

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 60957-PCT	FOR FURTHER ACTION		see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US2015/016892	International filing date (day/month/year) 20 February 2015	(Earliest) Priority Date (day/month/year) 23 February 2014	
Applicant FMC CORPORATION			

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed.
☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (see Box No. II).

3. ☐ Unity of invention is lacking (see Box No. III).

4. With regard to the title,

- ☒ the text is approved as submitted by the applicant.
☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- ☒ the text is approved as submitted by the applicant.
☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. _____
☐ as suggested by the applicant.
☐ as selected by this Authority, because the applicant failed to suggest a figure.
☐ as selected by this Authority, because this figure better characterizes the invention.
- b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2015/016892

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A01N 43/80 (2015.01)

CPC - A01N 43/80 (2015.04)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - A01N 25/32, 43/80; A01P 7/04 (2015.01)

CPC - A01N 25/32, 43/72, 43/74, 43/80 (2015.04) (keyword delimited)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 504/107, 271; 562/623 (keyword delimited)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Orbit, Google Patents, Google, NPIRS, PubChem, SureChem.

Search terms used: dichlorophenyl)methyl-4,4-dimethyl-3-isoxazolidinone, isoxazolidinone, 2,4-DC, 2,5-DC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2012/148689 A2 (FMC CORPORATION) 01 November 2012 (01.11.2012) entire document	1-6, 10, 11, 17-19, 26, 27, 36
A	US 4,405,357 A (CHANG) 20 September 1983 (20.09.1983) entire document	1-41
A	US 5,527,762 A (ENSMINGER) 18 June 1996 (18.06.1996) entire document	1-41
A	AU 752714 B2 (JOMAA PHARMAKA GMBH) 10 January 2000 (10.01.2000) entire document	1-41

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

21 April 2015

Date of mailing of the international search report

14 MAY 2015

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents

P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-8300

Authorized officer:

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: ANDREA D. SMALL
FMC CORPORATION
1735 MARKET STREET
PHILADELPHIA, PA 19103

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

14 MAY 2015

Applicant's or agent's file reference
60957-PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US2015/016892

International filing date (day/month/year)

20 February 2015

Priority date (day/month/year)

23 February 2014

International Patent Classification (IPC) or both national classification and IPC

IPC(8) - A01N 43/80 (2015.01)

CPC - A01N 43/80 (2015.04)

Applicant
FMC CORPORATION

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1 bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-8300

Date of completion of this opinion

21 April 2015

Authorized officer:

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2015/016892

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:
- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:
- a. (means)
- ☐ on paper
- ☐ in electronic form
- b. (time)
- ☐ in the international application as filed
- ☐ together with the international application in electronic form
- ☐ subsequently to this Authority for the purposes of search
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2015/016892

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>7-9, 12-16, 20-25, 28-35, 37-41</u>	YES
	Claims	<u>1-6, 10, 11, 17-19, 26, 27, 36</u>	NO
Inventive step (IS)	Claims	<u>7-9, 12-16, 20-25, 28-35, 37-41</u>	YES
	Claims	<u>1-6, 10, 11, 17-19, 26, 27, 36</u>	NO
Industrial applicability (IA)	Claims	<u>1-41</u>	YES
	Claims	<u>None</u>	NO

2. Citations and explanations:

Claims 1-6, 10, 11, 17-19, 26, 27, and 36 lack novelty under PCT Article 33(2) as being anticipated by FMC Corporation (hereafter FMC).

Regarding claim 1, FMC discloses a composition comprising:

- i. a first herbicide selected from the group consisting of 2-(2,4-dichlorophenyl)methyl-4,4-dimethyl-3-isoxazolidinone ("2,4-DC") and 2-(2,5-dichlorophenyl)methyl-4,4-dimethyl-3-isoxazolidinone ("2,5-DC") (FMC, Abstract; Paras. [0002]; [0006]; [0011]); and
- ii. a second herbicide; with the proviso that when the first herbicide is 2,4-DC or 2,5-DC, the second herbicide is not 2,5-DC or 2,4-DC respectively (FMC, Para. [0019]).

