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

SUPERINDUSTRIA Y COMERCIO
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SUPERINDUSTRIA Y COMERCIO

Trámite : 011
Evento : 379
Actuación: 329

Referencia : Expediente No. 03.035.666
Solicitante : DOW AGROSCIENCES LLC
Asunto : Solicitud de patente para "4,5-DIHIDRO-
1,2,4-TRIAZIN-6-ONAS, 1,2,4-TRIAZIN-6-
ONAS, Y SU USO COMO FUNGICIDAS E
INSECTICIDAS"
Fecha de solicitud : 29 de abril de 2003.

1. Yo, Emilio FERRERO, obrando como apoderado de la solicitante en referencia, atentamente presento con este escrito una copia del Reporte de Examen Preliminar Internacional con anexos, junto con su respectiva traducción al español.

2. Con base en las modificaciones anexas a dicho Reporte se debe establecer el examen de patentabilidad que realice ese Despacho sobre la presente solicitud de patente.

3. Ruego a la Señora Jefe se sirva aceptar este escrito con sus anexos, y se continúe con el trámite de la solicitud.

Bogotá, 27 SET 2005
Señora Jefe,



EMILIO FERRERO
T.P.A. No. 31.929

COLO 10975-841-005-3
ECC/MRE/
ID-000237/WPC10975

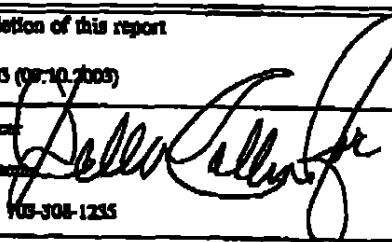
PATENT COOPERATION TREATY

PCT

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference RHAG1070	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IEPA/416)	
International application No. PCT/US01/50563	International filing date (day/month/year) 25 October 2001 (25.10.2001)	Priority date (day/month/year) 27 October 2000 (27.10.2000)
International Patent Classification (IPC) or national classification and IPC IPC(7): A01N 31/53; C07D 233/04, 487/00 and US CL.: 514/242, 243; 544/182, 183, 184		
Applicant DOW AGROSCIENCES LLC		
1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet. ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of <u>0</u> sheets. 3. This report contains indications relating to the following items: I ☒ Basis of the report II ☐ Priority III ☐ Non-establishment of report with regard to novelty, inventive step and industrial applicability IV ☐ Lack of unity of invention V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI ☐ Certain documents cited VII ☐ Certain defects in the international application VIII ☐ Certain observations on the international application		
Date of submission of the demand 10 May 2002 (10.05.2002)	Date of completion of this report 09 October 2003 (09.10.2003)	
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1439 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230	Authorized officer  Brenda L. Coleman Telephone No. 703-304-1235	

Form PCT/IEPA/409 (cover sheet)(July 1998)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US01/30363

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I. Basis of the report

1. With regard to the elements of the international application:^a

- ☐ the international application as originally filed.
- ☒ the description:
 pages 1-104 as originally filed
 pages NONE filed with the demand
 pages NONE filed with the letter of _____
- ☒ the claims:
 pages 113-126 as originally filed
 pages NONE as amended (together with any statement) under Article 19
 pages NONE filed with the demand
 pages 105-112 filed with the letter of 12 September 2003 (12.09.2003)
- ☐ the drawings:
 pages NONE as originally filed
 pages NONE filed with the demand
 pages NONE filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages NONE as originally filed
 pages NONE filed with the demand
 pages NONE filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE
- ☐ the claims, Nos. NONE
- ☐ the drawings, sheets/fig. NONE

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).^{**}^a Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).^{**} Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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V. Reasoned statement under Rule 66.2 (ii) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims 2-13	YES
	Claims 1	NO
Inventive Step (IS)	Claims 2-13	YES
	Claims 1	NO
Industrial Applicability (IA)	Claims 1-13	YES
	Claims NONE	NO

2. CITATIONS AND EXPLANATIONS

Claim 1 lacks novelty under PCT Article 33(2) as being anticipated by DE 42 39 540 A1 (ASTA MEDICA AG). DE 42 39 540 A1 (ASTA MEDICA AG) teaches the compounds of the formula where Z is oxygen; R¹ is methyl; R² is 4-pharmylmethoxyphenyl and R³ is methyl or R³ can form a fused ring to the R² substituent wherein the R² substituent is 3-chlorophenyl and R³ is -N-CH₃; R² is hydrogen and X² is hydrogen. See Table 2 and 3.

Claim 1 lacks an inventive step under PCT Article 33(3) as being obvious over DE 42 39 540 A1 (ASTA MEDICA AG). For reasons stated above.

