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EDIFICIO SIS
CARRERA 4 No. 7
BOGOTÁ 8, COLOMBIA

Radicación : 00021434 00000003
Fecha (AND): 2003-07-28 13:03:18
Trámite : 002 PATENTES D 1 REGISTRADO/ 538 PETICION
Remedial: 2020 DIVISION DE NUEVAS CREACIONES

47-3611
Folios: 2 110-4995

Señora Jefe de la
DIVISION DE NUEVAS CREACIONES
Superintendencia de Industria y Comercio
E. S. D.

TRÁMITE: 002

EVENTO: 001

ACTUACIÓN: 538

Referencia : Expediente No. 00-021.434
Solicitante : THE PILLSBURY COMPANY
Asunto : Solicitud de patente para: "PRODUCTOS ALIMENTICIOS CON PRESERVACIÓN DE BIOCONTROL".
Fecha de solicitud : 24 de marzo de 2000
Publicada en : la Gaceta No. 524 del 31 de enero de 2003

1. Yo, Emilio FERRERO, identificado como aparece al pie de mi firma, actuando como apoderado en el asunto de la referencia, atentamente solicito se efectúe el examen de patentabilidad de la solicitud en referencia según lo establecido en el artículo 44 de la Decisión 486 de la Comisión de la Comunidad Andina. Para tal efecto presento junto con este escrito el recibo No. 03-50,607 por valor de \$335.000.00, que corresponde a la tasa fijada según lo dispuesto en la resolución No. 41687 del 24 de diciembre de 2002.

2. Ruego atentamente a la Señora Jefe se sirva ordenar que se anexe este recibo, para que se efectúe dicho examen y se continúe con el trámite de la solicitud.

Bogotá, 28 JUL. 2003
Señora Jefe,


EMILIO FERRERO
T.P.A. No. 31.929

COLO 11346-801-004-7
MRE/DIF/ID-000057/WPC11346

NIT. 860.041.367-3

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774

SUPERINDUSTRIA Y COMERCIO
Radicacion : 00021434 00000003 Folios: 2
Fecha (AMB): 2003-07-28 13:03:18
Tramite : 002 PATENTES 9 1 REGISTRO/ 538 PETICION
Residencia: 2020 DIVISION DE NUEVAS CREACIONES
NIT : 300076089-2

IMPORTE TOTAL DE CASH : 03 - 50,607
FECHA : JULIO 21 DE 2003

***** CONSIDERACION *****

DESCRIPCION	TITULO	TIPO	CLASIFICACION	No. PAGOS	FECHA PAGO	VALOR PAGO
DE CASH	CONSIDERACION	BANCO POPULAR	30-00110-6	0573198	21/07/2003	33,071,480.00

***** CONCEPTO *****

DESCRIPCION	CONCEPTO	TOTAL CONCEPTO
01-01-01 SOLICITUDES	02 EXAMEN DE PATENTABILIDAD DE INVEN	333,303.00
	TOTAL :	\$ 333,303.00

*** CIENTO TREINTA Y CINCO MIL PESOS ***

RECIBIDO : 

RECIBO DE CASH APLICADO AL EXPEDIENTE No. _____

Col. 11346-001-004-7

269
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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISIÓN DE NUEVAS CREACIONES

2020/

Bogotá, D. C.

Doctor

Emilio Ferrero

(apoderado o representante sociedad solicitante)

ASUNTO:	Radicación No.	00-21434
	Trámite	002
	Evento	001
	Actuación	430
	Oficio No	09433
	Folios	005

Como resultado del examen de fondo, realizado con fundamento en el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

1. DOCUMENTOS ESTUDIADOS:

Para el presente estudio se tendrá en cuenta:

- Capítulo descriptivo comprendido en los folios 206 a 268.
- Las figuras 1 a 21 de los folios 194 a 205.
- Las reivindicaciones 1 a 19 del capítulo reivindicatorio encontrado en los folios 83 a 88.
- De acuerdo con los artículos 9 a 11 de la Decisión 486 de la Comisión de la Comunidad Andina, se acepta la prioridad reivindicada sobre la solicitud US 09/277.627 de Estados Unidos, cuya fecha de presentación es el 26 de marzo de 1999.

2. OBJETO DE LA INVENCION

La solicitud reclama un producto alimenticio no fermentado que comprende un alimento con un grado de humedad medible, tal como líquido, salsa, jugo, un producto lácteo, un producto de pastelería cargado, un rollo de huevo o unos raviolos cargados, y una cantidad de un microorganismo no tóxico que se selecciona del grupo que consiste de *Pediococcus acidilactici*, *Lactobacillus bulgaricus*, *Lactobacillus platarrum*, *Lactobacillus acidophilus*, *Lactobacillus helveticus*, *Lactobacillus salivarius*, *Leuconostoc citrovorum*, *Streptococcus cremoris*, *Streptococcus diacetylactis* y *Streptococcus lactis*, y en un primer estado el producto alimenticio no está pasteurizado y los microorganismos no tóxicos están secos, es decir, presentan un contenido de agua menor al 15%, y el producto puede ser cambiado por pasteurización a un segundo estado donde por lo menos una porción de los microorganismos no tóxicos remanentes continúan vivos y en estado seco; y tal que si el producto es almacenado en refrigeración una porción de microorganismos permanecerá seca y si el producto es sometido a cierta temperatura, entre 15°C y 40°C por 4 a 7 días, por lo menos una porción de dichos microorganismos se hidrata para volverlos efectivos para inhibir parcialmente el crecimiento dentro del producto de microorganismos tóxicos.

El objetivo de la invención es el desarrollo de productos alimenticios preservados y métodos para su preservación utilizando aproximación de preservación por biocontrol, sin que requiere de la adición de preservativos que afectan el sabor y textura del producto.

El objeto de la invención se clasificó, de acuerdo con el IPC, así: A23L 3/3463

3. CLARIDAD

El artículo 30 de la Decisión 486 de la Comisión de la Comunidad Andina establece que: "Las reivindicaciones definirán la materia que se desea proteger mediante la patente. Deben ser claras y concisas y estar enteramente sustentadas por la descripción.