Regarding claim 2, FMC discloses a composition comprising:

- i. a first herbicide selected from the group consisting of 2,4 DC, and 2,5 DC (FMC, Abstract; Paras. [0002]; [0006]; [0011]);
- ii. at least one inactive component selected from the group consisting of at least one an antimicrobial, at least one surfactant, at least one thickener, at least one antifoam, at least one antifreeze, at least one solvent, and at least one co-solvent (FMC, Para. [0022]); and
- iii. optionally, one or more additional active ingredients (FMC, Para. [0019]).

Regarding claim 3, FMC discloses the composition of claim 2.

FMC discloses wherein said surfactant is selected from the group consisting of cationic surfactants, anionic surfactants, non-ionic surfactants, ionic surfactants, amphoteric surfactants and a combination thereof (FMC, Para. [0022]).

Regarding claim 4, FMC discloses the composition of claim 3.

FMC discloses wherein the surfactant is a non-ionic surfactant selected from the group consisting of ethoxylated linear alcohol, ethoxylated alkyl phenol, alkyl EO/PO copolymer, polyalkylene glycol monobutyl ether ethoxylated fatty acids/oils, sorbitan laurate, polysorbate, sorbitan oleate, ethoxylated fatty acid alcohols, or alkyl phenols (FMC, Para. [0022], alkyl EO/PO copolymer surfactant).

Regarding claim 5, FMC discloses the composition of claim 2.

FMC discloses wherein said inactive component is a thickener selected from the group consisting of rice, starch, gum arabic, gum tragacanth, guar flour, British gum, starch ethers and starch esters, gum resins, galactomannans, magnesium aluminum silicate, xanthan gum, carrageenan, cellulose derivatives, methyl cellulose, alginates and combinations thereof (FMC, Para. [0022], xanthan gum).

Regarding claim 6, FMC discloses the composition of claim 2.

FMC discloses wherein said additional active ingredients are selected from the group consisting of herbicides (FMC, Para. [0019]).

Regarding claim 10, FMC discloses the composition of claim 1.

FMC discloses wherein said first herbicide is 2,4 DC (FMC, Abstract; Paras. [0002]; [0006]; [0011]; [0022]).

Regarding claim 11, FMC discloses the composition of claim 1.

FMC discloses wherein said first herbicide is 2,5 DC (FMC, Abstract; Paras. [0002]; [0006]; [0011]; [0023]).

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2015/016892

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 41 are objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claim 41 is indefinite or lacks clarity for the following reason(s):

Regarding Claim 41, claim depends upon a nonexistent claim (claim 49), which is improper. For the purposes of the Written Opinion purposed, Claim 41 is best interpreted as depending from claim 39 to provide sufficient antecedent basis.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2015/016892

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Regarding claim 17, FMC discloses a method of controlling undesired vegetation in a crop comprising applying to the locus of such vegetation an herbicidally-effective amount of a composition comprising a first herbicide selected from the group consisting of 2,4-DC and 2,5-DC and a second herbicide, with the proviso that when the first herbicide is 2,4-DC or 2,5-DC, the second herbicide is not 2,5-DC or 2,4-DC respectively (FMC, Abstract; Paras. [0002]; [0006]-[0011]; [0019]), wherein said crop is selected from the group consisting of broadleaf crops and grass crops (FMC, Abstract; Paras. [0002]; [0006]), and said undesired vegetation is selected from the group consisting of grass weeds and broadleaf weeds (FMC, Para. [0024]; Pg. 9, Table 1).

