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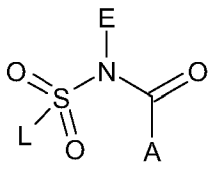
(54) Title: FUNGICIDE N-CYCLOPROPYL-SULFONYLAMIDE DERIVATIVES



(I)

(57) Abstract: The present invention relates to N-cyclopropyl-sulfonylamide derivatives of formula (I) wherein the substituents are cyclic groups, their process of preparation, their use as fungicide active agents, particularly in the form of fungicide compositions, and methods for the control of phytopathogenic fungi, notably of plants, using these compounds or compositions: (I)

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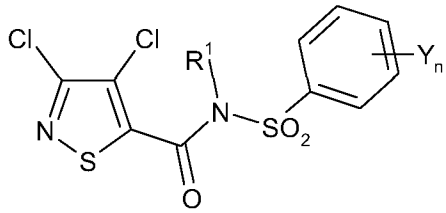
FUNGICIDE N-CYCLOPROPYL-SULFONYLAMIDE DERIVATIVES

DESCRIPTION

The present invention relates to N-cyclopropyl-sulfonylamide derivatives, their process of preparation, their use as fungicide active agents, particularly in the form of fungicide compositions, and methods for the control of phytopathogenic fungi, notably of plants, using these compounds or compositions.

In international patent application WO-01/77090, there are disclosed isothiazole derivatives of the following formula:



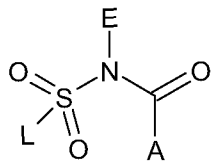
wherein R^1 may represent a cycloalkyl group. Preferred cycloalkyl groups are C_{5-6}-cycloalkyl groups, in particular cyclohexyl groups. Two examples are disclosed with such cyclohexyl groups. These two examples numbered Ia-88 and Ia-101 show insufficient or no activity on plant pathogen fungi.

In Japanese patent application JP-931069, there are disclosed 8 particular (2-bromo or 2-chloro)-(4-methyl or 4-ethyl)-1,3-thiazol-5-yl-(4-chloro-phenyl or phenyl)-N-cyclopropyl-sulfonylamide derivatives that are excluded from the scope of the present invention. Indeed, these 8 compounds have not been prepared and no activity is reported.

It is always of high-interest in agriculture to use novel pesticide compounds in order to avoid or to control the development of resistant strains to the active ingredients. It is also of high-interest to use novel compounds being more active than those already known, with the aim of decreasing the amounts of active compound to be used, whilst at the same time maintaining an effectiveness at least equivalent to the already known compounds.

We have now found a new family of compounds which possess the above mentioned effects or advantages.

Accordingly, the present invention provides N-cyclopropyl-sulfonylamide derivatives of formula (I):



(I)

wherein :

- A represents a carbon linked, substituted or non substituted, 5-, 6- or 7-membered, aromatic or non aromatic heterocycle comprising up to three heteroatoms which can be the same or different;
- E represents a substituted or non substituted cyclopropyl ;
- L represents a substituted or non substituted phenyl or a substituted or non substituted 5-, 6- or 7-membered aromatic or non aromatic heterocycle comprising up to three heteroatoms which can be the same or different as well as salts, N-oxydes, metallic complexes, metalloidic complexes and optically active isomers thereof; provided that when E represents a non-substituted cyclopropyl, A and L cannot represent simultaneously respectively

- a 2-bromo-4-methyl-1,3-thiazol-5-yl and a 4-chloro-phenyl;
- a 2-chloro-4-methyl-1,3-thiazol-5-yl and a 4-chloro-phenyl;
- a 2-bromo-4-ethyl-1,3-thiazol-5-yl and a 4-chloro-phenyl;
- a 2-chloro-4-ethyl-1,3-thiazol-5-yl and a 4-chloro-phenyl;
- a 2-bromo-4-methyl-1,3-thiazol-5-yl and a phenyl;
- a 2-chloro-4-methyl-1,3-thiazol-5-yl and a phenyl;
- a 2-bromo-4-ethyl-1,3-thiazol-5-yl and a phenyl;
- a 2-chloro-4-ethyl-1,3-thiazol-5-yl and a phenyl.

Any of the compounds according to the invention can exist in one or more optical or chiral isomer forms depending on the number of asymmetric centres in the compound. The invention thus relates equally to all the optical isomers and to their racemic or scalemic mixtures (the term "scalemic" denotes a mixture of enantiomers in different proportions), and to the mixtures of all the possible stereoisomers, in all proportions. The diastereoisomers and/or the optical isomers can be separated according to the methods which are known *per se* by the man ordinary skilled in the art.

Any of the compounds according to the invention can also exist in one or more geometric isomer forms depending on the number of double bonds in the compound. The invention thus relates equally to all geometric isomers and to all possible mixtures, in all proportions. The

geometric isomers can be separated according to general methods, which are known *per se* by the man ordinary skilled in the art.

For the compounds according to the invention, halogen atom means either one of fluorine, bromine, chlorine or iodine and heteroatom can be nitrogen, oxygen or sulphur.

For the compounds of formula (I) according to the invention, E can be substituted by up to five groups Z which can be the same or different and are selected in the list consisting of halogen atoms; C_1-C_5-alkyl; C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different; phenyl substituted by up to 5 halogen atoms which can be the same or different and C_1-C_5-alkoxycarbonyl.

Preferred compounds of formula (I) according to the invention are those wherein E represents a non-substituted cyclopropyl.

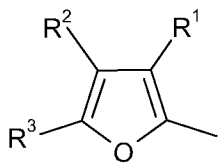
Other preferred compounds of formula (I) according to the invention are those wherein A is substituted by up to five groups R which can be the same or different and are selected in the list consisting of halogen atoms; cyano; nitro; hydroxy; amino; sulfanyl; pentafluoro-λ^6-sulfanyl; formyl; formyloxy; formylamino; carboxy; carbamoyl; N-hydroxycarbamoyl; carbamate; (hydroxyimino)-C_1-C_6-alkyl; C_1-C_5-alkylamino; di-C_1-C_5-alkylamino; tri(C_1-C_5-alkyl)silyl; C_1-C_5-alkylsulfanyl; C_1-C_5-halogenoalkylsulfanyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkyl; C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkenyl; C_2-C_5-halogenoalkenyl comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkynyl; C_2-C_5-halogenoalkynyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkoxy; C_1-C_5-halogenoalkoxy comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkenyloxy; C_2-C_5-halogenoalkenyloxy comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkynyloxy; C_2-C_5-halogenoalkynyloxy comprising up to 5 halogen atoms which can be the same or different; C_3-C_7-cycloalkyl; C_3-C_7-halogenocycloalkyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylcarbonyl; C_1-C_5-halogenoalkylcarbonyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylcarbamoyl; di-C_1-C_5-alkylcarbamoyl; N-C_1-C_5-alkyloxycarbamoyl; C_1-C_5-alkoxycarbamoyl; N-C_1-C_5-alkyl-C_1-C_5-alkoxycarbamoyl; C_1-C_5-alkoxycarbonyl; C_1-C_5-halogenoalkoxycarbonyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylcarbonyloxy; C_1-C_5-halogenoalkylcarbonyloxy comprising up to 5 halogen atoms which can be the same or

different; C_1-C_5-alkylcarbonylamino; C_1-C_5-halogenoalkylcarbonylamino comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylaminocarbonyloxy; di-C_1-C_5-alkylaminocarbonyloxy; C_1-C_5-alkyloxycarbonyloxy; C_1-C_5-alkylsulphenyl; C_1-C_5-halogenoalkylsulphenyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylsulphinyl; C_1-C_5-halogenoalkylsulphinyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylsulphonyl; C_1-C_5-halogenoalkylsulphonyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5 alkoxyimino; (C_1-C_5-alkoxyimino)-C_1-C_5-alkyl; (C_1-C_5-alkenyloxyimino)-C_1-C_5-alkyl; (C_1-C_5-alkynyloxyimino)-C_1-C_5-alkyl; a (benzyloxyimino)-C_1-C5-alkyl; benzyloxy; benzylsulfanyl; benzylamino; naphtyl; halogenophenyl comprising up to 5 halogen atoms which can be the same or different; halogenophenoxy comprising up to 5 halogen atoms which can be the same or different.

More preferred compounds according to the invention are those wherein A is substituted by up to five groups R which can be the same or different and can be selected in the list consisting of: halogen atoms; cyano; C_1-C_5-alkyl; C_1-C_5-alkoxy; C_2-C_5-alkenyloxy; C_2-C_5-alkynyloxy; C_3-C_5-cycloalkyl; C_1-C_5-alkoxycarbonyl C_1-C_5-alkylsulfanyl; C_1-C_5–alkylamino; di(C_1-C_5-alkyl)amino; phenyl; phenoxy; benzyl; C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-halogenocycloalkyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-halogenoalkoxy comprising up to 5 halogen atoms which can be the same or different; halogenophenyl comprising up to 5 halogen atoms which can be the same or different and halogenophenoxy comprising up to 5 halogen atoms which can be the same or different.

Examples of preferred compounds according to the invention are compounds wherein A represents a five membered heterocycle, advantageously A can be selected in the list consisting of:

-a heterocycle of formula (A^1)

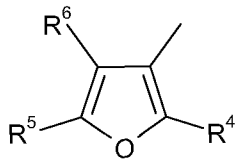


(A^1)

wherein :

R^1 to R^3 which can be the same or different represent a hydrogen atom; a halogen atom; a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;.

-a heterocycle of formula (A^2)



(A^2)

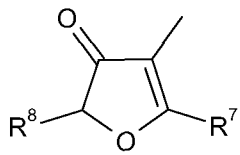
wherein :

R^4 represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

R^5 represents a hydrogen atom or C_1-C_5-alkyl;

R^6 represents a hydrogen or a halogen atom;

-a heterocycle of formula (A^3)

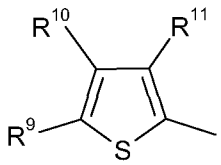


(A^3)

wherein :

R^7 and R^8 which can be the same or different represent a hydrogen atom or C_1-C_5-alkyl;

-a heterocycle of formula (A^4)



(A^4)

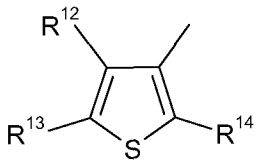
wherein :

R^9 represents a hydrogen; a halogen atom; a C_1-C_5-alkyl; an amino or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

R^{10} represents a hydrogen or a halogen atom;

R^{11} represents a hydrogen atom, a halogen atom, a C_1-C_5-alkyl or a C_1-C_5-alkoxy;

-a heterocycle of formula (A^5)



(A^5)

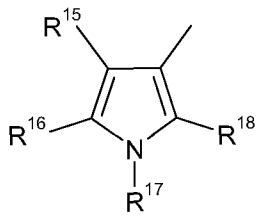
wherein :

R^{12} represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl; a C_1-C_5-alkoxy; an amino or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

R^{13} represents a hydrogen atom, a halogen atom or a C_1-C_5-alkyl;

R^{14} represents a hydrogen atom, a halogen atom; a C_1-C_5-alkyl; an amino or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

-a heterocycle of formula (A^6)



(A^6)

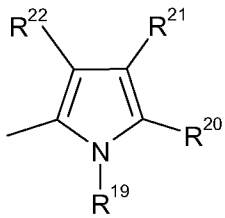
wherein :

R^{15} represents a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

R^{16} represents a hydrogen atom or C_1-C_5-alkoxycarbonyl;

R^{17} and R^{18} which can be the same or different represent a hydrogen atom or C_1-C_5-alkyl;

-a heterocycle of formula (A^7)



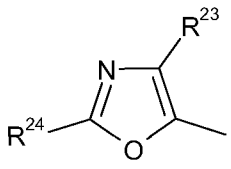
(A^7)

wherein :

R^{19} represents a C_1-C_5-alkyl;

R^{20} to R^{22} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

-a heterocycle of formula (A^8)



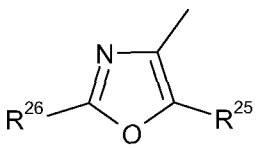
(A^8)

wherein :

R^{23} represents a hydrogen atom; a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

R^{24} represents a hydrogen atom or a C_1-C_5-alkyl;

-a heterocycle of formula (A^9)



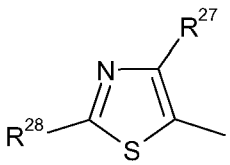
(A^9)

wherein :

R^{25} represents a hydrogen atom; a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

R^{26} represents a C_1-C_5-alkyl;

-a heterocycle of formula (A^{10})



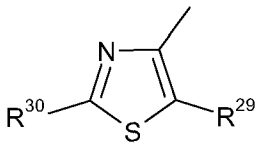
(A^{10})

wherein :

R^{27} represents a hydrogen atom; a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

R^{28} represents a hydrogen atom; a halogen atom, an amino; a C_1-C_5-alkyl or a phenyl;

-a heterocycle of formula (A^{11})



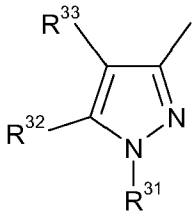
(A^{11})

wherein :

R^{29} represents a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

R^{30} represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl or an amino;

-a heterocycle of formula (A^{12})



(A^{12})

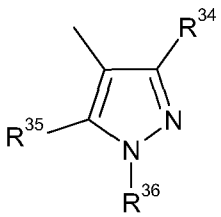
wherein :

R^{31} represents a C_1-C_5-alkyl or a phenyl;

R^{32} represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

R^{33} represents a hydrogen atom; a halogen atom; a nitro or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

-a heterocycle of formula (A^{13})



(A^{13})

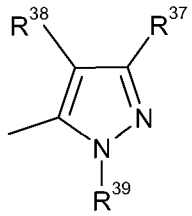
wherein :

R^{34} represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl; a C_3-C_5-cycloalkyl; a C_1-C_5-halogenoalkyl comprising up to halogen atoms which can be the same or different; a C_1-C_5-alkoxy; a C_2-C_5-alkynyloxy or a phenyl;

R^{35} represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl; a cyano; a C_1-C_5-alkoxy; a C_1-C_5-alkylthio; a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different; a C_1-C_5 –alkylamino; a di(C_1-C_5-alkyl)amino or a halogenophenoxy comprising up to 5 halogen atoms which can be the same or different;

R^{36} represents a hydrogen atom; a C_1-C_5-alkyl or a phenyl;

-a heterocycle of formula (A^{14})



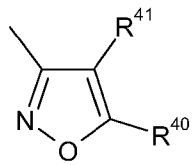
(A^{14})

wherein :

R^{37} and R^{38} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

R^{39} represents a C_1-C_5-alkyl;

-a heterocycle of formula (A^{15})

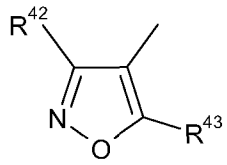


(A^{15})

wherein :

R^{40} and R^{41} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

-a heterocycle of formula (A^{16})



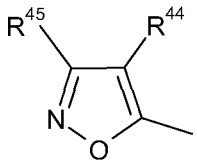
(A^{16})

wherein :

R^{42} represents a hydrogen atom or a C_1-C_5-alkyl;

R^{43} represents a hydrogen atom; a C_1-C_5-alkyl; a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different or an amino;

-a heterocycle of formula (A^{17})

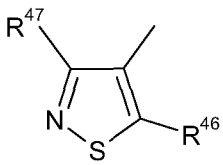


(A^{17})

wherein :

R^{44} and R^{45} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

-a heterocycle of formula (A^{18})



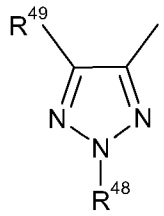
(A^{18})

wherein :

R^{46} represents a hydrogen atom; a C_1-C_5-alkyl; a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different or C_1-C_5-alkylsulfanyl;

R^{47} represents a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

-a heterocycle of formula (A^{19})



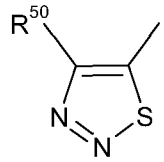
(A^{19})

wherein :

R^{48} represents a hydrogen atom or a halogenophenyl comprising up to 5 halogen atoms which can be the same or different;

R^{49} represents a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

-a heterocycle of formula (A^{20})

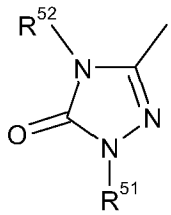


(A^{20})

wherein :

R^{50} represents a hydrogen atom or a C_1-C_5-alkyl;

-a heterocycle of formula (A^{21})

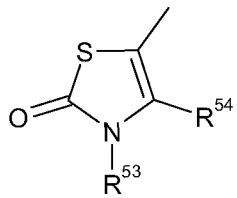


(A^{21})

wherein :

R^{51} and R^{52} which can be the same or different represent a C_1-C_5-alkyl;

-a heterocycle of formula (A^{22})



(A^{22})

wherein :

R^{53} represents a C_1-C_5-alkyl;

R^{54} represents a C_1-C_5-alkyl; a benzyl or a C_1-C_5-alkoxy-C_1-C_5-alkyl.

