

**MINISTERIO DE COMERCIO INDUSTRIA Y TURISMO
SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISION DE NUEVAS CREACIONES**

E.

S.

D.

SUPERINDUSTRIA Y COMERCIO
Radicacion : 05116274 00000002 Folios: 74
Fecha (MM): 2006-02-01 16:40:39
Tramite : 011 PCT-PATENT 379 FASE NACI 444 REPUESTA
Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

**REFERENCIA : SOLICITUD DE REGISTRO DE LA PATENTE PCT
"PRODUCTOS DE CEREZA DE CAFÉ CON BAJA
MICOTOXINA" EXPEDIENTE No. 05116274**
CODIGO : 01 - 01 - 08

JAIME LUIS CUELLAR TRUJILLO, mayor de edad, domiciliado en la ciudad de Bogotá D.C, República de Colombia, abogado titulado e identificado como aparece al pie de mi firma, en mi calidad de apoderada de la sociedad **VDF FUTURECEUTICALS, INC.**, existente y organizada conforme a las leyes del Estado de Illinois, Estados Unidos de América, con domicilio en la ciudad de Momence, Estado de Illinois, Estados Unidos de América, por medio del presente escrito damos respuesta a su oficio No. 13675 de fecha veintitrés (23) de diciembre de dos mil cinco (2005) notificado por fijación en lista de fecha veintitrés (23) de diciembre de dos mil cinco (2005), manifestando lo siguiente:

1. En fecha dieciséis (16) de noviembre de dos mil cinco (2005), actuando en calidad de agente oficioso de la sociedad **VDF FUTURECEUTICALS, INC.** solicité el registro de la patente de la referencia. Como consecuencia de lo anterior y con el fin de legitimar mi actuación, presento el respectivo documento de poder otorgado por dicha sociedad a favor del Dr. Fernando Triana Soto, el cual me fue legal y debidamente sustituido, como consta en la documentación anexa. De conformidad con lo anterior, ratifico mi actuación y solicito se me reconozca la correspondiente personería jurídica.
2. Conforme fue solicitado en el auto No. 13675, adjunto los siguientes documentos para efecto de dar cabal cumplimiento a los requisitos exigidos para el trámite de la solicitud de la patente en mención:
 - 2.1 Traducción de los anexos del reporte de examen preliminar internacional.
 - 2.2 Documento de cesión del derecho de la patente del inventor al solicitante, debidamente legalizado mediante la Apostilla.
 - 2.3 Formulario PETTORIO fase nacional, diligenciado en su totalidad.
3. Adicionalmente, y como complemento de la patente de la referencia anexo los siguientes

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documentos:

- 3.1 Documento de solicitud de registro de la patente **"PRODUCTOS DE CEREZA DE CAFÉ CON BAJA MICOTOXINA"**, debidamente legalizado mediante la Apostilla.
- 3.2 Documento de Búsqueda Internacional de la patente **"PRODUCTOS DE CEREZA DE CAFÉ CON BAJA MICOTOXINA"**, debidamente legalizado mediante la Apostilla.

De la Señora Jefe,



JAIME LUIS CUELLAR TRUJILLO

C.C. No. 19.360.271 de Bogotá

T.P.A. 64.905 del C. S. de la J.

YDFWAML
COLO 1888 0391 23843



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25

TRIANA, URIBE & MICHELSEN

MINISTERIO DE DESARROLLO ECONÓMICO
SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISIÓN DE NUEVAS CREACIONES

E. S. D.

REFERENCIA : SOLICITUD DE REGISTRO DE LA PATENTE PCT
"PRODUCTOS DE CEREZA DE CAFÉ CON BAJA
MICOTOXINA" EXPEDIENTE No.05116274 SOLICITADA
POR VDF FUTURECEUTICALS, INC.

Yo, **FERNANDO TRIANA SOTO**, mayor de edad, vecino de Bogotá, D.C., abogado identificado con la cédula de ciudadanía N° 79'154.036 de Usaquén y con la Tarjeta Profesional de Abogado N° 45.265 del Consejo Superior de la Judicatura, obrando como apoderado judicial de la sociedad **VDF FUTURECEUTICALS, INC.**, sociedad constituida y existente de acuerdo a las leyes de los Estados Unidos de América, domiciliada en la ciudad de Momence, Estado de Illinois, Estados Unidos de América, por medio del presente escrito, manifiesto a usted que **SUSTITUYO** el poder a mí conferido mediante escritura pública No. Trescientos cincuenta y uno (351) del veinticinco (25) de enero de dos mil seis (2006), con las mismas facultades a **JAIME LUIS CUELLAR TRUJILLO**, mayor de edad, vecino de Bogotá, D.C., abogado identificado con la cédula de ciudadanía N° 19.360.271 de Bogotá y con la Tarjeta Profesional de Abogado N° 64.905 del Consejo Superior de la Judicatura.

El apoderado queda facultado para recibir, cobrar, desistir, cancelar, transigir, sustituir, revocar sustituciones, ceder, conciliar, notificarse, renunciar, ratificar los actos de agentes oficiosos, admitir los hechos del proceso, intervenir en todas sus etapas, rematar o licitar por cuenta del crédito y, en general, para todas las actuaciones en derecho que sean necesarias para el buen desempeño del mandato conferido.

Ruego a usted reconocer personería a **JAIME LUIS CUELLAR TRUJILLO** en los términos y para los efectos del poder conferido.

Del Despacho,


FERNANDO TRIANA SOTO
C.C. N° 79'154.036 de Usaquén.
T.P.A. N° 45.265 del C. S. de la J.

Jlc (mic)/aml

NOTARIA SEXTA DE BOGOTA

RECONOCIMIENTO Y PRESENTACION PERSONAL

Bogotá, D.C.

27 ENE 2000

Ante mí PABLO MENDEZ BARRAJAS

NOTARIO SEXTO(E) DEL CIRCULO DE

BOGOTA

Comparecieron:

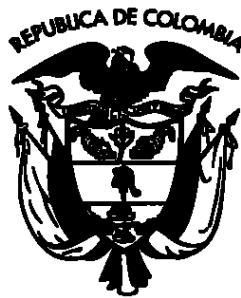
quien (es) exhibió(aron) la(s) C.C.

y declaró(n) que la(s) firma(s) que aparece(n)
en el presente documento es(son) la(s) suya (s) y
que el contenido del mismo es cierto.

En constancia se firmó esta diligencia y se imprimió
huella dactilar.

Renando Llane





NOTARIA SEXTA

DEL CIRCULO DE BOGOTA, D.C.

CALLE 71A No. 15-22

CONMUTADOR: 540 28 20 - FAX: 312 68 86

Correo Electrónico: notaria6liquida1@etb.net.co

SEGUNDA COPIA DE LA ESCRITURA 351

FERNANDO TRIANA

DE FECHA : 25 DE ENERO DE 2006

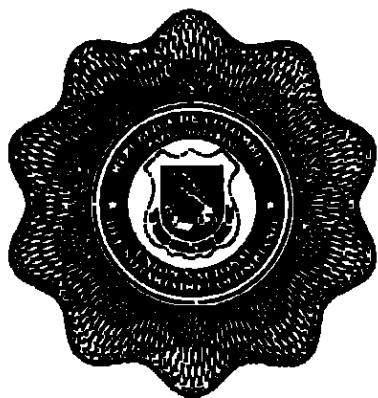
ACTO : PROTOCOLIZACION

EXPEDICION: 25 DE ENERO DE 2006

EN 5 HOJAS RUBRICADAS

JUAN MÁNUEL BOTERO MEDINA

NOTARIO SEXTO



AA 24297966

ESCRITURA PÚBLICA NÚMERO 351 - - - -

No TRESCIENTOS CINCUENTA Y UNO - - - -

DE LA NOTARIA SEXTA (6ª) DEL
CIRCULO DE BOGOTA, D C - - - -

DE FECHA ENERO VEINTICINCO (25) - - - -

DEL AÑO DOS MIL SEIS (2006) - - - -

CLASE DE ACTO O CONTRATO **PROTOCOLIZACION** - - - -

En la ciudad de Bogotá, Distrito Capital, Republica de Colombia, ante
mi - - - - PABLO MENDEZ BARAJAS - - - - ENCARGADO

Notario Sexto (6o) de este Círculo Notarial, se otorgó la escritura
publica, que se consigna en los siguientes términos - - - -

Compareció el Doctor **FERNANDO TRIANA**, mayor de edad, vecino
de esta ciudad, de estado civil casado, e identificado con la cédula
de ciudadanía número **79.154.030** de Usaquén, y manifestó - - -

PRIMERO Que presenta para su protocolización el siguiente
documento (I) El instrumento debidamente otorgado el diecisiete
(17) de octubre de dos mil cinco (2005), por **JOHN M. HUNTER** en
nombre y representación de la sociedad **VDF FUTURECEUTICALS,**
INC., sociedad constituida y existente de acuerdo a las leyes de los
Estados Unidos de América, domiciliada en la ciudad de Momenca,
Estado de Illinois, Estados Unidos de América, contentivo del
nombramiento como representantes para asuntos de Propiedad
Intelectual e Industrial y contra la competencia desleal a los
abogados, **FERNANDO TRIANA, LAURA MICHELSEN, JUAN**
CARLOS URIBE y JUAN PABLO TRIANA (II) Certificación notarial
debidamente legalizada y traducida - - - -

OTORGAMIENTO Y AUTORIZACIÓN El documento precedente
fue leído en forma legal por el compareciente a quien se le advirtió
sobre las responsabilidades que el presente acto genera, no
obstante lo cual y previa revisión minuciosa imparte su aprobación, al

verificar que no hay ningun error y por encontrar que expresa su voluntad en forma fidedigna, junto con el suscrito Notario, quien en esta forma lo autoriza -----

DERECHOS NOTARIALES Segun tarifa establecida en la Resolución 7200 del 14 de Diciembre de 2005, \$ 36.540.00 -----

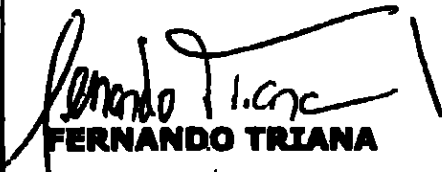
IVA 16% \$ 9.069.00 -----

PAPEL NOTARIAL Esta escritura se extendió en las hojas de papel sellado notarial distinguidas con los numeros AA- 24297966

ENMENDADO"ENCARGADO"SI VALE

EN BLANCO: EN BLANCO

EN BLANCO: EN BLANCO


FERNANDO TRIANA

C C No 79154036

TEL 6215810

HJELA 



EL NOTARIO SERIO (60) DEL CÍRCULO
DE BOGOTA, D C

164
TRADUCCIÓN OFICIAL No. 08/017 de un documento escrito en inglés, el cual para su identificación se sella con el sello del traductor al tiempo con la presente. Esta traducción ha sido preparada por Juan Pablo Piedrahita Aguilera, Traductor e Intérprete Oficial debidamente reconocido por el Ministerio del Interior y de Justicia, por resolución número 718 de 2003 y autorizado por el Ministerio de Relaciones Exteriores de Colombia.

(Se traducen unos Sellos y Apostilla No. S05KL19344 escritos en inglés, adjuntos a un poder otorgado por la compañía VDF Futureceuticals, con fecha Octubre 17, 2005, firmado por John M Hunter Vicepresidente de Desarrollo Comercial, y a un certificado notarial, ambos escritos en inglés y español.)

(En español e inglés, poder otorgado por la compañía VDF Futureceuticals, con fecha Octubre 17, 2005, firmado por John M Hunter Vicepresidente de Desarrollo Comercial, dos (2) hojas.)

En la parte inferior, aparece el sello notarial a tinta:

[SELLO OFICIAL, JUDITH DISSELKOEN, NOTARIO PÚBLICO – ESTADO DE ILLINOIS, MI COMISIÓN VENCE 09/02/09, (Firmado) Judith Disselkoen, 10-17-05].

(En español e inglés, certificado notarial, una (1) hoja).

En la parte inferior, aparece el sello notarial a tinta:

[SELLO OFICIAL, JUDITH DISSELKOEN, NOTARIO PÚBLICO – ESTADO DE ILLINOIS, MI COMISIÓN VENCE 09/02/09, (Firmado) Judith Disselkoen; 10-17-05].

ESTADO DE ILLINOIS

SECRETARIA DE ESTADO

SPRINGFIELD, ILLINOIS

APOSTILLA

(Convención de la Haya de Octubre 5 de 1961)

1. País: Estados Unidos de América
Este documento público
2. Ha sido firmado por JUDITH DISSELKOEN
3. Actuando en calidad de Notario Público, Condado de KANKAKEE.

4. Lleva el sello/estampilla del ESTADO DE ILLINOIS
CERTIFICADA
5. En Springfield, Illinois
6. Hoy Noviembre 14, 2005
7. Por El Secretario de Estado del Estado de Illinois,
8. Número **S05KL19344**
9. Sello / Estampilla (Sello Redondo en Relieve del Estado de Illinois)
10. Firma (Firmado)
JESSE WHITE
SECRETARIO DE ESTADO, ESTADO DE ILLINOIS

ES TRADUCCIÓN FIEL Y COMPLETA de la cual se deja copia en los archivos de esta oficina para su confrontación y a la cual
me remito

Bogotá, Enero 17, 2006.

NO SE ASUME
RESPONSABILIDAD POR EL TEXTO

2006 ENE 17 A las 06

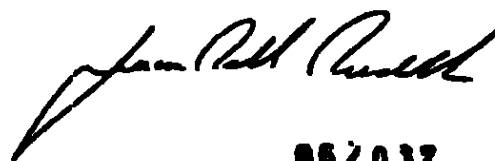
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RECELECALIZACIONES
BOGOTÁ D.C.

MINISTERIO DE
RELACIONES EXTERIORES

4071948

Juan Piedad
JUAN PABLO PIEDRAHITA AGUILERA

RECELECALIZACIONES
BOGOTÁ D.C.



TRADUCCION OFICIAL No. **067017**
JUAN PABLO PIEDRAHITA AGUILERA
TRADUCTOR E INTERPRETE OFICIAL
RES. 718 DE MAYO 2003
DEL MIN. INTERIOR Y DE JUSTICIA

7165



SPRINGFIELD, ILLINOIS

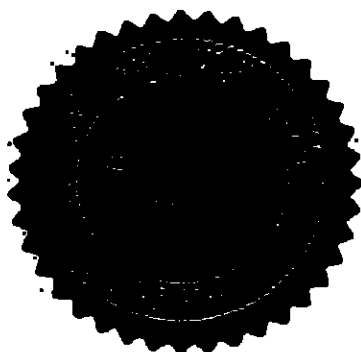
APOSTILLE

(Convention de La Haye du 5 Octobre 1961)

1. Country: United States of America
This public document
2. has been signed by JUDITH L. DISSELKOEN
3. acting in the capacity of NOTARY PUBLIC, KANKAKEE COUNTY
4. bears the seal/stamp of STATE OF ILLINOIS

Certified

5. Springfield, Illinois
6. NOVEMBER 14, 2005
7. by the Secretary of State, State of Illinois
8. No. S05KL19344
9. Seal/Stamp:
10. Signature:



Jesse White

JESSE WHITE
SECRETARY OF STATE
STATE OF ILLINOIS

087017
TRADUCCION OFICIAL No.
JUAN PABLO PIEDRAHITA AGUILERA
TRADUCTOR E INTERPRETE OFICIAL
RES. 718 DE MAYO 2003
DEL MIN. INTERIOR Y DE JUSTICIA

REPRESENTATION AND
POWER OF ATTORNEY

I, John M. Hunter (we), the undersigned

in representation of VDF Futuristics, Inc.
domiciled in 300 West 6th Street
Menasha, IL 60953 USA

in due compliance with the terms of paragraph 1st. of article 543 of the Commercial Code, do hereby appoint FERNANDO TRIANA, tpa. No. 45.265 c.e. No. 79.154.036; LAURA MICHELSEN, tpa. No. 67.897 c.e. No. 39.783.287; JUAN CARLOS URIBE, tpa. No. 54.493 c.e. No. 79.159.313 and JUAN PABLO TRIANA, tpa. 63.077 c.e. No. 79.457.222; domiciled at Calle 93 B No. 12-48 (204), Bogotá, D.C., Colombia, the first as principal and the others as alternates, in the order of their appointment, as our representatives for all industrial property and intellectual matters with faculty to receive notifications and to appear attorneys in and out of Court. The first alternate shall replace the principal in case of his absence or of temporal or definitive impediment. The same rule will apply when the second or third alternate representative is to replace the first or second one, or when the second or third is to replace the principal one. In such cases, the principal representative, shall state his intention not to act as representative through a declaration given before a Notary Public in Colombia, or before a Notary or another Public Official or a Colombian Consul abroad; and in cases of impediment, the appropriate certificate shall suffice. If any of the appointees were to be definitely absent, the following alternate shall take his place. When the absence or impediment of the principal representative, or of the first or second or third alternate in their turn cases, the representation can be taken again in their sequence, by the principal, the first or second or third alternate depending on case, and the same fact or its exercise will suffice. The exercise of the representation by the first or second or third alternates in their turn shall end at such time.