Regarding claim 18, FMC discloses a method of controlling undesired vegetation in a crop comprising applying to the locus of such vegetation an herbicidally-effective amount of a composition comprising a first herbicide selected from the group consisting of 2,4-DC and 2,5-DC (FMC, Abstract; Paras. [0002]; [0006]-[0011]), wherein said crop is selected from the group consisting of bananas, beans, beets, cassava, cereals, citrus, cocoas, coconuts, coffee, corn, fiber crops, flowers, forestry, forage crops, grapes, groundnuts, hops, horticultures, non-land crops, oil palm, oilseed rape, peas, peanuts, pomes, potato, rice, spices, stonefruit, sugar cane, sunflower, tea, tobacco, tree nuts, turf, vegetable crops, vines, wheat, and said undesired vegetation is selected from the group consisting of annual blue grass, Benghal dayflower, black grass, black night shade, broadleaf signal grass, Canada thistle, cheat, common cocklebur (*Xanthium pensylvanicum*), common ragweed, corn poppies, field violet, giant foxtail, goose grass, green fox tail, guinea grass, hairy beggarticks, herbicide-resistant black grass, horseweed, Italian rye grass, jimsonweed, johnsongrass (*Sorghum halepense*), large crabgrass, little seed canary grass, morning glory, Pennsylvania smartweed, pitted morningglory, prickly sida, quack grass, redroot pigweed, shatter cane, sheppard's purse, silky windgrass, sunflower (as weed in potato), wild buckwheat (*Polygonum convolvulus*), wild mustard (*Brassica kaber*), wild oat (*Avena fatua*), wild pointsettia, yellow foxtail, yellow nutsedge (*Cyperus esculentus*) (FMC, Abstract; Paras. [0002]; [0006]; [0007]; [0024]).

Regarding claim 19, FMC discloses the method of claim 18, wherein said crop is selected from the group consisting of beets, cereals, corn, groundnuts, peanuts, oil palm, oilseed rape, peas, potato, rice, sugar cane, sunflower, tobacco, vegetable crops, and wheat (FMC, Abstract; Paras. [0002]; [0006]; [0007]; [0024]).

Regarding claim 26, FMC discloses the method of claim 18.

FMC discloses wherein said first herbicide is 2,4 DC (FMC, Abstract; Paras. [0002]; [0006]; [0011]; [0022]).

Regarding claim 27, FMC discloses the method of claim 18.

FMC discloses wherein said first herbicide is 2,5 DC (FMC, Abstract; Paras. [0002]; [0006]; [0011]; [0023]).

Regarding claim 36, FMC discloses the composition of claim 2.

FMC discloses wherein the composition further comprises propylene glycol and surfactants (FMC, Para. [0022]).

Claims 7-9, 12-16, 20-25, 28-35, and 37-41 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest certain subject matter in the claims as follows:

As to claim 7, the prior art of record, individually or in combination, does not teach or fairly suggest the composition of Claim 1, wherein said second herbicide is selected from the group consisting of dimethenamid-P, diphenamid, napropamide, napropamide-M, naptalam, pethoxamid, propanil, acetochlor, alachlor, dimethachlor, S-metolachlor, pretilachlor, benzofluor, cambendichlor, chloramben, dicamba, bispyribac, pyriothibac, mesotrione, sulcotrione, tefuryltrione, tembotrione, benfuresate, asulam, barban, alloxymid, isoxaflutole, dinitramine, dipropalin, ethalfluralin, pendimethalin, trifluralin, acifluorfen, aclonifen, etniproimid, fluoronitrofen, fomesafen, imazamethabenz, bromobonil, bromoxynil, methiozolin, monisouron, pyroxasulfone, topramezone, bromofenoxim, clomeprop, 2,4-DEB, etniproimid, clacyfos, 4-CPA, 2,4-D, 2,4-DB, 3,4-DB, cloprop, 4-CPP, dichlorprop, chlorazifop, clodinafop, clofop, cyhalofop, kuicaoxi, metamifop, propaquizafop, quizalofop, difenzoquat, halosulfuron, metazachlor, fluzolate, brompyrazon, clopyralid, diflufenican, atrazine, chlorazine, cyanazine, cyprazine, trietazine, indaziflam, ametryn, methoprotryne, simetryn, terbutryn, ethiozin, hexazinone, metribuzin, amicarbazone, bencarbazone, carfentrazone, carfentrazone ethyl, sulfentrazone, thienicarbazone, cloransulam, isoproturon, linuron, methiuron, metolbromuron, metoxuron, tetrafluron, thidiazuron, amidosulfuron, cyclosulfamuron, ethoxysulfuron, flucetosulfuron, metsulfuron, prosulfuron, thifensulfuron, tebuthiuron, acrolein, flurtamone, fluthiacet-methyl, funaihecaoling, agriculturally acceptable salts thereof, esters thereof and mixtures of two or more thereof.