La reivindicación¹ se refiere a un producto alimenticio no fermentado que comprende un "ítem" de alimento medible húmedo, y una cantidad de un microorganismo no tóxico que, en un primer estado el producto alimenticio no está pasteurizado y los microorganismos no tóxicos están "sustancialmente" secos, y el producto puede ser cambiado por pasteurización a un segundo estado donde por lo menos una porción de los microorganismos no tóxicos remanentes continúan vivos y en estado seco; y tal que si el producto es almacenado en refrigeración una porción de microorganismos permanecerá seco y si el producto es sometido a un "reto" de temperatura por lo menos una porción de dichos microorganismos se hidrata para volverlos efectivos para inhibir parcialmente el crecimiento dentro del producto de microorganismos tóxicos.

Así las cosas y dado que cada reivindicación debe ser clara por sí misma, esta oficina encuentra que la reivindicación en cuestión tiene términos que no son claros en el estado de la técnica como "ítem" de alimento y "reto" de temperatura. Así mismo, esta reivindicación emplea palabras subjetivas que no permiten establecer de forma clara cual es el alcance de la invención como es el término "sustancialmente" que no se permite delimitar que tan seco estarán los microorganismos y el término "medible húmedo" que no deja saber si se reclama un alimento húmedo o cualquier alimento cuya humedad va a ser medida. Finalmente, no se entiende si el alimento que se reclama es el producto alimenticio del primer estado o el del segundo estado o un producto alimenticio que se caracteriza por comprender el artículo alimenticio y una cantidad, por cierto, no precisada de microorganismo, y que además haya sido producido por un método que comprende la mezcla del alimento y los microorganismos, seguido por un paso de pasteurización en el que los microorganismos se mantienen secos. Siendo así se requiere al solicitante para que presente su nueva versión de la reivindicación en cuestión, de lo contrario, el capítulo reivindicatorio no cumpliría con el requisito de claridad que exige el artículo 30 de la Decisión 486 de la Comisión de la Comunidad Andina.

4. DETERMINACIÓN DEL ESTADO DE LA TÉCNICA

El artículo 16 de la Decisión 486 de la Comisión de la Comunidad Andina que establece que *"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.*

Sólo para el efecto de la determinación de la novedad, también se considerará dentro del estado de la técnica, el contenido de una solicitud de patente en trámite ante la oficina nacional competente, cuya fecha de presentación o de prioridad fuese anterior a la fecha de presentación o de prioridad de la solicitud de patente que se estuviese examinando, siempre que dicho contenido esté incluido en la solicitud de fecha anterior cuando ella se publique o hubiese transcurrido el plazo previsto en el artículo 40."

Consultadas las bases de datos y los archivos con que cuenta la entidad se encontró que antes del 26 de marzo de 1999, fecha presentación de la solicitud prioritaria, había sido publicado el documento EP0333056, el cual se relaciona con un método para inhibir el crecimiento de patógenos humanos y microorganismos que estropean los alimentos en comida refrigerada usando un lactobacillus.

271
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De acuerdo con lo establecido en el artículo 16 se determinó el estado de la técnica y se encontraron los siguientes antecedentes:

No	Documento	Título	Fecha de Publicación
1	EP0333056 Todo el documento.	" Method for inhibiting food-borne human pathogens and preventing microbial spoilage in refrigerated foods using a lactobacillus "	20-09-89

*Si se trata de una solicitud colombiana esta fecha corresponde también a la fecha de presentación de la solicitud colombiana aún sin haber sido publicada o sin habersele cumplido el plazo previsto en el art.40.

5. EVALUACIÓN DE LOS REQUISITOS DE PATENTABILIDAD

El artículo 14 de la Decisión 486 de la Comisión de la Comunidad Andina establece que: *"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."*

En cumplimiento del artículo 14 de la Decisión 486, se procedió a evaluar los requisitos novedad, nivel inventivo y aplicación industrial con el fin de establecer la patentabilidad de la invención reivindicada en la solicitud en estudio.

5.1. EVALUACIÓN DE LA NOVEDAD

El artículo 16 de la Decisión 486 de la Comisión de la Comunidad Andina dispone que *"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. "Sólo para el efecto de la determinación de la novedad, también se considerará dentro del estado de la técnica, el contenido de una solicitud de patente en trámite ante la oficina nacional competente, cuya fecha de presentación o de prioridad fuese anterior a la fecha de presentación o de prioridad de la solicitud de patente que se estuviese examinando, siempre que dicho contenido esté incluido en la solicitud de fecha anterior cuando ella se publique o hubiese transcurrido el plazo previsto en el artículo 40."*

Las reivindicaciones 1, 3 a 6, 10, 14, 15, 16, 18 y 19 de la solicitud reclama un producto alimenticio no fermentado que comprende un alimento con un grado de humedad medible, tal como líquido, salsa, jugo, un producto lácteo, un producto de pastelería cargado, un rollo de huevo o unos raviolos cargados, y una cantidad de un microorganismo no tóxico que en un primer estado el producto alimenticio no está pasteurizado y los microorganismos no tóxicos están secos y el producto puede ser cambiado por pasteurización a un segundo estado donde por lo menos una porción de los microorganismos no tóxicos remanentes continúan vivos y en estado seco; y tal que si el producto es almacenado en refrigeración una porción de microorganismos permanecerá seca y si el producto es sometido a cierta temperatura, por lo menos una porción de dichos microorganismos se hidrata para volverlos efectivos para inhibir parcialmente el crecimiento dentro del producto de microorganismos tóxicos.

El documento EP0333056 (ahora en adelante como D1) evidencia que es conocido en el estado de la técnica un método para inhibir el crecimiento de patógenos y prevenir la descomposición causada por microorganismos. De acuerdo con este documentos, el método para la preservación de alimento mediante biocontrol comprende la inoculación de un producto

273
2763

reivindicaciones 7 a 9 de la solicitud en estudio no cumpliría con el requisito de nivel inventivo definido en el artículo 18 de la Decisión 486 de la Comisión de la Comunidad Andina.