Examples of more preferred compounds according to the invention are compounds wherein A represents a five membered heterocycle of formula (A^{13})

wherein :

R^{34} represents a C_1-C_5-alkyl;

R^{35} represents a fluorine atom;

R^{36} represents a C_1-C_5-alkyl; or

wherein :

R^{34} represents a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms;

R^{35} represents a hydrogen or fluorine atom;

R^{36} represents a C_1-C_5-alkyl; or

wherein :

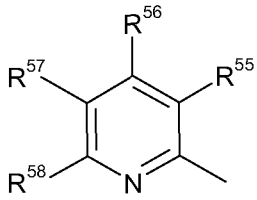
R^{34} represents a C_1-C_5-alkoxy;

R^{35} represents hydrogen;

R^{36} represents a C_1-C_5-alkyl.

Other examples of preferred compounds according to the invention are compounds wherein A represents a six membered heterocycle, advantageously A can be selected in the list consisting of:

- a heterocycle of formula (A^{23})



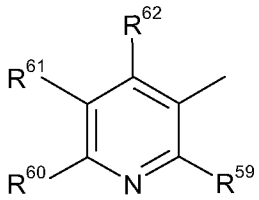
(A^{23})

wherein :

R^{55}, R^{56} and R^{58} which can be the same or different represent a hydrogen atom; a halogen atom or C_1-C_5-alkyl;

R^{57} represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

- a heterocycle of formula (A^{24})

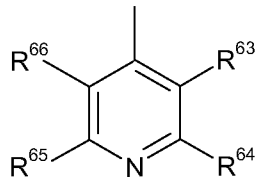


(A^{24})

wherein :

R^{59} to R^{62} which can be the same or different represent a hydrogen atom; a halogen atom, a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

- a heterocycle of formula (A^{25})

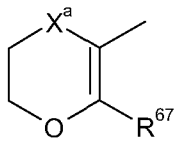


(A^{25})

wherein :

R^{63} to R^{66} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

- a heterocycle of formula (A^{26})



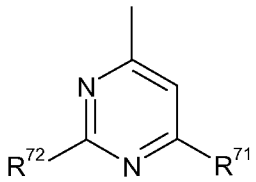
(A^{26})

wherein :

R^{67} represents a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms;

X^a represents a sulphur atom; -SO-; $-SO_2-$ or $-CH_2-$;

- a heterocycle of formula (A^{27})



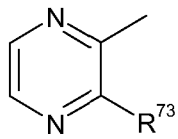
(A^{27})

wherein :

R^{71} represents a hydrogen atom or a C_1-C_5-alkyl;

R^{72} represents a hydrogen atom or a halogen atom.

- a heterocycle of formula (A^{28})



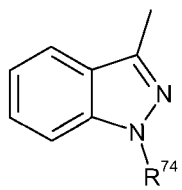
(A^{28})

wherein :

R^{73} represents hydrogen atom; a halogen atom or a C_1-C_5-alkyl.

Still other examples of preferred compounds according to the invention are compounds wherein A represents a fused heterocycle, advantageously A can be selected in the list consisting of:

- a heterocycle of formula (A^{29})

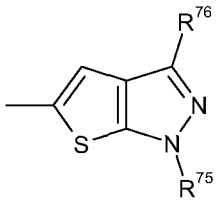


(A^{29})

wherein :

R^{74} represents a C_1-C_5-alkyl;

- a heterocycle of formula (A^{30})



(A^{30})

wherein :

R^{75} and R^{76} which can be the same or different represent a C_1-C_5-alkyl.

Still other preferred compounds of formula (I) according to the invention are those wherein L represents a phenyl substituted by up to five groups X which can be the same or different and can be selected in the list consisting of halogen atom; cyano; nitro; hydroxy; amino; sulfanyl; pentafluoro-λ^6-sulfanyl; formyl; formyloxy; formylamino; carboxy; carbamoyl; N-hydroxycarbamoyl; carbamate; (hydroxyimino)-C_1-C_6-alkyl; C_1-C_5-alkylamino; di-C_1-C_5-alkylamino; tri(C_1-C_5-alkyl)silyl; C_1-C_5-alkylsulfanyl; C_1-C_5-halogenoalkylsulfanyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkyl; C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkenyl; C_2-C_5-halogenoalkenyl comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkynyl; C_2-C_5-halogenoalkynyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkoxy; C_1-C_5-halogenoalkoxy comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkenyloxy; C_2-C_5-halogenoalkenyloxy comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkynyloxy; C_2-C_5-halogenoalkynyloxy comprising up to 5 halogen atoms which can be the same or different; C_3-C_7-cycloalkyl; C_3-C_7-halogenocycloalkyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylcarbonyl; C_1-C_5-halogenoalkylcarbonyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylcarbamoyl; di-C_1-C_5-alkylcarbamoyl; N-C_1-C_5-alkyloxycarbamoyl; C_1-C_5-alkoxycarbamoyl; N-C_1-C_5-alkyl-C_1-C_5-alkoxycarbamoyl; C_1-C_5-alkoxycarbonyl; C_1-C_5-halogenoalkoxycarbonyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylcarbonyloxy; C_1-C_5-halogenoalkylcarbonyloxy comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylcarbonylamino; C_1-C_5-halogenoalkylcarbonylamino comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylaminocarbonyloxy; di-C_1-C_5-alkylaminocarbonyloxy; C_1-C_5-alkyloxycarbonyloxy; C_1-C_5-alkylsulphenyl; C_1-C_5-halogenoalkylsulphenyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylsulphinyl; C_1-C_5-halogenoalkylsulphinyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylsulphonyl; C_1-C_5-halogenoalkylsulphonyl comprising up to 5 halogen atoms which

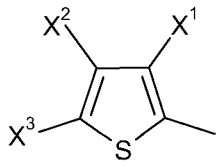
can be the same or different; C_1-C_6-alkoxyimino; (C_1-C_6-alkoxyimino)-C_1-C_6-alkyl; (C_1-C_6-alkenyloxyimino)-C_1-C_6-alkyl; (C_1-C_6-alkynyloxyimino)-C_1-C_6-alkyl; (benzyloxyimino)-C_1-C_6-alkyl; benzylsulfanyl; benzylamino; naphtyl; phenyl which can be substituted by up to five groups Q which can be the same or different; phenoxy which can be substituted by up to five groups Q which can be the same or different; benzyloxy which can be substituted by up to five groups Q which can be the same or different; phenylamino which can be substituted by up to five groups Q which can be the same or different, phenylsulfanyl which can be substituted by up to five groups Q which can be the same or different; phenylmethylene which can be substituted by up to five groups Q which can be the same or different; pyridinyl which can be substituted by up to four groups Q which can be the same or different and pyridinyloxy which can be substituted by up to four groups Q which can be the same or different.

More preferred compounds of formula (I) according to the invention are those wherein L represents a phenyl substituted by up to five groups X which can be the same or different and are selected in the list consisting of halogen atom; cyano; nitro; C_1-C_5-alkyl; C_2-C_5-alkenyl; C_2-C_5-alkynyl; C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkoxy; C_2-C_5-alkenyloxy; C_2-C_5-alkynyloxy; C_1-C_5-halogenoalkoxy comprising up to 5 halogen atoms which can be the same or different; tri(C_1-C_5-alkyl)silyl; naphtyl; phenyl which can be substituted by up to five groups Q which can be the same or different; phenoxy which can be substituted by up to five groups Q which can be the same or different; phenylsulfanyl which can be substituted by up to five groups Q which can be the same or different; pyridinyl which can be substituted by up to four groups Q which can be the same or different and pyridinyloxy which can be substituted by up to four groups Q which can be the same or different.

Still more preferred compounds of formula (I) according to the invention are those wherein L represents a 5-, 6- or 7-membered aromatic or non aromatic heterocycle substituted by up to five groups X which can be the same or different and are selected in the list consisting of halogen atom; cyano; nitro; C_1-C_5-alkyl; C_2-C_5-alkenyl; C_2-C_5-alkynyl; C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkoxy; C_2-C_5-alkenyloxy; C_2-C_5-alkynyloxy; C_1-C_5-halogenoalkoxy comprising up to 5 halogen atoms which can be the same or different; tri(C_1-C_5-alkyl)silyl; phenyl which can be substituted by up to five groups Q which can be the same or different and phenoxy which can be substituted by up to five groups Q which can be the same or different.

Examples of preferred compounds according to the invention are compounds wherein L represents a five membered heterocycle, advantageously L can be selected in the list consisting of:

- a heterocycle of formula (L^1):

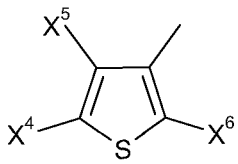


(L^1)

wherein :

X^1 to X^3 which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5-alkyl.

- a heterocycle of formula (L^2)



(L^2)

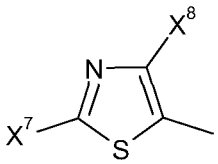
wherein :

X^4 represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl or a C_1-C_5- alkyloxycarbonyl;

X^5 represents a hydrogen atom or a halogen atom;

X^6 represents a hydrogen atom, a halogen atom or a C_1-C_5-alkyl;

- a heterocycle of formula (L^3)



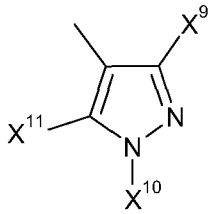
(L^3)

wherein :

X^7 represents a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

X^8 represents a hydrogen atom or a C_1-C_5-alkyl.

- a heterocycle of formula (L^4)



(L^4)

wherein :

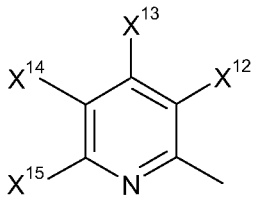
X^9 represents a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

X^{10} represents a C_1-C_5-alkyl or a phenyl;

X^{11} represents a hydrogen atom; a halogen atom or a C_1-C_5-alkyl.

Other examples of preferred compounds according to the invention are compounds wherein L represents a six membered heterocycle, advantageously L can be selected in the list consisting of:

- a heterocycle of formula (L^5)



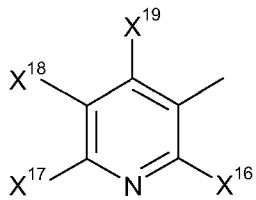
(L^5)

wherein :

X^{12}, X^{13} and X^{15} which can be the same or different represent a hydrogen atom or a halogen atom;

X^{14} represents a hydrogen atom, a halogen atom or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

- a heterocycle of formula (L^6)



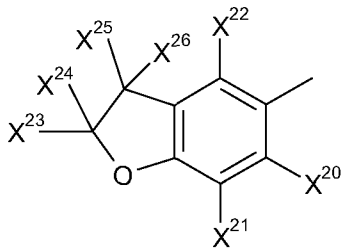
(L^6)

wherein :

X^{16} to X^{19} which can be the same or different represent a hydrogen; a halogen atom or a C_1-C_5-alkyl.

Still other examples of preferred compounds according to the invention are compounds wherein L represents a fused heterocycle, advantageously L can be selected in the list consisting of:

- a heterocycle of formula (L^7)



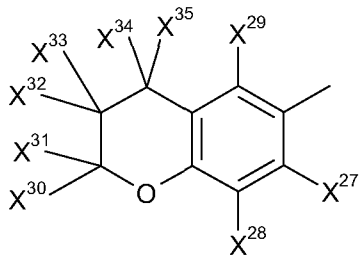
(L^7)

wherein :

X^{20} to X^{22} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5 alkyl;

X^{23} to X^{26} which can be the same or different represent a hydrogen atom or a C_1-C_5 alkyl;

- a heterocycle of formula (L^8)



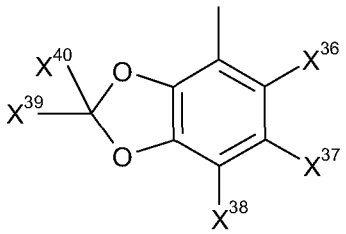
(L^8)

wherein :

X^{27} to X^{29} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5 alkyl;

X^{30} to X^{35} which can be the same or different represent a hydrogen atom or a C_1-C_5 alkyl;

- a heterocycle of formula (L^9)



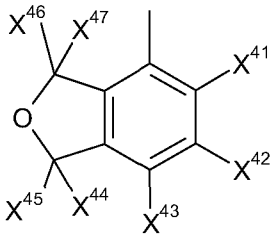
(L^9)

wherein :

X^{36} to X^{38} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5 alkyl;

X^{39} and X^{40} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5 alkyl;

- a heterocycle of formula (L^{10})



(L^{10})

wherein :

X^{41} to X^{43} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5 alkyl;

X^{44} to X^{47} which can be the same or different represent a hydrogen atom or a C_1-C_5 alkyl.

Still other preferred compounds of formula (I) according to the invention are those wherein Q can be selected in the list consisting of: halogen atom; cyano; nitro; C_1-C_5-alkyl; C_1-C_5-alkoxy; C_1-C_5-alkylsulfanyl; benzyloxy; C_1-C_5-alkylamino; di-C_1-C_5-alkylamino; C_1-C_5-halogenoalkyl comprising 1 to 5 halogen atoms which can be the same or different; C_1-C_5-halogenoalkoxy comprising 1 to 5 halogen atoms which can be the same or different and tri(C_1-C_5)alkylsilyl.

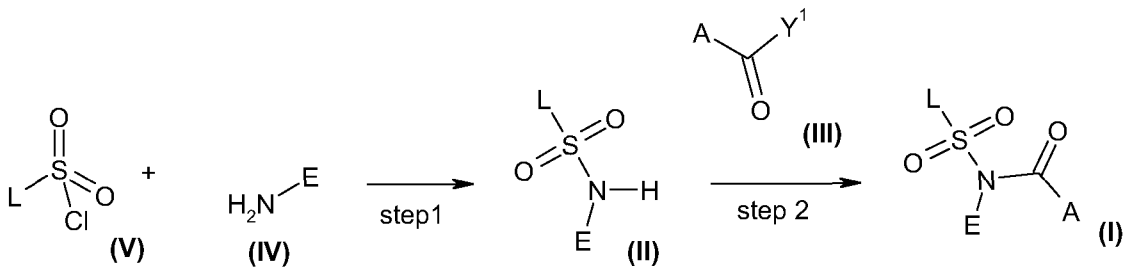
The above mentioned preferences with regard to the substituents of the compounds according to the invention can be combined in various manners. These combinations of preferred features thus provide sub-classes of compounds according to the invention. Examples of such sub-classes of preferred compounds according to the invention can combined:

- preferred features of E with preferred features of A;
- preferred features of E with preferred features of L;
- preferred features of A with preferred features of L;
- preferred features of L with preferred features of Q;
- preferred features of E with preferred features of A and L;
- preferred features of E with preferred features of L and Q;
- preferred features of A with preferred features of L and Q;
- preferred features of E with preferred features of A, L and Q.

