

Señor

SUPERINTENDENTE DE INDUSTRIA Y COMERCIO

DIVISIÓN DE NUEVAS CREACIONES

E.

S.

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 10-092553- -00002-0000

Fecha: 2010-10-08 16:11:41 Dep. 2020 DIR.NUEVASCR
Tra. 2 PATENTES Eva: 1 REGDEPOSITO
Act. 444 RESPUESTAREQUE Fojos. 42

Re: PI.-ROHM AND HAAS COMPANY.-Solicitud de Patente de Invención en Fase Nacional PCT para "TRATAMIENTO DE PLANTAS ORNAMENTALES".-Clase A01G 7/00.-Expediente número 10-092.553.-

1. Me refiero al Oficio No. **10303** dictado por ese Despacho notificado por fijación en lista el 12 de Agosto de 2010.
2. Dando respuesta al mencionado requerimiento y estando dentro del término establecido para ello, atentamente me permito presentar a ese Despacho los documentos que acreditan el traspaso, que los autores de la patente de la referencia hacen a favor de mi representado, de los derechos sobre la misma, debidamente apostillados, junto con sus Traducciones Oficiales números 2010-10-06-573, 2010-10-06-574 y 2010-10-06-575, legalizadas hasta por el Ministerio de Relaciones Exteriores de Colombia bajo los números 02634 y 026346 de 7 de Octubre de 2010.
3. Adicionalmente, me permito presentar a ese Despacho copia debidamente certificada de la Solicitud de Patente **respecto de la cual reclamo prioridad**, dentro del trámite de la Solicitud arriba referida, a saber, la Solicitud Estadounidense número **61/273,583** de 6 de Agosto de 2009, junto con su Traducción Oficial No. 2010-10-06-576, correspondiente a dicho documento.
4. Ruego a usted tomar atenta nota de lo anterior y proceder de conformidad.

Señor Superintendente,

ALICIA LLOREDA RICAURTE

T.P. 53.215

TRADUCCION OFICIAL No. 2010-10-06-573
DE UN DOCUMENTO ESCRITO EN INGLES

Traspaso de la invención llamada TRATAMIENTO DE PLANTAS
ORNAMENTALES, documento escrito en inglés y en español.

Estado de California

Secretario de Estado

Solicitado para uso en Colombia

No es para uso dentro de los Estados Unidos de América

El propósito de la Apostilla es certificar la autenticidad de la firma del funcionario que firma el documento, la competencia en la cual el funcionario que firma el documento ha actuado, y, si aplica, la identidad del sello o estampilla.

APOSTILLA

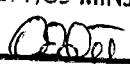
(Convención de La Haya del 5 de octubre de 1961)

1. País: Estados Unidos de América
Este documento público
2. ha sido firmado por Scott K. Yoder
3. actuando como Notario Público, Estado de California
4. lleva el sello/estampilla Scott K. Yoder, Notario Público, Estado de California

Certificado

- | | |
|--|--|
| 5. en Sacramento, California | 6. el día 27 de agosto de 2010 |
| 7. por el Subsecretario de Estado, Estado de California | |
| 8. No. 860999 | |
| 9. Sello/Estampilla
El Gran Sello del Estado
de California | 10. Firma: (ilegible)
Secretario de Estado
Por (firma: ilegible) |

TRADUCTORA OFICIAL
RES. 2177/89 MINJUSTICIA


ANITA ESCOBAR DE TAMAYO

CERTIFICADO DE RECONOCIMIENTO PARA TODOS LOS FINES DE CALIFORNIA

Estado de California)
) ss.
Condado de Yolo)

El 28 de julio de 2010, ante mí, Scott K. Yoder, Notario Público, compareció personalmente Deirdre Margaret (ilegible), quien me demostró con base en evidencia satisfactoria que es la persona(s) cuyo nombre(s) está suscrito en el instrumento adjunto y reconoció ante mí que ella firmó el mismo como persona autorizada, y que por medio de su firma en el instrumento la persona(s), o entidad en nombre de quien la persona(s) actuó, firmó el instrumento.

Certifico bajo PENA DE PERJURIO bajo las leyes del Estado de California que el párrafo anterior es fiel y correcto.

TESTIFICA mi firma y sello oficial.

(firma: ilegible)

Firma del Notario Público (Sello Notarial)

Scott K. Yoder
Nombramiento # 1735256
Notario Público – California
Condado de Yolo
Mi Nombramiento Expira el 27 de abril de 2011

----- OPCIONAL -----

Aunque la información que aparece a continuación no es requerida por ley, puede ser valiosa para las personas que dependan del documento y puede evitar la remoción y adhesión fraudulenta de esta forma a otro documento.

Descripción del Documento Adjunto

Título o Tipo de Documento: _____

Fecha del Documento: _____ Número de Páginas: 1

Signatario(s) Fuera del Nombrado Arriba: _____

NO SE ASUME
RESPONSABILIDAD
DEL TEXTO

MINISTERIO DE
RELACIONES EXTERIORES

Competencia Reivindicada por el Signatario

Nombre del Signatario: _____

- ☐ Funcionario Corporativo – Cargo(s): _____
- ☐ Persona(s) Natural
- ☐ Socio(s) - ☐ Limitado ☐ General
- ☐ Apoderado
- ☐ Fiduciario(s)
- ☐ Guardián o Conservador
- ☐ Otro _____

HUELLA DEL
PULGAR
DERECHO DEL
SIGNATARIO

El Signatario está Representando: _____

Traducido según mi mejor saber y entender, este día 6 de octubre de 2010,
en la ciudad de Bogotá, D.C., por Anita Escobar de Tamayo, Traductora Oficial,
Res. 2177 de 1989, Ministerio de Justicia, República de Colombia.

TRADUCTORA OFICIAL
RES. 2177/89 MINJUSTICIA

Anita Escobar de Tamayo
ANITA ESCOBAR DE TAMAYO

ASSIGNMENT**TRASPASO**

The undersign,

Los abajo firmados

1. DALY, James

1. DALY, James

2. LEGNANI, Garry

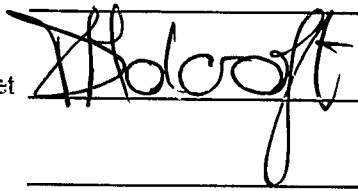
2. LEGNANI, Garry

3. HOLCROFT, Deirdre Margaret

3. HOLCROFT, Deirdre Margaret

4. RANWALA, Anil P.

4. RANWALA, Anil P.



domiciled in

Domiciliados en

1. 222 Addison Road, Cottageville, South Carolina 29435, United States of America;
2. 1456 North Boulevard, Kent, Ohio 44240, United States of America;
3. 2827 Zamora Lane, Davis, California 95618, United States of America and
4. 610 Fairway Forest Drive, Summerville, South Carolina 29485, United States of America

1. 222 Addison Road, Cottageville, South Carolina 29435, Estados Unidos de América
2. 1456 North Boulevard, Kent, Ohio 44240 Estados Unidos de América;
3. 2827 Zamora Lane, Davis, California 95618 Estados Unidos de América
4. 610 Fairway Forest Drive, Summerville, Carolina del Sur 29485 Estados Unidos de América

hereby state under oath to be sole and true inventor of

declaramos bajo juramento ser únicos y verdaderos inventores de

TREATMENT OF ORNAMENTAL PLANTS**TRATAMIENTO DE PLANTAS ORNAMENTALES**

State, as well that assign, without reservations or limitation, in favor of

Declaramos así mismo que cedemos y transferimos sin reserva ni limitación, a favor de

ROHM AND HAAS COMPANY**ROHM AND HAAS COMPANY**

A corporation organized and existing under the laws of Delaware
domiciled at
100 Independence Mall West, Philadelphia, PA
19106, United States of America

Una sociedad organizada y existente de conformidad con las leyes del Estado de Delaware
domiciliada en
100 Independence Mall West, Philadelphia, PA
19106, Estados Unidos de América

all rights inherent to said invention, and that the above mentioned corporation hereby is enabled to apply, in its name, for the corresponding patent in the Republic of Colombia.

todos los derechos inherentes a dicha invención y que la citada sociedad queda facultada para solicitar en su nombre la patente correspondiente en la República de Colombia

State of California

SECRETARY OF STATE

Requested for use in Colombia.

Not for use within the United States of America.

The purpose of the Apostille is to certify the authenticity of the signature of the official signing the document, the capacity in which the official signing the document has acted, and, where appropriate, the identity of the seal or stamp.

