

# **Introduction to Patent Disclosure Requirements for Genetic Resources and Associated Traditional Knowledge**

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IGC Special Session and Preparatory Committee of the Diplomatic Conference  
Informal Information Session

August 29, 2023



This presentation aims to provide Member States with a broad introduction to, first, patent applications in general and, second, patent applications for an invention based on genetic resources (GRs) and associated traditional knowledge (aTK). The presentation also introduces mainly Article 3 of the Text of a Draft International Legal Instrument Relating to Intellectual Property, Genetic Resources and Traditional Knowledge Associated with Genetic Resources (document WIPO/GRTKF/IC/SS/GE/23/2). The presentation is intended to support Member States and observers in their preparations for the IGC's Special Session taking place from September 4 to 8, 2023. It was prepared by three technical experts identified by the WIPO Secretariat, and reviewed anonymously by several other experts.

*Disclaimer.* This presentation does not necessarily represent the views of WIPO or any of its Member States. It is not a substitute for legal advice. The presentation was prepared in late August 2023.

# Agenda

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## **Part One: Patent Applications in General**

- Mr. Juan Rodrigo Pimentel Esquivel, Of Counsel, Arochi & Lindner SC, Mexico

## **Part Two: Examination of Patent Applications for an Invention Based on Genetic Resources and Traditional Knowledge Associated with Genetic Resources**

- Mr. Lutz Mailänder, Former Head of the Cooperation on Examination and Training Section, PCT International Cooperation Division, WIPO, Germany

## **Part Three: The Patent Disclosure Requirement in Article 3 of the Text of a Draft International Legal Instrument Relating to Intellectual Property, Genetic Resources and Traditional Knowledge Associated with Genetic Resources**

- Ms. Margo Bagley, Vice Dean and Asa Griggs Candler Professor of Law, Emory University School of Law, United States of America

# Part One: Patent Applications in General

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Mr. Juan Rodrigo Pimentel Esquivel, Of Counsel, Arochi & Lindner SC, Mexico

# Patent Basics

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- A patent is an exclusive right granted for an invention, which is a **product, a process or a composition** that provides, in general, a new way of doing something, or offers a new technical solution to a problem.
- Not every invention deserves a patent right: **patentability requirements**. Inventions must be novel, inventive/non-obvious and useful in order to be patented.
- To get a patent, technical information about the invention must be **disclosed to the public** in a patent application - “sufficiency of disclosure” and “enablement”.



# Territorial Rights

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- Exclusive rights are only enforceable in the country or region in which a patent has been filed and granted, in accordance with the law of that country or region. There is not an “international” or “global” patent.
- The Patent Cooperation Treaty (PCT) assists applicants in seeking patent protection internationally for their inventions, helps patent offices with their patent granting decisions, and facilitates public access to a wealth of technical information relating to those inventions.



# Patent Duration

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The protection is granted for a limited period, generally 20 years as from the **filing date** of the application, subject to payment of maintenance fees.



# Information Typically Contained in a Patent Publication (1/3)

- Title of invention
- Numbers:
  - Priority
  - Application
  - Publication
  - Patent
- Dates:
  - Priority
  - Filing
  - Publication
  - Issue
- Inventor / Assignee
- Technology fields (IPC)
- References Cited
- Abstract



(12) **United States Patent**  
Stutz et al.

(10) **Patent No.:** US 8,206,721 B2  
(45) **Date of Patent:** Jun. 26, 2012

(54) **USE OF AN EXTRACT FROM SNOW ALGAE IN COSMETIC OR DERMATOLOGICAL FORMULATIONS**

(75) **Inventors:** Cornelia Schürch Stutz, Staufen (CH); Daniel Schmid, Brugg (CH); Fred Züllli, Küttigen (CH)

(73) **Assignee:** Mibelle AG, Buchs (CH)

(\* ) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 16 days.

(21) **Appl. No.:** 12/760,173

(22) **Filed:** Apr. 14, 2010

(65) **Prior Publication Data**

US 2010/0316720 A1 Dec. 16, 2010

(30) **Foreign Application Priority Data**

Jun. 12, 2009 (CH) ..... 0917/09

(51) **Int. Cl.**

A61K 36/02 (2006.01)

(52) **U.S. Cl.** ..... 424/195.17

(58) **Field of Classification Search** ..... None  
See application file for complete search history.

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Search report for priority application CH00917/09, dated Aug. 28, 2009.

\* cited by examiner

Primary Examiner — Melenie McCormick

(74) **Attorney, Agent, or Firm** — Maginot, Moore & Beck, LLP

(57) **ABSTRACT**

The present invention relates to the use of an extract from snow algae, especially an extract from *Chlamydocapsa* sp (snow algae) in cosmetic and/or pharmaceutical products. More particularly, the invention relates to *Chlamydocapsa* sp. (snow algae) in cosmetic and/or pharmaceutical products employed to guard against extrinsic aging of the skin caused by negative environmental exposure, for instance, UV radiation or air pollution, but also to guard against intrinsic aging of the skin as influenced by aging-specific gene expression levels. The invention relates furthermore to a method for producing extracts from snow algae, suitable for topical applications.

