



(12) **DEMANDE DE BREVET CANADIEN
CANADIAN PATENT APPLICATION**

(13) **A1**

(22) Date de dépôt/Filing Date: 2020/07/21

(41) Mise à la disp. pub./Open to Public Insp.: 2022/01/21

(51) Cl.Int./Int.Cl. *A01N 43/653* (2006.01),
A01N 37/46 (2006.01), *A01N 43/32* (2006.01),
A01P 3/00 (2006.01)

(71) Demandeur/Applicant:
UPL CORPORATION LIMITED, MU

(72) Inventeurs/Inventors:
SCHILLING, BRIAN, MU;
MCCREA, TRENT, MU

(74) Agent: NORTON ROSE FULBRIGHT CANADA
LLP/S.E.N.C.R.L., S.R.L.

(54) Titre : COMPOSITION FONGICIDE

(54) Title: FUNGICIDAL COMPOSITION

(57) Abrégé/Abstract:

A fungicidal composition for controlling phytopathogenic fungi, particularly *Aphanomyces* fungi is described. A specific fungicidal composition includes ipconazole, metalaxyl and caboxin (carbathiin) as active components. The fungicidal composition is used to prevent and/or treat root rot disease caused by *Aphanomyces* fungi, and/or to promote improvement in the health of a plant. Also included are methods of increasing crop yield in *Aphanomyces*-infested soils.

Abstract

A fungicidal composition for controlling phytopathogenic fungi, particularly Aphanomyces fungi is described. A specific fungicidal composition includes ipconazole, metalaxyl and caboxin (carbathiin) as active components. The fungicidal composition is used to prevent and/or treat root rot disease caused by Aphanomyces fungi, and/or to promote improvement in the health of a plant. Also included are methods of increasing crop yield in Aphanomyces-infested soils.

Title: Fungicidal composition**Field of disclosure**

The present invention relates to a fungicidal composition effective against phytopathogenic fungi. The present invention also relates to a method for the prevention and/or treatment of root rot disease caused by an *Aphanomyces* fungus in plants.

Background

Aphanomyces euteiches belongs to the class Oomycete (syn. Peronosporomycete), which is a large (between 600 and 1500 species) and phylogenetically distinct group of eukaryotes including the most numerous, most important and earliest known water moulds (Dicket al., 1999).

Aphanomyces root rot (ARR) infection can occur at any time in the growing season. This disease is caused by *Aphanomyces euteiches* Drechs. (*A. euteiches*), which is distinguished from most other soil-borne pathogens by the formation of thick-walled oospores. It can cause severe root damage at all growth stages of its host. There is a significant increase in pea cultivation in North America (Canada and the United States). At present, ARR is one of the major limitations to pea production worldwide. The longevity of *A. euteiches* oospores, makes the management of ARR difficult. Most often roots are infected with a pathogen complex. Even the symptom expression of this fungus is not clear. A number of soil-borne pathogens have been reported to be involved in root rot complex, including *A. euteiches*, *Fusarium spp.*, *Pythium spp.*, *Phytophthora spp.*, and *Rhizoctonia solani* Kühn. Pea root rot complex has been reported to be a serious problem in field pea production in Canada and worldwide.

Aphanomyces is an extremely difficult disease for Canadian Pulse growers. The estimation of crop losses due to *A. euteiches* is difficult to establish as numerous factors, including the combination of several common soil fungi causing root rot diseases, may be involved. When root rot is severe, yield reduction can be as high as about 70%. Pea root rot is associated with seed decay, damping-off,

seedling blight, root rot, and wilt; however, the identity of the causal organisms cannot be determined solely by examining the symptoms.

Thus, considering the difficulty in determining the symptoms of disease and effectively controlling the root rot disease in plants, there is a need for an alternate treatment strategy for control of *Aphanomyces* fungi to increase the yield of crops.

Objects

It is an object of the present invention to provide agricultural methods and compositions, which result in a good efficiency against harmful fungi.

It is another object of the present invention to provide compositions and methods that result in an improvement of the health of a plant.

Summary

In an aspect, the present invention provides a fungicidal composition for controlling phytopathogenic fungi, particularly *Aphanomyces* fungi.

In another aspect, a fungicidal composition comprising ipconazole, metalaxyl and caboxin (carbathiin) as active components, is used to prevent and/or treat root rot disease caused by *Aphanomyces* fungi.

