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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



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Art. 444 RESPUESTA ROLUL - Folio 4

As. 91.871

Señora

JEFE DE DIVISIÓN DE NUEVAS CREACIONES

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

E.

S.

D.

REF: Expediente No. 03 075 632 – solicitud de patente de invención a favor
de MONSANTO TECHNOLOGY LLC

Respuesta al oficio No. 12841 del 20 de noviembre de 2009

JUAN PABLO CADENA SARMIENTO, portador de la tarjeta profesional No. 57.492 del C.S.J., obrando como apoderado de la sociedad MONSANTO TECHNOLOGY LLC, según lo acredita el documento de poder presentado ante esa División me permito dar respuesta a las observaciones de carácter técnico y jurídico, relacionadas con la patentabilidad, para la concesión de la patente de acuerdo con la Decisión 486 según el concepto técnico No. 3861 notificado por fijación en lista de fecha 20 de noviembre de 2009 y cuyo término fue prorrogado el 12 de febrero de 2010.

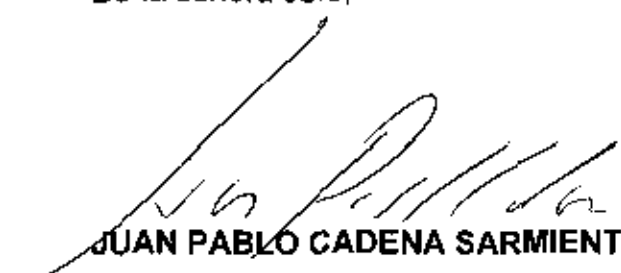
Con el ánimo de subsanar las objeciones realizadas por el Señor Examinador, adjuntamos un nuevo capítulo reivindicatorio de 1-10 reivindicaciones, sin ampliar en ningún momento la materia inicialmente divulgada y encontrando entero sustento en la descripción. Este capítulo reivindicatorio ha sido modificado de acuerdo a las objeciones presentadas en el oficio arriba mencionado y a la entrevista sostenida con el Señor Examinador.

Consideramos entonces que de acuerdo con las modificaciones realizadas, las objeciones a la claridad de las reivindicaciones y a la unidad de invención

quedan subsanadas, ya que se ilustra de manera clara en las nuevas reivindicaciones independientes 1 y 8 la materia previamente conocida en el arte previo y el aporte realizado al estado de la técnica por la presente solicitud. Vale la pena resaltar que este aporte al estado de la técnica está dado por los componentes que hacen parte de la composición y sus proporciones específicas. Por esta razón y subsanadas dichas objeciones, solicitamos al Señor Examinador ejecutar la evaluación correspondiente a los requerimientos de patentabilidad de Novedad y Nivel Inventivo.

En vista de lo anteriormente expuesto, respetuosamente solicitamos el retiro de las objeciones a la presente solicitud y la concesión del privilegio solicitado, ya que en opinión del solicitante cumple con todos los requisitos establecidos en la decisión 486.

De la señora Jefe,



JUAN PABLO CADENA SARMIENTO

C.C. No. 80.410.337 de Usaquén

T.P. No. 57492 del C.S.J.

Calle 70A No. 4-41

Bogotá, 6 de abril de 2010

MXB/NFA

Anexo

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REIVINDICACIONES

1. Una composición de concentrado herbicida acuoso que contiene:
 - glifosato o una sal o éster del mismo disuelto en un medio acuoso, y
 - un componente surfactante en solución o suspensión estable, emulsión o dispersión en dicho medio acuoso, que contiene uno o más surfactantes;dicha composición caracterizada porque:
 - a) La composición comprende ácido oxálico o una sal del mismo el cual mejora la bio-eficacia del glifosato y donde la razón en peso del surfactante al ácido oxálico o sal del mismo está entre 5:1 y 40:1.
 - b) La concentración del componente surfactante está entre 0.1% y 25% en peso de la composición.
 - c) La concentración de glifosato está en exceso de 400 gramos de equivalentes ácidos por litro.
2. Una composición de acuerdo con la reivindicación 1, en donde dicho ácido oxálico comprende una sal de metal alcalino, sal de alcalonamina, sal de alquilamina, o sal de ariltrialquilamonio de ácido oxálico.
3. Una composición de acuerdo con la reivindicación 1, en donde el glifosato está predominantemente en la forma de la sal de potasio, monoamonio, diamonio, sodio, monoetanolamina, isopropilamina, n-propilamina, etilamina, etilendiamina, hexametilendiamina o trimetilsulfonio del mismo.
4. Una composición de acuerdo con la reivindicación 1, en donde dicho surfactante y dicho ácido oxálico o sal del mismo están presentes en una razón de peso entre 5:1 y 20:1.
5. Una composición de acuerdo con la reivindicación 1, en donde dicha composición tiene un punto de separación de fases de 50°C y un punto de cristalización no mayor a 0°C.
6. Una composición de acuerdo con la reivindicación 1, en donde la concentración de glifosato está en exceso de 500 gramos de equivalentes ácidos por litro.
7. Una composición de acuerdo con la reivindicación 6, en donde la concentración de glifosato está en exceso de 540 gramos de equivalentes ácidos por litro.