Ahora bien, el producto alimenticio donde los microorganismos están encapsulados no era conocido en el estado de la técnica. Sin embargo, siendo que la tabla 7 del folio 347 no permite establecer diferencias entre realizar el proceso y obtener el producto con microorganismos encapsulados o no encapsulados, y dado que la anterioridad D1 deja en claro que el concepto inventivo de usar microorganismos del género *Lactobacillus* para obtener la preservación de alimento fundamentada en el principio del biocontrol, esta oficina encuentra que la encapsulación de los microorganismos no aporta una ventaja en la técnica en relación con la preservación de los alimentos. Siendo de esta manera, la oficina encuentra que cualquier persona versada en la materia encontraría obvio emplear microorganismos de este género para realizar el biocontrol de organismos patógenos o asociados con la descomposición de alimentos, y que no considerara que el empleo de estos microorganismos en forma encapsulada sea relevante para lograr el resultado. Así las cosas, cualquier persona versada en la materia que conozca la información del D1 se vería motivada a emplear para la preservación de alimentos un microorganismo previamente reportado como biocontrolador de patógenos como es son las bacterias del género *Lactobacillus*. Por lo expuesto anteriormente se afirma que el documento D1 afectaría el requisito de nivel inventivo del producto alimenticio cuya característica esencial es comprender los mismos componentes que revela la anterioridad D1 componentes de un alimento con preservación de biocontrol. En consecuencia, se consideraría que la invención de las reivindicaciones 11 a 13 y 17 de la solicitud en estudio no cumpliría con el requisito de nivel inventivo definido en el artículo 18 de la Decisión 486 de la Comisión de la Comunidad Andina.

Anexo copia del documento D1 citado como anterioridad.

Nº	Documento	Reivindicaciones afectadas	Requisito que afecta
D1	EP0333056 Todo el documento.	1, 3 a 6, 10, 14, 15, 16, 18 y 19	Novedad
		2, 7 a 9, 11 a 13 y 17	Nivel Inventivo

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta días contados a partir de la fecha de la notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e del capítulo quinto (5), del título primero de la circular única número 10 de 2001.

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

El anterior requerimiento fue notificado por fijación en lista, de fecha 30 OCT. 2003

CONCEPTO TÉCNICO Número: 1575	EXAMINADOR TÉCNICO Código # 202016
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Vence
30-a-04

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EUROPEAN PATENT APPLICATION

⑬ Application number: 89104280.8

⑭ Int. Cl.: A23L 3/34 , A23C 9/123 ,
A23C 19/032

⑮ Date of filing: 10.03.89

The microorganism(s) has (have) been deposited
with NRRL under number(s) B-12344 and
B-18261.

⑯ Priority: 14.03.88 US 167866

⑰ Date of publication of application:
20.08.89 Bulletin 89/38

⑱ Designated Contracting States:
AT BE CH DE ES FR GB GR IT LI LU NL SE

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⑷ Method for inhibiting food-borne human pathogens and preventing microbial spoilage in refrigerated food using a lactobacillus.

⑸ A method for inhibiting food-borne pathogen and spoilage microorganisms in processed foods using a Lactobacillus sp. which produces an antimicrobial substance at refrigeration temperatures is described. The method is particularly effective in inhibiting gas producing heterofermentative spoilage microorganisms, mold, food-borne pathogenic microorganisms, (Listeria and Salmonella) and psychrotrophic microorganisms which can occur in processed foods.

EP 0 333 056 A2

275
272**METHOD FOR INHIBITING FOOD-BORNE HUMAN PATHOGENS AND PREVENTING MICROBIAL SPOILAGE
IN REFRIGERATED FOODS USING A LACTOBACILLUS**Cross Reference to Related Application

This application is a continuation-in-part of application Serial No. 049,852 filed May 15, 1987.

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BACKGROUND OF THE INVENTION(1) Summary of the Invention

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The present invention relates to a bacterial method for inhibiting food-borne human pathogenic microorganisms and/or for preventing microbial spoilage in refrigerated processed foods after any heating of the foods during the processing which might inactivate bacteria. In particular, the present invention relates to a method wherein selected members of the genus Lactobacillus which metabolize in the processed food to produce an antimicrobial substance are inoculated into the processed food which is then held at refrigeration temperatures in order to inhibit the microorganisms without a substantial increase of the cell count (numbers) of the added bacterium.

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(2) Prior Art

U.S. Patent No. 4,514,424 to Raccach shows the use of Lactobacillus casei subspecies alactosus NRRL-B-12344 in fermented foods, particularly fermented sausage. The cells metabolize and increase in cell count in the sausage formulation. The problem is that this strain was later found to produce hydrogen peroxide which produces defects in sausage referred to as the "green ring". This strain was never commercialized for a sausage fermentation. The strain has been used for cheese fermentations where the cell count of the bacterium increases significantly as lactic acid is generated. The bacterium does not occur in significant numbers in the cheese product.

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OBJECTS

It is therefore an object of the present invention to provide a method for protecting refrigerated processed foods by incorporating in the processed food viable cells of a Lactobacillus which produces an antimicrobial substance to inhibit food-borne human pathogenic microorganisms and/or food spoilage microorganisms without a substantial increase in the number of cells of the Lactobacillus in the processed food. It is further an object of the present invention to provide a method which is simple and economical. These and other objects will become increasingly apparent by reference to the following description.

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GENERAL DESCRIPTION

The present invention relates to a method for inhibition of spoilage or food-borne pathogen microorganisms in a refrigerated processed food which comprises: inoculating the processed food following any heat treatment of the food which would inactivate the cells with a number of cells of a Lactobacillus which remain viable during refrigerated storage and which produce an antimicrobial substance to inhibit the microorganisms, and storing the food at refrigeration temperatures which prevent the number of the added Lactobacillus cells from increasing significantly except during transient temperature abuse. Both spoilage and food-borne human pathogens are inhibited in the food. The term "spoilage" means flavor, appearance, texture and/or aroma. The pathogens may or may not produce any evidence of spoilage in the food. Preferably the inhibition is at least twice as long as a control which does not contain added Lactobacillus cells.

U.S. Patent application Serial No. 049,852 filed May 15, 1987 describes the inhibition of psychrotrophic spoilage microorganisms by a Lactobacillus, particularly Lactobacillus casei subspecies alactosus NRRL-B-12344, which produces hydrogen peroxide in raw milk before it is processed. The inhibition results in part

276
278

from the lactoperoxidase system in milk using lactoperoxidase and thiocyanate naturally present. It has now been found that other antimicrobial metabolites are produced by this strain.

The preferred Lactobacillus which produce antimicrobial metabolites, including hydrogen peroxide, are Lactobacillus casei subspecies alactosus NRRL-B-12344 and Lactobacillus sp. NRRL-B-18,281 which have been deposited with the Northern Regional Research Laboratory in Peoria, Illinois. Both strains do not ferment lactose and produce hydrogen peroxide. These strains are available upon request by name and number. Other Lactobacillus sp. which produce an antimicrobial substance at refrigeration temperatures in processed foods can be easily located by screening. All that is required is testing in the food to be treated. There are only a relatively few Lactobacillus sp. which can be used in the present invention.