REPRESENTACIÓN Y
PODER

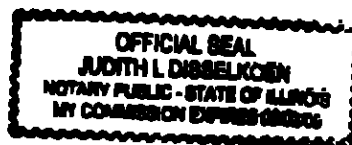
Yo, John M. Hunter (nosotros), el suscrito

en representación de VDF Futuristics, Inc.
domiciliado(s) en 300 West 6th Street
Menasha, IL 60953 USA

por el presente nombro (nominamos) a FERNANDO TRIANA, tpa. No. 45.265 c.e. No. 79.154.036; LAURA MICHELSEN, tpa. No. 67.897 c.e. No. 39.783.287; JUAN CARLOS URIBE, tpa. No. 54.493 c.e. No. 79.159.313 y JUAN PABLO TRIANA, tpa. 63.077 c.e. No. 79.457.222; domiciliados en la Calle 93 B No. 12-48 (204), Bogotá, D.C., Colombia, en obediencia a lo dispuesto en el parágrafo 1ro. del Artículo 543 del Código de Comercio, al primero como principal y los demás como suplentes, en su orden, como mis (nuestros) representantes en todos los asuntos de propiedad industrial con facultad para recibir notificaciones y comparecer apoderados judiciales o extrajudiciales. El primer representante suplente reemplazará al principal en caso de ausencia o impedimento temporal o definitivo de aquel. La misma regla se aplicará cuando el segundo y tercer representantes suplentes hayan de reemplazar al primero, al segundo o al principal. En tales casos, el representante principal, o el primero, o segundo suplente, o tercer suplente en su caso, o todos ellos, declararán su intención de no ejercer la representación mediante declaración autenticada por Notario Público en Colombia, o por Notario u otro Funcionario Público, o Consul de Colombia, en el extranjero; y si en ausencia de impedimento, con el certificado respectivo. Si alguno de los nombrados faltare definitivamente, el siguiente tomará su lugar. Cuando ocurre la ausencia o impedimento del representante principal, o de su primero o segundo o tercer suplente, en su caso, podrán ejercer la representación, en su orden, uno u otros según el caso, sucesivamente por el solo hecho de ejercerla, cuando en ese momento el ejercicio de la representación por el primero o segundo o tercer suplente en su caso.

2010-11-16 12:29:20 Bogotá, Colombia
77 1300 Bogotá 77 1300 Fax 57 110114200 615 1014
E-mail: info@triandm.com Website: www.triandm.com

Jmt



Judith L. Disselkoen

10-17-05

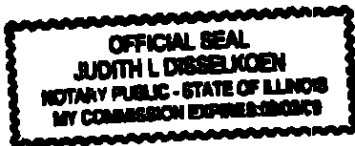
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In addition, we grant a Power of Attorney in favor of the above named attorneys-at-law so that they may obtain the protection of my (our) industrial property and against the unfair competition, for which purpose I (we) authorize the said attorneys to represent me (us) before any authorities or persons, with or without jurisdiction, specially those administrative, administrative contentious and judicial, in all matters concerning the following: a) Obtaining of patents, layout-designs of integrated circuits, utility models and industrial design; the registration of marks and trade slogans; the deposit of commercial names and trade emblems; the obtaining of the declaration and authentication of denominations of origin; renewal, payment of the annuity fees, assignment, license, change of name or domicile, voluntary cancellation; and the registration of commercialization agreements and licenses of use of the above rights; b) Protection of trade secrets; c) Obtaining of plant variety protection; d) Obtaining of functioning licenses, health registrations and sale licenses any other petition before the sanitary or administrative authorities; e) Protection to the consumers and actions against restrictive commercial practices; f) Obtaining of copyright registrations for any type of artistic, literary, scientific, musical, video, films, video games, cinematography works, software or any other production in the artistic, scientific or literary fields capable of being reproduced or expressed by any means known now or in the future; Registration of agreements related with the execution or transfer of intellectual property rights; Obtaining of reduced postal tariff; g) Registration of domain names; their renewal, assignment, change of name, change of domicile and any other acts related with their management. h) Actions of opposition, of opposition, cancellation, nullity, infringement of rights, custom procedures, writ of mandamus, granting of licenses; and in general the civil, criminal and administrative suits relating to all those rights; actions and suits instituted by me (us) or against me (us). And that in all the above matters they may substitute this Power of Attorney, compromise, execute license agreements, file extraordinary remedies such as nullification and/or revision and/or application of court decisions, conciliate, admit the facts of the case, desist, cancel, resolve, resign, and ratify acts done by representatives without a Power of Attorney.

Además, confiero (confiramos) poder a los abogados arriba nombrados, para obtener la protección de mi (nuestros) propiedad industrial e intelectual y contra la competencia desleal, a cuyo efecto autorizo (amos) a los dichos apoderados para que me (nos) representen ante cualquier autoridad o persona, ejercen o no jurisdicción, especialmente ante las del orden administrativo, contencioso-administrativo y judicial, en todo lo concerniente a las siguientes materias: a) Obtención de patentes de invención, de los esquemas de trazo de circuitos integrados, modelos de utilidad y diseños industriales, el registro de marcas y de lemas comerciales; el depósito de nombres comerciales y emblemas; la obtención de la declaración y de la autorización de denominaciones de origen; su renovación, pago de anualidades de mantenimiento, traspaso, licencia, cambio de nombre o domicilio, cancelación voluntaria; y el registro de acuerdos de comercialización y de licencias de uso de esos derechos; b) Protección de secretos empresariales; c) Obtención de la protección para variedades vegetales; d) Obtención y tramitación de todo lo relacionado con licencias de funcionamiento, registros sanitarios, licencias de venta y cualquier otra petición ante las autoridades sanitarias o administrativas; e) Protección del consumidor y acciones por prácticas comerciales restrictivas; f) Obtención del registro de derechos de autor para cualquier tipo de obra artística, literaria, científica, musical, videográfica, cinematográfica, coreográfica, o cualquier otra producción, en el campo artístico, científico, o literario capaz de ser reproducido o expresado por cualquier medio conocido ahora o por conocer en el futuro; Registro de contratos relacionados con la ejecución o transferencia de derechos intelectuales; Obtención de tarifa postal reducida; g) Registro de nombres de dominio, su renovación, traspaso, cambio de nombre, cambio de domicilio y demás actos relacionados con su administración. h) Las acciones reivindicatorias, de oposición, de cancelación, de nulidad, de infracción de derechos, de medidas cautelares, de medidas en frontera, de tutela, de concesión de licencias y en general los procesos civiles, penales, administrativos o contencioso-administrativos relacionados con todos estos derechos; acciones y procesos que promuevan o no sea promuevan; Y para que en todos los asuntos arriba detallados, puedan sustituir este mandato, transigir, suscribir contratos de licencia, presentar recursos extraordinarios de nulidad, y/o revisión y/o nulidad, conciliar, admitir los hechos del proceso, desistir, cancelar, recibir, renunciar y ratificar los actos de agentes oficiales.

Given and Signed this/Dado y Firmado hoy October 17, 2005
 in/at 300 W. 6th Street, Mankato, MN 56004 USA
 Signature/Firma John M. Jank VP Business Development
 VDF FutureCentrics



Judith L. Disselkoen
 10-17-05



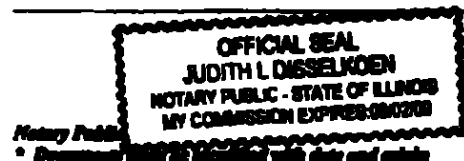
NOTARIAL CERTIFICATION
(CORPORATION)

On this 17th day of October (month), 2005 (year)
appeared before me
John M. Hunter
who I know personally and who signed this document
as representative of the corporation or company
named
VDF FutureCenticals, Inc.

Consequently, I certify:

1. That I have seen the following documents (with date and origin):
 - 1.1. Representation and Power of Attorney
 - 1.2.
 - 1.3.
2. That the above documents prove the following:
 - 2.1. That the corporation or company
VDF FutureCenticals, Inc.
was constituted and exists in accordance with the
laws
of the State of Illinois, U.S.A
 - 2.2. That the domicile of said corporation or company
is 300 West 6th Street
Moline, IL 61201 USA
 - 2.3. That the corporation or company is developing
its corporate or company activities and that the
purpose for which the present power of attorney is
granted is comprised within the corporation or
company purposes.
 - 2.4. That Mr. (Mrs.) John M. Hunter
is authorized to grant the present power of attorney.

City Moline, IL
State ILLINOIS
Country Kankakee USA



Given and Signed this/Dado y firmado hoy
in/en Moline, IL, USA Judith L. Disselkoen
Signature/Firma Judith L. Disselkoen

CERTIFICACION NOTARIAL
(SOCIEDAD)

Hoy, 17 (día) de octubre
(mes) de 2005 (año) se hizo presente ante mí el
Señor John M. Hunter (a)
(nombre), a quien conozco personalmente y que firma
este documento en representación de la sociedad
denominada
VDF FutureCenticals, Inc.

En consecuencia certifico lo siguiente:

1. Que he revisado los siguientes documentos (con fecha y origen):
 - 1.1. Representación y Poder
 - 1.2.
 - 1.3.
2. Que estos documentos prueban:
 - 2.1. Que la sociedad
VDF FutureCenticals, Inc.
(nombre) fue constituida y que existe de acuerdo con
las leyes de
el Estado de Illinois, U.S.A
 - 2.2. Que el domicilio de esta sociedad
es 300 West 6th Street
Moline, IL 61201 USA
 - 2.3. Que esta compañía desarrolla actualmente su
objeto social y que el objeto del poder que se otorga
está comprendido dentro del mismo.
 - 2.4. Que el Señor (a) John M. Hunter
está autorizado para otorgar este poder.

Ciudad Moline, IL
Estado ILLINOIS
País U.S.A

Notario Público
• Los documentos deben identificarse con fecha y origen

2167

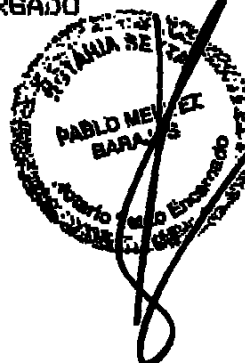
ES FIEL Y SEGUNDA COPIA (FOTOCOPIA) TOMADA DE LA ESCRITURA
PUBLICA NUMERO 351 DE FECHA 25 DE ENERO DE 2006.

QUE EXPIDO EN 5 HOJAS RUBRICADAS EN SUS MARGENES

BOGOTA D.C. 25 DE ENERO DE 2006.

POR EL NOTARIO SEXTO DE SANTAFE DE BOGOTA D.C.

PABLO MENDEZ BARAJAS
NOTARIO ENCARGADO



**Traducción de los
Anexos del Reporte
de Examen
Preliminar
Internacional.**

Lo que se reivindica es:

- 1. Un producto alimenticio que comprende una preparación de una cereza de café que es secada de manera rápida tal que un nivel de micotoxina de la cereza de café es menor a 20 ppb para el total de aflatoxinas, menos de 10 ppb para el total de ocratoxinas, y menos de 5 ppm para el total de fumonisinas.**
- 2. El producto alimenticio de la reivindicación 1 en donde la preparación de la cereza de café comprende un fragmento molido de la cereza de café.**
- 3. El producto alimenticio de la reivindicación 2 en donde la preparación de la cereza de café comprende un extracto a partir de un fragmento molido de la cereza de café.**
- 4. El producto alimenticio de la reivindicación 1 en donde la preparación de la cereza de café comprende por lo menos uno de un grano de la cereza de café, una pulpa de la cereza de café, un mucílago de la cereza de café y una cáscara de la cereza de café**
- 5. El producto alimenticio de la reivindicación 1 en donde la preparación de la cereza de café comprende un extracto de por lo menos un entre un grano de la cereza de café, una pulpa de la cereza de café, un mucílago de la cereza de café y un cáscara de la cereza de café.**

6. El producto alimenticio de la reivindicación 1 en donde la cereza de café es una cereza de café submadurada y tienen principalmente un color verde con menos de 25% de color rojo.
7. El producto alimenticio de la reivindicación 1 en donde la cereza de café es una cereza de café submadurada y tienen principalmente un color rojo con menos de 25% de color verde.
8. El producto alimenticio de la reivindicación 1 en donde la cereza de café es una cereza de café submadurada y tienen principalmente color rojo con menos de 5% de áreas manchadas.
9. El producto alimenticio de la reivindicación 1 en donde la cereza de café es secada de manera rápida en un secador usando aire caliente.
10. El producto alimenticio de la reivindicación 1 en donde la cereza de café es secada de manera rápida en un secador usando radiación solar.
11. El producto alimenticio de la reivindicación 1 en donde la cereza de café es secada rápidamente por medio de exponer la cereza de café a por lo menos uno entre aire ambiente y luz solar.
12. El producto alimenticio de la reivindicación 1 en donde el producto alimenticio es un té manufacturado a partir de cerezas de café.

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13. El producto alimenticio de la reivindicación 1 en donde el producto alimenticio es una bebida que comprende un extracto de cereza de café.
14. El producto alimenticio de la reivindicación 1 en donde el producto alimenticio es un suplemento nutricional en forma sólida o líquida y comprende un extracto de cereza de café.
15. Un té manufacturado a partir de una cereza de café secada de manera rápida molida con un porción de ella.
16. El té de la reivindicación 15 en donde la cereza de café tienen un nivel de micotoxina menor de 20 ppb para el total de aflatoxina menor de 10 ppb para el total de ocratoxinas y menor de 5 ppm para el total de fumonisinas.
17. El té de la reivindicación 16 que tienen una concentración de polifenol de por lo menos 10 mg/onza.
18. El té de la reivindicación 15 en donde la cereza de café es una cereza de café submadurada.
19. Una cereza de café secada de manera rápida o porción de ella que tiene un nivel de micotoxinas de menos de 20 ppb para el total de aflatoxinas, menos de 10 ppb para el total de ocratoxinas, y menos de 5 ppm para el total de fumonisina.

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20. La cereza de café secada de manera rápida de la reivindicación 19 en donde la cereza de café es una cereza de café submadurada.

