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FORMULARIO ÚNICO DE OPOSICIÓN

OP2012/000003

OPOSICIÓN A:

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☒

Patente de Invención.

☐

Marcas de Productos o Servicios.

☐

Patente de Modelo de Utilidad.

☐

Marca Colectiva.

☐

Diseño Industrial.

☐

Marca de Certificación.

☐

Esquema de Trazado para Circuitos Integrados.

☐

Lema Comercial.

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**SOLICITUD
PUBLICADA**

Número del expediente: **11-121.792**

Solicitante: SHAKHIN KHIKMAT VADI

Apoderado: JESÚS M. MÉNDEZ BERMÚDEZ

Título de la nueva creación o denominación del signo: **COMPOSICIÓN DE CAFÉ QUE CONSISTE DE CAFÉ INSTANTÁNEO LIOFILIZADO Y CAFÉ TOSTADO FINAMENTE MOLIDO CON EL SABOR Y AROMA DEL CAFÉ RECIÉN HECHO, Y MÉTODO PARA SU PRODUCCIÓN**

Gaceta: 639 de fecha 29 de febrero de 2012

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OPOSICIÓN PRESENTADA POR:

**SOLICITANTE
(71)**

Nombre: FEDERACION NACIONAL DE CAFETEROS

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C.E. ☐ Otro ☐

Cual _____

Número 860007538-2

**REPRESENTANTE
O APODERADO**

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Número 79.782.747

TP 74.295

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FUNDAMENTOS DE LA OPOSICIÓN:

Causal: FALTA DE NOVEDAD, NIVEL INVENTIVO E INSUFICIENCIA DEL CAPITULO DESCRIPTIVO SEGÚN ART. 14, 16 y 28 DE LA DECISION 486.

Signo opositor: _____

Justificación: VER ADJUNTO

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Comprobante de pago No. 12-

Fecha Mayo de 2012

6

ANEXOS

☒ x

Comprobante de pago de la tasa oposición y Comprobante de pago de la tasa de prorroga.

☒ x

Poderes, si fuere el caso.

☒ x

Pruebas de los fundamentos de la oposición.

☐

Documentos que acrediten el legítimo interés, si fuere el caso.

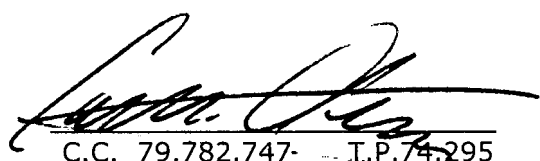
☒ x

Documento que acredita la existencia y representación legal de las partes, cuando sean personas jurídicas.

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NOMBRE: CARLOS R. OLARTE

FIRMA:


C.C. 79.782.747 T.P. 74.295

Señores

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

DIVISIÓN DE NUEVAS CREACIONES

E. _____ S. _____ D. _____

Re: Expediente N° 11-121.792

Solicitud de Patente de Invención Titulada: “COMPOSICIÓN DE CAFÉ QUE CONSISTE DE CAFÉ INSTANTÁNEO LIOFILIZADO Y CAFÉ TOSTADO FINAMENTE MOLIDO CON EL SABOR Y AROMA DEL CAFÉ RECIÉN HECHO, Y MÉTODO PARA SU PRODUCCIÓN”

Solicitante: Shakhin Khikmat Vadi

Opositor: FEDERACIÓN NACIONAL DE CAFETEROS DE COLOMBIA ACTUANDO COMO ADMINISTRADORA DEL FONDO NACIONAL DEL CAFÉ

Nuestra Ref.: OP2012/000003

OPOSICIÓN A LA SOLICITUD DE PATENTE DE INVENCION PUBLICADA EN LA GACETA DE LA PROPIEDAD INDUSTRIAL No. 639 DE FECHA 29 DE FEBRERO DE 2012, N° DE PUBLICACIÓN: 88

SOLICITUD DE PRÓRROGA BAJO EL SEGUNDO PÁRRAFO DEL ART. 42 PARA SUSTENTAR OPOSICIÓN

CARLOS R. OLARTE, mayor de edad y vecino de Bogotá, D.C., identificado tal como aparece al pie de mi firma, en mi condición de apoderado de la parte opositora, respetuosamente me permito presentar oposición a la solicitud de patente de invención en referencia y solicito respetuosamente al Despacho tener en consideración esta oposición como fundamento para determinar que la presente solicitud de patente de invención no cumple con los requisitos de patentabilidad dispuestos en la Decisión 486. De esta manera, solicito respetuosamente al Despacho declarar fundada esta oposición y en consecuencia negar la patente de invención solicitada bajo los siguientes argumentos.

1. Legítimo Interés: Mí representada, la Federación Nacional de Cafeteros de Colombia, en su calidad de administradora del Fondo Nacional del Café, tiene legítimo

interés para presentar oposición en este asunto por cuanto es una entidad que se dedica a la investigación y desarrollo de nuevas tecnologías para asegurar la competitividad y sostenibilidad cafetera de Colombia. De otorgarse la patente solicitada, se estaría otorgando un derecho de exclusión sobre un producto y un método para su producción que no reúne los requisitos para ser objeto de patente.

2. FALTA DE NOVEDAD Y NIVEL INVENTIVO

a- El artículo 14 de la Decisión 486 de la Comisión de la Comunidad Andina señala lo siguiente:

“Los Países Miembros otorgarán patentes para las invenciones, sean de producto o de procedimiento, en todos los campos de la tecnología, siempre que sean nuevas, tengan nivel inventivo y sean susceptibles de aplicación industrial.” (negrilla y subrayado fuera del texto)

A su vez, el artículo 16 ibídem establece:

“Una invención se considerará nueva cuando no está comprendida en el estado de la técnica.”

El estado de la técnica comprenderá todo lo que haya sido accesible al público por una descripción escrita u oral, utilización, comercialización o cualquier otro medio antes de la fecha de presentación de la solicitud de patente o, en su caso, de la prioridad reconocida. [...]” (subrayado y negrilla fuera del texto).

De otra parte, el artículo 18 de la misma Decisión establece:

“Se considerará que una invención tiene nivel inventivo, si para una persona del oficio normalmente versada en la materia técnica correspondiente, esa invención no hubiese resultado obvia ni se hubiese derivado de manera evidente del estado de la técnica.” (subrayado fuera del texto)

Por último, el artículo 28 ibídem señala

“La descripción deberá divulgar la invención de manera suficientemente clara y completa para su comprensión y para que una persona capacitada en la materia técnica correspondiente pueda ejecutarla. [...]” (negrilla y subrayado fuera del texto)

b- Como se demostrará a continuación, no resulta procedente otorgar el privilegio de patente a la solicitud de la referencia, toda vez que la solicitud carece de los requisitos legales para ser patentable, pues no reviste de NOVEDAD ni NIVEL INVENTIVO, y no revela de manera SUFICIENTEMENTE CLARA Y COMPLETA la invención.

3. El concepto inventivo reclamado en la solicitud en referencia consiste esencialmente en proporcionar una composición de café instantáneo liofilizado que contenga las características organolépticas (sabor y aroma) del café tostado regular, así como el método para su obtención, mediante la adición de café regular tostado finamente molido al extracto de café líquido concentrado, que luego es liofilizado y granulado; dichos gránulos tendrán un contenido uniforme de café regular tostado finamente molido¹.

Específicamente, la solicitud de patente reclama una composición de café que contiene dos ingredientes: i) café instantáneo liofilizado; y ii) café regular tostado finamente molido; en donde el último ingrediente está presente en una proporción de 4-30% del peso final, y con un tamaño de partícula entre 65µm y 200µm, el cual aporta el aroma y el sabor del café regular recién hecho². Igualmente, se reclama el siguiente método para producir la anterior composición:

- i) agregar café regular tostado finamente molido al extracto concentrado líquido de café (sustrato usado para la sublimación) a temperaturas reducidas;
- ii) espumar mediante la mezcla de nitrógeno y dióxido de carbono;
- iii) liofilizar;
- iv) opcionalmente, adicionar aceite de café al producto final.

¹ Solicitud de Patente Colombiana No. 11-121.792. Capítulo Descriptivo, pagina 3, segundo párrafo, líneas 12 a 20.

² En la solicitud se establece que el tamaño de partícula del café tostado molido depende de dos elementos: el mínimo se establece de acuerdo con el efecto mínimo esperado en sabor y aroma, y el máximo, se establece de acuerdo con el máximo de sedimentos permitido.

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Adicionalmente, en la solicitud de patente CO11-121.792 se especifica que la velocidad de extracción de las sustancias aromáticas es conmensurable con la velocidad de disolución del café liofilizado en una taza³.

Sin embargo, todas las **características esenciales** que comprende y reclama la composición y el método de dicha solicitud, ya habían sido divulgadas, de manera total y completa, en al menos cinco patentes, y adicionalmente, son equivalentes a las de productos existentes en el sector que se comercializan en el mercado, tales como “Koumi Baisen” de Nescafé Japón, “Azera” de Nescafé Europa, “Kuppo Attache Fusion” y “Egoiste” de Haco en Rusia, “Millicano” de Kenco en el Reino Unido y “Kanu” de Maxim en Corea.

4. A continuación, me permito desglosar y analizar la información contenida en el arte previo relevante para la evaluación de la patentabilidad de la solicitud CO11-121.792, con el fin de demostrar que el concepto inventivo desarrollado en dicha solicitud –proporcionar una composición de café instantáneo liofilizado que contenga las características organolépticas (sabor y aroma) del café tostado regular, así como el método para su obtención mediante la inserción de café regular tostado finamente molido al extracto de café líquido concentrado- es un concepto inventivo desarrollado con anterioridad a la invención, que no está revestido de novedad ni de nivel inventivo alguno.

a- Falta de novedad (artículo 16 de la Decisión 486):

i) La patente Europea EP0220889 (D1), copia adjunta como Anexo 1, publicada el 6 de mayo de 1987, enseña un proceso para la manufactura de un producto de café que comprende café tostado finamente molido combinado con café soluble, y secado en frío (liofilizado).

El proceso divulgado en D1 comprende las siguientes etapas:

- a) mezclar extracto de café con partículas de café tostado y molido entre un 10-60%, basados en el peso total de los dos cafés, y en donde el 95% de las partículas pasan por una malla de 75micrones (Columnas 1 y 2);
- b) homogenizar la mezcla del paso a);

³ Solicitud CO11-121.792, página 4, primer párrafo, líneas 6 a 8.

- c) adicionar a la mezcla homogenizada un equivalente en peso de extracto de café a una temperatura entre -5°C y 30°C;
- d) congelar la mezcla del paso anterior;
- e) moler el producto de café obtenido;
- f) secar en frío.

A lo largo del Capítulo Descriptivo, se especifican con detalle los pasos para llevar a cabo el proceso descrito y reclamado. Adicionalmente, en el Ejemplo ilustrado se muestra no sólo el tipo de café de partida, sino sus diferentes etapas, de tal forma que la persona medianamente versada en la materia puede fácilmente reproducirlo.

Respecto a la metodología utilizada en D1, en particular en los pasos b) a d), es importante resaltar que tal como se hace en la solicitud CO11-121.792, se aplica igualmente una operación de liofilización (también conocida como secado en frío), la cual existe al menos desde los años 50, y que consiste en un proceso de secado donde el agua es sublimada del producto luego de ser congelado. Dicho proceso contiene esencialmente los siguientes pasos⁴:

- i) Congelar un producto acuoso a una temperatura menor a su temperatura eutéctica;
- ii) Aplicar vacío a la cámara (usualmente menor a 0.1 torr);
- iii) Sublimar el hielo sobre una superficie condensadora fría a una temperatura menor a la del producto, siendo la superficie condensada dentro de la cámara o en una cámara adjunta;
- iv) Introducir calor al producto en condiciones controladas, proporcionando la energía para la sublimación en una proporción designada para mantener el producto a una temperatura menor a su temperatura eutéctica.

Teniendo en cuenta los pasos anteriores, es claro que el secado en frío al que se refiere el documento D1, consiste en el proceso de liofilización anteriormente descrito.

De la misma forma, la característica que los tiempos de disolución del liofilizado sean conmensurables con el tiempo de extracción del café tostado descrita en la solicitud CO11-121.792, debe entenderse como una característica inherente a todas las composiciones de

⁴ Tomado de "Remington: The science and practice of Pharmacy". Capítulo 41: Preparaciones parenterales. Lippincott, Williams & Wilkins. 20th Edition. Páginas 802 y 803. 2000.

café que incluyen dichos ingredientes y se preparan siguiendo dicha metodología. Es decir, la característica mencionada de tiempos de disolución, ya la presentaban las composiciones y metodologías divulgadas en D1, lo que anticipa completamente la solicitud CO11-121.792, y lejos de ser una característica novedosa, responde a una característica inherente de las composiciones que comprenden café tostado finamente molido combinado con café soluble, tal y como se divulgan en D1.

Para mayor ilustración de todo lo anterior, llamo la atención sobre las siguientes Tablas 1 y 2, que comparan los elementos característicos tanto del producto como del proceso reclamado en la solicitud CO11-121.792 con las características de D1:

Documento	CO11-121.792	EP0220889 (D1)
Fecha relevante	Prioridad reclamada: 01 d octubre de 2009	Publicación: 06 de mayo de 1987
Ingredientes de la composición de café	Café instantáneo liofilizado y café regular tostado finamente molido (donde el último está dispersado en el primero).	Producto de café secado en frío (freezed dried) que comprende: partículas de café soluble y café tostado finamente molido
% de café tostado	4-29% en peso	10-60% en peso
Tamaño de partícula del café tostado	65 a 200 micras	98%< 75 micras; 50%< 15 micras

Tabla 1. Comparación de los elementos técnicos de la **Reivindicación 1** de la solicitud de patente CO11-121.792 con los elementos divulgados en la patente EP022889 (D1).

Etapas CO11-121.792	EP0220889 (D1)
agregar café regular tostado finamente molido al extracto concentrado líquido de café (sustrato usado para la sublimación)	i) mezclar extracto de café con partículas de café tostado y molido entre un 10-60%, basados en el peso total de los dos cafés, y en donde el 95% de las partículas pasan por una malla de 75µm, y homogenizar
espumar mediante la mezcla de nitrógeno y dióxido de carbono y liofilizar	ii) adicionar a la mezcla homogenizada un equivalente en peso de extracto de café a una temperatura entre -5°C y 30°C
	iii) congelar la mezcla del paso anterior
	iv) moler el producto de café obtenido
	v) freeze drying

Tabla 2. Comparación de los elementos técnicos de la **Reivindicación 3** de la solicitud de patente CO11-121.792 con los elementos divulgados en la patente EP022889 (D1).

ii) En este punto, considero pertinente tener en cuenta las siguientes apreciaciones del Tribunal de Justicia de la Comunidad Andina en la interpretación prejudicial del Proceso 229-IP-2005:

“[...] el requisito de novedad exige que la invención no esté comprendida en el estado de la técnica, que comprende el conjunto de conocimientos tecnológicos accesibles al público antes de la fecha de presentación de la solicitud de patente o, en su caso, de la prioridad reconocida.

Para la aplicación de este concepto, es importante que el estudio del estado de la técnica esté basado en las características o condiciones innovadoras del invento.

En este sentido, el “estado de la técnica está constituido por todo lo que antes de la fecha de presentación de la solicitud se ha hecho accesible al público por una descripción escrita u oral, por una utilización o por cualquier otro medio, en cualquier lugar del mundo” [...]”.

En el caso concreto, es claro que el documento D1 revela los elementos característicos del proceso reclamado en la solicitud CO11-121.792, solucionando el mismo problema mediante el mismo concepto inventivo: mezclar partículas finamente molidas de café tostado con un tamaño de partícula donde el 98% es <75micras, en una proporción entre 10-60%, con un extracto de café soluble, lo cual proporciona al producto final (café liofilizado instantáneo) el sabor y aroma del café tostado recién hecho. Así las cosas, el proceso y el producto divulgado en D1 anticipa completamente los elementos esenciales del producto de café y el método para su producción reivindicado en la solicitud CO11-121.792, por lo que innegablemente destruye su novedad.

b- Falta de nivel inventivo (artículo 18 de la Decisión 486):

i) La patente US3,261,689 (D2) del 19 de julio de 1966, de la cual se adjunta copia como Anexo 2, divulga un producto de café soluble atomizado que presenta aroma y sabor mejorados, y enseña un proceso para su producción que incluye mezclar un extracto soluble de café con partículas de café tostado molido a muy baja temperatura y previo al secado. Claramente, desde ese momento (1966), existía una respuesta a la

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necesidad de introducir al mercado una composición de café soluble con el sabor y el aroma del café recién hecho.

Como se menciona en el Capítulo Descriptivo de D2, se intentaron muchas alternativas con el fin de lograr este objetivo, como por ejemplo, el aislamiento y adición de aceites esenciales del café. Incluso, por primera vez se mezcló una pequeña fracción de café tostado molido en el café soluble seco, lo que sin embargo inicialmente presentó desventajas de rápida rancidez y demasiado sedimento.

D2 desarrolla un proceso que consiste en dispersar gránulos de café tostado en el extracto acuoso de sólidos de café soluble, para luego realizar un proceso de spray drying y encapsulado, para obtener un producto de café que presenta las cualidades en aroma y sabor de un café recién hecho: “el polvo seco fue muy estable, de flujo libre, y se adaptó a ser cuchareado en cantidades medidas similares al café “instantáneo” regular, mientras que contiene “atrapado” el aroma y sabor más reminiscente del café molido y tostado⁵”.

Como se desprende de lo anterior, el concepto inventivo desarrollado en D2 en el año 1966, es el mismo concepto inventivo de la solicitud de patente CO11-121.792, donde el objetivo es proporcionar una composición de café soluble que contenga el aroma y el sabor del café molido y tostado, mediante la adición de café tostado y molido a un extracto soluble de café, para su posterior secado en frío. La invención de D2 radica en que la molienda se hace a muy baja temperatura, conservando así el aroma, y bajo una atmósfera inerte para conservar el tostado (sabor). La única diferencia en el proceso divulgado en D2, del año 1966 y la invención de la solicitud de patente CO11-121.792, es el mejoramiento de la técnica de secado en frío, lo que es natural, puesto que en el curso de 46 años desde 1966, fecha en la que se publica D1, las técnicas de liofilización han mejorado sustancialmente.

Adicionalmente, las características del producto de D2 enseñan un porcentaje de café molido tostado en el extracto soluble de café de 1-10% en peso, y un tamaño de partícula <74µm (50%) y <150µm (99%), valores y rangos de tamaño de partícula que se encuentran dentro del rango que se reclama en la solicitud de patente CO11-121.792.

En conclusión, el concepto inventivo desarrollado en la solicitud CO11-121.792 no reviste nivel inventivo alguno, puesto que ya era conocido, desde hace 46 años en D2, una

⁵ US3'261,689 (D1), columna 4, líneas 69 a 73.

composición de café soluble instantánea a partir de la mezcla de un extracto soluble de café y café tostado molido dispersado finamente, lo cual le proporciona al producto final las características organolépticas (sabor y aroma) del café recién hecho al café instantáneo.

ii) La patente US 3'652.292 (D3), publicada el 28 de marzo de 1972, copia simple adjunta como Anexo 3, divulga un producto de café instantáneo y el proceso para su manufactura. El producto contiene extracto de café soluble seco y café tostado molido con un tamaño de partícula de nivel coloidal.

En D3 se enseña un producto listo para infusión rápida de café soluble, en partículas de tamaño coloidal, el cual proporciona las características organolépticas (sabor y aroma) del café tostado, que no presenta los problemas de otras composiciones de café en las que se mezclan partículas de café tostado, porque no se sedimenta ni se aglomera debido a su tamaño de partícula. La turbidez del café obtenido con el producto de café de D3 corresponde a la turbidez del café tostado normal.

El proceso de manufactura divulgado en D3 comprende las etapas de molido del café tostado a un tamaño de partícula coloidal (3-10µm), en una proporción entre el 3 y el 40% en peso, el cual se mezcla con el extracto soluble de café, se estabiliza el pH, y se seca por atomización. Dentro de los antecedentes de D3, se menciona que entre otros mecanismos para obtener productos con el sabor y el aroma del café recién hecho, se adiciona aceite de café.

Dentro de las ventajas de la composición enseñada en D3 se menciona que, gracias al tamaño de partícula coloidal del café tostado molido y su porcentaje en la composición, no se presentan sedimentos al momento de servir.

Teniendo en cuenta lo anterior, es claro que la composición de D3 comprende y revela los elementos característicos del concepto inventivo de la solicitud CO11-121.792, es decir, un extracto de café soluble y café molido tostado en una proporción entre 4-30% del peso total.

iii) De otra parte, el informe de búsqueda internacional (ISR por sus siglas en inglés) para la solicitud internacional WO2011/040832, equivalente a la solicitud CO11-121.792, adjunto al presente documento para inmediata referencia del Despacho

como Anexo 4, encuentra como arte previo relevante para la evaluación de patentabilidad los documentos:

- DE19700084 (D4), publicada el 09 de junio de 1998, que afecta la novedad y el nivel inventivo de las Reivindicaciones 1 a 7
- WO96/24255 (D5), publicada el 15 de agosto de 1996, que afecta el nivel inventivo de las Reivindicaciones 4 a 7; y
- Nakhmedov F. G. “Teckhnologiya kofeproduktov”, Legkaya i pischvaya promyshlennost, páginas 78-83, Moscú, 1984, catalogado bajo la clase “A” como documento que describe de manera general los principios involucrados en la invención reivindicada.

Según la autoridad de búsqueda, el documento D4, divulga una composición de café soluble que comprende café soluble liofilizado y café natural molido finamente, que exhibe el aroma y sabor del café natural recién preparado, sin sedimento. En dicha composición, el proceso de molido fino asegura una distribución uniforme de las partículas y gránulos mencionados en el extracto de café soluble, el cual presenta un tamaño de partícula de 30µm, y está en una proporción cercana al 30%.

Por su parte, para la autoridad de búsqueda, el documento D5 enseña el uso de café natural molido finamente o la mezcla de granulados en la composición (página 8, líneas 4 y 5). El Ejemplo 6 divulga el uso de gránulos verdes tostados combinados en la composición de café, como, entre otras, se reclama en la Reivindicación 5.

Así las cosas, respecto a los documentos D4 y D5 citados en el ISR, es importante señalar que éstos complementan el conocimiento general establecido desde 1966 con el documento D2, es decir, que la mezcla y dispersión de café tostado molido finamente en un extracto soluble de café, produce una composición de café con mejoras en su sabor y aroma. Adicionalmente, las bases del método para su producción han consistido durante los últimos 46 años, desde la publicación del documento D2, en producir el extracto soluble de café, moler finamente café tostado, mezclar y secar en frío.

iv) Para mayor ilustración todo de lo anterior, a continuación presento las Tablas 3 y 4, en las que se comparan los elementos característicos del producto y proceso reclamados en la solicitud CO11-121.792 con las características de D1-D3:

Documento	CO11-121.792	EP0220889 (D1)	US3261689 (D2)	US3652292 (D3)
Fecha relevante:	Fecha de prioridad: 01-10-2009	Fecha de publicación :06 -05- 1987	Fecha de publicación: 19-07- 1966	Fecha de publicación: 28-03- 1972
Ingredientes de la composición de café	Café instantáneo liofilizado y café regular tostado finamente molido (donde el último está dispersado en el primero).	Producto de café secado en frío (freezed dried) que comprende: partículas de café soluble y café tostado finamente molido	Café soluble aromatizado y café fresco molido y tostado	Extracto de café soluble seco y café tostado molido
% de café tostado	4-29% en peso	10-60% en peso	1 - 10% en peso del total de sólidos	3-40% en peso
Tamaño de partícula del café tostado	65 a 200 micras	98%< 75 micras; 50%< 15 micras	50%<74micras, 99%<150micras (50% en malla 200 y 99% malla 100)	3-10 micras-nivel coloidal

Tabla 3. Comparación de los elementos técnicos de la **Reivindicación 1** de la solicitud de patente CO11-121.792 con los elementos divulgados en las patentes D1-D3.

CO11-121.792	EP0220889 (D1)	US3261689 (D2)	US3652292 (D3)
agregar café regular tostado finamente molido al extracto concentrado líquido de café (sustrato usado para la sublimación)	i) mezclar extracto de café con partículas de café tostado y molido entre un 10-60%, (peso total de los dos cafés), el 95% de las partículas pasan por una malla de 75µm y homogenizar	i) congelar los granos de café tostados y molerlos.	i) moler el café tostado a un tamaño de partícula coloidal (3-10µm), en una proporción de 3-40%
espumar mediante la mezcla de nitrógeno y dióxido de carbono y liofilizar	ii) adicionar a la mezcla homogenizada un equivalente en peso de extracto de café a una temperatura entre -5°C y 30°C	ii) proteger el café tostado molido mediante un gas inerte y estabilizar a T<10°F.	ii) mezclar el café tostado molido con el extracto soluble de café
	iii) congelar la mezcla del paso anterior	iii) enfriar el extracto soluble de café (que contiene 20-30% de sólidos) a <10°F (entre 50-70°F).	iii) estabilizar el pH
	iv) moler el producto de café obtenido	iv) spray drying	iv) secar por atomización
	v) freeze drying		

Tabla 4. Comparación de los elementos técnicos de la **Reivindicación 3** de la solicitud de patente CO11-121.792 con los elementos divulgados en la en las patentes D1-D3.

5. a- Teniendo en cuenta el arte previo citado anteriormente, es claro que el concepto inventivo desarrollado y reclamado en la solicitud CO11-121.792, está enteramente comprendido en los documentos D1-D5.

Como lo mencioné anteriormente, el concepto inventivo desarrollado en la solicitud CO11-121.792 consiste en mezclar café finamente molido con un extracto soluble de café, en

proporciones y tamaños de partícula específicos, con el fin de producir una composición de café que exhiba las propiedades organolépticas del café recién preparado (sabor y aroma). Los elementos de este concepto inventivo fueron divulgados de manera clara en todos los documentos citados anteriormente.