In another aspect, the present invention provides a method for controlling *Aphanomyces* fungi in a plant and/or improving the health of a plant, wherein the plant is treated with a composition comprising ipconazole, metalaxyl and caboxin.

In another aspect, the present invention provides use of the foregoing for controlling root rot disease in plants and improvement of the health of a plant.

In another aspect, the present invention relates to a process for increasing the crop yield in *Aphanomyces*-infested soils.

Detailed description

For the purposes of the following detailed description, it is to be understood that the invention may assume various alternative variations and step sequences,

except where expressly specified to the contrary. Moreover, other than in any operating examples, or where otherwise indicated, all numbers expressing, for example, quantities of materials/ingredients used in the specification are to be understood as being modified in all instances by the term "about".

Thus, before describing the present invention in detail, it is to be understood that this invention is not limited to particularly exemplified systems or process parameters that may of course, vary. It is also to be understood that the terminology used herein is for the purpose of describing particular embodiments of the invention only and is not intended to limit the scope of the invention in any manner. The use of examples anywhere in this specification including examples of any terms discussed herein is illustrative only, and in no way limits the scope and meaning of the invention or of any exemplified term.

It must be noted that, as used in this specification, the singular forms "a," "an" and "the" include plural referents unless the content clearly dictates otherwise. The terms "preferred" and "preferably" refer to embodiments of the invention that may afford certain benefits, under certain circumstances.

As used herein, the terms "comprising" "including," "having," "containing," "involving," and the like are to be understood to be open-ended, i.e., to mean including but not limited to.

The compound name coboxin as used herein is same names "carbathiin" and "carbathiinne" used in Canada and are used interchangeably.

The term "plant propagation material" refers to the parts of the plant, such as seeds, which can be used for the propagation of the plant and vegetative plant material. There may be mentioned, e.g., the seeds (in the strict sense), roots, fruits, tubers, bulbs, rhizomes, parts of plants. Germinated plants or young plants, which may be transplanted after germination or after emergence from the soil. The term "seed" embraces seeds and plant propagules of all kinds including but not limited to true seeds, seed pieces, suckers, corms, bulbs, fruit, tubers,

grains, cuttings, cut shoots and the like and means in a preferred embodiment true seed. "Fungicidal" refers to the ability of a substance to decrease or inhibit growth of fungi. The term "agriculturally acceptable amount of active" refers to an amount of an active that kills or inhibits the plant disease for which control is desired, in an amount not significantly toxic to the plant being treated. To "control" or "controlling" fungus means to inhibit, the ability of fungus to grow and/or reproduce, or to limit fungus-related damage or loss in crop plants or denotes control and prevention of a disease. Controlling effects include all deviation from natural development, for example: killing, retardation, decrease of the fungal disease. The term "agriculturally acceptable amount of active" refers to an amount of an active that kills or inhibits the plant disease for which control is desired, in an amount not significantly toxic to the plant being treated.

According to the present invention, "increased yield" of an agricultural plant means that the yield of a product of the respective plant is increased by a measurable amount over the yield of the same product of the plant produced under the same conditions, but without the application of an anti-fungal composition as described herein. According to the present invention, it is preferred that the yield be increased by at least 0.5 %, preferred at least 2 %, more preferred at least 5 %.

According to the present invention, there is provided a fungicidal composition useful in combating fungal infection which remarkable antifungal activities for pathogenic fungi, particularly *Aphanomyces* fungi. The composition also increases the vigor/yield of the plant. Surprisingly, the problems explained above are in part or in whole solved by the combination of active compounds and/or methods as defined herein.

According to an aspect the present invention, a fungicidal composition comprises a fungicidally effective amount of ipconazole, metalaxyl and caboxin (5,6-dihydro-2-methyl-1,4-oxathiin-3-carboxanilide).

Preferably, the fungicidal composition comprising ipconazole, metalaxyl and caboxin as active components, is used to prevent and/or treat root rot disease caused by *Aphanomyces* fungi.

In an aspect, the present invention provides a composition for treatment of a plant propagation material, comprising ipconazole, metalaxyl and caboxin, optionally with at least one agrochemically acceptable carrier.

Another aspect of the present invention provides a seed treatment composition comprising ipconazole, metalaxyl and caboxin.

In an aspect, the present invention provides a seed treatment composition for controlling root rot disease caused by *Aphanomyces sp.*

In an aspect, the present invention includes a method of partial or complete curative control of a disease, condition, symptom or adverse effect associated with the incidence of *Aphanomyces* fungi in peas and lentils, said method comprising applying fungicidally effective amount of ipconazole, metalaxyl and caboxin in combination to the locus of the disease, condition, symptom or adverse effect.