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What is claimed is:

1. A food product that comprises a preparation of a coffee cherry that is quick-dried such that a mycotoxin level of the coffee cherry is less than 20 ppb for total aflatoxins, less than 10 ppb for total ochratoxins, and less than 5 ppm for total fumonisins.
2. The food product of claim 1 wherein the preparation of the coffee cherry comprises a ground fragment of the coffee cherry.
3. The food product of claim 2 wherein the preparation of the coffee cherry comprises an extract from a ground fragment of the coffee cherry.
4. The food product of claim 1 wherein the preparation of the coffee cherry comprises at least one of a bean of the coffee cherry, a pulp of the coffee cherry, a mucilage of the coffee cherry, and a hull of the coffee cherry.
5. The food product of claim 1 wherein the preparation of the coffee cherry comprises an extract from at least one of a bean of the coffee cherry, a pulp of the coffee cherry, a mucilage of the coffee cherry, and a hull of the coffee cherry.
6. The food product of claim 1 wherein the coffee cherry is a sub-ripe coffee cherry and has a primarily green color with less than 25% red color.
7. The food product of claim 1 wherein the coffee cherry is a sub-ripe coffee cherry and has a primarily red color with less than 25% green color.
8. The food product of claim 1 wherein the coffee cherry is a sub-ripe coffee cherry and has a primarily red color with less than 5% blemished area.
9. The food product of claim 1 wherein the coffee cherry is quick-dried in a dryer using heated air.
10. The food product of claim 1 wherein the coffee cherry is quick-dried in a dryer using solar radiation.
11. The food product of claim 1 wherein the coffee cherry is quick dried by exposing the coffee cherry to at least one of ambient air and sun light.

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12. The food product of claim 1 wherein the food product is a tea brewed from the coffee cherry.
13. The food product of claim 1 wherein the food product is a beverage comprising an extract of the coffee cherry.
14. The food product of claim 1 wherein the food product is nutritional supplement in liquid or solid form and comprising an extract of the coffee cherry.
15. A tea that is brewed from a comminuted quick-dried coffee cherry or portion thereof.
16. The tea of claim 15 wherein the coffee cherry has a mycotoxin level of less than 20 ppb for total aflatoxins, less than 10 ppb for total ochratoxins, and less than 5 ppm for total fumonisins.
17. The tea of claim 16 having a polyphenol concentration of at least 10 mg/oz.
18. The tea of claim 15 wherein the coffee cherry is a sub-ripe coffee cherry.
19. A quick-dried coffee cherry or portion thereof that has a mycotoxin level of less than 20 ppb for total aflatoxins, less than 10 ppb for total ochratoxins, and less than 5 ppm for total fumonisins.
20. The quick-dried coffee cherry of claim 19 wherein the coffee cherry is a sub-ripe coffee cherry.

Expediente No. 100700.0024PCT

CESIÓN

POR CUANTO, los suscritos, **Dusan Miljkovic, Brad L. Duell y Vukosava Miljkovic**, todos individuos empleados por VDF Futureceuticals, 300 W. 6th Street, Momence, Illinois, 60954-0009 (individual y colectivamente a los cuales se refiere la presente como los "CEDENTES") han inventado cierta invención titulada "**Productos de Cereza de Café con baja Micotoxina**", para la cual se presentó una solicitud de título de patente PCT en los Estados Unidos de América, el 16 de Abril, 2003, con el número de serie PCT/US03/11950; que junto con los datos experimentales, el secreto industrial y demás *know how*, la presente hace referencia como la "**INVENCION**";

POR CUANTO, VDF Futureceuticals (sic), compañía con domicilio comercial principal en 300 W. 6th Street, Momence, Illinois, 60954-0009 (a la cual se hace referencia en la presente como el "CESIONARIO"), desea adquirir la totalidad de los derechos, propiedad y participación en y sobre dicha INVENCION, y en y sobre todos los Títulos de Patente o protección legal similar que pueda ser, o que se haya obtenido sobre ella en los Estados Unidos de América, en sus posesiones territoriales y en cualesquiera y todos los países extranjeros;

AHORA EN CONSECUENCIA, por una buen y valiosa contraprestación, recibo de la cual se reconoce en el presente, los **CEDENTES** por el presente

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vendemos, cedemos, transferimos y traspasamos al **CESIONARIO**, a sus sucesores causahabientes y cesionarios la totalidad de sus derechos, propiedad y participación en y sobre dicha **INVENCION** y sobre todos los Títulos de Patente o protección legal similar que pueda surgir de ella, no solo en los Estados Unidos de América sino en sus posesiones territoriales y en todos los países extranjeros que pudieran otorgarse sobre dicha **INVENCION**, por dicha solicitud o cualquier continuación, continuación parcial, división, renovación, sustitución, reexpedición o reexaminación de la misma o de cualquier equivalente legal de la misma en un país extranjero, durante la vigencia total o vigencias para las cuales las misma a sea otorgada, incluyendo todos los derechos de prioridad bajo cualquier Convenio Internacional.

Los **CEDENTES**, por el presente convenimos que no se ha celebrado cesión, venta, acuerdo o gravamen, ni se celebrará, el cual pueda estar en conflicto con la presente cesión.

Los **CEDENTES** además convenimos que al **CESIONARIO**, a solicitud, se le suministrarán sin demora, todos los hechos pertinentes y documentos referentes a dicha **INVENCION**, incluyendo la solicitud de patente arriba mencionada, y cualesquiera Títulos de Patente y sus equivalentes legales en países extranjeros que los expidan, en la forma en que puedan conocerse y a los cuales se pueda tener acceso por parte de los **CEDENTES**, y que declararán respecto de los mismos en cualquier oposición, objeción, interferencia o litigio relacionados con ello, y suscribirán sin demora y le entregarán al **CESIONARIO** o a sus representantes legales cualesquiera y todos los documentos, instrumentos o declaraciones juramentadas que se requieran para solicitar, obtener, mantener, expedir y hacer

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cumplir dicha invención y dichos Títulos de Patente y dichos equivalentes de los mismos en cualquier país extranjero, que puedan ser necesarios o convenientes para llevar a cabo los fines de los mismos.

Desempeño esperado. Cada una de las partes del presente conviene llevar a cabo todos los actos y suscribir y entregar todos los documentos que puedan ser necesarios y convenientes para llevar a cabo la intención y el propósito de este Contrato.

Totalidad del Contrato. Este Contrato incorpora la totalidad del entendimiento entre las Partes y revoca y reemplaza cualesquiera acuerdos preexistentes o entendimientos entre los Cedentes y el Cesionario. Ninguna reforma o modificación de este Contrato será válida u obligante

Desempeño esperado. Cada una de las partes del presente conviene llevar a cabo todos los actos y suscribir y entregar todos los documentos que puedan ser necesarios y convenientes para llevar a cabo la intención y el propósito de este Contrato.

Totalidad del Contrato. Este Contrato incorpora la totalidad del entendimiento entre las Partes y revoca y reemplaza cualesquiera acuerdos preexistentes o entendimientos entre los Cedentes y el Cesionario. Ninguna reforma o modificación de este Contrato será válida u obligante para el Cesionario y los Cedentes, a menos que se haga por escrito y esté firmada por cada una de las Partes, por sus respectivos representantes debidamente autorizados.

Este Contrato podrá ser firmado en un número de ejemplares, cada uno de los

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cuales se considerará un original, pero todos los cuales juntos constituirán uno y el mismo instrumento.

DA FE mi firma en Momence, Illinois, hoy día 29 de Abril, 2003
Ciudad Estado Mes

(Firmado) **Dusan Miljkovic**

DA FE mi firma en Momence, Illinois, hoy día 29 de Abril, 2003
Ciudad Estado Mes

(Firmado) **Brad L. Duell**

DA FE mi firma en Momence, Illinois, hoy día 29 de Abril, 2003
Ciudad Estado Mes

(Firmado) **Vukosava Miljkovic**

[SELLO OFICIAL, JUDITH DISSELKOEN, NOTARIO PÚBLICO – ESTADO DE ILLINOIS, MI COMISIÓN VENCE 08/18/05, (Firmado) Judith Disselkoen, 5-1-03].

(Sello Pre-impreso del Departamento de Comercio de los Estados Unidos de América)

OFICINA DE PATENTES Y MARCAS DE LOS ESTADOS UNIDOS

BAJO LA SECRETARÍA DE COMERCIO PARA LA PROPIEDAD INTELECTUAL Y LA DIRECCIÓN DE LA OFICINA DE PATENTES Y MARCAS DE LOS ESTADOS UNIDOS DE AMÉRICA

(Código de Barras, *102500900A*)

Enero 21, 2004 Ptas
RUTAN & TUCKER LLP
ROBERT D. FISH.
611 ANTON BLVD. SUITE 1400
COSTA MESA CA 92626

OFICINA DE PATENTES Y MARCAS DE LOS ESTADOS UNIDOS 06 / 018

TRADUCCION OFICIAL No. _____
JUAN PABLO PIEDRAHITA AGUILERA
TRADUCTOR E INTERPRETE OFICIAL
RES. 718 DE MAYO 2003
DEL MIN. INTERIOR Y DE JUSTICIA

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AVISO REGISTRO DEL DOCUMENTO DE CESIÓN

EL DOCUMENTO ANEXO HA SIDO REGISTRADO POR LA DIVISIÓN DE CESIONES DE LA OFICINA DE PATENTES Y MARCAS DE LOS ESTADOS UNIDOS. UNA COPIA COMPLETA MICROFILMADA ESTÁ DISPONIBLE EN EL CUARTO DE BUSQUEDA DE CESIONES EN EL CARRETE Y NÚMERO DE MARCO A LOS QUE SE HACE REFERENCIA ABAJO.

POR FAVOR REVISE TODA LA INFORMACIÓN CONTENIDA EN ESTE AVISO. LA INFORMACIÓN CONTENIDA EN ESTE RECORDATORIO REFLEJA LOS DATOS PRESENTES EN EL SISTEMA DE CESIONES DE PATENTES Y MARCAS SI ENCUENTRA ERRORES O TIENE PREGUNTAS REFERENTES A ESTE AVISO, PUEDE CONTACTAR AL FUNCIONARIO CUYO NOMBRE APARECE EN ESTE AVISO EN EL 703-308-9723. FAVOR ENVIAR LA SOLICITUD DE CORRECCIÓN A: LA OFICINA DE PATENTES Y MARCAS DE LOS ESTADOS UNIDOS, DIVISIÓN DE CESIONES, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON D.C. 20231.

FECHA DEL REGISTRO: 07/14/2003

RIEL / MARCO: 01427070395 NÚMERO DE PÁGINAS: 3

RESUMEN: CESIÓN DE LA PARTICIPACIÓN DEL CEDENTE (VER EL DOCUMENTO PARA DETALLES).

CEDENTE: MILJKOVIC DUSAN

FECHA DOC.: 10/18/2002

CEDENTE: DUELL, BRAD L.

FECHA DOC.: 10/18/2002

CEDENTE: MILJKOVIC VUKOSAVA

FECHA DOC.: 10/18/2002

CESIONARIO: VDF FUTURECEUTICALS INC.

300 W. 6TH STREET

MOMENCE, ILLINOIS 60954

NÚMERO SERIAL: (EN BLANCO) FECHA DE PRESENTACIÓN: (EN BLANCO)

NÚMERO DE PATENTE: (EN BLANCO) FECHA DE EXPEDICIÓN: (EN BLANCO)

NUMERO PCT: US0311950

014270 PAGINA 2

THERESA FREDERICK, EXAMINADOR

DIVISIÓN DE CESIONES

OFICINA DE REGISTROS PÚBLICOS

(Sello a tinta: Julio 14, 2003, Oficina de Patentes y Marcas de los Estados Unidos)

Formulario PTO-1595, (Rev. 10/02), OMB No. 0651-0027 (vence 6/30/2005)

CARÁTULA DEL FORMULARIO DE REGISTRO - SOLO PATENTES

Departamento de Comercio de los Estados Unidos, Oficina de Patentes y Marcas

07-18-2003 Código de barras, 102500900

Al Honorable Comisario para patentes y marcas: Favor registrar los documentos originales adjuntos o sus copias.

1. Nombre de las partes que traspasan:

Dusan Miljkovic

Brad L. Duell

Vukosava Miljkovic

Nombres o partes que traspasan adicionales adjuntas? Si ☒ No

2. Nombre de las partes que reciben:

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24

VDF Futureceuticals, Inc.

Dirección: 300 W. 6th Street

Ciudad: Mokenca, Estado: Illinois, 60954

Nombres o partes que traspasan adicionales adjuntas? (en blanco) Si ☒ No

3. Clase de Traspaso

☒	Cesión	(en blanco)	Fusión
(en blanco)	Contrato de Valores	(en blanco)	Cambio de Nombre
(en blanco)	Otro		

Fecha de Suscripción: Octubre 18, 2002

4. Número(s) de Solicitud o Número(s) de Patente:

Si este documento se presenta junto con una nueva solicitud, la fecha de suscripción de la solicitud es : (en blanco)

A. Solicitud de Patente Número(s) PCT/US03/11950

B. de Patente Número(s) (en blanco)

Hay números adicionales adjuntos? (en blanco) Si ☒ No

5. Nombre y Dirección de la parte a quien se le debe dirigir la correspondencia concerniente al documento:

Nombre: Robert D. Fish

Dirección: Rutan & Tucker LLP

611 ANTON BLVD. SUITE 1400

Ciudad: Costa Mesa Estado: CA Código Postal: 92626

6. Número total de solicitudes de patentes involucradas: 1

7. Total Derechos (37 CFR 3.41) \$40.00

(En Blanco)

182

Adjuntos

x

Autorización para cargo a cuenta de depósito

8. Cuenta de Depósito Número 502191

Adjunte copia por duplicado si el pago es a cuenta de depósito

NO USE ESTE ESPACIO (en blanco)

9. Declaración y Firma

En mi leal saber y entender, la información anterior es verdadera y correcta y cualquier copia adjunta es una copia verdadera del documento original.

Robert D. Fish (Firmado) 7/10/03

Nombre del Firmante Firma Fecha

Número Total de páginas, incluyendo la carátula, los anexos y documentos: 4

(Sello mecánico: 07/17/2003 LMUELLER 00000243 502 91

PCT/US03/11950

01 FC: 8021 40 DA)

Envíe los documentos a ser registrados con la información requerida en la carátula a:

Comisario para Patentes y Marcas, Casilla Cesiones, Washington D.C. 20231

ESTADO DE ILLINOIS

SECRETARIA DE ESTADO

SPRINGFIELD, ILLINOIS

APOSTILLA

(Convención de la Haya de Octubre 5 de 1961)

TRADUCCION OFICIAL No. 08 / 018
JUAN PABLO PIEDRAHITA AGUILA
TRADUCTOR E INTERPRETE OFICIAL
RES. 718 DE MAYO 2003
DEL MIN. INTERIOR Y DE JUSTICIA

28183

1. País: Estados Unidos de América
- Este documento público
2. Ha sido firmado por JUDITH DISSELKOEN
3. Actuando en calidad de Notario Público, Condado de KANKAKEE.
4. Lleva el sello/estampilla del ESTADO DE ILLINOIS

CERTIFICADA

5. En Springfield, Illinois
6. Hoy Enero 4, 2006
7. Por El Secretario de Estado del Estado de Illinois,
8. Número **S06KL10019**
9. Sello / Estampilla (Sello Redondo en Relieve del Estado de Illinois)
10. Firma (Firmado)

JESSE WHITE

SECRETARIO DE ESTADO, ESTADO DE ILLINOIS

ES TRADUCCIÓN FIEL Y COMPLETA de la cual se deja copia en los archivos de esta oficina para su confrontación y a la cual me remito.

Bogotá, Enero 17, 2006.