The food-borne pathogens inhibited include Salmonella and Listeria. Molds, which are spoilage microorganisms, such as Penicillium oxalicum are inhibited. The spoilage microorganisms include Lactobacillus fermentum and Lactobacillus bifermmentans and various psychrotrophic microorganisms which produce spoilage at refrigeration temperatures.

The Lactobacillus sp. which produce the antimicrobial metabolites can be provided as a bacterial concentrate which is frozen or lyophilized. The bacterial concentrates usually contain between about 10^8 and 10^{12} CFU (colony forming units or cells) per ml or gram. The cultures can also be used directly from a growth medium and usually contain between 10^8 to 10^9 CFU per ml.

A "processed food" is one which has been subjected to some form of treatment prior to being consumed. The processed food is particularly hard or soft cheeses, pasteurized milk or cream based products, dressing, sauces and the like. The culture is introduced after any heat treatment or pasteurization of the food to prevent the culture from being inactivated or killed during the processing.

The Lactobacillus can be used at a rate of between about 10^2 to 10^8 CFU per gram of processed food. For hard or soft cheeses the amount is preferably between about 10^5 and 10^8 CFU per ml or gram.

The processed foods are stored at refrigeration temperatures, which are less than about 12°C and preferably between 1°C and 12°C , after inoculation with the Lactobacillus. The foods are not fermented during storage. The cells do not divide (grow) significantly and thus do not ferment the processed food after introduction. Thus the cell count of the added Lactobacillus sp. does not increase significantly (i.e. by more than about ten times) during refrigeration. There can be temporary temperature abuse of the processed food during storage and it is still regarded as a "refrigerated" processed food because of the general conditions of storage. If the temperature abuse is severe, then the Lactobacillus can produce lactic acid and the food would be regarded as spoiled.

SPECIFIC DESCRIPTION

Example 1

This Example shows the use of Lactobacillus casei subspecies alactosus NRRL-B-12344 for inhibition of gas producing heterofermentative Lactobacilli.

PROCEDURE

A model food system which supports carbon dioxide production by heterofermentative Lactobacilli was developed. The substrate contained 1% casein hydrolysate, 1% beef extract, 0.5% yeast extract, 2% dextrose and 0.75% agar. The substrate was distributed into screw cap tubes, autoclaved ($121^\circ\text{C}/15$ min.) and tempered to 45°C . The tubes were inoculated with Lactobacillus casei subspecies alactosus NRRL-B-12344 and/or a heterofermentative indicator strain (Lactobacillus fermentum). The tubes were allowed to solidify at 24°C and then a 3 ml plug of sterile 2% agar (45°C) was delivered to the substrate surface of each tube. The tubes were incubated at 24°C . Gas production was indicated by cracking of the medium and displacement of the agar plug. As can be seen from Table 1, Lactobacillus casei subspecies alactosus NRRL-B-12344 effectively inhibited the production of gas by Lactobacillus fermentum at 24°C for a relatively long period of time even when L. fermentum was added at very high levels (5×10^8 /gram) which normally would not be encountered in foods processed under sanitary conditions.

Table 1

Incubation Time (h)	L. fermentum ¹ Added (CFU/ml)	L. casei ² Added (CFU/ml)	Gas ³ Production
24	1 x 10 ⁷	-	-
	1 x 10 ⁷	4 x 10 ⁷	-
	5 x 10 ⁷	-	-
	5 x 10 ⁷	4 x 10 ⁷	-
	50 x 10 ⁷	-	+
48	50 x 10 ⁷	4 x 10 ⁷	-
	1 x 10 ⁷	-	+
	1 x 10 ⁷	4 x 10 ⁷	-
	5 x 10 ⁷	-	+
	5 x 10 ⁷	4 x 10 ⁷	-
120	50 x 10 ⁷	-	+
	50 x 10 ⁷	4 x 10 ⁷	-
	1 x 10 ⁷	-	+
	1 x 10 ⁷	4 x 10 ⁷	-
	5 x 10 ⁷	-	+
	5 x 10 ⁷	4 x 10 ⁷	-
	50 x 10 ⁷	-	+
	50 x 10 ⁷	4 x 10 ⁷	+

¹Lactobacillus fermentum is a heterofermentative Lactobacillus

²Lactobacillus casei subspecies alactosus NRRL-B-12344.

³Gas production in the model food system consisting of 1% casein hydrolysate, 1% beef extract, 0.5% yeast extract, 2% dextrose, 0.75% agar. +, Gas produced; -, No gas produced.

This example shows that even at 24°C which can occur during temporary temperature abuse of the food during storage, Lactobacillus fermentum is inhibited. During refrigerated storage, the inhibition was for much longer periods.

The results of Example 1 show that the shelf life of product containing Lactobacillus casei subspecies alactosus NRRL-B-12344 is at least twice as long as the control without the cells, even at 24°C. The generation of gas is prevented as evidenced by the lack of cracking and movement of the agar plug when the Lactobacillus casei subspecies alactosus is present.

Processed foods containing Lactobacillus casei can be provided in sealed packages, such as blister packs. The generation of gas, primarily carbon dioxide, by heterofermentative spoilage microorganisms, particularly Lactobacillus fermentum and Lactobacillus bifementans is prevented. The Lactobacillus prevents spoilage of the processed food, cracking of the food and rupture of the sealed package by gas produced by the spoilage bacteria.

Example 2

This Example shows the use of Lactobacillus casei subsp. alactosus NRRL-B-12344 for inhibition of psychrotrophic microorganisms in a cream dressing.

PROCEDURE

A model cream dressing system was prepared using a half cream and half milk base. Commercial half and half was obtained and the pH was adjusted to 5.0 with 85% lactic acid. Sodium chloride was added to a concentration of 1.5%. The dressing was inoculated with psychrotrophic microorganisms for an initial titer of 4.0 x 10⁵ cfu/ml. This inoculum was obtained from a commercial milk sample and represents heavy

228
1/81

contamination. The dressing was placed in sterile bottles and inoculated with Lactobacillus casei subspecies alactosus NRRL-B-12344. A control consisted of the dressing without inoculation with the Lactobacillus casei subspecies alactosus. The samples were incubated at 7° C. The psychrotroph count (CVT count) was conducted as described by Gilliland et al (Psychrotrophic microorganisms in Compendium of Methods for the Microbiological Examination of Foods. American Public Health Association, Marvin L. Speck, ed. 173-178 (1978)) after 3, 6, 10, 22 and 28 days incubation at 7° C. The results are shown in Table 2.

