found such beans and published their findings as early as 1930 (Bukasov, 1930). In traditional Mexican agriculture, yellow beans are known by many names, *inter-alias*, Amarillo, azufrado, canario, mantequilla, garbancillo zarco (Hernandez X., 1973; Hernandez X, et. al., 1991; Voysest, 1983.) A Peruvian origin for some yellow beans in Mexico is also indicated by the names, peruano and azufrado peruano. Most of these beans or their close relatives are held in the gene bank at THE INTERNATIONAL CENTER FOR TROPICAL AGRICULTURE (CIAT) also known by its Spanish name Centro Internacional de Agricultura Tropical. The database containing characterization of these genetic materials is published material and

is freely available to the International community via Internet access.

([www.cgiar.org/singer](http://www.cgiar.org/singer))

Yellow beans have been used in breeding programs undertaken in Mexico. Several cultivars were released from these breeding programs, including “Mayocoba,” in the 1970s. There is a color picture of this variety on p. 602 of Gepts (1988) book, Genetic Resources of Phaseolus Beans. This and other varieties of yellow beans, with the same characteristics, including the hilar ring, claimed in the Enola bean patent can be found in pictures in the works cited below.

The collection, characterization and maintenance of bean genetic resources are the global mandate of the International Center for tropical Agriculture (CIAT). The genetic resources are held under a trust agreement between CIAT and the Food & Agriculture Organization (FAO) of the United Nations. These collections are International Public Goods upon which no form of Intellectual Property protection is afforded. While CIAT holds under the International trust agreement some 260 separate accessions with yellow seeds, we would like to draw your attention, in particular, to the existence of 6 accessions in the CIAT collection which are substantially identical in terms of the claims made in U.S. Patent 5,894,079. The patent holder did not cite this data as prior art in the patent application despite their existence prior to the purchase of seeds in the marketplace in 1994.

The six accessions all display the claimed yellow color. Significantly, they also have a yellow hilar ring (found in Peruvian materials but not found in materials of exclusively

Mexican origin, but later used in Mexican breeding programs), and are similar in growth habit to the “Enola” bean. A description of the six follows, and photographs are attached as exhibits PHOTOS A-F:

1. G13 094 called Mayocoba and released as a commercial variety in the 1970 in northern Mexico. THE INTERNATIONAL CENTER FOR TROPICAL AGRICULTURE (CIAT) obtained it in January 1979 from the Mexican institute INIA-CIAPAN-Sinaloa.
2. G02 400 called Mantequilla. It was collected by Howard Scott Gentry (USDA plant collector) (HSG-21953) in Alamos, Sonora, Mexico, in 1965. THE INTERNATIONAL CENTER FOR TROPICAL AGRICULTURE (CIAT) obtained it from USDA Beltsville (Mr. Harold Winters) in September 1970. It has a US plant introduction number: PI 312 090.
3. G22 215 called II8FR-MO-5-3-M-2-1-M. It is a bred line, out of a series of breeding materials of the Mexican INIA CIAPAN Sinaloa, presented by Rafael Atanasio Salinas to THE INTERNATIONAL CENTER FOR TROPICAL AGRICULTURE (CIAT) in July 1986.
4. G22 227 called MO-85-86-2598. It is a bred line, out of a series of breeding materials of the Mexican INIA CIAPAN Sinaloa, donated by Rafael

Atanasio Salinas to THE INTERNATIONAL CENTER FOR TROPICAL AGRICULTURE (CIAT) in July 1986.

5. G22 230 called MO-85-86-2780. It is a bred line, out of a series of breeding materials of the Mexican INIA CIAPAN Sinaloa, presented by Rafael Atanasio Salinas to THE INTERNATIONAL CENTER FOR TROPICAL AGRICULTURE (CIAT) in July 1986.

6. G11 891 called Culiacan-11-57R-M-37-M-M. It is a bred line, out of a series of breeding materials of the Mexican INIA CIAS of Sinaloa, presented by Fernando Hernandez to THE INTERNATIONAL CENTER FOR TROPICAL AGRICULTURE (CIAT) in February 1980.

The following published materials also all contain highly pertinent prior art that was not disclosed to the USPTO in the patent application.