De hecho, desde 1966, cuando se publicó D2, se proporcionó una solución al problema de suministrar una composición de café instantáneo que presentara los sabores y aromas del café recién preparado. Desde entonces, las patentes y solicitudes D1-D5 han desarrollado diferentes soluciones al mismo problema, bajo el mismo concepto inventivo: incorporar en el extracto de café soluble café tostado molido, con una proporción y tamaño de partícula específicos.

b- i) En particular, el Capítulo Reivindicatorio Modificado de la solicitud CO11-121.792 reclama en la Reivindicación 1 “una composición de café que consiste de café instantáneo liofilizado y café regular tostado finamente molido que tiene el aroma y el sabor del café regular recién hecho en el cual este último, en un contenido de 4 a 29% en peso y con un tamaño de partícula entre 65µm y 200µm, está distribuido uniformemente en el interior de los gránulos liofilizados”. Como se desprende, los documentos citados como arte previo, D1 a D5, describen y enseñan composiciones de café que contienen los dos elementos esenciales de la solicitud CO11-121.792, café instantáneo liofilizado y café regular finamente molido.

Para hacer más evidente la derivación del estado de la técnica de la materia de la solicitud CO11-121.792, llamo respetuosamente la atención de la SIC sobre las características esenciales que constituyen la invención en esta solicitud de patente, como se reclaman en la Reivindicación 1:

- composición de café;
- café instantáneo liofilizado; y
- café regular tostado finamente molido (de 4 a 29% en peso y con un tamaño de partícula entre 65µm y 200µm), distribuido uniformemente en el interior de los gránulos liofilizados;
- que tiene el aroma y el sabor del café regular recién hecho.

Como lo demostré anteriormente, el estado de la técnica ha divulgado desde hace más de 4 décadas composiciones solubles de café que comprenden la combinación de café finamente molido con un extracto soluble de café (D1 y D3), en donde la proporción específicamente reclamada (4-29%) está claramente sugerida en el arte previo, por ejemplo en D3 que presenta una proporción del 3-40% y D1 que presenta una proporción del 10-60%.

En cuanto al tamaño de partícula del café regular finamente molido, también resulta relevante señalar que el arte previo anticipa dicho rango ($65\mu\text{m}$ y $200\mu\text{m}$) al ser $<150\mu\text{m}$ en D2 y $75\mu\text{m}$ en D1. Todos los anteriores documentos resaltan la importancia del tamaño de partícula del café tostado, a la luz de los sedimentos que dicho tamaño puede ocasionar al momento de solubilizar la composición de café para ser ingerida. De hecho, en D3 se logró una composición que presenta en suspensión coloidal las partículas de café molido, evitando todos los problemas derivados de grandes tamaños de partícula.

ii) La Reivindicación 2 de la solicitud CO11-121.792 establece que la composición de la Reivindicación 1 contiene aceite de café. Dicha característica la incluyen la composición de café de D3, en las cual se menciona de forma clara que la adición de aceite de café mejora el sabor y el aroma del café, por lo que no existe nivel inventivo alguno en dicha adición.

iii) Respecto a la metodología reclamada en las Reivindicaciones 3 a 7, en cuanto al siguiente proceso general:

- i) agregar café regular tostado finamente molido al extracto concentrado líquido de café (sustrato usado para la sublimación);
- ii) espumar mediante la mezcla de nitrógeno y dióxido de carbono;
- iii) liofilizar;
- iv) el café regular tostado finamente molido contiene varios aditivos alimenticios (Reivindicación 6); y
- iv) adicionar aceite de café al producto final o antes del empacado (Reivindicación 7).

En particular, la Reivindicación 4 establece que el café regular tostado finamente molido proviene de un tipo o mezcla de granos verdes, y en la Reivindicación 5 que el tostado se

realiza de manera separada para cada variedad de tipos de granos verdes, o de manera simultánea en su mezcla.

Como se ha señalado en repetidas ocasiones durante este escrito, el concepto inventivo desarrollado en el proceso reclamado en la Reivindicación 3 de la solicitud CO11-121.792, no reviste nivel inventivo alguno, puesto que mezclar café regular tostado con un extracto concentrado líquido de café soluble es una metodología desarrollada desde 1966 y que se ha mejorado con los años, para producir un producto de café instantáneo que proporcione las características organolépticas del café recién hecho (sabor y aroma). Tampoco resulta inventiva la adición de aceite de café al producto final, puesto que ya D3 enseñaba que la adición de aceite de café mejora el sabor y el aroma del producto final.

Por último, no se evidencia en la única realización de la solicitud CO11-121.792 (Ejemplo 1) ni a lo largo del Capítulo Descriptivo, un efecto técnico sorprendente o alguna ventaja inesperada derivada del método o del producto reclamado, antes inexistente. El objetivo de la solicitud CO11-121.792 es proporcionar una composición de café que exhiba las propiedades organolépticas del café recién hecho, tal como ya se logró en los documentos D1-D5, efecto que sin embargo no es demostrado en la solicitud CO11-121.792.

iv) En conclusión, y teniendo en cuenta el arte previo citado, el concepto inventivo desarrollado por los inventores en la solicitud CO11-121.792, fueron completamente divulgadas en D1-D5, y ampliamente conocidas en el campo técnico.

Cualquier persona medianamente versada en la materia, a la fecha de prioridad de la solicitud CO11-121.792, con el fin de producir una composición de café instantáneo que exhiba el sabor y el aroma del café recién hecho, a la luz de D1-D5, habría mezclado un extracto de café soluble con café tostado finamente molido, en una proporción por ejemplo de 3-40% (según D3) y con un tamaño de partícula menor a $<150\mu\text{m}$ (según D2) y hasta alrededor de $75\mu\text{m}$ (de acuerdo con D1), tal y como se reclama en la solicitud CO11-121.792. De la misma forma, la persona medianamente versada en la materia habría desarrollado el método reclamado en las Reivindicaciones 3 a 7 a la luz de los métodos divulgados desde 1966 en D1-D5, por lo que se puede concluir que no resulta procedente otorgar el privilegio de patente de invención solicitado, ya que el producto y el método reivindicados carecen de nivel inventivo.

6. INSUFICIENCIA DEL CAPÍTULO DESCRIPTIVO

a- De acuerdo con el Artículo 28 de la Decisión 486 y el Manual Andino de Patentes, sobre la claridad de la Descripción se establece que ésta debe ser suficiente, esto es, que por un lado “contenga la suficiente información técnica para que una persona con conocimiento medio en el arte pueda poner en práctica la invención”, y por el otro que esta divulgación sea “suficiente para conocer el aporte que se está haciendo a la tecnología”.⁶ (subrayado fuera del texto)

b- Pues bien, tal y como podrá corroborar el Despacho, la Descripción de la solicitud CO11-121.792, y particularmente el único ejemplo allí incluido, no cumple con los requisitos anteriormente señalados como se detalla a continuación:

- i) no es posible determinar a partir del único ejemplo ilustrado cómo se realiza la molienda del café regular tostado y cuáles son las características del “molino especial”;
- ii) no se caracteriza el extracto soluble de café a mezclar con el café regular tostado finamente molido, tales como la concentración, temperatura y viscosidad, las cuales son esenciales para determinar la dispersión del café regular molido y su efecto en la homogenización;
- iii) no es claro el porcentaje de café regular tostado finamente molido adicionado al extracto soluble de café, en tanto su definición no especifica si es porcentaje en peso o volumen. La definición simplemente menciona “5% del contenido en los gránulos liofilizados finales”;
- iv) como es sabido por cualquier persona medianamente versada en la materia, al moler el café tostado, es necesario mantenerlo en condiciones aptas para garantizar su buena calidad y evitar su rápido deterioro. Ninguna de estas condiciones se especifican en el único ejemplo de la solicitud CO11-121.792;
- v) de la misma forma, es sabido por cualquier persona medianamente versada en la materia que en el proceso de espumado con nitrógeno y oxígeno es muy importante determinar la proporción de la mezcla, si esta existe. El uso de nitrógeno en el espumado permite obtener

⁶ Manual Andino de Patentes. (2004) Claridad y Suficiencia Secciones 3.2. y 3.3, páginas 32 y 33. (disponible en <http://www.comunidadandina.org/public/patentes.pdf>).

- productos de café claros, y el uso de dióxido de carbono, productos oscuros, de tal forma que es importante caracterizar la mezcla de gases utilizada en el único ejemplo para que la persona medianamente versada en la materia pueda reproducir fácilmente la metodología reclamada y obtener el producto deseado;
- vi) el único parámetro medido es el tiempo de disolución de la composición de café, sin embargo, el término “rico aroma de café de un café regular recién hecho” no permite determinar las características organolépticas deseadas y mejoradas del producto reclamado. De hecho, en el campo técnico se utilizan diferentes herramientas para caracterizar un producto de café entre las que se encuentran: cromatografía de gases, panel de catación de expertos y pruebas de sedimentación, los cuales permiten determinar si se asemeja o no a un café regular recién hecho en su olor, aroma y características tales como la apariencia de taza⁷.

De lo anterior se puede concluir que una persona medianamente versada en la técnica del café, gracias al Capítulo Descriptivo, y particularmente el único ejemplo, podría a lo sumo entender las etapas generales del proceso reclamado, pero no podría determinar parámetros particulares que permitan efectivamente reproducir el invento.

c- Finalmente pongo de presente al Despacho que la falta en la suficiencia de divulgación de la Descripción no puede ser superada mediante una modificación posterior de la solicitud. Lo anterior, por cuanto la única opción con la que contaría el solicitante para ello sería mediante la inclusión de ejemplos que materialicen la invención, lo cual excede la facultad del solicitante de efectuar modificaciones a su solicitud en la medida que estaría adicionando la información revelada al momento de su presentación.

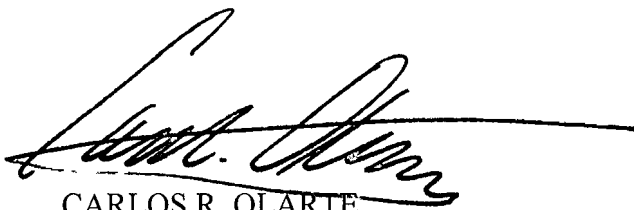
7. SOLICITUD DE PRÓRROGA: Para terminar, considero que la anterior argumentación explica de manera completa la falta de nivel inventivo y novedad de la solicitud CO11-121.792, sin embargo, me reservo el derecho de aportar argumentos

⁷ Las pruebas de sedimentación se realizan con el fin de determinar la perfecta homogenización de las partículas de café regular tostado en los gránulos de café al momento de su disolución en una taza de café. Las partículas de café tostado finamente molido de gran tamaño o que han sufrido una pobre homogenización al disolverse en agua caliente se sedimentan o precipitan produciendo una “mala apariencia de taza”. De hecho, el objetivo de estos productos de café es lograr que como producto del tamaño de partícula del café regular finamente molido y la homogenización, las partículas queden suspendidas en el café instantáneo recién preparado durante el tiempo en el que una persona promedio se toma una taza de café.

adicionales, para lo cual hago uso de la prórroga en virtud del artículo 42 de la Decisión 486 y apporto anexo a este memorial el recibo de pago de la tasa correspondiente.

8. Finalmente, con fundamento en los hechos y pruebas antes citados, comedidamente solicito al Despacho proceder a negar el privilegio de patente para todas las pendientes.

Atentamente,



CARLOS R. OLARTE

C. C. No. 79.782.747 de Bogotá

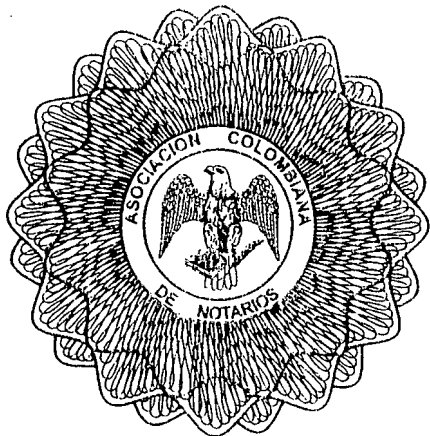
T. P. 74.295

Anexos:

- Anexo 1 Copia simple de la patente Europea EP0220889 (D1).
- Anexo 2: Copia simple de la patente US3,261,689 (D2).
- Anexo 3: Copia simple de la patente US 3'652.292 (D3).
- Anexo 4: Copia simple de la versión en inglés del Informe de Búsqueda Internacional y la Opinión Escrita de la Autoridad de Búsqueda internacional de la solicitud WO2011/040832, equivalente a la solicitud colombiana CO11-121.792.
- Anexo 5: Recibo de pago de la tasa correspondiente a prórroga.

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ESCRITURA PUBLICA NUMERO = = = = =
NOVECIENTOS DIEZ (910) = = , = = = = =

En la ciudad de Bogotá, Distrito
Capital, República de Colombia, a los
Diez = = = = = (10) días del mes de
Agosto = = = = = del año dos mil siete
(2007), ante mi

NOTARIA VEINTISIETE (27) DEL

CIRCULO DE BOGOTA, = = = se otorgó la escritura pública que
se consigna en los siguientes términos: -----

CLASE DE ACTO: PODER ESPECIAL PARA
REPRESENTACIÓN EN ASUNTOS VARIOS DE PROPIEDAD
INTELECTUAL DE: FEDERACIÓN NACIONAL DE
CAFETEROS DE COLOMBIA actuando en su calidad de
administradora del FONDO NACIONAL DEL CAFÉ.-----

FEDERACIÓN NACIONAL DE CAFETEROS DE COLOMBIA
NIT: 860007538-2 -----

A: CARLOS OLARTE, ANA MARÍA FRIERI, JUAN
GUILLERMO MOURE, J. IAN RAISBECK, y/o NATALIA
CASTRO. -----

C O M P A R E C I Ó: LUIS GENARO MUÑOZ ORTEGA
mayor de edad, vecino y domiciliado en Colombia,
identificado con cédula de ciudadanía N° 10.536.679, obrando
en nombre y representación de la FEDERACIÓN NACIONAL
DE CAFETEROS DE COLOMBIA, persona jurídica de derecho
privado, sin ánimo de lucro, con domicilio en la ciudad de
Bogotá D.C., con personería jurídica reconocida por el
Gobierno Nacional de la República de Colombia mediante
resolución ejecutiva número 33 del 2 de septiembre de 1927,
publicada en el Diario Oficial No. 20.894 de 1928, actuando

ESTE PAPEL NO TIENE COSTO PARA EL USUARIO

en su calidad de administradora del FONDO NACIONAL DEL CAFÉ (en adelante la "PODERDANTE"), en virtud del contrato de administración celebrado con el Gobierno Nacional; debidamente facultado por mi calidad de representante legal de la entidad (Primer Gerente Auxiliar-Gerente Administrativo) manifiesto lo siguiente: -----

PRIMERO.- Que mediante el presente instrumento público, confiere PODER ESPECIAL, pero amplio y suficiente a CARLOS OLARTE, mayor de edad, vecino y domiciliado en Bogotá D.C., identificado con la cédula de ciudadanía No. 79.782.747 de Bogotá y con Tarjeta Profesional número 74:295, ANA MARIA FRIERI identificada con la cédula de ciudadanía No. 45.483.209 de Cartagena y con Tarjeta Profesional número 99.270, JUAN GUILLERMO MOURE, mayor de edad, vecino y domiciliado en Bogotá, D.C., identificado con la cédula de ciudadanía No. 80'412.281 de Usaquén y con Tarjeta Profesional número 67.343, J. IAN RAISBECK, mayor de edad, vecino y domiciliado en Bogotá, D.C., identificado con la cédula de ciudadanía No. 79'376.996 de Bogotá y con Tarjeta Profesional número 135.799 y/o NATALIA CASTRO identificada con la cédula de ciudadanía No. 52.008.577 de Bogotá y con Tarjeta Profesional número 70.997, para que a nombre de la PODERDANTE, presenten, tramiten, obtengan, defiendan y hagan respetar todo derecho o título de propiedad intelectual de la PODERDANTE, tal como Patentes de Invención, Modelos de Utilidad, Esquemas de Trazados de Circuitos Integrados, Diseños Industriales, Marcas, Lemas Comerciales, Nombres Comerciales, Enseñas Comerciales, Denominaciones de Origen, Protección de Secretos Empresariales, Certificados de Obtentor, Derechos de Autor, Registro de Nombres de Dominio, Registros Sanitarios, o cualquier otro bien de propiedad intelectual de la

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CAMARA DE COMERCIO DE BOGOTA

SEDE NORTE

3 DE AGOSTO DE 2007

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CERTIFICADO DE EXISTENCIA Y REPRESENTACION LEGAL DE LA ENTIDAD SIN ANIMO DE LUCRO: FEDERACION NACIONAL DE CAFETEROS DE COLOMBIA. NUMERO: S0002579

N.I.T. : 860007538-2

EL SUSCRITO SECRETARIO DE LA CAMARA DE COMERCIO DE BOGOTA, EN EJERCICIO DE LA FACULTAD CONFERIDA POR LOS ARTICULOS 43 Y 144 DEL DECRETO NUMERO 2150 DE 1995.

CERTIFICA :

DOMICILIO: BOGOTA D.C.

DIRECCION: CLL. 73 NO. 8-13

TELEFONO: 3456600 FAX: 2171021

CERTIFICA :

QUE POR CERTIFICACION DEL 28 DE FEBRERO DE 1997 , OTORGADO(A) EN EL MINISTERIO DE AGRICULTURA , INSCRITA EN ESTA CAMARA DE COMERCIO EL 5 DE MARZO DE 1997 BAJO EL NUMERO: 00002809 DEL LIBRO I DE LAS ENTIDADES SIN ANIMO DE LUCRO, FUE INSCRITA LA ENTIDAD DENOMINADA: FEDERACION NACIONAL DE CAFETEROS DE COLOMBIA

CERTIFICA :

QUE DICHA ENTIDAD OBTUVO SU PERSONARIA JURIDICA NO. 0033 EL 02 DE SEPTIEMBRE DE 1927.

CERTIFICA :

ENTIDAD QUE EJERCE LA FUNCION DE INSPECCION, VIGILANCIA Y CONTROL: MINISTERIO DE AGRICULTURA

CERTIFICA :

QUE DICHA ENTIDAD HA SIDO REFORMADA POR LOS SIGUIENTES DOCUMENTOS:

NUMERO	FECHA	ORIGEN	INSCRIP	FECHA
	1998/12/03	CONGRESO	00023670	1999/06/21
0000003	2000/12/13	CONGRESO	00040882	2001/06/04
0000001	2003/12/10	CONGRESO NACIONAL	00069444	2004/03/16

CERTIFICA :

VIGENCIA: QUE LA ENTIDAD NO SE HALLA DISUELTA. DURACION HASTA EL 1 DE DICIEMBRE DE 2094 .

CERTIFICA :

OBJETO: TIENE POR OBJETO ORIENTAR, ORGANIZAR, FOMENTAR Y REGULAR LA CAFICULTURA COLOMBIANA PROCURANDO EL BIENESTAR DEL CAFICULTOR A TRAVES DE MECANISMOS DE COLABORACION, PARTICIPACION Y FOMENTO DE CARACTER ECONOMICO, CIENTIFICO, TECNOLOGICO, INDUSTRIAL Y COMERCIAL, BUSCANDO MANTENER EL CARACTER DE CAPITAL SOCIAL ESTRATEGICO DE LA CAFICULTURA COLOMBIANA. LA FEDERACION NACIONAL DE CAFETEROS DE COLOMBIA ES UNA ENTIDAD DEMOCRATICA, PARTICIPATIVA, PLURALISTA, FEDERADA Y DELIBERANTE, QUE TIENE COMO MISION PROMOVER PRIMERO Y PRIORITARIAMENTE LA PROSPERIDAD Y EL INTERES GENERAL DE LOS PRODUCTORES. SON FUNCIONES DE LA FEDERACION NACIONAL DE CAFETEROS DE COLOMBIA : A) DEFENDER LOS DERECHOS DE LOS CAFICULTORES. B) PROCURAR QUE LAS POLITICAS MACROECONOMICAS Y SECTORIALES DEL ESTADO BENEFICIEN AL CAFICULTOR. C) TRABAJAR PARA QUE LOS CAFICULTORES ALCANCEN

Carla Eugenia Rojas de Uribe

NIVELES DE COMPETITIVIDAD QUE LES PERMITA MANTENER UN ADECUADO NIVEL DE VIDA Y CONTINUAR SIENDO EL CAPITAL SOCIAL ESTRATEGICO DEL CAMPO COLOMBIANO. D) CELEBRAR CONVENIOS O CONTRATOS CON EL GOBIERNO NACIONAL, DEPARTAMENTAL O MUNICIPAL Y CON OTRAS ENTIDADES DE CARACTER PUBLICO Y PRIVADO, PARA LA GESTION, ADMINISTRACION Y MANEJO DE PROGRAMAS DE INVERSION E IMPUESTOS, NORMAS, CONTROLES, PRESTACION DE SERVICIOS, PROPAGANDA Y, EN GENERAL, SOBRE TODO LO QUE TIENDA A BENEFICIAR AL CAFICULTOR. E) CELEBRAR PACTOS O CONVENIOS CON ORGANIZACIONES SIMILARES DE OTROS PAISES PRODUCTORES, CON INSTITUCIONES INTERNACIONALES, CON ORGANIZACIONES NO GUBERNAMENTALES Y CON EMPRESAS PRIVADAS PARA LA DEFENSA DE LOS INGRESOS DE LOS CAFICULTORES Y EL FOMENTO DEL CONSUMO, DEL CULTIVO, PROPAGANDA; CUOTAS DE EXPORTACION, PRECIOS, TRANSPORTE, BANCA, IMPUESTOS Y COMERCIO CAFETERO. F) ENTREGAR FONDOS EN FIDEICOMISO, O BAJO CUALQUIER MODALIDAD, A ENTIDADES NACIONALES O DEL EXTERIOR, PARA FINANCIAR ACTIVIDADES RELACIONADAS CON EL CAFICULTOR Y LA INDUSTRIA CAFETERA EN GENERAL. G) CON ARREGLO A LOS REGLAMENTOS ESPECIFICOS ADOPTADOS POR LOS ORGANOS COMPETENTES, PRESTAR ASISTENCIA A LOS CAFICULTORES, CON EL FIN DE MEJORAR SU NIVEL DE INGRESOS. H) DIVULGAR ENTRE LOS CAFICULTORES LOS AVANCES TECNICOS Y LA INFORMACION CORRESPONDIENTE SOBRE EL CULTIVO, BENEFICIO Y COMERCIO DEL CAFE Y MANTENERLOS ACTUALIZADOS EN RELACION CON EL COMPORTAMIENTO DE LAS VARIABLES ECONOMICAS, SOCIALES Y PRODUCTIVAS QUE INCIDEN SOBRE LA ACTIVIDAD. I) APOYAR AL CAFICULTOR MEDIANTE LA ADQUISICION, VENTA, PRESTAMO, ALQUILER O DISTRIBUCION DE LOS ELEMENTOS NECESARIOS O UTILES PARA LA CAFICULTURA. J) ORGANIZAR, ADMINISTRAR O PROMOVER OBRAS DE UTILIDAD COMUN, EN CUANTO FAVOREZCAN LA CAFICULTURA DEL PAIS. K) ORGANIZAR, ADMINISTRAR O PROMOVER, CON SUS RECURSOS O CON EL CONCURSO DE ORGANIZACIONES CAFETERAS O ENTIDADES OFICIALES O PARTICULARES DE COLOMBIA O DE OTROS PAISES, ESTABLECIMIENTOS DE COMERCIO DEDICADOS A LA VENTA, DISTRIBUCION Y DIVULGACION DEL CONSUMO DE CAFE, ALMACENES GENERALES DE DEPOSITO DE CAFE, BODEGAS, PLANTAS DE PROCESAMIENTO DE CAFE Y EMPRESAS DE COMERCIALIZACION, ALMACENES DE PROVISION AGRICOLA, SOCIEDADES COOPERATIVAS, ENTIDADES SOLIDARIAS O ASOCIATIVAS DE AHORRO Y CREDITO, ESQUEMAS DE COBERTURA Y CONTROL DE RIESGO, TOSTADORAS Y TRILLADORAS DE CAFE, CENTRALES DE BENEFICIO, QUE TENGAN POR OBJETO MEJORAR EL INGRESO DEL CAFICULTOR, DISMINUIR LOS COSTOS DE PRODUCCION, HACER MAS EFICIENTE SU COMERCIALIZACION Y MEJORAR LAS CALIDADES DEL CAFE; L) CREAR OFICINAS DE PROPAGANDA, VENTA, COMISION DEPOSITO DE CAFE, EN EL INTERIOR Y EN EL EXTERIOR Y ORGANIZAR, ADMINISTRAR O PARTICIPAR EN BOLSAS CAFETERAS. M) ORGANIZAR Y SOSTENER UNA ACTIVA Y ADECUADA PROPAGANDA DE CAFE COLOMBIANO EN EL INTERIOR Y EN EL EXTERIOR, BUSCANDO GENERAR MAYOR RECONOCIMIENTO Y VALOR AGREGADO AL PRODUCTOR Y PROMOVER EL AUMENTO DEL CONSUMO. N) COMPRAR CAFE, PROCESARLO Y VENDERLO EN EL MERCADO INTERIOR Y DEL EXTERIOR, O RETENERLO EN EL PAIS. O) REALIZAR UN SEGUIMIENTO DE LA INDUSTRIA CAFETERA MUNDIAL, Y SUS AGENTES, LOS PAISES PRODUCTORES, LOS PAISES CONSUMIDORES, Y, EN GENERAL, DE TODOS AQUELLOS ASPECTOS NACIONALES O INTERNACIONALES QUE SEAN RELEVANTES PARA EL DESARROLLO DE LA INDUSTRIA CAFETERA COLOMBIANA. P) LLEVAR UNA COMPLETA ESTADISTICA DE LA ACTIVIDAD CAFETERA Y MANTENER PERMANENTEMENTE INFORMADO AL GREMIO, EN SUS DIVERSAS INSTANCIAS, SOBRE LO CONCERNIENTE A PRECIOS EN LOS PRINCIPALES MERCADOS, EXISTENCIAS O VENTAS EN LOS MAS IMPORTANTES

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CENTROS DE DISTRIBUCION O CONSUMO MUNDIAL Y SOBRE LOS PRONOSTICOS RELATIVOS A LA PRODUCCION DE CAFE, Y, EN GENERAL, A TODO LO QUE PUEDA CONVENIR PARA LA BUENA ORGANIZACION DE LA INDUSTRIA CAFETERA. IGUALMENTE CORRESPONDE A LA FEDERACION, EN EL PAIS, LA ESTADISTICA DE PRODUCTORES, DE PREDIOS CAFETEROS, DE PRODUCCION Y COSTOS, DE PRODUCTIVIDAD, Y, EN GENERAL, DE TODAS LAS ACTIVIDADES CAFETERAS QUE PUEDAN SERVIR PARA LA MEJOR ORIENTACION DE LA INDUSTRIA EN COLOMBIA, ASI COMO LOS INDICADORES SOCIALES DE LA ACTIVIDAD CAFETERA. Q) PROMOVER Y EJECUTAR PROGRAMAS DE DESARROLLO ECONOMICO Y DE COMPLEMENTACION DEL INGRESO DEL CAFICULTOR. R) APOYAR LA INVESTIGACION Y LA TRANSFERENCIA DE TECNOLOGIA, PARA EL CULTIVO, EL PROCESAMIENTO Y LA COMERCIALIZACION DEL CAFE PROCURANDO, EN TODO CASO, LA PRESERVACION DEL MEDIO AMBIENTE Y LA CONSERVACION DE LOS RECURSOS NATURALES. S) FOMENTAR, APOYAR E INTENSIFICAR EL ESTABLECIMIENTO DE INDUSTRIAS COMPLEMENTARIAS O QUE TIENDAN A INCREMENTAR EL INGRESO DE LOS CAFICULTORES. T) CONTRATAR EMPRESTITOS O PRESTAMOS CON ENTIDADES NACIONALES O EXTRANJERAS, TENIENDO EN CUENTA LAS DISPOSICIONES DE LOS ESTATUTOS Y DE LOS CONTRATOS CELEBRADOS CON EL GOBIERNO NACIONAL, SI FUERE EL CASO, Y CONSTITUIR LAS GARANTIAS PERTINENTES. U) CON RECURSOS PROPIOS U OBTENIDOS DE ENTIDADES OFICIALES, SEMIOFICIALES O PARTICULARES, PROCURAR LA DOTACION DE LA INFRAESTRUCTURA FISICA Y SOCIAL INDISPENSABLE PARA LOGRAR EL DESARROLLO SOCIAL Y ECONOMICO DE LOS HABITANTES DE LA ZONA DE INFLUENCIA CAFETERA. V) PROCURAR POR LOS MEDIOS QUE SE CONSIDEREN MAS ADECUADOS EL ESTABLECIMIENTO DE UNA POLITICA INTEGRAL DE PROTECCION SOCIAL A LOS CAFICULTORES. W) ORGANIZAR FUNDACIONES O ASOCIACIONES SIN ANIMO DE LUCRO, PARA ATENDER LA PRESTACION DE SERVICIOS A SUS FEDERADOS, TALES COMO LA EDUCACION Y LA SALUD. X) REALIZAR INVERSIONES PERMANENTES CON SUS RECURSOS SOLO EN ACTIVOS QUE PERTENEZCAN A LA INDUSTRIA CAFETERA Y EFECTUAR INVERSIONES TEMPORALES, PARA OBTENER BENEFICIOS Y RENDIMIENTOS QUE GARANTICEN LA SOLIDEZ PATRIMONIAL DE LA FEDERACION Y LE PERMITAN ATENDER OPORTUNA Y ADECUADAMENTE SUS PROGRAMAS A FAVOR DE SUS ASOCIADOS Y DE BIENESTAR PARA SUS SERVIDORES. Y) REALIZAR TODA CLASE DE ACTOS O NEGOCIOS JURIDICOS. PODRAN EN CONSECUENCIA, ADQUIRIR Y ENAJENAR TODA CLASE DE BIENES, EN CUANTO LA ADQUISICION O ENAJENACION CORRESPONDAN AL OBJETO.