15 Claims, No Drawings



# Information Typically Contained in a Patent Publication (2/3)

## Specification

- Background (Prior Art)
- Summary
- Detailed Description
- Examples\*
- Drawings\*

(\* optional)

### BACKGROUND

The present invention relates to the use of an extract from snow algae, especially an extract from *Chlamydocapsa* sp (snow algae) in cosmetic and/or pharmaceutical products. More particularly, the invention relates to *Chlamydocapsa* sp. (snow algae) in cosmetic and/or pharmaceutical products employed to guard against extrinsic aging of the skin caused by negative environmental exposure, for instance, UV radiation or air pollution, but also to guard against intrinsic aging of the skin as influenced by aging-specific gene expression levels. The invention relates furthermore to a method for producing extracts from snow algae, suitable for topic applications.

### DETAILED DESCRIPTION

One method for producing a snow algae extract used in accordance with the invention is characterized by the steps: culturing snow algae for example the strain *Chlamydocapsa* sp (CCCryo 101-99, IBMT strain collection, deposited with the Culture Collection of Algae and Protozoa with the Scottish Marine Institute, OBAN, Argyll PA 37 1QA, United Kingdom, submitted on Feb. 10, 2012, and given accession number CCAP 9/3) in a tube reactor system in 2-phase culturing, harvesting being done in the 2<sup>nd</sup> phase (red phase);

### SUMMARY

One object of the present invention is to provide a cosmetic and/or pharmaceutical product for protection, treatment and care of the skin. More particularly the object is to provide a cosmetic and/or pharmaceutical product to prevent or delay skin aging with which both intrinsic as well as extrinsic skin aging can be treated.

This object is achieved in accordance with the invention by an extract from snow algae, more particularly from *Chlamydocapsa* sp. contained in a cosmetic and/or pharmaceutical product, said extract being produced by a reproducible method employing 2-phase cryoculturing.

### EXAMPLES

#### Example 1

#### Producing the Biomass

Producing the biomass was done in close cooperation with the IBMT Fraunhofer Institute in Berlin in two phases. During the first phase in production the snow algae were nurtured in a corresponding culturing medium (3N-BBM) with a pH of 5.5 and cultured at a temperature ranging from 4° C. to 15° C. with a supply of CO<sub>2</sub>. The time for the algae to double was approx. 1.3 days at a temperature of 14.5° C. On completion of the first production phase the snow algae were transferred to a nutrient-limited culturing medium to induce the transition into the red/stationary phase. Culturing in the 2<sup>nd</sup> phase of production was implemented with the same parameters as for the 1<sup>st</sup> phase. On completion of the 2<sup>nd</sup> phase the cell biomass was separated from the culturing medium and frozen at -20° C.



# Information Typically Contained in a Patent Publication (3/3)

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## Claims

*"The Name of the Game is the Claims"*

The invention claimed is:

1. A method for delaying skin aging comprising applying to the skin of a subject in need thereof a product comprising an effective amount of lysed *Chlamydocapsa* sp CCryo 101-99 snow algae.

2. A method for protecting skin against the loss of the barrier function induced by environmental exposure, comprising applying to the skin of a subject in need thereof a cosmetic composition comprising an effective amount of a snow algae extract wherein the snow algae extract is homogenized *Chlamydocapsa* sp Ccryo 101-99 snow algae.

3. The method according to claim 1, wherein a Klotho anti-aging gene is activated.

4. The method according to claim 1, wherein genes for collagen production are activated.

5. The method according to claim 1, wherein gene expression of matrix metalloproteinases is reduced.



# **Part Two: Examination of Patent Applications for an Invention Based on Genetic Resources and Traditional Knowledge Associated with Genetic Resources**

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Mr. Lutz Mailänder, Former Head of the Cooperation on Examination and Training Section, PCT International Cooperation Division, WIPO, Germany

# Conditions for Patentability

Formal and substantive patent examination must check

- Formal requirements (inventor names, ....)
- Novelty
- Inventive step (obviousness)
- Industrial applicability
- Unity of invention
- No case of exclusion/exemption
- Sufficient disclosure (knowledge sharing)
- Additions to initial disclosure after filing date
- Legal certainty of claims (clarity)
- *Deposit of novel micro-organisms*
- **Disclosure of origin/source of genetic resources, and associated TK (PDR)**

Example:

[Samoa IP Act 2011](#)

Section 7(2-4)

Section 5(1)

Section 8(1)

Section 4(3)(a-h)

Section 7(5)(a)

Section 8(3)

Section 7(6)(b)

*no provision yet*

**Section 7(3) (g, h)**

# Example: Samoa IP Act 2011

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## 10. Filing date and examination-

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(2) Despite subsection (1), the Registrar must accord the filing date only when the application fee is paid and the requirements of section 7(2) to (4) are met.



Formal requirements

## 7. Application for a patent-

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(3) An application must contain the following:

(g) a statement stating whether or not the invention for which protection is claimed is based on knowledge available within any local or indigenous community whether from Samoa or elsewhere;

(h) a statement disclosing the source and geographical origin of any biological material used for the invention;

# Patent Examination

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## Examination of formal requirements

- For any application after filing
  - Basic requirements for allocating filing date (applicant, description, request; ...)
  - Further formal requirements (inventor names, authorizations, claims, abstract, ....)
- Does not require technical expertise (obvious defects)

## Substantive examination

- If requested or if obligatory (subject to national law)
- Of claimed subject matter, for example, with regard to prior art
- Requires prior art search + technical expertise
- Work-sharing opportunities for foreign applications by using foreign work-products (prior art search reports, opinions, ..) if claimed subject matter is similar

# Proposed PDR in 'Article 3'

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**Claimed invention =  
invention as defined by  
independent claims**

## **ARTICLE 3 DISCLOSURE REQUIREMENT**

3.1 Where the **claimed invention** in a patent application is [*materially/directly*] based on GRs, each Contracting Party shall require applicants to disclose:

- (a) the country of origin of the GRs, or,
- (b) in cases where the information in sub paragraph (a) is not known to the applicant, or where sub paragraph (a) does not apply, the source of the GRs.