## References

Bukasov, S.M. (1930) The Cultivated Plants of Mexico, Guatemala and Colombia. Bull. Appl. Bot. Gen. Pl. Breed. Leningrad Supplement 47. (see appendix 1)

Gepts, P. (1988) Genetic Resources of Phaseolus Beans: Their Maintenance, Domestication, Evolution, and Utilization, published by Kluwer Academic Publishers, Holland. (see appendix 2)

Hernandez-Xolocotzi E. 1973. "Plant introduction and germplasm of Phaseolus vulgaris and other food legumes." Potentials of field beans and other food legumes in Latin America. Series Seminars No. 2E, Centro Internacional de Agricultura Tropical, Cali, Colombia. pp. 253-258. (see appendix 3)

Hernandez-Xolocotzi E., A. Ramos Rodriguez & M.A. Martinez Alfaro. 1991. "Etnobotanica." Contribuciones al conocimiento del frijol (Phaseolus) en Mexico, E.M. Engleman (ed.), Colegio de Postgraduados, Chapingo, Mexico. (see appendix 4)

Kaplan L. 1980. "Variation in the cultivated beans." Guitarrero Cave: Early Man in the Andes, T.F. Lynch (ed.), Academic Press, New York, USA. (see appendix 5)

Kaplan L. & Lynch T.F. 1999. Phaseolus (Fabaceae) in archaeology: AMS radiocarbon dates and their significance for pre-Colombian agriculture. *Economic Botany* 53(2): 261-272. (see appendix 6)

Von Schoonhoven, A. and O. Voysest (1991) *Common Beans: Research for Crop Improvement*. Wallingford: CABI International. (see appendix 7)

Voysest O. 1983. *Variedades de frijol en America Latina y su origen*. Centro Internacional de Agricultura Tropical, Cali, Colombia. (see appendix 8)

In addition to the general material matters described above, we now proceed to challenge each and every one of the claims made in the patent.

II Explanation of pertinency and manner of applying cited prior art to every claim for which reexamination is requested based on prior art:

Let me proceed to analyze each claim of this patent and give an objective response to rebut the validity of each such claim.

1. “ A Phaseolus vulgaris field bean designated Enola as deposited with the American Type Culture Collection under accession number 209549”

Firstly this does not really rise to the level of a “claim”. The patent holder is simply putting the reader of the patent on notice that a deposit of material has been made.

Secondly there are concerns as to the legal title and the phytosanitary quality of the material. Since the material did not receive appropriate, and legally required export

permits then we contend that the materials should, under plant movement and quarantine regulations be destroyed.

2. “A field bean plant produced by growing the seed of claim 1”

This claim derives from Claim 1. Should claim one fail to be valid upon reexamination we contend that this claim should also fail. Furthermore, claim 2 also fails on its own merits; the growing of a seed is hardly an indication of a new invention. It is an age-old process and has been described and published. Mayasa & White 1991 (see appendix 9). It fails to meet the statutory requirements of novelty and Unobviousness and is precluded through prior art widely available in the literature.

3. “Pollen of the plant of claim 2”

Again this is a derivative claim. Firstly we contend that it fails on grounds of merely being an extension of Claims 1& 2. Secondly we contend that there is clearly no “inventive step” to a plant producing pollen. This again is a natural process, not an invention. The production of pollen by a plant is obvious and not novel. The production of pollen by a bean plant again is a process that has been widely published. See White & Izquierdo 1991 (see appendix 10) and Webster et al 1977 (see appendix 11).

4. “A field bean having all the physiological and morphological characteristics of the field bean of claim 2 “

We contend again, that there is no inventive step in terms of the description of the shape of a bean plant. While the patent holder is trying to indicate that this is “Novelty” he has failed to show any inventive step in the process. Furthermore all the physiological and morphological characteristics of this bean plant and its seeds have previously described and published, those being:

Gept 1988 (see appendix 12)

Voyest 1983 (see appendix 13)

Salinas Perez & Lepiz Ildefonso 1983 (see appendix 14)

CIAT Bean Genetic Resources Catalog 1992 (see appendix 15)

USDA Plant Inventory No 174 (see appendix 16)

Hernandez 1973 (see appendix 17)

Kaplan 1980 (see appendix 5)

Kaplan & Lynch 1999 (see appendix 6) (post claim date, but added for reference purposes)

5. “A method of producing a field bean plant comprising crossing a first parent field bean plant with a second parent field bean plant, wherein the first field bean plant is the field bean plant of claim 2”

Again, we contend that there is no statutory underpinning for this claim. The well-established process of plant breeding is clearly prior art and has been for thousands of

years. Furthermore, we contend that a simple restatement of conventional crossing techniques cannot pass the hurdles of Novelty and Unobviousness. It is obvious that these plants can be crossed, that METHOD cannot be claimed per se. Crossing of beans is referenced in Bliss 1980 (see appendix 18) and by Fouilloux and Bannerot (1988) where they discuss hybridization techniques in crop plants.

