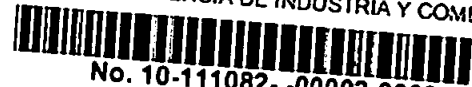




SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 10-111082-00002-0000

Fecha: 2010-11-17 13:27:21 Dep. 2020 DIR.NUEVASCR
Tra. 11 PATENTEIYII Eve: 378 FASENACIONALI
Act. 444 RESPUESTAREQUE Folios: 41

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

Dirección de Nuevas Creaciones

E. S. D.

Asunto	RADICACIÓN	10-111082
Trámite	PATENTE INVENCIÓN FASE NACIONAL	
Evento	SOLICITUD PROTECCIÓN	
Actuación	CONTESTACIÓN REQUERIMIENTO	
Título	COMPUESTO QUÍMICO PARA INCREMENTAR LA EFICIENCIA DEL PROCESO DE FOTOSÍNTESIS	
Solicitante	SREE RAMCIDES CHEMICALS PVT LTD	

MAURICIO PINZON PINZON, abogado de la firma **PINZON PINZON & ASOCIADOS**, mayor de edad, domiciliado en Bogotá D.C., identificado como aparece al pie de mi firma, estando dentro del término, me permito contestar el oficio No. 12046 notificado por fijación en lista de fecha 17 de septiembre de 2010 en los siguientes términos:

1. Allego Poder General debidamente otorgado con el lleno de los requisitos y debidamente legalizado junto con el documento que acredita la existencia y representación legal de SREE RAMCIDES CHEMICALS PVT LTD.
2. Adjunto solicitud PCT número PCT/IN2008/000520 debidamente legalizada.
3. Aporto documento en el cual consta la cesión de derechos del inventor a la sociedad solicitante SREE RAMCIDES CHEMICALS PVT LTD, debidamente legalizado.
4. Adjunto traducción de la solicitud internacional ajustada de acuerdo a la solicitud de esta Entidad.
5. De acuerdo a lo solicitado en el requerimiento oficial, el nuevo título de la patente solicitada es el siguiente:

“Compuesto Químico para Incrementar la Eficiencia del Proceso de Fotosíntesis”

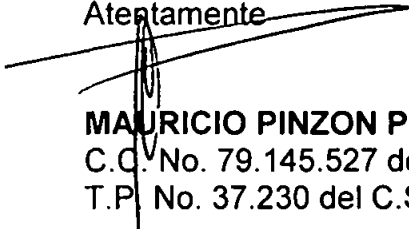
Así mismo renuncio al derecho de términos y solicito a su Despacho se sirva continuar con el trámite previsto para este asunto.



NOTIFICACIONES

Tanto mi representado como el suscrito recibiremos Notificaciones en la secretaría de esta División o en la Calle 99 No. 12-39 Piso 4 de la ciudad de Bogotá D.C. Teléfono 6219721.

Atentamente


MAURICIO PINZON PINZÓN
C.C. No. 79.145.527 de Usaquén
T.P. No. 37.230 del C.S. de la J.

Map-25860

POWER OF ATTORNEY

Be it known that R. GOPAL Legally representing and acting on behalf of SREE RAMCIDES CHEMICALS PVT LTD a corporation addressed in 7, Duraisamy Road, T. Nagar, Chennai – 600 017, Tamil Nadu, India

does hereby grant **GENERAL POWER OF ATTORNEY** to:

MAURICIO PINZON PINZON
SILVIA GARCIA CHACON

Lawyers in practice, of legal age, residing in Bogota D.C., Republic of Colombia, so that they may act in his own name and representation in order to carry out all the necessary steps and processes before the judicial, administrative or police authorities of the Republic of Colombia or any other countries if it could be necessary, as well as before third persons or parties in order to:

1) Obtain the registration and/or protection of the Intellectual Property Rights in general terms and in specific aspects such as Trademarks, industrial designs, utility models, patents, Plants Varieties, Denomination of Origin, Commercial Names and Ensigns, Copyrights, Domain Names, including all the steps, procedures and actions necessary for their defense, protection and conservancy, including the capability of granting licenses and to assign registrations.

2) Obtain the licenses or health registration or whatever necessary for the normal development of activities as well as the commercialization of its products or services.

3) Our proxies also are specifically authorized to carry out in our name, all the payments related with government expenses, rates, banking commissions, bearings, notarial expenses and in general all the other expenses that are required for the effects of the exact fulfillment of this mandate.

In carrying out the present mandate the proxy will be able to receive, withdraw, compromise, conciliate, substitute, resume, and in general, carry out all kinds of actions which would lead to the obtention of the pursued matter.

Note: This document must be signed before a Notary Public and then legalized by a apostille.

For Sree Ramcides Chemicals Pvt. Ltd.

R. Gopal

PODER GENERAL

Compareció R. GOPAL Representante legal de SREE RAMCIDES CHEMICALS PVT LTD Sociedad domiciliada en 7, Duraisamy Road, T. Nagar, Chennai – 600 017, Tamil Nadu, India

otorgo **PODER GENERAL** a:

MAURICIO PINZON PINZON
SILVIA GARCIA CHACON

Abogados en ejercicio, mayores de edad, vecinos de Bogotá D.C., República de Colombia, para que en su nombre y representación adelanten ante las autoridades judiciales, administrativas o de policía de la República de Colombia y de los demás países que así le indique así como ante terceras personas, todos los trámites, acciones judiciales o extrajudiciales o gestiones según sea el caso encaminadas a:

1) Obtener el registro y/o protección de los Derechos de Propiedad Intelectual en terminos generales y específicamente en materias tales como Marcas, Diseños Industriales, Modelos de Utilidad, Patentes, Variedades Vegetales, Denominaciones de Origen, Nombres y Enseñas Comerciales, Derechos de Autor, Nombres de Dominio, comprendiendo todos los trámites, gestiones y acciones que se hagan necesarios para su conservación y defensa, incluyendo la facultad de conceder licencias y efectuar cesiones.

2) Obtener las Licencias o Registros Sanitarios o de cualquier otra índole, necesarios para el normal desarrollo de su actividad ordinaria, así como para la comercialización de sus productos o servicios.

3) Nuestros apoderados igualmente quedan expresamente facultados para efectuar por cuenta nuestra el pago a terceros de tasas, pagos de servicios prestados por terceros en Colombia como en el exterior, comisiones bancarias, portes, gastos notariales y en general todos los demás gastos que se requieran para los efectos del cabal cumplimiento de este mandato.

En desarrollo del presente mandato los apoderados podrán recibir, desistir, transigir, conciliar, sustituir, reasumir y en general realizar todo tipo de actos que contribuyan a la obtención del objeto perseguido.

Note: Este documento debe ser firmado ante Notario Publico y luego legalizado mediante apostilla.

M. CHIDAMBARAM
ADVOCATE & NOTARY
CENTRAL GOVERNMENT
GOVT OF INDIA





सं० MEABS दिनांक
No. 14100 Date. 17/09/10
घाणिज्य मण्डल के सहायक सचिव/उप सचिव।
सचिव के हस्ताक्षर को अनुप्रमाणित किए जाते हैं
The Signature of Asstt. Secretary/
Deputy Secretary/Secretary of Chamber
of Commerce Attested.

P. S. Santhana Raman

पि.एस. संतान रामन
P.S. SANTHANA RAMAN
अनुभाग अधिकारी
Section Officer
विदेश मंत्रालय
Ministry of External Affairs
शाखा सचिवालय, चेन्नै
Branch Secretariat, Chennai.

For 2008 Ramchand Chemicals Pvt. Ltd.

FIRMA :
(Signature)

SIGNATURE - FIRMADO

For Sree Ramcides Chemicals Pvt. Ltd.

R. Gopal
Chief Operating Officer

CERTIFICACION NOTARIAL - SOCIEDAD

(Notary certificate - Corporation or Company)

. CHIDAMBARAM

ADVOCATE & NOTARY
CENTRAL GOVERNMENT
GOVT. OF INDIA

56, Addl. Law Chambers,
Court Buildings, CHENNAI - 600 104

Como Notario Publico certifico que:

The undersigned Notary Public, certifies that:

Qu la Compañía otorgante de este poder,

The above mentioned Company / R. Gopal, Chief Operating Officer of

existe y se encuentra organizada de acuerdo con las leyes de este pais / estado/

exists and is organized in accordance with the Laws of this Country / State /

y la persona que en su representacion suscribe el presente mandato cu nta con las debidas facultades para representarla en este acto.

/and the person who executed the forgoing document is the authorized representative of said Corporation / Company and is empowered to execute this document on its behalf.

SREE RAMCIDES CHEMICALS PVT LTD
Aishwarya Complex, II & III Floor,
7, Duraisamy Road, T.Nagar,
Chennai-600017

Notario Público
Notary Public

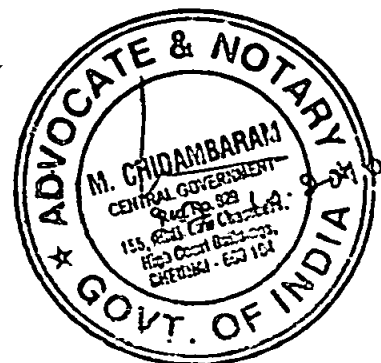


M. CHIDAMBARAM

ADVOCATE & NOTARY
CENTRAL GOVERNMENT
GOVT. OF INDIA

156 Addl. Law Chambers,
Court Buildings, CHENNAI - 600 104

Ms. B. HIGHLAND
Manager - Trade Facilitation
The Madras Chamber of Commerce & Industry



C102 AGN C 1

**CONSULADO DE COLOMBIA
NUEVA DELHI**

No. 1823/2010

El suscrito **Cónsul de Colombia CERTIFICA**
que el señor S.P. SANTANAR

que autoriza el presente documento, ejerce
legalmente en la fecha allí expresada las
funciones de Oficial Registral
(O.I.) H.E.A.

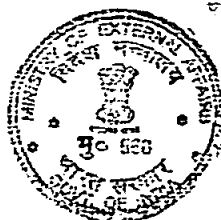
y que la firma y sello que en el documento
aparecen como suyos son los que usa y
acostumbra en sus actos oficiales.

El Cónsul no asume responsabilidad alguna
por el contenido del documento.



Lina Mora Fajardo
LINA FAJARDO
Counsellor

No. 26664
Date
The Signature of Asst. Secretary/
Deputy Secretary of Commerce
Attested
10/11/2010



(E. K. PARAMESWARAN)
(E. K. PARAMESWARAN)
Section Officer (O.I.)
Ministry of External Affairs, New Delhi



GOVERNMENT OF INDIA

PATENT OFFICE

**Ministry of Commerce and Industry
Department of Industrial Policy and Promotion**

It is hereby certified that annexed here to is a true copy of PCT Request, Complete Specification, Claims, Abstract, Drawings of the patent application as filed and detailed below:-

Date of application : 21-08-2008

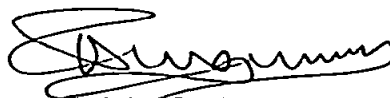
Application No. : PCT/IN2008/000520

Applicant : M/s. Sree Ramcidas Chemicals Pvt Ltd
7, Duraisamy Road, T.Nagar,
Chennai – 600 017, India.