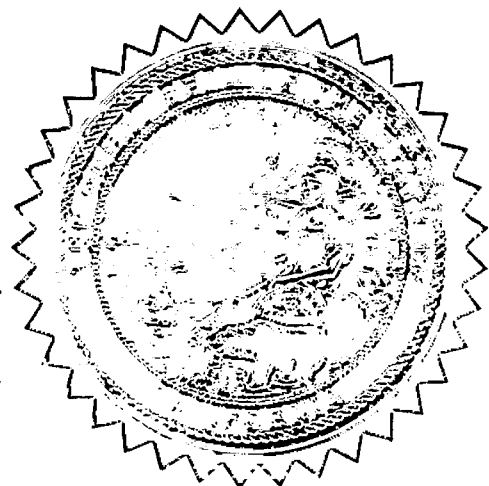
APOSTILLE

(Convention de La Haye du 5 octobre 1961)

1. Country: *United States of America*
This public document
2. *has been signed by Scott K. Yoder*
3. *acting in the capacity of Notary Public, State of California*
4. *bears the seal/stamp of Scott K. Yoder, Notary Public,*
State of California

CERTIFIED

5. *At Sacramento, California*
6. *the 27th day of August 2010*
7. *by Deputy Secretary of State, State of California*
8. *No. 860999*
9. *Seal/Stamp:*



10. Signature

Jana Bowen
Secretary of State

BY *BA*



CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

CIVIL CODE § 1189

State of California

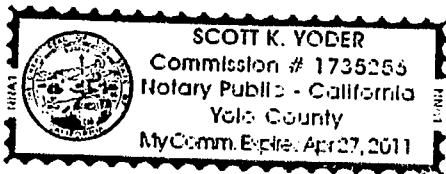
County of Yolo

On July 28, 10
Date

before me, Scott K. Yoder, Notary Public
Here Insert Name and Title of the Officer

personally appeared Deirdre Margaret Holcroft
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~they~~ executed the same in his/her/~~their~~ authorized capacity(ies), and that by his/her/~~their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Place Notary Seal Above

Signature

Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on this document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: 1

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____ Signer's Name: _____

☐ Corporate Officer — Title(s): _____ ☐ Corporate Officer — Title(s): _____

☐ Individual ☐ Individual

☐ Partner — ☐ Limited ☐ General ☐ Partner — ☐ Limited ☐ General

☐ Attorney in Fact ☐ Attorney in Fact

☐ Trustee ☐ Trustee

☐ Guardian or Conservator ☐ Guardian or Conservator

☐ Other: _____ ☐ Other: _____

Signer Is Representing: _____ Signer Is Representing: _____

RIGHT THUMBPRINT
OF SIGNER

Top of thumb here

RIGHT THUMBPRINT
OF SIGNER

Top of thumb here

NOTARY

TRADUCCION OFICIAL No. 2010-10-06-574
DE UN DOCUMENTO ESCRITO EN INGLES

Estado de Carolina del Norte
Oficina del Secretario de Estado
El Honorable Mark Hammond

APOSTILLA

(Convención de La Haya del 5 de octubre de 1961)

1. País: Estados Unidos de América
2. Este documento público
ha sido firmado por Denise K. Guthrie
3. actuando como Notario Público para el Estado de Carolina del Sur
4. lleva el sello/estampilla de Denise K. Guthrie, Notario Público para el
Estado de Carolina del Sur

Certificado

- | | |
|---|---|
| 5. en Columbia, Carolina del Sur | 6. Martes, 24 de agosto de 2010 |
| 7. por el Secretario de Estado de Carolina del Sur | |
| 8. No. 90111 | |
| 9. Sello/Estampilla
Sello del Estado de Carolina del Sur | 10. Firma: (ilegible)
Mark Hammond
Secretario de Estado |

(Esta Apostilla certifica exclusivamente la firma, la competencia del signatario y el sello o estampilla que lleva. No certifica el contenido del documento para el cual fue expedido. Este certificado no es válido si es eliminado o alterado de alguna manera.)

TRADUCTORA OFICIAL
RES. 2177/99 MINJUSTICIA


ANITA ESCOBAR DE TAMAYO

Traspaso de la invención llamada TRATAMIENTO DE PLANTAS ORNAMENTALES, documento escrito en inglés y en español.

Certificado Notarial, documento escrito en inglés y en español.

Sello Notarial

Traducido según mi mejor saber y entender, este día 6 de octubre de 2010, en la ciudad de Bogotá, D.C., por Anita Escobar de Tamayo, Traductora Oficial, Res. 2177 de 1989, Ministerio de Justicia, República de Colombia.

NO SE Asume
RESPONSABILIDAD
DEL TEXTO

02634

ANITA ESCOBAR
CUYA FIRMA APARECE EN EL
DOCUMENTO DESEMPEÑA
LAS FUNCIONES INDICADAS

MINISTERIO DE
RELACIONES EXTERIORES

2010 OCT -7 A 10:38

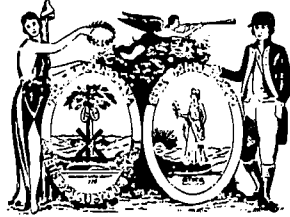
OFFICE DE LEGALIZACIONES
BOGOTA D.C.

TRADUCTORA OFICIAL
RES. 2177/89 MINJUSTICIA

Anita Escobar de Tamayo
ANITA ESCOBAR DE TAMAYO

49

State of South Carolina
Office of the Secretary of State
The Honorable Mark Hammond



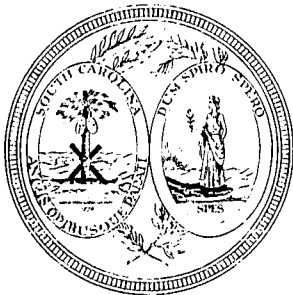
Apostille

(Convention de La Haye du 5 octobre 1961)

1. *Country* : United States of America
This public document
2. has been signed by Denise K. Guthrie
3. acting in the capacity of Notary Public for the State of South Carolina,
4. bears the seal / stamp of Denise K. Guthrie, Notary Public for the State of South Carolina

Certified

5. At Columbia, South Carolina
6. Tuesday, August 24, 2010
7. by the South Carolina Secretary of State
8. N°. 90111
9. Seal/Stamp
10. Signature




Mark Hammond, Secretary of State

(This Apostille only certifies the signature, the capacity of the signer and the seal or stamp it bears. It does not certify the content of the document for which it was issued. This certificate is not valid if it is removed or altered in anyway whatsoever.)

ASSIGNMENT**TRASPASO**

The undersign,

Los abajo firmados

1. DALY, James

1. DALY, James

2. LEGHIANI, Garry

2. LEGHIANI, Garry

3. HOLCROFT, Deirdre Margaret

3. HOLCROFT, Deirdre Margaret

4. RAJWALA, Anil P.

Anil Priyanka Rana 4. RAJWALA, Anil P.

domiciled in

Domiciliados en

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3. 2827 Zamora Lane, Davis, California 95618, United States of America and
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4. 610 Fairway Forest Drive, Summerville, Carolina del Sur 29435 Estados Unidos de América

hereby state under oath to be sole and true inventor of

declaramos bajo juramento ser únicos y verdaderos inventores de

TREATMENT OF ORNAMENTAL PLANTS**TRATAMIENTO DE PLANTAS ORNAMENTALES**

State, as well that assign, without reservations or limitation, in favor of

Declaramos así mismo que cedemos y transferimos sin reserva ni limitación, a favor de

ROHM AND HAAS COMPANY**ROHM AND HAAS COMPANY**

A corporation organized and existing under the laws of Delaware
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Una sociedad organizada y existente de conformidad con las leyes del Estado de Delaware
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all rights inherent to said invention, and that the above mentioned corporation hereby is enabled to apply, in its name, for the corresponding patent in the Republic of Colombia.

todos los derechos inherentes a dicha invención y que la citada sociedad queda facultada para solicitar en su nombre la patente correspondiente en la República de Colombia

CERTIFICADO NOTARIAL

A los días del mes de de 2010,
compareció personalmente ante mí,

Notario Público,

a quien doy fé de conocer y me consta que
la persona descrita y firmante
del documento que precede, declarando ante mí que
otorga el mismo para los fines y propósitos que
en él se expresan.

Notario Público

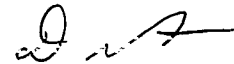
NOTARIAL CERTIFICATE

On this 28 day of July, 2010,
personally appeared before me, Denise Anthrie

a Notary Public, South Carolina
expires Apr. 1 2015

to me known and known to me to be the person
described in and who executed the foregoing
document, and duly acknowledged to
me that executed the same for
the uses and purposes therein expressed.

Notary Public



TRADUCCION OFICIAL No. 2010-10-06-575
DE UN DOCUMENTO ESCRITO EN INGLES

Traspaso de la invención llamada TRATAMIENTO DE PLANTAS ORNAMENTALES, documento escrito en inglés y en español.