6. “A method of producing a field bean plant comprising crossing a first parent field bean plant with a second parent field bean plant, wherein the second field bean plant is the field bean plant of claim2”

As with claim 5, the same arguments hold. It is obvious that these plants can be crossed, that METHOD cannot be claimed per se. Crossing of beans is referenced in Bliss 1980 (see appendix 18) and by Buishand (1956) where they discuss hybridization techniques in crop plants.

7. “A method of producing a field bean plant comprising crossing a first parent field bean plant with a second parent field bean plant, wherein the first and second field bean plant is the field bean plant of claim2”

As with claims 5 and 6 the same arguments remove a statutory basis for the claims. It is obvious that these plants can be crossed, that METHOD cannot be claimed per se.

Crossing of beans is referenced in Bliss 1980 (see appendix 18) where he discusses hybridization techniques in crop plants.

8. “A field bean variety of *Phaseolus vulgaris* that produces seed having a seed coat that is yellow in color, wherein the yellow color is from about 7.5 Y 8.5/4 to about 7.5 Y 8.5/6 in the Munsell Book of Color when viewed in Natural light.

This claim is basis upon which the patent holder purports to cover a “color”. We believe it will make a mockery of the patent system to allow statutory protection of a color per se, especially given that the patent holder then tries to block other persons from making, selling or using beans with that color. The standard is also per se vague. If we take the color definition as given, how different does the yellow have to be to be distinct from the Enola bean? There is no true standard here. In addition, and most importantly the facts that other bean data has already been published that display the same color is proffered as prior art, given that this is the scope of patent holders claim. The prior art printed references to this color in beans are:

Bassett 1996 (see appendix 19)

Leakey 1988 (see appendix 20)

Roberts 1982 (see appendix 21)

Yarnell 1965 (see appendix 22)

Voysest 1983 (see appendix 8)

Voysest & Dessert 1991 (see appendix 7)

Gept 1988 (see appendix 12)

Salinas Perez & Lepiz Ildefonso 1983 (see appendix 14)

CIAT Bean Genetic Resources Catalog 1992 (see appendix 15)

USDA Plant Inventory No 174 (see appendix 16)

Hernandez 1973 (see appendix 17)

Kaplan 1980 (see appendix 5)

Kaplan & Lynch 1999 (see appendix 6) (post claim date, but added for reference purposes)

9. “The *Phaseolus vulgaris* of claim 8 wherein the seed further comprises a hilar ring”

Yet again, where is the inventive step and Novelty here? Many beans have hilar rings and that has been published as pertinent prior art for decades. Examples of prior art not cited in the original application include:

Bassett 1996 (see appendix 19)

Leakey 1988 (see appendix 20)

Roberts 1982 (see appendix 21)

Yarnell 1965 (see appendix 22)

10. “The *Phaseolus vulgaris* of claim 9 wherein the hilar ring has a color of rom about 2.5Y 9/4 to about 2.5 Y 9/6 in the Munsell Book of Color when viewed in natural light”

As with claim 8, this would be precluded by prior art and is, I would contend, a travesty of the concept of patent rights from a statutory standpoint. See also prior art

Bassett 1996 (see appendix 19)

Leakey 1988 (see appendix 20)

Roberts 1982 (see appendix 21)

Salinas- Perez and Lopez Ildefonso (see appendix 14)

Voysest 1983 (see appendix 8)

Yarnell 1965 (see appendix 22)

#### 11. “Propagation material of the *Phaseolus vulgaris* of claim 8”

As with claim 2 we fail to see any novelty or unobvious arguments here. What is new? The growing of a seed is hardly an indication of a new invention. It is an age-old process and has been described and published. See Masaya & White 1991. (see appendix 9)

#### 12. “Pollen of the *Phaseolus vulgaris* of claim 8”

As with claim 3, the deriving of pollen from a plant is not a novel activity. We contend that there is clearly no “inventive step” to a plant producing pollen. This again is a natural process, not an invention. The production of pollen by a plant is obvious and not novel. The production of pollen by a bean plant again is a natural process that has been widely

published. See White & Izquierdo 1991 (see appendix 10) and Webster et al 1977 (see appendix 11).