In these combinations of preferred features of the substituents of the compounds according to the invention, the said preferred features can also be selected among the more preferred features of each of E, A, L and Q so as to form most preferred subclasses of compounds according to the invention.

The present invention also relates to a process for the preparation of the compounds of formula (I).

Thus according to a further aspect according to the invention, there is provided a process P1 for the preparation of compound of formula (I) and illustrated according to the following reaction scheme :



Process P1

wherein

A, E and L are as defined above;

Y^1 represents a halogen atom or a hydroxyl group.

In process P1, step 1 may be performed in the presence of an acid binder and in the presence of a solvent.

In process P1, step 2 may be performed in the presence of a solvent, in the presence of an acid binder and in the presence of a condensing agent .

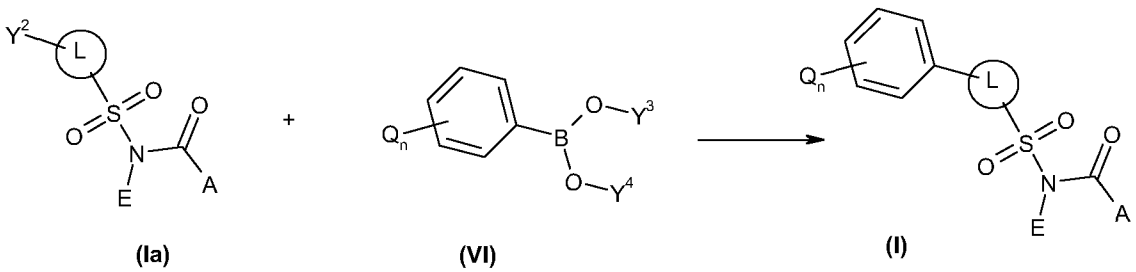
Sulfonylchloride derivatives of formula (V) are known or can be prepared by known processes (J. Med. Chem., **1983**, p1181 ; JP11292865 ; Bioorg. Med. Chem., **2002**, p3649-3661).

Amine derivatives of formula (IV) are also known or can be prepared by known processes (J.Org. Chem., **1998**, p100402-10044 ; J.Org. Chem., **2003**, p7134-7136).

Carboxylic acids, acid chlorides, acid bromides or acid fluorides of formula (III) are known or can be prepared by known processes (WO9311117, p16-20 ; Nucleosides & Nucleotides, **1987**, p737-759 ; Bioorg. Med. Chem. Lett., **2002**, p2105-2108).

According to the invention, compounds of formula (Ia) are compounds of formula (I) wherein L is substituted by a halogen atom. These compounds o f formula (Ia) can be prepared according to process P1.

The present invention also provides a process P2 which permits to prepare compounds of formula (I) starting from compounds of formula (Ia).
Process P2 can be illustrated according to the following reaction scheme :



(Ia) (VI) (I)

Process P2

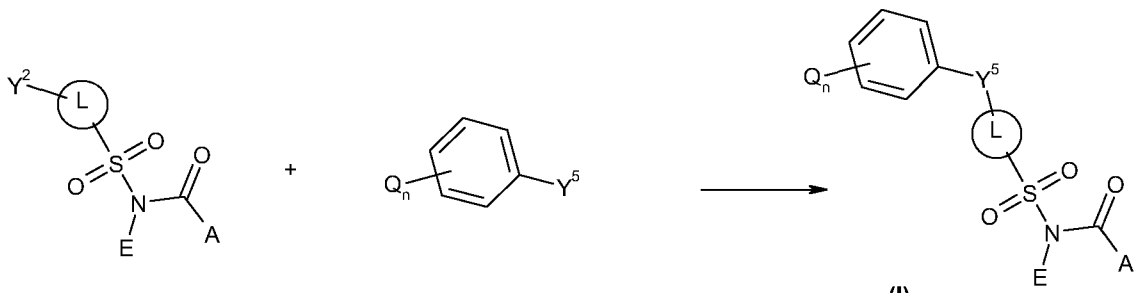
wherein
A, E, L and Q are as defined above;
Y^2 is halogen atom;
Y^3 and Y^4 each represent hydrogen or together represent tetramethylethylene;
Q is as defined above;
n is 0, 1, 2, 3, or 5.

Process P2 may be performed in the presence of a catalyst, in the presence of an acid binder and in the presence of a solvent.

Boronic acid derivatives of formula (VI) are known compounds.

The present invention also provides a process P3 which also permits to prepare compounds of formula (I) starting from compounds of formula (Ia).

Process P3 can be illustrated according to the following reaction scheme :



(Ia) (VII) (I)

Process P3

wherein

A, E, L and Q are as defined above;

Y^2 is halogen atom;

Y^5 is sulphur, oxygen or C_1-C_5-alkylamino;

n is 0, 1, 2, 3, or 5.

Process P3 may also be performed in the presence of a catalyst in the presence of an acid binder and in the presence of a solvent.

Phenol, thiophenol or aniline derivatives of formula (VII) are known compounds.

Suitable acid binders for carrying out the processes P1, P2 and P3 according to the invention can be inorganic and organic bases which are customary for such reactions. Preference is given to using alkaline earth metal or alkali metal hydroxides, such as sodium hydroxide, calcium hydroxide, potassium hydroxide or other ammonium hydroxide derivatives; alkali metal carbonates, such as sodium carbonate, potassium carbonate, potassium bicarbonate, sodium bicarbonate; alkali metal or alkaline earth metal acetates, such as sodium acetate, potassium acetate, calcium acetate; and also tertiary amines, such as trimethylamine, triethylamine, tributylamine, N,N-dimethylaniline, pyridine, N-methylpiperidine, N,N-dimethylaminopyridine, diazabicyclooctane (DABCO), diazabicyclononene (DBN) or diazabicycloundecene (DBU).

It is also possible to work in the absence of any additional acid binder or to employ an excess of the amine derivative, so that it simultaneously acts as an acid binder.

Suitable solvents for carrying out the processes P1, P2 and P3 according to the invention can be customary inert organic solvents. Preference is given to using optionally halogen atomated aliphatic, alicyclic or aromatic hydrocarbons, such as petroleum ether, hexane, heptane, cyclohexane, methylcyclohexane, benzene, toluene, xylene or decalin; chlorobenzene, dichlorobenzene, dichloromethane, chloroform, carbon tetrachloride, dichlorethane or trichlorethane; ethers, such as diethyl ether, diisopropyl ether, methyl t-butyl ether, methyl t-amyl ether, dioxane, tetrahydrofuran, 1,2-dimethoxyethane, 1,2-diethoxyethane or anisole; nitriles, such as acetonitrile, propionitrile, n- or i-butyronitrile or benzonitrile; amides, such as N,N-dimethylformamide, N,N-dimethylacetamide, N-methylformanilide, N-methylpyrrolidone or hexamethylphosphoric triamide; esters, such as methyl acetate or ethyl acetate, sulphoxides, such as dimethyl sulphoxide, or sulphones, such as sulpholane.

Processes P2 and P3 according to the invention can be carried out in the presence of a catalyst, such as a metal salt or complex. Suitable metal derivatives for this purpose are based on copper or palladium. Suitable metal salts or complexes for this purpose are copper chloride, copper iodide, copper oxide, palladium chloride, palladium acetate, tetrakis(triphenylphosphine)palladium, bis(triphenylphosphine)palladium dichloride or 1,1'-bis(diphenylphosphino) ferrocenepalladium(II) chloride.
It is also possible to generate a palladium complex in the reaction mixture by separate addition to the reaction of a palladium salt and a complex ligand, such as triethylphosphine, tri-tert-butylphosphine, tricyclohexylphosphine, 2-(dicyclohexylphosphine)biphenyl, 2-(di-tert-butylphosphine)biphenyl, 2-(dicyclohexylphosphine)-2'-(N,N-dimethylamino)biphenyl, triphenylphosphine, tris-(o-tolyl)phosphine, sodium 3-(diphenylphosphino)benzenesulphonate, tris-2-(methoxyphenyl)-phosphine, 2,2'-bis(diphenylphosphine)-1,1'-binaphthyl, 1,4-bis(diphenylphosphine)butane, 1,2-bis(diphenylphosphine)ethane, 1,4-bis(dicyclohexylphosphine)butane, 1,2-bis(dicyclohexylphosphine)ethane, 2-(dicyclohexylphosphine)-2'-(N,N-dimethylamino)-biphenyl, bis(diphenylphosphino)ferrocene or tris-(2,4-tert-butylphenyl)phosphite.

When carrying out the processes P1, P2 and P3 according to the invention, the reaction temperatures can be varied within a relatively wide range. In general, these processes are carried out at temperatures from 0°C to 160°C, preferably from 10°C to 120°C. A way to control

the temperature for the processes according to the invention, notably process P3, is to use micro-wave technology.

Processes P1, P2 and P3 according to the invention are generally carried out under atmospheric pressure. It is also possible to operate under elevated or reduced pressure.

When carrying out step 1 of process P1 according to the invention, 1 mol or an excess of the amine derivative of formula (IV) and from 1 to 3 mol of acid binder can be employed per mole of sulfonyl chloride of formula (V).

It is also possible to employ the reaction components in other ratios. Work-up is carried out by known methods.

In general, the reaction mixture is concentrated under reduced pressure. The residue that remains can be freed by known methods, such as chromatography or recrystallization, from any impurities that may still be present.

When carrying out step 2 of process P1 according to the invention, 1 mol or an excess of the acid halide derivative of formula (III) and from 1 to 3 mol of acid binder can be employed per mole of sulfonamide derivative of formula (II).

It is also possible to employ the reaction components in other ratios.

Work-up is carried out by known methods.

In general, the reaction mixture is treated with water and the organic phase is separated off and, after drying, concentrated under reduced pressure. The residue that remains can, if appropriate, be freed by known methods, such as chromatography or recrystallization, from any impurities that may still be present.

When carrying out process P2 according to the invention, 1 mol or an excess of the boronic acid derivative of formula (VI) and from 1 to 5 mol of acid binder and from 0.5 to 5 mol percent of a catalyst can be employed per mole of sulfonylamide of formula (Ia).

It is also possible to employ the reaction components in other ratios. Work-up is carried out by known methods.

In general, the reaction mixture is treated with water and the precipitate is separated off and dried. The residue that remains can, if appropriate, be freed by known methods, such as chromatography or recrystallization, from any impurities that may still be present.

When carrying out process P3 according to the invention, 1 mol or an excess of the phenol, thiophenol or aniline derivative of formula (VII) and from 1 to 10 mol of acid binder and from 0.5

to 5 mol percent of a catalyst can be employed per mole of sulfonylamide derivative of formula (Ia).

It is also possible to employ the reaction components in other ratios. Work-up is carried out by known methods.

In general, the reaction mixture is concentrated under reduced pressure. The residue that remains can, if appropriate, be freed by known methods, such as chromatography or recrystallization, from any impurities that may still be present.

Compounds according to the invention can be prepared according to the above described processes. It will nevertheless be understood that, on the basis of his general knowledge and of available publications, the skilled worker will be able to adapt these processes according to the specifics of each of the compounds which it is desired to synthesise.

In a further aspect, the present invention also relates to a fungicide composition comprising an effective and non-phytotoxic amount of an active compound of formula (I).

The expression "effective and non-phytotoxic amount" means an amount of composition according to the invention which is sufficient to control or destroy the fungi present or liable to appear on the crops, and which does not entail any appreciable symptom of phytotoxicity for the said crops. Such an amount can vary within a wide range depending on the fungus to be controlled, the type of crop, the climatic conditions and the compounds included in the fungicide composition according to the invention.

This amount can be determined by systematic field trials, which are within the capabilities of a person skilled in the art.

Thus, according to the invention, there is provided a fungicide composition comprising, as an active ingredient, an effective amount of a compound of formula (I). as defined above and an agriculturally acceptable support, carrier or filler.

According to the invention, the term "support" denotes a natural or synthetic, organic or inorganic compound with which the active compound of formula (I) is combined or associated to make it easier to apply, notably to the parts of the plant. This support is thus generally inert and should be agriculturally acceptable. The support may be a solid or a liquid. Examples of suitable supports include clays, natural or synthetic silicates, silica, resins, waxes, solid fertilisers, water, alcohols, in particular butanol, organic solvents, mineral and plant oils and derivatives thereof. Mixtures of such supports may also be used.

The composition according to the invention may also comprise additional components. In particular, the composition may further comprise a surfactant. The surfactant can be an emulsifier, a dispersing agent or a wetting agent of ionic or non-ionic type or a mixture of such surfactants. Mention may be made, for example, of polyacrylic acid salts, lignosulphonic acid salts, phenolsulphonic or naphthalenesulphonic acid salts, polycondensates of ethylene oxide with fatty alcohols or with fatty acids or with fatty amines, substituted phenols (in particular alkylphenols or arylphenols), salts of sulphosuccinic acid esters, taurine derivatives (in particular alkyl taurates), phosphoric esters of polyoxyethylated alcohols or phenols, fatty acid esters of polyols, and derivatives of the above compounds containing sulphate, sulphonate and phosphate functions. The presence of at least one surfactant is generally essential when the active compound and/or the inert support are water-insoluble and when the vector agent for the application is water. Preferably, surfactant content may be comprised from 5% to 40% by weight of the composition.

Optionally, additional components may also be included, e.g. protective colloids, adhesives, thickeners, thixotropic agents, penetration agents, stabilisers, sequestering agents. More generally, the active compounds can be combined with any solid or liquid additive, which complies with the usual formulation techniques.

In general, the composition according to the invention may contain from 0.05 to 99% by weight of active compound, preferably 10 to 70% by weight.

Compositions according to the invention can be used in various forms such as aerosol dispenser, capsule suspension, cold fogging concentrate, dustable powder, emulsifiable concentrate, emulsion oil in water, emulsion water in oil, encapsulated granule, fine granule, flowable concentrate for seed treatment, gas (under pressure),gas generating product, granule, hot fogging concentrate, macrogranule, microgranule, oil dispersible powder, oil miscible flowable concentrate, oil miscible liquid, paste, plant rodlet, powder for dry seed treatment, seed coated with a pesticide, soluble concentrate, soluble powder, solution for seed treatment, suspension concentrate (flowable concentrate), ultra low volume (ULV) liquid, ultra low volume (ULV) suspension, water dispersible granules or tablets, water dispersible powder for slurry treatment, water soluble granules or tablets, water soluble powder for seed treatment and wettable powder.

These compositions include not only compositions which are ready to be applied to the plant or seed to be treated by means of a suitable device, such as a spraying or dusting device, but also concentrated commercial compositions which must be diluted before application to the crop.

The compounds according to the invention can also be mixed with one or more insecticide, fungicide, bactericide, attractant, acaricide or pheromone active substance or other compounds with biological activity. The mixtures thus obtained have a broadened spectrum of activity.

