



HU000027860T2

(19) **HU**(11) Lajstromszám: **E 027 860**(13) **T2****MAGYARORSZÁG**
Szellemi Tulajdon Nemzeti Hivatala**EURÓPAI SZABADALOM**
SZÖVEGÉNEK FORDÍTÁSA(21) Magyar ügyszám: **E 06 706259**(51) Int. Cl.: **A01N 43/38** (2006.01)(22) A bejelentés napja: **2006. 01. 17.****A01N 25/00** (2006.01)**A01N 47/06** (2006.01)(96) Az európai bejelentés bejelentési száma:
EP 20060706259

(86) A nemzetközi (PCT) bejelentési szám:

PCT/EP 06/000356(97) Az európai bejelentés közzétételi adatai:
EP 1843660 A2 **2006. 07. 27.**

(87) A nemzetközi közzétételi szám:

WO 06077071(97) Az európai szabadalom megadásának meghirdetési adatai:
EP 1843660 B1 **2016. 04. 13.**(30) Elsőbbségi adatok:
102005003076 **2005. 01. 22.** **DE**(73) Jogosult(ak):
Bayer Intellectual Property GmbH, 40789
Monheim am Rhein (DE)(72) Feltaláló(k):
FISCHER, Reiner, 40789 Monheim (DE)
HUNGENBERG, Heike, 40764 Langenfeld (DE)
BRÜCK, Ernst, 51467 Bergisch Gladbach (DE)
NAUEN, Ralf, 40764 Langenfeld (DE)
THIELERT, Wolfgang, 51519 Odenthal (DE)
VAN WAETERMEULEN, Xavier, Alain, Marie, 40472
Düsseldorf (DE)(74) Képvisező:
Danubia Szabadalmi és Jogi Iroda Kft.,
Budapest(54) **Tetraminsav-származékok alkalmazása növénytetvek (sternorrhyncha) nemeibe tartozó rovarok irtására**

Az európai szabadalom ellen, megadásának az Európai Szabadalmi Közlönyben való meghirdetésétől számított kilenc hónapon belül, felszólalást lehet benyújtani az Európai Szabadalmi Hivatalnál. (Európai Szabadalmi Egyezmény 99. cikk(1))

A fordítást a szabadalmas az 1995. évi XXXIII. törvény 84/H. §-a szerint nyújtotta be. A fordítás tartalmi helyességét a Szellemi Tulajdon Nemzeti Hivatala nem vizsgálta.

Use of tetramic acid derivatives for the control of insects of the plant louse species (Sternorrhyncha)

The present invention relates to the use of the compound of the formula (I) for
5 controlling insects from the suborder of the plant lice (Sternorrhyncha).

Tetramic acid derivatives are known from EP-A-456 063, EP-A-521 334, EP-A-
596 298, EP-A-613 884, WO 95/01 997, WO 95/26 954, WO 95/20 572, EP-A-
0 668 267, WO 96/25 395, WO 96/35 664, WO 97/01 535, WO 97/02 243, WO
10 97/36 868, WO 97/43 275, WO 98/05638, WO 98/06721, WO 98/25928, WO
99/16748, WO 99/24437, WO 99/43649, WO 99/48869 and WO 99/55673, WO
01/09092, WO 01/17972, WO 01/23354, WO 01/74770, WO 03/013249,
WO 2004/007 448, WO 2004/024 688, WO 04/065 366, WO 04/080 962, WO 04/111
042, WO 05/044 791, WO 05/044 796, WO 05/048 710, WO 05/049 596, WO 05/066
15 125.

The insecticidal action of some of these compounds against the species *Myzus persicae*
and *Aphis gossypii* from the family of the aphids (Aphididae) in vegetable crops such
as, for example, brassica vegetables and cotton, is known. The action against the
20 whitefly *Bemisia tabaci* (Aleyrodidae) on cotton has also been described.

Surprisingly, it has now been found that tetramic acid derivatives are also particularly
suitable for controlling further animal pests from the suborder of the plant lice,
especially from the families of the gall-making aphids (Pemphigidae), phylloxerans
25 (Phylloxeridae), jumping plant lice (Psyllidae), soft scales (Coccidae), armoured scales
(Diaspididae), ensign coccids (Ortheziidae) and mealy bugs (Pseudococcidae).