# Patent Examination (continued)

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**Independent claims** define the invention by citing all features necessary to solve the technical problem

- Dependent claims specify only additional features of various embodiments

Therefore:

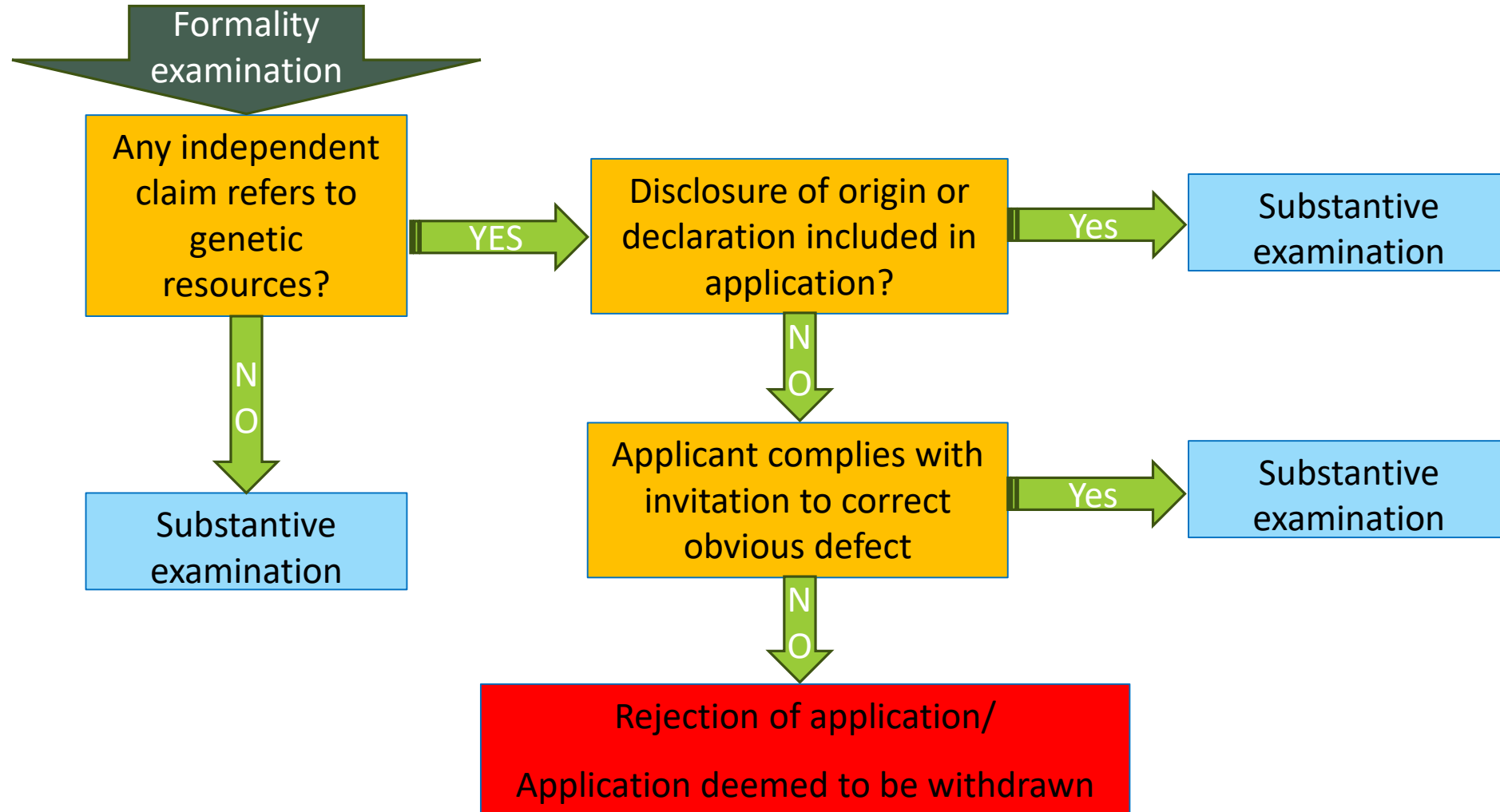
- If independent claims refer to specific genetic resources/material, then:
- the invention is likely to be (materially/directly) based on use of such genetic resources/material.

If an applicant files independent claims referring to specific genetic resources/material, then the applicant implicitly states that the invention is (materially/directly) based on such material.

If IP law stipulates PDR in such case, then an examiner can easily infer that an appropriate disclosure/declaration should be included in the application if any independent claim of the application refers to specific genetic resources/material (missing PDR is an obvious defect).



# Patent Examination (continued)



# Samples of Main Claims Referring to a Specific GR

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## US8206721B2

- 1. A method for delaying skin aging comprising applying to the skin of a subject in need thereof a product comprising an effective amount of lysed **Chlamydocapsa sp CCryo 101-99 snow algae**.

## EP2538917B1

- 1. Use of a composition comprising an extract of **Dionaea muscipula** in cosmetic treatment of the skin, especially skin changes due to accelerated or chronological aging e.g. wrinkles, loss of firmness and elasticity, and increased pigmentation. (*Dionaea muscipula* is the scientific Latin name for the Venus Flytrap plant).