CERTIFICA :

PATRIMONIO : \$ 1,314,923.00

CERTIFICA :

** ORGANO DIRECTIVO **

NOMBRE
MIEMBRO PRINCIPAL COMITE EJECUTIVO
RESTREPO SALAZAR JUAN CAMILO
MIEMBRO PRINCIPAL COMITE EJECUTIVO
GOMEZ ESTRADA MARIO

IDENTIFICACION

C.C. 00017157059

C.C. 00010211732

MIEMBRO PRINCIPAL COMITE EJECUTIVO CAMPOS ARANA CESAR ELADIO	C.C. 00005881550
MIEMBRO PRINCIPAL COMITE EJECUTIVO RAMIREZ MONTOYA CARLOS ROBERTO	C.C. 00092937864
MIEMBRO PRINCIPAL COMITE EJECUTIVO ECHEVERRY CASTAÑO CESAR AUGUSTO	C.C. 00009956514
MIEMBRO PRINCIPAL COMITE EJECUTIVO GOMEZ BUENDIA CARLOS ALBERTO	C.C. 00017057077
MIEMBRO PRINCIPAL COMITE EJECUTIVO AZUERO RAMIREZ CARLOS FLORESMIRO	C.C. 00012090307
MIEMBRO PRINCIPAL COMITE EJECUTIVO CASTRILLON M FERNANDO	C.C. 00010518013
MIEMBRO PRINCIPAL COMITE EJECUTIVO CALA ROBAYO JORGE	C.C. 00000160838
MIEMBRO PRINCIPAL COMITE EJECUTIVO CAMPO GONZALEZ RAMON ALBERTO	C.C. 00012558183
MIEMBRO PRINCIPAL COMITE EJECUTIVO CAMPO SOTO RODOLFO JOSE	C.C. 00005131927
MIEMBRO PRINCIPAL COMITE EJECUTIVO ROMAN CALDERON HERNAN MIGUEL	C.C. 00017197691
MIEMBRO PRINCIPAL COMITE EJECUTIVO YAÑEZ CARVAJAL ALFREDO	C.C. 00013223632
MIEMBRO PRINCIPAL COMITE EJECUTIVO GARCIA PARRA JAIME	C.C. 00000001394
MIEMBRO PRINCIPAL COMITE EJECUTIVO BOHORQUEZ BOHORQUEZ JAVIER	C.C. 00017066695

CERTIFICA :

REPRESENTACION LEGAL: LA REPRESENTACION LEGAL DE LA FEDERACION PARA ASUNTOS JUDICIALES, EXTRAJUDICIALES Y ADMINISTRATIVOS DE CARACTER LABORAL INDIVIDUAL O COLECTIVO, LA TENDRA EL DIRECTOR DE RELACIONES INDUSTRIALES Y EN SU DEFECTO A QUIEN PARA ESOS PROPOSITOS DESIGNE EL GERENTE GENERAL. LA DESIGNACION DE DOS REPRESENTANTES LEGALES SUPLENTE, QUIENES TENDRAN LA DISTINCION DE PRIMER GERENTE AUXILIAR Y SEGUNDO GERENTE AUXILIAR, Y DEL SECRETARIO GENERAL ESTARA A CARGO DEL GERENTE GENERAL, PREVIA CONSULTA CON EL COMITE DIRECTIVO. EN CASO DE AUSENCIAS TEMPORALES, EL GERENTE GENERAL ENCARGARA A UNO DE SUS SUPLENTE. CUANDO SE TRATE DE AUSENCIAS PERMANENTES O GENERADAS POR UN IMPEDIMENTO DEL GERENTE GENERAL, SERA EL COMITE DIRECTIVO QUIEN ENCARGUE A UNO DE LOS DOS REPRESENTANTES LEGALES SUPLENTE, MIENTRAS SE DESIGNA UN NUEVO TITULAR EN PROPIEDAD.

CERTIFICA :

REPRESENTACION LEGAL

PRINCIPAL(ES): - GERENTE GENERAL

SILVA LUJAN GABRIEL

C.C. 00079142102

SUPLENTE(ES) : - PRIMER GERENTE AUXILIAR

MUÑOZ ORTEGA LUIS GENARO

C.C. 00010536679

- SEGUNDO GERENTE AUXILIAR

DURAN CATALINA CRANE DE

C.C. 00035460200

- DIRECTOR DE RELACIONES INDUSTRIALES

MUÑOZ ORTEGA LUIS GENARO

C.C. 00010536679

CERTIFICA :

FACULTADES DEL REPRESENTANTE LEGAL: - A) ORGANIZAR Y EJECUTAR LAS

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POLITICAS Y LOS PROGRAMAS DE LA FEDERACION, DE ACUERDO CON LOS ESTATUTOS, LOS CONTRATOS CELEBRADOS CON EL GOBIERNO NACIONAL, LOS ACUERDOS Y RESOLUCIONES DE LOS CONGRESOS NACIONALES DE CAFETEROS Y LAS ORDENES E INSTRUCCIONES DEL COMITE NACIONAL COMO ORGANISMO ADMINISTRADOR DEL FONDO NACIONAL DEL CAFE Y DEL COMITE DIRECTIVO COMO MAXIMA AUTORIDAD ADMINISTRATIVA DE LA FEDERACION; - B) REPRESENTAR LEGALMENTE A LA FEDERACION Y ACTUAR COMO SU VOCERO ANTE TODAS LAS AUTORIDADES DE LA REPUBLICA O DE CUALQUIER PAIS Y ANTE TERCEROS, CON FACULTAD PARA DELEGAR EN OTROS EMPLEADOS O EN APODERADOS ESPECIALES; EL GERENTE GENERAL O SUS SUPLENTE PODRAN CONFERIR PODERES GENERALES A LOS DIRECTORES EJECUTIVOS DE LOS COMITES DEPARTAMENTALES DE CAFETEROS PARA QUE REPRESENTEN A LA FEDERACION ANTE LAS AUTORIDADES DEL RESPECTIVO DEPARTAMENTO Y ATIENDAN TODO LO RELACIONADO CON LOS EMPLEADOS DE CADA COMITE; C) DIRIGIR LAS RELACIONES DE LA FEDERACION CON LAS ENTIDADES PUBLICAS Y PRIVADAS. - D) ELABORAR DE MANERA QUINQUENAL UN PLAN ESTRATEGICO EN CONCORDANCIA CON EL OBJETO DE LA FEDERACION NACIONAL DE CAFETEROS, AL CUAL DEBERAN ADECUARSE LOS PLANES Y PROGRAMAS DE LOS COMITES DEPARTAMENTALES Y MUNICIPALES. DICHO PLAN ESTRATEGICO SERA LLEVADO PARA SU APROBACION AL COMITE DIRECTIVO PARA SU ADOPCION POR EL CONGRESO NACIONAL DE CAFETEROS. E) PROVEER LOS CARGOS EN LA OFICINA CENTRAL DE LA FEDERACION, DE ACUERDO CON EL ORGANIGRAMA, LA POLITICA SALARIAL Y LA PLANTA DE CARGOS APROBADOS POR EL COMITE DIRECTIVO. F) CELEBRAR TODA CLASE DE ACTOS, CONTRATOS O NEGOCIOS JURIDICOS, CUYA CUANTIA NO EXCEDA DE MIL QUINIENTOS CINCUENTA SALARIOS MINIMOS MENSUALES LEGALES VIGENTES (1.550 SMMLV) EN CONCORDANCIA CON EL LITERAL P) DEL ARTICULO 23. G) MANTENER INFORMADOS A LA DIRIGENCIA GREMLIAL Y A LOS CAFICULTORES SOBRE LA SITUACION Y PERSPECTIVAS DEL MERCADO Y COSECHAS DE CAFE, Y ATENDER LAS CONSULTAS QUE LE SEAN FORMULADAS. H) ORDENAR LOS GASTOS DE LA FEDERACION, DENTRO DEL MARCO DEL PLAN ESTRATEGICO, LOS PRESUPUESTOS Y NORMAS RESPECTIVAS. I) ESTUDIAR LAS CIRCUNSTANCIAS QUE CONFRONTE LA CAFICULTURA, Y PRESENTAR AL CONGRESO NACIONAL DE CAFETEROS, AL COMITE NACIONAL Y AL COMITE DIRECTIVO, LAS INICIATIVAS QUE ESTIMARE CONVENIENTES PARA SU BUEN MANEJO. J) INFORMAR AL COMITE NACIONAL SOBRE LA SITUACION DEL FONDO NACIONAL DEL CAFE Y AL COMITE DIRECTIVO SOBRE LA PRODUCCION, COMERCIALIZACION, INVESTIGACION, EXTENSION, LA SITUACION FINANCIERA Y DEMAS TEMAS ADMINISTRATIVOS DE LA FEDERACION; K) PRESENTAR PERIODICAMENTE AL COMITE DIRECTIVO LOS ESTADOS FINANCIEROS DE LA FEDERACION; L) PRESENTAR AL CONGRESO NACIONAL DE CAFETEROS UN INFORME DETALLADO DE LAS LABORES REALIZADAS POR LA FEDERACION TANTO EN EL PAIS COMO EN EL EXTERIOR A PARTIR DE LA REUNION DEL ULTIMO CONGRESO NACIONAL DE CAFETEROS; SOBRE LA MANERA QUE SE HAYAN CUMPLIDO LAS DECISIONES DE ESTE; SOBRE LOS PROBLEMAS PRINCIPALES, LAS ACTIVIDADES DE LA INDUSTRIA, LAS SOLUCIONES QUE CONVENDRIA ADOPTAR; Y SOBRE LOS DEMAS TEMAS

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PERTINENTES DE ACUERDO CON LA SITUACION Y PERSPECTIVAS DE LA FEDERACION Y DE LA ECONOMIA CAFETERA; M) ELABORAR EL PROYECTO DE PRESUPUESTO DE LA FEDERACION PARA LA VIGENCIA SIGUIENTE, SOMETERLO A CONSIDERACION DEL COMITE DIRECTIVO Y PRESENTARLO OPORTUNAMENTE AL CONGRESO NACIONAL DE CAFETEROS, PARA SU ESTUDIO Y APROBACION. N) MANTENER OPORTUNAMENTE INFORMADOS A LOS COMITES DEPARTAMENTALES SOBRE LAS PRINCIPALES ACTIVIDADES DESARROLLADAS POR EL COMITE NACIONAL, EL COMITE DIRECTIVO, LA GERENCIA GENERAL Y DEMAS DEPENDENCIAS; O) ORIENTAR LA POLITICA SALARIAL APLICABLE A LOS EMPLEADOS ADSCRITOS A LA GERENCIA GENERAL Y DEMAS GERENCIAS, OFICINAS DEL EXTERIOR Y DE LOS DIRECTORES EJECUTIVOS, UNA VEZ APROBADA POR EL COMITE DIRECTIVO. P) COORDINAR LA POLITICA DE INVERSIONES, GASTOS, PROGRAMAS Y ACTIVIDADES DE LOS COMITES DEPARTAMENTALES EN CONSONANCIA CON LOS LINEAMIENTOS ESTABLECIDOS POR EL CONGRESO NACIONAL DE CAFETEROS, EL COMITE NACIONAL Y EL COMITE DIRECTIVO. Q) COORDINAR LA ACCION GREMIAL PARA LA EFICAZ DEFENSA DE LOS PRODUCTORES Y DE LA ACTIVIDAD CAFETERA Y LAS DISTINTAS CAMPAÑAS QUE DEBAN EJECUTAR LOS COMITES DEPARTAMENTALES A TRAVES DE SUS DIRECTORES EJECUTIVOS. R) OTORGAR EL VISTO BUENO A LA DESIGNACION DE LOS DIRECTORES EJECUTIVOS QUE REALICEN LOS COMITES DEPARTAMENTALES Y SOLICITAR SU REMOCION CUANDO SE PRESENTEN LAS CIRCUNSTANCIAS PREVISTAS EN EL LITERAL D) DEL ARTICULO 30. EN CASO QUE EL COMITE DEPARTAMENTAL NO PROCEDA A LA REMOCION SOLICITADA POR EL GERENTE GENERAL, SE CONSULTARA AL COMITE DIRECTIVO PARA SU DECISION FINAL. EL GERENTE GENERAL PODRA APLAZAR, INFORMANDO DE MANERA OPORTUNA AL COMITE DIRECTIVO, EL ENVIO DE LOS DINEROS QUE CORRESPONDEN A LOS COMITES DEPARTAMENTALES CUANDO ESTOS NO HAYAN PRESENTADO OPORTUNAMENTE LAS CUENTAS CORRESPONDIENTES, O HABIENDOLAS PRESENTADO NO FUEREN SATISFACTORIAS O HAYAN INCURRIDO EN VIOLACION DE LAS NORMAS ESTATUTARIAS O REGLAMENTARIAS, O DE LAS POLITICAS GENERALES DE LA FEDERACION, CASO EN EL CUAL LA GERENCIA GENERAL PODRA ORDENAR LA INTERVENCION DE DICHO COMITE DEPARTAMENTAL. CORRESPONDE AL COMITE DIRECTIVO AUTORIZAR LA CELEBRACION DE CONTRATOS CON EL GOBIERNO NACIONAL, CON ENTIDADES TERRITORIALES, CON INSTITUCIONES PUBLICAS Y PRIVADAS, CON ORGANISMOS INTERNACIONALES Y CON ORGANIZACIONES NO GUBERNAMENTALES A NOMBRE DE LA FEDERACION; AUTORIZAR AL GERENTE GENERAL PARA LA CELEBRACION DE ACTOS, CONTRATOS O NEGOCIOS JURIDICOS A NOMBRE DE LA FEDERACION NACIONAL DE CAFETEROS, INCLUIDOS PERO NO LIMITADOS A LA ADQUISICION, ENAJENACION, GRAVAMENES O LIMITACIONES DEL DOMINIO DE INMUEBLES, A CUALQUIER TITULO, QUE SE HAGAN POR LA OFICINA CENTRAL O POR LOS COMITES DEPARTAMENTALES, LO MISMO QUE LA PARTICIPACION EN SOCIEDADES, CUYA CUANTIA EXCEDA DE MIL QUINIENTOS CINCUENTA SALARIOS MINIMOS MENSUALES LEGALES VIGENTES (1.550 SMMLV).

CERTIFICA:

QUE POR RESOLUCION NO. 002 DEL 12 DE MARZO DE 1990, INSCRITA EL 3 DE JUNIO DE 1997, BAJO EL NO. 5857 DEL LIBRO 51, EL GERENTE GENERAL DE LA FEDERACION NACIONAL DE CAFETEROS DE COLOMBIA, EN USO DE SUS ATRIBUCIONES, Y CONFORME AL ARTICULO 23 DE LOS ESTATUTOS, FACULTO A CADA UNO DE LOS SEÑORES SUBGERENTE GENERAL, PRIMER GERENTE AUXILIAR Y SEGUNDO GERENTE AUXILIAR, GERENTE ADMINISTRATIVO PARA QUE, ACTUANDO SEPARADAMENTE, REPRESENTEN A LA FEDERACION NACIONAL DE CAFETEROS DE COLOMBIA, EJERCIENDO SU PERSONERIA, ANTE TERCEROS AUTORIDADES CIVILES, JUDICIALES Y ADMINISTRATIVAS DE LA REPUBLICA O DE CUALQUIER OTRO PAIS .-----



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CERTIFICA :

QUE POR ESCRITURA PUBLICA NO. 102 DE LA NOTARIA 06 DE BOGOTA D.C., DEL 16 DE ENERO DE 2002, INSCRITA EL 23 DE JULIO DE 2002 BAJO EL NO. 52475 DEL LIBRO I, DE LOS LIBROS DE LAS ENTIDADES SIN ANIMO DE LUCRO, COMPARECIO EMILIO ECHEVERRI MEJIA IDENTIFICADO CON LA CEDULA DE CIUDADANIA NO. 4. 317. 954 DE MANIZALES, EN SU CALIDAD DE REPRESENTANTE LEGAL DE LA SOCIEDAD DE LA REFERENCIA, POR MEDIO DE LA PRESENTE ESCRITURA PUBLICA, OTORGA PODER GENERAL A LUIS GENARO MUÑOZ ORTEGA, IDENTIFICADO CON LAS CEDULA DE CIUDADANIA NO. 10.536.679 DE BOGOTA, PARA QUE EN NOMBRE DE LA ENTIDAD REALICE LOS SIGUIENTES ACTOS: 1. SUSCRIBA LA ESCRITURA PUBLICA MEDIANTE LA CUALES LA FEDERACION ACEPTE LAS HIPOTECAS QUE LOS CITADOS EMPLEADOS DE LA FEDERACION O DE LOS ALMACENES GENERALES DE DEPOSITO DE CAFE ALMACAFE CONSTITUYAN EN FAVOR DE LA FEDERACION PARA GARANTIZAR EL PAGO DE LOS PRESTAMOS. 2. SUSCRIBA LAS ESCRITURAS PUBLICAS DE CANCELACION DE LAS HIPOTECAS, QUE COMO GARANTIA DE LOS PRESTAMOS DE VIVIENDA OTORGADOS TANTO A LOS EMPLEADOS DE LA FEDERACION COMO A LOS DE LOS ALMACENES GENERALES DE DEPOSITO DE CAFE ALMACAFE, HAYAN SIDO CONSTITUIDOS A FAVOR DE LA FEDERACION. 3. CONFIERE PODERES ESPECIALES, CON LOS MISMOS FINES A LOS SEÑORES GERENTES REGIONALES DE LOS ALMACENES GENERALES DE DEPOSITO DE CAFE ALMACAFE. 4. ASUMA EL MANEJO DE TODAS LAS GESTIONES NOTARIALES PARA EL BUEN EXITO DE LA GESTION QUE SE ENCOMIENDA. SOLICITE Y RETIRE LAS COPIAS DE LAS ESCRITURAS. 5. REPRESENTA A LA FEDERACION EN LA CELEBRACION DE CONTRATOS DE MUTUO, POR CONCEPTO DE PRESTAMOS DE DINERO OTORGADOS POR LA FEDERACION A SUS EMPLEADOS O A LOS DE ALMACAFE EN EL DESARROLLO DEL PROGRAMA DE BIENESTAR SOCIAL, Y ACEPTE Y EN SU MOMENTO CANCELE LOS GRAVAMENES DE PRENDA O SIN TENENCIA O LIMITACIONES DEL DOMINIO SOBRE VEHICULOS AUTOMOTORES, CONSTITUYAN LOS DEUDORES PARA GARANTIZARLE A LA FEDERACION EL PAGO DE LOS CORRESPONDIENTES PRESTAMOS.

CERTIFICA :

QUE POR ESCRITURA PUBLICA NO. 657 DE LA NOTARIA 27 DE BOGOTA D.C., DEL 01 DE JUNIO DE 2004, INSCRITA EL 27 DE OCTUBRE DE 2005 BAJO EL NO. 91131 DEL LIBRO I DE LAS ENTIDADES SIN ANIMO DE LUCRO, COMPARECIO LUIS GERARDO MUÑOZ ORTEGA, IDENTIFICADO CON LA CEDULA DE CIUDADANIA NO. 10.536. 679 DE POPAYAN, OBRANDO COMO REPRESENTANTE LEGAL DE LA ENTIDAD DE LA REFERENCIA POR MEDIO DE LA PRESENTE ESCRITURA PUBLICA CONFIERE PODER GENERAL AL DOCTOR GABRIEL AUGUSTO ROJAS GIRALDO, IDENTIFICADO CON LA CEDULA DE CIUDADANIA NO. 19.366. 099 DE BOGOTA, PARA QUE EN NOMBRA Y REPRESENTACION DE LA FEDERACION NACIONAL DE CAFETEROS DE COLOMBIA Y REVESTIDO DE PLENAS FACULTADES PARA CONCILIAR, COMPAREZCA A LAS AUDIENCIAS DE CONCILIACION, SANEAMIENTO Y DECISION DE EXCEPCIONES PREVIAS Y FIJACION DEL LITIGIO, DE QUE TRATA EL ARTICULO 101 DEL CODIGO DE PROCEDIMIENTO CIVIL, QUE SE LLEVEN A CABO ANTE LAS

AUTORIDADES JURISDICCIONALES DEL ORDEN CIVIL, EN TODO EL TERRITORIO DE LA REPUBLICA, DENTRO DE LOS PROCESOS CIVILES ORDINARIOS ABREVIADOS Y DE EJECUCION (EJECUTIVO SINGULAR, EJECUTIVO HIPOTECARIO Y EJECUTIVO CON TITULO PRENDARIO), EN LOS CUALES LA FEDERACION SEA PARTE COMO DEMANDANTE O COMO DEMANDADA, E IGUALMENTE PARA QUE COMPAREZCA EN LA MISMA CLASE DE PROCESOS, REVESTIDO DE PLENA FACULTAD PARA CONFESAR, A ABSOLVER LOS INTERROGATORIOS A INSTANCIA DE PARTE QUE DEBA ABSOLVER EL REPRESENTANTE LEGAL DE LA FEDERACION. PRESENTE EL DOCTOR GABRIEL AUGUSTO ROJAS GIRALDO, DE LAS CONDICIONES CIVILES ANTERIORMENTE ANOTADAS, MANIFIESTA QUE ACEPTA EL PODER GENERAL QUE MEDIANTE LA PRESENTE ESCRITURA SE CONFIERE.