In witness there of
I have here unto set my hand

Dated this the 30th day of August 2010
8th day of Phadrapada, 1932 (Saka)

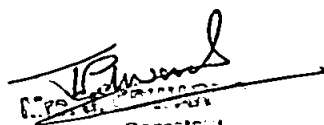
By Authority of
THE CONTROLLER GENERAL OF PATENTS,
DESIGNS AND TRADE MARKS.



(V. RENGASAMY)

DEPUTY CONTROLLER OF PATENTS & DESIGNS

PATENT OFFICE
INTELLECTUAL PROPERTY RIGHTS BUILDING
G.S.T. ROAD, GUINDY,
CHENNAI – 600 032.



Deputy Secretary
The Madras Chamber of Commerce & Industry

PAGADO IMPUESTO DE TIMBRE US\$ 100
PAGADOS DERECHOS CONSULARES US\$ 20

**CONSULADO DE COLOMBIA
NUEVA DELHI**

No. 1822/2010

El suscrito Cónsul de Colombia CERTIFICA
que el señor S. P. SANTHANA R.
que autoriza el presente documento, ejerce
legalmente en la fecha allí expresada las
funciones de Oficial Registral
COLOMBIA

y que la firma y sello que en el documento
aparecen como suyos son los que usa y
acostumbra en sus actos oficiales.

El Cónsul no asume responsabilidad alguna
por el contenido del documento.



Lina Mono Fajardo
LINA FAJARDO
Counsellor

सं. MEABS दिनांक
No. 14103 Date. 17/09/10
वाणिज्य मण्डल के सहायक सचिव/उप सचिव।
सचिव के हस्ताक्षर को अनुप्रामाणित किए जाते हैं
The Signature of Asstt. Secretary/
Deputy Secretary/Secretary of Chamber
of Commerce Attested.

पि.एस. संतान रामन
P.S. SANTHANA RAMAN
अनुभाग अधिकारी
Section Officer
विदेश मंत्रालय
Ministry of External Affairs
शाखा सचिवालय, चेन्नै
Branch Secretariat, Chennai.

HOME COPY REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

485

PCT / IN 08 / 000520

International Application No.

21 AUGUST 2008 (21.08.08)

International Filing Date

THE PATENT OFFICE (INDIA)
PCT INTERNATIONAL APPLICATION

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference
(if desired) (12 characters maximum)

Box No. I TITLE OF INVENTION A PRODUCT TO BOOST PHOTOSYNTHESIS	
Box No. II APPLICANT ☐ This person is also inventor	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) Sree Ramcides Chemicals Pvt Ltd 7 Duraisamy Road T.Nagar Chennai - 600 017	Telephone No. 24345770 Facsimile No. 24347569 Teleprinter No. Applicant's registration No. with the Office 331 / CHE / 2008
State (that is, country) of nationality: IN	State (that is, country) of residence: IN
This person is applicant for the purposes of: ☐ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box	
Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) Dr.S.Sundaresan 46/4, Sushantha Flats Ashok Nagar, Chennai - 83 Phone - 24719334	This person is: ☐ applicant only ☐ applicant and inventor ☒ inventor only (If this check-box is marked, do not fill in below.) Applicant's registration No. with the Office
State (that is, country) of nationality: IN	State (that is, country) of residence: IN
This person is applicant for the purposes of: ☒ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box	
☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.	
Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: ☐ agent ☐ common representative	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) Sree Ramcides Chemicals Pvt Ltd 7 Duraisamy Road T.Nagar Chennai 600 017	Telephone No. 24345770 Facsimile No. 24347569 Teleprinter No. Agent's registration No. with the Office
☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.	



Box No. VIII (iv) **DECLARATION: INVENTORSHIP** (only for the purposes of the designation of the United States of America)
The declaration must conform to the following standardized wording provided for in Section 214: see Notes to Boxes Nos. VII, VIII (i) to (v) (in general) and the specific Notes to Box No. VIII (iv). If this Box is not used, this sheet should not be included in the request.

**Declaration of inventorship (Rules 4.17(iv) and 51bis.1(a)(iv))
for the purposes of the designation of the United States of America:**

I hereby declare that I believe I am the original, first and sole (if only one inventor is listed below) or joint (if more than one inventor is listed below) inventor of the subject matter which is claimed and for which a patent is sought.

This declaration is directed to the international application of which it forms a part (if filing declaration with application).

This declaration is directed to international application No. PCT/..... (if furnishing declaration pursuant to Rule 26ter).

I hereby declare that my residence, mailing address, and citizenship are as stated next to my name.

I hereby state that I have reviewed and understand the contents of the above-identified international application, including the claims of said application. I have identified in the request of said application, in compliance with PCT Rule 4.10, any claim to foreign priority, and I have identified below, under the heading "Prior Applications," by application number, country or Member of the World Trade Organization, day, month and year of filing, any application for a patent or inventor's certificate filed in a country other than the United States of America, including any PCT international application designating at least one country other than the United States of America, having a filing date before that of the application on which foreign priority is claimed.

Prior Applications: 331/CHE/2008 dt. 8.12.08

I hereby acknowledge the duty to disclose information that is known by me to be material to patentability as defined by 37 C.F.R. § 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the PCT international filing date of the continuation-in-part application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name: Dr. S. Sundaresan

Residence: 46/4 Sushantha Flats, Ashok Nagar, Chennai - 600083, Tamil Nadu, India
(city and either US state, if applicable, or country)

Mailing Address: As above

Citizenship: IN

Inventor's Signature: *S. Sundaresan*
(if not contained in the request, or if declaration is corrected or added under Rule 26ter after the filing of the international application. The signature must be that of the inventor, not that of the agent)

Date: 21.8.2008
(of signature which is not contained in the request, or of the declaration that is corrected or added under Rule 26ter after the filing of the international application)

Name:

Residence:
(city and either US state, if applicable, or country)

Mailing Address:

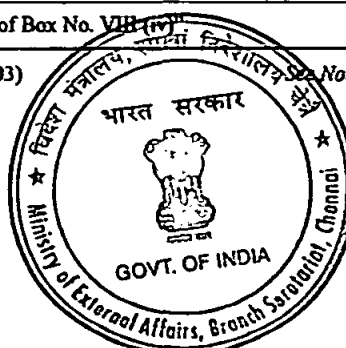
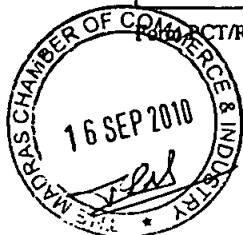
Citizenship:

Inventor's Signature:
(if not contained in the request, or if declaration is corrected or added under Rule 26ter after the filing of the international application. The signature must be that of the inventor, not that of the agent)

Date:
(of signature which is not contained in the request, or of the declaration that is corrected or added under Rule 26ter after the filing of the international application)

☐ This declaration is continued on the following sheet, "Continuation of Box No. VIII (iv)".

PCT/RO/101 (declaration sheet (iv)) (March 2001; reprint July 2003)



See Notes to the request form

The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.

However,

- ☐ DE Germany is not designated for any kind of national protection
- ☐ KR Republic of Korea is not designated for any kind of national protection
- ☐ RU Russian Federation is not designated for any kind of national protection

(The check-boxes above may be used to exclude (irrevocably) the designations concerned in order to avoid the ceasing of the effect, under the national law, of an earlier national application from which priority is claimed. See the Notes to Box No. V as to the consequences of such national law provisions in these and certain other States.)

Box No. VI PRIORITY CLAIM

The priority of the following earlier application(s) is hereby claimed:

Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country or Member of WTO	regional application:* regional Office	international application: receiving Office
item (1) 8 Feb 2008	331/CHE/2008	IN	IN	IN
item (2)				
item (3)				

☐ Further priority claims are indicated in the Supplemental Box.

The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of this international application is the receiving Office) identified above as:

☐ all items ☐ item (1) ☐ item (2) ☐ item (3) ☐ other, see Supplemental Box

* Where the earlier application is an ARIPO application, indicate at least one country party to the Paris Convention for the Protection of Industrial Property or one Member of the World Trade Organization for which that earlier application was filed (Rule 4.10(b)(ii)):

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):

ISA / .. AT

Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):

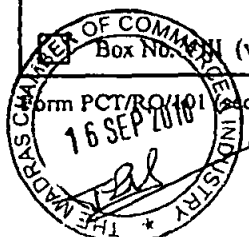
Date (day/month/year) Number Country (or regional Office)

Box No. VIII DECLARATIONS

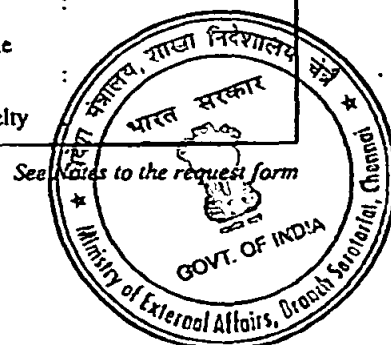
The following declarations are contained in Boxes Nos. VIII (i) to (v) (mark the applicable check-boxes below and indicate in the right column the number of each type of declaration):

Number of
declarations

- ☐ Box No. VIII (i) Declaration as to the identity of the inventor :
- ☐ Box No. VIII (ii) Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent :
- ☐ Box No. VIII (iii) Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application :
- ☒ Box No. VIII (iv) Declaration of inventorship (only for the purposes of the designation of the United States of America) :
- ☐ Box No. VIII (v) Declaration as to non-prejudicial disclosures or exceptions to lack of novelty :



Form PCT/RO/101 (second sheet) (October 2005)



contains: number of	This international application is accompanied by the following item(s) (mark the applicable check-boxes below and indicate in right column the number of each item):	Number of items
: 4	1. ☐ fee calculation sheet	:
:	2. ☐ original separate power of attorney	:
:	3. ☐ original general power of attorney	:
tables related thereto) : 7	4. ☐ copy of general power of attorney; reference number, if any:	:
claims : 2	5. ☐ statement explaining lack of signature	:
abstract : 1	6. ☐ priority document(s) identified in Box No. VI as item(s):	:
drawings : 6	7. ☐ translation of international application into (language):	:
Sub-total number of sheets : 20	8. ☐ separate indications concerning deposited microorganism or other biological material	:
sequence listing :	9. ☐ sequence listing in electronic form (indicate type and number of carriers)	:
tables related thereto :	(i) ☐ copy submitted for the purposes of international search under Rule 13ter only (and not as part of the international application) :	:
(for both, actual number of sheets if filed on paper, whether or not also filed in electronic form; see (c) below)	(ii) ☐ (only where check-box (b)(i) or (c)(i) is marked in left column) additional copies including, where applicable, the copy for the purposes of international search under Rule 13ter :	:
Total number of sheets : 20	(iii) ☐ together with relevant statement as to the identity of the copy or copies with the sequence listing mentioned in left column :	:
(b) ☐ only in electronic form (Section 801(a)(i))	10. ☐ tables in electronic form related to sequence listing (indicate type and number of carriers)	:
(i) ☐ sequence listing	(i) ☐ copy submitted for the purposes of international search under Section 802(b-quater) only (and not as part of the international application) :	:
(ii) ☐ tables related thereto	(ii) ☐ (only where check-box (b)(i) or (c)(i) is marked in left column) additional copies including, where applicable, the copy for the purposes of international search under Section 802(b-quater) :	:
(c) ☐ also in electronic form (Section 801(a)(ii))	(iii) ☐ together with relevant statement as to the identity of the copy or copies with the tables mentioned in left column :	:
(i) ☐ sequence listing	11. ☐ other (specify):	:
(ii) ☐ tables related thereto		
Type and number of carriers (diskette, CD-ROM, CD-R or other) on which are contained the		
☐ sequence listing:		
☐ tables related thereto:		
(additional copies to be indicated under items 9(ii) and/or 10(ii), in right column)		

Figure of the drawings which should accompany the abstract: 1

Language of filing of the international application: ENGLISH

Box No. X SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

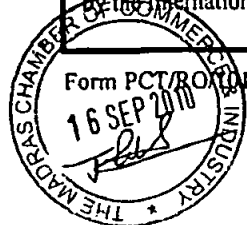
Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

For Sree Ramcides Chemicals Pvt. Ltd.