In another aspect, the present invention provides a method for controlling phytopathogenic fungi.

In an aspect, the present invention provides a process for controlling *Aphanomyces* fungal diseases of plants comprising contacting plant propagation material/plant with an *Aphanomyces* disease-controlling effective amount of ipconazole, metalaxyl and caboxin as active compounds.

In an embodiment, the plants are pea or soybean plants.

In an aspect, the present invention provides a method for controlling *Aphanomyces* fungi in a plant and/or improving the health of a plant, wherein the plants are treated with composition comprising ipconazole, metalaxyl and caboxin in an effective amount.

In an aspect, the method of controlling root rot caused by *Aphanomyces euteiches* in particular by seed treatment using a composition comprising ipconazole, metalaxyl and caboxin in an effective amount.

The total amount of ipconazole, carboxin and metalaxyl in the composition of the present invention, is in the range of about 0.1 to 99 wt%, preferably 0.5 to 90 wt%, further preferably 1 to 80 wt%.

In an aspect, the total amount of ipconazole in the composition may be present in the range of 0.1 to 99% by weight. The total amount of carboxin in the composition may be present in the range of 0.1 to 99% by weight. The total amount of metalaxyl in the composition may be present in the range of 0.1 to 99% by weight.

In an aspect, the said combination is admixed in the ratio of (1-80): (1-80): (1-80).

Exemplary target crops include cereals such as wheat, barley, rye, oats, corn, rice, sorghum, triticale and related crops; beets such as sugar beet and fodder beet; leguminous plants such as beans, lentils, peas, soybean, chickpeas; dry bean, dry pea, Rye, Triticale, oat, wheat, barley, oil plants such as rape, mustard, sunflowers; cucurbits such as marrows, cucumbers, melons; fibre plants such as cotton, flax, hemp, jute; vegetables such spinach, lettuce, asparagus, cabbages, carrots, onions, tomatoes, potatoes, paprika as well as ornamentals such as flowers, shrubs, broad-leaved trees and evergreens, such as conifers.

In an aspect, the compositions described herein can be used to control fungal diseases, for example pea diseases: *Alternaria alternata*, *Aphanomyces euteiches* f. sp. *pisi*, *Ascochyta pinodella*, *Ascochyta pinodes*, *Ascochyta pisi*, *Botryotinia fuckeliana*, *Botrytis cinerea*, *Cercospora pisa-sativae*, *Chalara elegans*, *Cladosporium cladosporioides* f. sp. *pisicoia*, *Cladosporium pisicoia*, *Colletotrichum gloeosporioides*, *Colletotrichum pisi*, *Erysiphe pisi*, *Fusarium oxysporum*, *Fusarium oxysporum*. sp. *pisi*, *Fusarium solani*, *Fusicladium pisicoia*, *Glomerella cingulata*, *Mycosphaerella pinodes*, *Oidium* sp., *Peronospora viciae*, *Phoma pinodella*, *Pythium* spp., *Rhizoctonia solani*, *Sclerotinia sclerotiorum*, *Septoria pisi*, *Thanatephonis cucumeris*, *Thielaviopsis hasicola* and *Uromyces fabae*, Soybean diseases: *Cercospora kikuchii*, *Elsinoe glycines*, *Diaporthe phaseolorum* var . *sojae*, *Septoria glycines* *Cercospora sojina*, *Phakopsora pachyrhizi*, *Phytophthora sojae* and *Rhizoctonia solani*.

In an aspect, the present compositions are used for controlling *Aphanomyces euteiches*.

In an aspect, the target crop is field pea or lentil.

In an aspect, the target crop is soybean.

In an aspect, the target pathogen and disease are caused by *Aphanomyces* species.

In an aspect, the target pathogen and disease are root rot caused by *Aphanomyces euteiches*.

In an aspect, the target pathogen and disease are for pea is root rot caused by *Aphanomyces* species.

In an aspect, the target pathogen and disease are for pea is root rot caused by *Aphanomyces euteiches*.