Table 2

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Psychrotrophic Cell Count ^a (CFUx10 ⁶ /ml)		
Days at 7° C	Control	<u>Lactobacillus casei</u> subspecies <u>alactosus</u> ¹ NRRL-B-12344
0	0.42	0.42
3	0.23	0.01
6	8.30	2.30
10	131.00	13.20
22	2060.00	620.00
28	4400.00	1510.00

¹Lactobacillus casei subspecies alactosus (NRRL-B-12344) at 1 x 10⁷ cfu/ml dressing.

^aGram negative psychrotrophic organisms enumerated on Crystal Violet Tetrazolium (CVT) Agar.

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As seen in Table 2, Lactobacillus casei subspecies alactosus NRRL-B-12344 significantly inhibited psychrotrophic microorganism development in the cream dressing system at 7° C by comparison to the control.

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Example 3

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This Example shows the preservation of a dressing using a plate assay for the inhibition of psychrotrophic bacteria.

PROCEDURE

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A cream dressing agar medium was prepared using 200ml of ultra-pasteurized half and half. Sodium chloride and bacteriological agar were added at 1.5% each, and the medium was heated to boiling to dissolve the agar. After tempering to 45° C, the medium was acidified to pH 5.0 by adding 1.8 ml 85% lactic acid.

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The cream dressing agar was then divided into 2 x 100ml portions in sterile flasks and inoculated with the following cultures:

- A) Control - no culture
- B) Lactobacillus casei subsp. alactosus NRRL-B-12344 @ 8.9 x 10⁶ CFU/ml.

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The flasks were mixed well and 2 petri plates poured per flask and allowed to solidify. All plates were surface inoculated with 0.1 ml of a dilution prepared from a frozen stock of psychrotrophic milk spoilage microorganisms obtained from commercial pasteurized milk. The psychrotrophic microorganisms were diluted to deliver approximately 1500 cells per plate, which is heavy contamination.

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One set of plates was incubated @ 24° C and the duplicate set was incubated @ 5° C. The plates were monitored daily for surface growth of psychrotrophs. The temperature of 24° C can occur temporarily for short periods of time, as previously indicated, during storage of the processed food.

279
18

Table 1

Incubation Time (h)	L. fermentum ¹ Added (CFU/ml)	L. casei ² Added (CFU/ml)	Gas ³ Production
24	1 x 10 ⁷	-	-
	1 x 10 ⁷	4 x 10 ⁷	-
	5 x 10 ⁷	-	-
	5 x 10 ⁷	4 x 10 ⁷	-
	50 x 10 ⁷	-	+
48	50 x 10 ⁷	4 x 10 ⁷	-
	1 x 10 ⁷	-	+
	1 x 10 ⁷	4 x 10 ⁷	-
	5 x 10 ⁷	-	+
	5 x 10 ⁷	4 x 10 ⁷	-
120	50 x 10 ⁷	-	+
	50 x 10 ⁷	4 x 10 ⁷	-
	1 x 10 ⁷	-	+
	1 x 10 ⁷	4 x 10 ⁷	-
	5 x 10 ⁷	-	+
	5 x 10 ⁷	4 x 10 ⁷	-
	50 x 10 ⁷	-	+
	50 x 10 ⁷	4 x 10 ⁷	+

¹Lactobacillus fermentum is a heterofermentative Lactobacillus

²Lactobacillus casei subspecies alactosus NRRL-B-12344.

³Gas production in the model food system consisting of 1% casein hydrolysate, 1% beef extract, 0.5% yeast extract, 2% dextrose, 0.75% agar. +, Gas produced; -, No gas produced.

This example shows that even at 24° C which can occur during temporary temperature abuse of the food during storage, Lactobacillus fermentum is inhibited. During refrigerated storage, the inhibition was for much longer periods.

The results of Example 1 show that the shelf life of product containing Lactobacillus casei subspecies alactosus NRRL-B-12344 is at least twice as long as the control without the cells, even at 24° C. The generation of gas is prevented as evidenced by the lack of cracking and movement of the agar plug when the Lactobacillus casei subspecies alactosus is present.

Processed foods containing Lactobacillus casei can be provided in sealed packages, such as blister packs. The generation of gas, primarily carbon dioxide, by heterofermentative spoilage microorganisms, particularly Lactobacillus fermentum and Lactobacillus bifementana is prevented. The Lactobacillus prevents spoilage of the processed food, cracking of the food and rupture of the sealed package by gas produced by the spoilage bacteria.

Example 2

This Example shows the use of Lactobacillus casei subsp. alactosus NRRL-B-12344 for inhibition of psychrotrophic microorganisms in a cream dressing.

PROCEDURE

A model cream dressing system was prepared using a half cream and half milk base. Commercial half and half was obtained and the pH was adjusted to 5.0 with 85% lactic acid. Sodium chloride was added to a concentration of 1.5%. The dressing was inoculated with psychrotrophic microorganisms for an initial titer of 4.0 x 10⁵ cfu/ml. This inoculum was obtained from a commercial milk sample and represents heavy

Table 3

Degree of Psychrotroph Growth ¹		
Days @ 24° C	Uninoc. Control	L. casei ²
2	2+	0+
4	4+	2+
8	4+	3+

¹Psychrotroph growth visually scored from 0+ (no growth) to 4+ (confluent lawn).

²Lactobacillus casei subsp. alactosus (NRRL-B-12344) at 8.9×10^6 CFU/ml.

Table 4

Degree of Psychrotroph Growth ¹		
Days @ 5° C	Uninoc. Control	L. casei ²
4	0+	0+
8	3+	1+

¹Psychrotroph growth visually scored from 0+ (no growth) to 4+ (confluent lawn).

²L. casei subsp. alactosus NRRL-B-12344 at 8.9×10^6 CFU/ml.

As can be seen from Tables 3 and 4, Lactobacillus casei subspecies alactosus NRRL-B-12344 provided inhibition of the psychrotrophic microorganisms particularly at 5° C and 24° C for up to 8 days.

Example 4

This Example shows use of Lactobacillus casei subsp. alactosus NRRL-B-12344 for inhibition of mold in a processed food.

PROCEDURE:

A basic cream dressing agar was prepared using 200 ml of ultra-pasteurized half and half. Sodium chloride and bacteriological agar were added at 1.5% each, and the medium was heated to boiling to dissolve the agar. After tempering to 45° C, the medium was acidified to pH 5.0 by adding 1.8 ml 85% lactic acid.