Furthermore, it has been found that tetramic acid derivatives are also highly active
against whiteflies (Aleyrodidae) in further annual crops, such as vegetables, cotton,
30 melons, potatoes, tobacco and, surprisingly, also in perennial crops, such as, for
example, citrus fruit, soft fruit, but also ornamental plants and spices.

Moreover, it has been found that tetramic acid derivatives are also very active against aphids (Aphididae) in further annual crops, such as potatoes, tobacco, melons, beet, oilseed rape, cereals, fruit vegetables, tuber vegetables, leafy vegetables, brassica vegetables, root vegetables, stem vegetables, bulb crops, flower-heads/curds as vegetables and, surprisingly, also in perennial crops, such as, for example, citrus fruit, pomme fruit and stone fruit, nuts, almonds, soft fruit, grapevines and hops, and also in tropical crops, ornamental plants and spices.

Accordingly, the present invention relates to the use of the compound of the formula (I) for controlling insects from the families a) of the gall-making aphids (Pemphigidae), 10 phylloxerans (Phylloxeridae), jumping plant lice (Psyllidae), soft scales (Coccidae), armoured scales (Diaspididae), ensign coccids (Ortheziidae) and mealy bugs (Pseudococcidae) in annual and perennial and also tropical crops, and also b) for controlling pests from the family of the whiteflies (Aleyrodidae) in further annual 15 crops, such as vegetables, potatoes, tobacco, melons, cotton and, surprisingly, also in perennial crops, such as, for example, citrus fruit, soft fruit, but also ornamental plants and spices and in tropical crops, and c) for controlling insects from the family of the aphids (Aphididae) in further annual crops, such as potatoes, tobacco, melons, beet, oilseed rape, cereal, fruit vegetables, tuber vegetables, leafy vegetables, brassica 20 vegetables, root vegetables, stem vegetables, bulb crops, flower-heads/curds as vegetables and, surprisingly, also in perennial crops, such as, for example, citrus fruit, pomme fruit and stone fruit, nuts, almonds, soft fruit, grapevines and hops, and also tropical crops, ornamental plants and spices.

25 The crops to be protected, which have only been described in a general manner, are described in a more differentiated and more specific manner below. Thus, with respect to the use, vegetable is to be understood as meaning, for example, fruit vegetable and flower-heads/curds as vegetables, for example bell peppers, chilli peppers, tomatoes, aubergines, cucumbers, cucurbits, courgettes, broad beans, runner beans, bush beans, 30 peas, artichokes, maize;

but also leafy vegetables, for example lettuce, chicory, endives, cress, rocket salad, field salad, iceberg lettuce, leek, spinach, Swiss chard;

furthermore tuber vegetables, root vegetables and stem vegetables, for example celeriac, beetroot, carrots, garden radish, horseradish, scorzonera, asparagus, table beet,
5 palm shoots, bamboo shoots, moreover bulb vegetables, for example onions, leek, fennel, garlic;

furthermore brassica vegetables, such as cauliflowers, broccoli, kohlrabi, red cabbage, white cabbage, green cabbage, Savoy cabbage, Brussels sprouts, Chinese cabbage.

Thus, with respect to the use in cereal crops, cereal is to be understood as meaning, for
10 example, wheat, barley, rye, oats, triticale but also maize, millet and rice;

with respect to the use, perennial crops are to be understood as meaning citrus fruit, such as, for example, oranges, grapefruit, mandarins, lemons, limes, bitter oranges, cumquats, satsumas;

but also pomme fruit, such as, for example, apples, pears and quince, and stone fruit,
15 such as, for example, peaches, nectarines, cherries, plums, common plums, apricots;

furthermore grapevine, hops, olives, tea, and tropical crops, such as, for example, mangoes, papayas, figs, pineapples, dates, bananas, durians, kakis, coconuts, cacao, coffee, avocados, litchis, maracujas, guavas,

moreover almonds and nuts, such as, for example, hazelnuts, walnuts, pistachios,
20 cashew nuts, brazil nuts, pecan nuts, butter nuts, chestnuts, hickory nuts, macadamia nuts, peanuts,