4
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8. Una composición de concentrado herbicida sólido que contiene:
- una sal o éster de glifosato, y
 - un componente surfactante que contiene uno o más surfactantes;
- dicha composición caracterizada porque:
- a) La composición comprende ácido oxálico o una sal del mismo a una concentración entre 1% y 25% en peso de la composición, el cual mejora la bio-eficacia del glifosato.
 - b) La concentración de la sal de glifosato está entre 50% y 80% en peso de la composición
 - c) La concentración de surfactante está entre 5% y 25% en peso de la composición.
9. Una composición de acuerdo con la reivindicación 8, en donde el componente surfactante comprende uno o más surfactantes catiónicos o no iónicos.
10. Una composición de acuerdo con la reivindicación 8, en donde el glifosato está predominantemente en la forma de la sal de potasio, monoamonio, diamonio, sodio, monoetanolamina, isopropilamina, n-propilamina, etilamina, etilendiamina, hexametilendiamina o trimetilsulfonio del mismo.

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LIQUID ENHANCER COMPOSITION FOR AMINO ACID SERIES HERBICIDES

This application has been filed under 35 USC 371 as the national stage of international application PCT/JP46/01781, filed Jun. 27, 1996.

FIELD OF THE INVENTION

The present invention relates to an enhancer composition for agricultural chemicals and an agricultural chemical composition containing the same, more specifically to a liquid enhancer for herbicides having a higher enhancer effect to amino acid series herbicides, which is represented by glyphosate, and an excellent storage stability.

RELATED ART

Agricultural chemicals including insecticides, fungicides, herbicides, miticides, and plant growth regulators have been used in the forms of emulsions, wettable powder, granules, powder materials, and flowables. In using them, various attempts in terms of the properties of the formulations have been made in order to fully bring out the effectivenesses of agricultural chemical components. However, the existing situation is that it is difficult to further enhance the effectivenesses of agricultural chemicals through contrivances in terms of formulations. It is further difficult to develop novel agricultural chemicals, so that it is industrially very significant to further enhance the activities of existing agricultural chemicals.

As substances having the effect of enhancing the activities of agricultural chemicals, surfactants comprising various nitrogen-containing compounds such as quaternary ammonium salts, betaines, and amine oxides have so far been known (JP-A-63-145205). It is known as well that among them, quaternized or further polyoxyethylenated long-chain amines are particularly effective (JP-A-4-211002, JP-A-2-295907, and JP-A-63-284106). However, the medicinal efficacy-enhancing effects of these compounds are not necessarily satisfactory, and a further improvement in the effect has been desired. Accordingly, in order to meet such a desire, the present inventors have proposed to use quaternary ammonium salts or tertiary amines or salts thereof in combination with chelating agents, as shown in W095/17817 published in English on Jul. 6, 1995 corresponding to Japanese Patent Application No. 5-337502 filed on Dec. 28, 1993. In addition, W092/12637 published Aug. 6, 1992 discloses a composition comprising glyphosate, an acid acceptor and a surfactant.

However, further investigations have resulted in clarifying that while this enhancer for agricultural chemicals shows a marked enhancer effect to various agricultural chemicals, it is inferior in storage stability, particularly stability to a change in temperatures when it is stored in a liquid form over a long period of time. It has been clarified that this problem is serious particularly when using it in combination with amino acid series herbicides and the medicinal efficacies of amino acid series herbicides can not sufficiently be enhanced in some cases. Accordingly, it has become clear that such problems as described above have to be further improved.