## EP2346948B1

- 1. A method of manufacturing a pH-stable blue colorant comprising:
  - A. Peeling off a **Genipa americana** fruit from its skin, wherein said fruit without skin is *Genipa americana* fruit pulp;
  - B. Obtaining raw liquid juice from *Genipa americana* fruit pulp;
  - C. Mixing the raw liquid juice with between 0.2 grams and 1.6 grams of glycine per 100 millilitres of raw liquid juice; and,
  - D. Warming the raw liquid juice mixed with glycine to a temperature between 40 °C and 80 °C for a period of time from 1 hour to 10 hours.

# **Part Three: The Patent Disclosure Requirement in Article 3 of the Text of a Draft International Legal Instrument Relating to Intellectual Property, Genetic Resources and Traditional Knowledge Associated with Genetic Resources**

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Ms. Margo Bagley, Vice Dean and Asa Griggs Candler Professor of Law, Emory University School of Law, United States of America

# Aims of International Instrument (Objectives)

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## OBJECTIVES (ART. 1)

A. Enhance the **efficacy, transparency and quality** of the patent system re: GRs and ATK.

B. Prevent patents from being granted erroneously for inventions that are **not novel or inventive** re: GRs and Associated TK.

The term “**efficacy**” is used to make it clear that a disclosure requirement implemented at the national level should be **effective, practical, easily implementable** and **not** result in **overly burdensome transaction costs**.

The words “misappropriation” and “access and benefit-sharing” are not explicitly mentioned; however, enhancing transparency in patents **will** facilitate benefit-sharing and deter misappropriation of GRs and ATK.

# Provisions of the Draft Text

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Preamble

Art. 1 **Objectives**

Art. 2 List of Terms

Art. 3 **Disclosure Requirement**

Art. 4 **Exceptions and  
Limitations**

Art. 5 Non-Retroactivity

Art. 6 **Sanctions and Remedies**

Art. 7 **Information Systems**

Art. 8 **Relationship with Other  
International Agreements**

Art. 9 **Review**

**Administrative Clauses**

[bracketed]

Art. 10 General Principles  
on Implementation

Art. 11 Assembly

Art. 12 International Bureau

Art. 13 Eligibility to Become  
a Party

Art. 14 Revisions

Art. 15 Signature

Art. 16 Entry Into Force

Art. 17

Art. 18 Reservations

# Disclosure Requirement – Genetic Resources

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## ART 3.1

Where the **claimed invention** in a patent application is **[*materially/directly*] based on genetic resources (GRs)**, each Contracting Party shall require applicants to disclose:

- (a) the country of origin of the GRs, or,
- (b) in cases where the information in (a) is not known to the applicant, or where sub paragraph (a) does not apply, the source of the GRs.

# Disclosure Requirement – Associated TK

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## ART 3.2

Where the **claimed invention** in a patent application is **[*materially/directly*] based on ATK**, each Contracting Party shall require applicants to disclose:

- (a) the indigenous peoples or local community that provided the ATK, or,
- (b) in cases where the information in (a) is not known to the applicant, or where sub paragraph (a) does not apply, the source of the ATK

# Definitions (continued)

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## TERMS (ART. 2)

*Genetic resources,*  
*Genetic material,*  
*Country of origin,*  
and *In situ conditions,* have been taken directly from the [Convention on Biological Diversity](#).

"Genetic material" means any **material of plant, animal, microbial or other origin containing functional units of heredity.**

"Genetic resources" means **genetic material of actual or potential value.**

The Text proposes **not to define traditional knowledge** in this instrument as it is still under discussion under a different track at the IGC.

The Text thus **proposes that the term TK be left to national interpretation.**



# Definitions

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## TERMS (ART. 2)

*“Materially/directly based on”* means that the GRs and/or ATK must have “been **necessary or material** to the development of the claimed invention, and that **the claimed invention must depend on the specific properties** of the GRs and/or Associated TK.”

This aims to specify the **close relationship** between the claimed invention and the GRs and/or ATK triggering disclosure.

# Examples where GR Origin/Source Disclosure would be required

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Invention comprises using neem seed oil extract as a fungicide

GRs mentioned in claims and description; claimed invention appears to depend on the specific features of the genetic resource

# United States Patent [19]

Locke et al.

US005368856A

[11] Patent Number: 5,368,856

[45] Date of Patent: Nov. 29, 1994

[54] **HYDROPHOBIC EXTRACTED NEEM OIL-A NOVEL FUNGICIDE USE**

[75] Inventors: James C. Locke, Silver Spring; James F. Walter, Ashton; Hiram G. Larew, III, Hyattsville, all of Md.

[73] Assignee: W. R. Grace & Co.-Conn., New York, N.Y.

[21] Appl. No.: 101,112

[22] Filed: Aug. 2, 1993

### Related U.S. Application Data

[63] Continuation of Ser. No. 959,835, Oct. 13, 1992, Pat. No. 5,271,937, which is a continuation of Ser. No. 947,867, Sep. 21, 1992, Pat. No. 5,271,938, which is a continuation-in-part of Ser. No. 456,762, Dec. 26, 1989, abandoned.