APOSTILLA

(Convención de la Haya del 5 de Octubre 1961)

1. País: Estados Unidos de América
- Este documento público
2. ha sido firmado por Daniel M. Horrigan
3. actuando como Secretario del Tribunal de Instancias Comunes
4. lleva el sello/timbre del Tribunal de Instancias Comunes, Condado de Summit

CERTIFICADO

5. en Columbus, Ohio
6. el 3 de septiembre de 2010
7. por el Secretario de Estado de Ohio
8. No. A 049404
9. Sello/timbre
10. Firma: ilegible
- El Sello del Secretario de Estado de Ohio
- Jennifer Brunne
- Secretario de Estado de Ohio

Esta Apostilla certifica exclusivamente la autenticidad de la firma del funcionario que firmó el documento, la competencia en la cual el funcionario actuó, y cuando sea apropiado, la identidad del sello o estampilla que el documento lleva. Esta certificación no implica que los contenidos del documento(s) sean correctos, ni que tengan la aprobación de esta oficina.

Certificado Notarial, documento escrito en inglés y en español.

Sello Notarial Estado de Ohio	Christine Sierleja Residente en el Condado de Summit Notario Público, Estado de Ohio Mi Nombramiento Expira: 01/10/12
----------------------------------	--

TRADUCTORA OFICIAL
REG. 2177/89 MINJUSTICIA

ANITA ESCOBAR DE TAMAYO

EL ESTADO DE OHIO

Condado de Summit

Yo, DANIEL M. HERRIGAN, Secretario del Tribunal de Instancias Comunes del Condado de Summit, Ohio, y el Tribunal de Apelaciones, siendo el mismo los tribunales de registro del Condado anteriormente mencionado, que tienen por ley un sello, por el presente certifico que CHRISTINE SIERLEJA cuyo nombre está suscrito al certificado de reconocimiento, prueba o affidavit adjunto, era en el certificado de tomar dicho certificado de reconocimiento, prueba o affidavit, un Notario Publico debidamente comisionado y juramentado y residente en dicho condado, y era como tal un funcionario de dicho Estado, debidamente autorizado por las leyes del mismo para tomar y certificar el mismo, así como para tomar y certificar la prueba y reconocimiento de escrituras y otros instrumentos por escrito para ser registrados en dicho estado, y que se le debe dar plena fe y crédito a sus actos oficiales; y además certifico que estoy familiarizado con su escritura, y verdaderamente creo que la firma sobre el certificado adjunto es su firma auténtica.

Las leyes del Estado de Ohio no requieren que se registre en la Oficina del Secretario una impresión del Sello Notarial.

EN TESTIMONIO DE LO CUAL, he suscrito mi nombre y colocado el sello oficial este día 24 de agosto A.D., de 2010.

Sello del Secretario del Tribunal de
Instancias Comunes, Condado de
Summit, Ohio

(firma: ilegible)
DANIEL M. HERRIGAN, Secretario
de Tribunales

Traducido según mi mejor saber y entender, este día 6 de octubre de 2010, en la ciudad de Bogotá, D.C., por Anita Escobar de Tamayo, Traductora Oficial, Res. 2177 de 1989, Ministerio de Justicia, República de Colombia.

TRADUCTORA OFICIAL
RES. 2177/89 MINJUSTICIA


ANITA ESCOBAR DE TAMAYO
(112200-23300 Doc 01/2)

AA

ASSIGNMENT**TRASPASO**

The undersign,

Los abajo firmados

1. DALY, James

1. DALY, James

2. LEGNANI, Garry

2. LEGNANI, Garry

3. HOLCROFT, Deirdre Margaret

3. HOLCROFT, Deirdre Margaret

4. RANWALA, Anil P.

4. RANWALA, Anil P.

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hereby state under oath to be sole and true inventor of

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APOSTILLE

(Convention de la Haye du 5 octobre 1961)

1. Country: United States of America

This public document

2. has been signed by **DANIEL M. HERRIGAN**

3. acting in the capacity of **Clerk of Court of Common Pleas**

4. bears the seal/stamp of **Court of Common Pleas, Summit County**

CERTIFIED

5. at Columbus, Ohio

6. September 3, 2010

7. by the Secretary of State of Ohio.

8. No. **A 049404**

9. Seal/Stamp:

10. Signature:



A handwritten signature in black ink, appearing to read "Jennifer Brunner".

Jennifer Brunner
Secretary of State of Ohio

THE STATE OF OHIO
County of Summit

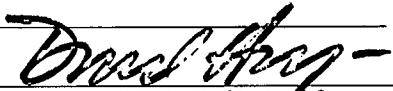
I, DANIEL M. HORRIGAN, Clerk of the Court of Common Pleas of Summit County, Ohio, and the Court of Appeals, the same being the courts of record of the aforesaid County, having by a law a seal, do hereby certify that:

CHRISTINE SIERLEJA

whose name is subscribed to the attached certificate of acknowledgment, proof or affidavit, was at the time of taking such acknowledgment, proof or affidavit, a Notary Public duly commissioned and sworn and residing in said county, and was as such an officer of said state, duly authorized by the laws thereof to take and certify the same, as well as to take and certify the proof and acknowledgment of deeds and other instruments in writing to be recorded in said state, and that full faith and credit are and ought to be given to his official acts; and I further certify that I am well acquainted with his handwriting, and verily believe that the signature to the attached certificate is his genuine signature.

The laws of the State of Ohio do not require an impression of the Notarial Seal to be on file in the Clerk's Office.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal this
24TH day of AUGUST A.D., 2010


DANIEL M. HORRIGAN, Clerk of Courts

CERTIFICADO NOTARIAL

A los días del mes de de 2010,
compareció personalmente ante mí,

Notario Público,

a quien doy fé de conocer y me consta que
la persona descrita y firmante
del documento que precede, declarando ante mí que
otorga el mismo para los fines y propósitos que
en él se expresan.

Notario Público

NOTARIAL CERTIFICATE

On this 30th day of July 2010,
personally appeared before me,

GARRY Legnani

a Notary Public,

to me known and known to me to be the person
described in and who executed the foregoing
document, and duly acknowledged to
me that executed the same for
the uses and purposes therein expressed.

Notary Public

Christine Sierleja



Christine Sierleja
Resident Summit County
Notary Public, State of Ohio
My Commission Expires: 01/10/12

TRADUCCION OFICIAL No. 2010-10-06-576
DE UN DOCUMENTO ESCRITO EN INGLES

LOS ESTADOS UNIDOS DE AMERICA
A TODOS AQUELLOS QUE VIEREN ESTOS PRESENTES:
DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS
Oficina de Patentes y Marcas de los Estados Unidos

20 de julio de 2010

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NUMERO DE SOLICITUD: 61/273,583
FECHA DE PRESENTACION: 06 de agosto de 2009

EL CODIGO DEL PAIS Y EL NUMERO DE SU SOLICITUD DE PRIORIDAD, PARA SER USADOS PARA PRESENTACION EN EL EXTERIOR BAJO LA CONVENCION DE PARIS, ES US61/273,583

Sello del Departamento de Comercio
Oficina de Patentes y Marcas de los
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Por Autoridad del
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(firma: ilegible)
C. HIGHTOWER
Funcionario que Certifica

Reivindicamos:

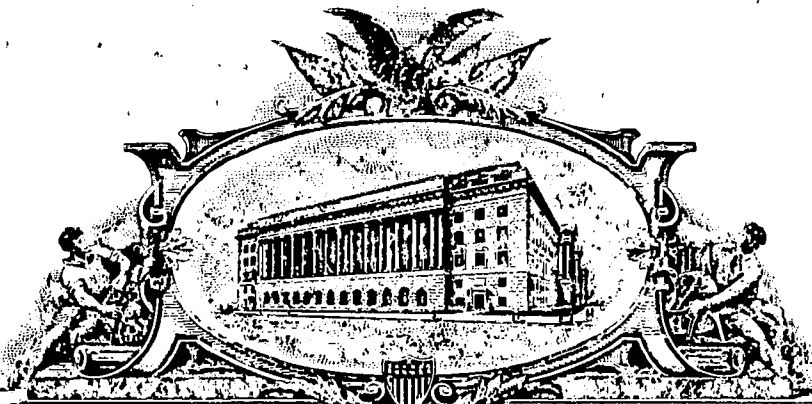
1. Un método de tratamiento de plantas ornamentales que comprende contactar dichas plantas con una composición líquida que comprende uno o más compuestos de ciclopropeno, en donde la concentración del total de dichos uno o más compuestos de ciclopropeno es 0.3 a 300 miligramos de compuesto de ciclopropeno por litro de dicha composición líquida.
2. El método de la reivindicación 1, en donde dichas plantas ornamentales comprenden plantas florecientes en plena floración.
3. El método de la reivindicación 1, en donde dicha composición líquida es una composición acuosa.
4. El método de la reivindicación 1, en donde dichas plantas están en macetas.
5. El método de la reivindicación 1, en donde dicha composición líquida comprende además uno o más agentes quelantes.
6. El método de la reivindicación 1, en donde algo o todo de dicho compuesto de ciclopropeno está encapsulado por un agente de encapsulación molecular.
7. El método de la reivindicación 1, en donde la concentración del total de dichos uno o más compuestos de ciclopropeno es de 5 a 50 miligramos de compuesto de ciclopropeno por litro de dicha composición líquida.