DISCLOSURE OF THE INVENTION

Intensive research has been made by the present inventors in order to obtain an enhancer for amino acid series herbicides which has good stability to changes in temperatures

2

even when it is stored in a liquid form over an extended period of time have resulted in finding that the intended liquid enhancer and liquid herbicide composition can be obtained by using a nitrogen-containing compound comprising specific tertiary amine and derivatives thereof in combination with oxalic acid or a specific oxalic acid salt, and thus completing the present invention.

That is, the present invention provides a liquid enhancer composition for amino acid series herbicides characterized by containing (1) at least one nitrogen-containing compound selected from tertiary amines represented by the following Formula (1) and derivatives thereof, and (2) at least one oxalic acid or salt thereof selected from the group consisting of oxalic acid, potassium oxalate, alkanolamine salts of oxalic acid, and lower alkylamine salts of oxalic acid, wherein the content of oxalic acid or a salt thereof is 0.1 to 10 times mole per mole of the nitrogen-containing compound described above:



[wherein

R¹: represents a linear or branched alkyl group having a carbon number of 8 to 30 or a linear or branched alkenyl group having a carbon number of 8 to 30, and

R², R³: may be the same as or different from each other and each represent a linear or branched alkyl group having a carbon number of 1 to 30, a linear or branched alkenyl group having a carbon number of 2 to 30, or —(AO)_n—H (AO is an oxyalkylene group having a carbon number of 2 to 4, and n is a number of 1 to 30 on the average.)

The invention provides, in other words, a liquid enhancer composition for herbicides of amino acid compounds which comprises, or consisting essentially of, (1) at least one nitrogen-containing compound as above defined and (2) at least one oxalic acid compound as above defined, optionally further comprising a surfactant.

It is preferable that the derivative is selected from the group consisting of amine salts, quaternized products, betaines and amine oxides of the tertiary amine compound represented by Formula (1).

The composition may be in the form of an aqueous solution thereof, comprising 10 to 30 percent by weight of the nitrogen-containing compound.

An herbicide composition of the invention comprises (i) an effective amount of at least one nitrogen-containing compound as defined above and an effective amount of the oxalic acid compound as defined above and (ii) a herbicide of amino acid compound, a weight ratio of (i) to (ii) ranging from 0.05/1 to 50/1.

The invention moreover provides a method for enhancing the herbicidal effectiveness of (ii) a herbicide of amino acid compound with (i) an effective amount of at least one nitrogen-containing compound as defined above and an effective amount of the oxalic acid compound as defined above.

The tertiary amine which is the nitrogen-containing compound used in the present invention is represented by Formula (1) described above, wherein R¹ in Formula (1) is preferably a linear alkyl group or a linear alkenyl group having a carbon number of 8 to 20, more preferably an alkyl group or alkenyl group having a carbon number of 8 to 20, which is derived from natural oil and fat; when R² and R³ are —(AO)_n—H, AO is preferably an oxyalkylene group having a carbon number of 2, and n is preferably a number

of 1 to 10 on the average. To describe concretely, preferred examples of the tertiary amine include mono-long-chain alkylamine, for example, bis(2-hydroxyethyl)cocoamine, bis(2-hydroxyethyl)tallowamine, bis(2-hydroxyethyl)oleylamine, and bis(2-hydroxyethyl)laurylamine. Further, included are polyoxyalkylenated long-chain alkylamine, for example, bis(polyoxyethylene(EOP=3 to 30))cocoamine, bis(polyoxyethylene(EOP=3 to 30))tallowamine, bis(polyoxyethylene(EOP=3 to 30))oleylamine, bis(polyoxyethylene(EOP=3 to 30))laurylamine, bis(polyoxyethylene(EOP=3 to 30))palmstearylamine, bis(polyoxyethylene(EOP=3 to 10))polyoxypropylene(POP=3 to 10)cocoamine, and bis(polyoxyethylene(EOP=3 to 10))polyoxypropylene(POP=3 to 10)tallowamine. In the compounds described above, EOP represents an average addition mole number of ethylene oxide, and POP represents an average addition mole number of propylene oxide.

In the present invention, derivatives derived from the tertiary amine represented by Formula (1) described above can be used as well. The tertiary amine derivatives described above include amine salts, quaternized products, betaines, and amine oxides.

The tertiary amine salts include salts of inorganic acids such as hydrochloric acid and sulfuric acid, and salts of organic acids such as acetic acid. In particular, hydrochlorides and acetates are preferred.