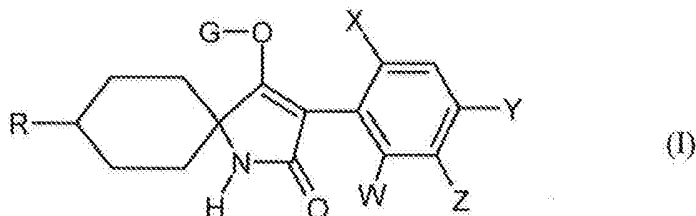
additionally also soft fruit, such as, for example, blackcurrants, gooseberries, raspberries, blackberries, blueberries, strawberries, red bilberries, kiwis, cranberries.

With respect to the use, ornamental plants are to be understood as meaning annual and
25 perennial plants, for example cut flowers, such as, for example, roses, carnations, gerbera, lilies, marguerites, chrysanthemums, tulips, daffodils, anemones, poppies, amaryllis, dahlias, azaleas, malves,

but also, for example, bedding plants, potted plants and shrubs, such as, for example, roses, tagetes, pansies, geraniums, fuchsias, hibiscus, chrysanthemums, busy lizzies,
30 cyclamen, African violets, sunflowers, begonias,

furthermore, for example, bushes and conifers, such as, for example, fig trees, rhododendron, spruce trees, fir trees, pine trees, yew trees, juniper trees, stone pines, rose bays.

- 5 With respect to the use, spices are to be understood as meaning annual and perennial plants, such as, for example, aniseed, chilli pepper, bell pepper, pepper, vanilla, marjoram, thyme, cloves, juniper berries, cinnamon, estragon, coriander, saffron, ginger.
- 10 According to the invention, use is made of example compound I-4 of the formula (I) mentioned in the table below:



Example No.	W	X	Y	Z	R	G	m.p. ^{°C}
I-1	H	Br	H	CH ₃	OCH ₃	CO-i-C ₃ H ₇	122
I-2	H	Br	H	CH ₃	OCH ₃	CO ₂ -C ₂ H ₅	140 - 142
I-3	H	CH ₃	H	CH ₃	OCH ₃	H	> 220
I-4	H	CH ₃	H	CH ₃	OCH ₃	CO ₂ -C ₂ H ₅	128
I-5	CH ₃	CH ₃	H	Br	OCH ₃	H	> 220
I-6	CH ₃	CH ₃	H	Cl	OCH ₃	H	219
I-7	H	Br	CH ₃	CH ₃	OCH ₃	CO-i-C ₃ H ₇	217
I-8	H	CH ₃	Cl	CH ₃	OCH ₃	CO ₂ C ₂ H ₅	162
I-9	CH ₃	CH ₃	CH ₃	CH ₃	OCH ₃	H	>220
I-10	CH ₃	CH ₃	H	Br	OC ₂ H ₅	CO-i-C ₃ H ₇	212 - 214
I-11	H	CH ₃	CH ₃	CH ₃	OC ₂ H ₅	CO-n-C ₃ H ₇	134
I-12	H	CH ₃	CH ₃	CH ₃	OC ₂ H ₅	CO-i-C ₃ H ₇	108

Example No.	W	X	Y	Z	R	G	m.p.°C
I-13	H	CH ₃	CH ₃	CH ₃	OC ₂ H ₅	CO- <i>c</i> -C ₃ H ₅	163

in the form of their *cis/trans* isomer mixtures or their pure *cis* isomers.

The compounds of the formula (I) are known compounds whose preparation is described in the patents/patent applications cited on page 1 (see especially 5 WO 97/01 535, WO 97/36 868, WO 98/05 638).

From the family of the gall-making aphids (Pemphigidae), preference is given to: Eriosoma spp., Pemphigus spp., Anuraphis spp., in crops such as, for example, citrus 10 fruit, pomme fruit, stone fruit, vegetables, beet, cereals and ornamental plants.

From the family of the phylloxerans (Phylloxeridae), preference is given to: Phylloxera spp. in grapevines, nuts, citrus fruit.

From the family of the jumping plant lice (Psyllidae), preference is given to: Psylla 15 spp., Paratrioza spp., Tenalaphara spp., Diaphorina spp., Trioza spp., in crops such as, for example, pomme fruit, stone fruit, citrus fruit, vegetables, potatoes, in tropical crops.