The mixtures with other fungicide compounds are particularly advantageous. Examples of suitable fungicide mixing partners can be selected in the list consisting of

B1) a compound capable to inhibit the nucleic acid synthesis like benalaxyl, benalaxyl-M, bupirimate, chiralaxyl, clozylacon, dimethirimol, ethirimol, furalaxyl, hymexazol, metalaxyl-M, ofurace, oxadixyl, oxolinic acid ;

B2) a compound capable to inhibit the mitosis and cell division like benomyl, carbendazim, diethofencarb, fuberidazole, pencycuron, thiabendazole thiophanate-methyl, zoxamide;

B3) a compound capable to inhibit the respiration for example

as CI-respiration inhibitor like diflumetorim;

as CII-respiration inhibitor like boscalid, carboxin, fenfuram, flutolanil, furametpyr, mepronil, oxycarboxine, penthiopyrad, thifluzamide;

as CIII-respiration inhibitor like azoxystrobin, cyazofamid, dimoxystrobin, enestrobin, famoxadone, fenamidone, fluoxastrobin, kresoxim-methyl, metominostrobin, orysastrobin, pyraclostrobin, picoxystrobin, trifloxystrobin;

B4) a compound capable of to act as an uncoupler like dinocap, fluazinam;

B5) a compound capable to inhibit ATP production like fentin acetate, fentin chloride, fentin hydroxide, silthiofam;

B6) a compound capable to inhibit AA and protein biosynthesis like andoprim, blasticidin-S, cyprodinil, kasugamycin, kasugamycin hydrochloride hydrate, mepanipyrim, pyrimethanil;

B7) a compound capable to inhibit the signal transduction like fenpiclonil, fludioxonil, quinoxyfen;

B8) a compound capable to inhibit lipid and membrane synthesis like chlozolinate, iprodione, procymidone, vinclozolin, pyrazophos, edifenphos, iprobenfos (IBP), isoprothiolane, tolclofos-methyl, biphenyl, iodocarb, propamocarb, propamocarb-hydrochloride;

B9) a compound capable to inhibit ergosterol biosynthesis like fenhexamid, azaconazole, bitertanol, bromuconazole, cyproconazole, diclobutrazole, difenoconazole, diniconazole, diniconazole-M, epoxiconazole, etaconazole, fenbuconazole, fluquinconazole, flusilazole, flutriafol, furconazole, furconazole-cis, hexaconazole, imibenconazole, ipconazole, metconazole, myclobutanil, paclobutrazol, penconazole, propiconazole, prothioconazole, simeconazole, tebuconazole, tetraconazole, triadimefon, triadimenol, triticonazole, uniconazole, voriconazole, imazalil, imazalil sulfate, oxpoconazole, fenarimol, flurprimidol, nuarimol, pyrifenox, triforine, pefurazoate, prochloraz, triflumizole, viniconazole, aldimorph, dodemorph, dodemorph acetate, fenpropimorph, tridemorph, fenpropidin, spiroxamine, naftifine, pyributicarb, terbinafine;

B10) a compound capable to inhibit cell wall synthesis like benthiavalicarb, bialaphos, dimethomorph, flumorph, iprovalicarb, polyoxins, polyoxorim, validamycin A;

B11) a compound capable to inhibit melanine biosynthesis like carpropamid, diclocymet, fenoxanil, phtalide, pyroquilon, tricyclazole;

B12) a compound capable to induce a host defence like acibenzolar-S-methyl, probenazole, tiadinil;

B13) a compound capable to have a multisite action like captafol, captan, chlorothalonil, copper preparations such as copper hydroxide, copper naphthenate, copper oxychloride, copper sulphate, copper oxide, oxine-copper and Bordeaux mixture, dichlofluanid, dithianon, dodine, dodine free base, ferbam, fluorofolpet, folpet, guazatine, guazatine acetate, iminoctadine, iminoctadine albesilate, iminoctadine triacetate, mancopper, mancozeb, maneb, metiram, metiram zinc, propineb, sulphur and sulphur preparations including calcium polysulphide, thiram, tolylfluanid, zineb, ziram;

B14) a compound selected in the list consisting of: amibromdole, benthiazole, bethoxazin, capsimycin, carvone, chinomethionat, chloropicrin, cufraneb, cyflufenamid, cymoxanil, dazomet, debacarb, diclomezine, dichlorophen, dicloran, difenzoquat, difenzoquat methylsulphate, diphenylamine, ethaboxam, ferimzone, flumetover, flusulfamide, fosetyl-aluminium, fosetyl-calcium, fosetyl-sodium, fluopicolide, fluoroimide, hexachlorobenzene, 8-hydroxyquinoline sulfate, irumamycin, methasulphocarb, metrafenone, methyl isothiocyanate,

mildiomycin, natamycin, nickel dimethyldithiocarbamate, nitrothal-isopropyl,octhilinone, oxamocarb, oxyfenthiin, pentachlorophenol and salts, 2-phenylphenol and salts, phosphorous acid and its salts, piperalin, propanosine–sodium, proquinazid, pyrrolnitrine, quintozene, tecloftalam, tecnazene, triazoxide, trichlamide, zarilamid and 2,3,5,6-tetrachloro-4-(methylsulfonyl)-pyridine, N-(4-Chloro-2-nitrophenyl)-N-ethyl-4-methyl-benzenesulfonamide, 2-amino-4-methyl-N-phenyl-5-thiazolecarboxamide, 2-chloro-N-(2,3-dihydro-1,1,3-trimethyl-1H-inden-4-yl)-3-pyridincarboxamide, 3-[5-(4-chlorophenyl)-2,3-dimethylisoxazolidin-3-yl]pyridine, cis-1-(4-chlorophenyl)-2-(1H-1,2,4-triazole-1-yl)-cycloheptanol, methyl 1-(2,3-dihydro-2,2-dimethyl-1H-inden-1-yl)-1H-imidazole-5-carboxylate, 3,4,5-trichloro-2,6-pyridinedicarbonitrile, Methyl 2-[[[cyclopropyl[(4-methoxyphenyl)imino]methyl]thio]methyl]-.alpha.-(methoxymethylene)-benzeneacetate, 4-Chloro-alpha-propynyloxy-N-[2-[3-methoxy-4-(2-propynyloxy)phenyl]ethyl]-benzeneacetamide, (2S)-N-[2-[4-[[3-(4-chlorophenyl)-2-propynyl]oxy]-3-methoxyphenyl]ethyl]- 3-methyl-2-[(methylsulfonyl)amino]-butanamide, 5-chloro-7-(4-methylpiperidin-1-yl)-6-(2,4,6-trifluorophenyl)[1,2,4]triazolo[1,5-a]pyrimidine, 5-chloro-6-(2,4,6-trifluorophenyl)-N-[(1R)-1,2,2-trimethylpropyl][1,2,4]triazolo[1,5-a]pyrimidin-7-amine, 5-chloro-N-[(1R)-1,2-dimethylpropyl]-6-(2,4,6-trifluorophenyl)[1,2,4]triazolo[1,5-a]pyrimidin-7-amine, N-[1-(5-bromo-3-chloropyridin-2-yl)ethyl]-2,4-dichloronicotinamide, N-(5-bromo-3-chloropyridin-2-yl)methyl-2,4-dichloronicotinamide, 2-butoxy-6-iodo-3-propyl-benzopyranon-4-one, N-{(Z)-[(cyclopropylmethoxy)imino][6-(difluoromethoxy)-2,3-difluorophenyl]methyl}-2-phenylacetamide, N-(3-ethyl-3,5,5-trimethyl-cyclohexyl)-3-formylamino-2-hydroxy-benzamide, 2-[[[[1-[3(1Fluoro-2-phenylethyl)oxy]phenyl]ethylidene]amino]oxy]methyl]-alpha-(methoxyimino)-N-methyl-alphaE-benzeneacetamide, N-{2-[3-chloro-5-(trifluoromethyl)pyridin-2-yl]ethyl}-2-(trifluoromethyl)benzamide, N-(3',4'-dichloro-5-fluorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide, 2-(2-{[6-(3-chloro-2-methylphenoxy)-5-fluoropyrimidin-4-yl]oxy}phenyl)-2-(methoxyimino)-N-methylacetamide , 1-[(4-methoxyphenoxy)methyl]-2,2-dimethylpropyl-1H-imidazole-1- carboxylic acid, O-[1-[(4-methoxyphenoxy)methyl]-2,2-dimethylpropyl]-1H-imidazole- 1- carbothioic acid.

The composition according to the invention comprising a mixture with a bactericide compound may also be particularly advantageous. Examples of suitable bactericide mixing partners may be selected in the list consisting of bronopol, dichlorophen, nitrapyrin, nickel dimethyldithiocarbamate, kasugamycin, octhilinone, furancarboxylic acid, oxytetracycline, probenazole, streptomycin, tecloftalam, copper sulphate and other copper preparations.

The compound of formula (I) and the fungicide composition according to the invention can be used to curatively or preventively control phytopathogenic fungi of plants and crops. Thus, according to a further aspect according to the invention, there is provided a method for curatively or preventively controlling phytopathogenic fungi of plants or crops characterised in that a compound of formula (I) or a fungicide composition according to the invention is applied to the seed, the plant or to the fruit of the plant or to the soil wherein the plant is growing or wherein it is desired to grow.

The method of treatment according to the invention may also be useful to treat propagation material such as tubers or rhizomes, but also seeds, seedlings or seedlings pricking out and plants or plants pricking out. This method of treatment can also be useful to treat roots. The method of treatment according to the invention can also be useful to treat the overground parts of the plant such as trunks, stems or stalks, leaves, flowers and fruit of the concerned plant.

Among the plants that can be protected by the method according to the invention, mention may be made of cotton; flax; vine; fruit or vegetable crops such as *Rosaceae sp.* (for instance pip fruit such as apples and pears, but also stone fruit such as apricots, almonds and peaches), *Ribesioidae sp.*, *Juglandaceae sp.*, *Betulaceae sp.*, *Anacardiaceae sp.*, *Fagaceae sp.*, *Moraceae sp.*, *Oleaceae sp.*, *Actinidaceae sp.*, *Lauraceae sp.*, *Musaceae sp.* (for instance banana trees and plantins), *Rubiaceae sp.*, *Theaceae sp.*, *Sterculiceae sp.*, *Rutaceae sp.* (for instance lemons, oranges and grapefruit); leguminous crops such as *Solanaceae sp.* (for instance tomatoes), *Liliaceae sp.*, *Asteraceae sp.* (for instance lettuces), *Umbelliferae sp.*, *Cruciferae sp.*, *Chenopodiaceae sp.*, *Cucurbitaceae sp.*, *Papilionaceae sp.* (for instance peas), *Rosaceae sp.* (for instance strawberries); big crops such as *Graminae sp.* (for instance maize, lawn or cereals such as wheat, rice, barley and triticale), *Asteraceae sp.* (for instance sunflower), *Cruciferae sp.* (for instance colza), *Papilionaceae sp.* (for instance soja), *Solanaceae sp.* (for instance potatoes), *Chenopodiaceae sp.* (for instance beetroots); horticultural and forest crops; as well as genetically modified homologues of these crops.

Among the plants or crops and the possible diseases of these plants or crops protected by the method according to the invention, mention may be made of :

- wheat, as regards controlling the following seed diseases: fusaria (*Microdochium nivale* and *Fusarium roseum*), stinking smut (*Tilletia caries, Tilletia controversa* or *Tilletia indica*), septoria disease (*Septoria nodorum*) and loose smut;

- wheat, as regards controlling the following diseases of the aerial parts of the plant: cereal eyespot (*Tapesia yallundae, Tapesia acuiformis*), take-all (*Gaeumannomyces graminis*), foot blight

(*F. culmorum, F. graminearum*), black speck (*Rhizoctonia cerealis*), powdery mildew (*Erysiphe graminis forma specie tritici*), rusts (*Puccinia striiformis* and *Puccinia recondita*) and septoria diseases (*Septoria tritici* and *Septoria nodorum*);

- wheat and barley, as regards controlling bacterial and viral diseases, for example barley yellow mosaic;

- barley, as regards controlling the following seed diseases: net blotch (*Pyrenophora graminea, Pyrenophora teres* and *Cochliobolus sativus*), loose smut (*Ustilago nuda*) and fusaria (*Microdochium nivale* and *Fusarium roseum*);

- barley, as regards controlling the following diseases of the aerial parts of the plant: cereal eyespot (*Tapesia yallundae*), net blotch (*Pyrenophora teres* and *Cochliobolus sativus*), powdery mildew (*Erysiphe graminis forma specie hordei*), dwarf leaf rust (*Puccinia hordei*) and leaf blotch (*Rhynchosporium secalis*);

- potato, as regards controlling tuber diseases (in particular *Helminthosporium solani, Phoma tuberosa, Rhizoctonia solani, Fusarium solani*), mildew (*Phytopthora infestans*) and certain viruses (virus Y);

- potato, as regards controlling the following foliage diseases: early blight (*Alternaria solani*), mildew (*Phytophthora infestans*);

- cotton, as regards controlling the following diseases of young plants grown from seeds: damping-off and collar rot (*Rhizoctonia solani, Fusarium oxysporum*) and black root rot (*Thielaviopsis basicola*);

- protein yielding crops, for example peas, as regards controlling the following seed diseases: anthracnose (*Ascochyta pisi, Mycosphaerella pinodes*), fusaria (*Fusarium oxysporum*), grey mould (*Botrytis cinerea*) and mildew (*Peronospora pisi*);

- oil-bearing crops, for example rape, as regards controlling the following seed diseases: *Phoma lingam, Alternaria brassicae* and *Sclerotinia sclerotiorum*;

- corn, as regards controlling seed diseases: (*Rhizopus* sp., *Penicillium* sp., *Trichoderma* sp., *Aspergillus* sp., and *Gibberella fujikuroi*);

- flax, as regards controlling the seed disease: *Alternaria linicola*;

- forest trees, as regards controlling damping-off (*Fusarium oxysporum, Rhizoctonia solani*);

- rice, as regards controlling the following diseases of the aerial parts: blast disease (*Magnaporthe grisea*), bordered sheath spot (*Rhizoctonia solani*);

- leguminous crops, as regards controlling the following diseases of seeds or of young plants grown from seeds: damping-off and collar rot (*Fusarium oxysporum, Fusarium roseum, Rhizoctonia solani, Pythium sp.*);

- leguminous crops, as regards controlling the following diseases of the aerial parts: grey mould (Botrytis sp.), powdery mildews (in particular *Erysiphe cichoracearum, Sphaerotheca fuliginea* and *Leveillula taurica*), fusaria (*Fusarium oxysporum, Fusarium roseum*), leaf spot (*Cladosporium sp.*), alternaria leaf spot (*Alternaria sp.*), anthracnose (*Colletotrichum sp.*), septoria leaf spot (*Septoria sp.*), black speck (*Rhizoctonia solani*), mildews (for example *Bremia lactucae, Peronospora sp., Pseudoperonospora sp., Phytophthora sp.*);

- fruit trees, as regards diseases of the aerial parts: monilia disease (*Monilia fructigenae, M. laxa*), scab (*Venturia inaequalis*), powdery mildew (*Podosphaera leucotricha*);

- vine, as regards diseases of the foliage: in particular grey mould (*Botrytis cinerea*), powdery mildew (*Uncinula necator*), black rot (*Guignardia biwelli*) and mildew (*Plasmopara viticola*);

- beetroot, as regards the following diseases of the aerial parts: cercospora blight (*Cercospora beticola*), powdery mildew (*Erysiphe beticola*), leaf spot (*Ramularia beticola*).

The fungicide composition according to the invention may also be used against fungal diseases liable to grow on or inside timber. The term "timber" means all types of species of wood, and all types of working of this wood intended for construction, for example solid wood, high-density wood, laminated wood, and plywood. The method for treating timber according to the invention mainly consists in contacting one or more compounds according to the invention, or a composition according to the invention; this includes for example direct application, spraying, dipping, injection or any other suitable means.

The dose of active compound usually applied in the method of treatment according to the invention is generally and advantageously from 10 to 800 g/ha, preferably from 50 to 300 g/ha for applications in foliar treatment. The dose of active substance applied is generally and advantageously from 2 to 200 g per 100 kg of seed, preferably from 3 to 150 g per 100 kg of seed in the case of seed treatment.

It is clearly understood that the doses indicated above are given as illustrative examples of the method according to the invention. A person skilled in the art will know how to adapt the application doses, notably according to the nature of the plant or crop to be treated.

The fungicide composition according to the invention may also be used in the treatment of genetically modified organisms with the compounds according to the invention or the agrochemical compositions according to the invention. Genetically modified plants are plants

into genome of which a heterologous gene encoding a protein of interest has been stably integrated. The expression "heterologous gene encoding a protein of interest" essentially means genes which give the transformed plant new agronomic properties, or genes for improving the agronomic quality of the modified plant.