CERTIFICA :

QUE POR ESCRITURA PUBLICA NO. 925 DE LA NOTARIA 27 DE BOGOTA D.C., DEL 08 DE AGOSTO DE 2005, INSCRITA EL 27 DE OCTUBRE DE 2005 BAJO EL NO. 91130 DEL LIBRO I DE LAS ENTIDADES SIN ANIMO DE LUCRO, COMPARECIO LUIS GERARDO MUÑOZ ORTEGA, IDENTIFICADO CON LA CEDULA DE CIUDADANIA NO. 10. 536. 679 DE POPAYAN, OBRANDO COMO REPRESENTANTE LEGAL DE LA ENTIDAD DE LA REFERENCIA POR MEDIO DE LA PRESENTE ESCRITURA PUBLICA CONFIERE PODER GENERAL AL DOCTOR GABRIEL AUGUSTO ROJAS GIRALDO, MAVOR VECINO DE ESTA CIUDAD, IDENTIFICADO CON CEDULA DE CIUDADANIA NUMERO 19.366.099 DE BOGOTA Y LIBRETA MILITAR NUMERO 19.366. 099, DISTRITO MILITAR NUMERO TREINTA Y OCHO (38), JEFE DEL DEPARTAMENTO DE PERSONAL DE LA ENTIDAD, PARA QUE REVESTIDO DE LA PLENITUD DE LAS FACULTADES QUE LOS ESTATUTOS CONFIEREN A QUIEN OTORGA ESTE PODER, REPRESENTA A LA FEDERACION NACIONAL DE CAFETEROS DE COLOMBIA, POR, UNA PARTE, EN TODA CLASE DE PROCESOS ORDINARIOS, EJECUTIVOS Y DE FUERO SINDICAL QUE SE ADELANTEN ANTE LA JUSTICIA LABORAL EN CUALQUIER PARTE DEL TERRITORIO NACIONAL Y CUALQUIERA QUE SEA LA ; JERARQUIA DEL JUZGADO O TRIBUNAL QUE CONOZCA DE ELLOS, EN LOS CUALES DEBA INTERVENIR A LA FEDERACION COMO DEMANDANTE O COMO DEMANDADA, Y, POR OTRA PARTE, EN AUDIENCIAS DE CONCILIACION PROCESAL EXTRAPROCESAL DE CARACTER LABORAL QUE LA FEDERACION QUIERA LLEVAR A CABO, CON LA INTERVENCION DE CUALQUIER JUEZ LABORAL. IGUALMENTE LE CONFIERE PODER PARA QUE, DENTRO DE LA MISMA ORBITA LABORAL REPRESENTA A LA FEDERACION ANTE EL MINISTERIO DE PROTECCION SOCIAL, EN TODAS LAS DILIGENCIAS DE CARACTER ADMINISTRATIVO LABORAL INDIVIDUAL Y DE FUERO SINDICAL EN AQUELLA DEBA FORMAR PARTE, EN VIRTUD DE TODO LO ANTERIOR, EL DOCTOR ROJAS GIRALDO PODRA RECIBIR TODA CLASE DE NOTIFICACIONES TANTO ADMINISTRATIVAS COMO JUDICIALES, CONCURRIR, CON PLENA FACULTAD PARA CONCILIAR, A AUDIENCIAS DE CONCILIACION TANTO PROCESALES COMO EXTRAPROCESALES, JUDICIALES O ADMINISTRATIVAS ABSOLVER, CON PLENA FACULTAD PARA CONFESAR, INTERROGATORIOS DE PARTE QUE SE LE FORMULEN AL REPRESENTANTE LEGAL DE LA FEDERACION DENTRO DE PROCESOS ORDINARIOS LABORALES PROCESOS EJECUTIVOS LABORALES Y PROCESOS DE FUERO SINDICAL. TAMBIEN SE LE CONFIERE PODER PARA INSTAURAR Y CONTESTAR LAS ACCIONES DE TUTELA ANTE TODAS LAS JURISDICCIONES EN LAS QUE SEA PARTE O INTERVENGA LA FEDERACION. IGUALMENTE SE LE CONFIERE PODER PARA ADELANTE TRAMITES ADMINISTRATIVOS ANTE EL INSTITUTO DE SEGURO SOCIAL ISS, Y DEMAS ENTIDADES DE SEGURIDAD SOCIAL COMO EMPRESAS DE RIESGOS PROFESIONALES, CAJAS DE COMPENSACION FAMILIAR, SENA, INSTITUTO COLOMBIANO DE BIENESTAR FAMILIAR Y SUPERINTENDENCIA DE SALUD, TALES COMO RADICAR DOCUMENTOS, RECIBIR NOTIFICACIONES Y DEMAS ACTIVIDADES; . QUE REQUIERAN ACREDITAR LA REPRESENTACION LEGAL DE



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CAMARA DE COMERCIO DE BOGOTA

SEDE NORTE

3 DE AGOSTO DE 2007

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LA : FEDERACION, ANTE DICHAS ENTIDADES. ASI COMO INTERPONER, RECURSOS Y NOTIFICARSE DE LAS DECISIONES QUE SE ADOPTEN ANTE LAS; JUNTAS REGIONALES DE CALIFICACION DE INVALIDEZ Y LA JUNTAY; NACIONAL DE CALIFICACION DE INVALIDEZ. EL PRESENTE PODER DEJA SIN EFECTOS EL CONFERIDO MEDIANTE ESCRITURA PUBLICA NUMERO SEISCIENTOS CUARENTA Y SIETE (647) DEL CATORCE (14) DE FEBRERO DE DOS MIL DOS (2002) Y EL CONFERIDO MEDIANTE ESCRITURA PUBLICA NUMERO TRES MIL DOSCIENTOS VEINTISIETE (3227) DEL NUEVE (9) DE JULIO DE DOS MIL TRES (2003), EXPEDIDOS LOS DOS (2) POR LA NOTARIA SEXTA (6A.) DEL CIRCULO DE BOGOTA.

CERTIFICA :

QUE MEDIANTE ESCRITURA PUBLICA NO. 3041 DE LA NOTARIA 6 DE BOGOTA D.C. DEL 10 DE JULIO DE 2001, INSCRITA EL 31 DE JULIO DE 2006 BAJO EL NO. 104760 DEL LIBRO V, COMPARECIO EMILIO ECHEVERRI MEJIA, MAYOR DE EDAD Y ESTA DOMICILIADO EN ESTA CIUDAD, QUIEN SE IDENTIFICA CON LA CEDULA DE CIUDADANIA NO. 4. 317. 954 DE MANIZALES QUE ACTUANDO EN SU CONDICION DE PRESENTANTE LEGAL DE LA FEDERACION NACIONAL DE CAFETEROS DE COLOMBIA CONFIERE PODER GENERAL AL DOCTOR CARLOS EDUARDO UMAÑA LIZARAZO, QUE ES MAYOR DE EDAD Y DOMICILIADO EN ESTA CIUDAD Y SE IDENTIFICA CON LA CEDULA DE CIUDADANIA NO. 74. 281. 101 DE GUATEQUE TARJETA PROFESIONAL DE ABOGADO NO. 86. 022 DEL CONSEJO SUPERIOR DE LA JUDICATURA, PARA QUE EN NOMBRE Y REPRESENTACION DE LA FEDERACION Y REVESTIDO DE PLENAS FACULTADES PARA CONCILIAR, COMPAREZCA A LAS AUDIENCIAS DE CONCILIACION, SANEAMIENTO, DECISION DE EXCEPCIONES PREVIAS Y FIJACION DEL LITIGIO, DE QUE TRATA EL ARTICULO 101 DEL CODIGO DE PROCEDIMIENTO CIVIL, QUE SE LLEVEN A CABO ANTE LAS AUTORIDADES JURISDICCIONALES DEL ORDEN CIVIL, EN TODO EL TERRITORIO DE LA REPUBLICA, DENTRO DE LOS PROCESOS CIVILES ORDINARIOS, ABREVIADOS DE EJECUCION (EJECUTIVO SINGULAR, EJECUTIVO CON TITULO HIPOTECARIO Y EJECUTIVO CON TITULO PRENDARIO), EN LOS CUALES LA FEDERACION SEA PARTE COMO DEMANDANTE O COMO DEMANDADA, E IGUALMENTE PARA QUE COMPAREZCA EN LA MISMA CLASE DE PROCESOS, REVESTIDO DE PLENA FACULTAD PARA CONFESAR A ABSOLVER LOS INTERROGATORIOS A INSTANCIA DE PARTE QUE DEBA ABSORVER EL REPRESENTANTE LEGAL DE LA FEDERACION. B. QUE ASE MISMO, CONFIERE PODER AL DOCTOR CARLOS EDUARDO YUMARA LIZARAZO, PARA QUE, IGUALMENTE REVESTIDO DE PLENAS FACULTADES PARA CONCILIAR, COMPAREZCA EN NOMBRE REPRESENTACION DE LA FEDERACION A LAS AUDIENCIAS DE CONCILIACION QUE SE LLEVEN A CABO DENTRO DE LOS PROCESOS CONTENCIOSOS ADMINISTRATIVOS, EN LOS CUALES SEA PARTE LA ENTIDAD. QUE SE ADELANTE ANTE LA JURISDICCION DE LO CONTENCIOSO ADMINISTRATIVO, EN TODO EL PAIS. PARA TODOS LOS EFECTOS ANTERIORES EL APODERADO PODRA TAMBIEN RECIBIR LAS NOTIFICACIONES QUE SEAN DEL CASO.

CERTIFICA:

QUE MEDIANTE ESCRITURA PUBLICA NO. 4176 DE LA NOTARIA 6 DE BOGOTA

Eugenio Rojas de Uruea

D.C. DEL 23 DE AGOSTO DE 2000, INSCRITA EL 31 DE JULIO DE 2006 BAJO EL NO. 104761 DEL LIBRO V, COMPARECIO EMILIO ECHEVERRI MEJIA, MAYOR DE EDAD Y ESTA DOMICILIADA EN ESTA CIUDAD, QUIEN SE IDENTIFICA CON LA CEDULA DE CIUDADANIA NO. 4.317.954 DE MANIZALES QUE ACTUANDO EN SU CONDICION DE PRESENTANTE LEGAL DE LA FEDERACION NACIONAL DE CAFETEROS DE COLOMBIA. PRIMERO : .QUE ACTUANDO EN SU CONDICION DE SEGUNDO GERENTE AUXILIAR - GERENTE ADMINISTRATIVO DE LA FEDERACION NACIONAL DE CAFETEROS DE COLOMBIA Y COMO REPRESENTANTE LEGAL DE LA ENTIDAD, CONFIERE PODER GENERAL A CARLOS EDUARDO UMAÑA LIZARAZO MAYOR DE EDAD, DE ESTADO CIVIL SOLTERO, IDENTIFICADO CON LA CEDULA DE CIUDADANIA NUMERO 74.281101 DE GUATEQUE TARJETA PROFESIONAL DE ABOGADO NO. 86.022 DEL CNNEJO SUPERIOR DE LA JUTICATURA, VECINO Y DOMICILADO EN SANTA FE DE BOGOTA, D. C, PARA QUE. EN NOMBRE Y REPRESENTACION DE LA FEDERACION DE CAFETEROS DE COLOMBIA . 1. LA REPRESENTANTE ANTE LAS DISTINTAS AUTORIDADES JUDICIALES, CON JURISDICCION EN TODO EL PAIS, EN CUALQUIER ACTUACION O DILIGENCIA QUE COMO CONSECUENCIA DE DEMANDAS DE ACCION DE TUTELA INSTAURADAS CONTRA ELLA HAYA LUGAR. 2) RECIBIR EN NOMBRE DE ELLA TODAS LAS MODIFICACIONES QUE SEAN DEL CASO DENTRO DE LAS DEMANDAS DE ACCION DE TUTELA QUE INTERPONGAN 3) CONTESTAR EN SU NOMBRE TODOS LOS REQUERIMIENTOS QUE EN DESARROLLO DE LAS ACCIONES DE TUTELA QUE SE INTERPONGAN SE REALICEN POR PARTE DE LOS DESPACHOS JUDICIALES 4) INTERPONER EN CONTRA DE LAS PROVIDENCIAS O FALLOS QUE RESUELVAN LAS DEMANDAS DE ACCION DE TUTELA, LOS RECURSOS O IMPUGNACIONES A QUE HAYA LUGAR, DE CONFORMIDAD CON LAS NORMATIVIDAD VIGENTE 5) REALIZAR TODAS LAS EMAS ACTUACIONES QUE SE DERIVEN DE LAS DEMANDAS DE ACCION DE TUTELA DONDE LA FEDERACION NACIONAL DE CAFETEROS DE COLOMBIA SEA ACCIONADA

CERTIFICA :

** ORGANO DE FISCALIZACION **

NOMBRE	IDENTIFICACION
REVISOR FISCAL - FIRMA AUDITORIA	
DELOITTE & TOUCHE LTDA	N.I.T. 08600058134
REVISOR FISCAL	
DUQUE MONTENEGRO ISMAEL	P.P 00000003270
REVISOR FISCAL SUPLENTE	
CARRILLO CAICEDO WILSON OSWALDO	C.C. 00080373219
SUBORDINADA EN SITUACION DE CONTROL	
COFFEA ARABICAS LTDA	N.I.T. 00900057955

CERTIFICA :

QUE POR DOCUMENTO PRIVADO DEL 21 DE MARZO DE 2002 Y RESOLUCION NO. 0103 DEL 22 DE FEBRERO DE 2002 DE LA SUPERINTENDENCIA DE VALORES, INSCRITAS EL 23 DE ABRIL DE 2002 BAJO EL NO. 49020 DEL LIBRO I DE LOS LIBROS DE LAS ENTIDADES SIN ANIMO DE LUCRO, SE NOMBRO A FIDUCOLOMBIA S A, COMO REPRESENTANTE LEGAL DE LOS TENEDORES DE BONOS DE LA EMISION DE 225,000,000,000.00.

CERTIFICA :

QUE POR DOCUMENTO PRIVADO DE BOGOTA D.C. DEL 07 DE SEPTIEMBRE DE 2004, INSCRITO EL 07 DE OCTUBRE DE 2004 BAJO EL NUMERO 0077945 DEL LIBRO I DE LAS ENTIDADES SIN ANIMO DE LUCRO, COMUNICO LA SOCIEDAD DE LA REFERENCIA (MATRIZ), QUE HA CONFIGURADO SITUACION DE CONTROL CON LAS SIGUIENTES SOCIEDADES SUBORDINADAS:

- PROMOTORA DE CAFE COLOMBIA S.A. LA CUAL PODRA TAMBIEN UTILIZAR LA SIGLA PROCAFECOL S.A.

DOMICILIO : BOGOTA, D.C.

CERTIFICA :

28



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CAMARA DE COMERCIO DE BOGOTA

SEDE NORTE

3 DE AGOSTO DE 2007

HORA : 08:34:48

02NA40803017

HOJA : 6 DE 6

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QUE POR DOCUMENTO PRIVADO DE BOGOTA D.C. DEL 28 DE DICIEMBRE DE 2005, INSCRITO EL 05 DE ENERO DE 2006 BAJO EL NUMERO 93498 DEL LIBRO I DE LAS ENTIDADES SIN ANIMO DE LUCRO, COMUNICO LA ENTIDAD DE LA REFERENCIA (MATRIZ), QUE HA CONFIGURADO SITUACION DE CONTROL SOBRE LA SOCIEDAD:

- ALMACENES GENERALES DE DEPOSITO DE CAFE S A ALMACAFE.
DOMICILIO : BOGOTA, D.C.

CERTIFICA :

QUE POR DOCUMENTO PRIVADO DE BOGOTA D.C. DE MAYO DE 2006, INSCRITO EL 14 DE JUNIO DE 2006 BAJO EL NUMERO 102413 DEL LIBRO I DE LAS ENTIDADES SIN ANIMO DE LUCRO, COMUNICO LA ENTIDAD DE LA REFERENCIA (MATRIZ), QUE HA CONFIGURADO SITUACION DE CONTROL SOBRE LA SOCIEDAD:

- COOFFE ARABICAS LTDA
DOMICILIO : BOGOTA, D.C.

CERTIFICA :

DIRECCION DE NOTIFICACION JUDICIAL : CLL. 73 NO. 8-13
MUNICIPIO : BOGOTA D.C.

CERTIFICA :

QUE EN ESTA CAMARA DE COMERCIO NO APARECEN INSCRIPCIONES POSTERIORES DE DOCUMENTOS REFERENTES A REFORMA, DISOLUCION, LIQUIDACION O NOMBRAMIENTOS DE REPRESENTANTES LEGALES DE LA MENCIONADA ENTIDAD.

I M P O R T A N T E

EL REGISTRO ANTE LAS CAMARAS DE COMERCIO NO CONSTITUYE APROBACION DE ESTATUTOS. (DECRETO 2150 DE 1999 Y DECRETO 427 DE 1998).

LA PERSONA JURIDICA DE QUE TRATA ESTE CERTIFICADO SE ENCUENTRA SUJETA A LA INSPECCION, VIGILANCIA Y CONTROL DE LAS AUTORIDADES QUE EJERCEN ESTA FUNCION, POR LO TANTO DEBERA PRESENTAR ANTE LA AUTORIDAD CORRESPONDIENTE, EL CERTIFICADO DE REGISTRO RESPECTIVO, EXPEDIDO POR LA CAMARA DE COMERCIO, DENTRO DE LOS 10 DIAS HABILES SIGUIENTES A LA FECHA DE INSCRIPCION, MAS EL TERMINO DE LA DISTANCIA CUANDO EL DOMICILIO DE LA PERSONA JURIDICA SIN ANIMO DE LUCRO QUE SE REGISTRA ES DIFERENTE AL DE LA CAMARA DE COMERCIO QUE LE CORRESPONDE. EN EL CASO DE REFORMAS ESTATUTARIAS ADEMÁS SE ALLEGARA COPIA DE LOS ESTATUTOS.

TODA AUTORIZACION, PERMISO, LICENCIA O RECONOCIMIENTO DE CARACTER OFICIAL, SE TRAMITARA CON POSTERIORIDAD A LA INSCRIPCION DE LAS PERSONAS JURIDICAS SIN ANIMO DE LUCRO EN LA RESPECTIVA CAMARA DE COMERCIO.

CERTIFICA :

REGISTRO DE BOGOTA

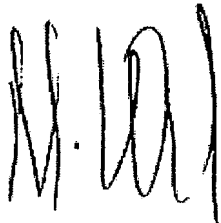
DE CONFORMIDAD CON LO ESTABLECIDO POR LA LEY 962 DE 2005, LOS ACTOS DE REGISTRO AQUI CERTIFICADOS QUEDAN EN FIRME CINCO (5) DIAS HABILES DESPUES DE LA FECHA DE INSCRIPCION, SIEMPRE QUE NO SEAN OBJETO DE RECURSOS EN LA VIA GUBERNATIVA.

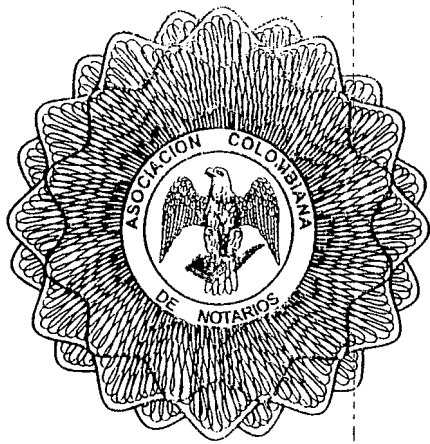
* * * EL PRESENTE CERTIFICADO NO CONSTITUYE PERMISO DE * * *
* * * FUNCIONAMIENTO EN NINGUN CASO * * *

EL SECRETARIO DE LA CAMARA DE COMERCIO,

VALOR : \$ 3,000.00

DE CONFORMIDAD CON EL DECRETO 2150 DE 1995 Y LA AUTORIZACION IMPARTIDA POR LA SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO, MEDIANTE EL OFICIO DEL 18 DE NOVIEMBRE DE 1996, LA FIRMA MECANICA QUE APARECE A CONTINUACION TIENE PLENA VALIDEZ PARA TODOS LOS EFECTOS LEGALES.

A handwritten signature in dark ink, appearing to be a stylized representation of the letters 'M' and 'A' followed by a vertical stroke.



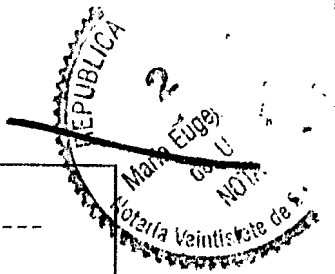
PODERDANTE en la República de Colombia, a cuyo efecto los faculta para dar todos los pasos necesarios ante cualquier autoridad administrativa o judicial de cualquier jerarquía para cumplir con lo encomendado, elevar solicitudes,

recursos, respuestas y oposiciones, pagar impuestos y anualidades, solicitar testimonios, recibir documentos y valores, desistir y percibir. Se concede poder suficiente para recibir notificaciones a nombre de la PODERDANTE, otorgar poderes a quienes vayan a representar a la PODERDANTE judicial y extrajudicialmente, responder en juicio a todas las reclamaciones o demandas que por motivo de lo encomendado se presentaren, dándoles asimismo facultad para sustituir el presente y en caso necesario revocar dichas sustituciones.-----

Presentes CARLOS OLARTE, ANA MARÍA FRIERI, JUAN GUILLERMO MOURE, J. IAN RAISBECK y NATALIA CASTRO, de las condiciones civiles ya anotadas y manifestaron: que aceptan el poder que mediante esta escritura se les otorga. (HASTA AQUÍ LA MINUTA PRESENTADA)-----

El(los) compareciente(s) hace(n) constar que han verificado cuidadosamente sus nombres completos el número(s) de su documento de identidad. Declara(n) que todas las informaciones consignadas en el presente instrumento son correctas y, en consecuencia, asume la responsabilidad que se derive de cualquier inexactitud en los mismos. Conoce la ley y sabe que el Notario responde de la regularidad formal de los instrumentos que autoriza, pero no de la veracidad de las

Cada hoja de minuta



declaraciones de los interesados.- -----

ADVERTENCIA, OTORGAMIENTO Y AUTORIZACION.- Leído el presente instrumento por el (los) compareciente (s) y advertido (s) sobre la obligación de pagar el impuesto de Registro (Art.226 y s.s. ley 223 del 1995) y también sobre la formalidad del registro dentro del término perentorio de 2 meses contados a partir de la fecha de otorgamiento de este instrumento, cuyo incumplimiento causará intereses moratorios por mes o fracción de mes de retardo, lo aprueban y firman conmigo y ante mí la(el) Notaria(o) quién lo autoriza. A los otorgantes se les advirtió finalmente que una vez firmado el presente instrumento, la(el) Notaria(o) no aceptará correcciones o modificaciones sino en la forma y casos previstos por la Ley. - Se extendió el presente instrumento público en las hojas de papel Notarial Nos.WK 6305886, WK 6305887, WK 6305888 = = = = =

DERECHOS LEGALES: \$ 38.110 -----

RESOLUCIÓN No. 7880 DE 2006 -----

IVA \$ 10.370.00 -----

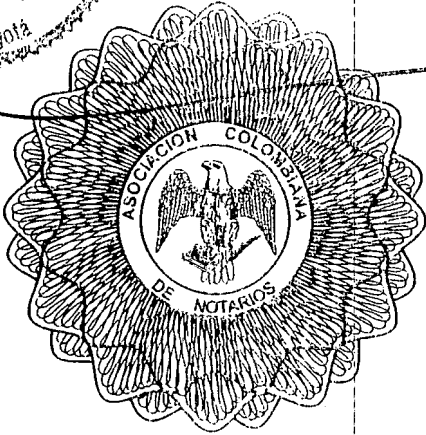


LUIS GENARO MUÑOZ ORTEGA

CC. 10.536.679 de Popayán

TELEFONO:

WK 6305888



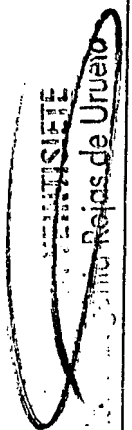
ESTA HOJA HACE PARTE DE LA
 ESCRITURA PUBLICA NUMERO 911 = =
 DEL 10 DE AGOSTO DE 2007 = = = = =
 NOTARIA 27 DE BOGOTA = = = = =
 REFERENTE AL PODER DE
 FEDERACIÓN NACIONAL DE
 CAFETEROS DE COLOMBIA A:

CARLOS OLARTE, ANA MARÍA FRIERI, JUAN GUILLERMO
 MOURE, J. IAN RAISBECK, y/o NATALIA CASTRO. -----


 CARLOS OLARTE



C.C. No. 79.782.747 de Bogotá
 TP No 74.295
 TELÉFONO: 6017700




 ANA MARÍA FRIERI

C.C. No. 45.483.209 de Cartagena
 TP No. 99.270
 TELEFONO: 6017700


 JUAN GUILLERMO MOURE PEREZ



C.C. No. 80.412.281 de Usaquén
 TP No. 67.343
 TELEFONO: 6017700

J. Ian Raisbeck

J. IAN RAISBECK

C.C. No. 79'376.996 de Bogotá

TP No. 135.799

TELÉFONO: 6017700

Natalia Castro

NATALIA CASTRO

C.C. No. 52.008.577

TP No. 70.997

TELÉFONO: 6017700

Maria Eugenia Rojas de Urueta

MARIA EUGENIA ROJAS DE URUETA
NOTARIA VEINTISIETE (27) DE BOGOTÁ



red b.

Es fiel y Primera (1^a)
fotocopia de la Escritura Pública No. 9-10
de fecha 10 de Agosto de 2007
tomada de su original que expido en
Nueve (9) hojas útiles de papel
común autorizado (Decreto 1343 de 1970) con destino a

Interesado

Dado en Santafé de Bogotá D.C., a 17 AGO. 2007

El Notario Veintisiete de Santafé de Bogotá



29

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800.176.089-2

- / -

Industria y Comercio SUPERINTENDENCIA	RECIBO DE CAJA	No. 12 - 0052254
		Bogotá D.C., Mayo 25 de 2012 - 15:32:46

RECIBIDO DE : OLARTE MOURE & ASOCIADOS	NI 830.122.870
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*** Soporte del Pago ***					
TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PAGO	VR. PAGO
CONSIGNACION	BANCO DE BOGOTA	062754387	455532512	25/05/2012	7.110.000.00

*** Conceptos Pagados ***			
CANT.	RENTISTICO	CONCEPTO	Vr.UNDITARIO Vr.CONCEPTO
1 50005-01-04	PRESENTACION DE OBSERVACIONES A SOLICITUDES	12 MARCAS Y LEMAS COMERCIALES	315.000.00 315.000.00
			\$315.000.00
=====			

SON: **TRESCIENTOSQUINCE MIL PESOS MONEDA CORRIENTE***

Responsable. _____

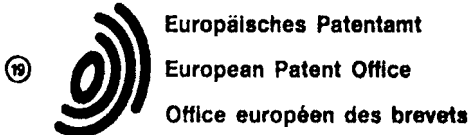
Recibo de Caja Aplicado al Expediente No. _____

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 11-121792- -00002-0000

Fecha: 2012-05-28 16:52:22 Dep. 2020 DIR.NUEVASCR
Tra. 11 PATENTEIYII Eve: 378 FASENACIONALI
Act. 400 OPOSIOBSERVTER Folios: 43



(11) Publication number:

0 220 889
A2

(12)

EUROPEAN PATENT APPLICATION

(21) Application number: 86308038.8

(51) Int. Cl. 4: A 23 F 5/32
A 23 F 5/40

(22) Date of filing: 16.10.86

(30) Priority: 18.10.85 GB 8525725

(43) Date of publication of application:
06.05.87 Bulletin 87/19

(64) Designated Contracting States:
AT BE CH DE ES FR GB GR IT LI LU NL SE

(71) Applicant: GENERAL FOODS LIMITED
Banbury Oxfordshire, OX16 7QU (GB)

(72) Inventor: Lascelles, Le Gay John
2 Old Vicarage Gardens Cropredy
Nr. Banbury Oxon (GB)

Hampson, Kim Suzanne
6 Windsor Close Kings Sutton
Nr. Banbury Oxfordshire, OX17 3QT (GB)

(74) Representative: Allard, Susan Joyce et al
BOULT, WADE & TENNANT 27 Funnival street
London EC4A 1PQ (GB)

The title of the invention has been amended (Guidelines for Examination in the EPO, A-III, 7.3).