The cream dressing agar was then divided into 2 x 100 ml portions in sterile flasks and inoculated as follows:

A) Control - no culture

B) Lactobacillus casei subsp. alactosus NRRL-B-12344 @ 1×10^7 CFU/ml.

The flasks were mixed well and 2 petri plates poured per flask and allowed to solidify. A Penicillium oxalicum spore suspension was spread on the surface of each plate to deliver approximately 50 spores per plate. This represents substantial contamination.

One set of plates was incubated @ 24° C and the duplicate set was incubated @ 7° C. The temperature

281
284

of 24° C can occur for short periods as a result of temperature abuse of the processed food as previously indicated. The plates were monitored daily for surface growth of mold. The results are shown in Tables 5 and 6.

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Table 5

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Degree of Mold Growth ¹		
Days @ 24° C	Uninoc. Control	Lactobacillus casei subspecies alactosus NRRL-B-12344
1	0+	0+
3	2+	1+
4	4+	1+
10	4+	3+

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¹Mold growth scored visually from 0+ (no growth) to 4+ (confluent lawn).

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Table 6

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Degree of Mold Growth ¹		
Days @ 7° C	Uninoc. Control	Lactobacillus casei subspecies alactosus NRRL-B-12344
4	0+	0+
10	3+	0+
13	3+	0+
18	4+	0+

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¹Mold growth scored visually from 0+ (no growth) to 4+ (confluent lawn).

The results of Example 4 show that mold inhibition was particularly effective at 7° C. Even at 24° C the mold inhibition was good.

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Example 5

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This example shows use of Lactobacillus sp. NRRL-B-18281 for inhibition of psychrotrophic microorganisms in a cream dressing.

PROCEDURE

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A model cream dressing system was prepared using a half cream and half milk base. Commercial half and half was obtained and the pH was adjusted to 5.0 with 85% lactic acid. Sodium chloride was added to a concentration of 1.5%. The dressing was inoculated with psychrotrophic microorganisms for an initial titer of 5.0×10^8 CFU/ml. This inoculum was obtained from a commercial milk sample and represents heavy contamination. The dressing was placed in sterile bottles and inoculated with Lactobacillus sp. NRRL-B-18281. A control consisted of the dressing without inoculation with the lactic-acid bacteria. The samples were incubated at 5° C. The psychrotroph count (CVT count) was conducted as described by Gilliland et al (Psychrotrophic microorganisms in Compendium of Methods for the Microbiological Examination of Foods, American Public Health Association, Marvin L. Speck, ed. 173-178 (1978)) after 4, 8, 15 and 22 days incubation at 5° C. The results are shown in Table 7.

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282
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Table 7

Psychrotroph Inhibition in a Cream Dressing Using Lactobacillus sp. NRRL-B-18281 at 5° C.		
Days at 5° C	Psychrotroph Count ¹ (CFU x 10 ⁴ /ml)	
	Control	Test ²
0	0.20	-
4	0.84	<0.01
8	80.00	<0.01
15	11000.00	2.33
22	20500.00	17.30

¹ Psychrotrophic count determined on Crystal Violet Tetrazolium Agar (CVT) as described by Gilliland.

² Lactobacillus sp. NRRL-B-18281 added at a rate of 1 x 10⁷ CFU/ml.

Table 7 shows that Lactobacillus sp NRRL-B-18281 was very effective in inhibiting psychrotrophic microorganisms at 5° C.

Example 8

This example shows inhibition of growth of Salmonella newport in a model food system at 7° C and 24° C by two strains of Lactobacillus.

A model food system comprised of 1.5% casein hydrolysate, 0.75% yeast extract, 0.5% soy protein hydrolysate, 0.5% salt, 0.25% dextrose, 2% 3-(N-Morpholino) propane sulfonic acid (MOPS, a buffer) and 1.5% agar was developed. The medium was adjusted to pH 8.5, sterilized at 121° C for 15 minutes and cooled to 45° C. Test cultures were added to a portion of this medium to give a Lactobacillus count of 1 x 10⁷ CFU/ml medium. The medium was poured into sterile petri dishes and allowed to harden. The control consisted of the test medium to which no Lactobacillus was added.

Each test plate was challenged with 2 x 10⁶ CFU of Salmonella newport which is an excessively high level of contamination. The plates were incubated at 7° C or 24° C and scored for surface growth of Salmonella newport. Plates from each set (control or Lactobacillus inoculated) not challenged with Salmonella newport were also incubated at the appropriate temperature. These plates were used to monitor the pH of the medium during incubation. The results are shown in Table 8.

283
786

Table 7

Psychrotroph Inhibition in a Cream Dressing Using <i>Lactobacillus</i> sp. NRRL-B-18281 at 5° C.		
Days at 5° C	Psychrotroph Count ¹ (CFU x 10 ⁴ /ml)	
	Control	Test ²
0	0.20	-
4	0.84	<0.01
8	80.00	<0.01
15	11000.00	2.33
22	20500.00	17.30

¹ Psychrotrophic count determined on Crystal Violet Tetrazolium Agar (CVT) as described by Gilliland.

² *Lactobacillus* sp. NRRL-B-18281 added at a rate of 1 x 10⁷ CFU/ml.

Table 7 shows that *Lactobacillus* sp NRRL-B-18281 was very effective in inhibiting psychrotrophic microorganisms at 5° C.

Example 6

This example shows inhibition of growth of *Salmonella newport* in a model food system at 7° C and 24° C by two strains of *Lactobacillus*.

A model food system comprised of 1.5% casein hydrolysate, 0.75% yeast extract, 0.5% soy protein hydrolysate, 0.5% salt, 0.25% dextrose, 2% 3-(N-Morpholino) propane sulfonic acid (MOPS, a buffer) and 1.5% agar was developed. The medium was adjusted to pH 8.5, sterilized at 121° C for 15 minutes and cooled to 45° C. Test cultures were added to a portion of this medium to give a *Lactobacillus* count of 1 x 10⁷ CFU/ml medium. The medium was poured into sterile petri dishes and allowed to harden. The control consisted of the test medium to which no *Lactobacillus* was added.