Claims 2-13 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the compounds, compositions or method of use of the substituted triazine compounds as claimed herein.

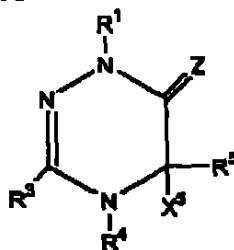
Claims 1-13 meet the criteria set out in PCT Article 33(4), and thus the substituted triazine compounds, compositions and method of use have industrial applicability because the subject matter claimed can be made or used in industry.

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We claim:

1. A compound of the formula



wherein

R^1 is alkyl, haloalkyl, cyanoalkyl, alkenyl, haloalkenyl, alkynyl, haloalkynyl, cycloalkylalkynyl, alkoxyalkyl, alkylthioalkyl, cycloalkyl, cycloalkylalkyl, trialkylsilylalkyl where the three alkyl groups may be the same or different, alkoxycarbonyl, alkylcarbonyl, alkoxycarbonylalkyl, phenyl, naphthyl, or phenyl or naphthyl substituted with from one to three substituents independently selected from the group consisting of alkyl, halo, nitro, alkoxy, alkylthio, haloalkyl, haloalkylthio and haloalkoxy, phenalkyl or phenalkyl substituted on the phenyl ring with from one to three substituents independently selected from the group consisting of alkyl, halo, alkoxy, haloalkyl and haloalkoxy, pyridyl or pyridyl substituted with from one to two substituents independently selected from the group consisting of alkyl and halo, furyl, thienyl, thenyl or furyl, thienyl or thenyl substituted with halo or alkyl on the furyl or thienyl ring, benzothienyl, benzofuranyl or benzothienyl or benzofuranyl substituted with halo, alkyl or haloalkyl.

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R¹ is alkyl, cycloalkyl, cycloalkylalkyl, phenalkyl or phenalkyl substituted on the phenyl ring with from one to three substituents independently selected from the group consisting of alkyl, halo, alkoxy, haloalkyl and haloalkoxy, aryl selected from phenyl, naphthyl, and phenyl and naphthyl substituted with from one to five substituents independently selected from the group consisting of halo, alkyl, haloalkyl, haloalkoxy, alkylthio, haloalkylthio, alkylsulfinyl, alkylsulfonyl, nitro, cyano, dialkylamino wherein the alkyl groups may be the same or different or together with the nitrogen to which they are attached form a 5- or 6-membered heterocyclic ring, or phenyl and naphthyl substituted with a heteroaryl group selected from furyl, thienyl, quinolinyl, isoquinolinyl, benzofuranyl, benzothieryl, pyridyl, pyridazinyl, pyrimidinyl, pyrazinyl, 1,2,3-thiadiazol-4-yl, 3-(4,5-dihydro-1,2,4-triazin-6-one)yl and oxazol-5-yl, and furyl, thienyl, quinolinyl, isoquinolinyl, benzofuranyl, benzothieryl, pyridyl, pyridazinyl, pyrimidinyl, pyrazinyl, 1,2,3-thiadiazol-4-yl, 3-(4,5-dihydro-1,2,4-triazin-6-one)yl and oxazol-5-yl substituted with one or two substituents independently selected from halo, alkyl, alkoxy, haloalkoxy, haloalkyl, alkylthio, nitro and cyano, phenyl, phenoxy, and phenyl and phenoxy substituted with one or two substituents independently selected from the group consisting of halo, alkyl, alkoxy, haloalkyl, haloalkoxy, alkylthio, nitro and cyano, heteroaryl selected from furyl, thienyl, quinolinyl, isoquinolinyl, benzofuranyl, benzothieryl, pyridyl, pyridazinyl, pyrimidinyl, pyrazinyl, pyrazolyl, 1,2,3-thiadiazol-4-yl, thiazolyl, triazolyl, triazinyl, isoxazolyl and oxazolyl, and

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REAGENTS

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furyl, thienyl, pyridyl, pyridazinyl, pyrimidinyl, pyrazinyl, 1,2,3-thiadiazol-4-yl and oxazolyl substituted with one or two substituents independently selected from halo, alkyl, alkoxy, haloalkoxy, haloalkyl, alkylthio, haloalkylthio, nitro and cyano,