Traducido según mi mejor saber y entender, este día 6 de octubre de 2010, en la ciudad de Bogotá, D.C., por Anita Escobar de Tamayo, Traductora Oficial, Res. 2177 de 1989, Ministerio de Justicia, República de Colombia.

TRADUCTORA OFICIAL
RES. 2177/89 MINJUSTICIA


ANITA ESCOBAR DE TAMAYO

PA 17892:0



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July 20, 2010

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APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A
FILING DATE UNDER 35 USC 111.**

APPLICATION NUMBER: 61/273,583

FILING DATE: August 06, 2009

**THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY
APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS
CONVENTION, IS US61.273,583**

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



C. Hightower
C. HIGHTOWER
Certifying Officer

U.S. PTO
61/273583
08/06/2009

58

PTO/SB/16 (10-08)

Approved for use through 06/30/2010. OMB 0651-0032

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PROVISIONAL APPLICATION FOR PATENT COVER SHEET - Page 1 of 2

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. EM353503918US

INVENTOR(S)		
Given Name (first and middle (if any))	Family Name or Surname	Residence (City and either State or Foreign Country)
Deirdre Margaret	Holcroft	Davis, CA 95618
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Anil	Ranwala	Walterboro, SC 29488

Additional inventors are being named on the _____ separately numbered sheets attached hereto

TITLE OF THE INVENTION (500 characters max):

TREATMENT OF ORNAMENTAL PLANTS

Direct all correspondence to:

CORRESPONDENCE ADDRESS

☒ The address corresponding to Customer Number:

21898

OR

☐ Firm or
Individual Name

Address

City

State

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Telephone

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ENCLOSED APPLICATION PARTS (check all that apply)

☐ Application Data Sheet. See 37 CFR 1.76

☐ CD(s), Number of CDs _____

☐ Drawing(s) Number of Sheets _____

☒ Other (specify) Title Page _____

☒ Specification (e.g., description of the invention) Number of Pages 20

Fees Due: Filing Fee of \$220 (\$110 for small entity). If the specification and drawings exceed 100 sheets of paper, an application size fee is also due, which is \$270 (\$135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

METHOD OF PAYMENT OF THE FILING FEE AND APPLICATION SIZE FEE FOR THIS PROVISIONAL APPLICATION FOR PATENT

☐ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check or money order is enclosed to cover the filing fee and application size fee (if applicable).

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☒ The Director is hereby authorized to charge the filing fee and application size fee (if applicable) or credit any overpayment to Deposit

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This collection of information is required by 37 CFR 1.51. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PROVISIONAL APPLICATION COVER SHEET
Page 2 of 2

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SIGNATURE Carl P. Hemerway Date August 26, 2009

TYPED or PRINTED NAME Carl P. Hemerway REGISTRATION NO. 51,798
(if appropriate)

TELEPHONE 215-592-3000 Docket Number: A02063

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Atty Docket No.: A02068

In re application of:

Holcroft, et al.

Serial No.: Not yet assigned

Group Art Unit: Not yet assigned

Filed: Herewith

Examiner: Not yet assigned

For: TREATMENT OF ORNAMENTAL
PLANTS

Commissioner for Patents
P.O. Box 1450
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PATENT APPLICATION

OF

DEIRDRE MARGARET HOLCROFT
ANIL P. RANWALA
AND
GARRY LEGNANI

FOR

TREATMENT OF ORNAMENTAL PLANTS

DOCKET NO: A02068

EXPRESS MAIL LABEL NO.: EM353503918US

CPH/jls

TREATMENT OF ORNAMENTAL PLANTS

BACKGROUND:

It is often desirable to prolong the life of ornamental plants. It is also often desirable to improve the general vitality of ornamental plants.

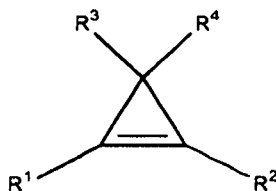
US 2005/0261132 describes contacting plants or plant parts with a composition containing a cyclopropene and a metal-complexing agent. US 2005/0261132 does not address the problem of how to treat ornamental plants in a way that will prolong their lives. One object of the present invention is to provide a method of treating ornamental plants to prolong their lives, for example by delaying one or more of the following: degradation of appearance, onset of flower abscission, onset of bud abscission, onset of flower wilting, onset of bud wilting, or any combination thereof. Another object of the present invention is to provide a method of treating ornamental plants to improve their general vitality.

STATEMENT OF THE INVENTION:

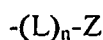
In a first aspect of the present invention, there is provided a method of treating ornamental plants comprising contacting said plants with a liquid composition comprising of one or more cyclopropene compound, wherein the concentration of the total of all of said one or more cyclopropene compound is 0.3 to 300 milligrams of cyclopropene compound per liter of said liquid composition.

DETAILED DESCRIPTION:

The present invention involves the use of one or more cyclopropene compound. As used herein a cyclopropene compound is any compound with the formula



where each R¹, R², R³ and R⁴ is independently selected from the group consisting of H and a chemical group of the formula:



where n is an integer from 0 to 12. Each L is a bivalent radical. Suitable L groups include, for example, radicals containing one or more atoms selected from H, B, C, N, O, P, S, Si, or mixtures thereof. The atoms within an L group may be connected to each other by single bonds, double bonds, triple bonds, or mixtures thereof. Each L group may be linear, branched, cyclic, or a combination thereof. In any one R group (i.e., any one of R¹, R², R³ and R⁴) the total number of heteroatoms (i.e., atoms that are neither H nor C) is from 0 to 6.

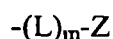
Independently, in any one R group the total number of non-hydrogen atoms is 50 or less.

Each Z is a monovalent radical. Each Z is independently selected from the group consisting of hydrogen, halo, cyano, nitro, nitroso, azido, chlorate, bromate, iodate, isocyanato, isocyanido, isothiocyanato, pentafluorothio, and a chemical group G, wherein G is a 3 to 14 membered ring system.

Ring systems suitable as chemical group G may be substituted or unsubstituted; they may be aromatic (including, for example, phenyl and naphthyl) or aliphatic (including unsaturated aliphatic, partially saturated aliphatic, or saturated aliphatic); and they may be carbocyclic or heterocyclic.

The R¹, R², R³, and R⁴ groups are independently selected from the suitable groups. The R¹, R², R³, and R⁴ groups may be the same as each other, or any number of them may be different from the others. Groups that are suitable for use as one or more of R¹, R², R³, and R⁴ may be connected directly to the cyclopropene ring or may be connected to the cyclopropene ring through an intervening group such as, for example, a heteroatom-containing group.

As used herein, a chemical group of interest is said to be "substituted" if one or more hydrogen atoms of the chemical group of interest is replaced by a substituent. Suitable substituents include, for example, alkyl, alkenyl, acetamino, alkoxy, alkoxyalkoxy, alkoxyalkoxy, alkoxyalkoxy, alkoxyimino, carboxy, halo, haloalkoxy, hydroxy, alkylsulfonyl, alkylthio, trialkylsilyl, dialkylamino, and combinations thereof. An additional suitable substituent, which, if present, may be present alone or in combination with another suitable substituent, is



where m is 0 to 8, and where L and Z are defined herein above. If more than one substituent is present on a single chemical group of interest, each substituent may replace a different hydrogen atom, or one substituent may be attached to another substituent, which in turn is attached to the chemical group of interest, or a combination thereof.