(54) Coffee treatment process and product.

(57) The preparation of a substantially homogeneous freeze dried coffee product is effected by

i) mixing a coffee extract at a temperature in the range of from 0° to 20° C with from 10 to 60% by weight of roast and ground coffee particles based on the weight of the two coffee constituents, the said particles having a particle size such that 98% by weight of the ground coffee passes a 75 micron mesh;

ii) subjecting the mixture from step (i) to homogenization;

iii) passing the homogenized mixture from step (ii) to a mixing tank and adding thereto at least an equivalent weight of coffee extract at a temperature in the range of from minus 5 to 30° C and from 20 to 40% by weight of frozen coffee fines based on the weight of the homogenized extract and the coffee extract;

iv) freezing the mixture from step (iii);

v) grinding the frozen coffee product;

vi) screening the ground frozen coffee product from step (v); and

vii) subjecting frozen particles of an appropriate size to freeze drying.

Description

COFFEE PROCESS AND PRODUCT

The present invention relates to a process for the production of a coffee product and to a coffee product so-produced. More particularly, the invention is concerned with a process in which roast coffee of very finely ground particle size is combined with soluble coffee to produce a freeze dried product which has an improved in cup appearance and also had a desirable cup aroma and flavour.

There has been an interest in forming admixtures of soluble coffee with various percentages, usually less than 15% by weight, of finely ground roast coffee. These mixtures have the advantage that they incorporate aromatic and flavourful elements of roast coffee into the product. Generally the admixtures which have been commercially sold have been admixtures of soluble coffee powder and roast and ground particles which, though homogeneously mixed, result in poor flowability and poor ease of spooning out. The roast and ground particles contained in such products have generally been of a particle size such that they will not stay in suspension and tend to settle out on reconstitution of the product with water and/or milk and form an undesirably large quantity of sediment.

A proposal for producing a coffee product which incorporates roast and ground coffee therein is described in British Patent No.2022394. This process involves the steps of air cooling freshly roasted coffee beans, quenching the cooled beans with liquid nitrogen to freeze the beans, grinding the beans to produce colloidal roast and ground coffee having a particle size of less than 45 microns, adding the frozen colloidal roast and ground coffee to a chilled coffee extract, and drying the colloidal coffee containing extract. The coffee product produced by this process suffers from the disadvantage that the colloidal roast and ground coffee having a particle size of less than 45 microns is not evenly and homogeneously dispensed throughout the final coffee product. This results in an inability to provide a product with a consistent taste, aroma and in-cup appearance.

Another proposal for producing a coffee product which incorporates roast and ground coffee therein is described in our British Patent No. 2006603. This process involves the combination of spray dried soluble coffee and finely ground roast coffee into agglomerates, the agglomerates preferably having an average particle size greater than 850 microns.

We have now developed a process for the production of a substantially homogeneous freeze dried coffee product which includes finely ground roast coffee particles dispersed therein.

Accordingly, the present invention provides a process for the preparation of a substantially homogeneous freeze dried coffee product, which process comprises the steps of

i) mixing a coffee extract at a temperature in the range of from 0° to 20° C with from 10 to 60% by weight of roast and ground coffee particles based on the weight of the two coffee

constituents, the said particles having a particle size such that 98% by weight of the ground coffee passes a 75 micron mesh;

ii) subjecting the mixture from step (i) to homogenization;

iii) passing the homogenized mixture from step (ii) to a mixing tank and adding thereto at least an equivalent weight of coffee extract at a temperature in the range of from minus 5 to 30° C and from 20 to 40% by weight of frozen coffee fines based on the weight of the homogenized extract and the coffee extract;

iv) freezing the mixture from step (iii);

v) grinding the frozen coffee product;

vi) screening the ground frozen coffee product from step (v); and

vii) subjecting frozen particles of an appropriate size to freeze drying.

The coffee extract in step (i) of the process preferably has a solids content of 20 to 60 percent by weight, preferably from 35 to 45 percent by weight. The mixing in step (i) is preferably carried out at a temperature in the range of from 5 to 15° C and the mixing is preferably carried out using a high speed mixer to maintain all of the particles in suspension.

Preferably from 20 to 40% by weight roast and ground coffee particles are added in step (i) of the process. The particle size distribution of the coffee particles is preferably 99.9% less than 100 microns, 98% less than 75 microns, 95% less than 60 microns, 90% less than 45 microns and 50% less than 15 microns.

The dry grinding of roasted coffee beans to relatively coarse grinds is a well known operation in the coffee industry. Various workers have described the fine grinding of roasted coffee whilst preserving its aromatic character, by employing a cryogenic grinding technique involving a single stage; in such a method the roasted coffee beans are pre-cooled before grinding to temperatures below 50° F, for example as described in United States Patent Specification No. 3,261,689. Alternatively, it has been proposed to feed liquid nitrogen into a grinding mill during the grinding of roasted coffee beans, as described in Food Engineering, May 1962, pages 62 and 63. Other methods of grinding roasted coffee beans are described in British Patent Specifications Nos. 1,424,264 and 1,476,854. These methods, however, still provide only relatively fine grinds and do not provide in general the most desired average particle sizes of down to 20 microns or less.

Desirably in practising the present invention, the fine-subdivision of roasted coffee beans is accomplished by a method of grinding which incorporates both pre-cooling of the roasted coffee beans to below 0° C and preferably to below minus 45° C, coupled with the use of a classification of the finely ground roasted coffee employing cooled nitrogen in the classification step instead of the more conventional air. The pre-cooling is preferably carried out with liquid nitrogen. The fine-subdivision of the

roasted coffee beans may be effected using an impact mill fitted with means for classification which allows only ground coffee in the required particle size to leave as product from the mill. However, the classification system may be external to the mill, with the provision for return of the coarser fraction of the mill. Other means for providing the required particle size of finely ground roasted coffee with acceptable minimal loss of volatile components may be used. Certain commercial types of high speed impact (or other mills), such as pin-disc mills, are available, which can achieve the required particle size without need for either external or internal classification.

The mixture from step (i) of the process of the invention is homogenized, preferably by passage through a high shear mechanical mixer. The homogenization step breaks up any aggregates of colloidal particles and provides a substantially uniform distribution of the particles of roast and ground coffee in the coffee extract. The homogenization may also be effected using an in-line sonic mixer.

The homogenized mixture from step (ii) is then passed to a mixing tank which is preferably a tank fitted with a ribbon-type helix. Additional coffee extract, preferably having a solids content of from 35 to 45% by weight is added thereto. The additional extract is added to the homogenized mixture in an at least equivalent amount and preferably from 3 to 5 times the amount of extract is added based on the weight of the homogenized extract. The additional extract is added at a temperature in the range of from -5 to 30°C, preferably at a temperature of from -5 to 10°C, more preferably at a temperature of from 0 to 2°C.

Frozen coffee fines from the final step of the process of the invention are also preferably recycled to the homogenized mixture in step (iii). The frozen coffee fines are preferably at a temperature in the range of from -10° to -50°C and have a particle size of less than 200 microns. The frozen coffee fines are preferably added in an amount of from 30 to 40% by weight based upon the weight of the homogenized extract and the additional coffee extract. The frozen coffee fines lower the temperature of the mixture significantly, some of the coffee fines melting in the process. The remainder of the coffee fines are thought to act as nucleates around which the mixture begins to freeze.

The mixture leaves the mixing tank in step (iii) of the process generally at a temperature in the range of from -10°C to -2°C and is then subjected to freezing. The frozen product is then ground and screened. Generally, frozen coffee particles having a particle size above 200 microns are considered appropriate for freeze drying. Those particles having a particle size of less than 200 microns are then preferably recycled as coffee fines to step (iii) of the process.

The freeze drying of the particles having a particle size above 200 microns is carried out according to conventional techniques such as are described in Coffee Technology by M. Sivetz and N.W. Desrosier published by Avi Publishing Company Inc. (1979).

It will be understood that the process of the present invention may be carried out in a batchwise

or continuous manner, although continuous operation is preferred.

The amount of the additional coffee extract and the frozen coffee fines added in step (iii) of the process of the invention are preferably chosen so that the resulting coffee product has a roast and ground coffee content of from 5 to 20% by weight. However, a coffee product having a higher roast and ground coffee content of up to 50% by weight may be desirable either for use as a filter coffee or for use as a Turkish-style coffee.

Whilst not wishing to be bound by theory, it is believed that the combination of the viscosity of the mixture in step (iii) of the process of the invention and the homogenization in step (ii) serve to maintain the ground coffee particles in suspension uniformly and homogeneously during the freeze drying step. For example, at a 40% total solids concentration the mixture in step (iii) has a viscosity of above 70 cps.

The freeze dried product produced according to the present invention differs from the prior art freeze dried product described in British Patent No. 2022394 in that the roast and ground coffee particles are uniformly and homogeneously dispersed through the product.

Thus, in another aspect the present invention provides a substantially homogeneous freeze dried coffee product which comprises soluble coffee particles and finely ground roast coffee, the finely ground roast coffee being homogeneously and uniformly dispersed throughout the product and being present in an amount of from 2 to 50% by weight based on the weight of the two coffee constituents and having a particle size such that 98% by weight of the ground coffee passes a 75 micron mesh.

Preferably the coffee product contains from 5 to 20% by weight of the roast and ground coffee. The roast and ground coffee particles in the coffee product preferably have a particle size distribution such that 99.9% is less than 100 microns, 98% is less than 75 microns, 95% is less than 60 microns, 90% is less than 45 microns and 50% is less than 15 microns.

The present invention will be further described with reference to the following Example.

EXAMPLE

Colombian and Robusta beans were roasted to 30 and 40° Lumetron respectively and blended in the weight ratio of 40:60. 30 kg of the roasted coffee blend were then passed through an Alpine Contraplex 250 Pin Mill. Liquid nitrogen was introduced into both the cooling screw feeder and the milling chamber. The liquid nitrogen acts as an embrittling agent and as a low temperature method of retaining the volatile aromas. Cold air from the mill was filtered and recycled to reduce the amount of liquid nitrogen required. The milling chamber temperature was recorded at -42°C and the emergent air temperature at -38°C. Particle size measurements of the ground coffee product were made by means of a Coulter Counter. The following size profile was obtained: 99.9% was less than 100 microns, 98% was less than 75 microns, 95% was less than 60 microns,

90% was less than 45 microns and 50% was less than 20 microns.

20 kg of the resultant ground coffee product was added to 30 kg of a coffee extract (38% soluble solids) at 10°C and mixed with the use of a high speed stirrer for 20 minutes. The resulting pre mix (40% by weight of roast and ground coffee) was then passed through a Silverson high shear mixer. The homogeneous mixture was then fed into a jacketed mixing tank fitted with a rotating helix. 150 kg of extract at 38% soluble solids and 10°C was then added to the tank, together with about 60 kg frozen coffee fines (200 microns) recycled from the screen at the end of the belt. The mixture was then agitated for a further 30 minutes. The mixture was then fed onto a freezing belt and frozen at -45°C. The frozen slab was broken down, ground and screened and freeze dried in a conventional manner. As mentioned above frozen coffee fines having a particle size of less than 200 microns were recycled in the process to the jacketed mixing tank.

The freeze dried product was judged by experts to have a high "in-cup" body and a pleasing ground coffee flavour.

Claims

1. A process for the preparation of a substantially homogeneous freeze dried coffee product, which process comprises the steps of

i) mixing a coffee extract at a temperature in the range of from 0° to 20°C with from 10 to 60% by weight of roast and ground coffee particles based on the weight of the two coffee constituents, the said particles having a particle size such that 98% by weight of the ground coffee passes a 75 micron mesh;

ii) subjecting the mixture from step (i) to homogenization;

iii) passing the homogenized mixture from step (ii) to a mixing tank and adding thereto at least an equivalent weight of coffee extract at a temperature in the range of from minus 5 to 30°C and from 20 to 40% by weight of frozen coffee fines based on the weight of the homogenized extract and the coffee extract;

iv) freezing the mixture from step (iii);

v) grinding the frozen coffee product;

vi) screening the ground frozen coffee product from step (v); and

vii) subjecting frozen particles of an appropriate size to freeze drying.

2. A process is claimed in claim 1 wherein the mixing in step (i) is carried out at a temperature in the range of from 5° to 15°C.

3. A process as claimed in claim 1 or claim 2 wherein the extract is mixed in step (i) with from 20 to 40% by weight of the roast and ground coffee particles based on the weight of the two coffee constituents.

4. A process as claimed in any one of the

preceding claims wherein the roast and ground coffee particles added in step (i) have a particle size distribution such that 99.9% are less than 100 microns, 98% are less than 75 microns, 95% are less than 60 microns, 90% are less than 45 microns and 50% are less than 15 microns.

5. A process as claimed in any one of the preceding claims wherein the mixture from step (i) is homogenized using a high shear mechanical mixer.

6. A process as claimed in any one of the preceding claims wherein the homogenized mixture from step (ii) is passed to a mixing tank fitted with a ribbon-type helix.

7. A process as claimed in any one of the preceding claims wherein in step (iii) the homogenized mixture is mixed with from 3 to 5 times by weight of additional extract at a temperature in the range of from minus 5 to 10°C, preferably in the range of from 0° to 2°C.

8. A process as claimed in any one of the preceding claims wherein the frozen coffee fines added in step (iii) are at a temperature in the range of from minus 10° to minus 50°C.

9. A process as claimed in any one of the preceding claims wherein the frozen coffee fines are added in an amount of from 30 to 40% by weight based upon the weight of the homogenized mixture and additional extract.

10. A process as claimed in any one of the preceding claims wherein the mixture leaves the mixing tank in step (iii) at a temperature in the range of from minus 10° to minus 20°C.

11. A process as claimed in any one of the preceding claims wherein the frozen coffee product is ground and screened in step (v) and frozen coffee fines having a particle size of less than 200 microns are recycled to step (iii) of the process.

12. A process as claimed in any one of the preceding claims wherein step (vii) particles of a size above 200 microns are subjected to freeze drying.

13. A process as claimed in any one of the preceding claims which is carried out continuously.

14. A substantially homogeneous freeze dried coffee product which comprises soluble coffee particles and finely ground roast coffee, the finely ground roast coffee being homogeneously and uniformly dispersed throughout the product and being present in an amount of from 2 to 50% by weight based on the weight of the two coffee constituents and having a particle size such that 98% by weight of the ground coffee passes a 75 micron mesh.

15. A coffee product as claimed in claim 14 which comprises from 5 to 20% by weight of the roast and ground coffee particles being a particle size distribution such that 99.9% are less than 100 microns, 98% are less than 75 microns, 95% are less than 60 microns, 90% are less than 45 microns and 50% are less than 20 microns.

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3,261,689

SOLUBLE COFFEE PROCESS

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This application is a continuation-in-part of Serial No. 128,979, filed August 3, 1961, now abandoned.

This invention relates to a soluble coffee product of improved aroma and flavor and, more particularly, to a process for producing such a coffee product.

Many attempts have been made to enhance the cup aroma and flavor of instant coffee products. Essentially these attempts have been directed to the isolation of some essential oil or other aromatic constituent from roasted and ground coffee. A very significant commercial improvement has been achieved by such attempts. However, many consumers of roasted and ground coffee still prefer this type of brew because of its robust cup aroma and flavor.

It has also been attempted to introduce a small fraction of ground roasted coffee into the dried soluble coffee product. However, such a product has become rancid very quickly thus releasing undesirable flavors on reconstitution while leaving an unsightly coffee sediment. Attempts to introduce the ground roasted coffee directly into the soluble coffee extract have not been viewed with favor due to the belief that the roasted coffee would lose its aromatic notes by solubilization while leaving only an undesirable de-aromatized residue of coffee solids, such solids contributing only rancid flavor notes on reconstitution.

It would, therefore, be desirable if a method were devised for introducing ground roasted coffee into soluble coffee extract to thereby enhance the flavor of the soluble coffee while at the same time avoiding rancidity problems.

This invention is founded on the discovery that a stable soluble coffee product of improved flavor containing roasted and ground coffee therein, may be produced by a process which comprises preparing an aqueous extract of soluble coffee solids; tempering a charge of roasted coffee beans for at least three hours at a temperature of -80° to 10° F. to thereby congeal the coffee oils in said beans and develop large crystals of water ice; subdividing the cooled beans at a temperature of below -80° F. into fines of particulate powder wherein substantially all of the coffee fines pass through a 100 mesh U.S. Standard Sieve Screen and at least 50% pass through a 200 mesh U.S. Standard Sieve Screen; preventing oxidation of the coffee oils in the fines before adding the fines to the coffee extract; adding the charge of coffee fines to the extract while dispersing the fines to wet each particle of coffee as it enters the body of extract to thereby avoid clumping of fines in said extract, the extract being at a temperature of 40° to 100° F. and the charge of coffee fines being added at a level of 1-10% by weight of the soluble coffee solids in the extract; maintaining the extract at 40° to 100° F. while solubilizing 1-10% of the coffee solids in the fines and continuing to disperse the fines throughout the body of coffee extract; and spray drying the extract at an inlet air temperature of 300° - 450° F. and an outlet air temperature of 150° - 250° F., the fines being encapsulated with a thin coating of soluble coffee extract to thereby stabilize the coffee fines.

Unexpectedly, it has been found that the product of this invention enjoys a stability not found in soluble coffee products produced by a mere blending of roasted and ground coffee with the dried extract for "instant" coffee. Thus, the fixation of the particulate coffee particles in the powder produced upon spray drying, does not undergo rancidity or loss of freshness, which a product would normally be expected to encounter due to the presence of

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roasted and ground coffee therein. One of the reasons for this appears to be the encapsulating soluble coffee coating which is formed on the roasted and ground coffee particle during spray drying. By virtue of such a coating the roasted and ground coffee mixed with the soluble coffee will retain its freshness for substantially the same length of time as the soluble coffee extract. Advantageously, the brew prepared from the soluble coffee product of this invention provides a most desirable robust cup coffee flavor and aroma as well as an aroma in the container in which it is packed.

The invention, according to its more specific aspects, involves slowly cooling or tempering roasted coffee beans to thereby freeze or congeal the coffee oils in the beans. This is accomplished by a gradual reduction in the temperature of the beans over a period of at least 3 hours, say 6-12 hours, preferably in a freezing room having an ambient temperature of -50° F. After the beans have been tempered and cooled to below 10° F., preferably to -50° F., they are subjected to a hammer-milling or other impact-type milling operation whereby the roasted coffee particles are subdivided to a very fine degree. Normally, the oleaginous components of the coffee will be liberated as a result of such fine particulation and, accordingly, it is for this reason that the beans are first tempered and then ground at temperatures below -80° F., preferably -110° F. by co-grinding in Dry Ice. Any heat given off during grinding will be taken up by the Dry Ice and the oils solidified in the tempering step will be liquefied only to a slight extent. In any event, the various aromatic and flavor retaining oils will not be liberated to atmosphere but will solidify or remain solidified within the discrete coffee particles. After this controlled temper and grinding operation is performed, the coffee fines must be protected from atmospheric oxidation of the released coffee oils. This may be done by blanketing the coffee fines with an inert gas such as carbon dioxide, nitrogen, argon, or helium. Alternatively, the coffee fines may be stabilized by keeping the product temperature of the fines below 10° F.

It is a feature of the present invention that the soluble coffee extract containing about 20-30% soluble coffee solids is cooled to a temperature below 100° F., typically in the neighborhood of 50° - 70° F. in a hold-up tank preparatory to spray drying. The aqueous coffee extract is preferably cooled to this low temperature in order to properly continue the pretreatment or conditioning of the roasted and ground coffee particles as the particles are introduced thereto in a manner wherein each particle of roasted coffee is wetted with extract. Care should be taken in the addition of the fine particles of roasted coffee to prevent clumping of the particles. This is preferably accomplished by adding the fines through a vibrating screen having a mesh size of 100 mesh U.S. Standard Sieve and agitating the extract throughout the addition stage. The hold-up tank containing the extract should be subjected to a pressurized atmosphere of inert gas (say 5-10 p.s.i.g.) during this operation to prevent foaming of the extract and degradation or oxidation of the coffee oils in the fines.

The particles of ground roasted coffee should not remain in this blend tank for more than one hour, preferably not more than 3-10 minutes. The charge of coffee fines which is usually 3-6% by weight of the soluble coffee solids in said extract is uniformly dispersed in the extract and is partially brewed and solubilized, the solubilization of coffee solids being kept below 10%. By appropriate tempering of the coffee fines preparatory to their introduction to the coffee extract and the low temperature mixing with the extract, the coffee oils which are present in the coffee fines do not introduce an undesirable "oil slick" or surface emulsion in the hold-up tank and the particles themselves are most effectively dispersed in the body of extract without clumping together. In this way the required

hold-up period of the particles in the tank is not unduly prolonged and generally will not exceed 4 minutes, usually being 1-3 minutes.

It appears that the low brew temperature existing in the extract as the fines are introduced thereto elutriates or otherwise dissolves certain constituents of the roasted and ground coffee to thereby produce a final dried product of better storageability. It also appears that the low temperature solubilization of 1-10%, say 5%, of the soluble coffee solids in said fines results in a contribution of flavor and aroma constituents to the extract while leaving for the instant coffee user the completion of the solubilization step which releases the remaining flavor and aroma notes.

The dispersed, partially brewed, roasted coffee fines and the soluble coffee extract are then preferably fed to a spray drying tower where the extract is converted to liquid droplets which are dried to a powdery condition, usually by employing a countercurrent spray drying process having an inlet air temperature of 300°-450° F. and an outlet air temperature or product temperature of 150°-250° F.

The final product formed in accordance with this invention is a powdery coffee extract with a uniform dispersion of coated coffee fines. The coffee fines are largely encapsulated in the center portion of the atomized droplet of soluble coffee extract during the drying operation. Some of the larger droplets of coffee extract may encapsulate fine particles of roasted and ground coffee in the shell portion of soluble coffee, the shell acting as a matrix for the fines whereby the fines are coated and secured physically in place in such shell material. However, regardless of the mode of encapsulation the soluble coffee product will be relatively stable and will have improved flavor and aroma. The powdery extract will be found to contain aroma and flavor constituents extracted during the low temperature agitation or mixing operation in the hold-up tank and stable coffee fines having flavor and aroma constituents not capable of extraction at low temperatures which are retained within the roasted and ground coffee. These constituents are unstable during storage and present a distinct problem if loss of fresh coffee flavor is to be prevented. The encapsulating soluble coffee coating which is formed during spray drying is most suitable in prolonging the storage life of the coffee fines to that of the instant coffee extract and enables the trapped flavors and aromas to be released on reconstitution.

Although the sprayed coffee extract forms dry hollow particles which contain coffee fines trapped therein and thereby stabilizes the coffee fines thus allowing such product to be processed and stored similar to regular "instant" coffee, it is preferred to package the instant coffee product of this invention under an inert gaseous atmosphere. The jar of instant coffee product will preferably be purged of oxygen by means of an inert gas sparge with carbon dioxide, nitrogen, argon, etc. The bin containing soluble coffee powder will have mixed therewith inert gas to remove occluded oxygen or other materials tending to contribute toward rancidity. The bin containing the oxygen-free powder will then be subjected to a vacuum packing operation preferably accompanied with a carbon dioxide or nitrogen inter-mixing as the instant coffee powder is caused to issue from the head of the packaging machine into the coffee. This instant coffee powder may then be packaged under a super-atmospheric headspace pressure in the container in order to maintain a positive headspace of inert gas and thereby further stabilize the product.

According to the present invention, therefore, it is contemplated that the instant coffee product may be packaged in a container such as a jar or a can and preferably separated substantially from all of the oxygen which may be present with the dried coffee extract or carried with it incident to filling and packing of the

instant powder in a suitable container. Therefore, the soluble coffee product of the present invention is suitably packaged in a container which is air tight and wherein inert gas is overtly injected or swept through the body of coffee to reduce the oxygen level to below 1% by volume.

The dried powder is free-flowing and is spooned from the container in measured quantities for each coffee cup. The soluble coffee possesses an aroma and cup flavor more reminiscent of freshly brewed coffee as the addition of boiling water by the instant coffee user completes the brew function of the roasted fines. The product reconstitutes to a desired point without over-brewing the coffee fines to release detrimental flavor constituents or under-brewing with the release of only a portion of the desirable flavor and aroma constituents.

The invention will now be more fully described by reference to the following example:

Approximately 100 lbs. of ordinary commercial roasted whole beans were stored for 24 hours in a freezing room having an ambient temperature of 20° F. The prolonged cooling serving to slowly form large ice crystals and solidify the flavor and aroma retaining oils in the coffee. The beans were then mixed with about 100 lbs. of finely divided Dry Ice (solid CO₂), the Dry Ice being uniformly distributed throughout the beans to protect the solidified oils during grinding of the coffee beans. The bean-Dry Ice mixture was then fed into a mill, such as a Fitzpatrick mill, operating at 7000 r.p.m. and having a 100 mesh U.S. standard sieve screen, the sieve opening of the screen being 0.0059 inch. The mixture was co-ground to give a predominantly 200 mesh or smaller coffee particle size dispersed in equally fine particles of Dry Ice. About 5 lbs. of the fines were then added to 300 lbs. of coffee extract containing 95 lbs. of soluble coffee solids, thereby giving a 5% level of fines to 95% of soluble solids. The fines were protected from atmospheric oxidation under a blanket of CO₂ gas prior to adding the fines to the extract.