The compositions according to the invention may also be used for the preparation of composition useful to curatively or preventively treat human and animal fungal diseases such as, for example, mycoses, dermatoses, trichophyton diseases and candidiases or diseases caused by *Aspergillus spp.*, for example *Aspergillus fumigatus*.

The various aspects of the invention will now be illustrated with reference to the following tables of compounds and examples. The following tables illustrate in a non-limiting manner examples of fungicide compounds according to the invention.

In the following examples, M+1 (or M-1) means the molecular ion peak, plus or minus 1 a.m.u. (atomic mass unit) respectively, as observed in mass spectroscopy and M (ApcI+) means the molecular ion peak as it was found via positive atmospheric pressure chemical ionisation in mass spectroscopy.

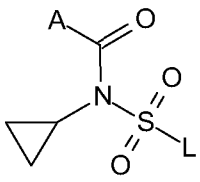
In the following examples, the logP values were determined in accordance with EEC Directive 79/831 Annex V.A8 by HPLC (High Performance Liquid Chromatography) on a reversed-phase column (C 18), using 2 methods as described below :

- Method A : Temperature: 43°C; Mobile phases : 0.1% aqueous phosphoric acid, acetonitrile; linear gradient from 10% acetonitrile to 90% acetonitrile ;
- Method B : Temperature: 40°C; Mobile phases : 0.1% aqueous formic acid and acetonitrile; linear gradient from 10% acetonitrile to 90% acetonitrile.

Calibration was carried out using unbranched alkan-2-ones (having 3 to 16 carbon atoms) with known logP values (determination of the logP values by the retention times using linear interpolation between two successive alkanones).

The lambda max values were determined in the maxima of the chromatographic signals using the UV spectra from 190nm to 400nm.

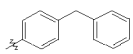
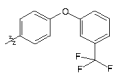
Table 1:



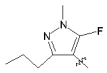
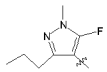
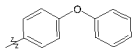
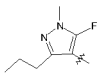
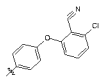
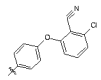
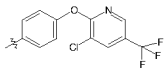
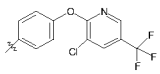
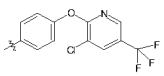
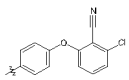
N°	A	L	LogP	LogP method	M+1
1			3,58	A	
2					408
3			3,27	A	
4			2,77	A	
5			3,8	B	
6			4,4	B	
7			4,9	B	
8					356
9					376
10					410

11					424
12					414
13			3,64	A	
14			3,12	A	
15			4,07	A	
16					424
17					444
18					478
19			3,8	B	
20					409
21			4,3	B	
22			4,9	B	
23					535
24					405
25			3,3	B	
26			3,9	B	

27			3,9	B	
28			4,4	B	
29			3,46	A	
30			3,72	A	
31			4,08	A	
32			3,63	A	
33			4,13	A	
34			3,5	B	
35					407
36			3,3	B	
37			3,9	B	
38			4,0	B	
39			4,5	B	
40					442
41					409
42					442

43					476
44					423
45					413
46					411
47					481
48					477
49					467
50					433
51					376
52					
53					
54					502
55					468
56					492
57					570
58					407
59			3,2	A	

60			2,8	A	
61			3,1	A	
62			3,46	A	
63			3,33	A	
64			2,91	A	
65					493
66			4,4	B	
67					459
68			3,18	A	
69			3,63	A	
70			3,46	A	
71			3,03	A	
72			3,59	A	
73					354
74			2,7	B	
75			3,3	B	

76			3,4	B	
77			4,0	B	
78					468
79					458
80					517
81					489
82					547
83					533
84					531
85					503
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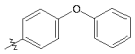
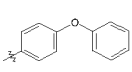
87					525
88					509
89					543
90					544
91					510

92					534
93			3,6	B	
94					468
95			3,1	B	
96			3,8	B	
97			4,0	B	
98			3,4	B	
99					458
100			4,3	B	
101			3,7	B	
102					434
103			2,8	B	
104			3,2	B	
105			3,4	B	
106			3,0	B	
107			3,8	B	

108			4,1	B	
109					408
110					455
111					430
112					426
113					386
114					426
115					459
116					386
117					386
118					420
119			2,8	B	
120			3,4	B	
121			3,5	B	
122			4,1	B	
123					480

124					400
125					374
126					397
127					383
128					412
129					384
130					465
131					390
132					439
133					433
134					463
135					470
136					416
137					481
138					388
139					358

140					404
141					404
142					437
143					428
144					481
145					515
146					506
147					447
148					481
149					497
150					430
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152					416
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155					458

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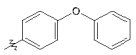
157					454
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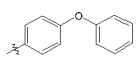
166					444
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168					504
169					421
170					416
171					390

172					394
173					475
174					452
175			2,61	A	
176			2,82	A	
177			3,03	A	
178			3,35	A	
179			2,46	A	
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181			2,28	A	
182			2,06	A	
183			2,59	A	
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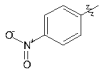
185			2,54	A	
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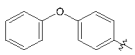
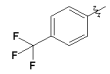
187			3,42	A	

188			3,1	A	
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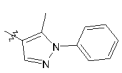
190			2,83	A	
191			2,91	A	
192			3,55	A	
193			3,48	A	
194			3,5	A	
195			2,48	A	
196			2,43	A	
197			1,95	A	
198			2,78	A	
199			2,58	A	
200			2,71	A	
201			2,97	A	
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203			2,75	A	

204			2,37	A	
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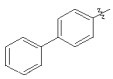
207			2,6	A	
208			3,27	A	
209			3,39	A	
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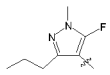
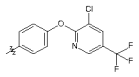
218			2,52	A	
219					474

220					561
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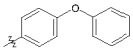
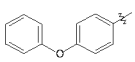
225			4,7	B	
226					456
227					432
228			3,9	B	
229			3,6	B	
230			3,2	B	
231					456
232					414
233					484
234					480
235					442

236					456
237					500
238					452
239					466
240					524
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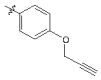
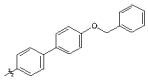
242					392
243					518
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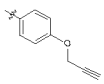
245					466
246					476
247					452
248					390
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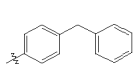
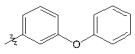
250					434
251					446

252					448
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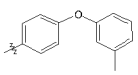
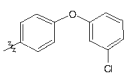
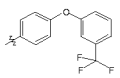
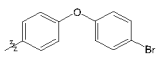
254					462
255					482
256					516
257					526
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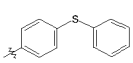
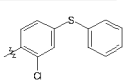
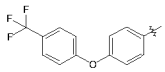
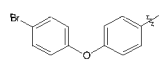
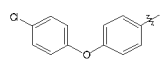
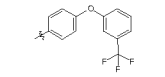
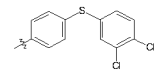
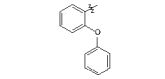
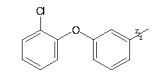
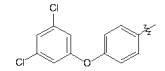
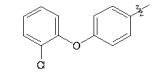
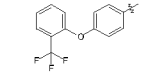
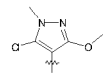
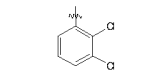
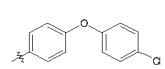
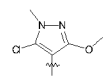
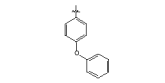
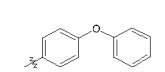
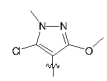
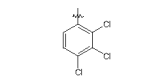
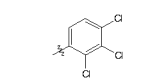
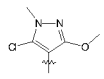
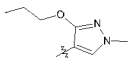
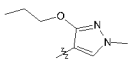
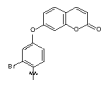
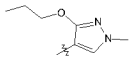
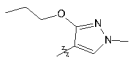
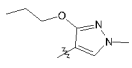
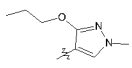
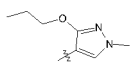
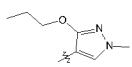
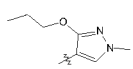
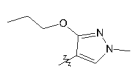
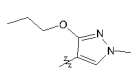
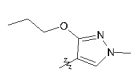
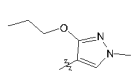
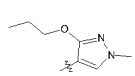
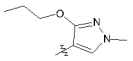
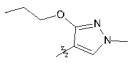
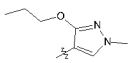
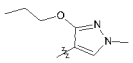
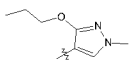
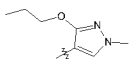
259					464
260					462
261			3,6	B	
262					408
263					410
264					510
265					428
266					444
267					478

268					496
269					506
270					462
271					496
272					512
273					428
274					462
275					496
276					462
277					496
278			3,2	B	
279					490
280			3,8	B	
281					456
282			3,8	B	
283					466

284			4,3	B	
285			2,7	B	
286			3,0	B	
287			3,4	B	
288			3,6	B	
289			4,0	B	
290			4,1	B	
291			4,2	B	
292			4,4	B	
293			4,5	B	
294			4,5	B	
295			4,5	B	
296			4,5	B	
297			4,5	B	
298			4,6	B	
299			4,6	B	

300			4,6	B	
301			4,9	B	
302			4,9	B	
303			4,9	B	
304			5,0	B	
305			5,1	B	
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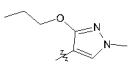
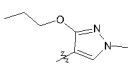
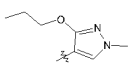
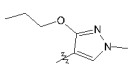
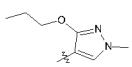
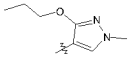
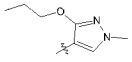
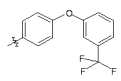
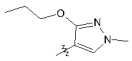
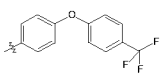
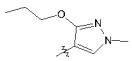
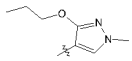
311					490
312					490
313					504
314					505
315					505

316					520
317					520
318					524
319					524
320					524
321					524
322					524
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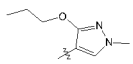
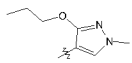
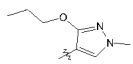
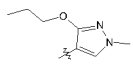
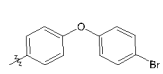
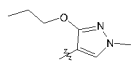
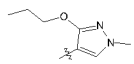
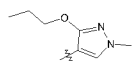
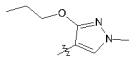
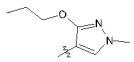
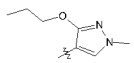
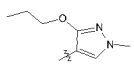
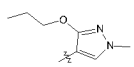
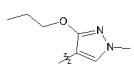
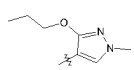
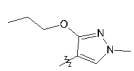
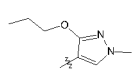
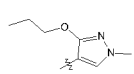
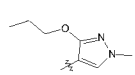
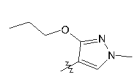
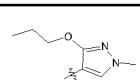
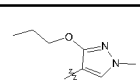
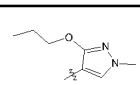
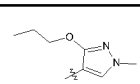
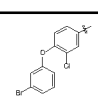
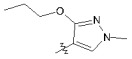
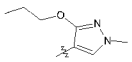
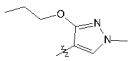
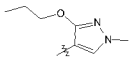
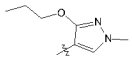
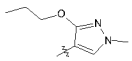
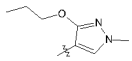
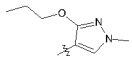
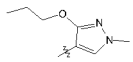
324					524
325					524
326					533
327					533
328					534
329					542
330					542
331					550

332					550
333					558
334					558
335					558
336					558
337					558
338					558
339					558
340					558
341					558
342					558
343					560
344					560
345					568
346					568
347					568

348					568
349					574
350					574
351					576
352					576
353					592
354					592
355					602
356					602
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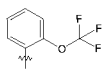
364			3,1	B	
365			3,2	B	
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372			4,2	B	
373			3,9	B	
374			2,7	B	
375			3,6	B	
376			3,9	B	
377			2,9	B	
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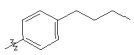
383			4,2	B	
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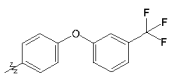
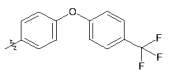
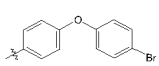
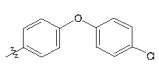
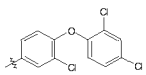
388			4,2	B	
389			4,3	B	
390			4,4	B	
391			4,2	B	
392					546
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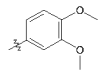
395			1,9	B	

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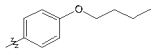
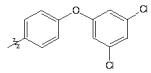
397					422
398					510
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405			4,46	A	
406			3,76	A	
407			3,63	A	
408			3	A	
409			2,74	A	
410			3,04	A	
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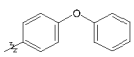
416					444
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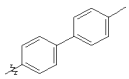
421					428
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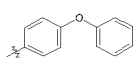
426					472
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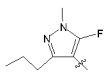
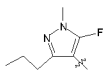
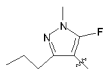
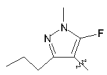
429					434
430					468
431					434
432					418
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439					487
440			3,1	B	
441					393
442					390
443			2,6	B	

444			1,7	B	
445					441
446			1,96	A	
447			3,08	A	
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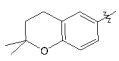
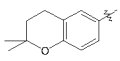
456					422
457					420
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464			3,3	B	
465			3,5	B	
466			3,5	B	
467			3,7	B	
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473			3,8	B	
474			3,9	B	
475			3,9	B	

476			4,0	B	
477			4,1	B	
478			4,2	B	
479			4,2	B	
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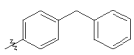
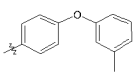
486					426
487					442
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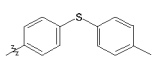
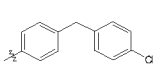
490					458
491					460

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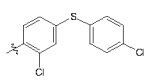
503					512
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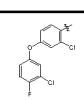
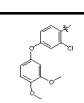
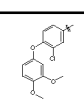
505					514
506					522
507					522

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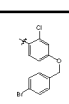
521					554
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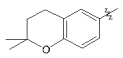
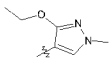
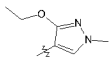
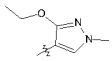
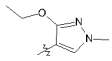
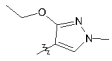
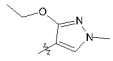
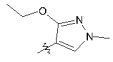
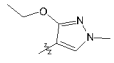
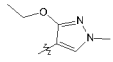
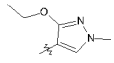
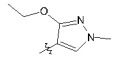
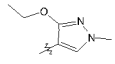
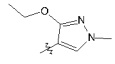
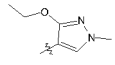
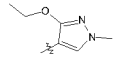
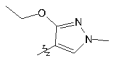
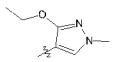
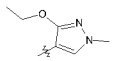
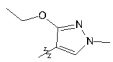
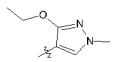
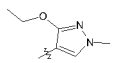
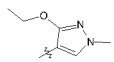
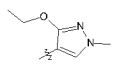
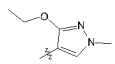
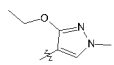
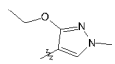
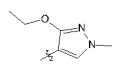
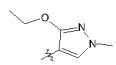
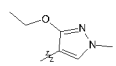
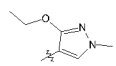
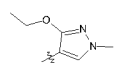
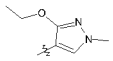
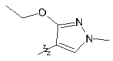
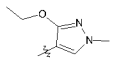
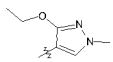
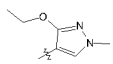
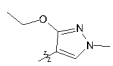
524					434
525			2,2	B	
526			2,3	B	
527			3,2	B	
528			3,5	B	
529			3,5	B	
530			3,6	B	
531			3,8	B	
532			3,8	B	
533			3,9	B	
534			3,9	B	
535			4,0	B	
536			4,0	B	
537			4,1	B	
538			4,1	B	
539			4,1	B	