R' is a haloalkyl, alkylcarbonyl, alkylcarbonylalkyl, cycloalkyl, cycloalkylalkyl, cycloalkyl-carbonyl, alkylsulfonyl, alkylthio, amino, alkylamino, dialkylamino wherein the alkyl groups may be the same or different or together with the nitrogen to which they are attached form a 5- or 6-membered heterocyclic ring, cyano, alkenyl, alkenylsulfonyl, haloalkenyl, alkenylcarbonyl, alkynyl, haloalkynyl, alkoxycarbonyl, haloalkoxycarbonyl, alkoxycarbonylalkyl, alkoxycarbonylthio, (alkylthio)carbonyl, alkyl(thiocarbonyl), alkylthiothiocarbonyl, alkenyloxy-carbonyl, alkenylthiothiocarbonyl, alkynyloxy-carbonyl, alkynylthiothiocarbonyl, alkoxyoxalyl, alkylcarbonyloxy-alkoxycarbonyl, aralkyl, arylcarbonyl, arylsulfonyl, arylsulfonylalkenyl, aryloxy-carbonyl, aryloxythiocarbonyl, arylthiothiocarbonyl or aralkyl, arylcarbonyl, arylsulfonyl, arylsulfonylalkenyl, aryloxy-carbonyl, aryloxythiocarbonyl, arylthiothiocarbonyl substituted on an aromatic ring with from one to two substituents independently selected from halo and alkyl, or thenyl or thenyl substituted on the thienyl ring with from one to two substituents independently selected from halo and alkyl,

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R^3 is a hydrogen atom, alkyl, haloalkyl, alkylcarbonyl, alkylcarbonylalkyl, formyl, alkoxy, alkoxy carbonyl, alkoxy carbonyloxy, alkylcarbonyloxy, alkoxy carbonylthio, alkylcarbonylthio, alkylthio, hydroxy, mercapto, alkenyl, alkynyl, cyano, amino, alkylamino, dialkylamino wherein the alkyl groups may be the same or different or together with the nitrogen to which they are attached form a 5- or 6-membered heterocyclic ring, aryl, aralkyl, aryloxy, arylthio, arylcarbonylthio or aryl, aralkyl, aryloxy, arylthio, arylcarbonylthio substituted on the aryl ring with from one to three substituents independently selected from the group consisting of alkyl, halo, alkoxy, haloalkyl, haloalkoxy, amino, alkylamino and dialkylamino wherein the alkyl groups may be the same or different or together with the nitrogen to which they are attached form a 5- or 6-membered heterocyclic ring, or

R^4 can form a fused ring to the R^3 substituent when the R^3 substituent is aryl or heteroaryl wherein R^4 is selected from $-\text{CH}(\text{R})-$, $-\text{O}-$, $-\text{S}-$, $-\text{N}(\text{R})-$, $-\text{C}(=\text{O})-$, $-\text{O}(\text{C}=\text{O})-$, $-\text{C}(=\text{O})\text{O}-$, $-\text{CH}_2\text{CH}_2-$, $-\text{CH}=\text{CH}-$, $-\text{N}(\text{R})\text{CH}_2-$, $-\text{C}(\text{R})=\text{N}-$, $-\text{N}=\text{C}(\text{R})-$, $-\text{CH}(\text{R})\text{O}-$, $-\text{OCH}(\text{R})-$, $-\text{CH}(\text{R})\text{S}-$ and $-\text{SCH}(\text{R})-$, or

R^3 and R^4 taken together can form a substituted pyridazinyl ring,

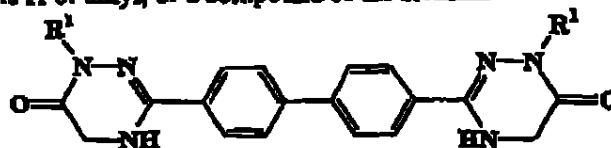
R^4 and X^1 taken together can form a carbonyl, or

X^2 is a hydrogen atom or taken together with R^4 forms a nitrogen-carbon bond,

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Z is an oxygen atom, a sulfur atom or NR,

R is H or alkyl, or a compound of the formula



or the agronomically acceptable salts, isomers, tautomers, enantiomers and mixtures thereof, provided that:

when R¹ is an alkyl or a heteroalkyl, R⁴ is not cyano, alkylsulfonyl, arylsulfonyl or polyhaloalkyl,

when R¹ is acetyl and R³ is 2-pyridyl, R⁵ and X⁴ taken together can not form a carbonyl, and

when R³ is phenyl, methyl or cyclohexyl, R¹ is not phenyl, methyl, nitrophenyl, ethoxycarbonyl, benzyl or benzyloxymethyl.