NO SE ASUME
RESPONSABILIDAD DEL TEXTO
2006 ENE 20 A 11:00
JESSE
JEFE DE LEGALIZACIONES
BOGOTÁ D.C.



TRADUCCION OFICIAL No. 06/018
JUAN PABLO PIEDRAHITA AGUILERA
TRADUCTOR E INTERPRETE OFICIAL
RES. 718 DE MAYO 2003
DEL MIN. INTERIOR Y DE JUSTICIA

MINISTERIO DE
RELACIONES EXTER.
407649
Juan Piedrahita
HUYA FIRMA APARECE EN EL
DOCUMENTO DESEMPLEA
LAS FUNCIONES INDICADAS



SPRINGFIELD, ILLINOIS

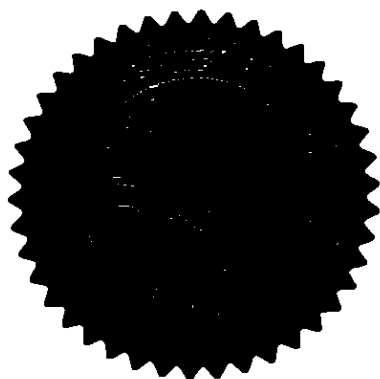
APOSTILLE

(Convention de La Haye du 5 Octobre 1961)

1. Country: United States of America
This public document
2. has been signed by JUDITH L. DISSELKOEN
3. acting in the capacity of NOTARY PUBLIC, KANKAKEE COUNTY
4. bears the seal/stamp of STATE OF ILLINOIS

Certified

5. Springfield, Illinois
6. JANUARY 4, 2006
7. by the Secretary of State, State of Illinois
8. No. S06KL10019
9. Seal/Stamp:
10. Signature:



Jesse White

JESSE WHITE
SECRETARY OF STATE
STATE OF ILLINOIS

06/018
TRADUCCION OFICIAL No. _____
JUAN PAOLO PIEDRAHITA AGUILERA
TRADUCTOR E INTERPRETE OFICIAL
RES. 718 DE MAYO 2003
DEL MIN. INTERIOR Y DE JUSTICIA

28/185

ASSIGNMENT

WHEREAS, the undersigned, Dusan Miljkovic, Brad L. Duell, and Vukosava Miljkovic, all individuals employed by VDF Futureceuticals, 300 W. 6th Street, Momence, Illinois, 60954-0009 (individually and collectively referred to hereinafter as "ASSIGNORS") has invented a certain invention entitled "Low-Mycotoxin Coffee Cherry Products", for which a PCT application for Letters of Patent of the United States of America was filed on April 16, 2003, serial number PCT/US03/11950; which together with related experimental data, trade secret, and other know-how is referred to hereinafter as the INVENTION;

WHEREAS, VDF Futureceuticals a company having its principal place of business at 300 W. 6th Street, Momence, Illinois, 60954-0009 (referred to hereinafter as "ASSIGNEE"), is desirous of acquiring all entire right, title and interest in, to and under said INVENTION, and in, to and under Letters Patent or similar legal protection to be, or having been, obtained therefor in the United States of America, its territorial possessions and in any and all countries foreign thereto;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, ASSIGNORS hereby sell, assign, transfer and set over unto the ASSIGNEE, its successors and assigns the entire title, right and interest in and to the INVENTION, and to all Letters Patent or similar legal protection arising therefrom, not only in the United States and its territorial possessions, but in all countries foreign thereto to be obtained for said INVENTION by said application or any continuation, continuation-in-part, divisional, renewal, substitute, reissue or reexamination thereof or any legal equivalent thereof in a foreign country for the full term or terms for which the same may be granted, including all priority rights under any International Convention.

ASSIGNORS hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment;

ASSIGNORS further covenant that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said INVENTION, including the patent application listed above, and any Letters Patent and legal equivalents in foreign countries issuing therefrom as may be known and accessible to ASSIGNORS, and will testify as to the same in any interference or litigation related thereto and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said invention and said Letters Patent and said equivalents thereof in any foreign country which may be necessary or desirable to carry out the purposes thereof.

Expected Performance. Each party herein agrees to perform all acts and execute and deliver all documents as may be necessary or appropriate to carry out the intent and purposes of This Agreement.

Entire Agreement. This Agreement embodies the entire understanding of The Parties and supersedes and replaces any and all pre-existing agreements or understandings between Assignee and Assignor. No amendment or modification of this Agreement shall be valid or binding upon

TRADUCCION OFICIAL No. 087019
JUAN PABLO PIEDRAHITA AGUILERA
TRADUCTOR E INTERPRETE OFICIAL
M.C. 218 DE MAYO 2003
DEL MUN. INTERIOR Y DE JUSTICIA

37, 106

Expected Performance. Each party herein agrees to perform all acts and execute and deliver all documents as may be necessary or appropriate to carry out the intent and purposes of This Agreement.

Entire Agreement. This Agreement embodies the entire understanding of The Parties and supersedes and replaces any and all pre-existing agreements or understandings between Assignee and Assignor. No amendment or modification of this Agreement shall be valid or binding upon Assignee and Assignor unless made in writing and signed on behalf of each of The Parties by their respective duly authorized representative.

This Agreement may be executed in any number of counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

WITNESS my hand at Momence, IL, this 29 day of April 2003,
City State Month

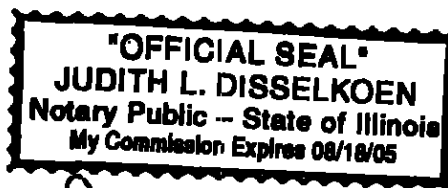
Dusan Miljkovic
Dusan Miljkovic

WITNESS my hand at Momence, IL, this 29 day of April 2003,
City State Month

Bradley L. Duell
Brad L. Duell

WITNESS my hand at San Diego, CA, this 1 day of MAY 2003,
City State Month

Vukosava Miljkovic
Vukosava Miljkovic



Judith L. Disselkoen
5-1-03

TRADUCCION OFICIAL No. 06 / 018
JUAN PABLO MED. AGUILERA
TRADUCTOR E INTERPRETE OFICIAL
E.L. 118 DE MAYO 2003
DEL MIN. INTERIOR Y DE JUSTICIA



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UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

JANUARY 21, 2004

PTAS



102500900A

RUTAN & TUCKER LLP
ROBERT D. FISH
611 ANTON BLVD., SUITE 1400
COSTA MESA, CA 92626

**UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT**

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 07/14/2003

REEL/FRAME: 014270/0395
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

MILJKOVIC, DUSAN

DOC DATE: 10/18/2002

ASSIGNOR:

DUELL, BRAD L.

DOC DATE: 10/18/2002

ASSIGNOR:

MILJKOVIC, VUKOSAVA

DOC DATE: 10/18/2002

ASSIGNEE:

VDF FUTURECEUTICALS INC.
300 W. 6TH STREET
MOMENCE, ILLINOIS 60954

SERIAL NUMBER:

PATENT NUMBER:

PCT NUMBER: US0311950

FILING DATE:

ISSUE DATE:

06 / 018

TRADUCCION OFICIAL No. _____
JUAN PABLO MED. ANITA AGUILERA
TRADUCTOR E INTERPRETE OFICIAL
E.L. 18 DE MAYO 2003
DEL MIN. INTERIOR Y DE JUSTICIA

2/188

014270/0395 PAGE 2

THERESA FREDERICK, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

TRADUCCION OFICIAL No. 087019
JURADO AGUILERA
TRADUCCION E INTERPRETE OFICIAL
MAYO 2003
DEPARTAMENTO DE INTERIOR Y DE JUSTICIA



07-18-2003

7.1403

32/109

Form PTO-1593
(Rev. 10/02)

RE

OMB No. 0851-0027 (exp. 07/30/2005)

Tab settings

102500900

U.S. DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

Dusan Miljkovic
Brad L. Duell
Vukosava Miljkovic

2. Name and address of receiving party(ies)

Name: VDF Futureceuticals, Inc.Internal Address: 300 W. 6th StreetAdditional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance:

- ☒ Assignment ☐ Merger
☐ Security Agreement ☐ Change of Name
☐ Other _____

Street Address: _____

City: Momence State: IL Zip: 60954Execution Date: October 18, 2002Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: _____

A. Patent Application No.(s)
PCT/US03/11950

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Robert D. FishInternal Address: Rutan & Tucker LLPStreet Address: 611 Anton Blvd., Suite 1400City: Costa Mesa State: CA Zip: 926266. Total number of applications and patents involved: 17. Total fee (37 CFR 3.41).....\$ 40.00

- ☐ Enclosed
☒ Authorized to be charged to deposit account

8. Deposit account number:

502191

(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

9. Statement and signature.

*To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.*Robert D. Fish

Name of Person Signing

[Signature]
Signature7/1-03
DateTotal number of pages including cover sheet, attachments, and documents: 4Mail documents to be recorded with required cover sheet information to:
Commissioner of Patents & Trademarks, Box Assignment
Washington, D.C. 20231ASISTENTE OFICIAL No. 018 / 01
PIEDRAHITA AG.
TRADUCTOR E INTERPRETE OFIC.
18 DE MAYO 2003
SECRETARIA DE INTERIOR Y DE JUST.

PETITORIO



Espacio reservado para el adhesivo de radicación

FORMULARIO ÚNICO DE SOLICITUD DE PATENTE PCT ENTRADA EN FASE NACIONAL

33
190

①

SOLICITUD DE :

☒ Patente de Invención.

☐ Patente de Modelo de Utilidad,

☐ Capítulo I.

☒ Capítulo II

②

SOLICITANTE
(71)

Nombre: VDF FUTURECEUTICALS

Dirección: 300 WEST 6TH STREET

Nacionalidad o Domicilio: MOMENCE, ILLINOIS

Lugar de Constitución: U.S.A.

Teléfono:

Fax:

E-mail:

IDENTIFICACIÓN

C.C.

☐

NIT

☐

C.E.

☐

Otro

☐

Cual

Número

③

REPRESENTANTE
O APODERADO

Nombre: JAIME LUIS CUELLAR TRUJILLO

Dirección: AVENIDA 13 No. 85-44, OF. 101

Teléfono:

Fax:

E-mail:

IDENTIFICACIÓN

C.C.

☒

NIT

☐

C.E.

☐

Otro

☐

Cual

Número 19.360.271 T P 64.805

④

INVENTOR (ES)
(72)

Nombre: MILJKOVIC DUSAN, DUELL BRAD, MILJKOVIC VUKOSAVA

Dirección: 4655 Ramsay Avenue, San Diego, Ca, 92122, 1441 Santa Lucia
RD. No. 1134, Chula Vista, Ca 91913

Nacionalidad o Domicilio ESTADOS UNIDOS DE AMERICA

⑤

PCT (86)

Solicitud Internacional No. PCT/US2003/11950

Fecha 16/04/2003

Publicación Internacional No. WO 2004/098303 A1

Fecha 18/11/2004

⑥

Título (54) PRODUCTOS DE CEREZA DE CAFE CON BAJA MICOTOXINA

⑦

Clasificación Internacional (51) A23F 5/02, 5/16

⑧

Prioridad

si ☐

NO ☒

(33) País de Origen

(32) Fecha

(31) Número de Solicitud

⑨

Comprobante de pago No. 05 - 82.610

Fecha 27/10/2005

191
37

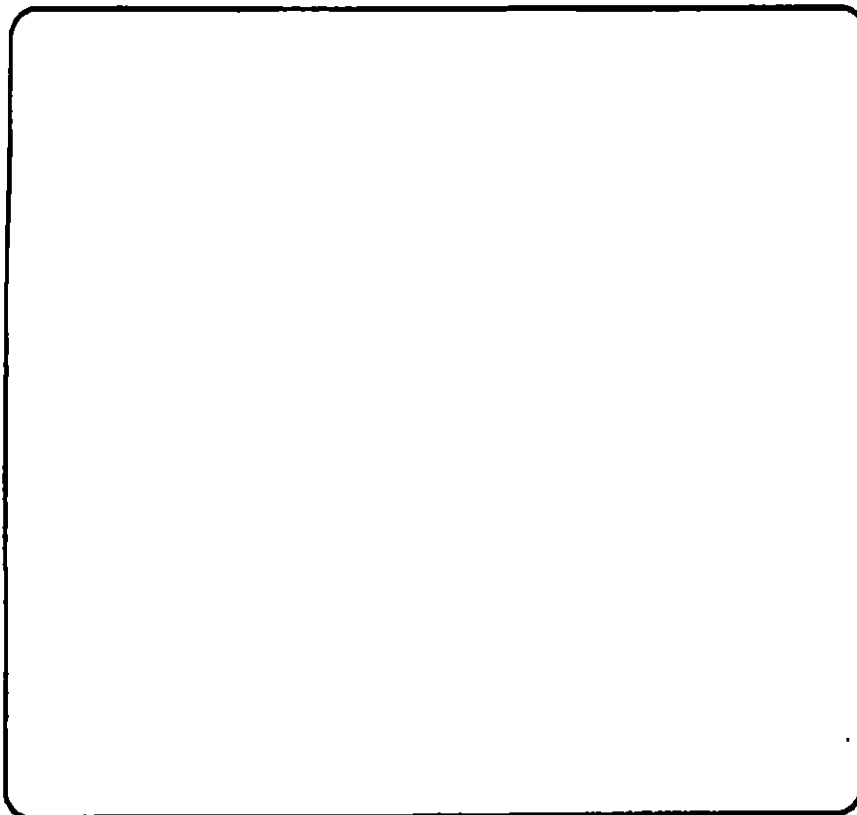
10

ANEXOS

- ☒ Comprobante de pago de la tasa de representación de la solicitud.
- ☒ Documento que acredite la existencia y representación legal cuando el solicitante sea persona jurídica.
- ☒ Poderes, si fuera el caso.
- ☒ Documentos de cesión del inventor al solicitante o a su causante.
- ☐ Declaraciones.
- ☒ Copia de la solicitud internacional. (Resumen, descripción, reivindicaciones, dibujos).
- ☒ Traducción de la solicitud internacional al castellano. (Resumen, descripción, reivindicaciones, dibujos).
- ☒ Copia del examen preliminar internacional efectuado por la Autoridad Internacional de Examen Preliminar (IPEA)
- ☒ Traducción del examen preliminar internacional efectuado por la IPEA.
- ☐ De ser el caso, copia del contrato de acceso.
- ☐ De ser el caso, documento que acredite la licencia o autorización de uso de conocimientos tradicionales de las comunidades indígenas.
- ☐ De ser el caso, certificado de depósito del material biológico.
- ☐ Arte final 12x12.
- ☐ De ser el caso, información sobre otras solicitudes de patente o títulos obtenidos en el extranjero por el titular o su causante, relacionadas parcial o totalmente con la invención de esta solicitud.
- ☐ De ser el caso, modificaciones efectuadas a la solicitud internacional.
- ☐ Otros.

11

FIGURA CARACTERÍSTICA:



12

Solicito la concesión de la patente

NOMBRE: JAIME LUIS CUELLAR TRUJILLO

FIRMA:

J. L. Cuellar
C.C. 10.380.271 T.P. 84.905

Instrucciones para la presentación de los anexos, ver reverso de esta página.

38 192
TRADUCCIÓN OFICIAL No. 06/020 de un documento escrito en Inglés, el cual para su identificación se sella con el sello del traductor al tiempo con la presente. Esta traducción ha sido preparada por Juan Pablo Piedrahita Aguilera, Traductor e Intérprete Oficial debidamente reconocido por el Ministerio del Interior y de Justicia, por resolución número 718 de 2003 y autorizado por el Ministerio de relaciones Exteriores de Colombia.