In another aspect, the secondary pathogens they may be targeted include seed rot (*Penicillium* spp. and *Aspergillus* spp.) damping off and seedling diseases, seedling blight (*Rhizoctonia solani*, *Fusarium* spp., *Pythium* spp.), seedling root rot (*Rhizoctonia solani*), seed rot and damping off caused by *Pythium*, root rot caused by *Rhizoctonia*, *Fusarium*, and *Botrytis*, seed rot and damping off caused by *Pythium*, root rot caused by and *Rhizoctonia*, and seed borne ascochyta blight. Typically, the compositions of present invention provides control or suppression of seed, seedling and soil-borne diseases of cereal grains (barley, wheat, oat, rye and triticale), dried shelled pea and bean (dry pea, dry bean, lentil and chickpea) and soybean.

In preferred aspect, the present invention provides use of said compositions for controlling pea diseases caused by *Aphanomyces* fungi.

Typically, the present invention provides use of present compositions for controlling root rot disease caused by *Aphanomyces euteiches* in peas.

The present compositions may comprise ipconazole, carboxin and metalaxyl as active components and at least one agrochemically excipient/carrier.

In an embodiment the present compositions are used for seed treatment of plants. In the treatment of seeds, the present formulations are commonly applied by treating the seeds with an effective amount of the compositions of the invention. In the treatment of a seed, the application rates of the compositions of the invention formulated at ipconazole at 5g a.i./L, metalaxyl at 13.33g a.i./L and carboxin at 133.33gai/L are generally in the range from 0.001 to 1000ml/100kg

seed, preferably 0.1 to 500ml/100kg of seeds. The active ingredient from application rates are generally in the range of 0.005 to 5 g a.i./100kg of seed for ipconazole, 0.0133 to 13.33 gai/100kg of seed for metalaxyl and 0.133 to 133.33g ai/100 of seed for carboxin.

In an aspect, the constituents of the composition of the present invention may be applied as per known methods of application to seeds and other plant propagation material or transplanted saplings. In an aspect of the present invention, the compositions can be formulated into either solid or liquid formulations that are suitable for application to plant propagation material. The formulation may be made as known formulation types such as wettable powders (WP), solutions (LS), emulsions (ES), suspension concentrates (FS), water dispersible granule (WG), or aqueous suspension concentrate (CS).

The formulation may be applied by various methods such methods using conventional treating techniques and machines, such as fluidized bed techniques, the roller mill method, drones, rotostatic seed treaters, and drum coaters, spouted beds etc. Pre and post coating procedures such as sizing etc., may also be carried out. Such procedures are known in the art. It is readily understood that plant propagation material will be treated only once it is removed from the plant and is ready to be re-sown. In an aspect, the treatment may occur before sowing of the plant propagation material so that the sown material has been pre-treated with the combination. In particular, seed coating or seed pelleting are preferred in the treatment of the combinations according to the invention. As a result of the treatment, the active ingredients in the combination are adhered on to the seed and therefore available for disease control. The formulations may be diluted in a carrier to no less than effective concentration.

The formulations may contain standard agriculturally acceptable adjuvants, carriers, diluents, emulsifiers, fillers, dispersing agents, anti-foaming agents, preservatives, thickening agents, anti-freeze agents, biocides, pigments, and the like.

Exemplary agricultural adjuvants and carriers include, but are not limited to, crop oil concentrates; methylated seed oils, emulsified methylated seed oil, nonylphenol ethoxylate; benzylcocoalkyldimethyl quaternary ammonium salt;

blend of petroleum hydrocarbon, alkyl esters, organic acid, and anionic surfactant; C9-C11 alkylpolyglycoside; phosphated alcohol ethoxylate; natural primary alcohol (C12- C16) ethoxylate; di-sec-butylphenol EO-PO block copolymer; polysiloxane-methyl cap; nonylphenol ethoxylate, urea ammonium nitrate; tridecyl alcohol (synthetic) ethoxylate (8EO); tallow amine ethoxylate ; PEG(400) dioleate-99, alkyl sulfates, such as diethanolammonium lauryl sulfate; alkylarylsulfonate salts, such as calcium dodecylbenzenesulfonate; alkylphenol-alkylene oxide addition products, such as nonylphenol-Cis ethoxylate; alcohol-alkylene oxide addition products, such as tridecyl alcohol-Ci6 ethoxylate; soaps, such as sodium stearate; alkyl- naphthalene-sulfonate salts, such as sodium dibutyl-naphthalenesulfonate; dialkyl esters of sulfosuccinate salts, such as sodium di(2-ethylhexyl)sulfosuccinate; sorbitol esters, such as sorbitol oleate; quaternary amines, such as lauryl trimethylammonium chloride; polyethylene glycol esters of fatty acids, such as polyethylene glycol stearate; block copolymers of ethylene oxide and propylene oxide; salts of mono and dialkyl phosphate esters; vegetable or seed oils such as soybean oil, rapeseed/canola oil, olive oil, castor oil, sunflower seed oil, coconut oil, corn oil, cottonseed oil, linseed oil, palm oil, peanut oil, safflower oil, sesame oil, tung oil and the like; and esters of the above vegetable oils, and in certain embodiments, methyl esters, and the like.