The quaternized products of the tertiary amines described above can be obtained by using known quaternizing agents. The quaternizing agents include dialkylsulfuric acids (an alkyl group having a carbon number of 1 to 3) and halogenated alkyl (an alkyl group having a carbon number of 1 to 3, a benzyl group).

Products obtained from the tertiary amines described above are preferred as the quaternized products of the tertiary amines used in the present invention. To describe concretely, included are methyl chloride-quaternized products, benzyl chloride-quaternized products, dimethylsulfuric acid-quaternized products and diethylsulfuric acid quaternized products of the tertiary amines described above.

Further, the following quaternary ammonium salts are preferred as well:

- (A) quaternized long-chain amines
 - (a) tri-lower alkyl long-chain alkylammonium chloride
 - (i) trimethylcocoammonium (COCO=C₁₂ to C₁₈ alkyl) chloride
 - (ii) trimethyloctadecylammonium chloride
 - (b) dialkyldi-lower alkylammonium chloride
 - (i) dimethyldioctadecylammonium chloride
 - (ii) dimethyldicocoalkylammonium chloride
- (B) quaternized polyoxyalkylenated long-chain amines
 - (a) alkyl-di(polyoxyethylene)-lower alkylammonium chloride
 - (i) methylbis(omega-hydroxy-poly(oxyethylene)-oleyl)ammonium chloride in which polyoxyethylene is derived from 2 to 30 moles of ethylene oxides.

Betaines derived from the tertiary amines represented by Formula (1) include trialkylbetaines. To describe concretely, long-chain alkyl-di-lower alkylbetaines such as lauryldimethylbetaine, stearyldimethylbetaine, cocodimethylbetaine, and decyldimethylbetaine.

The following products are suitable as amine oxides derived from the tertiary amine represented by Formula (1):

- (A) trialkylamine oxide
 - (i) lauryldimethylamine oxide
 - (ii) stearyldimethylamine oxide

- (B) dihydroxyethylalkylamine oxide
 - (i) dihydroxyethylcetylamine oxide
 - (ii) dihydroxyethyldodecylamine oxide
 - (iii) dihydroxyethyltallowamine oxide
- (C) di(polyoxyethylene)alkylamine oxide
 - (i) bis(polyoxyethylene)tallowamine oxide
 - (ii) bis(polyoxyethylene)cocoamine oxide
 - (iii) bis(polyoxyethylene)dodecylamine oxide
- (D) lower alkylpolyoxyethylenealkylamine oxide
 - (i) methylpolyoxyethylenecocoamine oxide.

In the present invention, the nitrogen-containing compound and oxalic acid or the specific oxalic acid salt as described above are used in combination. The salt of oxalic acid is potassium salt, alkanolamine salt, or lower alkylamine salt. The alkanolamine salt includes monoethanolamine salt, diethanolamine salt, and triethanolamine salt. The lower alkylamine salt includes monomethylamine salt, monoethylamine salt, dimethylamine salt, and diethylamine salt. The liquid enhancer composition which is stable to a change in temperatures can not be obtained from oxalic acid salts other than the above compounds. The oxalic acid salt is preferably potassium salt or alkanolamine salt, particularly preferably potassium salt or diethanolamine salt.

Oxalic acid or the salt thereof is used in a range of 0.1 to 10 moles, preferably 0.3 to 5 moles per mole of the nitrogen-containing compound. If the amount of oxalic acid or the salt thereof is less than 0.1 mole or exceeds 10 moles, the enhancement effect of amino acid series herbicides is deteriorated, and the composition becomes unstable to a change in temperatures.

In the liquid enhancer composition of the present invention, known surfactants can be used in combination.

Nonionic surfactants, anionic surfactants, and amphoteric surfactants, or the mixture thereof can be used as the surfactants capable of being used in combination.

These surfactants can be combined at the weight ratio of 1/1 to 1/10, preferably 1/2 to 1/6 based on the nitrogen-containing compound.

The nonionic surfactants include polyoxyethylene alkyl ether, polyoxyethylene alkylaryl ether, polyoxyethylene alkylaryl ether formaldehyde condensation product, polyoxyalkylene aryl ether, polyoxyalkylene alkyl ester, polyoxyalkylene alkylsorbitol ester, polyoxyalkylene sorbitan ester, polyoxyalkylene alkylglycerol ester, polyoxyalkylene block copolymer, polyoxyalkylene block copolymer alkylglycerol ester, polyoxyalkylene alkylsulfonamide, polyoxyalkylene rosin ester, polyoxypropylene block copolymer, polyoxyethylene oleyl ether, polyoxyalkylene alkylphenol, and the mixture of two or more kinds thereof.