(Se traducen un Certificado de la Oficina de Patentes y Marcas de los EE.UU. Del Registro No. PCT/US03/11950 y Apostilla No. 06008147-9 escritos en inglés, adjuntos a los documentos de presentación de la solicitud de patente.)

ESTADOS UNIDOS DE AMERICA

A TODOS A QUIENES ESTOS PRESENTES LLEGAREN:

DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS

OFICINA DE PATENTES Y MARCAS DE LOS ESTADOS UNIDOS

Noviembre 14, 2005

POR EL PRESENTE CERTIFICO QUE ADJUNTA SE ENCUENTRA UNA COPIA FIEL DE LA SOLICITUD INTERNACIONAL ABAJO IDENTIFICADA, COMO FUE ORIGINALMENTE PRESENTADA YN CON CUALESQUIERA CORRECCIONES EN ELLA, DE LOS REGISTROS DE LA OFICINA DE PATENTES Y MARCAS DE LOS ESTADOS UNIDOS, OBRANDO COMO OFICINA RECEPTORA BAJO EL TRATADO DE COOPERACIÓN DE PATENTYES (PCT).

NÚMERO DE SOLICITUD: *PCT/US03/11950*

FECHA DE SOLICITUD: *Abril 16, 2003*

Por autoridad de

**Bajo la Secretaría de Comercio para Propiedad Intelectual y el
Director de la OFICINA DE PATENTES Y MARCAS DE LOS
ESTADOS UNIDOS**

(Firmado.) P. SWAIN, Funcionario que Certifica

**(SELLO DE OBLEA DE LA OFICINA DE PATENTES Y MARCAS DE LOS ESTADOS
UNIDOS DE AMÉRICA)**

06-7-020
TRADUCCION OFICIAL No. 06/020
JUAN PABLO PIEDRAHITA AGUILERA
TRADUCTOR E INTERPRETE OFICIAL
RES. 718 DE MAYO 2003
DEL MIN. INTERIOR Y DE JUSTICIA

3/6
193

APOSTILLA

(Convención de la Haya de Octubre 5 de 1961)

1. País: *Estados Unidos de América*
Este documento público
 2. Ha sido firmado por P. Swain
 3. Obrando en calidad de Funcionario que Certifica
 4. Lleva el sello/estampilla de la Oficina de Patentes y Marcas
- CERTIFICADA**
5. En Washington D.C.
 6. Hoy cuatro de Enero, 2006
 7. Por el *Funcionario Asistente de Autenticaciones, Departamento de Estado de los Estados Unidos*
 8. No. **06008147-9**
 9. Sello/Estampilla (Sello en Relieve)
 10. Firma (Firmado)
PATRICK O'HATCHETT

A continuación, documentos del informe de la solicitud internacional, veintiséis (26) hojas).

ES TRADUCCIÓN FIEL Y COMPLETA de la cual se deja copia en los archivos de esta oficina para su confrontación y a la cual me remito.

Bogotá, Enero 17, 2006.


TRADUCCION OFICIAL No. **06/020**
JUAN PABLO PIEDRAHITA AGUILERA
TRADUCTOR E INTERPRETE OFICIAL
RES. 718 DE MAYO 2003
DEL MIN. INTERIOR Y DE JUSTICIA

MINISTERIO DE
RELACIONES EXTERIORES

407651
Juan Pineda
JUAN PINEDA
APARECE EN EL
DOCUMENTO DESEMPEÑA
LAS FUNCIONES INDICADAS

NO SE ASUME
RESPONSABILIDAD DEL TEXTO

2006 ENE 20 A 11 08
ues
JEFE DE LEGALIZACIONES
BOGOTÁ D.C.

24
194

APOSTILLE

(Convention de La Haye du 5 octobre 1961)

1. Country: United States of America

This public document

2. has been signed by P. Swain

3. acting in the capacity of Certifying Officer

4. bears the seal/stamp of U.S. Patent and Trademark Office

Certified

5. at Washington, D.C.

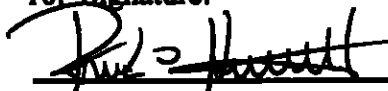
6. the fourth of January, 2006

7. by Assistant Authentication Officer, United States Department of State

8. No. 06008147-9

9. Seal/Stamp:

10. Signature:



Patrick O. Hatchett

TRADUCCION OFICIAL No. 007020
JUAN PABLO PIEDRAHITA AGUILERA
TRADUCTOR E INTERPRETE OFICIAL
R.L.S. 718 DE MAYO 2003
DEL MIN. INTERIOR Y DE JUSTICIA

38
195

PS 1382278

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

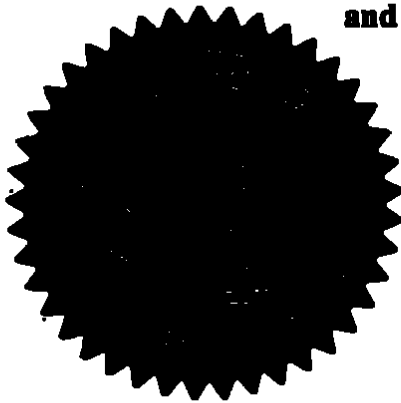
**UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office**

November 14, 2005

**THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY OF
THE BELOW IDENTIFIED INTERNATIONAL APPLICATION AS
ORIGINALLY FILED AND ANY CORRECTIONS THERETO FROM THE
RECORDS OF THE UNITED STATES PATENT AND TRADEMARK
OFFICE ACTING AS A RECEIVING OFFICE UNDER THE PATENT
COOPERATION TREATY.**

**APPLICATION NUMBER: PCT/US03/11950
FILING DATE: April 16, 2003**

**By Authority of the
Under Secretary of Commerce for Intellectual Property
and Director of the United States Patent and Trademark Office**



**P. SWAIN
Certifying Officer**

**TRADUCCION OFICIAL No. 08 / 0 2.0
JUAN PABLO PIEDRAHITA AGUILERA
TRADUCTOR E INTERPRETE OFICIAL
Res. 718 DE MAYO 2003
DEL MIN. INTERIOR Y DE JUSTICIA**

TRANSMITTAL LETTER TO THE UNITED STATES RECEIVING OFFICE

Date	16 April 2003
International Application No.	16 April 2003
Attorney Docket No.	100700.0024PCT

I. Certification under 37 CFR 1.10 (if applicable)

DT13 Rec'd PCT/PTO 16 APR 2003

EV282599972US
Express Mail mailing number

16 April 2003
Date of Deposit

I hereby certify that the application/correspondence attached hereto is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Assistant Commissioner for Patents, Washington, D.C. 20231.

Signature of person mailing correspondence

Erika Simpson
Typed or printed name of person mailing correspondence

II. ☒ New International Application

TITLE	Low-Mycotoxin Coffee Cherry Products
-------	--------------------------------------

Earliest priority date (Day/Month/Year)
--

SCREENING DISCLOSURE, INFORMATION: In order to assist in screening the accompanying international application for purposes of determining whether a license for foreign transmittal should and could be granted and for other purposes, the following information is supplied. (Note: check as many boxes as apply):

- A. ☐ The invention disclosed was not made in the United States.
- B. ☒ There is no prior U.S. application relating to this invention.
- C. ☐ The following prior U.S. application(s) contain subject matter which is related to the invention disclosed in the attached international application. (NOTE: priority to these applications may or may not be claimed on form PCT/RO/101 (Request) and this listing does not constitute a claim for priority.)

application no.		filed on	
application no.		filed on	

- D. ☐ The present international application contains additional subject matter not found in the prior U.S. application(s) identified in paragraph C. above. The additional subject matter is found on pages and ☐ DOES NOT ALTER ☐ MIGHT BE CONSIDERED TO ALTER the general nature of the invention in a manner which would require the U.S. application to have been made available for inspection by the appropriate defense agencies under 35 U.S.C. 181 and 37 CFR 5.1. See 37 CFR 5.15

III. ☐ A Response to an Invitation from the RO/US. The following document(s) is(are) enclosed:

- A. ☐ A Request for An Extension of Time to File a Response
- B. ☐ A Power of Attorney (General or Regular)
- C. ☐ Replacement pages:

pages		of the request (PCT/RO/101)	pages		of the figures
pages		of the description	pages		of the abstract
pages		of the claims			

- D. ☐ Submission of Priority Documents

Priority document		Priority document	
-------------------	--	-------------------	--

- E. ☐ Fees as specified on attached Fee Calculation sheet form PCT/RO/101 annex

IV. ☐ A Request for Rectification under PCT 91 ☐ A Petition ☐ A Sequence Listing Diskette

V. ☐ Other (please specify):

The person signing this form is the:

☐ Applicant	Robert D. Fish
☒ Attorney/Agent (Reg. No.) 33880	
☐ Common Representative	Signature

HOME COPY

PCT/US 03/11950

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197

1/5

PCT REQUEST

100700.24PCT

Original (for SUBMISSION) - printed on 16.04.2003 09:03:19 AM

0	For receiving Office use only	
0-1	International Application No.	PCT/US 03/11950
0-2	International Filing Date	16 APR 2003 (16.04.03)
0-3	Name of receiving Office and "PCT International Application"	INTERNATIONAL APPLICATION RO/US
0-4	Form - PCT/RO/101 PCT Request	
0-4-1	Prepared using	PCT-EASY Version 2.92 (updated 01.10.2002)
0-5	Petition	
	The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	United States Patent and Trademark Office (USPTO) (RO/US)
0-7	Applicant's or agent's file reference	100700.24PCT
I	Title of invention	LOW-MYCOTOXIN COFFEE CHERRY PRODUCTS
II	Applicant	
II-1	This person is:	applicant only
II-2	Applicant for	all designated States except US
II-4	Name	VDF FUTURECEUTICALS
II-5	Address:	300 West 6th Street Mokena, IL 60954-0009 United States of America
II-6	State of nationality	US
II-7	State of residence	US
II-8	Telephone No.	815-472-3100
II-9	Facsimile No.	815-472-3850
III-1	Applicant and/or inventor	
III-1-1	This person is:	applicant and inventor
III-1-2	Applicant for	US only
III-1-4	Name (LAST, First)	MILJKOVIC, Dusan
III-1-5	Address:	VDF FUTURECEUTICALS 4655 Ramsay Avenue San Diego, CA 92122 United States of America
III-1-6	State of nationality	YU
III-1-7	State of residence	US

4/98

PCT REQUEST

100700.24PCT

Original (for SUBMISSION) - printed on 16.04.2003 09:03:19 AM

III-2	Applicant and/or Inventor	
III-2-1	This person is:	applicant and inventor
III-2-2	Applicant for	US only
III-2-4	Name (LAST, First)	DUELL, Brad
III-2-5	Address:	VDF Futureceuticals 1441 Santa Lucia Rd. #1134 Chula Vista, CA 91913 United States of America
III-2-6	State of nationality	US
III-2-7	State of residence	US
III-3	Applicant and/or Inventor	
III-3-1	This person is:	applicant and inventor
III-3-2	Applicant for	US only
III-3-4	Name (LAST, First)	MILJKOVIC, Vukosava
III-3-5	Address:	VDF Futureceuticals 4655 Ramsay Avenue San Diego, CA 92122 United States of America
III-3-6	State of nationality	YU
III-3-7	State of residence	US
IV-1	Agent or common representative; or address for correspondence The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent international Authorities as:	agent
IV-1-1	Name	RUTAN & TUCKER LLP
IV-1-2	Address:	611 Anton Blvd., Suite 1400 Costa Mesa, CA 92626 United States of America
IV-1-3	Telephone No.	714-641-5100
IV-1-4	Facsimile No.	714-546-9035
IV-2	Additional agent(s)	additional agent(s) with same address as first named agent
IV-2-1	Name(s)	FISH, Robert(33880); ZOETWEY, David(45258); FESSENDAIER, Martin(46697)

PCT REQUEST

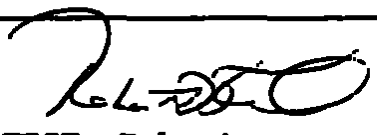
100700.24PCT

Original (for SUBMISSION) - printed on 18.04.2003 09:03:19 AM

V	Designation of States	
V-1	Regional Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AP: GH GM KE LS MW ME SD SL SZ TZ UG ZM ZW and any other State which is a Contracting State of the Harare Protocol and of the PCT EA: AM AZ BY KG KZ MD RU TJ TM and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT EP: AT BE BG CH&LI CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR and any other State which is a Contracting State of the European Patent Convention and of the PCT OA: BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG and any other State which is a member State of OAPI and a Contracting State of the PCT
V-2	National Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AE AG AL AM AT (patent and utility model) AU AZ BA BB BG BR BY BE CA CH&LI CN CO CR CU CZ (patent and utility model) DE (patent and utility model) DK (patent and utility model) DM DZ EC EE (patent and utility model) ES FI (patent and utility model) GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LR LS LT LU LV MA MD MG MK MN MW MX ME NO NZ OM PH PL PT RO RU SC SD SE SG SI SK (patent and utility model) SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
V-3	Precautionary Designation Statement In addition to the designations made under items V-1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-3 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit.	
V-4	Exclusion(s) from precautionary designations	NONE
VI	Priority claim	NONE
VI-1	International Searching Authority Chosen	United States Patent and Trademark Office (USPTO) (ISA/US)

PCT REQUEST

Original (for SUBMISSION) - printed on 16.04.2003 09:03:19 AM

VIII	Declarations	Number of declarations	
VIII-1	Declaration as to the identity of the inventor	-	
VIII-2	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	-	
VIII-3	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	-	
VIII-4	Declaration of inventorship (only for the purposes of the designation of the United States of America)	-	
VIII-5	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	-	
IX	Check list	number of sheets	electronic file(s) attached
IX-1	Request (including declaration sheets)	5	-
IX-2	Description	15	-
IX-3	Claims	2	-
IX-4	Abstract	1	EZABST00.TXT
IX-5	Drawings	0	-
IX-7	TOTAL	23	
	Accompanying items	paper document(s) attached	electronic file(s) attached
IX-8	Fee calculation sheet	✓	-
IX-17	PCT-EASY diskette	-	Diskette
IX-18	Figure of the drawings which should accompany the abstract		
IX-20	Language of filing of the international application	English	
X-1	Signature of applicant, agent or common representative		
X-1-1	Name (LAST, First)	FISH, Robert	

FOR RECEIVING OFFICE USE ONLY

10-1	Date of actual receipt of the purported international application	DT13 Baid PCT/PTO 16 APR 2003
10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/US
10-6	Transmittal of search copy delayed until search fee is paid	

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201

100700.24PCT

5/5

PCT REQUEST

100700.24PCT

Original (for SUBMISSION) - printed on 18.04.2003 09:03:19 AM

FOR INTERNATIONAL BUREAU USE ONLY

11-1	Date of receipt of the record copy by the International Bureau	
------	--	--

PCT (ANNEX - FEE CALCULATION SHEET)

100700.24PCT

Original (for SUBMISSION) - printed on 16.04.2003 09:03:19 AM

(This sheet is not part of and does not count as a sheet of the international application)

0	For receiving Office use only			
0-1	International Application No.	11/11950		
0-2	Date stamp of the receiving Office	16 APR 2003		
0-4	Form - PCT/RO101 (Annex)			
0-4-1	PCT Fee Calculation Sheet Prepared using	PCT-EASY Version 2.92 (updated 01.10.2002)		
0-9	Applicant's or agent's file reference	100700.24PCT		
2	Applicant	VDF FUTURECEUTICALS, et al.		
12	Calculation of prescribed fees	fee amount/multiplier	Total amounts (USD)	
12-1	Transmittal fee T	⇒	240	240
12-2-1	Search fee S	⇒	700	700
12-2-2	International search to be carried out by	US		
12-3	International fee			
	Basic fee (first 30 sheets) b1	407		
12-4	Remaining sheets	0		
12-6	Additional amount (X) 9			
12-6	Total additional amount b2	0		
12-7	b1 + b2 = B	407		
12-8	Designation fees			
	Number of designations contained in international application	95		
12-9	Number of designation fees payable (maximum 5)	5		
12-10	Amount of designation fee (X) 88			
12-11	Total designation fees D	440		
12-12	PCT-EASY fee reduction R	-125		
12-13	Total international fee (B+D-R) I	⇒	722	848
12-17	TOTAL FEES PAYABLE (T+S+I+P)	⇒	1,662	1788
12-19	Mode of payment	cheque		
12-20	Deposit account instructions			
	The receiving Office:	United States Patent and Trademark Office (USPTO) (RO/US)		
12-20-2	Authorization to charge any deficiency or credit any overpayment in the total fees indicated above.	✓ [Signature]		
12-20-3	Authorization to charge the fee for priority document.	✓ [Signature]		
12-21	Deposit account No.	502191		
12-22	Date	16 April 2003 (16.04.2003)		

PCT 34/113 50 950

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LOW-MYCOTOXIN COFFEE CHERRY PRODUCTS

Field of The Invention

The field of the invention is food products, and especially food products prepared from whole quick-dried sub-ripe coffee cherries, or fragments/portions thereof.