The temperature of the extract was lowered to 60° F. prior to adding the fines to the extract through a vibrating 100 mesh U.S. Standard Screen while continually agitating the extract. In this manner all of the particles of coffee were individually wetted and no clumping problems were presented. The extract was agitated for about 3 minutes while keeping the extract temperature at 60° F. to disperse the fines and allow a low temperature extraction of about 6% coffee solids. The extract was kept under a CO₂ atmosphere at a pressure of about 5 p.s.i.g. during the agitation to prevent foaming of extract and degradation of the coffee oils in the fines. The mixture was then fed while agitation continued to a conventional spray drying tower commonly used to dry soluble coffee extract. The mixture was spray dried at an inlet air temperature of 350° F. and an outlet air temperature of 200° F. Spraying pressure was about 2950 cubic feet per minute.

The dried product was composed of 95% by weight soluble coffee extract and 4.6% by weight roasted coffee fines. The fines were evenly distributed throughout the extract by spray drying and were found to contain a soluble coffee coating most suitable for encapsulating the aroma and flavor constituents of the roasted coffee. The dried product was packaged and stored in an air tight glass container with a positive headspace pressure of carbon dioxide after the coffee was reduced to less than 1% oxygen content by sweeping with carbon dioxide prior to packaging. The dried powder was very stable, free-flowing, and adapted to be spooned in measured quantities similar to regular "instant" coffee while containing a "trapped" aroma and flavor most reminiscent of roasted and ground coffee. These qualities were released at the desired time by contact with a measured amount of boiling water added by the instant coffee user

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to give a final brew very similar to that made completely from roasted and ground coffee.

While the invention has been described by a specific example the limits of this invention should be determined by reference to the appended claims.

What is claimed is:

1. In the art of aromatizing soluble coffee with particles of freshly roasted and ground coffee the improvement which comprises forming a liquid extract of soluble coffee solids, said extract having a temperature of between 40 and 100° F., tempering a separate charge of freshly roasted coffee for at least 3 hours at a temperature of between -80° and 10° F. to congeal the coffee oils present in said coffee and form large crystals of water ice, subdividing the tempered coffee at a temperature of below -80° F. to a size wherein substantially all of the coffee passes through a 100 mesh U.S. Standard sieve screen and at least 50% passes through a 200 mesh U.S. Standard sieve screen, dispersing the charge of coffee in said liquid extract, said coffee being added at level of 1 to 10% by weight of the total soluble solids in the extract, maintaining said extract at 40° to 100° F. while solubilizing between 1 and 10% of the coffee solids present in said fines, and spray-drying said extract to thereby encapsulate the freshly roasted coffee with a thin coating of dry coffee extract which serves to stabilize the roasted coffee.

2. In the art of aromatizing soluble coffee with particles of freshly roasted and ground coffee the improvement which comprises forming a liquid extract of soluble coffee solids, said extract having a temperature of between 50° and 70° F., tempering a separate charge of freshly roasted coffee for at least 3 hours at a temperature of between -80° and 10° F. to congeal the coffee oils present in said coffee and form large crystals of water ice, subdividing the tempered coffee at a temperature of below -80° F. to a size wherein substantially all of the coffee passes through a 100 mesh U.S. Standard sieve screen and at least 50% passes through a 200 mesh U.S. Standard sieve screen, dispersing the charge of coffee in said liquid extract, said coffee being added at a level of 3 to 6% by weight of the total soluble solids in the extract, maintaining said extract at 50° to 70° F. while solubilizing about 5% of the coffee solids present in said fines, and spray-drying said extract to thereby en-

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capsulate the freshly roasted coffee with a thin coating of dry coffee extract which serves to stabilize the roasted coffee.

3. In the art of aromatizing soluble coffee with particles of freshly roasted and ground coffee fines the improvement which comprises forming a liquid extract of coffee solids having a temperature of between 50° and 70° F., tempering a separate charge of freshly roasted coffee for at least 3 hours at a temperature of between -80° and 10° F. to solidify the coffee oil present in said coffee and form large crystals of water ice, grinding said tempered coffee to a particle size wherein all of the said coffee passes through a 100 mesh U.S. Standard sieve screen and at least 50% passes through a 200 mesh U.S. Standard sieve screen, blanketing said coffee fines with an inert gas to thereby prevent oxidation of the coffee oils in said fines, dispersing the charge of coffee fines in said liquid extract by sifting said fines through a 100 mesh U.S. Standard sieve screen to thereby wet each particle of ground coffee and prevent clumping of the ground coffee, said coffee being added at a level of between 3 and 6% by weight of total soluble solids in the extract, maintaining said extract at a temperature of about 50° to 70° F. while solubilizing about 1 to 10% of the coffee solids present in said fines, and spray-drying said liquid extract to thereby encapsulate the coffee fines with a coating of dry soluble coffee which serves to stabilize the coffee fines.

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United States Patent
Bach et al.

[15] 3,652,292
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[54] **INSTANT COFFEE PRODUCT AND A
PROCESS FOR ITS MANUFACTURE**

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[57] **ABSTRACT**

Soluble coffee solids prepared by extraction are mixed in an aqueous medium with wet ground colloidal particles of roast or extracted roast coffee, the latter representing about 3 percent to 40 percent by weight of the total weight of the coffee product. The colloidal particles are stabilized against flocculation by regulation of the pH so as not to exceed a pH of 5.2 and said particles are encased in the dried soluble coffee solids to form an instant coffee product having a fresh-brewed coffee aroma flavor and turbidity. The resultant coffee product may be admixed with additional soluble coffee powder. Drying is performed by conventional methods.

27 Claims, No Drawings

INSTANT COFFEE PRODUCT AND A PROCESS FOR ITS MANUFACTURE

This invention relates to an "instant-coffee" product, and a process for its manufacture.

Numerous proposals have already been made for the manufacture of ready-to-infuse rapidly soluble coffee powders or granules which are known under the general descriptive term "instant coffee." While initially the extraction of soluble roast coffee constituents with subsequent drying of the resulting extracts by the spray drying process gained very extensive acceptance in practice, proposals have more recently been made for improving the qualities, especially for developing a fullness of aroma which is more similar to a fresh coffee infusion. For example, it has been proposed to dry roast coffee extracts under conditions which do not damage the aroma, for example by freeze drying. It has also been proposed to add the oils containing the aroma substances of roast coffee, especially coffee bean oil, to the dry product in order thereby to obtain a product of more satisfactory odor and flavor. The fact remains that there are still considerable differences between the odor and aroma of freshly brewed coffee on the one hand and of instant coffee infused with hot or cold water on the other. Numerous users reject instant coffee as inferior in flavor in comparison with freshly brewed coffee, and the majority of users regards an improvement in flavor of instant coffee, in the direction of freshly brewed coffee, to be desirable.

It has recently been proposed to obtain a coffee extract powder mixed with the aroma substances of coffee by obtaining a thick juice from ground roast coffee by a conventional extraction process, and emulsifying this with a solution of roast coffee aroma substances in oil, especially coffee bean oil. The main feature of this proposal is that additionally a small quantity, namely 2 to 3%, relative to the solid content of the thick juice, of a finely ground roast coffee bean powder is added to the thick juice before subsequent freeze drying. Examination of this proposal has shown that there are considerable difficulties in the way of the realization of such an approach to the improvement of the aroma of instant coffee. Quite apart from the fact that such a product is not a true coffee extract but a material which together with the extract powder contains non-extracted fresh roast coffee bean powder, difficulties arise in redissolving this material, i.e. in preparing the ready-to-drink coffee. The added insoluble substances precipitate in the form of flocculent precipitates on infusing the coffee, especially with hot water, and these produce such an unusual optical impression that such a product is regarded by the consumer as being undrinkable.

The present invention is an attempt to solve the problem of combining the advantages of coffee prepared by fresh infusion with the simple preparation of instantly soluble coffee extract. The desired product should be as similar as possible to freshly brewed coffee not only in odor and fullness of aroma but also in external appearance, and should not, say, leave a large quantity of coarse coffee grounds in the cup. By the present invention, there is provided constituents of roast coffee ground to solid particles of colloidal size and against undesired influences during storage, for example influences which destroy the aroma, by carefully conceived "passivation" on the one hand whilst on the other hand the colloidal solids component is stabilized in such a way that, on infusing the product to give the ready-to-drink coffee, colloiddally stable solutions or suspensions of the individual solid particles are obtained which do not lead to agglomeration with the formation of flocculent precipitates. The present invention provides an instant coffee product which in its total nature is more similar to freshly infused coffee than hitherto known rapidly soluble coffee products. On the one hand the odor and fullness of aroma of fresh coffee is hereby preserved in a hitherto unknown way, while on the other hand the rapidly soluble coffee according to the invention shows a turbidity caused by insoluble coffee solid constituents of colloidal particle size which corresponds to the natural turbidity of coffee. By the procedure of the invention considerable quantities of the coffee solids con-

stituents which are ground to colloidal size are worked into soluble coffee extract substances and can at the same time be stabilized therein in such a way that on infusion of the product no precipitation of the colloidal solid constituent need be feared. The aroma-reinforcing and aroma-preserving ability of the colloidal substances employed in accordance with the invention at the same time remains practically unchanged over the period of time which is usual in the use of instant coffee and even beyond this.

The present invention provides an instant coffee product comprising a dried soluble coffee extract and roast coffee constituents ground to a colloidal particle size having a pH of at most 5.2.

The present invention provides a ready-to-infuse rapidly soluble coffee product based on dried soluble coffee extract solids which contains a proportion of colloiddally ground roast coffee constituents. The essential characteristic of the invention is at the same time to be regarded as the fact that this proportion of colloidal insoluble solids is colloiddally stabilized against undesired flocculation on precipitation. This colloidal stabilization is, according to the invention, achieved in that at least the proportion of the solids which are of colloidal particle size is adjusted to a pH-value in a more strongly acid range than is obtained on simply suspending these constituents in water or coffee extract. The invention thus involves a deliberate pH-value regulation, at least of the proportion of solids which are of colloidal particle size. According to the invention at least this part is adjusted to a pH-value of at most about 5.2, for example, it is worked into the dry product whilst adjusting to this pH-value. The colloidal coffee powder constituent is preferably adjusted to a pH-value below 5.0, for example to a value in the range of 4.0 to 5.0. It is preferred not to exceed pH-values of 4.9 during the adjustment and conversion of the colloidal constituent into the dry product, with the range from 4.3 to 4.9 and especially the range from 4.5 to 4.8 having proved to be particularly suitable. As a result of this measure and others within the present invention a reliable stabilization of the colloidal constituent against undesired flocculation on infusion of the new coffee product, even with water which may be as hot as desired, is achieved. At the same time a hitherto unknown fullness of odor and aroma is introduced into the finished product, or rather, according to the invention, the natural odor and aroma substances of the roast coffee which is extracted are preserved in a hitherto unknown way and are stabilized even over longer periods of storage.

Even though the details of the new coffee product will be dealt with extensively later, it may here already be stated that it is of particular advantage to carry out the pH-value regulation with coffee extract substances, especially with soluble coffee extract substances of higher acidity. In this way it proves possible, according to the invention, to provide a coffee product which is exclusively made up of constituents which are intrinsic to coffee, and which also in this respect ideally can be dissolved to give a product which resembles freshly infused filter coffee. At the same time the invention provides so to embed the proportion of coffee solids constituents of colloidal particle size in the dried soluble coffee extract substances and to encase them therein that an additional protection of the colloidal components which provide and preserve the aroma is ensured.

In using the principle which has been described for the conjoint use of stabilized colloidal solids the invention especially comprises mixed products which are on the one hand characterized by a content of the dry coffee substances containing colloids which have been described and on the other hand by essentially colloid-free dried soluble coffee extract substances. The invention is thus of particular importance for the manufacture of mixtures of conventional instant coffee powders or granules mixed with the coffee products containing colloidal solids which have been described. This is because it has surprisingly been found that the aroma-preserving and aroma-creating ability of the colloids employed in accordance with the invention is so intense that the conjoint use of relatively

limited quantities of the colloidal materials together with conventional soluble coffee products leads to an unexpected improvement in the aroma, odor and other properties of the total product. Thus the invention also provides a ready-to-infuse rapidly soluble coffee product based on dried coffee extract substances, which is characterized in that it is a mixture of (a) a conventional rapidly soluble powder or granular material of coffee extract substances, for example an instant coffee obtained by freeze drying or especially by spray drying, with (b) a dried coffee extract which contains colloiddally ground roast coffee constituents which are stabilized against flocculation especially by regulation of the pH-value. At the same time the colloid containing stabilized mixture component (b) is especially a material which meets the stipulations of the invention which have been described above.

The content of coffee solids of colloidal particle size in the instant coffee of the invention is as a rule considerable. It is appropriately above 3% by weight, preferably above 5% by weight, relative to the total weight of the coffee product. It may reach amounts of up to 40% by weight of the coffee product. In ready-to-use consumer coffee amounts of about 25% by weight of insoluble colloidal substances are preferably not exceeded. This however means that in products which are conceived as mixture components (b) for dilution with conventional soluble coffee, for example spray-dried coffee (a), considerable higher contents of insoluble colloids may be present, for example within the range of 15 to 35% by weight. For economic reasons it will frequently be desirable to adjust the amount of colloidal insoluble coffee to at least 8 to 10% by weight, so that for the ready-to-use end product the content of insoluble solids of colloidal particle size within the range of about 10 to 25% by weight can be particularly appropriate.

Beyond what has already been stated, the value of the invention furthermore rests on the surprising discovery which relates to the above-mentioned mixed products, of conventional soluble types of coffee, for example spray-dried coffee, and the coffee product which according to the invention contains insoluble colloidal solids. Herein one is dealing with the following phenomenon, which was not to be foreseen:

The stabilization of the colloidal solid constituent in the sense of the invention requires a regulation of the pH-value of this colloidal constituent to values which lie in a more strongly acid range than is found with normal coffee infusion. This can on the one hand lead to an effect on the flavor which a number of consumers describe as being less desirable, and can on the other hand initiate a problem which as a rule does not exist with conventional rapidly soluble coffee and also not with coffee. This is the precipitation of, for example, milk albumen on addition of milk or cream to the coffee as a result of the pH-value of the infusion having been displaced into the acid range. It has now surprisingly been found that these disadvantages can be overcome by mixing the acid-stabilized colloid-containing component with colloid-free coffee extracts of the usual pH-value. The usual coffee constituents in an infusion buffer the total mixture in such a way that neither a precipitation of milk albumen nor any change in flavor is observed. If desired it is possible so to adjust the basicity of the colloid-free components of the mixture that certain effects are established in the mixed products as a result of this. The surprising feature of this is that despite the buffering action of the generally predominant colloid-free less acid coffee constituent the reliable stabilization of the colloid-containing constituent against undesired flocculation of insoluble colloids remains fully preserved. In this way it thus proves possible completely to deal with the disadvantages of the acid colloid stabilization, which are in any case slight and only manifest themselves in a few cases, and exclusively to utilize its advantages. In this embodiment of the invention it is accordingly preferred to mix the material containing acid-stabilized colloidal insoluble solids of the invention, with at least such a quantity of a less acid, preferably conventional, coffee extract dry product that milk albumen does not coagulate in the infusion. Herein it is a particular characteristic of the invention that in order to

achieve the aim set in this context it suffices to mix the particular dry products. In the infusion of this mixed product the two components, with their particular advantages, then act on one another in such a way that the colloid-containing component improves the aroma and odor of the non-colloidal component, while on the other hand the non-colloidal component annuls possible side-effects resulting from the acid stabilization of the colloidal component. From this fact there may be recognized the possibility of providing, by the procedure of the invention, materials which contain insoluble coffee constituents of colloidal particle size, which are added as diluents to conventional dry products of soluble coffee extract substances, whereupon mixed products of high quality and high economic virtue are produced, which in the sum of their properties are far above the level which can up to the present time be achieved in the field of instant coffee.

In addition to the material mixtures which have been described and which have properties which could not be foreseen, the invention provides a process for the manufacture of such mixtures of materials, with a series of variations in the special manufacturing process here being possible. These manufacturing processes at the same time in turn again comprise a whole series of phenomena which were unforeseeable but form the basis of the invention, and which will be discussed in detail.

A subject of the invention is accordingly furthermore the manufacture of the preparations containing insoluble colloidal coffee constituents, especially in a dry form, with a particularly important embodiment of this aspect of the invention relating to a process for fixing and stabilizing the aroma substances intrinsic to coffee in roast coffee extract, especially within the framework of the preparation of ready-to-infuse rapidly soluble coffee extract dry products, which is characterized in that the extraction, especially aqueous extraction, of soluble roast coffee constituents is carried out with the addition of roast coffee constituents ground to colloidal particle size, and that an extract containing coffee constituents of colloidal particle size and soluble coffee constituents is separated off and worked up.

Two embodiments are here of particular importance within the framework of the invention. The material intended for conversion to the colloidal state is subjected to colloidal grinding and the ground material thereby produced is now either mixed with further roast coffee which has been pre-ground in the usual manner in order subsequently to extract this mixture, with one or more fractions comprising colloids and containing soluble extract substances being withdrawn. Or, preferably, in one of the embodiments of greatest importance for practical implementation, for the manufacture of the materials containing insoluble colloidal substances, the procedure is however that the extraction of a roast coffee prepared in the usual manner is not simply carried out with the pure extraction agent, i.e. especially with water, but with an aqueous extraction agent which contains a not insignificant quantity of colloidal coffee solids. Here it is surprisingly found that the fullness of flavor of the roast fresh coffee is in this way particularly effectively preserved during its processing to give soluble dry products. The explanation of this effect remains doubtful. The fact is that the conjoint use of colloidal coffee solids in the extraction agent in the extraction of the fresh roast coffee on the one hand leads to an unexpected development and preservation of the coffee flavor in the finished product and on the other hand provides even greater safety against undesired flocculation of the colloidal component on infusing the dry product with hot water.

The invention accordingly also provides a process for the manufacture of a ready-to-infuse practically soluble coffee concentrate with improved fullness of flavour by extracting ground roast coffee and drying the extract, wherein roast coffee solids are ground to colloidal particle size, preferably by wet grinding, fresh roast coffee is then extracted with an aqueous solution or suspension of these colloids, the extract thereby produced is adjusted to a pH-value of below about 5.0, and the latter extract is finally dried to give a dry product.

The roast coffee component which is to be extracted may be of the same or different origin as the colloidal coffee component. It is within the scope of the invention that any desired mixtures of varieties of coffee are used in order to produce desired flavor nuances or trends. In the embodiment here described for manufacturing the new coffee product it is preferable to employ, in the extraction, a colloid-containing liquid phase whose colloidal solids content is below 10% by weight relative to this liquid phase. The colloid component preferably amounts to up to about 5% by weight, and as a rule it is possible to work with colloid contents of 2 to 5% by weight. The term colloidal particle size here and within the description of the invention generally, especially designates the particle size range of up to about 10μ , with the average size of the individual particles being in the range of 3μ to 10μ . It will be appreciated that these particles are the result of grinding an insoluble material to particles of a "colloidal size."

In a special embodiment of the invention this colloid-containing aqueous liquid phase for coffee extraction is obtained by the coffee component which is to be worked to a colloidal particle size not being directly subjected to colloidal grinding but first being subjected to a preliminary extraction. In this embodiment of the invention the roast coffee, which has first been crushed to a moderate particle size, for example ground to about 2 to 3 mm., is initially subjected to an extraction under mild conditions. Temperatures of below 100°C . are here especially suitable, and it is possible to work in extraction columns under normal pressure. It can at the same time be appropriate to choose the amount of liquid extract herein withdrawn to be about equal to the amount of coffee starting material employed in this process stage. This first extract can, in a subsequent process stage, again be added to the product. This will be discussed later.

The roast coffee which has thus been pre-extracted, and which can now of course be ground more easily and therefore with less damage to the aroma than can dry roast coffee, is passed to the colloidal grinding stage. This colloidal very fine grinding can best be carried out as wet grinding with the addition of water. The use of soft or softened water is preferred both here and also in the other process stages. The colloidal grinding can best be carried out if the amount of water is a multiple of the dry weight of roast coffee employed, and in a preferred embodiment of the invention a ratio of about 5 to 12:1, especially about 9:1, is used.

The colloidal grinding of the pre-extracted material is appropriately effected in several stages. The suspension can first be passed to a preliminary comminution, which is appropriately carried out in a gear colloid mill. Thereafter there follows a further fine comminution for which a carborundum disk mill is for example very suitable. Here, it has again proved to be appropriate to work in at least 2 passes. An average degree of fineness of 100 to 500μ is initially achieved. This degree of fineness is however not yet sufficient to achieve a stable colloid, so that the desired average value for the size of the individual particles of less than 50μ and preferably of 3 to 100μ , is achieved by a further comminution, for example in a mill of the same system but with a narrower setting. The colloid-rich liquid phase obtained in this manner has a certain viscous character.

Since, in conventional grinding devices, only a part of the solids is always ground to the desired colloidal fineness, it is advisable to separate the colloidal component from the not yet colloidal component in a manner which is in itself known. Centrifuges or other decantation systems are suitable for this. The decantation residue can again be passed through the colloid mill in its finest setting, and at the same time it is appropriate again to add water, for example again in the ratio of 9:1 (water to dry weight of the solids).

Using conventional grinding devices it has been found that colloid-containing ground liquids can in this way be obtained whose colloid component is less than 10% by weight, for example in the range of 2 to 5% by weight. These liquids are outstandingly suitable for the subsequent extraction of fresh roast coffee.

The residue of larger particles produced during the colloid grinding can be employed in the usual manner for obtaining soluble coffee extracts. Thus it is advisable to extract it in autoclaves with stirrers. The material is as a rule less suitable for a conventional column extraction since the very fine grinding makes the penetration of the material by hot water and under high pressure difficult or impossible if the material is stacked high in a column, without stirring. On the other hand no difficulties arise in an autoclave with a stirred container. Here the same yields are achieved as in the usual column process. The extract hereby initially obtained can, in one embodiment of the invention, be employed to obtain the colloid-containing end product. This again will be discussed later. The residue which is appropriately exhaustively extracted in this last stage is discarded.

Fresh roast coffee is now extracted with the optionally combined colloid-containing ground liquid. Here again it is preferred, in a special embodiment of the invention, to carry out this extraction in several stages in such a way that a first extraction stage under mild conditions is employed. In particular, temperatures of 80° to 100°C . are herein not exceeded and at the same time roughly normal pressure is used. Under these conditions a first fraction is preferably withdrawn in such a way that the amount of liquid roughly corresponds to the weight of coffee employed. The solids content is then about 10 to 15% by weight. The solution is notably cloudy, i.e. the proportion of colloid is very high.

This first extraction stage is followed by a usual post-extraction at elevated temperatures and appropriately at elevated pressure. The number of these subsequent extraction stages, the temperature and pressure level, and the column circuit system is, in a manner which is in itself known, determined by the yields of dry substance, relative to the weight of coffee employed, which are to be achieved. The extraction stages which follow the first extraction carried out under mild conditions also still show colloidal turbidity, though to a reduced extent. The residue hereby obtained, which is preferably exhaustively extracted, may be discarded.

As a result of the process stages hitherto described various liquid phases are now present. These are from the stage of obtaining the colloid, the first extract, as well as the residue extract from the exhaustive extraction of the non-colloidally ground component. From the stage in which the fresh roast coffee is extracted with the colloid-containing liquid there are present the first extract from the extraction under mild process conditions and at least one extract from the subsequent exhaustive extraction of the starting material. According to the invention it is now further preferred to combine at least the colloid-containing extracts and to further process them together. In a particularly appropriate embodiment it is also possible to admix the extract phases which have arisen during the production of the colloid. In a typical embodiment of the invention the colloid component lies within the range of up to about 40% of the combined extract substances and is for example about 20 to 35%. Depending on the total solids content of the extracts it may now be desirable to concentrate the extracts or the extract mixture. The degree of concentration of the extract before drying at the same time essentially depends on the desired nature of the end product. If for example foamed granules and a specific gravity of the dried product corresponding to that of the usual spray-dried coffee are to be achieved, the drying stage should start with a coffee extract containing 28 to 36% solids. Against this, a preliminary concentration to 18 to 22% solids content suffices to obtain crystalline granules. This preliminary concentration is carried out in a manner which is in itself known, under conditions which do not harm the aroma; ice concentration is particularly suitable for this purpose.

Before drying the colloid-containing extract or extract mixture the pH value adjustment already described is carried out. Here the pH value is adjusted to a range of for example 4.3 to 5.0, preferably above 4.5. The range from 4.7 to 4.9 can be particularly preferred. It is preferred to employ constituents

intrinsic to coffee for the regulation of the pH value. Here the invention employs the known fact that the acidity of a coffee extract can be varied by varying the extraction conditions. The more severely a coffee powder is extracted, the higher, as a rule, is the proportion of acid components in the extract.

Separately from the process subject matter hitherto described, a coffee extract is accordingly prepared in the process of the invention, in the usual manner, under comparatively severe conditions and giving correspondingly higher acidity. This extract is then used to adjust the pH value. At the same time the acidity of the coffee extract can here — and also at comparable points of the process variants which are still to be described — be further regulated by a treatment with ion exchange resins in order to set up the desired acidity values in the coffee extract.

The mixed product is then converted to a dry product in a conventional manner. The use of conditions which do not harm the aroma, for example freeze drying, is herein preferred. This furthermore not only applies to the process variant here described but generally to the working-up of the colloid-containing solutions or suspensions in the sense of the invention. An instantaneously soluble coffee powder is produced which is characterized by a considerable content of colloidally ground solids. Substantial quantities of conventional coffee extract powders or granules can then be upgraded by means of this product.

In a further special embodiment of the invention a variation in flavor can here — and naturally also in the e.g. of colloid-containing products manufactured in other ways in accordance with the invention — be achieved by an aroma concentrate obtained by steam stripping being added to the colloid-containing extracts, especially before drying. In this variation known by the name of "stripping" the following procedure is preferably followed:

20 to 50% of the roast coffee to be extracted — that is to say e.g. the coffee not intended for the manufacture of the colloid — are subjected to a steam distillation in the ground state. The steam enriched with aroma substances is subsequently condensed. The concentrate thus obtained is added to the extract before drying.