2. The compound of claim 1 wherein

R¹ is (C₁-C₁₂)alkyl, halo(C₁-C₁₂)alkyl, (C₂-C₆)alkenyl, halo(C₂-C₆)alkenyl, (C₂-C₆)alkynyl, halo(C₂-C₆)alkynyl, cyclo(C₃-C₇)alkyl(C₂-C₆)alkynyl, (C₁-C₆)alkoxy(C₁-C₆)alkyl, cyclo(C₃-C₇)alkyl, cyclo(C₃-C₇)alkyl(C₁-C₆)alkyl, tri(C₁-C₆)alkylsilyl(C₁-C₆)alkyl where the three alkyl groups may be the same or different, (C₁-C₆)alkoxycarbonyl, (C₁-C₆)alkylcarbonyl, (C₁-C₆)alkoxycarbonyl(C₁-C₆)alkyl, phenyl or phenyl substituted

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R^4 is a halo(C_1 - C_6)alkyl, (C_1 - C_6)alkylcarbonyl, (C_1 - C_6)alkylcarbonyl(C_1 - C_6)alkyl, cyclo(C_3 - C_6)alkyl, cyclo(C_3 - C_6)alkyl(C_1 - C_6)alkyl, cyclo(C_3 - C_6)alkyl-carbonyl, (C_1 - C_6)alkylsulfonyl, (C_2 - C_6)alkenyl, (C_3 - C_6)alkenylsulfonyl, phenylsulfonyl(C_2 - C_6)alkenyl, halo(C_2 - C_6)alkenyl, (C_2 - C_6)alkenylcarbonyl, (C_2 - C_6)alkynyl, (C_1 - C_6)alkoxycarbonyl, halo(C_1 - C_6)alkoxycarbonyl, (C_1 - C_6)alkoxycarbonyl(C_1 - C_6)alkyl, (C_1 - C_6)alkylcarbonyloxy-methoxycarbonyl, (C_1 - C_6)alkoxycarbonylthio, ((C_1 - C_6)alkylthio)carbonyl, (C_1 - C_6)alkylthiothiocarbonyl, (C_2 - C_6)alkenylloxycarbonyl, (C_2 - C_6)alkenylthiothiocarbonyl, (C_2 - C_6)alkynylloxycarbonyl, (C_2 - C_6)alkynylthiothiocarbonyl, (C_1 - C_6)alkoxyoxalyl, (C_1 - C_6)alkylcarbonyloxy(C_1 - C_6)alkoxy-carbonyl, phen(C_1 - C_6)alkyl, benzoyl, phenoxycarbonyl, phenoxythiocarbonyl, phenylthiothiocarbonyl or phen(C_1 - C_6)alkyl, benzoyl, phenoxycarbonyl, phenoxythiocarbonyl, phenylthiothiocarbonyl substituted on the phenyl ring with from one to two substituents independently selected from halo and (C_1 - C_6)alkyl, or thienyl or thienyl substituted on the thienyl ring with from one to two substituents independently selected from halo and (C_1 - C_6)alkyl,

R^5 is a hydrogen atom, (C_1 - C_6)alkoxy, (C_1 - C_6)alkylthio, hydroxy, mercapto, cyano, phenyl or phenyl substituted on the phenyl ring with from one to three substituents independently selected from the group consisting of (C_1 - C_6)alkyl, halo, (C_1 - C_6)alkoxy, halo(C_1 - C_6)alkyl and halo(C_1 - C_6)alkoxy,

Z is an oxygen atom or a sulfur atom, and

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X^3 is a hydrogen atom or taken together with R^4 forms a nitrogen-carbon bond.

3. The compound of claim 2 wherein

R^1 is (C_1-C_{10}) alkyl, halo (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, cyclo (C_3-C_6) alkyl (C_1-C_2) alkyl, tri (C_1-C_4) -alkylsilyl (C_1-C_2) alkyl where the three alkyl groups may be the same or different,

R^3 is phenyl, naphthyl, or phenyl or naphthyl substituted with from one to three substituents independently selected from the group consisting of halo, (C_1-C_6) alkyl, halo (C_1-C_2) alkyl and halo (C_1-C_2) alkoxy,

R^4 is a hydrogen atom, (C_1-C_6) alkylsulfonyl, (C_1-C_6) alkoxy-carbonylthio, (C_1-C_6) alkenylloxycarbonyl, (C_1-C_6) alkynyl, (C_1-C_6) alkynylloxycarbonyl or (C_1-C_6) alkoxyoxalyl, and

R^5 is a hydrogen atom, (C_1-C_6) alkoxy or (C_1-C_6) alkylthio.

4. The compound of claim 3 wherein

R^1 is (C_1-C_{10}) alkyl, halo (C_1-C_6) alkyl, (C_1-C_6) alkenyl, halo (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, cyclo (C_3-C_6) alkyl (C_1-C_2) alkyl, tri (C_1-C_4) alkylsilyl (C_1-C_2) alkyl where the three alkyl groups may be the same or different,