540			4,2	B	
541			4,2	B	
542			4,3	B	
543			4,3	B	
544			4,3	B	
545			4,3	B	
546			4,3	B	
547			4,3	B	
548			4,4	B	
549			4,4	B	
550			4,4	B	
551			4,5	B	
552			4,5	B	
553			4,5	B	
554			4,5	B	
555			4,7	B	

556			4,8	B	
557			4,8	B	
558			4,9	B	
559			5,0	B	
560			5,6	B	
561			5,8	B	
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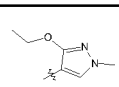
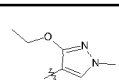
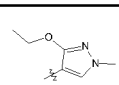
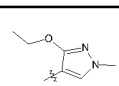
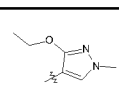
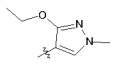
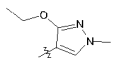
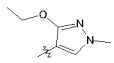
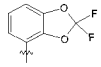
567					490
568					510
569					544
570					544
571					544

572					560
573					562
574					578
575					432
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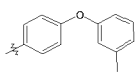
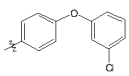
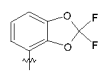
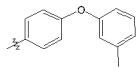
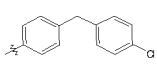
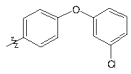
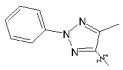
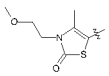
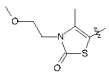
578					458
579					478
580					418
581					328
582					431
583					444
584					462
585					464
586			3,7	B	
587					354

588			3,46	A	
589			4,18	A	
590			4,37	A	
591			3,72	A	
592			3,41	A	
593			4,03	A	
594			4,82	A	
595			4,77	A	
596			4,41	A	
597			4,98	A	
598					341
599			3,0	B	
600			3,6	B	
601			3,7	B	
602			4,2	B	
603			2,2	B	

604			2,6	B	
605			3,4	B	
606			3,7	B	
607					417
608			1,97	A	
609			2,01	A	
610			2,01	A	
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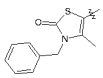
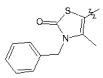
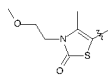
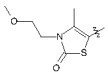
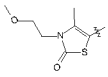
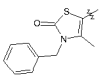
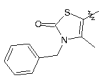
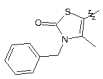
612			2,01	A	
613			2,01	A	
614			4,08	A	
615			2,01	A	
616			2,01	A	
617			2,01	A	
618			4,03	A	
619			2,01	A	

620			2,01	A	
621			2,01	A	
622			2,01	A	
623			2,01	A	
624			2,01	A	
625			3,01	A	
626			3,01	A	
627			4,03	A	
628			3,01	A	
629			3,01	A	
630			4,08	A	
631			2,01	A	
632			3,01	A	
633			3,01	A	
634			3,01	A	
635			2,01	A	

636			3,01	A	
637			2,74	A	
638			3,1	A	
639			2,91	A	
640					385
641					418
642			2,3	A	
643			2,91	A	
644			2,58	A	
645			3,2	B	
646			3,7	B	
647			3,7	B	
648			4,3	B	
649			2,4	B	
650			3,57	A	
651			4,16	A	

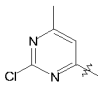
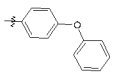
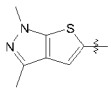
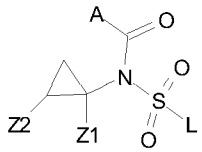
652			2,78	A	
653			3,2	A	
654			2,93	A	
655					448
656					457
657					410
658			3,1	B	
659			3,6	B	
660			3,6	B	
661			4,2	B	
662			2,8	B	
663			3,4	B	
664					445

Table 2



	A	L	Z1	Z2	LogP	LogP method	M+1	M-1
665				H			430	
666				H				496
667				H	4,04	B		
668				H			454	
669				H	4,44	A		
670				H	4,1	B		
671				H			448	
672			H					452
673			H				434	
674			H				442	
675			H				456	
676			H		3,27	A		

The following examples illustrate in a non-limiting manner the preparation and efficacy of the compounds of formula (I) according to the invention.

Preparation example 1: N-[(4-bromophenyl)sulfonyl]-N-cyclopropyl-3-methoxy-1-methyl-1H-pyrazole-4-carboxamide (compound 232)

Preparation of 4-bromo-N-cyclopropylbenzenesulfonamide

To a solution of 5.02g (88.05 mmol) of cyclopropylamine in DCM (150 ml) at room temperature is added dropwise a solution of 7.50g (29.35 mmol) of 4-bromobenzenesulfonyl chloride in DCM (20 ml).
After 1hr the reaction mixture is poured over 100mL of hydrochloric acid 1N and shaken. Organic phase is separated, dried over magnesium sulphate and solvent evaporated to give 7.27g of desired product 4-bromo-N-cyclopropylbenzenesulfonamide as a white solid (85%).
RMN ^{1}H (ppm) : 0,1 (2H, m); 0,2 (2H, m), 1,85 (1H, m), 7,5 (2H, m), 7,62 (2H, m), 7,8 (1H, s)

Preparation of N-[(4-bromophenyl)sulfonyl]-N-cyclopropyl-3-methoxy-1-methyl-1H-pyrazole-4-carboxamide

A solution of 1,64g (5.96 mmol) of 4-bromo-N-cyclopropylbenzenesulfonamide and 7.69g (6.86 mmol) of potassium *ter*butoxide is stirred in THF(35ml) for 15mins and 1.25g (7.16 mmol) of 3-methoxy-1-methyl-1H-pyrazole-4-carbonyl chloride is added in one portion. 6 ml of DMF is added to solubilise the mixture and the reaction mixture is stirred for 45mins at room temperature.
THF is removed under reduce pressure and the residue is partitioned between aqueous potassium carbonate and ethyl acetate. Organic phase is dried over magnesium sulphate and solvent evaporated. The white solid is washed with diethyl ether and dried to give 1.95g of desired N-[(4-bromophenyl)sulfonyl]-N-cyclopropyl-3-methoxy-1-methyl-1H-pyrazole-4-carboxamide (76%).
Mass spectrum : [M+1] = 414

Preparation example 2: N-cyclopropyl-3-methoxy-1-methyl-N-{[3'-(trimethylsilyl)biphenyl-4-yl]sulfonyl}-1H-pyrazole-4-carboxamide (compound 233)

A suspension of 0.25g (0.60 mmol) of N-[(4-bromophenyl)sulfonyl]-N-cyclopropyl-3-methoxy-1-methyl-1H-pyrazole-4-carboxamide (prepared in ex. 1), 0.17g (0.90 mmol) of [3-(trimethylsilyl)phenyl]boronic acid and 0.014g (0.012 mmol) of tetrakis(triphenyl-phosphine)palladium in a mixture of 20% aqueous potassium carbonate (15ml) and THF(15ml) are stirred at 80°C for 2hrs.

The reaction mixture is added to aqueous potassium carbonate and extracted into diethyl ether which is dried over magnesium sulphate and solvent evaporated. The crude material obtained is purified over a column of silica by using a diethyl ether as eluent, to give a colourless viscous oil. A 50:50 DIPE/heptane solution (10ml) is added to this oil and allowed to evaporate over the W/E. Resultant crystalline material is washed with heptane, filtered off and dried to give 0.27g of desired N-cyclopropyl-3-methoxy-1-methyl-N-{[3'-(trimethylsilyl)biphenyl-4-yl]sulfonyl}-1H-pyrazole-4-carboxamide (91%)

Mass spectrum : [M+1] = 484

Preparation example 3: N-cyclopropyl-3-methoxy-1-methyl-N-{[4-(phenylthio)phenyl]sulfonyl}-1H-pyrazole-4-carboxamide (compound 266)

A suspension of 0.10g (0.24mmol) of N-[(4-bromophenyl)sulfonyl]-N-cyclopropyl-3-methoxy-1-methyl-1H-pyrazole-4-carboxamide (prepared in ex 1), 0.026g (0.24 mmol) of thiophenol, 0.0046g (0.024mmol) of copper iodide and 0.16g (0.48mmol) of cesium carbonate in N-methylpyrrolidone (2ml) is heated under microwave irradiation at 140°C for 5mins.

The reaction mixture is purified over a column of silica by using a mixture of heptane and ethyl acetate as eluent to give 0.053g of desired N-cyclopropyl-3-methoxy-1-methyl-N-{[4-(phenylthio)phenyl]sulfonyl}-1H-pyrazole-4-carboxamide (47%)

Mass spectrum : [M+1] = 444

Efficacy example A : *in vivo* test on *Alternaria Solani* (Tomato Leaf spot)

Solvent: 49 parts by weight of N, N - dimethylformamide

Emulsifier: 1 part by weight of alkylaryl polyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration.

Young plants are sprayed with the preparation of active compound at the stated rate of application. After the spray coating has dried on, the plants are inoculated with an aqueous spore suspension of *Alternaria solani*. The plants remain for one day in an incubation cabinet at approximately 20°C and a relative atmospheric humidity of 100%. Then the plants are placed in an incubation cabinet at approximately 20°C and a relative atmospheric humidity of 96%.

The test is evaluated 7 days after the inoculation. Under these conditions, good (at least 70%) to total protection is observed at a dose of 500 ppm with the following compounds 110, 143, 160, 175, 176, 178, 179, 180, 186, 187, 189, 192, 196, 198, 203, 204, 205, 209, 210, 212, 214, 215 and 652.

Efficacy example B : *in vivo* test on *Podosphaera leucotricha* (Apple Mildew)

Solvent:	24,5 parts by weight of acetone
	24,5 parts by weight of dimethylacetamide
Emulsifier:	1 part by weight of alkylaryl polyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration.
Young plants are sprayed with the preparation of active compound at the stated rate of application. After the spray coating has dried on, the plants are inoculated with an aqueous spore suspension of the causal agent of apple mildew (*Podosphaera leucotricha*). The plants are then placed in a greenhouse at approximately 23°C and a relative atmospheric humidity of approximately 70%.

The test is evaluated 10 days after the inoculation. Under these conditions, good (at least 70%) to total protection is observed at a dose of 100 ppm with the following compounds : 104, 160, 176, 177, 180, 186, 187, 188, 192, 194, 196, 198, 203, 204, 205, 207, 209, 210, 211, 212, 213, 218 and 446.

Efficacy example C : *in vivo* test on *Erysiphe Graminis* (Barley Mildew)

Solvent:	50 parts by weight of N,N-dimethylacetamid
Emulsifier:	1.0 part by weight of alkylaryl polyglycol ether

To produce a suitable preparation of active compound, 1 part by weight of active compound or active compound combination is mixed with the stated amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration.

Young plants are sprayed with the preparation of active compound or active compound combination at the stated rate of application. After the spray coating has dried on, the plants are dusted with spores of *Erysiphe graminis f.sp. hordei*. The plants are placed in a greenhouse at a temperature of approximately 20°C and a relative atmospheric humidity of approximately 80% to promote the development of mildew pustules.

The test is evaluated 7 days after the inoculation. Under these conditions, good (at least 70%) to total protection is observed at a dose of 1000 ppm with the following compounds : 104, 160, 177, 178, 186, 192, 194, 203, 204, 205, 207, 210, 212, 213 and 435.

Efficacy example D : *in vivo* test on *Pyrenophora teres* (Barley Net blotch).

The active ingredients tested are prepared by homogenisation in a mixture of acetone/tween/DMSO, then diluted with water to obtain the desired active material concentration.

Barley plants (Express variety) in starter cups, sown on a 50/50 peat soil-pozzolana substrate and grown at 12°C, are treated at the 1-leaf stage (10 cm tall) by spraying with the active ingredient prepared as described above. Plants, used as controls, are treated with the mixture of acetone/tween/DMSO/water not containing the active material.

After 24 hours, the plants are contaminated by spraying them with an aqueous suspension of Pyrenophora teres spores (12,000 spores per ml). The spores are collected from a 12-day-old culture .The contaminated barley plants are incubated for 24 hours at about 20°C and at 100% relative humidity, and then for 12 days at 80% relative humidity.

Grading is carried out 12 days after the contamination, in comparison with the control plants.

Under these conditions, good (at least 70%) or total protection is observed at a dose of 500 ppm with the following compounds: 104, 160, 180, 210, 244, 254, 255, 258, 262, 263, 266, 267, 268, 269, 270, 272, 274, 311, 357, 374, 375, 381, 387, 393, 396, 398, 436, 456, 492, 501, 516, 517, 531, 542, 546 and 673

Example E : in vivo test on Mycosphaerella graminicola (wheat leaf spot)

The active ingredients tested are prepared by homogenisation in a mixture of acetone/tween/DMSO, and then diluted with water to obtain the desired active material concentration.

Wheat plants (Scipion variety), sown on a 50/50 peat soil-pozzolana substrate in starter cups and grown at 12°C, are treated at the 1-leaf stage (10 cm tall) by spraying with the active ingredient prepared as described above.

Plants, used as controls, are treated with the mixture of acetone/tween/DMSO/water not containing the active material.

After 24 hours, the plants are contaminated by spraying them with an aqueous suspension of Mycosphaerella graminicola spores (500 000 spores per ml). The spores are collected from a 7-day-old culture .The contaminated wheat plants are incubated for 72 hours at 18°C and at 100% relative humidity, and then for 21 to 28 days at 90% relative humidity.

Grading (% of efficacy) is carried out 21 to 28 days after the contamination, in comparison with the control plants.

Under these conditions, good (at least 70%) or total protection is observed at a dose of 500 ppm with the following compounds: 45, 49, 244, 249, 254, 255, 258, 262, 263, 264, 311, 316, 358, 374, 375, 377, 387, 392, 394, 398, 438, 456, 457, 488, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 504, 505, 506, 507, 508, 509, 510, 511, 512, 514, 515, 516, 517, 518, 519, 521, 522, 523, 524, 528, 530, 531, 535, 538, 539, 542, 547, 550, 552, 556, 559, 578, 579, 583, 584, 585, 673 and 675.

Efficacy example F : *in vivo* test on *Puccinia reconditef. Sp. tritici* (wheat brown rust).

The active ingredients tested are prepared by homogenisation in a mixture of acetone/tween/DMSO, then diluted with water to obtain the desired active material concentration.

Wheat plants (Scipion variety) in starter cups, sown on 50/50 peat soil-pozzolana substrate and grown at 12°C, are treated at the 1-leaf stage (10 cm tall) by spraying with the active ingredient prepared as described above. Plants, used as controls, are treated with the mixture of acetone/tween/DMSO/water not containing the active material.

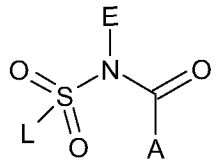
After 24 hours, the plants are contaminated by spraying the leaves with an aqueous suspension of Puccinia recondita spores (100,000 spores per ml). The spores are collected from a 10-day-old contaminated wheat and are suspended in water containing 2.5 ml/l of tween 80 10%. The

contaminated wheat plants are incubated for 24 hours at 20°C and at 100% relative humidity, and then for 10 days at 20°C and at 70% relative humidity. Grading is carried out 10 days after the contamination, in comparison with the control plants.

Under these conditions, good (at least 70%) or total protection is observed at a dose of 500 ppm with the following compounds: 49, 104, 160, 262, 264, 266, 269, 270, 272, 279, 281, 308, 309, 316, 318, 320, 328, 336, 337, 344, 366, 380, 398, 448, 456, 457, 493, 495, 498, 502, 507, 513, 514, 515, 524, 528, 531, 533, 539, 542, 545, 546, 547, 548, 550, 551, 552, 554, 555, 556, 557, 558 and 559.