As to claim claim 8, the prior art of record, individually or in combination, does not teach or fairly suggest the composition of Claim 1, wherein said second herbicide is selected from the group consisting of acetochlor, aclonifen, ametryn, amicarbazone, atrazine, bispyribac, bromoxynil, carfentrazone, carfentrazone ethyl, clomazone, cyhalofop, 2,4-D, 2,4-DB, 2,4-DEB, dicamba, diflufenican, dimethachlor, dimethenamid-P, ethalfluralin, ethoxysulfuron, flucetosulfuron, fluthiacet-methyl, fomesafen, hexazinone, isoxaflutole, linuron, mesotrione, metamifop, metazachlor, metolbromuron, S-metolachlor, metribuzin, metsulfuron, metsulfuron-methyl, napropamide, pendimethalin, pethoxamid, pretilachlor, propanil, pyroxasulfone, quizalofop, tebuthiuron, thifensulfuron, thifensulfuron-methyl, sulfentrazone, trifluralin, agriculturally acceptable salts thereof, esters thereof and mixtures of two or more thereof.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2015/016892

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

As to claim 9, the prior art of record, individually or in combination, does not teach or fairly suggest the composition of Claim 1, wherein said second herbicide is selected from the group consisting of napropamide, aclonifen, pyroxasulfone, metazachlor, diflufenican, sulfentrazone, mesotrione, metsulfuron, thifensulfuron, agriculturally acceptable salts thereof, esters thereof and mixtures of two or more thereof.

As to claim 12, the prior art of record, individually or in combination, does not teach or fairly suggest the composition of claim 1, wherein said first herbicide is 2,4 DC and the second herbicide is selected from the group consisting of dimethenamid-P, diphenamid, napropamide, napropamide-M, naptalam, pethoxamid, propanil, acetochlor, alachlor, dimethachlor, S-metolachlor, pretilachlor, benzooflour, cambendichlor, chloramben, dicamba, bispyribac, pyriithobac, mesotrione, sulcotrione, tefuryltrione, tembotrione, benfuresate, asulam, barban, alloxymid, isoxaflutole, dinitramine, dipropalin, ethalfluralin, pendimethalin, trifluralin, acifluorfen, aclonifen, etniproimid, fluoronitrofen, fomesafen, imazamethabenz, bromobonil, bromoxynil, methiozolin, monisouron, pyroxasulfone, topramezone, bromofenoxim, clomeprop, 2,4-DEB, etniproimid, clacyfos, 4-CPA, 2,4-D, 2,4-DB, 3,4-DB, cloprop, 4-CPP, dichlorprop, chlorazifop, clodinafop, clofop, cyhalofop, kuicaoxi, metamifop, propaquizafop, quizalofop, difenzoquat, halosulfuron, metazachlor, fluzolate, brompyrazon, clopyralid, diflufenican, atrazine, chlorazine, cyanazine, cyprazine, trietazine, indaziflam, ametryn, methoprotlyne, simetryn, terbutryn, ethiozin, hexazinone, metribuzin, amicarbazone, bencarbazone, carfentrazone, carfentrazone ethyl, sulfentrazone, thienicarbazone, cloransulam, isoproturon, linuron, methiuron, metobromuron, metoxuron, tetrafluron, thidiazuron, amidosulfuron, cyclosulfamuron, ethoxysulfuron, flucetosulfuron, metsulfuron, prosulfuron, thifensulfuron, tebuthiuron, acrolein, flurtamone, fluthiacet-methyl, funaihecaoling, agriculturally acceptable salts thereof, esters thereof and mixtures of two or more thereof.