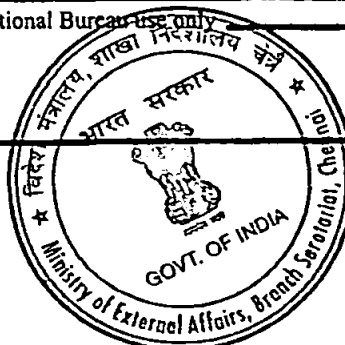
Managing Director
R. PADMANABAN

For receiving Office use only	
1. Date of actual receipt of the purported international application: 21 AUGUST 2008 (21.08.08)	2. Drawings: ☐ received: ☐ not received:
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:	
4. Date of timely receipt of the required corrections under PCT Article 11(2):	
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Form PCT/RO/ON (last sheet) (October 2005)



See Notes to the request form

FORM 2
THE PATENTS ACT 1970
(39 OF 1970)
AND
THE PATENTS RULES 2003

COMPLETE SPECIFICATION
(SEE SECTION 10 AND RULE 13)

TITLE OF THE INVENTION
A PRODUCT TO BOOST PHOTOSYNTHESIS

APPLICANTS
SREE RAMCIDES CHEMICALS PVT LTD
7, DURAISAMY ROAD,
T.NAGAR
CHENNAI - 600 017
TAMIL NADU
INDIAN



The following specification particularly describes the invention and the manner in which it is to be performed.

FIELD OF INVENTION

Although Photosynthesis has interested mankind of eons, rapid progress in understanding the Process has come in the last few years. It is observed Photosynthesis is relatively inefficient. In a typical growing season only 1 to 2% of the solar energy falling on the field is recovered as new Photosynthetic products. How can we increase efficiency of Photosynthesis to increase yield. One attempt is "Foliar" application of this invented product. The product innovated is the outcome of several years of research in making, trying and on result perfected as a Product for Agriculture to boost Photosynthesis. How? The sprayed innovated product getting absorbed in plant foliage, stem and all parts in just 4 hours. Chloroplast and Chlorophyll increases in remarkable speed thereby boosting Photosynthesis since Chloroplast are needed to tap sun energy.

It was considered near impossible to dissolve "Melamine" the chief ingredient (Synonyms - Triazine, Cyanuramide, Cyanuric Triamide, Cyanurotriamide, Cyanurotiamine etc) dissolved by years research by the inventor. Melamine containing Heterocyclic Nitrogen combined with phosphorous is adequately enriched with Potassium Sulphate, Octo Borate; Mono Zinc Sulphate with Diethyl Amino ethyl Hexanote is able to enhance Photosynthesis by 1.5% to 2% which is a break through in this field. It has resulted in increased meristem activity increased Photosynthesis and increased yield. In this reaction Diethyl Amino ethyl Hexanote exerts synergism in this composition.

We have increased agricultural production in last 50 years considerably and now we are in cross road and every efforts is needed. This invention will increase yield up to 15% to 20% to feed the burgeoning population which will touch 142 crores in 2020 in our country.

On probing and investigating the various requirements in the field of general agriculture and oil palm cultivation necessitated to invent new and location specific products. Hence three more products invented.

BACKGROUND OF INVENTION AND PRIOR ART.

To increase the yield in agriculture / horticulture is engaging our attention. The population increase in the world is threatening mankind and thereby the inadequate food security because of dwindling world food stock. Rightly the area Photosynthesis attracted attention worldwide because Photosynthesis is fulcrum for Life on this Earth. A molecule with 66% Heterocyclic Nitrogen in a peculiar molecular configuration i.e. 3N outside and 3N imbedded. It is practically insoluble in anything and used mainly as plasticizers, as melamine crockeries and resins.

Hence we tried repeatedly and found Ortho Phosphoric Acid dissolves totally melamine and this took us to make a preparation total with Diethyl Amino ethyl Hexanote, Zinc Sulphate Mono Hydrate, Octo Borate, Potassium Hydroxide or Potassium Sulphate and carboxyl methyl cellulose and IGSURF 6000 emulsifier and it has amazingly increased Photosynthesis by 1.5% to 2% and yield up to 15% to 20%.



To the best of our knowledge there is no prior art. Bringing Melamine complex to agriculture / horticulture is an unique invention that too to increase Photosynthesis efficiency which is like sustaining reaction in our earth. A liquid, soluble powder and granule which are described in statement of invention is unique in all respects.

Those skilled in the art should realize such equivalent conception do not depart from the spirit and scope of the invention in the broadest form.

World Phosphorus reserve is depleting and its availability is to be used judiciously. It is also a tricky element getting involved in "Fixation" and soil solubility. In this Melamine complex all these things rectified and made perfectly avoiding fixation, wastage, drain off etc. using all ingredients judiciously reducing dependence on bulk soil application.

With these background this Melamine complex is tailored with the sole object of increasing Photosynthesis efficiency and yield there under.

There is no prior art in developing products based on Melamine and hence this unique invention developed.

STATEMENT OF INVENTION

The backgrounds need, parameters required are carefully codified and the invention proceeded.

Heterocyclic Nitrogen 8.5% to get from 15% Melamine, to get 8.5% as P₂O₅ from ORTHO PHOSPHORIC ACID 16% and to get 5% as POTASSIUM OXIDE from 8% POTASSIUM HYDROXIDE taken Sodium Hydroxide 8% to neutralize. Arthophosphoric acid gave 8.5% as P₂O₅ in addition to dissolving Melamine. This soluble liquid is a viscous dull white liquid and at 0.1% to 0.2% concentration sprayed as "Foliar" does the miracle by enhancing Photosynthesis by 1.5% to 2% and increasing flowering, yield, and quality.

The preparation is made by taking Melamine 15kg and 16kg ORTHO PHOSPHORIC ACID is added slowly, stirring. Since reaction is slow it will take 5 to 6 hours to complete. Then add POTASSIUM HYDROXIDE 8kg cautiously and since the reaction is violent and emitting Hydrogen etc it has to be performed carefully. After the reaction is completed i.e. after 3 or 4 hours adding Sodium Hydroxide at 8kg (quantity till neutral PH 7 is obtained) and this reaction is more violent than (POTASSIUM HYDROXIDE reaction) and care should be taken. After everything is over adding 44.5 ltrs De-Mineralized water finally adding 500gms DIETHYL AMINOETHYL HEXANOTE the product is complete after 8 kg Emulsifier - IGSURF-6000 is added and stirred vigorously.



In another preparation one mole of Melamine and one mole of ORTHO PHOSPHORIC ACID is added and thoroughly mixed to get Melamine Phosphate. Any quantity can be made but this proportion followed. Completely centrifuged and powder taken as $C_3H_9N_6PO_4$ (Melamine Phosphate). Melamine Phosphate – 50kg, POTASSIUM SULPHATE – 30 kg, ZINC SULPHATE MONO HYDRATE -5 kg, wetting agent – 5kg,

Octoborate – 9.5kg and DIETHYL AMINOETHYL HEXANOTE – 500gms all added and machine mixed in ball mill and blended.

78 kg roasted or unroasted Bentonite clay granule is charged in the drum mixer with calcium silicate 2kg of the automatic granulating machine. Rosin 2.5 to 3 kg is provided in the Rosin Recepticle, once the machine is on rosin will melt and uniformly coat the granule. In the spray chamber 10kg Melamine Phosphate, 5 kg Zinc Sulphate Mono Hydrate, 2 kg Octoborate, 500gm DIETHYL AMINOETHYL HEXANOTE are added after dissolving in water and with wetting agent (Quantum Sufficentum). When the machine is on, with suitable nozzle the composition is sprayed at 50kg / pressure per sq.cm. After all is over the drum is rotated for 15 minutes and the granule is released.

A product is designed with Melamine, Mono Ammonium Phosphate, Potassium Sulphate or Potassium Chloride, Soluble Boron, Sea Weed Extract, Wetting and Dispensing agent, Zinc Sulphate mono Hydrate and anhydrous Magnesium Sulphate.

Example 1 (MELAMINE COMPLEX – SL)

Ingredients and Composition

Melamine	-	15 kg
ORTHO PHOSPHORIC ACID	-	16 kg
POTASSIUM HYDROXIDE	-	8 kg
Sodium Hydroxide	-	8 kg
IGSURF 6000	-	8 kg
DE MINERALISED WATER	-	44.5 kg
DIETHYL AMINOETHYL HEXANOTE	-	500 gm

Melamine 15 kg is taken in a glass or heat tolerable and acid resistant container. Then 16 kg ORTHO PHOSPHORIC ACID slowly added simultaneously stirring. Care should be taken since heat will evolve. Reaction will take 6 to 7 hours to dissolve and then 8kg POTASSIUM HYDROXIDE is added very slowly. Enormous heat will evolve and gas will also escape (Hydrogen & Oxygen). This reaction will take 5 to 6 hours. After that 8 kg Sodium Hydroxide is added and will produce violent reaction, noise, gas etc and the reaction will take 4 hours. After that PH is tested and it should be 6.5 to 7 PH. Accordingly Sodium Hydroxide quantity is decided (Approx – 8kg)

Then finally 0.5 kg DIETHYL AMINOETHYL HEXANOTE is added and 44.5 kg water is added along with special emulsifier 8 kg IGSURF – 6000. Now 100 kilos soluble liquid is ready.



Example 2 (MELAMINE COMPLEX – SP)Ingredients and Composition

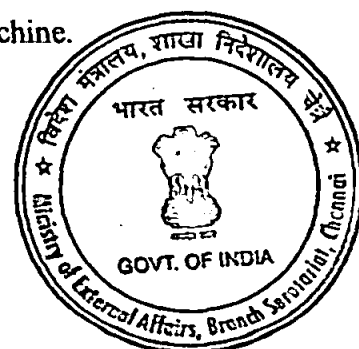
Melamine	-	127 kg }	will
ORTHO PHOSPHORIC ACID	-	98 kg }	yield 225 kg
Melamine Phosphate			
(Sticky ball should be centrifuged and Melamine Phosphate taken as dry clean powder):			
Melamine Phosphate	-	50 kg	
POTASSIUM SULPHATE	-	30 kg	
Octoborate	-	9.5 kg	
Zinc Sulphate Mono Hydrate	-	5 kg	
Wetting agent	-	5 kg	
(CARBOXYL METHYL CELLULOSE like)			
DIETHYL AMINOETHYL HEXANOTE	-	500 gm	

After making carefully Melamine Phosphate 50 kg is taken and all ingredients are added and it is ball milled and blended in mechanized blender.