Among the suitable R^1 , R^2 , R^3 , and R^4 groups are, for example, substituted and unsubstituted versions of any one of the following groups: aliphatic, aliphatic-oxy, alkylcarbonyl, alkylphosphonato, alkylphosphato, alkylamino, alkylsulfonyl, alkylcarboxyl, alkylaminosulfonyl, cycloalkylsulfonyl, cycloalkylamino, heterocyclyl (i.e., aromatic or non-aromatic cyclic groups with at least one heteroatom in the ring), aryl, hydrogen, fluoro, chloro, bromo, iodo, cyano, nitro, nitroso, azido, chlorato, bromato, iodato, isocyanato, isocyanido, isothiocyanato, pentafluorothio; acetoxy, carboethoxy, cyanato, nitrate, nitrite, perchlorato, allenyl; butylmercapto, diethylphosphonato, dimethylphenylsilyl, isoquinolyl, mercapto, naphthyl, phenoxy, phenyl, piperidino, pyridyl, quinolyl, triethylsilyl, and trimethylsilyl.

Among the suitable R^1 , R^2 , R^3 , and R^4 groups are those that contain one or more ionizable substituent groups. Such ionizable groups may be in non-ionized form or in salt form.

Also contemplated are embodiments in which R^3 and R^4 are combined into a single group, which is attached to the number 3 carbon atom of the cyclopropene ring by a double bond. Some of such compounds are described in US Patent Publication 2005/0288189.

In some embodiments, one or more cyclopropenes are used in which one or more of R^1 , R^2 , R^3 , and R^4 is hydrogen. In some embodiments, each of R^1 , R^2 , R^3 , and R^4 is hydrogen or methyl. In some embodiments, R^1 is (C_1 - C_4) alkyl and each of R^2 , R^3 , and R^4 is hydrogen. In some embodiments, R^1 is methyl and each of R^2 , R^3 , and R^4 is hydrogen, and the cyclopropene compound is known herein as "1-MCP."

In some embodiments, a cyclopropene compound is used that has boiling point at one atmosphere pressure of 50°C or lower; or 25°C or lower; or 15°C or lower. Independently, in some embodiments, a cyclopropene compound is used that has boiling point at one atmosphere pressure of -100°C or higher; -50°C or higher; or -25°C or higher; or 0°C or higher.

The practice of the present invention involves a composition (herein called the "CP composition") that contains one or more cyclopropene compound. In some embodiments, the CP composition includes one or more molecular encapsulating agent. Suitable molecular encapsulating agents include, for example, organic and inorganic molecular encapsulating agents. Suitable organic molecular encapsulating agents include, for example, substituted cyclodextrins, unsubstituted cyclodextrins, and crown ethers. Suitable inorganic molecular encapsulating agents include, for example, zeolites. Mixtures of suitable molecular encapsulating agents are also suitable. In some embodiments of the invention, the encapsulating agent is alpha-cyclodextrin, beta-cyclodextrin, gamma-cyclodextrin, or a mixture thereof. In some embodiments of the invention, particularly when the cyclopropene compound is 1-methylcyclopropene, the encapsulating agent is alpha-cyclodextrin. The preferred encapsulating agent will vary depending upon the structure of the cyclopropene compound or cyclopropene compounds being used. Any cyclodextrin or mixture of cyclodextrins, cyclodextrin polymers, modified cyclodextrins, or mixtures thereof can also be utilized pursuant to the present invention. Some cyclodextrins are available, for example, from Wacker Biochem Inc., Adrian, MI, as well as other vendors.

In some embodiments, at least one molecular encapsulating agent encapsulates one or more cyclopropene compounds. A cyclopropene compound or substituted cyclopropene compound molecule encapsulated in a molecule of a molecular encapsulating agent is known herein as a "cyclopropene compound molecular encapsulating agent complex." The cyclopropene compound molecular encapsulation agent complexes can be prepared by any means. In one method of preparation, for example, such complexes are prepared by contacting the cyclopropene compound with a solution or slurry of the molecular encapsulation agent and then isolating the complex, using, for example, processes disclosed in US Patent No. 6,017,349.

While the present invention is not limited by theory, among at least some of the embodiments in which the CP composition is aqueous and in which a molecular encapsulating agent encapsulates a cyclopropene compound, it is contemplated that the encapsulation complex is stabilized by hydrophobic interactions. That is, in such embodiments, it is contemplated that that particular cyclopropene compound is relatively non-polar and is poorly soluble in water, while the molecular encapsulating agent is a molecule with a relatively non-polar interior cavity and a relatively

hydrophilic exterior. In such embodiments, it is contemplated that the cyclopropene compound finds an energetically favorable environment on the interior cavity of the molecular encapsulating agent.

5 The amount of molecular encapsulating agent, when present, can usefully be characterized by the ratio of moles of molecular encapsulating agent to moles of cyclopropene compound (i.e., the number that results when the number of moles of molecular encapsulating agent is divided by the number of moles of cyclopropene compound). In some embodiments, the ratio of moles of molecular encapsulating agent to moles of cyclopropene compound is 0.1 or larger; or 0.2 or larger; or 0.5 or
10 larger; or 0.9 or larger. Independently, in some of such embodiments, the ratio of moles of molecular encapsulating agent to moles of cyclopropene compound is 2 or lower; or 1.5 or lower. In some embodiments, the ratio of moles of molecular encapsulating agent to moles of cyclopropene compound is 0.9 to 1.5.

15 In some embodiments, the CP composition contains one or more chelating agent. A chelating agent is a compound that has at least two atoms or groups, each of which is capable of forming a coordinate bond with a metal atom, and a single molecule of a chelating agent is capable of forming two or more coordinate bonds with a single metal atom.

In embodiments in which one or more chelating agent is used, suitable
20 chelating agents include, for example, organic and inorganic chelating agents. In some embodiments a chelating agent is used that is a phosphate such as, for example, tetrasodium pyrophosphate, sodium tripolyphosphate, or hexametaphosphoric acid. In some embodiments a chelating agent is used that is chosen from aminocarboxylic acids, 1,3-diketones, hydroxycarboxylic acids, polyamines, aminoalcohols, aromatic
25 heterocyclic bases, phenols, aminophenols, oximes, Schiff bases, sulfur compounds, or mixtures thereof. In some embodiments, a chelating agent is used that is chosen from one or more aminocarboxylic acids, one or more hydroxycarboxylic acids, one or more oximes, or a mixture thereof. In some embodiments, a chelating agent is used that includes ethylenediaminetetraacetic acid (EDTA),
30 hydroxyethylethylenediaminetriacetic acid (HEDTA), nitrilotriacetic acid (NTA), N-dihydroxyethylglycine (2-HxG), ethylenebis(hydroxyphenylglycine) (EHPG), or a mixture thereof. In some embodiments a chelating agent is used that includes tartaric acid, citric acid, gluconic acid, 5-sulfoslicylic acid, or a mixture thereof. In some

embodiments a chelating agent is used that includes dimethylglyoxime, salicylaldoxime, or a mixture thereof. In some embodiments, EDTA is used.

Among embodiments in which a chelating agent is used that is an acid, the acid may be present in neutral form or in the form of a salt or in a combination thereof. Salts may have any counterion, including, for example, sodium, potassium, magnesium, calcium, or mixtures thereof. In some embodiments, magnesium or calcium or a mixture thereof is used.

Mixtures of suitable chelating agents are also suitable.

Among embodiments in which a chelating agent is used, the amount of chelating agent is, based on the total weight of the CP composition, 10% by weight or less; or 3% by weight or less; or 6% by weight or less. Independently, in some embodiments, the amount of metal-complexing agent is, based on the total weight of the CP composition, 0.1% or more; or 0.2% or more; or 0.5% or more. In some embodiments, the amount of metal-complexing agent is, based on the total weight of the CP composition, 0.5% to 6%.

The present invention involves treatment of ornamental plants. As used herein, "ornamental plants" are living plants, rooted in soil, that have commercial value for their aesthetic appeal. Some ornamental plants have additional value as crop plants because they produce a crop (i.e., one or more product or one or more plant part) that may be harvested and that has commercial value. In some embodiments, one or more ornamental plant is chosen because of the aesthetic appeal of one or more of its flowers, leaves, scent, fruit, stems, bark, or combination thereof.

In some embodiments, one or more ornamental plant is chosen for its appearance. Of those, some (herein called "ornamental flower plants") are chosen for the appearance of their flowers.