Exemplary liquid carriers that may be employed in a composition of the present invention include water or organic solvents. The organic solvents include, but are not limited to, petroleum fractions or hydrocarbons such as mineral oil, aromatic solvents, paraffinic oils, and the like; vegetable oils such as soybean oil, rapeseed oil, olive oil, castor oil, sunflower seed oil, coconut oil, corn oil, cottonseed oil, linseed oil, palm oil, peanut oil, safflower oil, sesame oil, tung oil and the like; esters of the above vegetable oils; esters of monoalcohols or dihydric, trihydric, or other lower polyalcohols (4-6 hydroxy containing), such as 2-ethyl hexyl stearate, n-butyl oleate, isopropyl myristate, propylene glycol dioleate, di-octyl succinate, di-butyl adipate, di-octyl phthalate and the like; esters of mono, di and polycarboxylic acids and the like. Organic solvents include, but are not limited to toluene, xylene, petroleum naphtha, crop oil, acetone, methyl ethyl ketone, cyclohexanone, trichloroethylene, perchloroethylene, ethyl acetate,

amyl acetate, butyl acetate, propylene glycol monomethyl ether and diethylene glycol monomethyl ether, methyl alcohol, ethyl alcohol, isopropyl alcohol, amyl alcohol, ethylene glycol, propylene glycol, glycerine, N-methyl-2-pyrrolidinone, N,N-dimethyl alkylamides, dimethyl sulfoxide, and the like.

Solid carriers that may be employed in the compositions of the present invention may include, but are not limited to, attapulgite, pyrophyllite clay, silica, kaolin clay, kieselguhr, chalk, diatomaceous earth, lime, calcium carbonate, bentonite clay, Fuller's earth, talc, cottonseed hulls, wheat flour, soybean flour, pumice, wood flour, walnut shell flour, lignin, cellulose, and the like, and mixtures thereof.

Exemplary thickeners include silicates meal silicates, sodium carboxymethyl cellulose, methyl cellulose, ethyl cellulose, polyvinylalcohol, sodium alginate, Sodium poly acrylate, xanthan gum, welan gum, gum arabic, montmorillonite, lignosulfonates, hydroxy methyl cellulose, dextrin, starch, and mixtures thereof.

Anti-freeze agents include glycerin, ethylene glycol, propylene glycol, preferably propylene glycol and the like. Anti-foaming agents include silicone oils, mineral oils, fatty acid esters; biocides such as sodium benzoate, 1,2-benzisothiazoline -3-one, 2-methyl-4-isothiazolin-3-one, 5-chloro-2-methyl-4-isothiazolin-3-one, potassium sorbate, parahydroxy benzoates and the like.

Pigments may also be included in the formulation and may include, but are not limited to, pigment blue 15:4, pigment blue 15:3, pigment blue 15:2, pigment blue 15:1 , pigment blue 80, pigment yellow 1 , pigment yellow 13, pigment red 112, pigment red 48:2, pigment red 48:1 , pigment red 57: 1 , pigment red 53:1 , pigment orange 43, pigment orange 34, pigment orange 5, pigment green 36, pigment green 7, pigment white 6, pigment brown 25, basic violet 10, basic violet 49, violet 23, acid red 51 , acid red 52, acid red 14, acid blue 9, acid yellow 23, basic red 10, basic red 108.

Polymers which may be included are polyvinyl alcohols, polyvinylpyrrolidone, gel-forming carraagheenans, water-soluble gelatine and casein, superabsorbent polymers such polyacrylamides and polyacrylates based polymers, semi-synthetic or fully- synthetic peptide/protein-based superabsorbent polymers such as collagen-based synthetic polymers, elastin-like polypeptides, polyaspartic acid, polyaspartates, polyglutamic acid, polyglutamate, semi-synthetic or fully-

synthetic polysaccharide: carboxymethyl starch, sulfoethyl starch, carboxymethyl cellulose, sulfoethyl cellulose, hydroxypropyl cellulose, hydroxyethyl cellulose, methylcellulose, chitosan; cross-linked polysaccharides such as CMS cross-linked with multi-functional carboxylic acids or multi-functional epoxides and the like.