Example 3 (MELAMINE COMPLEX – GR)Ingredients and Composition

Bentonite roasted or un roasted clay	}	78 kg + 2 kg calcium silicate
or Silica quartz	}	(both 80 kg)
Melamine Phosphate	-	10 kg
Zinc Sulphate Mono Hydrate	-	5 kg
Octoborate	-	2 kg
DIETHYL AMINOETHYL HEXANOTE	-	500 gm
Rosin	-	2.5 kg
Wetting agent	-	quantum sufficientum

- Prewritegited granule is charged in drum mixer with calcium silicate.
- Then ingredients Melamine Phosphate, Zinc Sulphate, borate and DIETHYL AMINOETHYL HEXANOTE with wetting agent mixed in water and poured in the spray chamber.
- Then the mixture in spray chamber sprayed over granules in drum with suitable nozzle at 50kg / pressure sq.cm and rotating the drum.
- Rosin is mixed during the process from its receptacle after melting.
- Contents mixed well for 15 minutes in the drum.
- Everything is done by an elaborate granulating automatic machine.
- The product is discharged after signal from the machine.



Example 4 (MELAMINE COMPLEX – SP II)**Ingredients and Composition:**

Melamine	-	30 to 40 kg
Mono Ammonium Phosphate	-	10 kg
Potassium Sulphate /Potassium Chloride	-	10 kg
Soluble Boron	-	10 kg to 20 kg
Sea Weed Extract	-	13 kg
Wetting and Dispensing Agent	-	7 kg
Zinc Sulphate Mono	-	5 kg
Anhydrous Magnesium Sulphate	-	5 kg

Individually the ingredients are pulverized and measured quantity is blended in a mechanical blender to get homogenous fine meshed powder.

Example 5 (MELAMINE COMPLEX SOILAPPLICATION)

This Melamine complex suitably designed for soil application in various crops. Since the need is felt, we have designed a perfect configuration for soil application.

Ingredients and Composition:

Melamine	-	30 kg
Humic Acid	-	30 kg
Clay	-	10 kg
Silica	-	5 kg
Wetting and dispensing agent	-	5 kg
Potassium Chloride	-	15 kg
Rock Phosphate	-	5 kg

All the ingredients are individually grinded and blended mechanically to get homogenized sand and clay carrying complex.

Example 6 (MELAMINE COMPLEX FOR OILPALMS)

Oil palm is an important crop in Malaysia, Indonesia and Far East countries.

A study was undertaken to understand the requirement of Oil Palm. With plenty of rainfall, the crop is extremely coming up well in these localities. But deficiency of some minerals is noticed. Accordingly, an unique formula is designed which is given below



Ingredients and Composition:

Melamine	-	15 kg
Silica	-	15 kg
Humic acid	-	25 kg
Potassium Chloride	-	10 kg
Soluble Boron	-	20 kg
Sulphur water dispersable granule Or Ammonium Sulphate	-	8 kg
Water dispersable and wetting agent	-	5 kg
2-4-D	-	1 kg
Naphthyl Acetic Acid	-	1 kg

All the ingredients except Silica grinded individually and added with Silica and blended to get homogenous product.



CLAIM

1. We claim that a product containing 15% Melamine, 16% ORTHO PHOSPHORIC ACID and 8% POTASSIUM HYDROXIDE in soluble liquid form to boost Photosynthesis and yield there under.
 - (a) Melamine 15 kg is taken in a hard glass or stainless steel or HDP vessel.
 - (b) ORTHO PHOSPHORIC ACID 16 kg slowly mixed and reaction allowed for 6 to 7 hrs.
 - (c) POTASSIUM HYDROXIDE 8 kg is added and the hot reaction is allowed for 5 to 6 hrs.
 - (d) Sodium Hydroxide 8 kg is added and this violent reaction is allowed for 4 to 5 hrs.
 - (e) PH is measured and it must be 6.5 to 7 and accordingly adjusted Sodium Hydroxide quantity.
 - (f) Then added 44.5 ltrs or kg, De-Mineralized H₂O and stirred vigorously.
 - (g) 8 kg IGSURF – 6000 special emulsifier is added.
 - (h) Finally DIETHYL AMINOETHYL HEXANOTE 500gm is added and uniform white soluble liquid obtained
2. We claim that a manufacturing technique as claimed in 1. Where in
 - (a) 127 kilos Melamine is taken in stainless steel or HDP vessel.
 - (b) 99 kilos ORTHO PHOSPHORIC ACID is added and stirred
 - (c) Then it is centrifuged and dry white powder Melamine Phosphate is obtained
 - (d) 50 kg Melamine Phosphate is taken
 - (e) 30 kg POTASSIUM SULPHATE is mixed with Melamine Phosphate
 - (f) Octo Borate 9.5 kg is mixed thoroughly.
 - (g) 5 kg Zinc Sulphate Mono Hydrate is added
 - (h) DIETHYL AMINOETHYL HEXANOTE – 500gm thoroughly mixed
 - (i) Wetting agent (CARBOXYL METHYL CELLULOSE) – 5 kg mixed
 All mixed in ball mill and taken out as powder with a fine mesh and if necessary blended in blending machine.
3. We claim that a manufacturing technique as claimed in 1. Whereas 78 kg blank granule is taken and filled in drum along with 2kg calcium silicate, 10kg Melamine Phosphate, 5 kg ZnSO₄H₂O, 2 kg Octoborate, DIETHYL AMINOETHYL HEXANOTE-500 gm is charged in the spray chamber dissolving in water with wetting agent and spraying in drum over granule at 50 / pressure sq.cm and rotated adding rosin 2.5 kg from separate hopper after melting. All is done in a granulating machine in an automatic calibrated way and 15% granule obtained.
4. We claim that a manufacturing technique as claimed in claim 1. Wherein
 - (a) 30 kg to 40 kg of Melamine
 - (b) 10 kg of MONO AMMONIUM PHOSPHATE
 - (c) 10 kg of POTASSIUM SULPHATE or POTASSIUM CHLORIDE
 - (d) 10 kg to 20 kg of SOLUBLE BORON



- (e) 13 kg of Sea Weed Extract
- (f) 5 kg of ZINC SULPHATE MONO
- (g) 5 kg of ANHYDROUS MAGNESIUM SULPHATE

All the ingredients pulverised and measured quantity blended in mechanical blender to get a homogenous fine meshed powder.

5 We claim that a manufacturing technique as claimed in claim 1. Wherein

- (a) 30 kg of Melamine
- (b) 30 kg of HUMIC ACID
- (c) 10 kg of Clay
- (d) 5 kg of SILICA
- (e) 5 kg of wetting and dispensing agent
- (f) 15 kg of POTASSIUM CHLORIDE
- (g) 5 kg of ROCK PHOSPHATE

All ingredients grinded individually and blended mechanically to get homogenized sand and clay carrying complex

6 We claim that a manufacturing technique as claimed in claim 1. Wherein

- (a) 15 kg of Melamine
- (b) 15 kg of SILICA
- (c) 25 kg of HUMIC ACID
- (d) 10 kg of POTASSIUM CHLORIDE
- (e) 20 KG OF SOLUBLE BORON
- (f) 8 kg of SULPHUR WATER DISPERSABLE GRANULE or AMMONIUM SULPHATE
- (g) 5 kg of water dispersable and wetting agent
- (h) 1 kg of 2-4-D
- (i) 1 kg of Naphthyl Acetic Acid

All the ingredients except Silica grinded individually and blended to get homogenous product.

7 We claim as in claim 1. A process and product for the manufacture of compositions for boosting Photosynthesis thereby increasing the yield in agriculture / horticulture.



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ABSTRACT

A composition to enhance efficiency of Photosynthesis and thereby increasing agriculture and horticulture yield containing Melamine 5% to 90% Ortho Phosphoric acid 10% to 80% POTASSIUM HYDROXIDE 8% Sodium Hydroxide 8% and POTASSIUM SULPHATE or POTASSIUM CHLORIDE up to 30% with 0.5% DIETHYL AMINOETHYL HEXANOTE 5% ZINC SULPHATE MONOHYDRATE 5 % ANHYDROUS MAGNESIUM SULPHATE 10% Octoborate with IGSURF 6000 special emulsifiers 8% to 15% and wetting agent 5% to 10% 2-4-D to get a product for boosting Photosynthesis as liquid soluble powder and granule



APPLICANT
SREE RAMCIDES CHEMICALS PVT LTD

FLOW CHART - 1

In a stainless steel or HDP vessel 15 kg Melamine is taken



With that 16 kilos ORTHO PHOSPHORIC ACID is added slowly and reaction is allowed to continue for 6 to 7 hours



After the above reaction 8 kg POTASSIUM HYDROXIDE is added and this hot reaction is for 6 hours



Then 8 kg Sodium Hydroxide is added to get firm PH 6.5 to 7 and Sodium Hydroxide quantity is adjusted to get that PH. This reaction will continue for 4 to 5 hours



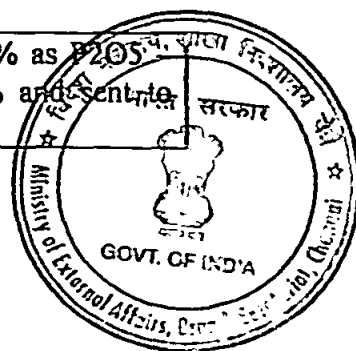
Then add 44.5 kg H₂O



Then add 0.5 kg DIETHYL AMINOETHYL HEXANOTE and IGSURF 6000 8kg thoroughly mix to get milky white solution



It is packed after analysis and if it is found Heterocyclic Nitrogen - 8.5% as P2O5, 8.5% as K2O - 5% and DIETHYL AMINOETHYL HEXANOTE 0.5% and sent to market



APPLICANT
SREE RAMCIDES CHEMICALS PVT.LTD

FLOW CHART - 2

Melamine 127 kg and ORTHO PHOSPHORIC ACID 98 kg mixed slowly and a sticky mass will be available



Centrifuging the above product Melamine Phosphate as powder is obtained



50 kg Melamine Phosphate powder is taken in a ball mill with that 30 kg POTASSIUM SULPHATE is added and mixed



Then Octoborate 10kg, DIETHYL AMINOETHYL HEXANOTE 500gm, $\text{ZnSO}_4 \cdot \text{H}_2\text{O}$ 5kg, wetting agent CARBOXYL METHYL CELLULOSE 5kg is added and all ball milled and fine uniform powder is obtained



Analysed for content and if it confirms to Heterocyclic Nitrogen - 18.5% as P_2O_5 - 15.8% as K_2O -15%, Boron - 2%, Zn - 1.65%, DIETHYL AMINOETHYL HEXANOTE - 0.5%. Packed and sent to market



APPLICANT
SREE RAMCIDES CHEMICALS PVT LTD

FLOW CHART - 3

Bentonite clay taken 78 kg in a rotary drum attached to granulating automatic machine along with 2 kg calcium silicate and filled



Rosin 2.5 kg is loaded in rosin cup.



Melamine 127 kg and ORTHO PHOSPHORIC ACID 98kg mixed and centrifuged and powder taken as Melamine Phosphate



Melamine Phosphate 10 kg, ZnSO₄ 5 kg, Octo Borate 2 kg, DIETHYL AMINOETHYL HEXANOTE 500 gm dissolved in water with wetting agent 2kg and charged in spray chamber



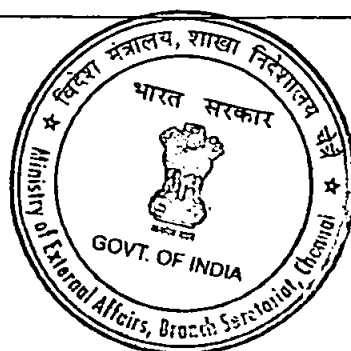
And then sprayed over granule with high pressure pump with suitable nozzle at 50kg / pressure sq. cm and rotated for 10 minutes



Once the granule is fully impregnated it is taken out on signal from automatic machine



Analysed and if it is found 3.75% Heterocyclic Nitrogen, 3.13% P₂O₅, 1.65% Zn, 0.4% boron and 0.5% DIETHYL AMINOETHYL HEXANOTE then packed and sent to market.