Among the anionic surfactants, typical ones can be obtained in the form of an aqueous solution or a solid matter. The examples thereof include sodium mono- and di-alkylnaphthalenesulfonates, sodium alpha-olefinsulfonates, sodium alkanesulfonates, alkylsulfosuccinates, alkylsulfates, polyoxyalkylene alkyl ether sulfates, polyoxyalkylene alkylaryl ether sulfates, polyoxyalkylene styrylphenyl ether sulfates, mono- and di-alkylbenzenesulfonates, alkylnaphthalenesulfonates, formaldehyde condensation products of alkylnaphthalenesulfonates, alkyl diphenyl ether sulfonates, olefinic sulfonates, mono- and dialkylphosphates, polyoxyalkylene mono and dialkylphosphates, polyoxyalkylene mono and diphenyl ether phosphates, polyoxyalkylene mono and dialkylphenyl ether phosphates, polycarboxylates, fatty acid salts, linear and branched alkyl polyoxyalkylene ether acetic acid or the salts thereof, alkenyl polyoxyalkylene ether acetic acid or the salts thereof, stearic acid and the

salts thereof, oleic acid and the salts thereof, N-methyl fatty acid taurides, and the mixtures of two or more kinds thereof (including sodium, potassium, ammonium and amine salts).

Among these surfactants, particularly preferred are the nonionic surfactants. Of them, preferred are ester types such as polyoxyalkylene sorbiten esters and polyoxyalkylene alkylglycerol esters, polyoxyalkylene alkyl ethers, and polyoxyalkylene alkylphenyl ethers.

The liquid enhancer composition for amino acid series herbicides of the present invention comprises the preceding nitrogen-containing compound, oxalic acid or the salt thereof, optional components blended according to necessity, and the balance of water. The form thereof is usually an aqueous solution. In the present invention, the nitrogen-containing compound is blended into the composition in a proportion of 10 to 30 weight %, preferably 15 to 25 weight %. The mole ratio of the oxalic acid (salt) to the nitrogen-containing compound has to be controlled to the ratio described previously.

Further, the present invention provides a liquid herbicide composition containing the liquid enhancer composition of the present invention and the amino acid series herbicide as described above.

The amino acid series herbicide includes, for example, glyphosate (N-(phosphonomethyl)glycine or the salts thereof), bialaphos (sodium salt of L-2-amino-4-[(hydroxy)(methyl)-phosphinoyl]butyryl-L-alanyl-L-alanine), and glufosinate (ammonium-DL-homoserine-4-yl(methyl)phosphinate).

In the liquid herbicide composition of the present invention, the ratio of the enhancer composition of the present invention to the amino acid series herbicide is (i):(ii)=0.05 to 50, preferably 0.05 to 20, and more preferably 0.1 to 10 in terms of a weight ratio of the total amount (i) of the nitrogen-containing compound and oxalic acid or the salt thereof contained in the enhancer composition to the agricultural chemical primary component (the active ingre-

redient of the herbicide) (ii) contained in the amino acid series herbicide. The ratio of less than 0.05 can not sufficiently achieve the intended enhancement effect of the herbicide. Meanwhile, the ratio exceeding 50 does not allow further increase in the effect to be expected.

Further, pH regulators, inorganic salts, and thickeners may be added to the herbicide composition of the present invention according to necessity.

The pH regulator capable of being used in the present invention is citric acid, phosphoric acid (pyrophosphoric acid), gluconic acid, or the salts thereof.

The inorganic salts which can be used in the present invention include inorganic ammonium salts such as ammonium sulfate, ammonium nitrate, ammonium phosphate, ammonium thiocyanate, ammonium chloride, and ammonium sulfamate.

The formulation of the herbicide composition of the present invention is a single liquid type (single formulation type) containing the enhancer composition and the amino acid series herbicide. It can be used as well by mixing (diluting) the amino acid series herbicide or the aqueous solution thereof with the aqueous solution of the enhancer composition immediately before using in such a proportion that the agricultural chemical concentration of the herbicide becomes the desired value.

EXAMPLES

The present invention shall be explained below with reference to examples but shall not be restricted to these examples.