In some embodiments, ornamental plants are chosen from the following: Acacia, Achillea, African Boxwood, African Lily, African Violet, Agapanthus, Ageratum, Ageratum houstonianum, Allium, Alpina, Alstroemeria, Amaranthus hypochondriacus, Amaryllis, Ammi majus, Anconitum, Anemone, Anigozanthus, Annual Delphinium, Anthurium, Antirrhinum majus, Asparagus, Aster, Aster spp., Astilbe, Azalea, Baby's Breath, Bachelor's Button, Banksia, Begonia, Bellflower, Bells of Ireland, Big Flax, Billy Buttons, Blazing Star, Bleeding Heart, Boronia, Bouvardia, Broom, Buddleia, Bupleurum, Butterfly Bush, Butterfly Orchid, California

- Pepperberry, Calla Lily, Campanul, Candytuft, Canterbury Bells, Carnation, Carthamus, Caspia, Cattleya, Celosia, Celosia argenta, Centaurea cyanus, Chamelaucium, Chimney Bells, Chrysanthemum, Chrysanthemum x morifolium, Clarkia, Consolida ambigua, Convallaria, Coral Bell, Cordyline, Coreopsis,
- 5 Cornflower, Craspedia, Curly Willow, Cyclamen, Cymbidium, Cymbidium Orchid, Daffodil, Daisy, Daisy Mums, Daylily, Delphinium, Dendrobium, Dendrobium Orchid, Dianthus barbatus, Dianthus caryophyllus, Dianthus caryophyllus nana, Dragon's Tongue, Drumstick, Enthusiasm, Erica spp, Eustoma grandiflorum, False Bird of Paradise, False Spirea, Farewell-To-Spring, Flamingo Flower, Floss Flower,
- 10 Freesia, Freesia x hybrida, Fuji or spider Mums, Gay Feather, Genista spp., Geranium, Gerbera, Gerbera spp., Ginger, Gladiolus, Gladiolus hybrid nanus, Goat's Beard, Godetia, Golden Rod, Guersney Lily, Gyp, Gypsophila paniculata, Hanging Heliconia, Heath, Heather, Helianthus annuus, Heliconia spp., Hippeastrum, Hosta, Hydrangea, Iberis amara, Impatiens, Inca Lily, Iris, Iris spp., Ivory Lily, Jade plant, Japhette
- 15 Orchid, Jonquil, Kalanchoe, Kangaroo Paw, napweed, Larkspur, Lathyrus odoratus, Lavandula, Lavender, Liatris, Lilac, Lilium spp., Lilly-of-the-Valley, Lily, Lily of the Field, Lily of the Nile, Limonium, Limonium spp., Lisianthus, Lobster Claw, Love in the mist, Love-lies-bleeding, Mattholia incana, Memosa, Miniature Carnation, Mini Carnation, Miniature Gladiolus, Moluccella laevis, Monkshood, Mother-in-law
- 20 tongue, Musa, Myrsine, Myrtle, Myrtus, Narcissus, Nephrolepis, Nerine, Nerine Lily, Nigella, Orchid, Ornamental Onion, Ornithogalum, Paeonia, Painted Tongue, Peony, Peruvian lily, Petunia, Phalaenopsis, Philodendron, Phlox, Pincushion Flower, Pitt, Pittosporum, Pixie Carnation, Pointsettia, Polianthes tuberosa, Pompon Chrysanthemum, Poppy Anemone, Porium, Protea spp., Purple Coneflower, Pussy
- 25 Willow, Queen Ann's Lace, Ranunculus, Rattlesnake, Red Ribbons, Rosa spp., Rose, Rudbeckia, Safflower, Salix, Salvia, Sansevieria, Satin Flowers, Scabiosa, Schinus, Sea lavender, Sedum, Shell Flowers, Snake Plant, Snapdragon, Solidago, Solidaster spp., Speedwell, Spider Lily, Spider Mums, Spray Carnation, Star of Bethlehem, Statice, Stenamezon, Stock, Summer's Darling, Sunflower, Sweet Pea, Sweet
- 30 William, Sword Fern, Syringa vulgaris, Tailflowers, Tassel flower, Thouroughwax, Throatwort, Trachelium, Tree Fern, Trumpet Lily, Tuberoze, Tulip, Tulipa, Veronica, Wattle, Waxflower, Wild Plantain, Windflower, Wolfsbane, Youth and Old Age, Zantedeschia, Zinna, Zinnia elegans, Zygocactus, and mixtures thereof.

In some embodiments, the plants treated in the practice of the present invention include one or more ornamental flower plant that is in bloom at the time of the treatment. In some of such embodiments, the life of the flower will be extended, or the vitality of the plant will be improved, or both. When improvement in vitality
5 occurs, it may occur immediately after treatment, or it may be observed later, possibly after the flowers have dropped off the plant, and/or possibly 4 weeks later.

In the practice of the present invention, plants are treated when they are rooted in growing medium. Growing medium may be natural or artificial or a mixture thereof. Suitable growing media include, for example, soil, artificial growing media,
10 and mixtures thereof. Artificial growing media may contain organic components or mineral components or both. Artificial growing media may be solid or liquid (i.e., hydroponic growing media) or a combination thereof. Some suitable growing media include, for example, compost (for example, composted yard waste), peat moss, pine bark, perlite, sand, vermiculite, coir, rockwool, foam, or any combination thereof. In
15 some embodiments, the growing medium is soil.

In the practice of the present invention, ornamental plants may be treated in any location. In some embodiments, ornamental plants are treated outside of any building or enclosure. In other embodiments, ornamental plants are treated inside an enclosure such as, for example, a greenhouse, another building, a shipping container,
20 or a truck.

Independently, ornamental plants may be treated when the growing medium in which they are rooted is in any configuration. In some embodiments, the growing medium is in the ground, for example in level ground or in a raised bed or in a combination thereof. In some embodiments, the growing medium is in containers,
25 such as, for example, pots, flats, some other container, or a combination thereof. In some embodiments, the growing medium in each container has depth of 80 cm or less. In some embodiments, the growing medium in each container has depth of 50 cm or less, or 25 cm or less, or 15 cm or less. In some embodiments, the growing medium is sufficiently rigid that no container is needed. Such rigid growing media include, for
30 example, foam (such as, for example, OasisTM growing media) or rockwool or a combination thereof.

It is contemplated that ornamental plants that are rooted in growing medium that is in the form of an item of rigid growing medium or that is in pot or a flat will be

portable. Usually, such a pot, flat, or item of rigid growing medium can be lifted and carried by an individual person.

In some embodiments, the plants treated in the practice of the present invention include one or more flowering bedding plants, which are treated in flats or pots and which are subsequently planted in soil in the ground by the consumer. In some embodiments, the plants treated in the practice of the present invention include one or more foliage plants, which are plants that are normally valued for the appearance of their foliage and not for their flowers. In some embodiments, the plants treated in the practice of the present invention include one or more flowering pot plants, which are in pots when treated and which normally remain in pots after purchase by the consumer. In some embodiments, the plants treated in the practice of the present invention include one or more nursery crops, which include, for example, annual plants, biennial plants, and perennial plants, which are treated in pots or flats and subsequently planted in the ground by the consumer. In some embodiments, the plants treated in the practice of the present invention include turf grass. In some embodiments, the plants treated in the practice of the present invention include one or more flowering bedding plants, one or more foliage plants, one or more flowering pot plants, one or more nursery crops, turf grass, or a combination thereof.

A composition is considered herein to be liquid if it is in the liquid state at pressure of one atmosphere over a temperature range that includes 10°C to 30°C.

A composition is considered herein to be "aqueous" if it contains 50% or more water by weight, based on the weight of the composition.

The practice of the present invention involves the use of a liquid CP composition. In some embodiments, that liquid CP composition is an aqueous composition. In some embodiments, that liquid CP composition contains water in an amount by weight based on the weight of the liquid CP composition, of 75% or more, or 85% or more, or 90% or more, or 95% or more.

As used herein, the phrase "cyclopropene compound in the amount of" is considered to mean, if more than one cyclopropene compound is present, that the sum of all cyclopropene compounds is present in that amount.

The liquid CP composition contains cyclopropene compound in the amount of 0.3 to 300 milligrams of cyclopropene per liter of the liquid CP composition. In some embodiments, the liquid CP composition compound contains cyclopropene compound

in the amount of (in milligrams of cyclopropene per liter of liquid CP composition) 0.5 or more; or 1 or more, or 2 or more; or 5 or more; or 10 or more. Independently, in some embodiments, the liquid CP composition contains cyclopropene compound in the amount of (in milligrams of cyclopropene per liter of liquid CP composition) 250
5 or less; or 200 or less; or 150 or less; or 100 or less; or 90 or less; or 50 or less. In some embodiments, the liquid CP composition contains cyclopropene compound in the amount of 5 to 50 milligrams of cyclopropene per liter of liquid CP composition.

In some embodiments, the ingredients other than water in an aqueous CP liquid composition are distributed throughout the water. Each ingredient other than
10 water, independent of other ingredients, may be dissolved in the water or dispersed in the water or emulsified in the water, or any combination thereof.

It is sometimes desirable to include in the CP composition one or more adjuvants, such as, for example, extenders, pigments, fillers, binders, plasticizers, lubricants, surfactants, wetting agents, spreading agents, dispersing agents, stickers,
15 adhesives, defoamers, thickeners, transport agents, and emulsifying agents.