As to claim 13, the prior art of record, individually or in combination, does not teach or fairly suggest the composition of claim 1, wherein said first herbicide is 2,4 DC and the second herbicide is selected from the group consisting of acetochlor, aclonifen, ametryn, amicarbazone, atrazine, bispyribac, bromoxynil, carfentrazone, carfentrazone ethyl, clomazone, cyhalofop, 2,4-D, 2,4-DB, 2,4-DEB, dicamba, diflufenican, dimethachlor, dimethenamid-P, ethalfluralin, ethoxysulfuron, flucetosulfuron, fluthiacet-methyl, fomesafen, hexazinone, isoxaflutole, linuron, mesotrione, metamifop, metazachlor, metobromuron, S-metolachlor, metribuzin, metsulfuron, metsulfuron-methyl, napropamide, pendimethalin, pethoxamid, pretilachlor, propanil, pyroxasulfone, quizalofop, tebuthiuron, thifensulfuron, thifensulfuron-methyl, sulfentrazone, trifluralin, agriculturally acceptable salts thereof, esters thereof and mixtures of two or more thereof.

As to claim 14, the prior art of record, individually or in combination, does not teach or fairly suggest the composition of claim 1, wherein said second herbicide is selected from the group consisting of dimethenamid-P, napropamide, dimethachlor, S-metolachlor, aclonifen, pyroxasulfone, metazachlor, diflufenican, sulfentrazone, metobromuron, metsulfuron, thifensulfuron, agriculturally acceptable salts thereof, esters thereof and mixtures of two or more thereof.

As to claim 15, the prior art of record, individually or in combination, does not teach or fairly suggest the composition of claim 1, wherein said first herbicide is 2,5-DC and the second herbicide is selected from the group consisting of acetochlor, aclonifen, ametryn, amicarbazone, atrazine, bispyribac, bromoxynil, carfentrazone, carfentrazone ethyl, clomazone, cyhalofop, 2,4-D, 2,4-DB, 2,4-DEB, dicamba, diflufenican, dimethachlor, dimethenamid-P, ethalfluralin, ethoxysulfuron, flucetosulfuron, fluthiacet-methyl, fomesafen, hexazinone, isoxaflutole, linuron, mesotrione, metamifop, metazachlor, metobromuron, S-metolachlor, metribuzin, metsulfuron, metsulfuron-methyl, napropamide, pendimethalin, pethoxamid, pretilachlor, propanil, pyroxasulfone, quizalofop, tebuthiuron, thifensulfuron, thifensulfuron-methyl, sulfentrazone, trifluralin, agriculturally acceptable salts thereof, esters thereof and mixtures of two or more thereof.

As to claim 16, the prior art of record, individually or in combination, does not teach or fairly suggest the composition of claim 1, wherein said second herbicide is selected from the group consisting of dimethenamid-P, napropamide, dimethachlor, S-metolachlor, aclonifen, pyroxasulfone, metazachlor, diflufenican, sulfentrazone, metobromuron, metsulfuron, thifensulfuron, agriculturally acceptable salts thereof, esters thereof and mixtures of two or more thereof.

As to claim 20, the prior art of record, individually or in combination, does not teach or fairly suggest the method of claims 17 or 18, wherein said crop is wheat.

As to claim 21, the prior art of record, individually or in combination, does not teach or fairly suggest the method of claim 17 wherein said second herbicide is selected from the group consisting of dimethenamid-P, diphenamid, napropamide, napropamide-M, naptalam, pethoxamid, propanil, acetochlor, alachlor, dimethachlor, S-metolachlor, pretilachlor, benzooflour, cambendichlor, chloramben, dicamba, bispyribac, pyriithobac, mesotrione, sulcotrione, tefuryltrione, tembotrione, benfuresate, asulam, barban, alloxymid, isoxaflutole, dinitramine, dipropalin, ethalfluralin, pendimethalin, trifluralin, acifluorfen, aclonifen, etniproimid, fluoronitrofen, fomesafen, imazamethabenz, bromobonil, bromoxynil, methiozolin, monisouron, pyroxasulfone, topramezone, bromofenoxim, clomeprop, 2,4-DEB, etniproimid, clacyfos, 4-CPA, 2,4-D, 2,4-DB, 3,4-DB, cloprop, 4-CPP, dichlorprop, chlorazifop, clodinafop, clofop, cyhalofop, kuicaoxi, metamifop, propaquizafop, quizalofop, difenzoquat, halosulfuron, metazachlor, fluzolate, brompyrazon, clopyralid, diflufenican, atrazine, chlorazine, cyanazine, cyprazine, trietazine, indaziflam, ametryn, methoprotlyne, simetryn, terbutryn, ethiozin, hexazinone, metribuzin, amicarbazone, bencarbazone, carfentrazone, carfentrazone ethyl, sulfentrazone, thienicarbazone, cloransulam, isoproturon, linuron, methiuron, metobromuron, metoxuron, tetrafluron, thidiazuron, amidosulfuron, cyclosulfamuron, ethoxysulfuron, flucetosulfuron, metsulfuron, prosulfuron, thifensulfuron, tebuthiuron, acrolein, flurtamone, fluthiacet-methyl, funaihecaoling, agriculturally acceptable salts thereof, esters thereof and mixtures of two or more thereof.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2015/016892