Example 1

The nitrogen-containing compounds and oxalic acid or the salts thereof shown in Table 1 were used to obtain various liquid enhancer compositions.

TABLE 1

Composition No.	Nitrogen containing compound	Oxalic acid or salt thereof	Mole ratio	Water
1	Cococyltrimethylammonium chloride	20 g Oxalic acid	5.2 g 1:0.75	74.8 g
2	Cococyltrimethylammonium chloride	20 g Dipotassium oxalate	9.6 g 1:0.75	70.4 g
3	Cococyltrimethylammonium chloride	20 g Disodium oxalate	7.7 g 1:0.75	72.3 g
4	Cococyltrimethylammonium chloride	20 g Diammonium oxalate	7.2 g 1:0.75	72.8 g
5	Cococyltrimethylammonium chloride	20 g Diethanolamine oxalate	17.2 g 1:0.75	62.8 g
6	Cococyltrimethylammonium chloride	20 g Dimethylamine oxalate	8.6 g 1:0.75	71.4 g
7	POE(15)beef tallow amine	20 g Oxalic acid	5.2 g 1:3	74.8 g
8	POE(15)beef tallow amine	20 g Dipotassium oxalate	9.6 g 1:3	70.4 g
9	POE(15)beef tallow amine	20 g Disodium oxalate	7.7 g 1:3	72.3 g
10	POE(15)beef tallow amine	20 g Diammonium oxalate	7.2 g 1:3	72.8 g
11	POE(15)beef tallow amine	20 g Diethanolamine oxalate	17.2 g 1:3	62.8 g
12	POE(15)beef tallow amine	20 g Dimethylamine oxalate	8.6 g 1:3	71.4 g
13	POE(15)cococylmonomethylammonium chloride	20 g Oxalic acid	5.2 g 1:3	74.8 g
14	POL(15)cococylmonomethylammonium chloride	20 g Dipotassium oxalate	9.6 g 1:3	70.4 g
15	POE(15)cococylmonomethylammonium chloride	20 g Disodium oxalate	7.7 g 1:3	72.3 g
16	POE(15)cococylmonomethylammonium chloride	20 g Diammonium oxalate	7.2 g 1:3	72.8 g
17	POE(15)cococylmonomethylammonium chloride	20 g Diethanolamine oxalate	17.2 g 1:3	62.8 g
18	POE(15)cococylmonomethylammonium chloride	20 g Dimethylamine oxalate	8.6 g 1:3	71.4 g
19	POE(2)cococylmonomethylammonium chloride	16 g		
	POE(6)Lauryl ether	4 g Dipotassium oxalate	9.6 g 1:1.2	75.4 g
Comp. 1	Cococyltrimethylammonium chloride	20 g		80 g
Comp. 2	POE(15)beef tallow amine	20 g		80 g

Herbicidal rate (%) = [(ground growth fresh weight (g) of the untreated lot - ground growth fresh weight (g) of the treated lot) / ground growth fresh weight (g) of the untreated lot] x 100

TABLE 7

Herbicide composition No.	Herbicidal rate to crabgrass (%)	Herbicidal rate to cabbage (%)
1	93.2	62.4
2	90.2	85.1
3	62.6	33.4
4	64.1	35.1
5	88.5	59.5
6	85.3	61.8
7	92.5	68.4
8	88.7	73.1
9	60.8	31.3
10	63.3	33.3
11	85.4	70.3
12	87.3	66
13	90.6	71.8
14	93.4	75.3
15	65.3	34.1
16	67.2	35.6
17	86.5	70.4
18	82.7	68.7
19	91.7	72.1
20	60.5	28.3
21	60.4	29.5
22	61.8	30.4
23	54.6	25.4
24	58.3	26.3
Roundup liquid formulation	52.3	30.5

In some cases, insoluble precipitation caused clogging of spray nozzle at spraying in the liquid enhancer compositions of Nos. 3, 4, 9, 10, 15, 16.

The compositions using bisPOE(15) (tallowamine oxide other than disodium oxalate or diammonium oxalate showed a good herbicidal activity as well.