13. “Seed from a field variety of *Phaseolus vulgaris* that is completely yellow in color, wherein the yellow color is from about 7.5 Y 8.5/4 to about 7.5 Y 8.5/6 in the Munsell Book of Color”

This is not different to claim 8. If anything the argument is self-defeating. If the bean were completely yellow then the hilar ring would be the same color as the seed coat, which it is not. Again pertinent prior art not cited includes:

Bassett 1996 (see appendix 19)

Leakey 1988 (see appendix 20)

Roberts 1982 (see appendix 21)

Yarnell 1965 (see appendix 22)

Voysest 1983 (see appendix 8)

Voysest & Dessert 1991 (see appendix 7)

Gept 1988 (see appendix 12)

Salinas Perez & Lepiz Ildefonso 1983 (see appendix 14)

CIAT Bean Genetic Resources Catalog 1992 (see appendix 15)

USDA Plant Inventory No 174 (see appendix 16)

Hernandez 1973 (see appendix 17)

Kaplan 1980 (see appendix 5)

14. “Seed of claim 13 further comprising a hilar ring”

Same argument as in 13 plus the arguments earlier made about the issue of color. Also we repeat the prior art published on color and style of hilar ring, and draw attention to a comparison of photos of prior materials on the market:

Bassett 1996 (see appendix 19)

Leakey 1988 (see appendix 20)

Roberts 1982 (see appendix 21)

Yarnell 1965 (see appendix 22)

15. “Seed of claim 14 wherein the color of the hilar ring is from about 2.5 Y 9/4 to about 2.5 Y 9/6 in the Munsell Book of Color when viewed in natural light”

Same arguments as made in respect to claims 10, 13 and 14. Same prior art holds in respect to this claim:

Bassett 1996 (see appendix 19)

Leakey 1988 (see appendix 20)

Roberts 1982 (see appendix 21)

Yarnell 1965 (see appendix 22)

Voysest 1983 (see appendix 8)

Voysest & Dessert 1991 (see appendix 7)

Gepts 1988 (see appendix 12)

Salinas Perez & Lepiz Ildefonso 1983 (see appendix 14)

CIAT Bean Genetic Resources Catalog 1992 (see appendix 15)

In summary, we believe that legitimate arguments are made against each and every one of the claims of this patent and as a consequence the entire patent is in our opinion invalid.

### III Statement pointing out substantial new questions of Patentability

#### Convention on Biological Diversity Matter

The International Convention on Biological Diversity (CBD), a critical output of the Rio Summit became a United Nations treaty. The original material, from which this so called invention was derived, was removed from its sovereign owner, without permission of the owner. This form of biopiracy cannot be condoned by the USPTO by allowing inventions to be based on that material or so-called derivatives.

#### Scope & Vagueness

One of the factors that have raised recent public concern over the concept of patents on living organisms is the issuing of patents on materials that do not fulfill the full statutory requirements. The USPTO has responded well to public concerns on patenting of life forms by attempting to strictly apply the standards of the existing patent law. We contend that the intent of the patent statute was not meant to allow protection on a color per se, particularly given the vagueness of describing colors in biological materials. An extrapolation of this philosophy will produce a massive increase in applications claiming minor color shifts for all types of living and non-living materials. We believe a clarification on this matter may prevent a massive explosion of unsubstantiated claims before the USPTO. Notwithstanding, even if the claim to a specific bean color can be allowed, there is published prior art of materials with the same characteristics.

Prior Art

We contend that the prior art that was provided by the patent holder to the USPTO, as a basis for this application was below the minimum expected standard. It is clear that substantial pertinent prior art was not included in the original request, despite the fact that this prior art is widely known to one familiar with the field as evidenced by expert letters attached as supporting material (Attachments I to III). While we attach copies of the additional prior art with this re-examination request we contend that this is a matter that deserves further attention by the USPTO, particularly in the matters relating to living organisms where much sensitivity to these types of claims exists.

We respectfully submit the above for your consideration and response.

Yours truly,

Dr. John Dodds

USPTO Registration Number 45,533

Attachments

Photographs of prior released materials in the public domain

Prior Art by appendix number

Letters of support from Technical Experts

Letter of Support from General Counsel Food & Agriculture Organization of United Nations.

Letter of Support from Rural Advancement Fund International (RAFI)

CC:

CIAT / Dr. J. Voss: Director General

Mr. Larry Proctor (Podners) Patent Holder

File