APPLICANT
SREE RAMCIDES CHEMICALS PVT LTD

FLOW CHART - 4

Melamine 40 kg is taken and loaded in blender and rotated



10 kg of Mono Ammonium Phosphate is added in the blender and mixed thoroughly



10 kg Potassium Sulphate or Potassium Chloride is added and blended to perfect mixing



10 kg of Soluble Boron, 5 kg of Zinc Sulphate, 5kg of Anhydrous Magnesium Sulphate are added in dry condition and blended



13 kg of Sea Weed Extract and 7 kg of Wetting and Dispersing Agent added in blender and rotated till satisfactory homogenous product is obtained



Sample is drawn , analysed and if confirmed to specification packed and sent to market.



APPLICANT
SREE RAMCIDES CHEMICALS PVT LTD

FLOW CHART - 5

10 kg of Clay and 5 kg of Silica are blended in blender and rotated and mixed



30 kg of Melamine added in blender and thoroughly blended



30 kg of Humic Acid, 15 kg of Potassium Chloride and 5kg of Rock Phosphate is added and blender rotated till satisfactory product obtained



5 kg of Wetting and dispensing agent is added finally and blended to fine perfection

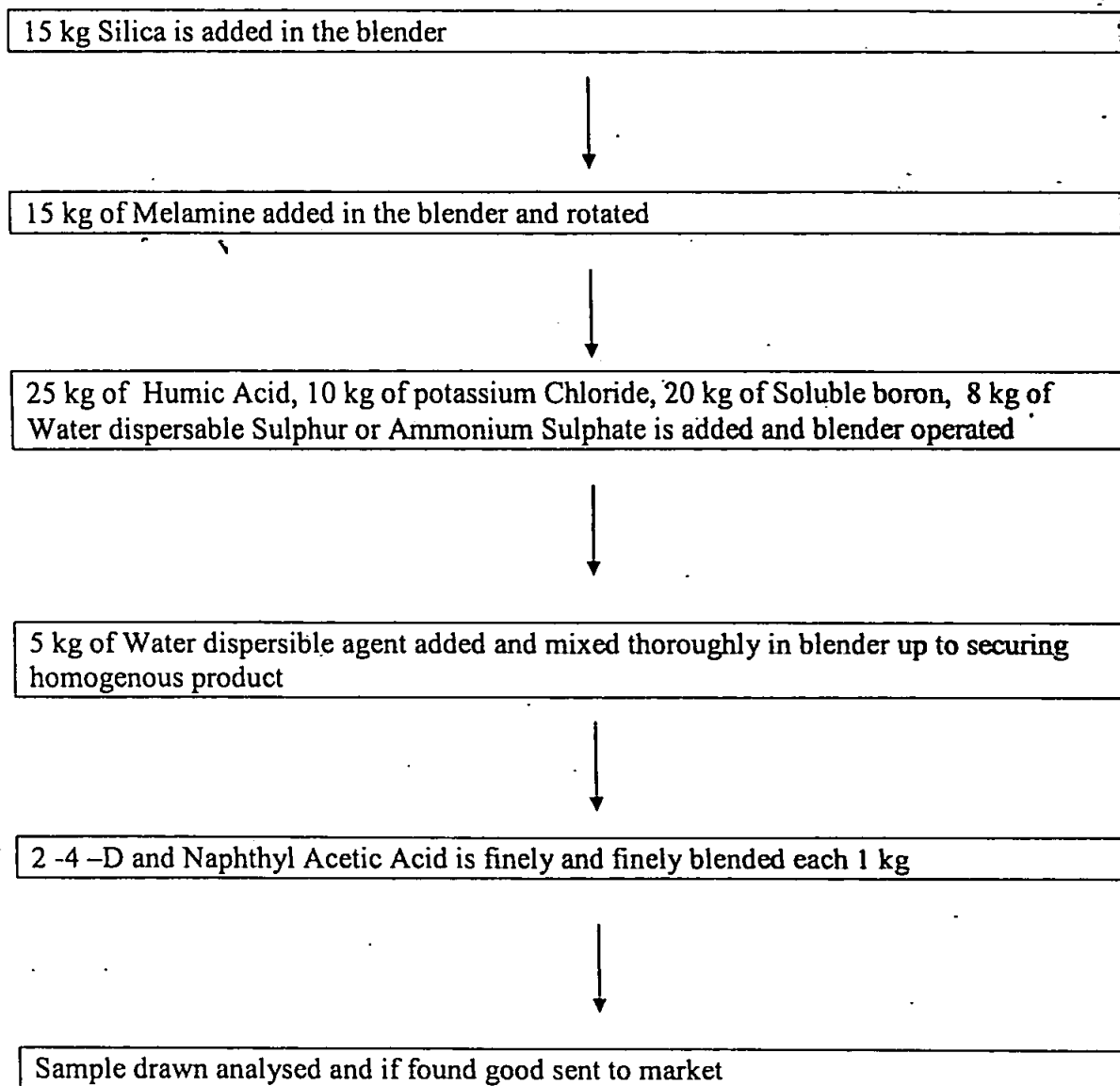


Sample drawn and analysed and if confirms to specification sent to market



APPLICANT
SREE RAMCIDES CHEMICALS PVT LTD

FLOW CHART - 6



26

Among the subscribers, S. Sundaresan, male of legal age, residing in 46/4 Sushantha Flats, Ashok Nagar, Chennai – 600 083, Tamil Nadu, India identified as at the bottom of his signature, acting in his own name, which for the purposes of this agreement shall be called THE ASSIGNOR, and on the other, R. Gopal, male of legal age, residing at B5, Shanthi Haven, 139, St Marys Road, Alwarpet, Chennai 600018, acting for and on behalf of SREE RAMCIDES CHEMICALS PVT LTD, an Indian company organized and existing according to the Indian laws, which for the purposes of this agreement shall be called THE ASSIGNEE, have concluded a contract of assignment of rights to be governed by the following clauses:

FIRST: The object of this contract is the transfer, to the ASSIGNEE, of all the rights that THE ASSIGNOR has as the owner of the patent **A PRODUCT TO BOOST PHOTOSYNTHESIS**.

SECOND: This assignment of rights is granted for free and due to the liberality intention of THE ASSIGNOR.

THIRD: The costs of legalization, including taxation incurred under this contract will be paid by THE ASSIGNEE.

Once read entirely this contract is signed as prove of its acceptance of the assignment:

As prove of the agreement to at all times adopt and abide by the Terms incorporated herein by reference, this agreement is signed by the duly authorized representatives of the parties hereto in duplicate copies on this date, the 23rd of Aug 2010.



THE ASSIGNOR

S. Sundaresan

THE ASSIGNEE

[SREE RAMCIDES CHEMICALS PVT LTD]

By: _____ For Sree Ramcides Chemicals Pvt. Ltd.

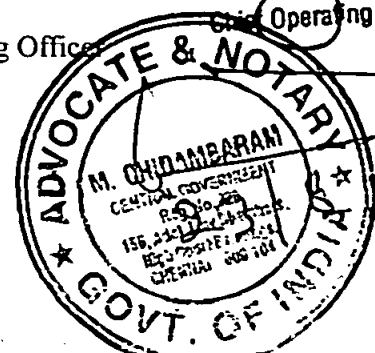
Name: R. Gopal

Title: Chief Operating Officer

R. Gopal
Chief Operating Officer

M. CHIDAMBARAM
Deputy Secretary
Chamber of Commerce & Industry

M. CHIDAMBARAM
ADVOCATE & NOTARY
CENTRAL GOVERNMENT
GOVT. OF INDIA
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Signature of Asstt. Secretary/
Secretary/Secretary of Chamber
Innereu Attested.

Santhana Raman

पि.एस. संतान रामन
S. SANTHANA RAMAN
अनुभाग अधिकारी
Section Officer
विदेश मंत्रालय
Ministry of External Affairs
शाखा सचिवालय, चेन्नै
Branch Secretariat, Chennai

Compuesto Químico para Incrementar la Eficiencia del Proceso de Fotosíntesis

RESUMEN

Un compuesto para incrementar la eficiencia de la fotosíntesis y de ese modo aumentar el rendimiento de la agricultura y la horticultura, que contiene Melamina 5% a 90%, Acido Ortofosfórico 10% a 80%, Hidróxido de Potasio 8%, Hidróxido de Sodio 8% y Sulfato de Potasio o Cloruro de Potasio hasta 30%, con 0.5% Hexanoato Dietil Aminoetil 0.5%, Sulfato de Zinc Monohidratado 5%, Sulfato de Magnesio Anhidro 10%, Octoborate emulsificante IGSURF 6000 8% a 15% y Agente Humidificador 5% a 10% 2-4-D para obtener un producto que maximice la fotosíntesis en forma de polvo, líquido soluble y granulado.

DESCRIPCIÓN

Aunque la fotosíntesis ha interesado a la humanidad desde hace mucho tiempo, en los últimos años se ha avanzado mucho en el entendimiento de este proceso. Se ha observado que la fotosíntesis es un proceso relativamente ineficiente. En una temporada normal sólo entre el 1 y 2% de la energía solar que llega a los campos es transformada en productos fotosintéticos. ¿Cómo podemos incrementar la eficiencia de la fotosíntesis para aumentar la productividad? Una alternativa es la aplicación "foliar" del producto que se describe a continuación. Dicho producto es el resultado de varios años de investigación en desarrollo; un producto para la agricultura y para mejorar la eficiencia de la fotosíntesis. ¿Cómo? El producto en forma de aerosol es absorbido por las hojas, el tallo y demás partes de la planta en sólo 4 horas. La cantidad de cloroplastos y clorofila aumenta a una velocidad considerable, lo que incrementa la fotosíntesis puesto que tanto los cloroplastos como la clorofila son necesarios para que la planta pueda capturar y aprovechar la energía solar.

Hasta la fecha era considerado imposible disolver "Melamina," el principal ingrediente (también conocido como Triazina, Cianuramida, Cianurtriamida, Cianurotriamida, Cianurotriamina, etc.) disuelto por el inventor tras años de investigación. La Melamina, que contiene Nitrógeno Heterocíclico combinado con fósforo adecuadamente enriquecido con Sulfato de Potasio, Octoborate, Monosulfato de Zinc con Hexanoato Dietil Aminoetil, tiene la capacidad de mejorar la eficiencia de la fotosíntesis entre un 1.5 y 2% lo cual es un gran avance en este campo. El resultado se resume en mayor actividad del meristemo, mayor fotosíntesis y mayor rendimiento. En esta reacción, Hexanoato Dietil Aminoetil ejerce un sinergismo en esta composición.

La producción agrícola ha aumentado considerablemente en los últimos 50 años y ahora estamos en una encrucijada que requiere de un gran esfuerzo. El invento aquí descrito aumentará el rendimiento entre 15 y 20% para alimentar a nuestra población que llegará a los 142 billones en el año 2020.

En el proceso de investigar y experimentar con los requisitos para inventar nuevos productos en el campo de la agricultura general y el cultivo de palma de aceite, otros tres productos fueron inventados.