We claim:

1. An aqueous liquid enhancer composition for herbicides of amino acid compounds which comprises (1) 10 to 30% by weight of at least one nitrogen-containing compound selected from tertiary amine compounds represented by the following Formula (1) and derivatives thereof, and (2) at least one oxalic acid compound selected from the group consisting of oxalic acid, potassium oxalate, alkanolamine salts of oxalic acid, potassium oxalate, alkanolamine salts of oxalic acid and lower alkylamine salts of oxalic acid, at a mole ratio of (2) the oxalic acid compound to (1) the

nitrogen-containing compound ranging between 0.1/1 and 10/1:



R^1 : represents a linear or branched alkyl group having a carbon number of 8 to 30 or a linear or branched alkenyl group having a carbon number of 8 to 30, and

R^2 , R^3 : may be the same or different from each other and each represent a linear or branched alkyl group having a carbon number of 1 to 30, a linear or branched alkenyl group having a carbon number of 2 to 30, or $-(AO)_n-H$ wherein AO is an oxyalkylene group having a carbon number of 2 to 4, and n is a number of 1 to 30 on the average.

2. The aqueous liquid enhancer composition as claimed in claim 1, in which the derivative is selected from the group consisting of amine salts, quaternized products, betaines and amine oxides of the tertiary amine compound represented by Formula (1).

3. The aqueous liquid enhancer composition as claimed in claim 1, which further comprises a surfactant.

4. An herbicide composition comprising (i) an effective amount of at least one nitrogen-containing compound as defined in claim 1 and an effective amount of the oxalic acid compound as defined in claim 1 and (ii) a herbicide of amino acid compound.

5. The herbicide composition as claimed in claim 4, in which the herbicide is selected from the group consisting of glyphosate (N-(phosphonomethyl)-glycine, salts thereof), bialaphos (sodium salt of L-2-amino-4-[(hydroxy)(methyl)-phosphinoyl]butyryl-L-alanyl-L-alanine) and glufosinate (ammonium-DL-homocysteine-4-yl(methyl)phosphinate).

6. The herbicide composition as claimed in claim 4, in which a weight ratio of (i) to (ii) ranges from 0.05/1 to 50/1.

7. A method for enhancing the herbicidal effectiveness of (ii) a herbicide of an amino acid compound which comprises adding (i), and (i) an effective amount of at least one nitrogen-containing compound as defined in claim 1 and an effective amount of the oxalic acid compound as defined in claim 1 together to form a composition; and applying said composition to an area to be treated.

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISIÓN DE NUEVAS CREACIONES

2020

Bogotá, D.C., (7 de Julio del 2010)

Abogado

Juan Pablo Cadena

(Apoderado)

ASUNTO	Radicación	03-75632
	Trámite	002
	Evento	001
	Actuación	430
	Oficio	
	Folios	006 0 8 9 6 4

Patente de Invención ☒ Patente de Modelo de Utilidad ☐Vía Nacional ☐Vía PCT (fase nacional) ☒ Cap. I ☐ Cap. II ☒

No. Sol. Internacional PCT/US02/06709

Fecha de Presentación Interna. 1 de marzo 2002

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

1. Documentos estudiados

- 1.1. Descripción: Folios: 177 a 450
- 1.2. Reivindicaciones: Folios: 451 a 518 (capítulo reivindicatorio original presentado en fase internacional)
Folios: 624 a 651 (capítulo reivindicatorio modificado en fase nacional)
Folios: 667 a 689 (capítulo reivindicatorio modificado)
Folios: 698 a 699 (capítulo reivindicatorio modificado)
- 1.3. Prioridad: 2 de marzo 2001, US, No. Solicitud 60/273.234
8 de marzo 2001, US, No. Solicitud 60/274.368
21 de mayo 2001, US, No. Solicitud PCT/US01/16550
14 de noviembre 2001, US, No. Solicitud 09/926.521
19 de noviembre 2001, US, No. Solicitud 09/988.353

El solicitante realizó modificaciones al capítulo reivindicatorio las cuales no se encuentran ampliando la materia inicialmente presentada; por lo que dicho capítulo reivindicatorio modificado es aceptado y sobre el mismo se emite el presente concepto.

2. Análisis de la Prioridad

La materia contenida en las prioridades que se reivindican coincide con la materia que se encuentra presentada en la solicitud, por lo tanto las prioridades presentadas se aceptan.