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

As to claim 22, the prior art of record, individually or in combination, does not teach or fairly suggest the composition of claim 17, wherein the second herbicide is selected from the group consisting of acetochlor, aclonifen, ametryn, amicarbazone, atrazine, bispyribac, bromoxynil, carfentrazone, carfentrazone ethyl, clomazone, cyhalofop, 2,4-D, 2,4-DB, 2,4-DEB, dicamba, diflufenican, dimethachlor, dimethenamid-P, ethalfluralin, ethoxysulfuron, flucetosulfuron, fluthiacet-methyl, fomesafen, hexazinone, isoxaflutole, linuron, mesotrione, metamifop, metazachlor, metobromuron, S-metolachlor, metribuzin, metsulfuron, metsulfuron-methyl, napropamide, pendimethalin, pethoxamid, pretilachlor, propanil, pyroxasulfone, quizalofop, tebuthiuron, thifensulfuron, thifensulfuron-methyl, sulfentrazone, trifluralin, agriculturally acceptable salts thereof, esters thereof and mixtures of two or more thereof.

As to claim 23, the prior art of record, individually or in combination, does not teach or fairly suggest the method of claim 17, wherein said second herbicide is selected from the group consisting of dimethenamid-P, napropamide, dimethachlor, S-metolachlor, aclonifen, pyroxasulfone, metazachlor, diflufenican, sulfentrazone, metobromuron, metsulfuron, thifensulfuron, agriculturally acceptable salts thereof, esters thereof and mixtures of two or more thereof.

Claims 24 and 25 depend from base Claim 23 and therefore meet the criteria set out in PCT Article 33(2)-(3) for at least the reasons set out with respect to base Claim 23.

As to claim 28, the prior art of record, individually or in combination, does not teach or fairly suggest the method of claim 17, wherein said first herbicide is 2,4-DC and said second herbicide is selected from the group consisting of dimethenamid-P, diphenamid, napropamide, napropamide-M, naptalam, pethoxamid, propanil, acetochlor, alachlor, dimethachlor, S-metolachlor, pretilachlor, benzoofluor, cambendichlor, chloramben, dicamba, bispyribac, pyriithiobac, mesotrione, sulcotrione, tefuryltrione, tembotrione, benfuresate, asulam, barban, alloxymid, isoxaflutole, dinitramine, dipropalin, ethalfluralin, pendimethalin, trifluralin, acifluorfen, aclonifen, etniproamid, fluoronitrofen, fomesafen, imazamethabenz, bromobonil, bromoxynil, methiozolin, monisouron, pyroxasulfone, topramezone, bromofenoxim, clomeprop, 2,4-DEB, etniproamid, clacyfos, 4-CPA, 2,4-D, 2,4-DB, 3,4-DB, cloprop, 4-CPP, dichlorprop, chlorazifop, clodinafop, clofop, cyhalofop, kuicaoxi, metamifop, propaquizafop, quizalofop, difenzoquat, halosulfuron, metazachlor, fluzolate, brompyrazon, clopyralid, diflufenican, atrazine, chlorazine, cyanazine, cyprazine, trietazine, indaziflam, ametryn, methoprottryne, simetryn, terbutryn, ethiozin, hexazinone, metribuzin, amicarbazone, bencarbazone, carfentrazone, carfentrazone ethyl, sulfentrazone, thiencazone, cioransulam, isoproturon, linuron, methiuron, metobromuron, metoxuron, tetrafluron, thidiazuron, amidosulfuron, cyclosulfamuron, ethoxysulfuron, flucetosulfuron, metsulfuron, prosulfuron, thifensulfuron, tebuthiuron, acrolein, flurtamone, fluthiacet-methyl, funaihecaoling, agriculturally acceptable salts thereof, esters thereof and mixtures of two or more thereof.