[51] Int. Cl.<sup>5</sup> ..... A01N 65/00; A01N 43/16

[52] U.S. Cl. .... 424/195.1; 514/453; 514/937

[58] Field of Search ..... 424/195.1; 514/937; 514/453

### [56] References Cited

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 5,001,146 3/1991 Carter et al. .... 514/40

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"Activity of Neem (*Azadirachta indica* A Juss) Seed Kernel Extracts Against the Mustard Aphid, *Lipaphis Erysimi*," R. P. Singh, C. Devakumar and S. Dhingra, *Phytoparasitica*, 16(3), 225-230 (1988).  
 Mansour et al., "Toxicity of Neem (*Azadirachta indica*) Seed Kernel Extracts Prepared with Different Solvents, on the Spider *Chiracanthium mildel*," *Phytoparasitica*, vol. 14, pp. 73-76 (1986).  
 Mansour et al., "Effects of Neem (*Azadirachta indica*)

Seed Kerne Extracts from Different Solvents on the Predacious Mite *Phytoseiulus persimilis* and the Phytophagous Mite *Tetranychus cinnabarinus*," *Phytoparasitica*, vol. 15, pp. 125-130 (1987).

"Effect of Sunlight on Azadirachtin: Antifeeding Potency", J. B. Stokes and R. E. Redfern-J. *Environ. Sci. Health*, A17(1), 57-65 (1982).

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"A Simplified Isolation Procedure for Azadirachtin", Daniel R. Schroeder and Koji Nakanishi-Journal of Natural Products, vol. 50, No. 2, 241-144, (Mar.-Apr. 1987).

"Estimation of Azadirachtin Content in Neem Extracts and Formulations", J. D. Warthen, Jr., et al.-Journal of Liquid Chromatography, 7(3), 591-598 (1984).

"Preparative Reversed-Phase Liquid Chromatographic Isolation of Azadirachtin from Neem Kernels", Uebel et al., *Journal of Liquid Chromatography*, 2(6), 875-882 (1979).

"Mutagenicity Tests of Cashewnut Shell Liquid, Rice-Bran Oil and Other Vegetable Oils Using the Salmonella Typhimurium/Microsome System," K. Polasa and C. Rukmini-Fd. *Chem. Toxic*, vol. 25, No. 10, 763-766 (1987).

(List continued on next page.)

Primary Examiner—John W. Rollins  
 Attorney, Agent, or Firm—Beverly K. Johnson

### [57] ABSTRACT

A novel method of controlling fungi is disclosed. The method involves contacting the fungi, or a surface to be protected from the fungi, with a neem oil fungicide derived from a neem seed extract. The neem oil is prepared by extracting dried, coarsely ground neem seeds with a non-polar, hydrophobic solvent to obtain a neem oil extract and then removing the solvent to obtain the neem oil.

5 Claims, No Drawings

GRs mentioned in claims and description; claimed invention appears to depend on the specific features of the genetic resource; Origin suggested

Neem seeds consist of two parts, a shell that does not contain oil or insecticidal activity and the kernel which contains oil and azadirachtin. However, the composition of seeds collected from throughout the world varies considerably as shown in Table A. In particular we have found that oil derived from neem trees with high azadirachtin concentration is both insecticidal and fungicidal.

TABLE A

Seeds Source	% Kernel in Seed	% Volatile	Content Oil %	AZAD mg/gsk*
Senegal (Pout)	54	7	22	6.6
India (Punjab)	55	5.8	30	1.6
Togo (Atkpame)	57	7.3	27	4.5
Haiti (Arcadie)	51	12.0	19	2.7
Ghana (Bawk)	57	6.4	14	3.9

\*gsk = gram seed kernel

Eighty (80) kgs of dried defruited neem seeds from Africa were ground in a cutting mill to about 10 mesh.

We claim:

1. A method of protecting a surface from fungi comprising contacting the surface to be protected with a fungicide having a fungicidally effective amount of a non-polar, hydrophobic solvent extracted neem oil which has less than 1 weight percent of azadirachtin, and which has been treated to remove the non-polar solvent, wherein the non-polar, hydrophobic solvent has neem oil solubility and substantially no azadirachtin and water solubility.

# Example where Associated TK might need to be disclosed

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2010/0083448 A1**  
(43) **Pub. Date: Apr. 8, 2010**  
**Lopez et al.**

(54) **BLUE COLORANT DERIVED FROM GENIPA AMERICANA FRUIT**

**Publication Classification**

(76) Inventors: **Luis Fernando Lopez**, Medellin (CO); **Sandra Patricia Zapata Porras**, Medellin (CO); **Luis Fernando Torres Roldan**, Medellin (CO)

(51) **Int. Cl.**  
*C09B 61/00* (2006.01)  
(52) **U.S. Cl.** ..... **8/438**  
(57) **ABSTRACT**

The present invention provides a method to make a blue colorant as a liquid and as a powder, wherein the blue colorant is derived from unprocessed raw juice obtained from *Genipa americana* fruit pulp, and wherein said raw juice is mixed with glycine (liquid) or with glycine plus starch (powder). Except for an additional step of warming up the juice-glycine mix, and in the case of the powder further dehydration of the juice-glycine-starch remix, no further steps are required to make a temperature and PH stable blue colorant which may be applied in textile, pharmaceutical, food, cosmetics, and other industries.

Correspondence Address:  
**JOHN J. MARTINEZ MD. JD.**  
**10 PALMER AVENUE**  
**CROTON ON HUDSON, NY 10520 (US)**

(21) Appl. No.: **12/245,367**

(22) Filed: **Oct. 3, 2008**

1. A method of manufacturing a colorant comprising:
  - A. Peeling off a *Genipa americana* fruit from its skin, wherein said skin is discarded, and wherein said fruit without skin is *Genipa americana* fruit pulp;
  - B. Obtaining raw liquid juice from the *Genipa americana* fruit pulp;
  - C. Mixing the raw liquid juice with glycine; and,
  - D. Warming up the raw liquid juice mixed with glycine for a determined period of time.