Independently, in some embodiments, the CP composition includes one or more alkyl alcohols. In some embodiments, the CP composition includes one or more alkyl alcohols where the alkyl group has 6 or fewer carbon atoms, or 3 or fewer carbon atoms.

In some embodiments, one or more surfactant is used. Suitable surfactants include, for example, anionic surfactants, cationic surfactants, nonionic surfactants, amphoteric surfactants, and mixtures thereof. In some embodiments, one or more nonionic surfactant is used. Some suitable nonionic surfactants are, for example, alkylphenol ethoxylates and silicone surfactants. In some embodiments, a silicone
25 surfactant is used. In some embodiments, a trisiloxane alkoxylate is used. One suitable trisiloxane alkoxylate is, for example, Poly(oxy-1,2-ethanediyl), alpha-methyl-omega-(3-(1,3,3,3-tetramethyl-1-((trimethylsilyl)oxy)-1-disiloxanyl)propoxy)-(registry number 27306-78-1), available as SilwetTM L-77 from GE silicones. Mixtures of suitable surfactants are also suitable.

Among embodiments that use surfactant, some embodiments use surfactant in amounts, by weight based on the total weight of the liquid CP composition, of 0.005% or more; or 0.01% or more. Independently, among embodiments that use surfactant, some embodiments use surfactant in amounts, by weight based on the total weight of

the liquid CP composition, of 1% or less; or 0.3% or less; or 0.1% or less. In some embodiments, surfactant is used in an amount of 0.01% to 0.1% by weight based on the total weight of the liquid CP composition.

In the practice of the present invention, liquid CP composition is brought into contact with plants. The brining into contact may be performed by any method, including, for example, spraying, dipping, misting, or any combination thereof. In some embodiments, spraying is used.

The amount of liquid CP composition used may be characterized as the volume of liquid CP composition in milliliters divided by the area in square meters to which the liquid CP composition is applied. When the plants being brought into contact with liquid CP composition are in pots or flats or other containers, the area used to calculate the amount of liquid CP composition used is the total area of the shape formed by the perimeter surrounding the containers, including any empty space between the containers.

In some embodiments, the amount of liquid CP composition used is 20 ml/m² or more; or 50 ml/m² or more; or 100 ml/m² or more. Independently, in some embodiments, the amount of liquid CP composition used is 2000 ml/m² or less; or 1000 ml/m² or less; or 500 ml/m² or less. In some embodiments, the amount of liquid CP composition used is 100 ml/m² to 500 ml/m².

It is to be understood that for purposes of the present specification and claims that each operation disclosed herein is performed at 25°C unless otherwise specified.

EXAMPLES

Methods

Spray applications were made using (unless otherwise noted) AFxRD-038 powder containing 3.8% active ingredient, i.e. 1-MCP, and also containing dextrose, alpha-cyclodextrin, and amino acid salt. Rates listed are for active ingredient e.g. 5 mg active ingredient per liter. Sprayed liquid contained (unless otherwise noted) AFxRD-038 powder added to water. AFxRD-038 powder was obtained from AgroFresh Inc. The water used (unless otherwise noted) was tap water. Applications were done in 500 ml spray bottles at rates typical for growth regulators applications in the ornamental industry i.e., 200 ml per square meter. Spraying was done within 5-15

minutes of mixing the formulation. Plants were allowed to dry for 1- 4 hours before being challenged with ethylene (2 ppm for about 16 hours at ambient temperatures).

"Ambient temperatures" means herein 15°C to 28°C.

Surfactant Silwet™ L-77 (called "surf" below) was sometimes included to evaluate the effect of surfactant on efficacy. Silwet™ L-77 was used in the form of a pure liquid. The amounts shown below as "ml/L" refer to milliliters of pure Silwet™ L-77 per liter of liquid CP composition.

Plants tested included bedding plants (i.e. flowering plants grown in a six pack tray) or flowering potted plants. Multiple identical plants were tested in each example below. Where measurements are marked with a lower-case letter or letters (e.g., "a" or "ab"), those letters denote the results of statistical analysis on the results. For example, in the "Day 9" results in Example 6, the results at 0 mg/L of 1-MCP (letter "a") are statistically different from the results at 5 and 10 mg/L (letters "b, c, d, and/or e" but no letter "a").

Example 1

Visual appearance and flower or bud abscission of Impatiens (unknown cultivar in pots with diameter of 10 cm (4 inch)) and Cyclamen plants (unknown cultivar in pots of diameter 11.5 cm (4.5 inch)) sprayed with 1-MCP solutions and challenged with ethylene.

	Impatiens		Cyclamen	
	Appearance ⁽¹⁾		Appearance ⁽²⁾	Abscission (%)
<u>1-MCP (mg/L)</u>	<u>Day 1</u>	<u>Day 4</u>	<u>Day 7</u>	<u>Day 7</u>
0	0.7 d	0.3 b	1.0 b	89.7 a
10	3.7 ab	3.3 a	3.7 a	25.6 b
15	nt	nt	3.7 a	23.3 b
25	nt	nt	3.7 a	25.0 b
100	4.3 a	3.7 a	nt	nt
300	2.3 bc	1.3 bc	nt	nt

Note 1: 0=poor; 5=excellent

Note 2: 1=poor; 5=excellent

The treatment at 300 mg/L caused phytotoxicity on Impatiens.

Example 2

Kalanchoe (unknown cultivar), 'Candy Stripe' phlox and 'Sonnet' snapdragon (all in pots of diameter 10 cm (4 inch)) were sprayed with 1-MCP solutions, with or without SilwetTM L-77 surfactant (specific gravity 1.007), and challenged with ethylene.

For Kalanchoe, we observed the percent of plants on which one or more flowers died by wilting, whether or not it stayed on the plant. For Phlox and Snapdragon, we observed the percent of plants on which one or more flowers or one or more buds underwent abscission.

<u>1- MCP</u> <u>(mg/L)</u>	<u>surf (ml/L)</u>	<u>Kalanchoe</u>		<u>Phlox</u>	<u>Snapdragon</u>
		<u>Flower Wilting (%)</u>		<u>Bud or Flower Abscission (%)</u>	
		<u>Day 5</u>	<u>Day 15</u>	<u>Day 5</u>	<u>Day 5</u>
0	0	58.7 a	38.8 a	94.7 a	70.1 a
0	0.25	46.0 a	32.7 a	96.1 a	70.1 a
5	0	7.9 b	11.9 b	21.4 c	19.9 b
5	0.25	7.3 b	8.7 b	26.0 bc	0.0 b
10	0	5.6 b	6.7 b	17.3 c	4.4 b
10	0.25	5.5 b	6.8 b	22.8 bc	3.3 b
25	0	4.6 b	7.2 b	15.8 c	7.4 b
25	0.25	6.2 b	7.4 b	21.2 c	3.3 b
50	0	6.7 b	7.5 b	44.1 b	6.4 b
50	0.25	5.7 b	6.7 b	40.0 bc	8.9 b

The rate of 1-MCP of 5 mg/L was sufficient in giving protection against ethylene. The 1-MCP rate of 50 mg/L did not result in any phytotoxicity on Kalanchoe or snapdragon flowers but on Phlox and Snapdragon the highest rates caused phytotoxicity to the open florets.

Example 3

Bud wilting and flower abscission (%) of *Campanula* (in pots) sprayed with 1-MCP solutions without a surfactant, and challenged with ethylene. We observed the percent of plants on which one or more buds or one or more flowers underwent wilting or abscission or both.

<u>1-MCP (mg/L)</u>	<u>Bud Wilting and/or Flower Abscission (%)</u>	
	<u>Day 1</u>	<u>Day 7</u>
0	96	30
5	21	25
10	45	52
25	38	59
50	38	57

Example 4

Flower loss (%) on Regal Geranium cultivars, 'Camelot' and 'Jewel' (in pots), sprayed with 1-MCP solutions with or without surfactant (Silwet™ L-77) and challenged with ethylene.