ESTADO DEL ARTE ANTERIOR

Aumentar el rendimiento agrícola y de la horticultura llama nuestra atención cada vez más. Una población mundial en alza amenaza a la humanidad dada la creciente inseguridad alimentaria a causa de la escasez de la oferta de alimentos. Con justa razón, el tema de la fotosíntesis atrajo la atención del mundo entero por ser una fuente de vida en este planeta. Una molécula con 66% de Nitrógeno Heterocíclico en una configuración molecular determinada (3N afuera y 3N adentro) es prácticamente insoluble y es usada principalmente en plastificantes, y en particular en vajillas de Melamina y resinas.

Por lo tanto intentamos repetidamente y encontramos que el Acido Ortofosfórico disuelve totalmente la Melamina, lo que nos llevó a preparar una mezcla de Hexanoato Dietil Aminoetil, Sulfato de Zinc Monohidratado, Octoborate, Hidróxido de Potasio o Sulfato de Potasio y Carboximetilcelulosa y emulsificante IGSURF 6000, lo que ha incrementado la fotosíntesis de manera sorprendente entre 1.5 y 2% y el rendimiento entre 15 y 20%.

Hasta donde tenemos entendido no hay Arte Anterior. Traer un compuesto de Melamina al agro y la horticultura es un invento único que incrementa la eficiencia de la fotosíntesis. El compuesto, en su forma líquida, en polvo y granulado descrito en el Estado de la Invención, es único en todos los aspectos.

Esta afirmación en ningún momento nos aleja del propósito y la razón principal del invento.

Las reservas mundiales de Fósforo están siendo agotadas y cada vez son más escasas, además de las dificultades que presentan los procesos de "Fijación" y solubilidad de la tierra. En este complejo de Melamina dichos factores han sido rectificados para evitar la fijación, los desechos, el drenaje, etc., usando todos los ingredientes cuidadosamente para así reducir la dependencia en la aplicación de tierra en cantidad.

Con estos antecedentes, este complejo de Melamina ha sido hecho a la medida con el único fin de incrementar la eficiencia de la fotosíntesis y su rendimiento. No ha habido intentos anteriores por desarrollar productos a base de Melamina y por tanto es un invento único.

ESTADO DE LA INVENCION

Los requisitos y parámetros de la invención están codificados y descritos a continuación:

Nitrógeno Heterocíclico 8.5% obtenido de 15% Melamina, para 8.5% P2O5 obtenido de Acido Ortofosfórico 16% y para 5% Oxido de Potasio obtenido de 8% Hidróxido de Potasio e Hidróxido de Sodio para neutralizar. Acido Fosfórico dio 8.5% de P2O5 además de disolver la Melamina. Este líquido soluble es un líquido blanco, viscoso y opaco y en concentraciones de entre 0.1 y 2% en aplicación "foliar" hace el milagro de incrementar la fotosíntesis entre 1.5 y 2%, mejorando el afloramiento, el rendimiento y la calidad.

La preparación consiste en tomar Melamina 15kg y añadir Acido Ortofosfórico 16kg lentamente mientras se revuelve. La reacción es lenta y toma entre 5 y 6 horas para completar. Añadir Hidróxido de Potasio 8kg cuidadosamente puesto que la reacción es violenta y emite Hidrógeno. Tras finalizar la reacción, añadir Hidróxido de Sodio 8kg por 3 o 4 horas hasta obtener un pH neutro de 7 (esta reacción es más violenta que la de Hidróxido de Potasio y debe ser llevada con mucho cuidado). Finalmente añadir 44.5 litros de Agua Desmineralizada, 500g Hexanoato Dietil Aminoetil y 8kg Emulsificante IGSURF-6000 y revolver todo con vigorosidad.

Aparte, a un mol de Melamina agregar un mol de Acido Ortofosfórico y mezclar muy bien para obtener Fosfato de Melamina. Cualquier cantidad puede ser preparada siempre y cuando se conserven las proporciones. Tras centrifugar esta mezcla, se obtiene el polvo C3H9N6PO4 (Fosfato de Melamina). Fosfato de Melamina – 50 kg, Sulfato de Potasio – 30 kg, Sulfato de Zinc Monohidratado – 5kg, agente humidificador – 5kg.

Octoborate -9.5kg y Hexanoato Dietil Aminoetil– 500g todo agregado y mezclado en máquina formadora de bolas y licuado.

78kg de granulos tostados y no tostados de Arcilla Bentonita es depositado en el tambor mezclador con Silicato de Calcio 2kg de la máquina de granulación automática. Entre 2.5 y 3kg de colofonia suministrada en el contenedor de colofonia, el cual al ser operado derretirá la colofonia y cubrirá uniformemente el granulado. En la cámara de aerosol 10kg Fosfato de Melamina, 5kg Monosulfato de Zinc, 2kg Octoborate, 500g Hexanoato Dietil Aminoetil son agregados después de disolverse en agua y con el agente humidificador (Quantum Sufficentum). Cuando la máquina está operando con la manguera y boquilla adecuadas, la composición en aerosol sale a una presión de 50kg /cm². Al terminar, el tambor es rotado por 15 minutos y el granulado es retirado.

Un producto es diseñado con Melamina, Monofosfato de Amonio, Sulfato de Potasio o Cloruro de Potasio, Boro soluble, Extracto de Algas, Agente Humidificador, Sulfato de Zinc Monohidratado y Sulfato de Magnesio Anhidro.
Ejemplo 1 (Complejo de Melamina - SL)

Ingredientes y Composición

Melamina	-	15kg
Acido Ortofosfórico	-	16kg
Hidróxido de Potasio	-	8kg
Hidróxido de Sodio	-	8kg
IGSURF-6000	-	8kg
Agua Desmineralizada	-	44.5 litros
Hexanoato Dietil Aminoetil	-	500g

Melamina 15kg es depositado en un recipiente de vidrio resistente al calor y al ácido. Luego añadir Acido Ortofosfórico 16kg lentamente mientras se revuelve. La reacción es lenta y tomará entre 6 y 7 horas para disolver. Añada Hidróxido de Potasio 8kg lentamente puesto que la reacción es violenta y emite Hidrógeno y Oxígeno. Esta reacción tomará entre 5 y 6 horas. Tras finalizar la reacción añada Hidróxido de Sodio 8kg. Esta reacción tomará 4 horas para obtener un pH neutro de entre 6.5 y 7. Finalmente debe añadir 44.5 litros de Agua Desmineralizada, 0.5kg Hexanoato Dietil Aminoetil y 8kg emulsificante IGSURF-6000 para un total de 100kg de líquido.

Ejemplo 2 (Complejo de Melamina – SP)

Ingredientes y Composición

Melamina	-	127kg}	rinde
Acido Ortofosfórico	-	98kg }	para 225kg
Fosfato de Melamina			
(la bola pegajosa debe ser centrifugada y el Fosfato de Melamina tomado en forma de polvo seco y limpio).			
Fosfato de Melamina	-	50kg	
Sulfato de Potasio	-	30kg	
Octoborate	-	9.5kg	
Sulfato de Zinc Monohidratado	-	5kg	
Agente Humidificador (Carboximetilcelulosa)	-	5kg	
Hexanoato Dietil Aminoetil	-	500gm	

Luego de haber hecho el Fosfato de Melamina 50kg es tomado y los ingredientes agregados a la máquina mezcladora formadora de bolas y mezclado en mezclador mecánico.

Ejemplo 3 (Complejo de Melamina – GR)

Ingredientes y Composición

Arcilla de Bentonita Tostada o sin Tostar	}	78kg + 2kg Silicato de Calcio
o Sílice cristalina	}	(ambos 80kg)
Fosfato de Melamina	-	10kg
Sulfato de Zinc Monohidratado	-	5kg
Octoborate	-	2kg
Hexanoato Dietil Aminoetil	-	500gm
Colofonia	-	2.5kg
Agente Humidificador	-	Quantum Sufficientum

- El granulado (pesado previamente) es depositado en el tambor mezclador con Silicato de Calcio.
- Los ingredientes Fosfato de Melamina, Sulfato de Zinc, Borate y Hexanoato Dietil Aminoetil con el agente humidificador son mezclados con agua y puestos en la cámara de aerosol.
- Cuando la máquina está operando con la manguera y boquilla adecuadas, la composición en aerosol sale a una presión sobre el granulado de 50kg /cm² y rotando el tambor.
- La colofonia es suministrada en el contenedor de colofonia, el cual al ser operado derritirá la colofonia y se mezclará al cubrir uniformemente el granulado.
- Mezclar el contenido bien por 15 minutos dentro del tambor.
- Todo es hecho por una compleja máquina de granulación automática.
- El producto es retirado tras la señal de la máquina.

Ejemplo 4 (Complejo de Melamina – SP II)

Ingredientes y Composición

Melamina	-	30 a 40kg
Monofosfato de Amonio	-	10kg
Sulfato de Potasio/Cloruro de Potasio	-	10kg
Boro soluble	-	10kg a 20 kg
Extracto de algas	-	13kg
Agente Humidificador y Surfactante	-	7kg
Monosulfato de Zinc	-	5kg
Sulfato de Magnesio Anhidro	-	5kg

Los ingredientes son pulverizados individualmente y la cantidad medida es mezclada en mezclador mecánico para obtener un polvo fino y homogéneo.

Ejemplo 5 (Complejo de Melamina para aplicación en tierra)

Este complejo de Melamina tiene la configuración adecuada para la aplicación en tierra de varios cultivos.

Ingredientes y Composición

Melamina	-	30kg
Acido Húmico	-	30kg
Arcilla	-	10kg
Sílice	-	5kg
Agente Humidificador y Surfactante	-	5kg
Cloruro de Potasio	-	15kg
Roca Fosfórica	-	5kg

Todos los ingredientes son molidos individualmente y mezclados mecánicamente para obtener arena homogenizada.

Ejemplo 6 (Complejo de Melamina para palma de aceite)

La palma de aceite es un importante cultivo en Malasia, Indonesia y otros países del lejano Oriente.

Un estudio fue llevado a cabo para entender los requisitos de la palma de aceite. Con suficiente lluvia, el cultivo está creciendo y madurando muy bien en estas localidades. Pero la deficiencia de ciertos minerales se ha hecho notar. Por lo tanto, una fórmula única fue obtenida y desarrollada abajo.