*Invention is a method of making a blue colorant from the juice of the fruit pulp of a plant.*

# Example where Associated TK might need to be disclosed

**Disclosure mentions the name of the fruit in the language of a particular tribe**

[0051] For purpose of the present invention, the term “*Genipa americana*” includes all the following:

[0052] *Gardenia genipa* Sw.

[0053] *Genipa americana*, var. *caruto* fo. *grandifolia*

[0054] *Genipa excelsa*

[0055] *Genipa americana* var. *Carnuto*

[0056] *Genipa barbata*

[0057] *Genipa pubescens* DC.

[0058] *Genipa humilis*

[0059] *Genipa caruto*

[0060] *Genipa grandifolia*

[0061] *Genipa oblongifolia*

[0062] Similarly, for purpose of this invention, the term “*Genipa americana*” also includes as equivalent any of the following popular synonym names:

[0063] Irayol (Guatemala);

[0064] Maluco (Mexico);

[0065] Guaitil (Costa Rica);

[0066] (VEN) Caruto;

[0067] Caruto, Jagua (Colombia);

[0068] Quipará o Quepará (native language of tribe étnia emberá);

# Examples where GR Origin/Source Disclosure NOT required

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GRs mentioned in patent, but no GR disclosure requirement is triggered

Invention is a novel process for producing a low fat or high protein nut paste while retaining good flavor and texture. Contains more nut solids (defatted) than regular nut butters.

**United States Patent** [19]  
**Wong et al.**

US05518755A

[11] **Patent Number:** **5,518,755**  
[45] **Date of Patent:** **May 21, 1996**

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|---|--|
| [54] <b>REDUCED FAT NUT SPREADS AND CONTINUOUS PROCESS FOR MAKING</b>   | 4,814,195 3/1989 Yokoyama et al. .... 426/633<br>4,828,868 5/1989 Lasdon et al. .... 426/633<br>5,079,027 1/1992 Wong et al. .... 426/633<br>5,230,919 7/1993 Walling et al. .... 426/633<br>5,366,754 11/1994 Rudan et al. .... 426/633 |
| [75] Inventors: <b>Vincent Y. Wong</b> , Hamilton; <b>Francisco V. Villagran</b> , W. Chester; <b>Richard J. Sackenheim</b> , Hamilton, all of Ohio |  |

[73] Assignee: **The Procter & Gamble Company**, Cincinnati, Ohio

*Primary Examiner*—Helen Pratt  
*Attorney, Agent, or Firm*—Tara M. Rosnell; Eric W. Guttag; Rose Ann Dabek

[21] Appl. No.: **407,264**  
[22] Filed: **Mar. 23, 1995**

[57] **ABSTRACT**

A continuous process for preparing a high protein or low fat nut spread having desirable fluidity, texture and flavor. The process comprises as a first step depositing a nut paste in a mixing tank. Next, the solid ingredients which are to be present in the final product spread are mixed into the tank containing the peanut paste and the mixture is pumped through a high shear mixer. The temperature of the mixture is then adjusted so that the temperature of the mixture exiting the homogenizer is less than about 240° F. The mixture is then pumped through a homogenizer at a pressure ranging from about 9,000 to about 14,500 psig, a colloid mill, a versator and a scraped wall heat exchanger. Nut spreads having a monomodal or bimodal particle size distribution such that at least 50% of the solids in the nut spread have a particle size of less than 18 microns and 90% of the solids in the nut spread have a particle size of less than 60 microns, and further having a Casson plastic viscosity of from about 8 to about 17 poise and a yield value of less than about 300 dynes per square centimeter are produced according to this process.

**Related U.S. Application Data**

- [63] Continuation-in-part of Ser. No. 245,084, May 17, 1994, abandoned.
- [51] **Int. Cl.**<sup>6</sup> ..... **A23L 1/38**  
[52] **U.S. Cl.** ..... **426/633; 426/518; 426/519**  
[58] **Field of Search** ..... 426/518, 519, 426/633

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**17 Claims, No Drawings**



Patent description mentions several GRs; but claims do not. The GRs are not *necessary or material* to the development of the claimed invention, and the claimed invention does not depend on the specific properties of those GRs (i.e. it is a novel process that can be used with any of a wide variety of nut pastes)

The process of the present invention utilizes a nut paste, preferably peanut paste, as a starting material. While this invention will be generally described in terms of peanuts and peanut paste, it should be readily apparent that other materials such as almonds, pecans, walnuts, cashews, filberts, macadamia nuts, brazilians, sunflower seeds, sesame seeds, pumpkin seeds and soybeans could be used to form the nut paste utilized in the process of the present invention. The term "nut" as used herein encompasses these nuts and seeds. Mixtures of these nuts and oil seeds can also be used.