Polysaccharide graft copolymers which may be included can be polysaccharides obtained by graft polymerizing a monomer onto a polysaccharide, wherein the monomer is selected from acrylonitrile, acrylic acid, methacrylic acid, acrylamide, methacrylamide, 2-acrylamido-2-methylpropanesulfonic acid (AMPS), vinyl sulfonic acid, ethyl acrylate, and potassium acrylate and the like.

In an aspect, the formulation is a FS formulation comprising combination of ipconazole, carboxin and metalaxyl as active components and at least one agrochemically excipient/carrier.

In an aspect, the combination of the present invention may be used for treatment of plant propagation material of crops such as cereals such as wheat, barley, rye, oats, corn, rice, sorghum, triticale and related crops; beets such as sugar beet and fodder beet; leguminous plants such as beans, lentils, peas, soybean; oil plants such as rape, mustard, sunflowers; cucurbits such as marrows, cucumbers, melons; fibre plants such as cotton, flax, hemp, jute; vegetables such as spinach, lettuce, asparagus, cabbages, carrots, onions, tomatoes, potatoes, paprika as well as ornamentals such as flowers, shrubs, broad-leaved trees and evergreens, such as conifers. The plant propagation material may also be used on varieties of plant propagation material such as conventional, hybrid or transgenic plants.

In an aspect, the combinations of the present invention may further contain herbicide, fungicides, insecticides, fertilizers, biologicals, other plant growth additives such as mycorrhiza, silicic acid, plant derived growth promoters, and the like.

According to an aspect, the various components of the stable fungicidal composition can be used individually or already partially or completely mixed with one another to prepare the composition according to the invention. It is also

possible for them to be packaged and used further as combination composition such as a kit of parts.

In another aspect, the compositions of the present invention may be presented in the form of a multi-pack fungicidal product or as a kit-of-parts for controlling target fungus.

In an embodiment, the multi-pack herbicidal product comprises a package holding a composition comprising one or more container containing fungicidally effective amounts of ipconazole, caboxin and metalaxyl respectively together with an instruction manual.

The multi-pack product described above is fungicidally efficacious for seed treatment.

The present combination demonstrated an enhanced root rot control in crops which resulted in increased yield.

The compositions according to the invention, for use in the present methods, can be applied before or after infection of the useful plants or the propagation material thereof by the fungi.

The method of the present invention also improves the existing disease control to an unexpectedly high degree and surprisingly improves the yield obtained.

According to an aspect, the method is for improving the health of a plant.

According to a further aspect of the invention, by means of seed treatment the health of the plants that are growing from seed that has been treated with said present compositions is improved.

According to an aspect of the present invention, the yield of an agricultural plant is increased. Effectively, the composition of present invention displayed improvement of the plant defense mechanism against targeted pathogens. It promoted the growth of the seedlings through the increment of the root system,

with greater depth of roots and better utilization of nutrients. Increased photosynthetic, consequently lower energy consumption of the seedling provided vigorous growth, conditioning the plant to achieve superior productivity even under stress conditions

While the foregoing written description of the invention enables one of ordinary skill to make and use what is considered presently to be the best mode thereof, those of ordinary skill will understand and appreciate the existence of variations, its combinations, and equivalents of the specific embodiment, method, and examples herein. The invention should therefore not be limited by the above described embodiment, method, and examples, but by all embodiments and methods within the scope and spirit of the invention.

The invention will be illustrated with reference to the following examples.

EXAMPLES

Example 1

Trials were conducted to test the effects of present composition, treatment 1 and 2 (ipconazole, metalaxyl and caboxin) for control of root rot in peas. No chemical phytotoxicity was observed from the seed treatments. The results are represented in Table 1.

Table 1

Treatments	Rate/Rate unit	Root rot infection (%)	Yield (bu/acre)
Untreated	-	90	26
Treatment 1	300 ml/100 kg	50	32
Treatment 2	400 ml/100 kg	48.3	33

It can be seen from above data that present compositions have significantly reduced the infection caused by *Aphanomyces* fungi.

Claims

1. A fungicidal composition useful in combating fungal infection comprising a fungicidally effective amount of ipconazole, metalaxyl and caboxin (5,6-dihydro-2-methyl-1,4-oxathiin-3-carboxanilide).