CLAIMS

1. A compound of formula (I)



(I)

wherein :

- A represents a carbon linked, substituted or non substituted, 5-, 6- or 7-membered, aromatic or non aromatic heterocycle comprising up to three heteroatoms which can be the same or different;
- E represents a substituted or non substituted cyclopropyl;
- L represents a substituted or non substituted phenyl or a substituted or non substituted 5-, 6- or 7-membered aromatic or non aromatic heterocycle comprising up to three heteroatoms which can be the same or different; provided that when E represents a non-substituted cyclopropyl, A and L cannot represent simultaneously respectively
  - a 2-bromo-4-methyl-1,3-thiazol-5-yl and a 4-chloro-phenyl;
  - a 2-chloro-4-methyl-1,3-thiazol-5-yl and a 4-chloro-phenyl;
  - a 2-bromo-4-ethyl-1,3-thiazol-5-yl and a 4-chloro-phenyl;
  - a 2-chloro-4-ethyl-1,3-thiazol-5-yl and a 4-chloro-phenyl;
  - a 2-bromo-4-methyl-1,3-thiazol-5-yl and a phenyl;
  - a 2-chloro-4-methyl-1,3-thiazol-5-yl and a phenyl;
  - a 2-bromo-4-ethyl-1,3-thiazol-5-yl and a phenyl;
  - a 2-chloro-4-ethyl-1,3-thiazol-5-yl and a phenyl.

2. A compound according to claim 1 wherein E can be substituted by up to five groups Z which can be the same or different and are selected in the list consisting of halogen atoms; C_1-C_5-alkyl; C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different; phenyl substituted by up to 5 halogen atoms which can be the same or different and C_1-C_5-alkoxycarbonyl.

3. A compound according to claims 1 to 2 wherein E represents a non-substituted cyclopropyl.

4. A compound according to claim 1 to 3 wherein A is substituted by up to five groups R which can be the same or different and are selected in the list consisting of halogen atoms; cyano; nitro; hydroxy; amino; sulfanyl; pentafluoro-λ^6-sulfanyl; formyl; formyloxy; formylamino; carboxy; carbamoyl; N-hydroxycarbamoyl; carbamate; (hydroxyimino)-C_1-C_6-alkyl; C_1-C_5-alkylamino; di-C_1-C_5-alkylamino; tri(C_1-C_5-alkyl)silyl; C_1-C_5-alkylsulfanyl; C_1-C_5-halogenoalkylsulfanyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkyl; C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkenyl; C_2-C_5-halogenoalkenyl comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkynyl; C_2-C_5-halogenoalkynyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkoxy; C_1-C_5-halogenoalkoxy comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkenyloxy; C_2-C_5-halogenoalkenyloxy comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkynyloxy; C_2-C_5-halogenoalkynyloxy comprising up to 5 halogen atoms which can be the same or different; C_3-C_7-cycloalkyl; C_3-C_7-halogenocycloalkyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylcarbonyl; C_1-C_5-halogenoalkylcarbonyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylcarbamoyl; di-C_1-C_5-alkylcarbamoyl; N-C_1-C_5-alkyloxycarbamoyl; C_1-C_5-alkoxycarbamoyl; N-C_1-C_5-alkyl-C_1-C_5-alkoxycarbamoyl; C_1-C_5-alkoxycarbonyl; C_1-C_5-halogenoalkoxycarbonyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylcarbonyloxy; C_1-C_5-halogenoalkylcarbonyloxy comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylcarbonylamino; C_1-C_5-halogenoalkylcarbonylamino comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylaminocarbonyloxy; di-C_1-C_5-alkylaminocarbonyloxy; C_1-C_5-alkyloxycarbonyloxy; C_1-C_5-alkylsulphenyl; C_1-C_5-halogenoalkylsulphenyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylsulphinyl; C_1-C_5-halogenoalkylsulphinyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylsulphonyl; C_1-C_5-halogenoalkylsulphonyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5 alkoxyimino; (C_1-C_5-alkoxyimino)-C_1-C_5-alkyl; (C_1-C_5-alkenyloxyimino)-C_1-C_5-alkyl; (C_1-C_5-alkynyloxyimino)-C_1-C_5-alkyl; a (benzyloxyimino)-C_1-C_5-alkyl; benzyloxy; benzylsulfanyl; benzylamino; naphtyl; halogenophenyl comprising up to 5 halogen atoms which can be the same or different; halogenophenoxy comprising up to 5 halogen atoms which can be the same or different.

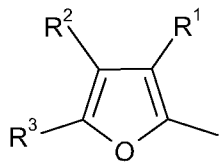
5. A compound according to claims 1 to 4 wherein A is substituted by up to five groups R which can be the same or different and are selected in the list consisting of halogen atom;

cyano; C_1-C_5-alkyl; C_1-C_5-alkoxy; C_2-C_5-alkenyloxy; C_2-C_5-alkynyloxy; C_3-C_5-cycloalkyl; C_1-C_5-alkoxycarbonyl C_1-C_5-alkylsulfanyl; C_1-C_5–alkylamino; di(C_1-C_5-alkyl)amino; phenyl; phenoxy; benzyl; C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-halogenocycloalkyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-halogenoalkoxy comprising up to 5 halogen atoms which can be the same or different; halogenophenyl comprising up to 5 halogen atoms which can be the same or different and halogenophenoxy comprising up to 5 halogen atoms which can be the same or different.

6. A compound according to claim 1 to 5 wherein A represents a five membered heterocycle.

7. A compound according to claim 6 wherein A is selected in the list consisting of:

-a heterocycle of formula (A^1)

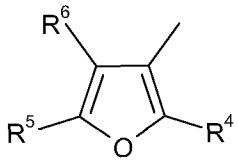


(A^1)

wherein :

R^1 to R^3 which can be the same or different represent a hydrogen atom; a halogen atom; a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;.

-a heterocycle of formula (A^2)



(A^2)

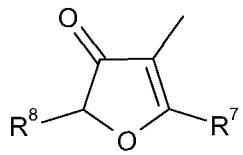
wherein :

R^4 represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

R^5 represents a hydrogen atom or C_1-C_5-alkyl;

R^6 represents a hydrogen or a halogen atom;

-a heterocycle of formula (A^3)

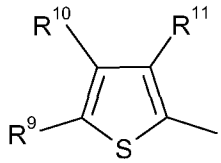


(A^3)

wherein :

R^7 and R^8 which can be the same or different represent a hydrogen atom or C_1-C_5-alkyl;

-a heterocycle of formula (A^4)



(A^4)

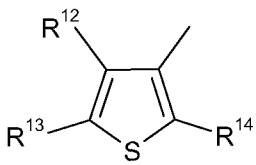
wherein :

R^9 represents a hydrogen; a halogen atom; a C_1-C_5-alkyl; an amino or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;;

R^{10} represents a hydrogen or a halogen atom;

R^{11} represents a hydrogen atom, a halogen atom, a C_1-C_5-alkyl or a C_1-C_5-alkoxy;

-a heterocycle of formula (A^5)



(A^5)

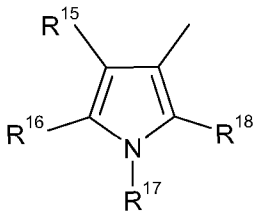
wherein :

R^{12} represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl; a C_1-C_5-alkoxy; an amino or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different

R^{13} represents a hydrogen atom, a halogen atom or a C_1-C_5-alkyl;

R^{14} represents a hydrogen atom, a halogen atom; a C_1-C_5-alkyl; an amino or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

-a heterocycle of formula (A^6)



(A^6)

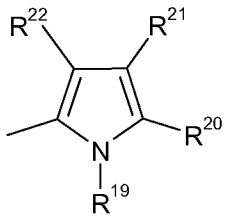
wherein :

R^{15} represents a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

R^{16} represents a hydrogen atom or C_1-C_5-alkoxycarbonyl;

R^{17} and R^{18} which can be the same or different represent a hydrogen atom or C_1-C_5-alkyl;

-a heterocycle of formula (A^7)



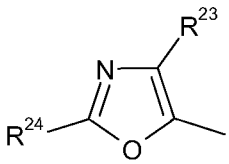
(A^7)

wherein :

R^{19} represents a C_1-C_5-alkyl;

R^{20} to R^{22} which can be the same or different represent a hydrogen atom, a halogen atom or a C_1-C_5-alkyl;

-a heterocycle of formula (A^8)



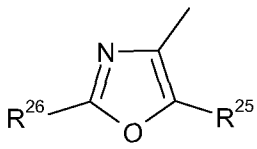
(A^8)

wherein :

R^{23} represents a hydrogen atom; a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

R^{24} represents a hydrogen atom or a C_1-C_5-alkyl;

-a heterocycle of formula (A^9)



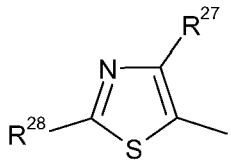
(A^9)

wherein :

R^{25} represents a hydrogen atom; a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

R^{26} represents a C_1-C_5-alkyl;

-a heterocycle of formula (A^{10})



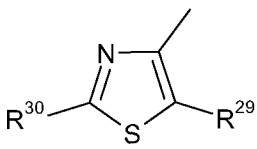
(A^{10})

wherein :

R^{27} represents a hydrogen atom; a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

R^{28} represents a hydrogen atom; a halogen atom, an amino; a C_1-C_5-alkyl or a phenyl;

-a heterocycle of formula (A^{11})



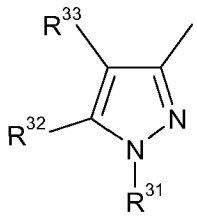
(A^{11})

wherein :

R^{29} represents a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

R^{30} represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl or an amino;

-a heterocycle of formula (A^{12})



(A^{12})

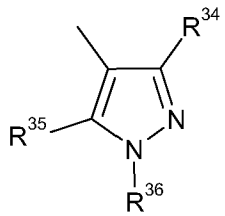
wherein :

R^{31} represents a C_1-C_5-alkyl or a phenyl;

R^{32} represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

R^{33} represents a hydrogen atom; a halogen atom; a nitro or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

-a heterocycle of formula (A^{13})



(A^{13})

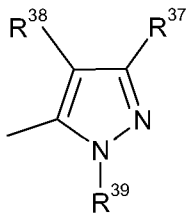
wherein :

R^{34} represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl; a C_3-C_5-cycloalkyl; a C_1-C_5-halogenoalkyl comprising up to halogen atoms which can be the same or different; a C_1-C_5-alkoxy; a C_2-C_5-alkynyloxy or a phenyl;

R^{35} represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl; a cyano; a C_1-C_5-alkoxy; a C_1-C_5-alkylthio; a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different; a C_1-C_5 –alkylamino; a di(C_1-C_5-alkyl)amino or a halogenophenoxy comprising up to 5 halogen atoms which can be the same or different;

R^{36} represents a hydrogen atom; a C_1-C_5-alkyl or a phenyl;

-a heterocycle of formula (A^{14})



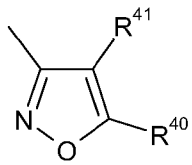
(A^{14})

wherein :

R^{37} and R^{38} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

R^{39} represents a C_1-C_5-alkyl;

-a heterocycle of formula (A^{15})

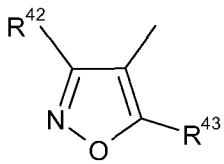


(A^{15})

wherein :

R^{40} and R^{41} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

-a heterocycle of formula (A^{16})



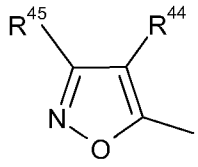
(A^{16})

wherein :

R^{42} represents a hydrogen atom or a C_1-C_5-alkyl;

R^{43} represents a hydrogen atom; a C_1-C_5-alkyl; a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different or an amino;

-a heterocycle of formula (A^{17})

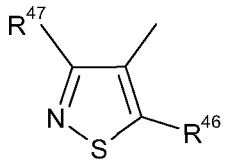


(A^{17})

wherein :

R^{44} and R^{45} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

-a heterocycle of formula (A^{18})



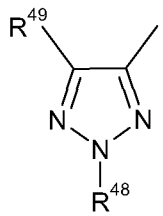
(A^{18})

wherein :

R^{46} represents a hydrogen atom; a C_1-C_5-alkyl; a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different or C_1-C_5-alkylsulfanyl;

R^{47} represents a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

-a heterocycle of formula (A^{19})



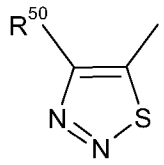
(A^{19})

wherein :

R^{48} represents a hydrogen atom or a halogenophenyl comprising up to 5 halogen atoms which can be the same or different;

R^{49} represents a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

-a heterocycle of formula (A^{20})

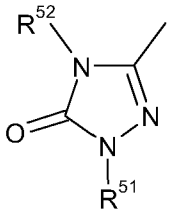


(A^{20})

wherein :

R^{50} represents a hydrogen atom or a C_1-C_5-alkyl;

-a heterocycle of formula (A^{21})

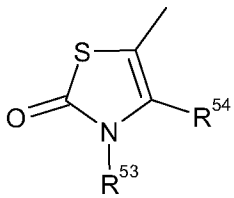


(A^{21})

wherein :

R^{51} and R^{52} which can be the same or different represent a C_1-C_5-alkyl;

-a heterocycle of formula (A^{22})



(A^{22})

wherein :

R^{53} represents a C_1-C_5-alkyl;

R^{54} represents a C_1-C_5-alkyl; a benzyl or a C_1-C_5-alkoxy-C_1-C_5-alkyl.

8. A compound according to claim 7 wherein A represents a heterocycle of formula (A^{13})

wherein :

R^{34} represents a C_1-C_5-alkyl;

R^{35} represents a fluorine atom;

R^{36} represents a C_1-C_5-alkyl; or

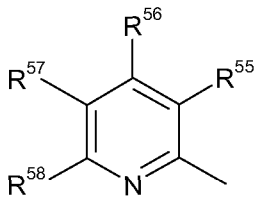
wherein

R^{34} represents a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms;
R^{35} represents a hydrogen or fluorine atom;
R^{36} represents a C_1-C_5-alkyl; or
wherein :
R^{34} represents a C_1-C_5-alkoxy;
R^{35} represents hydrogen;
R^{36} represents a C_1-C_5-alkyl.

9. A compound according to claims 1 to 5 wherein A represents a six membered heterocycle.

10. A compound according to claim 8 wherein A is selected in the list consisting of :

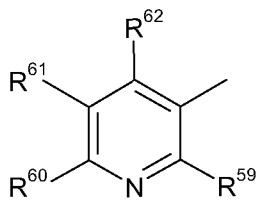
- a heterocycle of formula (A^{23})



(A^{23})

wherein :
R^{55}, R^{56} and R^{58} which can be the same or different represent a hydrogen atom; a halogen atom or C_1-C_5-alkyl;
R^{57} represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

- a heterocycle of formula (A^{24})

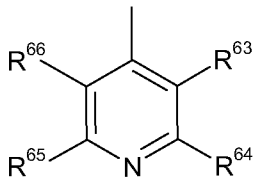


(A^{24})

wherein :

R^{59} to R^{62} which can be the same or different represent a hydrogen atom; a halogen atom, a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

- a heterocycle of formula (A^{25})

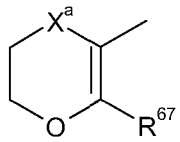


(A^{25})

wherein :

R^{63} to R^{66} which can be the same or different represent hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

- a heterocycle of formula (A^{26})



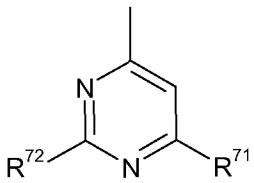
(A^{26})

wherein :

R^{67} represents a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms;

X^a represents a sulphur atom, -SO-, -SO_2- or -CH_2-;

- a heterocycle of formula (A^{27})



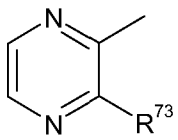
(A^{27})

wherein :

R^{71} represents a hydrogen atom or a C_1-C_5-alkyl;

R^{72} represents a hydrogen atom or a halogen atom;

- a heterocycle of formula (A^{28})



(A^{28})

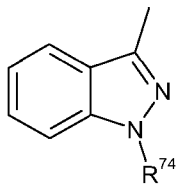
wherein :

R^{73} represents hydrogen atom; a halogen atom or a C_1-C_5-alkyl.