What is claimed is:

1. A process for preparing a low fat nut spread having desirable fluidity, texture, and flavor, which process comprises the steps of:

- a) depositing nut paste in a mixing tank;
- b) mixing the solid ingredients into the nut paste to form a mixture having a viscosity exceeding 30 poise and from about 25% to about 42% total fat, and passing the mixture through a high shear mixer;
- c) adjusting the mixture so that it has a temperature as it exits a homogenizer in step (d) of less than about 240° F.;
- d) pumping the mixture through a homogenizer at a pressure ranging from about 9,000 to about 14,500 psig;
- e) pumping the mixture through a colloid mill; and
- f) pumping the mixture through a versator and a scraped wall heat exchanger to provide a nut spread having a distribution such that at least 50% of the solids have a particle size of less than 18 microns, at least 90% of the solids in the nut spread have a particle size of less than about 60 microns, and up to about 73% of the solids in the nut spread have a particle size of less than about 13.0 microns, and further having a Casson plastic viscosity of from about 8 to about 17 poise; and a yield value of less than about 300 dynes per square centimeter.

Patent description mentions several GRs; but claims do not. The GRs are not *necessary or material* to the development of the claimed invention, and the claimed invention (**process claims and product claims**) does not depend on the specific properties of those GRs (i.e. it is a novel process that can be used with any of a wide variety of nut pastes and a novel nut spread that can be made from a wide variety of nuts)

15. A low fat bimodal nut spread which has desirable fluidity, texture and flavor and which comprises:

- a) from about 50% to about 90% of a nut paste;
- b) from about 13% to about 50% of solid ingredients;
- c) from 0% to about 3% stabilizer;
- d) from 0% to about 3% emulsifier; and
- e) from 0% to about 8% flavorant;

wherein the nut butter or nut spread has i) a Casson plastic viscosity ranging from about 8 to about 17 poise; ii) a yield value of less about 300 dynes per square centimeter; iii) from about 25% to about 42% total fat; and iv) a bimodal particle size distribution such that from about 80% to about 87% of the water insoluble solids comprising the nut butter or spread have a particle size less than about 21.6 microns, from about 75% to about 83% of the water insoluble solids comprising the nut butter or spread have a particle size of less than about 16.7 microns, from about 65% to about 73% of the water insoluble solids comprising the nut spread have a particle size of less than about 13.0 microns, from about 55% to about 60% of the water insoluble solids comprising the nut butter or spread have a particle size of less than about 10.1 microns, from about 43% to about 50% of the water insoluble solids comprising the nut butter or spread have a particle size of less than about 7.9 microns and from about 25% to about 30% of the water insoluble solids comprises the nut butter or spread have a particle size of less than about 6.2 microns.

What is claimed is:

1. A process for preparing a low fat nut spread having desirable fluidity, texture, and flavor, which process comprises the steps of:

- a) depositing nut paste in a mixing tank;
- b) mixing the solid ingredients into the nut paste to form a mixture having a viscosity exceeding 30 poise and from about 25% to about 42% total fat, and passing the mixture through a high shear mixer;
- c) adjusting the mixture so that it has a temperature as it exits a homogenizer in step (d) of less than about 240° F.;
- d) pumping the mixture through a homogenizer at a pressure ranging from about 9,000 to about 14,500 psig;
- e) pumping the mixture through a colloid mill; and
- f) pumping the mixture through a versator and a scraped wall heat exchanger to provide a nut spread having a distribution such that at least 50% of the solids have a particle size of less than 18 microns, at least 90% of the solids in the nut spread have a particle size of less than about 60 microns, and up to about 73% of the solids in the nut spread have a particle size of less than about 13.0 microns, and further having a Casson plastic viscosity of from about 8 to about 17 poise; and a yield value of less than about 300 dynes per square centimeter.

GRs mentioned in patent, but no GR disclosure requirement is triggered

Invention is an article of bedding (a comforter), with differing filler materials in different zones to create particular performance features, in particular, specialized zones of warmth.

(12) **United States Patent**  
**Fan**

(10) **Patent No.:** **US 9,186,002 B2**  
(45) **Date of Patent:** **Nov. 17, 2015**

(54) **FILLED BEDDING ARTICLES CONSISTING OF MORE THAN ONE FILLER**

- (71) Applicant: **Pac-Fung Feather Co., Ltd.**, Kowloon (HK)
- (72) Inventor: **Shi Hoo Fan**, Kowloon (HK)
- (73) Assignee: **PAC-FUNG FEATHER CO., LTD.**, Kowloon (HK)
- (\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
- (21) Appl. No.: **13/926,783**
- (22) Filed: **Jun. 25, 2013**

(65) **Prior Publication Data**  
US 2014/0373277 A1 Dec. 25, 2014

- (51) **Int. Cl.**  
*A47G 9/02* (2006.01)  
*A47G 9/00* (2006.01)
- (52) **U.S. Cl.**  
CPC ..... *A47G 9/0207* (2013.01); *A47G 9/0223* (2013.01); *A47G 9/0238* (2013.01); *A47G 9/0215* (2013.01)
- (58) **Field of Classification Search**  
CPC .... *A47G 9/02*; *A47G 9/0207*; *A47G 9/0215*; *A47G 9/0223*; *A47G 9/023*; *A47G 9/0238*  
USPC ..... 5/502, 500, 486, 482  
See application file for complete search history.