3. Objeto de la invención

- *Título de la solicitud: "Composiciones pesticidas que contienen ácido oxálico".*

El objeto de la presente solicitud de patente de invención consiste en:

Reivindicaciones 1-10: Una composición de concentrado herbicida acuoso que contiene:- glifosato o una sal o éster del mismo disuelto en un medio acuoso y un componente surfactante en solución o suspensión estable, emulsión o dispersión en dicho medio acuoso que contiene uno o más surfactantes, dicha composición caracterizada porque:

- a) La composición comprende ácido oxálico o una sal del mismo el cual mejora la bio-eficacia del glifosato y donde la razón en peso del surfactante al ácido oxálico o sal del mismo esta entre 5:1 y 40:1. b) La concentración del componente surfactante esta entre 0,1% y 25% en peso de la composición. c) La concentración de glifosato está en exceso de 400 g de equivalentes ácidos por litro.

El solicitante presenta, en el capítulo descriptivo, como objeto de la invención lo siguiente: "La presente invención se refiere a un método para mejorar eficacia herbicida del glifosato con ácidos orgánicos. Más particularmente, la presente invención se relaciona con un método de mejorar la efectividad herbicida concentrado de glifosato de potasio y formulaciones de mezcla en tanque que contienen uno o más surfactantes mediante la adición de un componente de ácido policarboxílico u otro componente que incrementa la permeabilidad de la membrana celular o suprime la explosión oxidativa."

- *Clasificación Internacional de Patentes (IPC.): A01N 57/20*

4. De la solicitud de Patente

El solicitante presentó modificaciones al capítulo reivindicatorio las cuales no se encuentran ampliando la materia inicialmente presentada y tampoco cambian el objeto de la solicitud inicial.

5. Determinación del Estado de la Técnica

La fecha que se ha tenido en cuenta para determinar el Estado de la Técnica es la fecha de presentación de la solicitud prioritaria la cual corresponde al 2 de marzo del 2001.

Teniendo en cuenta la fecha indicada se realizó la búsqueda en el estado de la técnica de documentos relacionados con la solicitud encontrándose los siguientes documentos más relevantes:

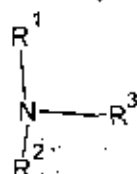
Nº	Documento	Título	Fecha de publicación
D1	US 5863863	Liquid enhancer composition for amino acid series herbicides	26 de enero de 1999

6. Análisis de patentabilidad (artículo 14 D488)

6.1. Nivel inventivo (artículo 18 D486)

En la anterioridad D1 se esta presentando una composición líquida que proporciona estabilidad a las formulaciones de herbicidas derivados de aminoácidos, particularmente proporciona estabilidad a los cambios de temperatura cuando la formulación es almacenada en forma líquida por largos periodos de tiempo.

De esta manera, la composición líquida esta constituida por al menos un compuesto derivado de la fórmula 1 y ácido oxálico o una sal derivada de este.



Fórmula 1.

Dentro de los compuestos de fórmula 1 principalmente se consideran sales de amina, sales de amonio cuaternario, betalinas y óxidos de amina derivados de la fórmula 1. Los compuestos de fórmula 1 se encuentran en una proporción de 10 a 30% en peso preferiblemente 15 a 25% en peso. La composición líquida es combinada con herbicidas derivados de aminoácidos, dentro de los cuales se consideran glifosato y sus sales, balafo y glufosinato.

Como se puede observar los componentes principales que se encuentran en la composición de la solicitud también son presentados en la anterioridad D1, de tal forma que para una persona versada en la materia puede derivar la composición de la solicitud ya que el objeto de la adición de ácido oxálico y el surfactante es el de proveer mayor estabilidad a la solución de glifosato y potenciar el efecto herbicida del mismo. Por lo tanto, el objeto de la composición de la anterioridad D1 es el mismo objeto que el planteado para la solicitud.

De esta manera, la solicitud no presenta el suficiente Nivel Inventivo para concederle el privilegio de patente.

7. Conclusión:

Los requisitos de patentabilidad de la presente solicitud se encuentran afectados así:

N°	Documento N°	Reivindicaciones afectadas	Requisito que afecta
D1	US 5863863	1 a 10	Nivel inventivo

8. Respuesta a los argumentos del solicitante:

El solicitante en el memorial de respuesta describe las modificaciones realizadas al capítulo reivindicatorio de la solicitud las cuales subsanan los problemas de claridad y unidad de invención de la solicitud.

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

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única N° 10 de 2001.

ALIX CARMENZA CÉSPEDES DE VERGEL
Directora de Nuevas Creaciones (C).

El anterior requerimiento fue notificado por fijación en lista, de fecha

16 JUL 2010

CONCEPTO TÉCNICO No. 2450	EXAMINADOR TÉCNICO Código No.202064
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