From the family of the soft scales (Coccidae), preference is given to: Ceroplastes spp., 20 Drosicha spp., Pulvinaria spp., Protopulvinaria spp., Saissetia spp., Coccus spp., in perennial crops such as, for example, citrus fruit, pomme fruit, stone fruit, olives, grapevines, coffee, tea, tropical crops, ornamental plants, vegetables.

From the family of the armoured scales (Diaspididae), preference is given to: 25 Quadraspidiotus spp., Aonidiella spp., Lepidosaphes spp., Aspidiotus spp., Aspisp spp., Diaspis spp., Parlatoria spp., Pseudaulacaspis spp., Unaspis spp., Pinnaspis spp., Selenaspis spp., in crops such as, for example, citrus fruit, pomme fruit, stone fruit, almonds, nuts, olives, tea, ornamental plants, grapevines, tropical crops.

From the family of the ensign coccids (Ortheziidae), preference is given to: *Orthezia* spp. in citrus fruit, pomme fruit, stone fruit.

5 From the family of the mealy bugs (Pseudococcidae), preference is given to: *Pericera*, *Pseudococcus* spp., *Planococcus* spp., *Dysmicoccus* spp., in crops such as, for example, citrus fruit, stone fruit and pomme fruit, tea, grapevines, vegetables, ornamental plants and tropical crops.

10 From the family of the whiteflies (Aleyrodidae), preference is furthermore given to: *Bemisia argentifolii*, *Trialeurodes vaporariorum*, *Aleurothrixus floccosus*, *Aleurodes* spp., *Dialeurodes* spp., *Parabemisia myricae* in crops such as, for example, vegetables, melons, potatoes, tobacco, soft fruit, citrus fruit, ornamental plants, cotton and tropical crops, and also *Bemisia tabaci* in crops such as, for example, vegetables, melons, soft fruit, tobacco, citrus fruit, ornamental plants, potatoes and tropical crops.

15

From the family of the aphids (Aphidae), preference is furthermore given to:

- | | | |
|----|--|--|
| | <i>Myzus</i> spp. | in tobacco, cereals, stone fruit, soft fruit, fruit vegetables, leafy vegetables, tuber and root vegetables, melons, potatoes, beet, oilseed rape, ornamental plants, |
| 20 | <i>Aphis</i> spp. | in tobacco, citrus fruit, pomme fruit, stone fruit, cereals, melons, beet, soft fruit, oilseed rape, fruit vegetables, leafy vegetables, brassica vegetables, tuber and root vegetables, ornamental plants, potatoes, cucurbits, |
| | <i>Rhodobium porosum</i> | in strawberries, |
| 25 | <i>Nasonovia ribisnigri</i> | in leafy vegetables, |
| | <i>Dysaphis</i> spp. | in pomme fruit, |
| | <i>Macrosiphum</i> spp. | in ornamental plants, cereals, potatoes, leafy vegetables, brassica vegetables and fruit vegetables, strawberries, |
| | <i>Rhopalosiphum padi</i> ,
<i>Sitobion avenae</i> ,
<i>Methopolophium dirhodum</i> ,
<i>Brachycolus noxius</i> | in cereals, |
| 30 | <i>Phorodon humuli</i> | in hops, |

Brachycaudus helychrisii in stone fruit, such as, for example, plums,
Toxoptera spp. in citrus fruit, stone fruit, almonds, nuts, cereals, spices,
Aulacorthum spp. in citrus fruit, potatoes, fruit vegetables and leafy vegetables.

5 Very particular preference is given to the control of the following species from the family of the gall-making aphids (*Pemphigidae*) in the following crops, preferably after foliar application:

- Eriosoma lanigerum* in pomme fruit and stone fruit such as, for example, apples, pears, cherries, plums, garden plums,
10 *Eriosoma pyricola* in pomme fruit such as apples and pears,
Pemphigus fuscicornis, *Pemphigus bursarius* in beet, vegetables, ornamental plants
Anuraphis cardui in vegetables such as, for example, artichokes.