It will be obvious that in detail the measures for preserving and securing the aroma as far as possible, which are known from the state of the art, are employed in carrying out the process stages. Thus it is for example advisable to use softened water and to cool the resulting extracts as rapidly as possible.

A summary of the stages of the new process for the manufacture of a colloid-rich extract which have been described for this form of manufacture is given in the flow diagram 1. The product is in this case the colloid-containing material of stabilized pH value which is especially suitable for upgrading when diluted with conventional soluble coffee products, for example spray-dried coffee.

As has already been explained, it is however also possible, in obtaining the colloid-containing stabilized products, to proceed by first subjecting a coffee starting material to a colloidal grinding, then mixing the ground material with other roast coffee which has been pre-ground in the usual manner, and then extracting this mixture, especially with water. The colloid-containing extract fractions hereupon produced are preferably combined and worked up to give the colloid-containing dry product. In detail, the following process is carried out:

Colloidal grinding is conveniently carried out in two stages in such a way that the material is first pre-ground to particle sizes of 70 to 500 μ , especially 100 to 200 μ , by means of a dry grinding in a suitable mill. The coffee powder thus obtained is then subject to colloidal grinding. In order to avoid any harm to the aroma at this stage, it is preferable to carry out the second stage of the grinding in the presence of water with cooling. The coffee powder can be mixed with water in the ratio of 2:1 to 4:1 and then subjected to colloidal grinding. The preferred aim is a particle size of the predominant part of the ground material within the range of 3 to 5 μ . Instead of

employing the suspension of the coffee powder from the first grinding stage in water it is of course also possible to employ a cooled coffee extract as the liquid phase.

The ground material thus obtained is then mixed with normal coarsely ground coffee and extracted in a manner which is in itself known. It is appropriate to use the conventional battery extraction for this. According to the invention it is preferred to employ, for this extraction, coffee mixtures which contain up to about 40% by weight of the roast coffee which has been ground to colloidal fineness. It is especially preferred to extract coffee mixtures which contain between 15 to 25% by weight of colloidal ground coffee.

According to a further characteristic of the invention the extraction is carried out in a manner which does not harm the aroma. According to the invention a stepwise process is herein followed in such a way that in a first extraction stage only moderate extraction conditions are employed. Preferably temperatures of about 125° C. are not exceeded in this first stage of the extraction. It is for example possible to carry out the first stage extraction at about 120° C.; however, even lower temperatures may be used. This first extract contains a high proportion of the desired colloidal substances and is, in the described special embodiment of the invention, separated from the solid phase. It is best to cool it immediately. The remaining solid phase still contains a considerable proportion of soluble coffee constituents which can subsequently be dissolved out in a second and conventional extraction stage. For this purpose, this partially extracted coffee powder can for example be added to a fresh starting material for obtaining a conventional extract and be conventionally extracted together with this material. It is however also possible — and a special embodiment of the invention is based thereon — to subject the pre-extracted coffee powder by itself to a post extraction and then appropriately to combine the extract thereby obtained with the extract first produced.

The pH value regulation is then effected on the combined liquids. The solids content of the combined solutions can be relatively low, especially because of the mild extraction conditions in the first stage. This could lead to difficulties in the subsequent drying of these liquid components, especially if the drying is to take place in the foamed state by freeze drying. According to a further characteristic of the invention it is accordingly possible now first to concentrate the combined liquid components from the two stages of the extraction of the colloid-containing material. A partial freeze drying, or the conventional freeze concentration, is especially suitable. It is convenient to work towards a dissolved solids content within the range of 30 to 50% by weight. Such solutions can subsequently be easily foamed and be passed to the freeze drying in this form.

The pH adjustment which now follows is preferably again effected with more acid intrinsic coffee constituents, it again being possible to adjust the acid content in the coffee extract, and hence to vary the acid value, in a manner which is in itself known by treatment with ion exchanges. A complete system for the process stages described for this embodiment is shown in flow diagram 2, which shows the manufacture of a mixed product of a conventional dried extract and the extract which has been mixed with colloidal substances in accordance with the invention.

It will be understood that the pH referred to herein as the pH of the product is based on the pH of the material from which the dry product was produced. It will be clear that the pH of a cup of coffee made from the product (even if not mixed with a conventionally prepared coffee extract) will not necessarily be that of the liquid extract containing colloidal solids from which the product was prepared.

In a modification of the process hitherto described for the manufacture of the new coffee product it is however not necessary that the insoluble solids component of colloidal particle size should be present during the extraction of soluble coffee extract constituents. In this embodiment it is, rather, possible first to extract roast coffee in the usual manner and

then to add the insoluble roast coffee constituents, ground to a colloidal particle size, to the extract containing soluble coffee constituents. For this it is thus for example possible to extract roast coffee in a manner which is in itself known and separately therefrom to comminute another part of the same roast coffee or a roast coffee of different origin to a colloidal particle size. If this colloidal insoluble solid component is then introduced into the extract obtained beforehand, the colloid stabilization by regulation of the pH value carried out, and the resulting mixture thereafter dried, then one again has an upgraded product in the sense of the invention. At the same time it is of course also possible simply to manufacture an insoluble coffee constituent ground to a colloidal particle size and then to mix this with a coffee extract adjusted to the desired pH value in sufficient quantities that the colloidal solids content is adjusted to within the ranges mentioned. The drying of such a mixture also leads to the products improved in the sense of the invention, or mixture components for improving further proportions of conventional soluble coffee. It is obvious — and has already been mentioned — that the production of the colloidally ground constituent is appropriately effected under conditions which do not harm the aroma. This primarily includes the wet grinding of coffee which is in itself known. Particular importance can furthermore attach to the use of a slightly pre-extracted pre-crushed roast coffee, with the pre-extraction having led to a softening of the coffee particle which is to be broken up.

Amazingly and indeed completely surprisingly it is here not even necessary, in the sense of the process according to the invention, to employ insoluble colloidal coffee constituents which themselves still retain the bulk of the aroma substances intrinsic to coffee. The effect of aroma preservation and aroma development is thus indeed not exclusively attributable to the fact that the colloidally ground component introduces, as it were, unharmed aroma substances of the roast coffee into the product. Rather, the insoluble colloidal solids develop an unexplained protective action on the aromatic constituents of the coffee which goes far beyond this. This phenomenon has already been discussed in the context of the extraction by means of a colloid-containing extraction liquid. It is evidently an important function of the colloid-containing material — and indeed independently of whether it itself still possesses a considerable content of aromatic substances or not — that it exerts an aroma-preserving and aroma-developing action in the coffee extracts of soluble coffee constituents. Coffee aroma substances which are still entirely present in the fresh extract of soluble coffee constituents but are lost or destroyed in the further course of working-up these extracts or on storage of the dry products, are protected against loss or destruction, in a hitherto unrecognized manner, by incorporating insoluble solids of colloidal particle size.

If this fact is taken into account, a further embodiment of the process according to the invention becomes understandable, which consists of first subjecting a roast coffee which has been pre-ground in the usual manner to an aqueous extraction, subjecting the solid phase hereby produced to colloidal grinding and at the same time preferably carrying out this colloidal grinding in the presence of at least a part of the liquid extract phase, then appropriately separating off the non-colloidal residue from the ground product regulating the pH value of the colloid-containing liquid phase to the range mentioned, and then drying the mixture which has been colloid-stabilized in this way. The dry product can again be mixed with conventional coffee extract powder in the manner described. In detail, the combination of the following process stages are suitable for this purpose:

A fresh roast coffee of any desired origin is subjected to preferably dry grinding in a first process stage. It is preferred to grind the material to relatively fine particle sizes, for example to particle sizes in the range of 70 to 500 μ , especially 100 to 200 μ . It is obvious that here conditions which do not harm the aroma, for example grinding at temperatures which are not too high, are to be recommended. This powder is then sub-

jected to an aqueous extraction in order to obtain a product which can, in a second grinding stage, namely the colloidal grinding, be converted into the essential flavour-generating and flavor-preserving component of the new finished product. Here it is preferred, in accordance with the invention, to carry out this aqueous extraction of the very finely ground roast coffee in two stages in such a way that in a first stage, which is subsequently described as "pre-extraction," one works at temperatures of at most about 100° C. and at approximately normal pressure, whilst in a second stage, the "post-extraction," the extraction is carried out at temperatures above 100° C., preferably in the range of 110° to 130° C., and at suitably elevated pressures. The pre-extraction is preferably carried out at normal pressure with almost boiling water, especially in the temperature range of 90° to 95° C. In both extraction stages, only limited quantities of water are used for the extraction. In particular, weight ratios of water to coffee powder within the range of 2:1 to 4:1 are suitable, and it is preferred to work with about 3 parts by weight of water per 1 part by weight of the roast coffee powder. The weight ratios here mentioned in each case relate to the weight of the dry coffee and this is to be taken into account in the post-extraction stage.

In this embodiment of the invention it is furthermore preferred to effect a separation of the liquid extract phase and the moist coffee powder after the pre-extraction. The liquid extract phase is cooled and preserved for further processing later in the process. The moist coffee powder from the pre-extraction is then, in the post-extraction, subjected to a second treatment under the conditions mentioned. Here again a liquid extract phase and a solid phase consisting of moist coffee powder are produced. According to a preferred embodiment of the invention these two phases from the post-extraction are not however, separated but are passed together to the subsequent colloidal grinding.

The abovementioned weight ratios of water to coffee powder in the two stages of the extraction have been chosen for practical reasons. They can be changed, particularly in the direction of using larger quantities of water, but this does not bring any advantage since the water must again be evaporated at a later point. A preferred extraction temperature for the post-extraction is about 120° C. The colloidal grinding of the total product from the post-extraction is effected in a manner which is in itself known, again under conditions which do not harm the aroma, preferably at temperatures which are only slightly elevated, if at all. It has been found that, compared to grinding the dry roast coffee, grinding according to the invention of a completely moist material which has already been treated with water at elevated temperatures results in improvements, especially in protection of the aroma. It will be clear that grinding the solid constituents in the method of the invention takes place more easily than in the case of dry roast coffee. In this colloidal grinding it is appropriate to grind as large a proportion of the solid product from the post-extraction as possible to a colloidal particle size. This proportion is preferably above 50% of the solid material employed. In practice it has proved preferable to grind about 80% of the solid starting material to particle sizes of 2 to 5 μ .

The ground product is accordingly a liquid phase which according to the preferred embodiment of the invention here described consists of the liquid extract from the post-extraction in which the colloidally ground component is suspended or colloidally dissolved. Alongside this, small quantities of remnants of the solid starting material, which have not yet been ground to a colloidal particle size, are as a rule present for this second grinding. The material is then appropriately separated from this solid residue, for example by decantation. The separated solid material, which has, under the process conditions described, for example been extracted to the extent of 20 to 30% by weight (relative to fresh coffee) still contains significant quantities of soluble coffee constituents and is therefore not discarded but added to the conventional coffee extraction which is provided for obtaining the other com-

ponent product for the new mixed extract, as will be described below.

If a liquid extract phase has been separated off after the pre-extraction, then two liquid phases are now present after the colloidal grinding, namely the liquid extract phase from the pre-extraction and the liquid phase from the post-extraction which contains the colloidal component.

This is followed by the colloid stabilization by regulation of the pH value. For this it is preferred to combine the liquid extract from the pre-extraction with the colloid-containing liquid phase from the colloidal grinding and then to effect the pH adjustment on the combined liquid. Here again the content of soluble solids in the combined solutions is relatively low because of the mild extraction conditions, so that concentration, for example for subsequent foaming for freeze drying, may be advisable. It will be clear that when adjusting the pH with acid coffee extracts it will as a rule be appropriate to use those acid extracts which have as high a solids content as possible. According to the invention it is preferred to match the degree of acidity and solids content of the conventional coffee extract employed for the pH adjustment to the solids content and initial pH of the colloid-containing liquid so that on pH adjustment at least approximately an equal amount by weight of soluble coffee solids, for example a 1-fold to 2-fold quantity, of the solids content of the colloidal liquid is added.

In the way which has been described, the insoluble colloid component is embedded in a larger quantity of the soluble solid constituents. The aroma substances taken up by it and/or still contained therein thus receive additional protection. Adjustment of the acid content in the coffee extract, and hence a variation of the acid value to the solids content, can here again be effected in a manner which is in itself known by treating this part of the extract by ion exchange.

A complete summary of the various stages of this embodiment of the invention which have here been described is shown in flow diagram 3.

In a further embodiment of the invention it can be appropriate already to carry out the colloidal grinding of the roast coffee whilst maintaining the intended acid pH conditions. This is by no means essential to achieve the result according to the invention. The adjustment of the pH value can not only be effected with acid constituents intrinsic to coffee but also with other physiologically tolerable acids, for example edible acids, hydrochloric acid or phosphoric acid. It is particularly this adjustment with hydrochloric acid which can be carried out in variations which are perhaps not uninteresting in particular cases. Here the pH value can first be comparatively strongly lowered by adding an excess of the hydrochloric acid, for example to values of below about 4.0, and the desired pH value within the range quoted can then be established by partial neutralization. If this partial neutralization is carried out with sodium hydroxide solution then sodium chloride, i.e. simply common salt, is produced as the product. Ultimately this simply means that a pinch of common salt has been added to the coffee, as is done regularly by many housewives. The aroma of the finished product is thereby not only not harmed but even further accentuated. For a number of reasons, especially considerations relating to food laws, the use of those embodiments first described which are exclusively based on constituents intrinsic to coffee is generally preferred.

The invention finally provides a further development in the production of mixtures of colloid-containing coffee products (A) with substantially colloid-free, especially conventional, components composed of soluble coffee extract substances (B). This form of the invention may be especially preferred when component (B) is one made under conditions in which the coffee aroma substances are comparatively strongly damaged. A typical example of this is coffee made by conventional spray-drying methods. In the drying stage, which is generally carried out at raised temperatures, a considerable proportion of the aroma substances are, as is known, irretrievably lost in spite of extreme precautions being taken. In

the modification of the invention described in the following an effective remedy in this connection is afforded.

In accordance with the invention, in the production of mixed products of a colloid-containing component (A) with a colloid-free component (B) a part of the aroma substances is separated from the starting material used for (B) and added to the component (A) during its preparation. The idea of this form of the invention is to remove beforehand from the starting material used for (B) at least that part of the aroma substances of the starting material used for component (B) that is relatively volatile and is lost in the conventional drying operation. A material having a low content of sensitive aroma substances is then worked up into component (B). This working up is carried out without any deleterious influence on the less volatile and more stable aroma substances of the coffee that still remain.

The separated portion of the aromatic substances is not lost, but is added to the colloid-containing component (A). In this way the invention utilizes the aroma preserving and stabilizing action of the colloid constituent frequently described above. Advantageously the aroma concentrate separated from (B) is added to the colloid-containing material during the production of (A) immediately before the aroma-preserving drying, especially therefore freeze drying. In addition to component (B) having a low content of aroma substances, which is then mixed with component (B) of low aroma content to form the end product.

It is important that in this form of the invention a still further increased effect can be obtained in the preservation of the fullness of the aroma. Thus, while utilizing the described capabilities and properties of the colloid-constituent the aroma substances of component (B) are also preserved, which would otherwise be lost in working up (B) to a dry product, especially in spray drying.

The dearomatization of the material used for producing (B) is advantageously carried out by stripping with steam the roast coffee used or by partial distillation, especially of the aromatic first extract from the process for making (B). In both cases there are obtained water-clear aroma concentrates, which in the production of component (A) are usually incorporated immediately before the freeze drying. It has been found useful within the scope of the invention to carry out the stripping with steam to obtain this aroma concentrate from the fresh roast coffee used with a quantity of vaporized water which corresponds to one or two times the weight of the coffee used. When the aroma concentrate is obtained from an extract fraction the simplest procedure is to evaporate a part of this extract. It is preferred to evaporate about 5 to 10 volume percent. of the extract liquid phase and to incorporate the aromatic concentrate so obtained in (A).

EXAMPLE 1

Production of the Colloid-containing Extracts

100 kg. of fresh roast coffee are ground to a particle size of 2 to 3 mm. and then subjected to an extraction in an extraction column at 90° temperature of 90° to 95° C., during which an aroma-rich pre-extract is withdrawn which is of the order of magnitude of the weight employed. This pre-extract is immediately cooled and stored for subsequent further processing. These 100 kg. of the pre-extract contain about 8 kg. of solids.

The pre-extracted roast coffee is emptied out of the extraction vessel and mixed with softened water, in the ratio of 9 parts of water to 1 part of solids, in a mixing vessel. The suspension is next subjected to a preliminary comminution in a gear colloid mill, and this is followed by grinding in a carborundum disk mill. The product is ground to an average particle size value of 3 to 10 μ . In a first stage of this wet grinding a colloid-containing liquid ground product containing about 32.5 kg. of solids is produced. The residue from the grinding is mixed with water in the ratio of 9 to 1 and is again passed

through the colloid mill. The aqueous ground phase now contains about 14 kg. of solids of colloidal particle size. The colloid-containing ground product from the first stage of the wet grinding has a solids content of about 3 to 5% and the product of the second grinding stage a solids content of about 3 to 4%.

The non-colloidal residue, which is separated off by means of a decanter and which amounts to about 45.5 kg. of solids is conventionally extracted in an autoclave provided with a stirrer, at elevated pressure. Hereupon a further 10 kg. of solids are dissolved out and the residue (35 kg. of solids) is discarded. The liquid extract obtained during this exhaustive extraction is cooled and stored for further use. The previously obtained colloid-containing extracts are combined.

Extraction Stage

210 kg. of conventionally pre-ground roast coffee are subjected to a mild extraction with the combined colloid-containing solutions in a first process stage. This extraction takes place in the range of 80° to 100° C. Here again a first fraction is withdrawn in such a way that the amount of liquid approximately corresponds to the weight of coffee employed. The solids content of this fraction is about 37.5 kg. (15%). The turbid colloid-containing solution is rapidly cooled and stored for further processing.

The residue of the coffee from the pre-extraction is subjected to a post-extraction at elevated temperatures and pressure in a manner which is in itself known and is 800 exhaustively extracted. A liquid extract containing 84.5 kg. of solids, together with 135 kg. of a solid residue, is thereby obtained. The exhaustively extracted residue is discarded. The liquid extract is cooled.

Isolation of the Dry Product

All the extracts obtained, i.e. the pre-extract from the stage in which the colloid is obtained, the residue extract from the same stage, as well as the two extract phases from the extraction of the roast coffee with the colloid-containing liquid, are combined. The solids content is increased to about 30% by a partial freeze drying. 470 kg. of the liquid, containing 140 kg. of solids, are now present. The pH value is adjusted to 4.7 to 4.8. Furthermore a coffee aroma concentrate obtained by steam stripping is added. The mixture thus obtained is subjected to freeze drying in the conventional manner. The yield of solids from the process is about 140 kg.

The colloid-containing component obtained in this manner is suitable for dilution with any desired conventional soluble coffee extract products. It can thus for example be mixed with conventional spray-dried coffee in dilution quantities of, for example, one to four parts of sprayed coffee per part of colloid coffee. Surprisingly, the effect of aroma development is herein the stronger, the weaker the original intensity of aroma of the conventional soluble coffee product.

EXAMPLE 2

225 kg. of roast coffee are divided into 3 portions of 25 kg., 75 kg. and 125 kg. The 125 kg. are extracted in the usual manner in accordance with the column system until the desired yield of, for example, 40 to 41% relative to roast coffee is obtained. The concentration of the extract is preferably adjusted to 30%, where appropriate by interpolating a freeze concentration or evaporation using a thin layer evaporator.

About 170 kg. of extract with a total solids content of about 50 kg. result. Of this extract, about 20 kg. are put to one side, whilst the remaining 150 kg. are adjusted to a pH value of about 5.2 by means of ion exchange. This latter portion is subsequently passed to freeze drying, with the interpolation of foaming, granulating or sieving if it is intended to offer the final product in a granular form. The remaining 20 kg. of this extract, containing about 6 kg. of solids, are kept at the low pH value which has resulted from the extraction, i.e. for example 4.3 to 4.7 and are first cooled, and then put aside to be subsequently combined with the colloiddally ground coffee.

The initially mentioned charge of 25 kg. roast coffee is subjected to a very fine dry grinding in suitable equipment and subsequently mixed with water in the ratio of 1:3. The 100 kg. of coffee suspension thus obtained are passed to a wet grinding in a colloid mill, if appropriate in several stages, until an average size of the individual particles of 3.5 μ results. This somewhat sludge-like coffee preparation is, together with the 75 kg. of conventionally ground roast coffee (which still remained from the division of the 225 kg.), subjected to an extraction at 100° to 120° C. Herein it is appropriate to use little water in order to keep the concentration of the extract as high as possible. 150 kg. of extract, with an average solids content of about 20%, can be withdrawn, being a total of more or less 31 kg. of solids, of which the predominant part is present in the solution in the colloidal state. In the second step this is further extracted, by the usual column process, to the total yield which is also otherwise usual or desired, for example to 40 to 41%. Hereupon about 200 kg. of liquid of total solids content about 19 kg. are obtained. This extract is combined with the colloid-rich other liquid extract. An amount of liquid of about 350 kg., with a total solids content of about 50 kg. results.

This extract is appropriately brought to a solids concentration of around 30% by ice concentration, and after introducing the abovementioned extract component from the extraction of 125 kg. of roast coffee has a natural pH value of 4.3 to 4.7, depending on the type and on the method of extraction. The concentrate is subjected to freeze drying in the usual manner, again with the use of foaming and granulating, if desired, if the product is to be marketed in this form.

One now thus has 2 end products, of which one, having a relatively low pH value, comprises 56 kg. and contains a high proportion of colloidal substances, whilst the other amounts to 44 kg. and has a pH value of about 5.2 to 5.3 (according to experience the pH value shifts slightly upwards during freeze drying). The two parts are mixed. On infusion the product lies within the pleasant flavor range as regards total acid, in which range added milk also does not coagulate, and is very aromatic and colloiddally cloudy.

Instead of mixing the colloid-containing constituent with a freeze-dried colloid-free coffee extract, the colloid-containing material can also be diluted with other usual soluble varieties of coffee, especially spray-dried coffee. Good results are for example achieved on mixing with 1 to 3 parts of spray-dried coffee per part of the colloid-containing coffee.

EXAMPLE 3

225 kg. of fresh roast coffee are divided into 2 batches of 25 kg. and 200 kg. The 200 kg. batch is extracted in the usual manner, best of all by the column system, to a yield of about 40% relative to the weight of roast coffee, so that in total an extract of about 270 kg. with a solids content of 80 kg. results. In order to achieve an average solids content of 30%, a freeze concentration or a thin layer evaporator can if desired be interpolated. Of these 270 kg. of extract, 100 kg. are put aside and stored cooled until they are subsequently mixed with the colloid component. The remaining 170 kg. are adjusted to a pH value of about 5.2 by means of ion exchangers, and are freeze-dried in the usual manner to about 50 kg. solids content, optionally with the interpolation of foaming and granulation if the end product is to be sold in this form.

The 25 kg. of roast coffee which have initially been put aside from the total weight of 225 kg. employed are fed to a dry very fine grinding step in a suitable apparatus, and thereafter subjected to a pre-extraction with 3 kg. of water per 1 kg. of coffee employed, at moderate temperatures. Hereupon a pre-extract of, for example, 25 kg., with approx. 14 to 15% solids content, i.e. approx. 3.7 kg. total solids, is obtained. The pre-extracted very finely ground coffee is again mixed with 50 kg. of water and in this state passes to a colloid mill. In this mill it is so finely ground, if appropriate by double passage, that the average size of the individual particles is in

the range of 3 μ . The coarser constituents can be removed by decantation and are subjected to an ordinary post-extraction. The main constituent amounting to about 105 kg. and having an average solids content of 15%, thus together representing 16.3% solids, is combined with the initially withdrawn pre-extract and preferably concentrated by freeze concentration, for example to a solids content of 30%. In total, 70 kg. of extract, with a solids content of 20 kg., are obtained.

On adding the 100 kg. of liquid extract, which had initially been put aside from the extraction of the 200 kg. of roast coffee, this liquid batch is adjusted to a pH value of about 4.7. It contains a large quantity of colloidal constituents. The extract is passed to a freeze drying, again optionally with preliminary foaming and granulation. 50 kg. of freeze-dried product are obtained. The pH value of this product is so low that the dried coffee extract thus obtained is considered to be too acid by average consumers, and there is also the danger of coagulation of milk. The product is therefore mixed with the conventionally extracted and freeze-dried coffee extract whose manufacture was described initially. The products are normally mixed in the ratio of 1:1. 100 kg. of freeze-dried coffee extract result from the 225 kg. of roast coffee which in total is extracted. The end product is distinguished by particular richness of aroma.

Instead of mixing the colloid-containing component with a freeze-dried colloid-free coffee extract, the colloid-containing material can also be diluted with other conventional soluble types of coffee, especially spray-dried coffee. Good results are for example achieved on mixing with 1 to 3 parts of spray-dried coffee per 1 part, in each case, of the colloid-containing coffee.

EXAMPLE 4

400 kg. of ground roast coffee are subjected to steam distillation. The stripped aroma concentrate is cooled and retained. 800 kg. of roast coffee ground in the usual way and the 400 kg. of product stripped as above are extracted in the usual way in a column system. The solids yield, based on the roast coffee, is 40 to 45% and the solids content of the extract was 20 to 23%. The product is spray-dried in the usual way.

80 kg. of roast coffee are pre-extracted under mild temperature conditions as described under Example 1 and then ground to colloidal size by several mills connected in series. After decanting, 40 to 50 kg. of roast coffee of colloidal size remain in aqueous solution 300 kg. of ground roast coffee were extracted with this solution in the manner described above in such a way that the first stage was carried out at a temperature of about 100° C., the second stage at about 120° C. while the third stage was carried out at a high temperature and pressure to obtain the desired yield. The first stages contain the colloidal material obtained by the extraction in preponderant quantities.

Both these stages are brought by freeze-concentration to a solids content in the extract of about 30%. The pH value lies, as stated in Example 1, at 4.7 to 4.9. The third stage was brought to a 30% solids content in the extract by a falling flow thin film evaporator.