5 Background of The Invention

Various parts of the coffee tree have been used for nutritional purposes for a relatively long time (see *e.g.*, Pendergrast, M. *Uncommon Grounds*. Basic Books: New York, 1999). For example, coffee tree leaves and fresh, ripe coffee cherries were boiled to make tea. In other examples, the pulp of the coffee cherry can be fermented to produce wine as described in
10 Chinese Patent CN 1021949. In a still further well known example, the seeds (*i.e.*, the beans) of the coffee tree are extracted from the cherry, dried, roasted, ground, and extracted with hot water to provide the beverage that many users enjoy as coffee.

Unfortunately, coffee cherries, and especially the pulp and husk tend to rapidly spoil in the presence of molds, fungi, and other microorganisms, and therefore contain almost always
15 significant levels of mycotoxins (see *e.g.*, Pittet, A., Tomare, D., Huggett, A., Viani, R. Liquid Chromatographic Determination of Ochratoxin A in Pure and Adulterated Soluble Coffee Using an Immunoaffinity Column Cleanup Procedure. *J. Agric. Food Chem.* 1996, 44, 3564-3569; or Bucheli, P., Kanchanomai, C., Meyer I., Pittet, A. Development of Ochratoxin A during Robusta (*Coffea canephora*) Coffee Cherry Drying. *J. Agric. Food Chem.* 2000, 48, 1358-1362). Thus,
20 beverages produced from the coffee pulp, husk, mucilage, and/or whole coffee cherry generally failed to find acceptance as beverage ingredients (Although one product is advertised as "coffee cherry tea" [<http://www.paradiserelocation.com/paradisetogo/foodproducts.htm>], the product is actually made from coffee cherry pulp and was recently determined to have substantial quantities of mycotoxins).

25 Even in situations where the pulp, mucilage, and hull is removed, mycotoxins may still be present on and/or in the coffee bean. Consequently, considerable efforts have been undertaken to detoxify coffee beans and other food products. For example, where the mycotoxin is already present in the food product, selected mycotoxins can be extracted from the food product using

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various solvents and procedures as described in U.S. Pat. No. 4,436,756 to Canella et al. On the other hand, various mycotoxins can be adsorbed from the food product onto a mineral carrier as described in U.S. Pat. No. 5,935,623 to Alonso-Debolt.

5 In still other methods, selected mycotoxins can be degraded using enzymes as described in U.S. Pat. No. 5,716,820 to Duvick et al. The inventors in the '820 reference even contemplate that the genes encoding for such enzymes may be cloned to produce transgenic plants that are then thought to be less contaminated with mycotoxins. Alternatively, microorganisms may be employed to destroy enzymatically mycotoxins found in food products as described in U.S. Pat. No. 6,025,188 to Duvick et al.

10 Where mycotoxins are not yet produced by a microorganism present on a plant or other food stuff, pesticides or other compositions that control microbial growth or production of mycotoxins in microorganisms may be employed. For example, Emerson et al. describe in U.S. Pat. No. 5,639,794 use of a saponin as a synergist to control colonization and/or growth of plant and animal pathogens. Alternatively, as described in U.S. Pat. No. 4,199,606 to Bland, propionic acid on a carrier may be employed as a diffusible growth inhibitor for various microorganisms. 15 Further known compositions (see e.g., U.S. Pat. No. 5,698,599 to Subbiah or U.S. Pat. No. 3,798,323 to Leary) may be employed to suppress or at least reduce synthesis of mycotoxins in a microorganism.

20 Alternatively, mycotoxin-containing food products may be blended with uncontaminated food products to a concentration that is acceptable and/or below the maximum allowable amount of mycotoxins in food products (see e.g., Herrman, T. and Trigo-Stockli, D.; Mycotoxins in Feed Grains and Ingredients; Kansas State University, May 2002), or (at least potentially) mycotoxin-containing coffee cherry products may be employed in a non-food product. In still other uses, the mycotoxin content may not be considered relevant as the coffee cherry product is incinerated and 25 thus the mycotoxins are at least partially destroyed as described in U.S. Pat. No. 4,165,752, GB 2026839, or CA 1104410. Here, the inventor teaches that the coffee cherries may be compressed, dehydrated, ground, and roasted to yield a smokable product.

However, while most of the known methods reduce the concentration of mycotoxins to at least some degree, numerous disadvantages remain. Among other things, additional processing

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steps will require dedicated equipment, thereby increasing processing time and costs. Moreover, and especially where pesticides and/or fungicides are used, new problems with residual toxic chemicals may arise.

Thus, despite numerous beneficial properties of coffee cherries and its components, whole
5 coffee cherries are generally not used as food products as mycotoxins are typically present in substantial quantities in the ripe and overripe fruit. Therefore, there is still a need to provide improved methods and compositions for coffee cherries, and especially for products comprising coffee cherries with low or no mycotoxin content for human and veterinary consumption.

Summary of the Invention

10 The present invention is directed to compositions and methods that include quick-dried (preferably sub-ripe) coffee cherries or portions thereof, wherein the coffee cherries are substantially devoid of, or have a very low content of mycotoxins.

In one aspect of the inventive subject matter, a food product comprises a preparation of a coffee cherry that is quick-dried such that a mycotoxin level of the coffee cherry is less than 20
15 ppb for total aflatoxins, less than 10 ppb for total ochratoxins, and less than 5 ppm for total fumonisins. Preferred preparations in such food products include the bean, pulp, mucilage, and/or hull of the quick-dried coffee cherry, or ground fragments of the coffee cherry, or an extract thereof. It is further preferred that the coffee cherry is a sub-ripe coffee cherry. Preferred food products include a tea brewed from the quick-dried (preferably sub-ripe) coffee cherries, or
20 a beverage comprising an extract of the coffee cherry. Alternatively, suitable food products also include nutritional supplements in liquid or solid form comprising an extract of the coffee cherry.

Contemplated sub-ripe coffee cherries have a primarily green color with less than 25% red color, more preferably a primarily red color with less than 25% green color, and even more preferably a primarily red color with less than 5% blemished area. The (sub-ripe) coffee cherries
25 may be quick-dried using various methods, however, it is generally preferred that the coffee cherries are quick dried using heated air or exposure to sun and/or ambient air.

In another aspect of the inventive subject matter, a tea is brewed from a comminuted or ground quick-dried (preferably sub-ripe) coffee cherry or portion thereof, wherein the coffee

cherry has a mycotoxin level of less than 20 ppb for total aflatoxins, less than 10 ppb for total ochratoxins, and less than 5 ppm for total fumonisins, and preferably has a polyphenol concentration of at least 10 mg/oz (most preferably at a chlorogenic acid to caffeine ratio of at least 2.7).

- 5 Thus, viewed from another perspective, it is contemplated that a quick-dried coffee cherry or portion thereof has a mycotoxin level of less than 20 ppb for total aflatoxins, less than 10 ppb for total ochratoxins, and less than 5 ppm for total fumonisins, preferably having a chlorogenic acid content of at least 2% (wt/wt) and a polyphenol content of at least 3.2% (wt/wt).

- 10 Various objects, features, aspects and advantages of the present invention will become more apparent from the following detailed description of preferred embodiments of the invention.

Detailed Description

- 15 The inventors have discovered that low-mycotoxin or even mycotoxin-free tea and other food products may be produced from whole, substantially non-damaged coffee cherries that are preferably picked at a sub-ripe stage, and wherein the coffee cherry is quick-dried after harvest. Among other advantages, the inventors discovered that such coffee cherries significantly reduce the likelihood of infestation of the coffee cherry with mold and fungi known to produce mycotoxins. Still further, the inventors discovered that sub-ripe coffee cherries (in contrast to completely unripe coffee cherries) provide a desirable level of flavor and an aroma profile in the
20 coffee cherry product (e.g., coffee cherry tea) as well as relatively high levels of polyphenols, polysaccharides, and other nutrients.

- 25 The term "food product" as used herein refers to any product that is ingested by a human and/or animal for nutritional, health-maintenance, health-improvement, and/or recreational purpose. Particularly preferred food products include those consumed by human, wherein such food products may be solid products (e.g., dietary supplement, snack bar, bagged tea, etc.) or liquid products (e.g., tea or other beverage, syrup or elixir, etc.).

As also used herein, the term "coffee cherry" refers to the fruit of the coffee tree (*Coffea spec.*, Family *Rubiaceae*) in which exocarp and outer mesocarp (i.e., the pulp) surround the inner

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mesocarp (*i.e.* the mucilage) and endocarp (*i.e.*, the hull), which in turn surround the seeds (*i.e.*, the beans). Thus, the term coffee cherry specifically refers to a whole coffee cherry, which may or may not include the stem of the cherry.

The term "sub-ripe coffee cherry" refers to a coffee cherry that has not yet reached the ripe stage, which is generally characterized by susceptibility to or presence of a fungal infection and/or presence of mycotoxins. Thus, a sub-ripe coffee cherry is at a ripeness stage in which the coffee cherry - when quick-dried - will exhibit mycotoxin levels that are below 20 ppb for total aflatoxins, below 5 ppm for total fumonisins, below 5 ppm for total vomitoxins, and below 5 ppb for ochratoxins. Consequently, quick-dried coffee cherries are typically dried within 0-48 hours (and more preferably between 6-24 hours) of the harvest such that the residual water content is no higher than 20% (wt/wt), and more typically no higher than 6-12% (wt/wt).

Viewed from an other perspective, sub-ripe coffee cherries generally have a complete or almost complete (at least 95% of the cherry) red color (or in some cases yellow color), and typically include various surface defects (*e.g.*, blemishes, cuts, and/or holes covering an area of more than 5% of the cherry). Thus, a sub-ripe coffee cherry will typically exhibit at least some green color (at least 5%, more typically at least 10%) and will typically be free of any surface defects (*e.g.*, blemishes, cuts, and/or holes covering an area of less than 5% of the cherry). Sub-ripe coffee cherries may also be characterized in that they will remain on the coffee tree for a subsequent round of picking where the coffee cherries are hand picked and used for the production of coffee beans. Alternatively, a color sorting machine with CCD equipment may be employed to identify and select sub-ripe coffee cherries on a quantitative color basis where the coffee cherries are mass-harvested and automatically sorted.

It should further be appreciated that while many of the following aspects and examples employ coffee cherries in a sub-ripe state, completely ripe coffee cherries are also contemplated suitable herein, especially where such ripe coffee cherries are substantially devoid of surface damage (*i.e.*, no more than 5% of surface area) or microbial infection (*i.e.*, infestation that results in mycotoxin levels of less than 20 ppb for total aflatoxins, less than 5 ppm for total fumonisins, less than 5 ppm for total vomitoxins, and less than 5 ppb for ochratoxins on a dry weight basis). Thus, all contemplated food products and/or coffee cherries may comprise completely ripe as

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well as sub-ripe coffee cherries in varying proportions. For example, suitable proportions include 100% ripe : 0% sub-ripe, preferably 90% ripe : 10% sub-ripe, more preferably 75% ripe : 25% sub-ripe, even more preferably 50% ripe : 50% sub-ripe, and most preferably less than 25% ripe : more than 75% sub-ripe.

5 As further used herein, the term "quick-dried" coffee cherry means that the whole coffee cherry is dried under a protocol that limits growth of molds, fungi, and/or yeast to an extent such that the dried coffee cherry will exhibit mycotoxin levels that are below 20 ppb for total aflatoxins, below 5 ppm for total fumonisins, below 5 ppm for total vomitoxins, and below 5 ppb for ochratoxins. Consequently, quick-dried coffee cherries are typically dried within 0-48 hours (and more preferably between 6-24 hours) of the harvest such that the residual water content is no higher than 20% (wt/wt), and more typically no higher than 6-12% (wt/wt).

10 As still further used herein, the term "mycotoxin" refers to any toxic product formed in a mold, fungus, and/or yeast that exhibits significant toxicity to a human or animal when ingested. Thus, specifically contemplated mycotoxins include aflatoxins (and particularly B1, B2, G1, and G2), fumonisins (and particularly B1, B2, and B3), ochratoxin, deoxynivalenol (DON, vomitoxin), T-2 toxin, and zearalenone. The term "total aflatoxins" therefore refers to the sum of all aflatoxin variants, the term "total fumonisins" refers to the sum of all fumonisin variants, and the term "total ochratoxins" therefore refers to the sum of all ochratoxin variants.

20 In one exemplary aspect of the inventive subject matter, whole undamaged sub-ripe (e.g., semi ripe or almost ripe) coffee cherries are hand picked and within about one hour quick-dried using a dry air drier at about 140°F until constant weight is obtained. The so obtained coffee cherries typically possess significant storage stability, high resistance to infection by fungi, and lower shipping weight than wet cherry.

25 It is generally contemplated that the sub-ripe coffee cherries may be derived from various sources, and the particular use of the sub-ripe coffee cherries will at least in part determine the particular source(s). However, it is preferred that the sub-ripe coffee cherries are derived from a single coffee species (e.g., *coffea arabica*), which is cultivated under similar growth conditions (e.g., shade-grown). Among other advantages, it is contemplated that a single source of coffee cherries will facilitate quick-drying the sub-ripe coffee cherries. It should be recognized,

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however, that once the sub-ripe coffee cherries are quick-dried, various coffee species and/or coffee cherries from various growth conditions may be blended to achieve a mixture with particularly preferred characteristics.

Furthermore, it should be appreciated that depending on the particular product or use for the coffee cherry, the degree of ripeness of the coffee cherry may vary considerably. For example, where extraction of polyphenols and/or chlorogenic acid from the whole coffee cherry is desired, semi-ripe (stage 1 or stage 2) coffee cherries may be used. On the other hand, where the coffee cherry is used for the production of a coffee cherry tea and flavor and aroma are paramount, almost ripe coffee cherries may be picked. In still further contemplated aspects, unripe coffee cherries, or any reasonable mixtures of varying ripeness degrees may be used. Especially where the coffee cherry is a ripe coffee cherry, it is contemplated that the whole cherry is preferably free of surface defects, including cracks, splits, holes, or other openings. However, while not preferred, coffee cherries with surface defects may also be used. While not limiting to the inventive subject matter, it is generally preferred that the sub-ripe coffee cherries (or coffee cherry mixtures) are washed with water or other aqueous solution (e.g., diluted hypochlorite solution) to remove soil particles and other debris before drying.