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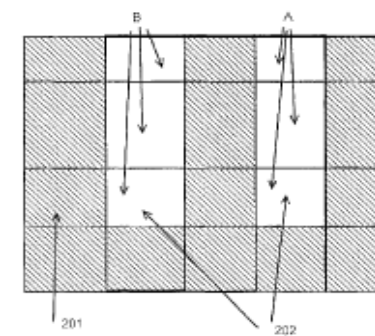
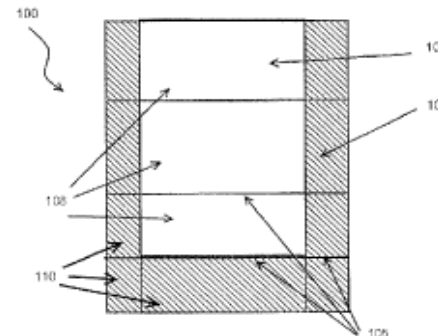
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*Primary Examiner* — Robert G Santos  
(74) *Attorney, Agent, or Firm* — Leason Ellis LLP

(57) **ABSTRACT**  
The present invention is directed to a bedding article which provides a structured construction for filling with filler material. Specifically, the present invention is directed to a bedding article that incorporates a number of pattern arrangements. The pattern arrangements allow for the sequestration of high performance filler material to areas of maximum effectiveness. Likewise, the pattern arrangement allows for standard performance material to be used in areas where user interaction is likely to be minimal, in order to minimize the amount of material needed in manufacture.

**11 Claims, 5 Drawing Sheets**



Patent description mentions several GRs; but the claims do not. The GRs are not *necessary or material* to the development of the claimed invention, and the claimed invention does not depend on the specific properties of those GRs (i.e. it is a novel process that can be used with any of a wide variety of filler materials)

The filler of the present invention can be wool, cotton, silk, batting, microfiber, synthetic and natural fibers, wadding and similar standard filling materials. Those skilled in the art would appreciate that premium filler materials can include variations and variants of the standard filler than has been specially modified or constructed for the purposes of improved comfort, heat retention or functionality. For instance, premium filler is envisioned but not limited to memory foam, visco-elastic materials, natural feathering and products, as well as similar textile materials.

I claim:

1. A bedding article comprising;  
a top material sheet,  
a bottom material sheet,  
wherein the top sheet and the bottom sheet are joined so as to produce a plurality of enclosed cells;  
wherein at least a portion of the enclosed cells are filled with a premium bedding material and the remaining portion of the cells is filled with a standard bedding material and each cell is configured to prevent the migration of bedding material from one cell to another;  
wherein contents of the enclosed cells alternate between cells filled with a standard bedding material type and cells filled with a premium bedding material type such that at least one cell filled with a standard bedding material type is interposed between two cells filled with a premium bedding material type.

# Patent Disclosure Requirement and Implementation of the CBD and Nagoya Protocol

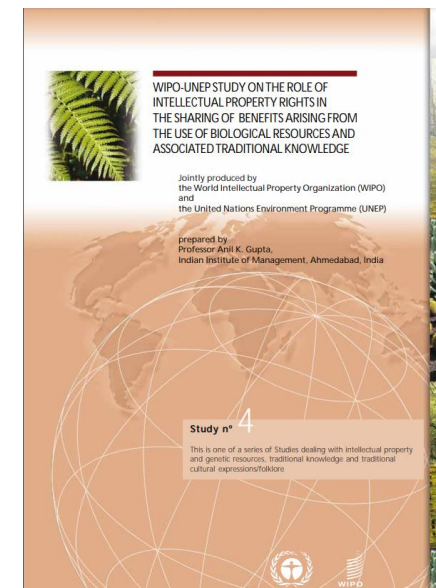
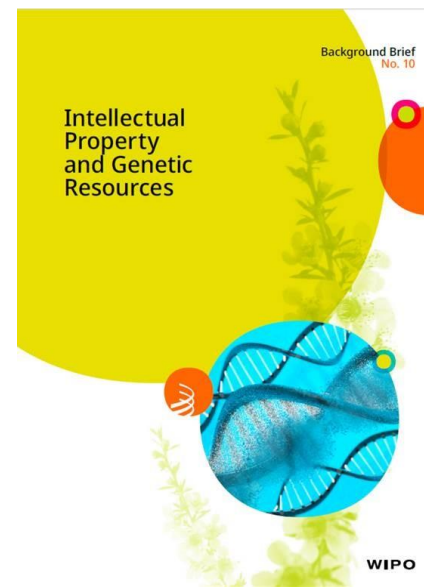
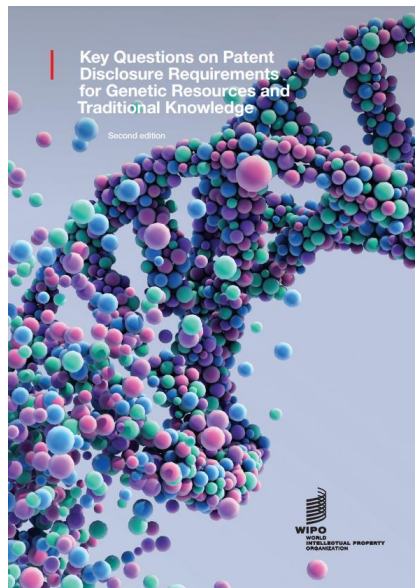
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The patent disclosure requirement will be a measure to indirectly support implementation of the CBD and Nagoya Protocol by enhancing the efficacy, transparency and quality of the patent system re: GRs and ATK

It is also likely to aid in preventing patents from being granted erroneously for inventions that are not novel or inventive re: GRs and ATK



# Key Resources



[Disclosure Requirements Table](https://www.wipo.int/diplomatic-conferences/en/genetic-resources/index.html) and other resources available at <https://www.wipo.int/diplomatic-conferences/en/genetic-resources/index.html>

# Q&A Session

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