Ingredientes y Composición

Melamina	-	15kg
Sílice	-	15kg
Acido Húmico	-	25kg
Cloruro de Potasio	-	10kg
Boro Soluble	-	20kg
Gránulos de azufre dispersados en agua o Sulfato de Amonio	-	8kg
Agente Humidificador y Dispersable en Agua	-	5kg
2-4-D	-	1kg
Acido Naftil acético	-	1kg

REIVINDICACIONES

1. Un producto que contiene Melamina 15kg, Acido Ortofosfórico e Hidróxido de Potasio 8kg en su forma líquida soluble para aumentar la eficiencia y rendimiento de la fotosíntesis.
 - a) Tomar Melamina 15kg en un recipiente de vidrio resistente o de acero inoxidable o de Polímero de alta densidad.
 - b) Añadir Acido Ortofosfórico 16kg lentamente mientras se revuelve. La reacción es lenta y toma entre 6 y 7 horas para completar.
 - c) Añadir Hidróxido de Potasio 8kg cuidadosamente puesto que la reacción es violenta y dura entre 5 y 6 horas.
 - d) Tras finalizar la reacción añadir Hidróxido de Sodio 8kg por 4 o 5 horas
 - e) Medir el pH hasta obtener un pH neutro de entre 6.5 y 7.
 - f) Agregar 44.5 litros de Agua Desmineralizada y revolver vigorosamente.
 - g) Finalmente Hexanoato Dietil Aminoetil 500g es agregado para obtener el líquido uniforme, blanco y soluble.
2. La técnica de manufactura como figura en el # 1, en la que:
 - a) Tomar Melamina 127kg en un recipiente de acero inoxidable o Polímero de alta densidad.
 - b) Añadir 99 kg de Acido Ortofosfórico lentamente mientras se revuelve.
 - c) La mezcla se centrifuga y se obtiene polvo blanco de Fosfato de Melamina.
 - d) Se obtiene 50kg de Fosfato de Melamina.
 - e) Se mezclan 30kg de Sulfato de Potasio con el Fosfato de Melamina.
 - f) Octoborate 9.5kg se mezcla muy bien.
 - g) Agregar 5kg de Sulfato de Zinc Monohidratado.
 - h) Hexanoato Dietil Aminoetil - 500g bien mezclado.
 - i) Agente Humidificador (Carboximetilcelulosa) – mezclar 5kg.

Todo mezclado en la máquina mezcladora formadora de bolas y retirado como polvo que de ser necesario se puede mezclar mecánicamente.
3. La técnica de manufactura como figura en el # 1, en la que 78kg granulado blanco es tomado e insertado en el tambor mezclador junto con 2kg Silicato de Calcio, 10kg Fosfato de Melamina, 5kg $\text{ZnSO}_4\text{H}_2\text{O}$, 2kg Octoborate, Hexanoato Dietil Aminoetil 500gm es cargado en la cámara de aerosol y disuelto en agua con el agente humidificador y la composición en aerosol sale a una presión sobre el granulado de $50\text{kg}/\text{cm}^2$ y rotando el tambro agregando colofonia 2.5% después de derretirse. Todo es hecho por una compleja máquina de granulación automática con un total de 15% de granulado obtenido.
4. La técnica de manufactura como figura en el # 1, en la que:
 - a) Melamina 30 a 40kg
 - b) Monofosfato de Amonio 10kg
 - c) Sulfato de Potasio/Cloruro de Potasio 10kg
 - d) Boro soluble 10kg a 20 kg
 - e) Extracto de algas 13kg
 - f) Mono Sulfato de Zinc 5kg
 - g) Sulfato de Magnesio Anhidro 5kg
5. La técnica de manufactura como figura en el # 1, en la que:
 - a) Melamina 30kg
 - b) Acido Húmico 30kg
 - c) Arcilla 10kg
 - d) Sílice 5kg

- e) Agente Humidificador y Surfactante 5kg
- f) Cloruro de Potasio 15kg
- g) Roca Fosfórica 5kg

Todos los ingredientes son molidos individualmente y mezclados mecánicamente para obtener un complejo de arena y arcilla homogenizada.

6. La técnica de manufactura como figura en el # 1, en la que:

- a) Melamina 15kg
- b) Sílice 15kg
- c) Acido Húmico 25kg
- d) Cloruro de Potasio 10kg
- e) Boro soluble 20kg
- f) Gránulos de azufre dispersados en agua 8kg
o Sulfato de Amonio
- g) Agente Humidificador y Dispersable en Agua 5kg
- h) 2-4-D 1kg
- i) Acido Naftil acético 1kg

Todos los ingredientes excepto la Sílice son molidos individualmente y posteriormente agregados a la Sílice y mezclados para obtener un producto homogéneo.

7. Tal como lo afirmamos en la afirmación #1, un proceso y producto para manufactura de compuestos para mejorar tanto la eficiencia de la fotosíntesis como el rendimiento en la agricultura y horticultura.