Each test plate was challenged with 2 x 10⁶ CFU of *Salmonella newport* which is an excessively high level of contamination. The plates were incubated at 7° C or 24° C and scored for surface growth of *Salmonella newport*. Plates from each set (control or *Lactobacillus* inoculated) not challenged with *Salmonella newport* were also incubated at the appropriate temperature. These plates were used to monitor the pH of the medium during incubation. The results are shown in Table 8.

284
78

Table 8

Inhibition of Growth of Salmonella newport in a model food system containing inhibitory Lactobacillus cultures.¹

Days of Incubation	Extent of Growth of <u>Salmonella newport</u> ²					
	Control No Culture	at 7°C LT ³	LS ⁴	Control No Culture	at 24°C LT ³	LS ⁴
3	0+ (6.52) ⁵	0+ (6.48)	0+ (6.48)	4+ (6.52)	0+ (5.98)	Trace (6.28)
4	0+	0+	0+	4+ (6.50)	Trace (6.00)	Trace (6.12)
6	0+	0+	0+	4+	1+	Trace
7	0+	0+	0+	4+	1+	Trace
11	0+	0+	0+	4+	1+	Trace
14	Trace	0+	0+	4+	1+	Trace
20	4+ (6.48)	Trace (6.13)	Trace (6.28)	4+ (6.39)	1+ (5.90)	Trace (5.90)
25	4+ (6.48)	Trace (6.13)	ND (6.29)			

ND = Not determined

¹Test media comprised of 1.5% casein hydrolysate, 0.75% yeast extract, 0.5% soy protein hydrolysate, 0.5% sodium chloride, 0.25% dextrose, 2% 3-(N-Morpholino) propane sulfonic acid (MOPS, a buffer) and 1.5% agar. The pH was adjusted to 6.5 and the medium sterilized at 250°F/15 min.
²Salmonella newport was spread onto the surface of the agar medium. The inoculation rate was 2×10^6 CFU/plate.
 Surface growth visually scored as 4+ = confluent lawn; 0+ = No visible growth; Trace = barely visible pinpoint colonies.

³LT = Lactobacillus casei subspecies alactosus NRRL-B-12344. Culture was added to medium at 1×10^7 CFU/ml.

⁴LS = Lactobacillus sp. NRRL-B-18261. Culture was added to medium at 1×10^7 CFU/ml.

285
287

5 pH of control plate incubated at indicated temperature but
without *Listeria* inoculation are set forth in parenthesis.

Both strains of *Lactobacillus* tested effectively inhibited the growth of *Salmonella newport* at both 7° C and 24° C. In no case did the pH of the medium drop below 5.9, thus the growth inhibition was not due to acid production.

Example 7

15 Inhibition of growth of *Listeria monocytogenes* in a model food system at 7° C and 24° C by two strains of *Lactobacillus*.

A model food system comprised of 1.5% casein hydrolysate, 0.75% yeast extract, 0.5% soy protein hydrolysate, 0.5% salt, 0.25% dextrose, 2% 3-(N-Morpholino) propane sulfonic acid (MOPS, a buffer) and 1.5% agar was developed. The medium was adjusted to pH 6.5, sterilized at 121° C for 15 minutes and cooled to 45° C. Test cultures were added to a portion of this medium to give a *Lactobacillus* count of 1×10^7 CFU/ml medium. The medium was poured into sterile petri dishes and allowed to harden. The control consisted of the test medium to which no *Lactobacillus* was added.

Each test plate was challenged with 2×10^5 CFU of *Listeria monocytogenes*. The plates were incubated at 7° C or 24° C and scored for surface growth of *Listeria monocytogenes*. Plates from each set (control or *Lactobacillus* inoculated) not challenged with *Listeria monocytogenes* were also incubated at the appropriate temperature. These plates were used to monitor the pH of the medium during incubation as in Example 6. The results are shown in Table 8.

786
289

Table 9

Inhibition of Growth of Listeria monocytogenes
in a model food system containing inhibitory
Lactobacillus cultures.¹

Extent of Growth of <u>Listeria monocytogenes</u> ²						
Days of Incubation	at 7°C			at 24°C		
	Control No Culture	LT ³	LS ⁴	Control No Culture	LT	LS
3	0+ (6.52) ⁵	0+ (6.48)	0+ (6.48)	4+ (6.52)	0+ (5.98)	0+ (6.28)
4	0+	0+	0+	4+	Trace	ND
6	0+	0+	0+	4+ (6.45)	2+ (6.01)	ND
7	0+	0+	0+	4+	2+	ND
11	2+	Trace	0+	4+	3+	ND
14	4+	Trace	0+	4+	3+	ND
20	4+ (6.48)	Trace (6.13)	0+ (6.28)	4+ (6.39)	3+ (5.90)	ND
25	4+ (6.48)	Trace (6.18)	0+ (6.29)			ND

ND = Not determined

¹Test media comprised of 1.5% casein hydrolysate, 0.75% yeast extract, 0.5% soy protein hydrolysate, 0.5% sodium chloride, 0.25% dextrose, 2% 3-(N-Morpholino) propane sulfonic acid (MOPS, a buffer) and 1.5% agar. The pH was adjusted to 6.5 and the medium sterilized at 250°F/15 min.

²Listeria monocytogenes was spread onto the surface of the agar medium. The inoculation rate was 2×10^5 CFU/plate. Surface growth visually scored as 4+ = confluent lawn; 0+ = No visible growth; Trace = barely visible pin-point colonies.

³LT = Lactobacillus casei subspecies alactosus

NRRL-B-12344. Culture was added to medium at 1×10^7 CFU/ml.

⁴LS = Lactobacillus sp. NRRL-B-18261. Culture was added to medium at 1×10^7 CFU/ml.

287
290

5pH of control plate incubated at indicated temperature but without Listeria inoculation indicated in parenthesis.

Both strains of Lactobacillus tested effectively inhibited the growth of Listeria monocytogenes at both 7° C and 24° C. In no case did the pH of the medium drop below 5.0, thus the growth inhibition was not due to acid production.

The agar plate tests wherein the spoilage or food-borne pathogenic microorganisms are provided on nutrient medium in agar containing the Lactobacillus sp., are preferred for determining whether or not a particular Lactobacillus sp. will be effective in the method of the present invention by generating an antimicrobial substance. These tests also reliably predict the effect of the Lactobacillus sp. in a particular food where the food is used as the nutrient medium in the agar.

Thus the method of the present invention can be used with salads, sauces, cheeses, salad dressings and other foods which are subject to microbial spoilage and capable of harboring human pathogens. The method can be particularly used with foods which are in sealed packages where gas production breaks the seal of the package and foods (cheeses) which are cracked by the gas production.