The three stages were combined after concentration and the aroma concentrate which is derived from the stripping of the 400 kg. of roast coffee, which is finally extracted for spray drying, are added to the concentrated extract immediately before the freeze drying. About 170 kg. of final product is obtained and about 500 kg. of the product of spray-drying is mixed with this 170 kg. The total 650 to 700 kg. product contains about 40 kg. of colloidal material which gives to the infusion a colloidal turbidity and a pleasant aroma strength.

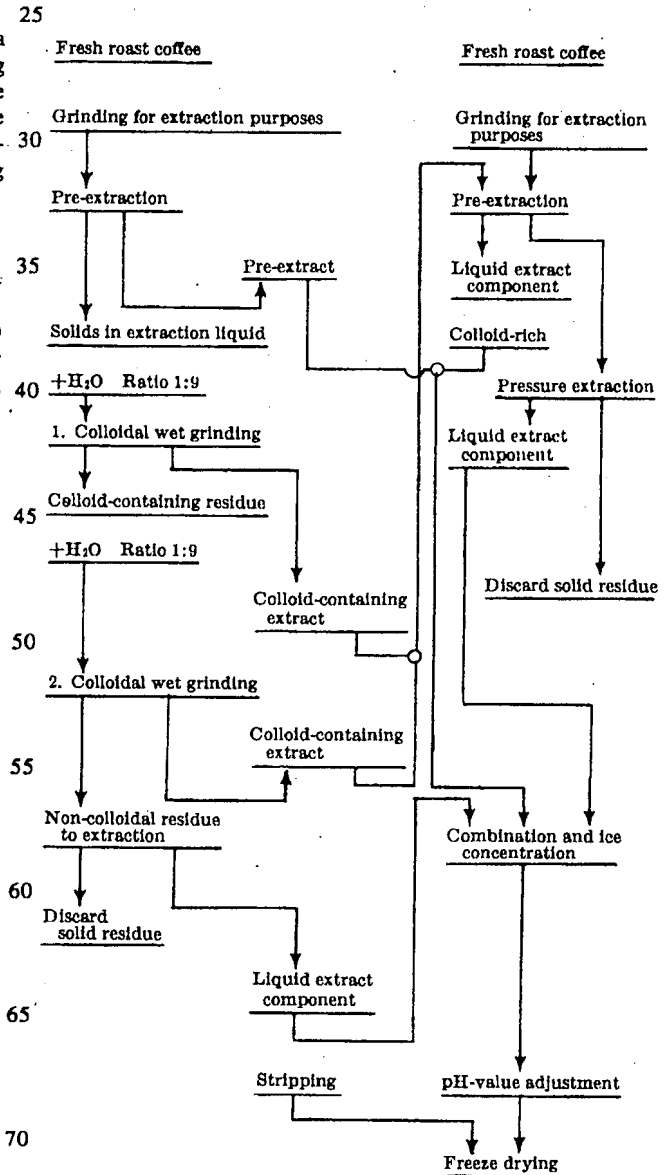
EXAMPLE 5

600 kg. of roast coffee were ground in the usual manner and conventionally extracted in a column system. The yield, based on the coffee, is 40 to 45% and the solids content in the extract 20 to 23%.

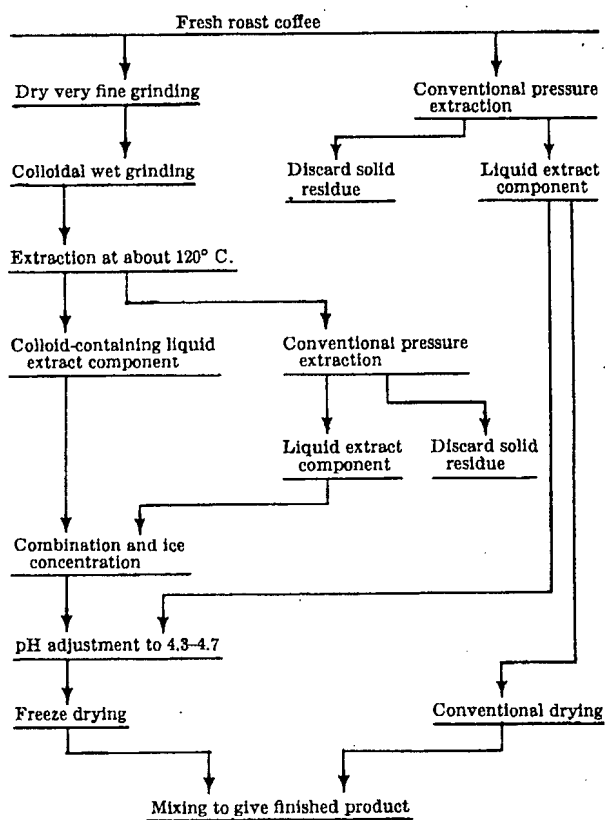
A further 600 kg. of roast coffee were extracted, after conventional grinding, with a three-fold quantity of water at the boiling point. 1,200 kg. of extract with a solids content of 7 to 8% were obtained. The extract was passed to a high-turbulence falling film evaporator. At a vacuum of 500 to 600 mm. Hg and a temperature about 65° C., 5 to 10% of the liquid is evaporated and condensed in a condenser at a lower temperature. This very aroma-rich condensate is retained.

In the post-extraction these 600 kg. are also extracted at the usual temperatures and pressures to a yield of 40 to 50% based on the coffee. Because of the prior removal of the first extract, this extract is thinner than is usual for spray drying. It is therefore concentrated in the same thin film evaporator at normal temperatures so that after being combined with the first drawings of the pre-extract it can be spray-dried at the usual 20 to 23% solids concentration.

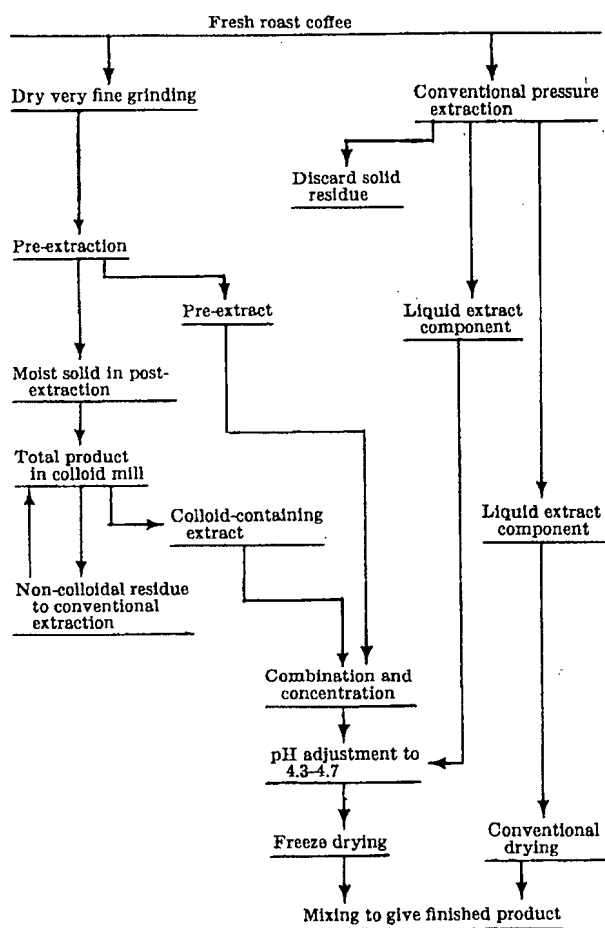
The preparation of the colloidal-rich freeze-dried coffee proceeds as described in Example 3. The aroma concentrate obtained by steam distillation was replaced by the concentrated extract of the aroma condensate that is obtained in the thin film evaporator from the extraction stage extended by spray-dried material. This product also gives the resulting mixture a particular aroma-richness and colloidal turbidity.



FLOW DIAGRAM 1



FLOW DIAGRAM 2



FLOW DIAGRAM 3

What is claimed is:

1. An instant coffee product having fresh-brewed coffee aroma, flavor and turbidity, comprising dried soluble coffee solids having incorporated and encased therein wet ground colloidal particles of roast or extracted roast coffee said colloidal particles having a particle size of about 3 to 10 microns and being effective to remain in suspension in dilute aqueous medium and to provide fresh-brewed aroma, flavor and turbidity, said dried soluble and wet ground colloidal particles having been dried from an aqueous medium having a pH adjusted so as not to exceed 5.2, said colloidal particles being present in from above 3% by weight up to 40% by weight relative to the total weight of the coffee product.
2. The product of claim 1 wherein the instant coffee is vacuum freeze dried.
3. The product of claim 1, wherein the pH is within the range of 4.3 to 4.9, and wherein the colloidal particles comprise, on a dry weight basis, from 15 to 35% by weight of the product.
4. The product of claim 1 which further includes an additional amount of dry powdered soluble coffee, the weight of wet ground particles being from 3% by weight up to 40% by weight relative to the total weight of the coffee product.
5. The product of claim 4 in which the dried soluble coffee solids are freeze dried and the additional soluble coffee is spray dried soluble powder, the weight of wet ground particles being from 3% by weight up to 40% by weight relative to the total weight of the coffee product.
6. A process for the manufacture of an instant coffee product having improved, regular coffee aroma, flavor and turbidity, and which forms a stable colloidal suspension when infused which comprises:
 - wet grinding roast or extracted roast coffee to particles of colloidal size having a particle size of about 3 to 10 microns effective to remain in suspension in dilute aqueous medium and to provide fresh-brewed aroma, flavor and turbidity;
 - incorporating and encasing said colloidal particles in soluble coffee to form an aqueous mixture of soluble coffee solids and colloidal particles having a pH which is adjusted so as not to exceed 5.2; and
 - drying the mixture, said colloidal particles being present in from above 3% by weight up to 40% by weight relative to the total weight of the coffee product.
7. The process of claim 6 which further includes pre-extracting the roast coffee, recovering the extracted roast coffee, preparing an aqueous mixture of the extracted roast coffee, wet grinding the aqueous mixture and recovering an aqueous mixture of colloidal material having a particle size of about 3 to 10 microns.
8. The process of claim 7 which further includes separating a non-colloidal residue from said wet ground aqueous mixture and subjecting said residue to a post-extraction at elevated temperatures in order to exhaustively extract the residue, and recovering the coffee extract therefrom.
9. The process of claim 7 wherein the pre-extraction is carried out at a temperature not exceeding 120° C., and wherein the amount of water to amount of roast coffee on a dry basis employed during wet grinding is from 5:1 to 12:1.
10. The process of claim 7 which further includes subjecting ground roast coffee to a mild extraction employing the aqueous mixture of colloidal material and recovering a soluble coffee extract containing colloidal particles of roast coffee having a particle size of about 3 to 10 microns.
11. The process of claim 7 in which ground roasted coffee is subjected to a staged extraction by first extracting under mild conditions employing the aqueous mixture of colloidal material, withdrawing a first fraction of coffee extract from said ground roasted coffee, said extract containing roasted coffee colloidal particles of a particle size of about 3 to 10 microns and further subjecting said residue of ground roasted coffee to a post-extraction by conventional means in order to exhaustively extract the coffee and recovering the soluble coffee extract produced therefrom.
12. The process of claim 11 which further includes mixing

said first fraction of coffee extract containing coffee colloidal particles with one or more of said soluble coffee extracts and drying the mixture.

13. The process of claim 12 in which the mixture is vacuum freeze dried.

14. The process of claim 12 in which an aroma fraction recovered from roasted coffee is added prior to drying said instant coffee.

15. The process of claim 7 in which at least two stages of wet grinding of roast coffee to colloidal size are employed and the colloidal roast coffee particles size recovered from the wet grinding stages is about 3 to 10 microns.

16. The process of claim 15 in which the amount of water to amount of roast coffee on a dry weight basis during wet grinding is from 5:1 to 12:1.

17. The process of claim 6 which further includes forming a mixture of wet ground colloidal coffee and coarsely ground roasted coffee, extracting the mixture by conventional means and recovering a coffee extract containing colloidal coffee particles having a particle size of about 3 to 10 microns.

18. The process of claim 17 in which the mixture of wet ground colloidal coffee and coarsely ground roast coffee is subjected to a first mild extraction, withdrawing a first fraction of coffee extract from the mixture, said extract containing colloidal material having a particle size of about 3 to 10 microns, subjecting the residue of the mild extraction to a post-extraction in order to exhaustively extract the coffee and recovering the coffee extract produced therefrom.

19. The process of claim 18 which further includes mixing the first fraction of coffee extract containing coffee colloidal particles having a particle size of about 3 to 10 microns with one or more soluble coffee extracts obtained from the process and drying the mixture.

20. The process of claim 19 in which the mixture is vacuum freeze dried.

21. A process for preparing an instant coffee product having fresh-brewed coffee aroma, flavor and turbidity comprising: providing a minor and major portion of fresh roast coffee; grinding the minor portion to a fine particle size; extracting the ground minor portion with water and recovering an aroma rich pre-extract; recovering the roast coffee residue from pre-extraction; forming an aqueous mixture of water and recovered residue; comminuting the aqueous residue and recovering an aqueous colloidal material; separating the non-colloidal residue from colloidal grinding, exhaustively extracting said non-colloidal residue and recovering the liquid extract obtained from exhaustive extraction; subjecting the major conventionally ground roast coffee portion to a mild extraction by aqueous colloidal material; withdrawing a first fraction of extract containing colloidal roast coffee particles, said colloidal material having an average size within the range of from 3 to 10 microns; subjecting the said first extraction coffee residue to post-extraction to exhaustively extract the residue, and recovering a liquid extract; combining at least one extract obtained during processing with the extract containing colloidal material so as to adjust the pH not to exceed 5.2 and drying the mixture, said mixture containing from above 3% by weight up to 40% by weight of colloidal particles of coffee relative to the total weight of the dry mixture.

22. The process of claim 21 wherein said mixture is freeze dried and is mixed with conventional dry soluble coffee in an amount such that the colloidal particles do not exceed about 25% by weight of the instant coffee product effective to enhance the regular coffee character thereof.

23. A process for preparing an instant coffee product having fresh-brewed coffee aroma, flavor and turbidity comprising: providing first and second portions of roast coffee; grinding the first portion to a finely ground state, mixing the finely ground roast coffee with water to form a suspension; grinding the aqueous roast coffee suspension to produce a colloidal material; mixing the colloidal material with the second portion of roasted and ground coffee; subjecting the mixture to conventional extraction, withdrawing a first fraction of coffee extract containing roasted coffee colloidal material, said colloidal material having an average particle size within the range of from 3 to 10 microns, continuing extraction of the residue of the first and second portions of ground roast coffee by conventional means in order to exhaustively extract the coffee and recovering a soluble coffee extract therefrom; combining the colloidal containing extract and conventionally obtained extract so as to adjust the pH not to exceed 5.2 and drying the mixture, said dry mixture containing from above 3% by weight up to 40% by weight of colloidal particles of coffee relative to the total weight of the dry mixture.

24. The process of claim 23 in which said mixture is freeze dried and is mixed with the dry soluble coffee in an amount such that the colloidal particles do not exceed about 25% by weight of the instant coffee product effective to enhance the regular coffee character thereof.

25. A process for preparing an instant coffee product having fresh-brewed coffee aroma, flavor and turbidity comprising: providing a minor and major portion of roast coffee; extracting the major portion in a conventional manner and recovering a soluble coffee extract; subjecting the minor portion of ground roasted coffee to a first mild extraction and recovering a soluble coffee extract; forming an aqueous dispersion of the residue of roasted and ground coffee from the first extraction and grinding to produce an aqueous colloidal material, said colloidal material having an average size within the range of from 3 to 10 microns; combining the aqueous colloidal material with a portion of said coffee extracts to produce a mixture having the pH adjusted to not exceed 5.2, and vacuum freeze drying the mixture, said mixture containing from above 3% by weight up to 40% by weight of colloidal particles of coffee relative to the total weight of the dry mixture; combining the remaining soluble coffee extracts and drying; and finally combining the colloidal containing dry coffee mixture and said dried soluble coffee extracts in an amount such that the colloidal particles do not exceed about 25% by weight of the instant coffee product effective to enhance the regular coffee character thereof.

26. The process of claim 6 wherein the pH is adjusted by the addition of a physiologically tolerable acid.

27. The process of claim 6 wherein the pH is adjusted by the addition of acid extract substances intrinsic to coffee.

* * * * *

ANEXO 4.
P

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 0285-002	FOR FURTHER ACTION	See item 4 below
International application No. PCT/RU2010/000349	International filing date (day/month/year) 23 June 2010 (23.06.2010)	Priority date (day/month/year) 01 October 2009 (01.10.2009)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant SHAKHIN, Khikmat Vadi		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

	Date of issuance of this report 03 April 2012 (03.04.2012)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Authorized officer Athina Nickitas-Etienne e-mail: pt04.pct@wipo.int

ДОГОВОР О ПАТЕНТНОЙ КООПЕРАЦИИ

от
МЕЖДУНАРОДНОГО ПОИСКОВОГО ОРГАНА

Кому:
Николаевой Н.В. а/я 852 Москва, 101000

PCT

**ПИСЬМЕННОЕ СООБЩЕНИЕ
МЕЖДУНАРОДНОГО ПОИСКОВОГО ОРГАНА
(PCT Правило 43bis.1)**

Дата отправки: 28 октября 2010 (28.10.2010) (день/месяц/год)

№ дела заявителя или агента: 0285-002	ДЛЯ ДАЛЬНЕЙШИХ ДЕЙСТВИЙ См. пункт 2 ниже
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Номер международной заявки: PCT/RU 2010/000349	Дата международной подачи: 23 июня 2010 (23.06.2010)	Самая ранняя дата приоритета: 01 октября 2009 (01.10.2009)
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Международная патентная классификация (МПК) или национальная классификация и МПК A23F 5/00 (2006.01) A23F 5/24 (2006.01) A23F 5/10 (2006.01)
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Заявитель: ШАХИН Хикмат Вадн

1. Данное сообщение содержит информацию, относящуюся к следующим разделам: ☒ Графа I Основа сообщения ☐ Графа II Приоритет ☐ Графа III Отсутствие заключения в отношении новизны, изобретательского уровня и промышленной применимости ☐ Графа IV Нарушение единства изобретения ☒ Графа V Обоснованное утверждение в соответствии с Правилем 43 bis.1(a)(i) в отношении новизны, изобретательского уровня и промышленной применимости; ссылки и пояснения, подкрепляющие такое утверждение ☐ Графа VI Некоторые процитированные документы ☐ Графа VII Некоторые недостатки в международной заявке ☐ Графа VIII Некоторые замечания по международной заявке 2. ДАЛЬНЕЙШИЕ ДЕЙСТВИЯ Если требование на проведение международной предварительной экспертизы будет подано, тогда данное сообщение будет рассматриваться как первое письменное сообщение от Органа международной предварительной экспертизы ("IPEA"). Данная норма не применяется в случае, когда заявитель выбирает другой Орган, отличный от данного, в качестве IPEA, и выбранный IPEA уведомил Международное бюро в соответствии с Правилем 66.1 bis(b), что письменные сообщения от данного Международного поискового органа не будут рассматриваться как таковые. Если данное сообщение рассматривается в качестве первого письменного сообщения IPEA, как предусмотрено выше, заявителю предлагается представить в IPEA письменный ответ с изменениями, в случаях когда это целесообразно, до истечения 3-х месяцев с даты почтовой отправки Формы PCT/ISA/220 или до истечения 22-х месяцев с даты приоритета, в зависимости от того, какой срок истекает позднее. Для дополнительной информации, см. Форму PCT/ISA/220. 3. Для дальнейших разъяснений см. Форму PCT/ISA/220.
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Наименование и адрес Международного поискового органа: ФГУ ФИПС, РФ, 123995, Москва, Г-59, ГСП-5, Бережковская наб., 30-1 Факс: (499) 243-3337, телетайп: 114818 ПОДАЧА	Дата завершения данного сообщения 13 октября 2010 (13.10.2010)	Уполномоченное лицо: А. Вороная Телефон № (495)730-7675
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ПИСЬМЕННОЕ СООБЩЕНИЕ
МЕЖДУНАРОДНОГО ПОИСКОВОГО ОРГАНА

Номер международной
заявки:
PCT/RU 2010/000349

Графа I Основа сообщения

1. Относительно языка, данное сообщение подготовлено на основе:
 - ☒ международной заявки, на языке, на котором она была подана
 - ☐ перевода международной заявки на следующий язык _____, который является языком перевода, представленного для целей международного поиска (Правила 12.3(a) и 23.1(b)).
2. ☐ Данное сообщение подготовлено с учетом исправления очевидной ошибки, разрешенного данным Органом или доведенного до сведения данного Органа согласно Правилу 91 (Правило 43bis1(a))
3. Относительно любой последовательности нуклеотидов и/или аминокислот, раскрытой в международной заявке и необходимой для заявленного изобретения, данное сообщение подготовлено на основе:
 - a. перечень последовательностей, поданный или представленный
 - ☐ на бумажном носителе
 - ☐ в электронной форме
 - b. время подачи или предоставления
 - ☐ содержался в первоначально поданной заявке
 - ☐ подан вместе с международной заявкой в электронной форме
 - ☐ представлен впоследствии в данный Орган для целей проведения поиска
4. ☐ Дополнительно, в случае, если более чем одна версия или копия перечня последовательности, была подана первоначально или была представлена впоследствии, требуется, чтобы информация в последующих или дополнительных копиях была идентична той, которая была в первоначально поданной заявке, или не выходила за рамки раскрытия первоначально поданной заявки.
5. Дополнительные комментарии:

**ПИСЬМЕННОЕ СООБЩЕНИЕ
МЕЖДУНАРОДНОГО ПОИСКОВОГО ОРГАНА**

Номер международной
заявки:
PCT/RU 2010/000349

Графа V Обоснованное утверждение в соответствии с Правилom 43 bis.1(a)(i) в отношении новизны, изобретательского уровня и промышленной применимости; ссылки и пояснения, подкрепляющие такое утверждение

1. Утверждение

Новизна (N)	Пункты	4-14	ДА
	Пункты	1-3	НЕТ
Изобретательский уровень (IS)	Пункты	8-14	ДА
	Пункты	4-7	НЕТ
Промышленная применимость (IA)	Пункты	1-14	ДА
	Пункты		НЕТ

2. Ссылки и пояснения

D1: DE 19700084 A1, 09.07.1998

D2: WO 9624255 A1, 15.08.1996.

D3: Нахмедов Ф.Г., «Технология кофепродуктов», Легкая и пищевая промышленность, Москва, 1984г, с. 78-83.

Из D1 (кол.1) известна растворимая кофейная композиция, состоящая из растворимого сублимированного кофе и натурального кофе тонкого помола, без осадка, обладающая вкусом и ароматом свежесваренного натурального кофе, при этом тонкий помол обеспечивает равномерное распределение указанных частиц и гранул. Натуральный кофе тонкого помола имеет размер частиц 30 мкм. Содержание натурального кофе тонкого помола в композиции составляет около 30%.

На основании того, что все признаки заявленной кофейной композиции по п.п. 1-3 известны из D1, изобретение по п.п. 1-3 не соответствует критерию «новизна».

Использование натурального кофе тонкого помола из одного вида или смеси зеленых зерен в заявленной композиции по п. 4 известно из D2 (с. 8, строки 4-5).

Из D2 (пример 6) известно использование совместного обжаривания зеленых зерен в кофейной композиции как указано в п.5

Что касается признаков п. 6, то специалисту очевидно, что смешивание различных видов зеленого кофе для производства сублимированного кофе, в зависимости от сортности, страны произрастания и даты сбора урожая, будет приводить к различным вкусовым и ароматическим характеристикам готового продукта.

Использование кофейного масла в заявленной композиции по п. 7 известно из D2 (описание с.2, строка 26).

На основании изложенного, изобретение по п.п. 4-7 не соответствует критерию «изобретательский уровень».

Наиболее близким аналогом заявленного способа получения кофейной композиции является D1.

Из D1 (кол. 1) известен способ получения кофейной композиции, включающий смешивание растворимого сублимированного кофе и натурального кофе тонкого помола в процессе сгущения.

ПИСЬМЕННОЕ СООБЩЕНИЕ
МЕЖДУНАРОДНОГО ПОИСКОВОГО ОРГАНА

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Дополнительная графа

Заявленный способ по п.8 отличается от способа известного из D1 тем, что натуральный кофе тонкого помола смешивают с концентрированным жидким кофейным экстрактом перед вспениванием, предшествующим сублимации.

Таким образом, способ по п.п. 8-14 соответствует критерию «новизна».

Из D2 известен способ получения кофейной композиции, включающий совместную экстракцию зеленого кофе в зернах и обжаренного кофе, обжарку смеси, сгущение и сушку кофейной композиции или смешивание молотого зеленого кофе с кофе, прошедший стадии карамелизации.

Из D3 (с.78-83) известен способ получения натурального растворимого кофе, включающий обжарку, измельчение, экстракцию и сушку полуфабриката.

На основании того, что указанные отличительные признаки неизвестны и неочевидны из уровня техники и позволяют получить быстрорастворимый кофе методом сублимации, изобретение по п.п. 8-14 соответствует критерию «изобретательский уровень».

Изобретения соответствуют критерию «промышленная применимость».

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
NIT : 800.176.089-2
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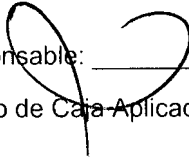
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		Bogotá D.C., Mayo 28 de 2012 - 16:15:11

RECIBIDO DE : OLARTE MOURE & ASOCIADOS	NI 830.122.870
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*** Soporte del Pago ***					
TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PAGO	VR. PAGO
CONSIGNACION	BANCO DE BOGOTA	062754387	455532630	28/05/2012	100.000.00

*** Conceptos Pagados ***			
CANT.	RENTISTICO	CONCEPTO	Vr.UNDITARIO Vr.CONCEPTO
1	50005-01-08 PRORROGA DE TERMINOS	1609 S.DISTINTIVOS PRORROGA DE TERMINOS O PLAZO ADICIONAL	100.000.00 100.000.00
			\$100.000.00
=====			

SON: **CIEN MIL PESOS MONEDA CORRIENTE***

Responsable: 
Recibo de Caja Aplicado al Expediente No. _____

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

No. 11-121792- -00002-0000
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