Claims 29 and 30 depend from base Claim 28 and therefore meet the criteria set out in PCT Article 33(2)-(3) for at least the reasons set out with respect to base Claim 28.

As to claim 31, the prior art of record, individually or in combination, does not teach or fairly suggest method of claim 17, wherein said first herbicide is 2,5-DC, and said second herbicide is selected from the group consisting of dimethenamid-P, diphenamid, napropamide, napropamide-M, naptalam, pethoxamid, propanil, acetochlor, alachlor, dimethachlor, S-metolachlor, pretilachlor, benzoofluor, cambendichlor, chloramben, dicamba, bispyribac, pyriithiobac, mesotrione, sulcotrione, tefuryltrione, tembotrione, benfuresate, asulam, barban, alloxymid, isoxaflutole, dinitramine, dipropalin, ethalfluralin, pendimethalin, trifluralin, acifluorfen, aclonifen, etniproamid, fluoronitrofen, fomesafen, imazamethabenz, bromobonil, bromoxynil, methiozolin, monisouron, pyroxasulfone, topramezone, bromofenoxim, clomeprop, 2,4-DEB, etniproamid, clacyfos, 4-CPA, 2,4-D, 2,4-DB, 3,4-DB, cloprop, 4-CPP, dichlorprop, chlorazifop, clodinafop, clofop, cyhalofop, kuicaoxi, metamifop, propaquizafop, quizalofop, difenzoquat, halosulfuron, metazachlor, fluzolate, brompyrazon, clopyralid, diflufenican, atrazine, chlorazine, cyanazine, cyprazine, trietazine, indaziflam, ametryn, methoprottryne, simetryn, terbutryn, ethiozin, hexazinone, metribuzin, amicarbazone, bencarbazone, carfentrazone, carfentrazone ethyl, sulfentrazone, thiencazone, cioransulam, isoproturon, linuron, methiuron, metobromuron, metoxuron, tetrafluron, thidiazuron, amidosulfuron, cyclosulfamuron, ethoxysulfuron, flucetosulfuron, metsulfuron, prosulfuron, thifensulfuron, tebuthiuron, acrolein, flurtamone, fluthiacet-methyl, funaihecaoling, agriculturally acceptable salts thereof, esters thereof and mixtures of two or more thereof.

Claims 32-35 depend from base Claim 31 and therefore meet the criteria set out in PCT Article 33(2)-(3) for at least the reasons set out with respect to base Claim 31.

As to claim 37, the prior art of record, individually or in combination, does not teach or fairly suggest composition of claim 36, wherein the 2,4 DC is in the amounts ranging from 35-40% w/w, propylene glycol is in amount ranging from 3-8 % w/w, and the surfactant is in amount ranging from 1-5%.

As to claim 38, the prior art of record, individually or in combination, does not teach or fairly suggest composition of claim 36, wherein 2, 4 DC is in an amount of about 36% w/w, the propylene glycol is in amount of about 6% w/w, and the surfactant is in amounts of about 3% w/w.

As to claim 39, the prior art of record, individually or in combination, does not teach or fairly suggest composition of claim 2, further comprising calcium chloride and sodium nitrate.

Claims 40 and 41 depend from base Claim 39 and therefore meet the criteria set out in PCT Article 33(2)-(3) for at least the reasons set out with respect to base Claim 39.

Claims 1-41 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.