Quick-drying is preferably performed immediately after picking to up to about two days after picking until a constant weight is obtained (or until the outer pulp of the cherry has dried). Thus, and depending on the particular heat source available, it is generally preferred that quick-drying is performed at a temperature of about 100° to about 180°F for a period of about 6-48 hours. For example, where electrical (or other) energy is readily available, the sub-ripe coffee cherries may be dried in a warm air drier in a stationary or rotating drum, or in a refractance window drying process. Alternatively, the sub-ripe coffee cherries may also be freeze dried. On the other hand, and especially where energy sources are not readily available, the sub-ripe coffee cherries may be sun dried. However, regardless of the particular drying method, it should be recognized that the sub-ripe coffee cherries are quick-dried to prevent production of mycotoxins from fungi, molds, and/or yeast that are already present and/or colonize (e.g., via infection or sporulation) the coffee cherry. Thus, sub-ripe coffee cherries are advantageously dried on a surface that is clean and free of sources of mycotoxin contamination. In further alternative

aspects of the inventive subject matter, the sub-ripe coffee cherries may also be frozen and stored/transported until quick-drying can be implemented.

The so obtained quick-dried sub-ripe coffee cherries may then without further mycotoxin detoxification be employed for various uses in numerous food products. For example, where the whole quick-dried sub-ripe coffee cherry is used in a food product, the coffee cherry may be admixed with another consumable (*e.g.*, admixture with grain for animal feed, or coating with chocolate for human consumption). In another especially preferred example, the quick-dried sub-ripe coffee cherry is ground and used as a food additive or as a basis for brewing coffee cherry tea (*e.g.*, for use as loose tea, grinding to a size of 500-3000 μm is preferred, or for bagged teas, grinding to a size of 200-1000 μm is preferred).

Alternatively, it should be recognized that only parts of the quick-dried sub-ripe coffee cherry may be employed in a food product. For example, where the sub-ripe coffee cherry is in an almost ripe state, it is contemplated that the pulp, mucilage, and/or hull may be separated from the seeds, which are then (optionally admixed with other seeds) roasted to commercial grade coffee beans. The remaining pulp, mucilage, and/or hull from the quick-dried sub-ripe coffee cherry may then be employed as food additive or basis for extraction of one or more desired components (*e.g.*, polyphenols).

In still further contemplated uses of so obtained quick-dried sub-ripe coffee cherries, it is contemplated that the coffee cherries (or portions thereof) may be employed as starting material for extraction of various beneficial components. For example, the quick-dried sub-ripe coffee cherries may be extracted with an aqueous (*e.g.*, water, water-ethanol mixture) or non-aqueous solvent (*e.g.*, critical point CO_2 , dimethylformamide) to isolate one or more components that can be used in a food product. For example, quick-dried sub-ripe coffee cherries may provide an excellent source of polyphenols, chlorogenic acid, and/or caffeine.

The term "polyphenol" as used herein refers to a diverse group of compounds produced by a plant, wherein the compounds include a phenol ring to which at least one OH group, and more typically at least two OH groups are covalently attached. For example, representative polyphenols include ellagic acid, tannic acid, vanillin, caffeic acid, chlorogenic acid, ferulic acid, catechins (*e.g.*, epicatechin gallate, epigallocatechin), flavonols (*e.g.*, anthocyanidins, quercetin,

kaempferol), and various other flavonoids, and their glycosides and depsides. Furthermore, contemplated polyphenols may also be in oligomeric or polymeric form (e.g., oligomeric proanthocyanidins or condensed tannins).

5 In another preferred aspect of the inventive subject matter, the inventors contemplate use of whole quick-dried sub-ripe coffee cherries in the production of various beverages. For example, it was observed that teas produced from unripe (green) and semi-ripe stage 1 whole quick-dried coffee cherries possess relatively low aroma and flavor characteristics. Thus, extracts or at least partially condensed teas from unripe (green) and semi-ripe stage 1 whole quick-dried coffee cherries may be added as low-flavor additive to a commercially available beverage to
10 enhance the nutritional properties.

As ripeness increases, more aroma and flavor is evident in the quick-dried sub-ripe coffee cherries. Consequently, tea produced from semi-ripe stage 2 and almost ripe whole coffee cherries will possess high aroma and fruity flavor, and the inventors contemplate that semi-ripe and almost ripe coffee cherries could be used directly after quick-drying and grinding for a
15 "Whole Coffee Fruit Tea", either by itself or after placing into tea bags. As illustrated below, such a tea would provide high levels of polyphenols, typically 60-70 mg per 6 oz. cup. Furthermore, teas prepared from whole quick-dried sub-ripe coffee cherries generally possess relatively high ratios of chlorogenic acid to caffeine (typically about 2-4.5) as compared to
20 beverages made from roasted coffee (typically about 0.4). Therefore, it should be appreciated that tea prepared from quick-dried sub-ripe coffee cherries is much more nutritional (based upon polyphenols and chlorogenic acid) than roasted coffee.

Therefore, the inventors contemplate a food product that includes a preparation of a (preferably sub-ripe) coffee cherry that is quick-dried such that a mycotoxin level of the coffee cherry is less than 20 ppb for total aflatoxins, less than 10 ppb for total ochratoxins, and less than
25 5 ppm for total fumonisins. Alternatively, contemplated mycotoxin levels may also be in the range of 20-50 ppb, but more preferably less than 15 ppb, even more preferably less than 10 ppb, and most preferably less than 5 ppb for total aflatoxins. Similarly contemplated mycotoxin levels also include a range of 10-30 ppb, but more preferably less than 5 ppb, even more preferably less than 3 ppb, and most preferably less than 2 ppb for total ochratoxins. Likewise, contemplated

mycotoxin levels also include a range of 5-20 ppm, but more preferably less than 15 ppm, even more preferably less than 10 ppm, and most preferably less than 5 ppm for total fumonisins and/or vomitoxins.

As already discussed above, the preparation of the sub-ripe coffee cherry may include the whole coffee cherry, comprise a ground fragment of the whole coffee cherry, or include the bean, the pulp, the mucilage, and/or the hull of the quick-dried sub-ripe coffee cherry. Alternatively, it should be recognized that the preparation may also comprise an extract from the whole quick-dried sub-ripe coffee cherry (or fragment or portion thereof).

Contemplated food products especially include beverages prepared from contemplated quick-dried sub-ripe coffee cherries (or fragments or portions thereof), or beverages to which extracts or pieces from contemplated quick-dried sub-ripe coffee cherries (or fragments or portions thereof) have been added. Similarly, further contemplated food products include baked goods (e.g., bread, crackers, etc.), snacks (e.g., candy or energy bars), cereals, and other solid nutrients to which extracts or pieces from contemplated quick-dried sub-ripe coffee cherries (or fragments or portions thereof) have been added. Alternatively, contemplated food products also include a nutritional supplement in liquid or solid form that comprises an extract of the quick-dried sub-ripe coffee cherry.

Depending on the particular purpose, it should be recognized that such food products may be prepared from quick-dried sub-ripe coffee cherries having a primarily green color with less than 25% red color, more preferably with less than 25% green color, and most preferably from quick-dried sub-ripe coffee cherries having primarily (no less than 90%, most typically no less than 95%) red color with less than 5% blemished area. Still further contemplated compositions and methods are disclosed in our co-pending U.S. Patent application with the title "Methods for Coffee Cherry Products", filed on or about April 16, 2003, which is incorporated by reference herein.

Examples

The following examples are provided to enable a person of ordinary skill in the art to make and use compositions according to the inventive subject matter and to illustrate exemplary compositions and methods generally described herein.

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Harvest Of Whole Coffee Cherries

The ripeness of the coffee cherries was determined by visually estimating the amount of green and red color (or yellow, where applicable) of the whole cherries. As the cherries ripen, the green cherries will typically increase in size and subsequently develop increasing amounts of red color. For the present examples, the coffee cherries were collected at four stages of ripeness: Completely, or almost completely green (unripe; typically less than 5% of the coffee cherry red or yellow), primarily green with some red (semi-ripe, stage 1; typically less than 25% of the coffee cherry red or yellow), primarily red with some green (semi-ripe, stage 2; typically less than 25% of the coffee cherry green), and unbroken, unblemished red (almost ripe; typically less than 10% of the coffee cherry green; area of blemishes, cuts, or otherwise broken surface less than 5%). As much as possible, whole, unbroken and uncut cherries were collected.

Quick-Drying Of The Whole Coffee Cherries

Whole coffee cherries for sample extraction were prepared by drying the cherries within 1-12 hours after harvest on separate trays of an air dryer according to the following procedure. Coffee cherries (400-600 g) were weighed into beakers and washed two times with tap water, followed by a single wash with distilled water. The so washed coffee cherries were placed on a tray of an air dryer to drain, and then dried at 150-160°F for 16-18 hours to constant weight. Drying was stopped when the weight at two consecutive one-hour intervals differed by less than 1 g. Typical yields of dried whole cherry were 160-220 g. Further analysis indicated 6-12% residual water content in the dried cherry.

Mycotoxin Analysis

In order to determine the viability of the whole coffee cherry at the unripe, semi-ripe, and almost ripe stages (see above) for use in a nutritional product (and especially for use in tea), the level of selected mycotoxins was measured and compared against comparative products and red, ripe coffee cherry by-product from coffee production. As can be clearly seen in Table 1 below, quick-dried coffee cherries of all sub-ripe harvest stages had a mycotoxin level below the detection limit of 1 ppb (as measured for aflatoxin and ochratoxin).

The mycotoxin concentration was determined in an independent laboratory by both ELISA and HPLC analysis. Based on the below results, the inventors conclude that all samples from the different sub-ripe harvest stages are suitable for direct use in a nutritional product for both human and veterinary consumption. In contrast, the by-product of coffee production (predominantly consisting of pulp, mucilage, and hull from coffee cherries) from ripe cherries of red color with blemishes (typically greater than 20% of the cherry surface) had a substantial content in both aflatoxins and ochratoxins. Similarly, the comparative product "Paradise to Go Tea" (made from coffee cherry pulp) exhibited mycotoxins in double-digit concentrations.

RIPENESS	COLOR	AFLATOXIN	OCHRATOXIN
Unripe, quick-dried	Green	< 1ppb	< 1ppb
Semi-ripe Stage 1, quick-dried	Mostly green with some red	< 1ppb	< 1ppb
Semi-ripe Stage 2, quick-dried	Mostly red with some green	< 1ppb	< 1ppb
Almost ripe, quick-dried	Red, Blemished Area <5%	< 1ppb	< 1ppb
Ripe (by-product of Coffee Production)	Red, Blemished Area >20%	> 200 ppb	> 500 ppb
Paradise to Go Tea (dry matter)	N/A	> 25 ppb	> 40 ppb

Table 1

Polyphenol(PP), Chlorogenic Acid (CG), and Caffeine (CF) Analysis for Quick-dried Sub-ripe Whole Coffee Cherries

In a further series of experiments, the levels of total polyphenols, chlorogenic acid, and caffeine from quick-dried whole coffee cherry at various sub-ripe stages were measured and compared against green and roasted coffee beans. Table 2 summarizes the results of this analysis.

Interestingly, while the polyphenol (PP) level of quick-dried coffee cherries of all sub-ripe harvest stages was somewhat less than the level of green or roasted coffee beans, significant quantities of polyphenols in quick-dried sub-ripe coffee cherries still remain. Similarly, the chlorogenic acid (CG) content of quick-dried whole coffee cherry at various sub-ripe stages remained at substantial high levels as compared to roasted coffee, but was somewhat lower as

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compared to green beans. The caffeine (CF) level of quick-dried coffee cherries of all sub-ripe harvest stages was substantially within the caffeine level of green and roasted coffee beans (It should be pointed out that all data given are on a dry matter basis and are not normalized to the dry weight of the bean).

5 Polyphenol analysis: Dried whole coffee cherry (or green beans or roasted beans) (1.00 g) were ground in a rotating steel knife coffee grinder for 30 seconds to produce a ground sample. The ground sample was added to 100 mL distilled water and the resulting mixture heated to boiling in an Erlenmeyer flask for 30 minutes. The heat was removed and the mixture allowed to cool to room temperature. The resulting suspension was transferred to a 100 mL graduated
10 cylinder and water added to bring the volume to 100 mL. The mixture was then transferred back to the Erlenmeyer flask, stirred briefly, and the solids allowed to settle. An aliquot (~3 mL) of the supernatant solution was filtered through an 0.45 μ m Acrodisc filter, and the resulting clear solution was diluted 1:10 with distilled water using a volumetric flask (1.00 mL diluted with 9.00 mL distilled water).

15 The Folin-Ciocalteu method was used to measure the polyphenol content of the diluted solution as follows. One mL of the diluted solution was added to a test tube, mixed with 1 mL of 0.2N Folin-Ciocalteu's Phenol reagent (Sigma solution, 2N, diluted 1:10 with water), and allowed to stand 5 minutes at room temperature. One mL of 1N NaHCO₃ was added and the reaction mixture left at room temperature for 2 hours. The polyphenol level was determined
20 using a UV-visible spectrophotometer standardized against catechin, at λ_{max} =750 nm against distilled water as blank.

Chlorogenic acid: Determination of chlorogenic acid was done using HPLC separation of the filtered clear solution prepared above using standard analytical and separation protocols well known in the art. Similarly, determination of caffeine was done using HPLC separation of the
25 filtered clear solution prepared above using standard analytical and separation protocols well known in the art (for exemplary protocols see e.g., Bispo M.S., et al. in J. Chromatogr. Sci.; 2002, Jan;40(1):45-8, or Nakakuki, H. et al. in J. Chromatogr. A.;1999, Jul 2;848(1-2):523-7).

RIPENESS	COLOR	% PP	%CG	% CF	CG/CF
Unripe, quick-dried	Green	3.80	2.64	1.03	2.56

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Semi-ripe stage 1, quick-dried	Mostly green with some red	3.28	2.70	1.00	2.70
Semi-ripe stage 2, quick-dried	Mostly red with some green	3.54	2.00	0.70	2.86
Almost ripe, quick-dried	Red, Blemished Area <5%	3.35	N/D	N/D	N/D
Green Coffee beans	Green	4.58	3.31	0.95	3.48
Roasted Coffee beans	Brown	3.93	0.50	1.20	0.42

Table 2

Polyphenol(PP), Chlorogenic Acid (CG), and Caffeine (CF) Analysis for a Tea brewed from Quick-dried Sub-ripe Whole Coffee Cherries

Quick-dried sub-ripe coffee cherry were ground in a rotating steel knife coffee grinder for 10-30 seconds to produce a ground sample. To the ground sample (1.00 g) was added 90 mL (approx. 3 fluid oz.) boiling distilled water and the resulting mixture allowed to stand in an Erlenmeyer flask for 10 minutes to produce a coffee cherry tea. An aliquot (~3 mL) of the supernatant solution was filtered through a 0.45 µm Acrodisc filter, and the resulting clear solution was diluted 1:10 with distilled water using a volumetric flask (1.00 mL diluted with 9.00 mL distilled water). The Folin-Ciocalteu method as described above was used to measure the polyphenol content (on dry matter basis, catechin equivalents) of the so prepared coffee cherry tea. Table 3 summarizes the results.