It is intended that the foregoing description be only illustrative of the present invention and that the present invention be limited only by the hereinafter appended claims.

Claims

-1- A method for inhibition of food-borne human pathogen or spoilage microorganisms in a refrigerated processed food which comprises:

(a) inoculating the processed food following any heat treatment of the food which would inactivate the cells with a number of cells of a Lactobacillus which remain viable during refrigerated storage and which produce an antimicrobial substance and to inhibit the microorganisms; and

(b) storing the food at refrigeration temperatures which prevent the number of the cells from increasing significantly except during transient temperature abuse to thereby inhibit the microorganisms.

-2- The method of Claim 1 wherein the Lactobacillus is selected from the group consisting of Lactobacillus casei subspecies alactosus NRRL-B-12344 and Lactobacillus sp. NRRL-B-18281.

-3- The method of Claim 1 wherein the Lactobacillus is Lactobacillus sp. NRRL-B-18281.

-4- The method of Claim 1 wherein the refrigeration temperatures are between about 1° C and 12° C.

-5- A method for inhibition of food-borne pathogen or spoilage microorganisms in refrigerated processed foods which comprises:

(a) inoculating the processed food following any heat treatment which would inactivate the cells with a number of cells of a Lactobacillus which remains viable during refrigerated storage and which produce an antimicrobial substance; and

(b) storing the food at refrigeration temperatures which prevent the number of the added Lactobacillus cells from increasing significantly except during transient temperature abuse, wherein the spoilage microorganisms are inhibited without fermenting the food for at least twice as long as a control without the cells.

-6- The method of Claim 5 wherein the Lactobacillus is selected from the group consisting of Lactobacillus casei subspecies alactosus NRRL-B-12344 and Lactobacillus sp. NRRL-B-18281.

-7- The method of Claim 5 wherein the spoilage microorganisms comprise heterofermentative lactobacilli.

-8- The method of Claim 5 wherein the heterofermentative spoilage microorganisms are selected from the group consisting of Lactobacillus fermentum or Lactobacillus bifementans.

-9- The method of Claim 5 wherein the food is selected from the group consisting of hard or soft cheeses.

-10- The method of Claim 5 wherein the food is or contains sauce.

-11- The method of Claim 5 wherein the food is a salad dressing.

-12- The method of Claim 5 wherein the food contains milk or a milk derivative.

288
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- 13- The method of Claim 5 wherein the food is a prepared salad.
-14- The method of Claim 5 wherein the food is or contains meat.
-15- The method of Claim 5 wherein the food is or contains cheese.
-16- The method of Claim 5 wherein the food is or contains Cottage cheese.
-17- The method of Claim 5 wherein the food is stored at a temperature of between about 1° and 12° C.
-18- The method of Claim 5 wherein the food is provided in a sealed package.
-19- The method of Claim 1 wherein the food is inoculated with between about 10² and 10⁸ cells of the Lactobacillus per gram of the food.
-20- The method of Claim 5 wherein the food is a cheese which can be cracked by gas production.
-21- The method of Claim 1 wherein the Lactobacillus is selected from the group consisting of Lactobacillus casei subsp. alactosus NRRL-B-12344 and Lactobacillus sp. NRRL-B-18261 and wherein the food is inoculated with between about 10² and 10⁸ cells of the Lactobacillus per gram of the food.
-22- The method of Claim 21 wherein the temperature is less than about 12° C.
-23- The method of Claim 17 wherein the temperature is between about 1° C and 12° C.

289
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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISIÓN DE NUEVAS CREACIONES

2020/

Bogotá, D. C.

Doctor

Emilio Ferrero

(apoderado o representante sociedad solicitante)

ASUNTO:	Radicación No.	00-21434
	Trámite	002
	Evento	001
	Actuación	430
	Oficio No	09434
	Folios	002

Como resultado de la búsqueda de anterioridad y con fundamento en el artículo 46 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

El artículo 46 de la Decisión 486 de la Comisión de la Comunidad Andina establece que: "La oficina nacional competente podrá requerir el informe de expertos o de organismos científicos o tecnológicos que se consideren idóneos, para que emitan opinión sobre la patentabilidad de la invención. Asimismo, cuando lo estime conveniente, podrá requerir informes de otras oficinas de propiedad industrial.

"De ser necesario, a efectos del examen de patentabilidad y a requerimiento de la oficina nacional competente, el solicitante proporcionará, en un plazo que no excederá de 3 meses, uno o más de los siguientes documentos relativos a una o más de las solicitudes extranjeras referidas total o parcialmente a la misma invención que se examina:

"...b) copia de los resultados de exámenes de novedad o de patentabilidad efectuados respecto a esa solicitud extranjera;...

Si el solicitante no presentara los documentos requeridos dentro del plazo señalado en el presente artículo la oficina nacional competente denegará la patente."

Como resultado de la búsqueda de anterioridades se encontró que la solicitud en estudio corresponde con la solicitud europea y publicada con el número WO00/21494. El análisis del informe de búsqueda internacional de la solicitud extranjera establece como documento que afecta el nivel inventivo del objeto de la solicitud colombiana el siguiente documento: GOMBAS, D.: "Biological Competition as a Preserving Mechanism" JOURNAL OF FOOD SAFETY vol. 10, 1989, paginas 107 - 117, XP002928691. Con el fin de agilizar el trámite, le sugerimos que junto al documento solicitado presente los argumentos que usted considere necesarios para demostrar que este artículo no afecta los requisitos de patentabilidad de su invención.

Dado que el artículo mencionado es el resultado del examen de patentabilidad efectuado a la solicitud extranjera que corresponde con la solicitud colombiana y habiendo sido imposible la consecución de dicho documento, esta Oficina requiere que el solicitante proporcione en un plazo que no excederá de 3 meses, la copia del artículo mencionados anteriormente. Nos permitimos recordarle que si el solicitante no presentara los documentos requeridos dentro del plazo señalado la oficina nacional competente denegará la patente.

290
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Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e del capítulo quinto (5), del título primero de la circular única número 10 de 2001.


ALIX CARMENZA GÁSPEDES DE VERGEL
Jefe de la División de Nuevas Creaciones

El anterior requerimiento fue notificado por fijación en lista, de fecha 30 OCT. 2003

CONCEPTO TÉCNICO Número: 1583	EXAMINADOR TÉCNICO Código # 202016
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