All plants and plant parts can be treated in accordance with the invention. In this
15 context, plants are understood as meaning all plants and plant populations such as desired and undesired wild plants or crop plants (including naturally occurring crop plants). Crop plants can be plants which can be obtained by traditional breeding and optimization methods or by biotechnological and recombinant methods, or combinations of these methods, including the transgenic plants and including the plant
20 varieties which are capable or not capable of being protected by Plant Breeders' Rights. Plant parts are understood as meaning all aerial and subterranean parts and organs of the plants such as shoot, leaf, flower and root, examples which may be mentioned being leaves, needles, stalks, stems, flowers, fruit bodies, fruits and seeds, but also roots, tubers and rhizomes. The plant parts also include crop material and vegetative
25 and generative propagation material, for example cuttings, tubers, rhizomes, slips and seeds.

The treatment according to the invention with the active compound, of the plants and plant parts, is effected directly or by treating their environment, habitat or store using
30 conventional treatment methods, for example by dipping, spraying, fumigating,

fogging, scattering, brushing on, injecting, and, in the case of propagation material, in particular seeds, furthermore by coating with one or more coats.

As already mentioned above, all plants and their parts can be treated in accordance
5 with the invention. In a preferred embodiment, plant species and plant varieties which
are found in the wild or which are obtained by traditional biological breeding methods,
such as hybridization or protoplast fusion, and parts of these species and varieties are
treated. In a further preferred embodiment, transgenic plants and plant varieties which
10 have been obtained by recombinant methods, if appropriate in combination with
traditional methods (genetically modified organisms) and their parts are treated. The
terms "parts", "parts of plants" or "plant parts" have been described above.

Plants which are especially preferably treated in accordance with the invention are
those of the varieties which are in each case commercially available or in use. Plant
15 varieties are understood as meaning plants with novel traits which have been bred both
by conventional breeding, by mutagenesis or by recombinant DNA techniques. They
may take the form of varieties, biotypes or genotypes.

Depending on the plant species or plant varieties, their location and growth conditions
20 (soils, climate, vegetation period, nutrition), superadditive ("synergistic") effects may
also occur as a result of the treatment according to the invention. Effects which exceed
the effects actually to be expected are, for example, reduced application rates and/or
widened activity spectrum and/or an enhancement of the activity of the substances and
compositions which can be used in accordance with the invention, better plant growth,
25 increased tolerance to high or low temperatures, increased tolerance to drought or to
water or soil salinity, increased flowering performance, facilitated harvest, speedier
maturation, higher yields, higher quality and/or higher nutritional value of the crop
products, better storability and/or processibility of the crop products.

30 The preferred transgenic plants or plant varieties (plants or plant varieties obtained by
means of genetic engineering) which are to be treated in accordance with the invention

include all plants which, by means of the recombinant modification, have received genetic material which confers particularly advantageous valuable traits to these plants. Examples of such traits are better plant growth, increased tolerance to high or low temperatures, increased tolerance to drought or to water or soil salinity, increased flowering performance, facilitated harvest, speedier maturation, higher yields, higher quality and/or higher nutritional value of the crop products, better storability and/or processibility of the crop products. Other examples of such traits which are particularly emphasized are an improved defence of the plants against animal and microbial pests such as insects, mites, phytopathogenic fungi, bacteria and/or viruses, and an increased tolerance of the plants to specific herbicidal active compounds. Examples of transgenic plants which are mentioned are the important crop plants such as cereals (wheat, rice), maize, soybean, potato, cotton, tobacco, oilseed rape and fruit plants (with the fruits apples, pears, citrus fruits and grapes), with particular emphasis on maize, soybean, potatoes, cotton, tobacco and oilseed rape. Traits which are particularly emphasized are the increased defence of the plants against insects, arachnids, nematodes and slugs and snails as the result of toxins formed in the plants, in particular toxins which are produced in the plants by the genetic material of *Bacillus Thuringiensis* (for example by the genes CryIA(a), CryIA(b), CryIA(c), CryIIA, CryIIIA, CryIIIB2, Cry9c, Cry2Ab, Cry3Bb and CryIF and their combinations) (hereinbelow "Bt plants"). Traits which are also particularly emphasized are the increased defence of plants against fungi, bacteria and viruses by systemic acquired resistance (SAR), systemin, phytoalexins, elicitors and resistance genes and correspondingly expressed proteins and toxins. Traits which are furthermore especially emphasized are the increased tolerance of the plants to specific herbicidal active compounds, for example imidazolinones, sulphonylureas, glyphosate or phosphinothricin (for example "PAT" gene). The specific genes which confer the desired traits can also occur in combinations with one another in the transgenic plants. Examples of "Bt plants" which may be mentioned are maize varieties, cotton varieties, soybean varieties and potato varieties sold under the trade names YIELD GARD® (for example maize, cotton, soybean), KnockOut® (for example maize), StarLink® (for example maize), Bollgard® (cotton), Nucotn® (cotton) and NewLeaf® (potato). Examples of herbicide-tolerant plants which may be