RIPENESS	SOLVENT	% PP	%CG	% CF	CG/CF
Unripe, quick-dried	Water	10.93	8.61	3.04	2.83
Semi-ripe stage 1, quick-dried	Water	9.38	7.58	2.72	2.78
Semi-ripe stage 2, quick-dried	Water	8.51	6.74	1.71	3.95
Almost ripe, quick-dried	Water	6.92	1.34	0.29	4.61

Table 3

Brewing Of Teas From Whole Coffee Cherry Of Different Ripeness

The following procedure was used to prepare teas from whole coffee cherry of different ripeness for aroma and taste testing. Whole dried coffee cherry (10-20 g) was ground in a rotating steel knife coffee grinder for 10-30 seconds to produce a ground sample. The ground

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coffee cherry (2.0 g) was placed in a ceramic cup and of nearly boiling water (6 oz., 190-200°F) added. The slurry was stirred and allowed to stand for 3 minutes, at which time the aroma and taste of the supernatant liquid were noted. Results are shown in Table 4.

RIPENESS	COLOR	AROMA	TASTE	PP/6 OZ. TEA
Unripe, quick-dried	Green	None	Almost no taste	76 mg
Semi-ripe stage 1, quick-dried	Mostly green with some red	Very mild fruity	Slight fruit flavor	66 mg
Semi-ripe stage 2, quick-dried	Mostly red with some green	Mild fruity	Mild fruit flavor	71 mg
Almost ripe, quick-dried	Red, Blemished Area <5%	Fruity	Rich fruit flavor	67 mg

Table 4

5 Thus, specific embodiments and applications of low-mycotoxin coffee cherry products have been disclosed. It should be apparent, however, to those skilled in the art that many more modifications besides those already described are possible without departing from the inventive concepts herein. The inventive subject matter, therefore, is not to be restricted except in the spirit of the appended claims. Moreover, in interpreting both the specification and the claims, all terms
10 should be interpreted in the broadest possible manner consistent with the context. In particular, the terms "comprises" and "comprising" should be interpreted as referring to elements, components, or steps in a non-exclusive manner, indicating that the referenced elements, components, or steps may be present, or utilized, or combined with other elements, components, or steps that are not expressly referenced.

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CLAIMS

What is claimed is:

1. A food product comprising a preparation of a coffee cherry that is quick-dried such that a mycotoxin level of the coffee cherry is less than 20 ppb for total aflatoxins, less than 10
5 ppb for total ochratoxins, and less than 5 ppm for total fumonisins.
2. The food product of claim 1 wherein the preparation of the coffee cherry comprises a ground fragment of the coffee cherry.
3. The food product of claim 2 wherein the preparation of the coffee cherry comprises an extract from a ground fragment of the coffee cherry.
- 10 4. The food product of claim 1 wherein the preparation of the coffee cherry comprises at least one of a bean of the coffee cherry, a pulp of the coffee cherry, a mucilage of the coffee cherry, and a hull of the coffee cherry.
5. The food product of claim 1 wherein the preparation of the coffee cherry comprises an extract from at least one of a bean of the coffee cherry, a pulp of the coffee cherry, a
15 mucilage of the coffee cherry, and a hull of the coffee cherry.
6. The food product of claim 1 wherein the coffee cherry is a sub-ripe coffee cherry and has a primarily green color with less than 25% red color.
7. The food product of claim 1 wherein the coffee cherry is a sub-ripe coffee cherry and has a primarily red color with less than 25% green color.
- 20 8. The food product of claim 1 wherein the coffee cherry is a sub-ripe coffee cherry and has a primarily red color with less than 5% blemished area.
9. The food product of claim 1 wherein the coffee cherry is quick-dried in a dryer using heated air.
10. The food product of claim 1 wherein the coffee cherry is quick-dried in a dryer using
25 solar radiation.

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11. The food product of claim 1 wherein the coffee cherry is quick dried by exposing the coffee cherry to at least one of ambient air and sun light.
12. The food product of claim 1 wherein the food product is a tea brewed from the coffee cherry.
- 5 13. The food product of claim 1 wherein the food product is a beverage comprising an extract of the coffee cherry.
14. The food product of claim 1 wherein the food product is nutritional supplement in liquid or solid form and comprising an extract of the coffee cherry.
15. A tea brewed from a comminuted quick-dried coffee cherry or portion thereof.
- 10 16. The tea of claim 15 wherein the coffee cherry has a mycotoxin level of less than 20 ppb for total aflatoxins, less than 10 ppb for total ochratoxins, and less than 5 ppm for total fumonisins.
17. The tea of claim 16 having a polyphenol concentration of at least 10 mg/oz.
18. The tea of claim 15 wherein the coffee cherry is a sub-ripe coffee cherry.
- 15 19. A quick-dried coffee cherry or portion thereof having a mycotoxin level of less than 20 ppb for total aflatoxins, less than 10 ppb for total ochratoxins, and less than 5 ppm for total fumonisins.
20. The quick-dried coffee cherry of claim 19 wherein the coffee cherry is a sub-ripe coffee cherry.

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ABSTRACT

A coffee cherry is harvested, preferably in a sub-ripe state, and quick-dried to provide a basis for numerous nutritional products. Such coffee cherries and portions thereof may be particularly characterized by their extremely low concentration of mycotoxins, including various
5 aflatoxins, fumonisins, ochratoxins, and/or vomitoxin (DON, deoxynivalenol).

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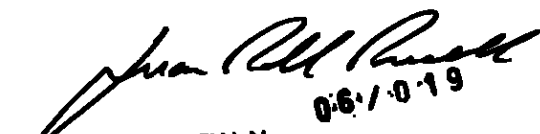
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6. Hoy cuatro de Enero, 2006
7. Por el *Funcionario Asistente de Autenticaciones, Departamento de Estado de los Estados Unidos*
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PATRICK O'HATCHETT

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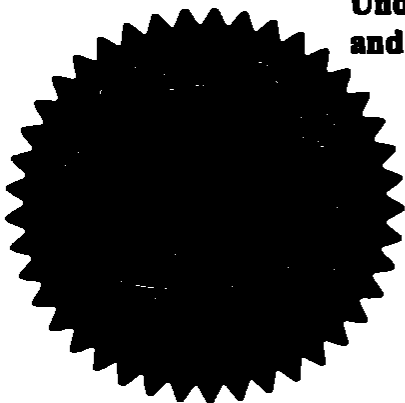
International Search Report

SERIAL NUMBER: PCT/US03/11950

FILING DATE: April 16, 2003

By Authority of the

**Under Secretary of Commerce for Intellectual Property
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H. L. JACKSON

Certifying Officer

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From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF RECEIPT
OF SEARCH COPY

(PCT Rule 25.1)

To:

ROBERT FISH
RUTAN & TUCKER LLP
611 ANTON BLVD., SUITE 1400
COSTA MESA, CALIFORNIA 92626

Date of mailing
(day/month/year)

21 May 2003

Applicant's or agent's file reference

100700.24PCT

IMPORTANT NOTIFICATION

International application No.

PCT/US03/11950

International filing date (day/month/year)

16 Apr 2003

Priority date (day/month/year)

Applicant

VDF FUTURECEUTICALS

1. Where the International Searching Authority and the receiving Office are not the same Office:

The applicant is hereby notified that the search copy of the international application was received by this International Searching Authority on the date indicated below.

Where the International Searching Authority and the receiving Office are the same Office:

The applicant is hereby notified that the search copy of the international application was received on the date indicated below.

21 May 2003

(date of receipt)

2. ☐ The search copy was accompanied by a nucleotide and/or amino acid sequence listing in computer readable form.

3. Time limit for establishment of international search report

The applicant is informed that the time limit for establishing the international search report is 3 months from the date of receipt indicated above or 9 months from the priority date, whichever time limit expires later.

4. A copy of this notification has been sent to the International Bureau and, where the first sentence of paragraph 1 applies, to the receiving Office.

Name and mailing address of the ISA/

Assistant Commissioner for Patent, Box PCT
Washington, D.C. 20231 Attn: RO/US

Facsimile No. 703-305-3230

Authorized officer

Latrice Russell

Telephone No. 703-306-5829

Form PCT/ISA/202 (July 1998)

7A 229 227

TO: 811 ANTON BLVD., SUITE 1400 COSTA MESA, CALIFORNIA 92626	UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)
NOTIFICATION OF STATUS OF REQUIREMENTS UNDER 35 U.S.C. 371	
DATE OF MAILING (day/month/year) 21 May 2003	
FILE REFERENCE 100700.24PCT	

IDENTIFICATION OF INTERNATIONAL APPLICATION		
International application No. PCT/US03/11950	International filing date (day/month/year) 16 Apr 2003	Priority Date Claimed

Applicant for DO/EO/US

MILJKOVIC, DUSAN

NOTIFICATION
The applicant is hereby advised that the U.S. Patent and Trademark Office in its capacity as ☒ Designated Office ☐ Elected Office has received following items as of the date of mailing indicated above. 1. ☐ U.S. Nation fee [35 U.S.C 371 (c) (1)] 2. ☐ Oath of declaration [35 U.S.C 371 (c) (4)] 3. ☒ Copy of International application as [35 U.S.C 371 (c) (2)] 4. ☐ Translation of Application [35 U.S.C 371 (c) (2)] 5. ☐ Amendments under PCT Article 19 [35 U.S.C 371 (c) (3)] 6. ☐ Translation of PCT Article 19 Amendments [35 U.S.C 371 (c) (3)] 7. ☐ Search Report or Declaration under PCT Article 17(2) [35 U.S.C 371 (a)] 8. ☐ International Preliminary Examination Report and its Annexes, if any, under PCT Article 36(3)(b) [35 U.S.C 371 (a)] 9. ☐ Translation of Annexes to the International Preliminary Examination Report under PCT Article 36(3)(b) [35 U.S.C 371 (c) (5)] 10. ☐ Other items received: ☐ Assignment Document ☐ Prior Art Statement ☐ Preliminary Amendment A. ☐ Requirements for U.S. National processing have been met. Processing will commence ☐ at the expiration of the applicable time limit under either ☐ PCT Article 22 [35 U.S.C 371 (b)] or ☐ PCT Article 39 [35 U.S.C 371 (b)] ☐ on the date indicated below under the provisions of 35 U.S.C 371 (f)

U.S. NATIONAL SERIAL#	DATE UNDER 35 U.S.C. 102(e)	DATE OF COMMENCEMENT OF NATIONAL PROCESSING
-----------------------	-----------------------------	---

All correspondence submitted after the date of commencement of U.S. National processing indicated above should refer to the U.S. National Serial Number and the appropriate U.S. National processing organization of Officer.

B. ☐ As the above identified application has been accepted for U.S. National processing under the provision of 35 U.S.C. 371 (f) before expiration of the applicable time limit under ☐ PCT Article 22 ☐ PCT Article 39, applicant is reminded that

☐ Amendments under PCT Article 19 and/or
☐ the International Preliminary Examination Report and its Annexes, if any, under PCT Article 36(3)(a), and (b) and any translation thereof, if applicable, must be submitted to the Patent and Trademark Office as soon as they are available.

International application No. PCT/US03/11950	International filing date 18 Apr 2003	Priority Date Claimed
C. ☒ In order that U.S. National processing may begin, certain items must be received by the DO/EO/US by the expiration of applicable time limit under ☒ PCT Article 22 or ☒ PCT Article 39. Specifically: ☒ 1. U.S. National Fee ☒ 2. Oath or Declaration ☐ 3. Copy of Application ☐ 4. Translation of application ☒ 5. Amendments under PCT Article 19, if any ☐ 6. Translation of PCT Article 19 Amendments, if applicable ☐ 7. Search Report or PCT Article 17(2) declaration ☐ 8. International Preliminary Examination Report and its Annexes, if any, under PCT Article 36(3)(a), if applicable ☐ 9. Translation of Annexes to the International Preliminary Examination Report under PCT Article 36(3)(b), if applicable THE ABOVE CHECK ITEMS MUST BE TIMELY RECEIVED TO AVOID ABANDONMENT OF THE APPLICATION. [35 U.S.C. 371(d)] D. Further information for the applicant: This is only a reminder.		
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Address Only: Assistant Commissioner for Patent, Box PCT Washington, D.C. 20231 Attn: RO/US		Authorized Officer: Latrice Russell 703-306-5829

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TRANSMITTAL LETTER TO THE
UNITED STATES RECEIVING OFFICE

Date	16 April 2003
International Application No.	01/03411950
Attorney Docket No.	100700.0024PCT

I. Certification under 37 CFR 1.10 (if applicable)

EV282599972US
Express Mail mailing number

16 April 2003
Date of Deposit

I hereby certify that the application/correspondence attached hereto is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Assistant Commissioner for Patents, Washington, D.C. 20231.


Signature of person mailing correspondence

Erika Simpson
Typed or printed name of person mailing correspondence

II. ☒ New International Application

TITLE	Low-Mycotoxin Coffee Cherry Products
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Earliest priority date (Day/Month/Year)
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SCREENING DISCLOSURE, INFORMATION: In order to assist in screening the accompanying international application for purposes of determining whether a license for foreign transmittal should and could be granted and for other purposes, the following information is supplied. (Note: check as many boxes as apply):

- A. ☐ The invention disclosed was not made in the United States.
- B. ☒ There is no prior U.S. application relating to this invention.
- C. ☐ The following prior U.S. application(s) contain subject matter which is related to the invention disclosed in the attached international application. (NOTE: priority to these applications may or may not be claimed on form PCT/RO/101 (Request) and this listing does not constitute a claim for priority.)

application no.		filed on	
application no.		filed on	

- D. ☐ The present international application contains additional subject matter not found in the prior U.S. application(s) identified in paragraph C. above. The additional subject matter is found on pages and ☐ DOES NOT ALTER ☐ MIGHT BE CONSIDERED TO ALTER the general nature of the invention in a manner which would require the U.S. application to have been made available for inspection by the appropriate defense agencies under 35 U.S.C. 181 and 37 CFR 5.1. See 37 CFR 5.15

III. ☐ A Response to an Invitation from the RO/US. The following document(s) is(are) enclosed:

- A. ☐ A Request for An Extension of Time to File a Response
- B. ☐ A Power of Attorney (General or Regular)
- C. ☐ Replacement pages:

pages		of the request (PCT/RO/101)	pages		of the figures
pages		of the description	pages		of the abstract
pages		of the claims			

- D. ☐ Submission of Priority Documents

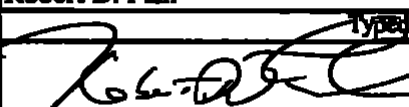
Priority document		Priority document	
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- E. ☐ Fees as specified on attached Fee Calculation sheet form PCT/RO/101 annex

IV. ☐ A Request for Rectification under PCT 91 ☐ A Petition ☐ A Sequence Listing Diskette

V. ☐ Other (please specify):

The person
signing this
form is the:

☐ Applicant	Robert D. Fish
☒ Attorney/Agent (Reg. No.) 33880	
☐ Common Representative	Signature

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Folio 233

2020
Bogotá D.C.,

Doctor(a)
CUELLAR TRUJILLO JAIME LUIS
Apoderado(a) y/o Representante de
VDF FUTURECDEUTICALS

REFERENCIA	Radicación No.	05 116274
	Solicitud internacional	US2003/11950
	Fecha inicio fase nacional	16/11/2005
	Trámite	11
	Evento	379
	Actuación	416
	Oficio No.	2264
	Folios	1

Teniendo en cuenta que la solicitud de privilegio de patente que se tramita bajo el expediente indicado en la referencia, reúne los requisitos de forma establecidos en la Decisión 486 de la Comisión de la Comunidad Andina, el Tratado de Cooperación en Materia de Patentes (PCT), el Reglamento y la Circular Única de la Superintendencia de Industria y Comercio, se envía el extracto de la solicitud a la Oficina de Comunicaciones para efecto de su publicación en la Gaceta de Propiedad Industrial.

Se cumplase
Dado en Bogotá DC,

20 DIC. 2005


ALIX CARMONA CESPEDES DE VERGEL
Jefe de la División de Nuevas Creaciones

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