Diagrama – 1

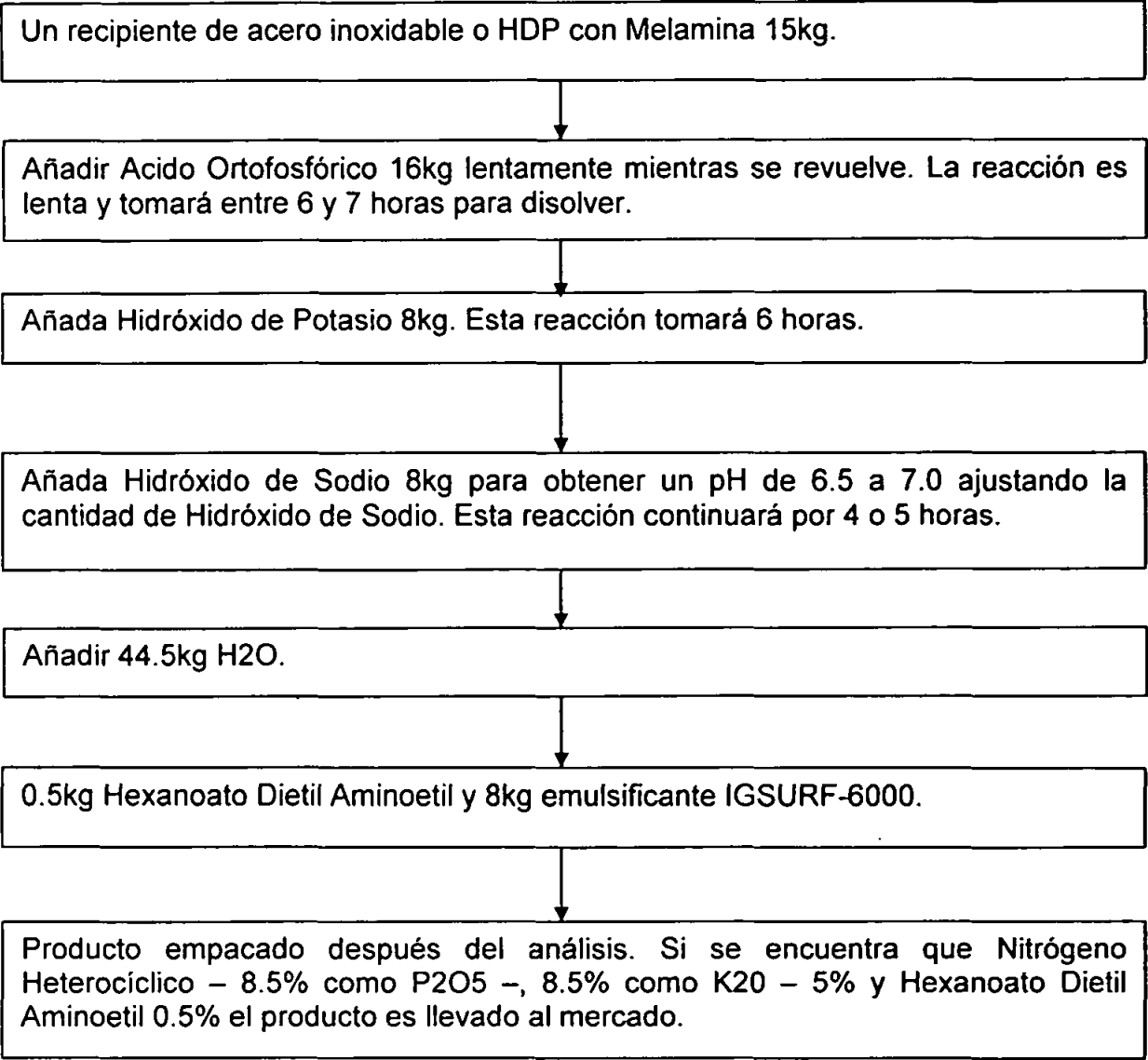


Diagrama -2

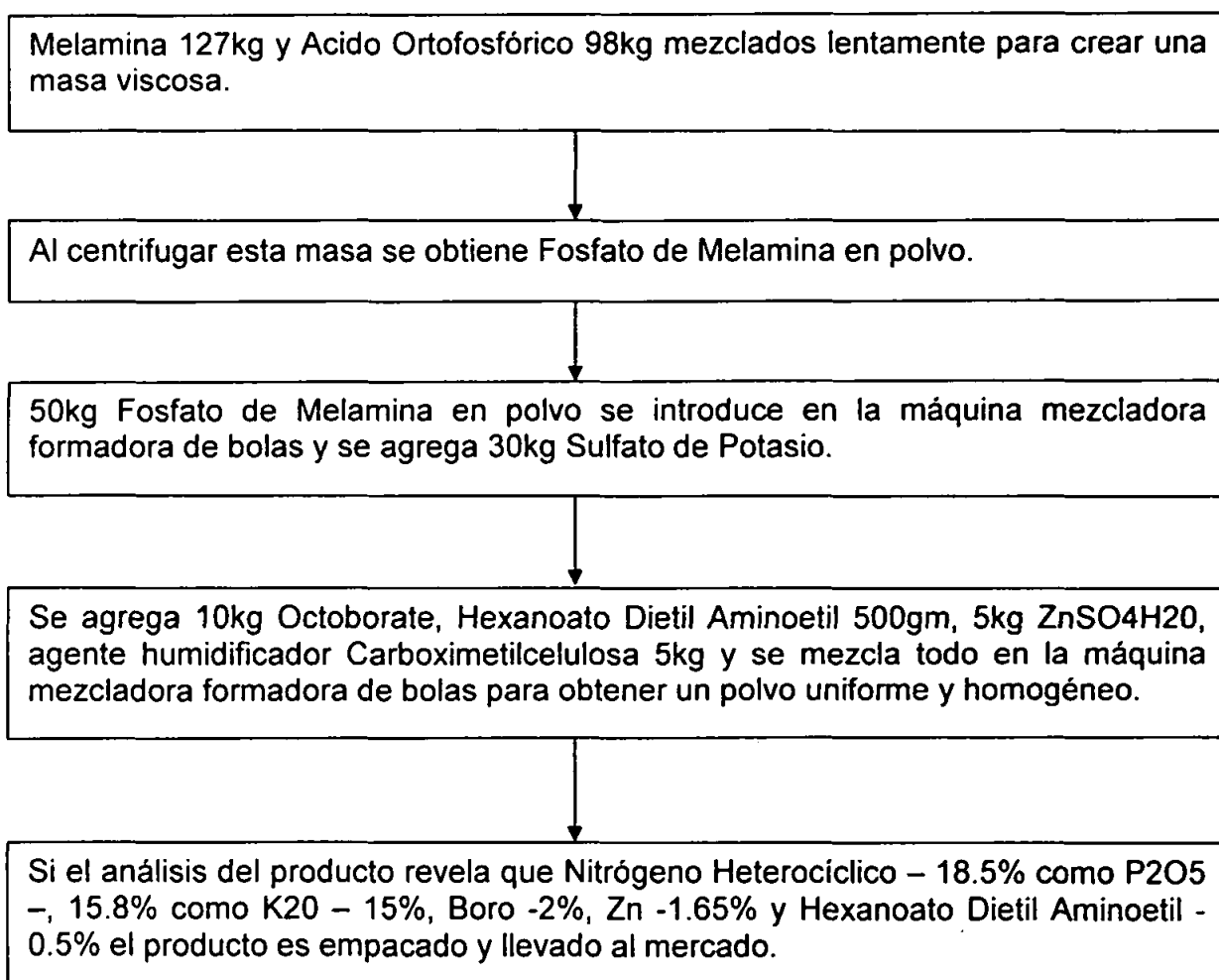


Diagrama – 3

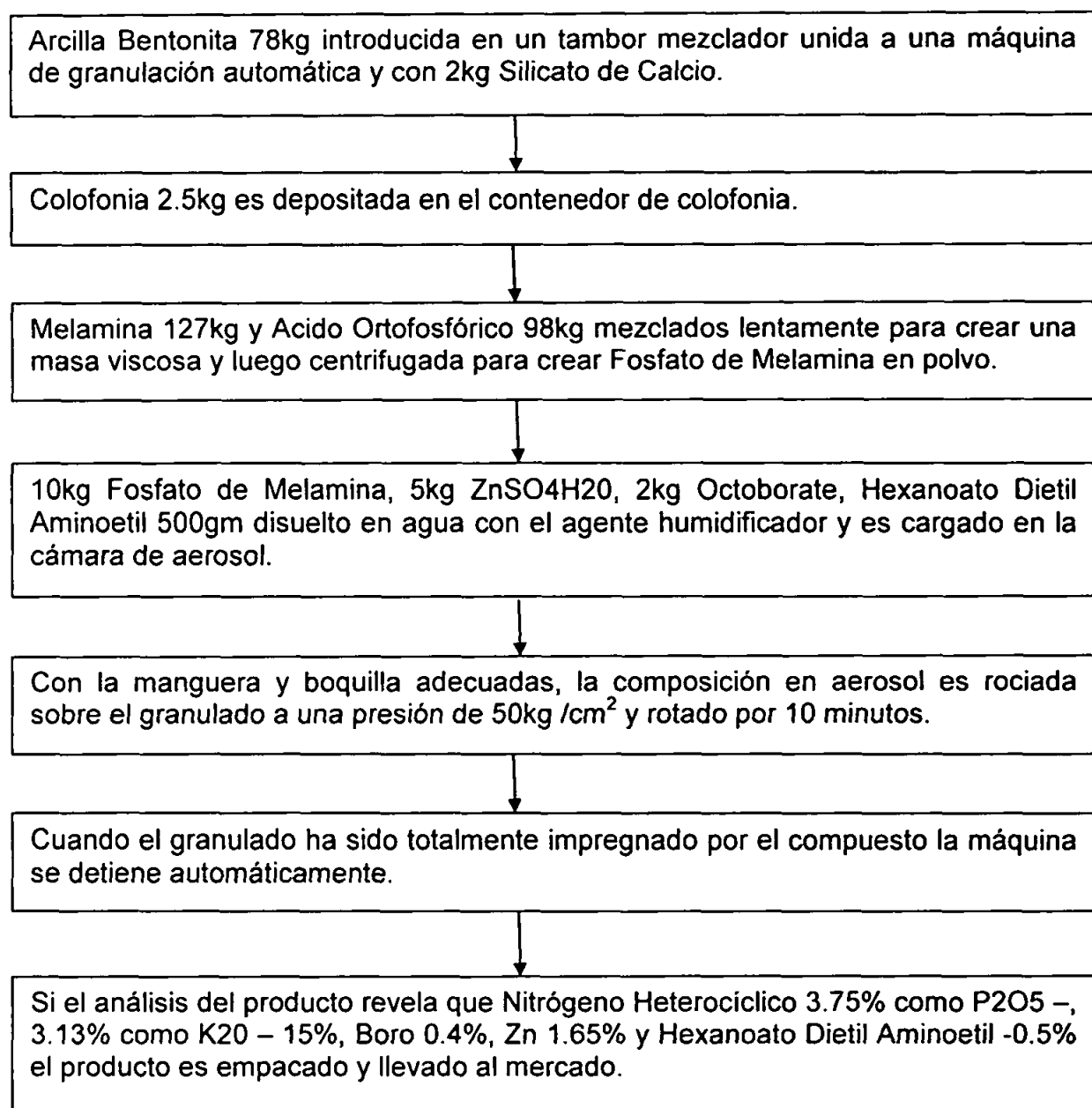


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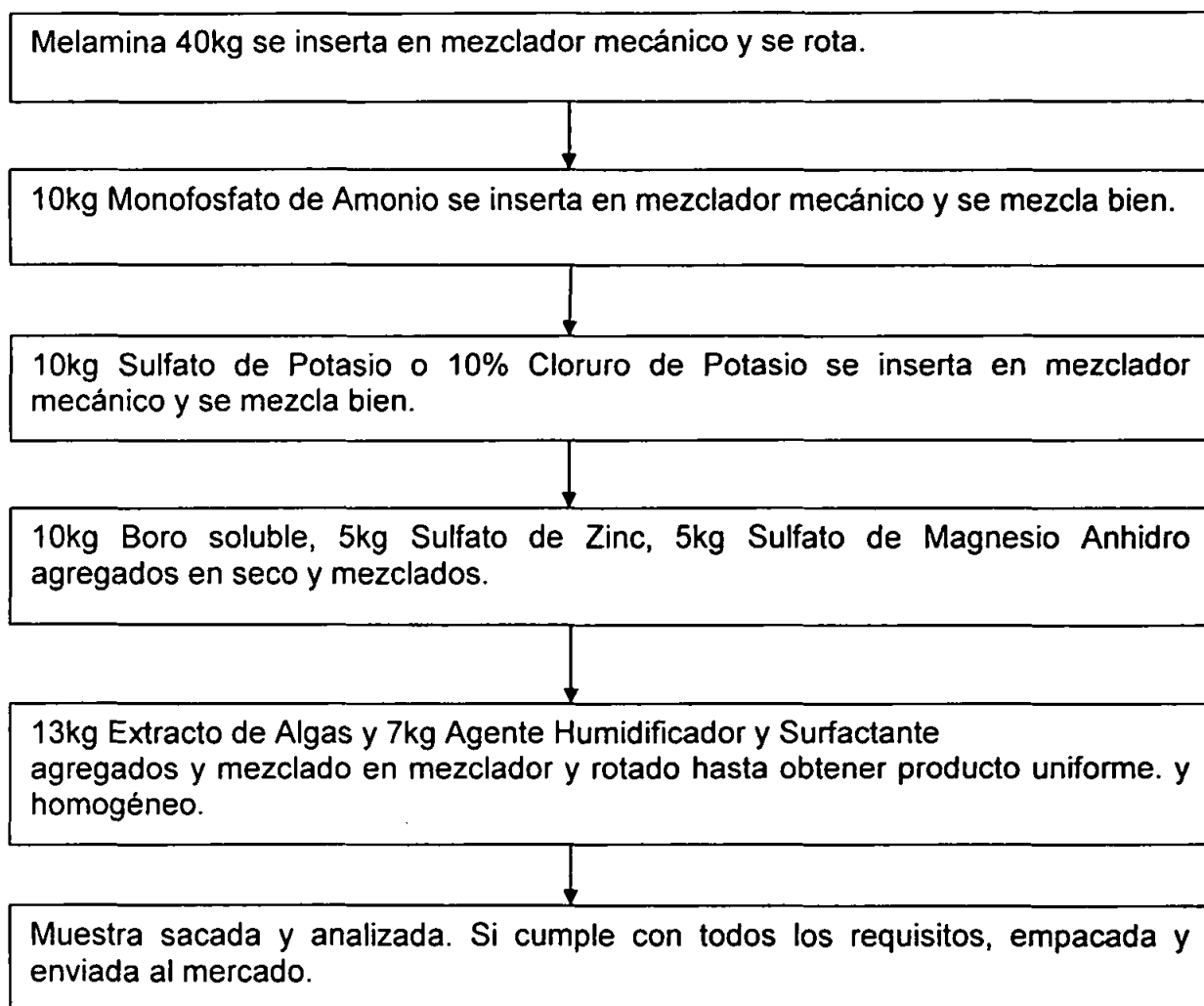


Diagrama – 5

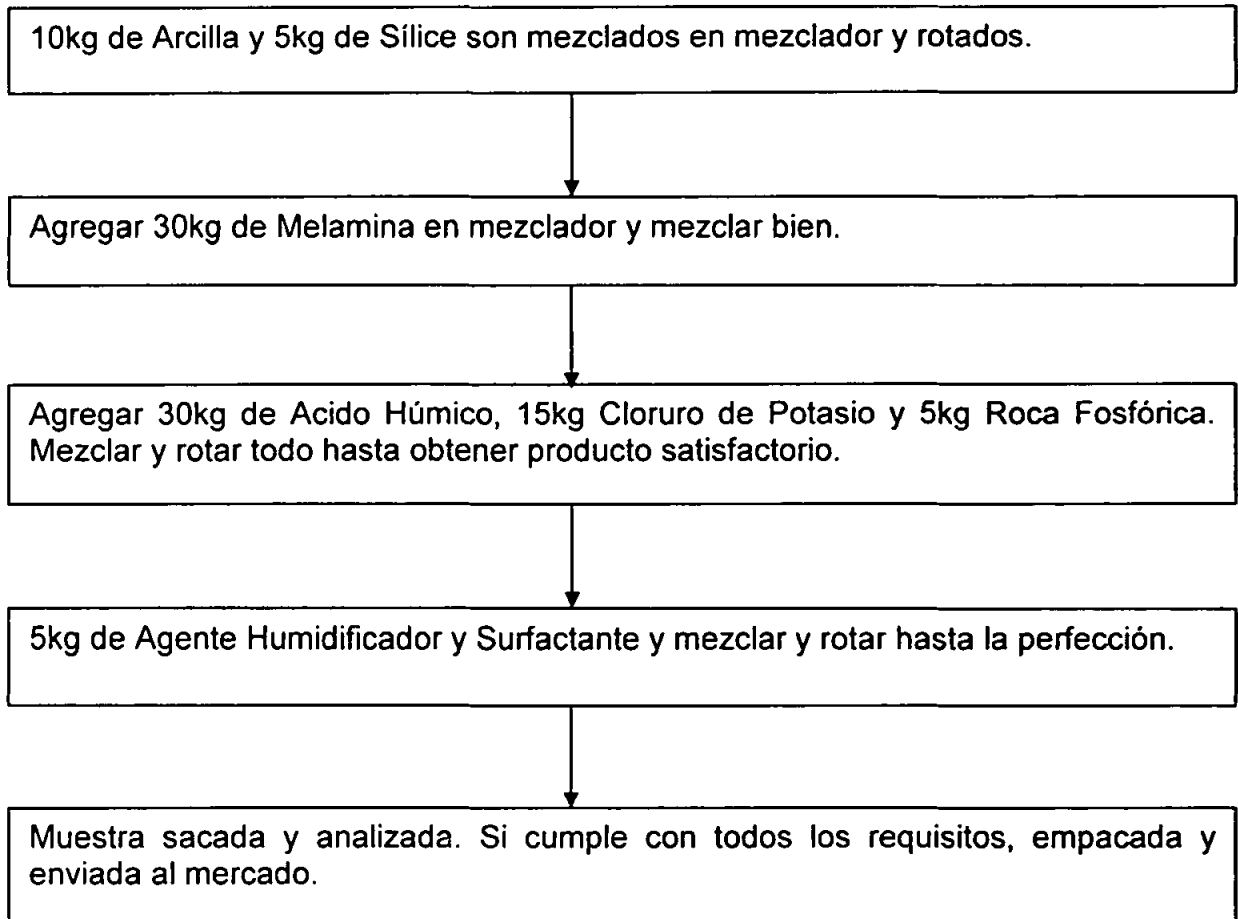


Diagrama – 6