1-MCP (mg/L)	surf. (ml/L)	Flower Loss (%)							
		"Camelot"		"Camelot"		"Jewel"		"Jewel"	
		Day 1	Day 2	Day 1	Day 7	Day 1	Day 2	Day 1	Day 7
0	0	100	100	95	62	100	100	100	78
5	0	45	64	62	46	84	100	90	76
5	2	5 ⁽³⁾	24 ⁽³⁾	nt	nt	65 ⁽³⁾	100 ⁽³⁾	nt	nt
10	0	nt	nt	20	0	nt	nt	85	68
25	0	nt	nt	28	27	nt	nt	52	43
50	0	0 ⁽³⁾	0 ⁽³⁾	0 ⁽³⁾	48 ⁽³⁾	28 ⁽³⁾	82 ⁽³⁾	26 ⁽³⁾	65 ⁽³⁾
50	2	5 ⁽³⁾	44 ⁽³⁾	nt	nt	35 ⁽³⁾	81 ⁽³⁾	nt	nt

Note 3: phytotoxicity was observed

Example 5

Bud wilting and flower abscission (i.e., % of plants that showed bud wilting or flower abscission or both) of 'Magenta' Impatiens (in pots) sprayed with 1-MCP solutions with 0.25 mL/L SilwetTM L-77 surfactant and challenged with ethylene.

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<u>1-MCP (mg/L)</u>	<u>surf. (ml/L)</u>	<u>Wilt and/or Abscission (%)</u>
0	0.25	65
5	0.25	3
10	0.25	2
25	0.25	5
50	0.25	0

No phytotoxicity was observed on 'Magenta' impatiens even at the highest rates with SilwetTM L-77.

10 Example 6

Bud wilting (%) of Petunia (in six-pack trays) sprayed with 1-MCP solutions with or without SilwetTM L-77 surfactant and challenged with ethylene.

<u>1-MCP (mg/L)</u>	<u>surf (ml/L)</u>	<u>Bud Wilting (%)</u>	
		<u>Day 5</u>	<u>Day 9</u>
0	0	91 ab	100 a
0	0.25	95 ab	98 a
1	0	89 ab	93 ab
1	0.25	76 abc	93 ab
2.5	0	74 bc	91 ab
2.5	0.25	68 c	85 abc
5	0	63 c	71 bcd
5	0.25	57 cd	67 cd
10	0	34 c	52 de
10	0.25	37 de	50 de

Example 7

Percent of plants showing one or more of flower wilting, bud wilting, and drop on 'Hark' Phalaenopsis orchids (in pots) sprayed with 1-MCP solutions with or without SilwetTM L-77 surfactant and challenged with ethylene.

<u>1-MCP</u> <u>(mg/L)</u>	<u>surf</u> <u>(ml/L)</u>	<u>flower wilt, bud wilt, and/or drop (%)</u>			
		<u>Day 0</u>	<u>Day 5</u>	<u>Day 10</u>	<u>Day 15</u>
0	0	0 a	88 a	94 a	94 a
5	0	0 a	1.8 b	1.8 b	1.8 b
10	0	0 a	2.9 b	2.9 b	2.9 b
25	0	0 a	0 b	0 b	0 b
50	0	0 a	1.8 b	1.8 b	1.8 b
50	0.25	0 a	0 b	0 b	0 b

5

1-MCP spray protected both closed and open buds on Phalaenopsis orchid plants.

Example 8: Racks of Flowering Plants

10 Racks of flowers were sprayed with spray liquid containing 25 mg/L at rate of 200 ml/square meter. Racks were then placed into a full enclosed truck (length 7.3 meter) for 14 hours. Plants were then challenged with ethylene and evaluated 3 and 7 days later, using a rating scale from 0 (poor) to 2 (good). Control plants were treated identically except that they did not receive the spray. Results were as follows:

<u>Plant</u>	<u>Pot size</u>	<u>Day 3</u>		<u>Day 7</u>	
		<u>Control</u>	<u>Sprayed</u>	<u>Control</u>	<u>Sprayed</u>
Snapdragon (yellow)	3.8 liter	0.92 a	0.83 a	0.017 b	0.53 a
Petunia "Royal Velvet"	10.2 cm	0.00 b	1.00 a	0.00 b	0.38 a
Callibrachoa "Cherry Blossom"	10.2 cm	0.00 b	1.00 a	0.00 b	1.00 a
Dianthus (mixed)	15.2 cm	0.00 b	0.58 a	0.00 a	0.25 a
Dianthus "Ideal White"	15.2 cm	0.17 b	0.92 a	0.83 a	1.00 a
Impatiens (light pink)	3.8 liter	0.25 b	1.00 a	0.42 b	1.00 a
Impatiens (dark pink)	3.8 liter	0.42 b	1.00 a	0.25 b	0.83 a
Impatiens (double pink)	15.2 cm	0.08 b	1.00 a	0.00 b	0.58 a
Verbena "babylon Red"	10.2 cm	0.00 b	0.58 a	0.00 a	0.19 a

In no case was the sprayed plant worse to a statistically significant degree than the corresponding control plant. In most cases the sprayed plant was better than the corresponding control plant. Every variety showed that the sprayed plant was better than the control plant at day 3 or at day 7 or at both.

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Example 9: Shelf Life After Low-Concentration Spray

Spray liquid was EthylBloc™ powder (contains 0.14% by weight 1-MCP, plus alpha-cyclodextrin and dextrose, obtained from Floralife Inc.) in distilled water. The shelf lives of sprayed and non-sprayed control plants were observed, with the following results:

10

	Shelf Life (days)		
<u>1-MCP (mg/L)</u>	<u>Impatiens</u>	<u>New Guinea Impatiens</u>	<u>Geranium</u>
0 (control)	1	1	1
0.03	3	4	3
0.32	5	7	4

Example 10: Nursery Plants

A range of nursery plants that often show quality problems during shipping were chosen including Datura (tropical), Mini-rose, Delphinium (sun perennial), Verbena (sun perennial), Asclepias (sun perennial), Delosperma (groundcover), Myosotis (shade perennial) and Primula (shade perennial).

Spray liquid had 50 mg/L of 1-MCP. Sprayed and unsprayed control plants, all of which were blooming, were packed in boxes according to standard procedures and shipped under commercial conditions. After 5 days plants were unpacked and given a quality rating, from 0 (poor) to 2 (good). Results were as follows:

15

20

	<u>Quality Rating</u>	
<u>Plant</u>	<u>Control</u>	<u>Sprayed</u>
Asclepias	1.0	1.5
Datura (tropical)	1.8	2.0
Delosperma	0.5	1.3
Delphinium	0.5	1.0
Mini-rose	1.0	1.8
Myosotis	0.5	0.5
Primula	0.8	1.0
Verbena	0.5	0.5

After the above observations, the plants were placed in a greenhouse for 4 weeks and assessed again. The sprayed plants were typically larger, greener, and healthier.

We claim:

1. A method of treating ornamental plants comprising contacting said plants with a liquid composition comprising of one or more cyclopropene compound, wherein the concentration of the total of all of said one or more cyclopropene compound is 0.3 to 300 milligrams of cyclopropene compound per liter of said liquid composition.
2. The method of claim 1, wherein said ornamental plants comprise flowering plants in bloom.
3. The method of claim 1, wherein said liquid composition is an aqueous composition.
4. The method of claim 1, wherein said plants are in pots.
5. The method of claim 1, wherein said liquid composition further comprises one or more chelating agent.
6. The method of claim 1, wherein some or all of said cyclopropene compound is encapsulated by a molecular encapsulation agent.
7. The method of claim 1, wherein the concentration of the total of all of said one or more cyclopropene compound is 5 to 50 milligrams of cyclopropene compound per liter of said liquid composition.

ABSTRACT

In a first aspect of the present invention, there is provided a method of treating ornamental plants comprising contacting said plants with a liquid composition comprising of one or more cyclopropene compound, wherein the concentration of the total of all of said one or more cyclopropene compound is 0.3 to 300 milligrams of
5 cyclopropene compound per liter of said liquid composition.

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Bogotá D.C.,

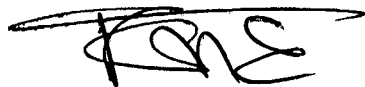
Doctor(a)
LLOPEDA RICAURTE ALICIA
Apoderado(a) y/o Representante de
ROHM AND HAAS COMPANY

REFERENCIA	Radicación No. 10 92553
	Trámite 2
	Evento 1
	Actuación 416
	Oficio No. 12835
	Folios 1

Teniendo en cuenta que la solicitud de privilegio de patente que se tramita bajo el expediente indicado en la referencia, reúne los requisitos de forma establecidos en los artículos 26 y 27 de la Decisión 486 de la Comisión de la Comunidad Andina, y en las demás disposiciones vigentes sobre la materia, se envía el extracto de la solicitud a la Oficina de Comunicaciones para efecto de su publicación en la Gaceta de Propiedad Industrial.

De acuerdo con lo previsto por el artículo 40 de la Decisión 486/00, la publicación en este caso se hará a partir del día 29 del mes de julio de 2011.

Cúmplase
Dado en Bogotá DC, 08 ABR. 2011



JOSE LUIS SALAZAR LOPEZ
Director de Nuevas Creaciones (C)

adpall