11. A compound according to claims 1 to 5 wherein A represents a fused heterocycle.

12. A compound according to claim 10 wherein A is selected in the list consisting of:

- a heterocycle of formula (A^{29})

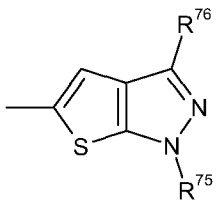


(A^{29})

wherein :

R^{74} represents a C_1-C_5-alkyl;

- a heterocycle of formula (A^{30})



(A^{30})

wherein :

R^{75} and R^{76} which can be the same or different represent a C_1-C_5-alkyl.

13. A compound according to claim 1 to 12 wherein L represents a phenyl substituted by up to five groups X which can be the same or different and are selected in the list consisting of halogen atoms; cyano; nitro; hydroxy; amino; sulfanyl; pentafluoro-λ^6-sulfanyl; formyl; formyloxy; formylamino; carboxy; carbamoyl; N-hydroxycarbamoyl; carbamate; (hydroxyimino)-C_1-C_6-alkyl; C_1-C_5-alkylamino; di-C_1-C_5-alkylamino; tri(C_1-C_5-alkyl)silyl; C_1-C_5-alkylsulfanyl; C_1-C_5-halogenoalkylsulfanyl comprising up to 5 halogen atoms which can be the same or different; C_1-

C_5-alkyl; C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkenyl; C_2-C_5-halogenoalkenyl comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkynyl; C_2-C_5-halogenoalkynyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkoxy; C_1-C_5-halogenoalkoxy comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkenyloxy; C_2-C_5-halogenoalkenyloxy comprising up to 5 halogen atoms which can be the same or different; C_2-C_5-alkynyloxy; C_2-C_5-halogenoalkynyloxy comprising up to 5 halogen atoms which can be the same or different; C_3-C_7-cycloalkyl; C_3-C_7-halogenocycloalkyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylcarbonyl; C_1-C_5-halogenoalkylcarbonyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylcarbamoyl; di-C_1-C_5-alkylcarbamoyl; N-C_1-C_5-alkyloxycarbamoyl; C_1-C_5-alkoxycarbamoyl; N-C_1-C_5-alkyl-C_1-C_5-alkoxycarbamoyl; C_1-C_5-alkoxycarbonyl; C_1-C_5-halogenoalkoxycarbonyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylcarbonyloxy; C_1-C_5-halogenoalkylcarbonyloxy comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylcarbonylamino; C_1-C_5-halogenoalkylcarbonylamino comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkylaminocarbonyloxy; di-C_1-C_5-alkylaminocarbonyloxy; C_1-C_5-alkyloxycarbonyloxy, C_1-C_5-alkylsulphenyl, C_1-C_5-halogenoalkylsulphenyl comprising up to 5 halogen atoms which can be the same or different, C_1-C_5-alkylsulphinyl, C_1-C_5-halogenoalkylsulphinyl comprising up to 5 halogen atoms which can be the same or different, C_1-C_5-alkylsulphonyl, C_1-C_5-halogenoalkylsulphonyl comprising up to 5 halogen atoms which can be the same or different, C_1-C_6-alkoxyimino, (C_1-C_6-alkoxyimino)-C_1-C_6-alkyl, (C_1-C_6-alkenyloxyimino)-C_1-C_6-alkyl, (C_1-C_6-alkynyloxyimino)-C_1-C_6-alkyl, a (benzyloxyimino)-C_1-C_6-alkyl, benzylsulfanyl, benzylamino, naphtyl; phenyl which can be substituted by up to five groups Q which can be the same or different; phenoxy which can be substituted by up to five groups Q which can be the same or different; benzyloxy which can be substituted by up to five groups Q which can be the same or different; phenylamino which can be substituted by up to five groups Q which can be the same or different, phenylsulfanyl which can be substituted by up to five groups Q which can be the same or different; pyridinyl which can be substituted by up to four groups Q which can be the same or different and pyridinyloxy which can be substituted by up to four groups Q which can be the same or different.

14. A compound according to claims 1 to 13 wherein L represents a phenyl substituted by up to five groups X which can be the same or different and are selected in the list consisting of halogen atoms; cyano; nitro; C_1-C_5-alkyl; C_2-C_5-alkenyl; C_2-C_5-alkynyl; C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkoxy; C_2-C_5-

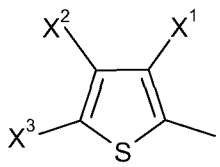
alkenyloxy; C_2-C_5-alkynyloxy; C_1-C_5-halogenoalkoxy comprising up to 5 halogen atoms which can be the same or different; tri(C_1-C_5-alkyl)silyl; naphtyl; phenyl which can be substituted by up to five groups Q which can be the same or different; phenoxy which can be substituted by up to five groups Q which can be the same or different; phenylsulfanyl which can be substituted by up to five groups Q which can be the same or different; phenylmethylene which can be substituted by up to five groups Q which can be the same or different; pyridinyl which can be substituted by up to four groups Q which can be the same or different and pyridinyloxy which can be substituted by up to four groups Q which can be the same or different.

15. A compound according to claims 1 to 12 wherein L represents a 5-, 6- or 7-membered aromatic or non aromatic heterocycle substituted by up to five groups X which can be the same or different and are selected in the list consisting of halogen atoms; cyano; nitro; C_1-C_5-alkyl; C_2-C_5-alkenyl; C_2-C_5-alkynyl; C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different; C_1-C_5-alkoxy; C_2-C_5-alkenyloxy; C_2-C_5-alkynyloxy; C_1-C_5-halogenoalkoxy comprising up to 5 halogen atoms which can be the same or different; tri(C_1-C_5-alkyl)silyl; phenyl which can be substituted by up to five groups Q which can be the same or different and phenoxy which can be substituted by up to five groups Q which can be the same or different; phenylsulfanyl which can be substituted by up to five groups Q which can be the same or different.

16. A compound according to claim 15 wherein L represents a five membered heterocycle.

17. A compound according to claim 16 wherein L is selected in the list consisting of

- a heterocycle of formula (L^1):

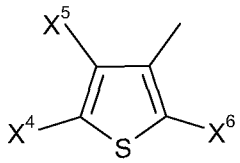


(L^1)

wherein :

X^1 to X^3 which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

- a heterocycle of formula (L^2)



(L^2)

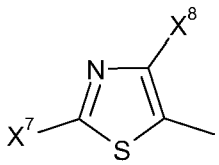
wherein :

X^4 represents a hydrogen atom; a halogen atom; a C_1-C_5-alkyl or a C_1-C_5- alkyloxycarbonyl;

X^5 represents a hydrogen atom or a halogen atom;

X^6 represents a hydrogen atom, a halogen atom or a C_1-C_5-alkyl;

- a heterocycle of formula (L^3)



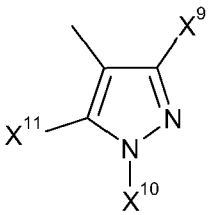
(L^3)

wherein :

X^7 represents a hydrogen atom; a halogen atom or a C_1-C_5-alkyl;

X^8 represents a hydrogen atom or a C_1-C_5-alkyl;

- a heterocycle of formula (L^4)



(L^4)

wherein :

X^9 represents a C_1-C_5-alkyl or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

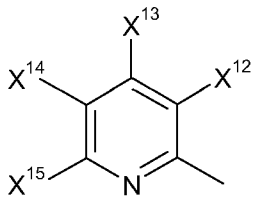
X^{10} represents a C_1-C_5-alkyl or a phenyl;

X^{11} represents a hydrogen atom; a halogen atom or a C_1-C_5-alkyl.

18. A compound according to claim 15 wherein L represents a six membered heterocycle.

19. A compound according to claim 18 wherein L is selected in the list consisting of

- a heterocycle of formula (L^5)



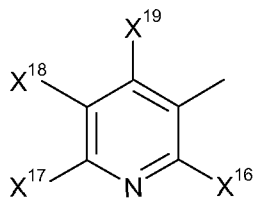
(L^5)

wherein :

X^{12}, X^{13} and X^{15} which can be the same or different represent a hydrogen atom or a halogen atom;

X^{14} represents a hydrogen atom, a halogen atom or a C_1-C_5-halogenoalkyl comprising up to 5 halogen atoms which can be the same or different;

- a heterocycle of formula (L^6)



(L^6)

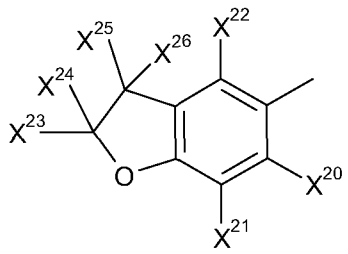
wherein :

X^{16} to X^{19} which can be the same or different represent a hydrogen; a halogen atom or a C_1-C_5-alkyl.

20. A compound according to claim 15 wherein L represents a fused heterocycle.

21. A compound according to claim 20 wherein L is selected in the list consisting of

- a heterocycle of formula (L^7)



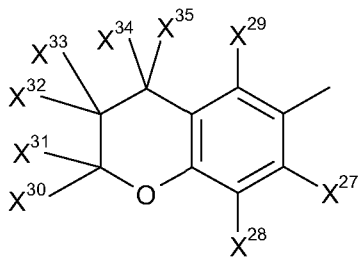
(L^7)

wherein :

X^{20} to X^{22} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5 alkyl;

X^{23} to X^{26} which can be the same or different represent a hydrogen atom or a C_1-C_5 alkyl;

- a heterocycle of formula (L^8)



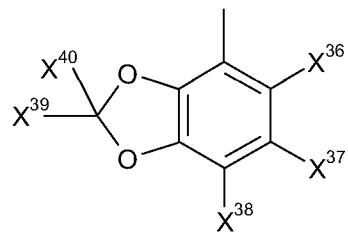
(L^8)

wherein :

X^{27} to X^{29} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5 alkyl;

X^{30} to X^{35} which can be the same or different represent a hydrogen atom or a C_1-C_5 alkyl;

- a heterocycle of formula (L^9)



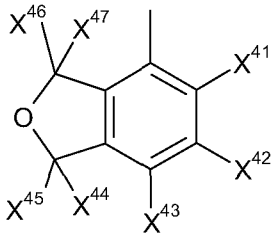
(L^9)

wherein :

X^{36} to X^{38} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5 alkyl;

X^{39} and X^{40} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5 alkyl;

- a heterocycle of formula (L^{10})



(L^{10})

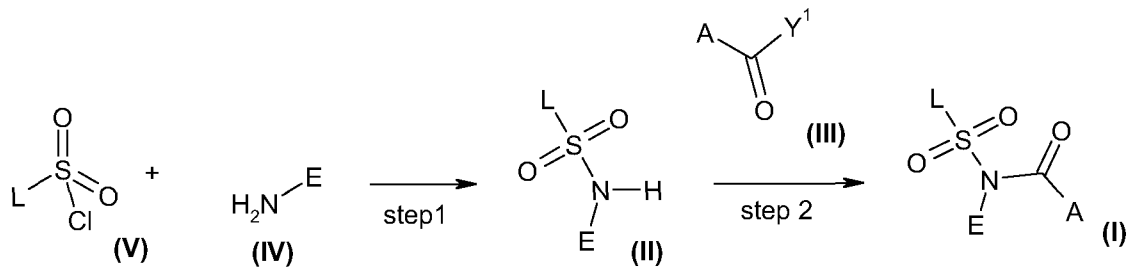
wherein :

X^{41} to X^{43} which can be the same or different represent a hydrogen atom; a halogen atom or a C_1-C_5 alkyl;

X^{44} to X^{47} which can be the same or different represent a hydrogen atom or a C_1-C_5 alkyl.

22. A compound according to claims 13 to 21 wherein Q is selected in the list consisting of halogen atoms; cyano; nitro; C_1-C_5-alkyl; C_1-C_5-alkylamino; di-C_1-C_5-alkylamino; C_1-C_5-alkoxy; C_1-C_5-alkylsulfanyl; benzyloxy; C_1-C_5-halogenoalkyl comprising 1 to 5 halogen atoms which can be the same or different; C_1-C_5-halogenoalkoxy comprising 1 to 5 halogen atoms which can be the same or different and tri(C_1-C_5)alkylsilyl.

23. A process for the preparation of a compound according to claims 1 to 22 and comprising the following steps

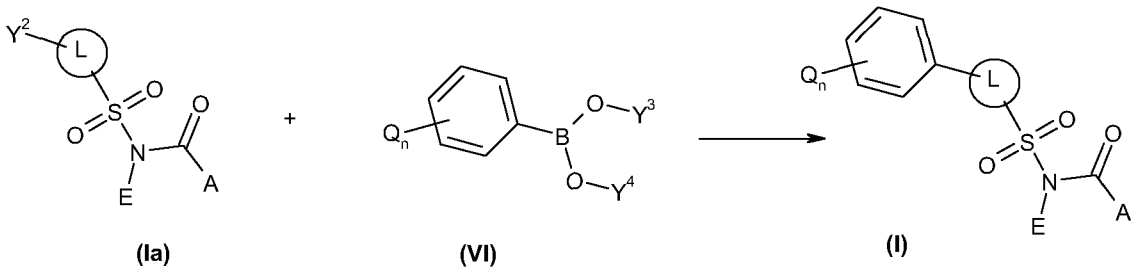


wherein

A, E and L are as defined in claims 1 to 22;

Y^1 represents a halogen atom or a hydroxyl group.

24. A process for the preparation of a compound according to claims 1 to 22 and comprising the following steps



(Ia) (VI) (I)

wherein

A, E, L and Q are as defined in claims 1 to 22;

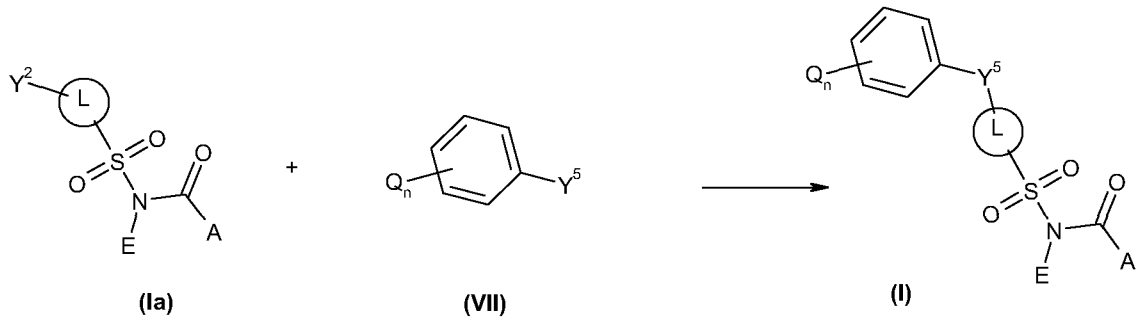
Y^2 is a halogen atom;

Y^3 and Y^4 each represent hydrogen or together represent tetramethylene;

Q is as defined in claims 1 to 22;

n is 0, 1, 2, 3, or 5.

25. A process for the preparation of a compound according to claims 1 to 22 and comprising the following step



(Ia) (VII) (I)

wherein

A, E, L and Q are as defined in claims 1 to 22;

Y^2 is a halogen atom;

Y^5 is a sulphur atom, oxygen or C_1-C_5-alkylamino;

n is 0, 1, 2, 3, or 5.

26. A method for curatively or preventively controlling phytopathogenic fungi of plants or crops characterised in that a compound of formula (I) according to claims 1 to 22 is applied to

the seed, the plant or to the fruit of the plant or to the soil wherein the plant is growing or wherein it is desired to grow.