mentioned are maize varieties, cotton varieties and soybean varieties which are sold under the trade names Roundup Ready® (glyphosate tolerance, for example maize, cotton, soybean), Liberty Link® (phosphinothricin tolerance, for example oilseed rape), IMI® (imidazolinone tolerance) and STS® (sulphonylurea tolerance, for example maize). Herbicide-resistant plants (bred conventionally for herbicide tolerance) which may also be mentioned are the varieties sold under the name Clearfield® (for example maize). Naturally, what has been said also applies to plant varieties which will be developed, or marketed, in the future and which have these genetic traits or traits to be developed in the future.

10

The active compound of the formula (I) can be converted into the customary formulations, such as solutions, emulsions, wettable powders, suspensions, powders, dusts, pastes, soluble powders, granules, suspoemulsion concentrates, natural and synthetic materials impregnated with active compound, and ultrafine encapsulations in polymeric materials.

15

These formulations are produced in the known manner, for example by mixing the active compound with extenders, that is, liquid solvents and/or solid carriers, optionally with the use of surfactants, that is, emulsifiers and/or dispersants and/or foam formers.

20

In the case of the use of water as an extender, organic solvents can, for example, also be used as cosolvents. Liquid solvents which are suitable are mainly: aromatics, such as xylene, toluene or alkylnaphthalenes, chlorinated aromatics or chlorinated aliphatic hydrocarbons, such as chlorobenzenes, chloroethylenes or methylene chloride, aliphatic hydrocarbons, such as cyclohexane or paraffins, for example mineral oil fractions, mineral oils and vegetable oils, alcohols, such as butanol or glycol as well as their ethers and esters, ketones, such as acetone, methyl ethyl ketone, methyl isobutyl ketone or cyclohexanone, strongly polar solvents, such as dimethylformamide and dimethyl sulphoxide, and water.

30

Solid carriers which are suitable are:

for example ammonium salts and ground natural minerals, such as kaolins, clays, talc, chalk, quartz, attapulgite, montmorillonite or diatomaceous earth, and ground synthetic
5 minerals, such as highly-disperse silica, alumina and silicates; suitable solid carriers for granules are: for example crushed and fractionated natural rocks such as calcite, marble, pumice, sepiolite and dolomite, and synthetic granules of inorganic and organic meals, and granules of organic material such as sawdust, coconut shells, maize cobs and tobacco stalks; suitable emulsifiers and/or foam formers are: for example
10 non-ionic and anionic emulsifiers, such as polyoxyethylene fatty acid esters, polyoxyethylene fatty alcohol ethers, for example alkylaryl polyglycol ethers, alkylsulphonates, alkyl sulphates, arylsulphonates as well as protein hydrolysates; suitable dispersants are: for example liginosulphite waste liquors and methylcellulose.

15 Adhesives such as carboxymethylcellulose and natural and synthetic polymers in the form of powders, granules or latices, such as gum arabic, polyvinyl alcohol and polyvinyl acetate, and natural phospholipids, such as cephalins and lecithins, and synthetic phospholipids, can be used in the formulations. Other additives can be mineral and vegetable oils.

20

It is possible to use colorants such as inorganic pigments, for example iron oxide, titanium oxide and Prussian Blue, and organic dyestuffs, such as alizarin dyestuffs, azo dyestuffs and metal phthalocyanine dyestuffs, and trace nutrients such as salts of iron, manganese, boron, copper, cobalt, molybdenum and zinc.

25

The formulations in general comprise between 0.1 and 95% by weight of active compound, preferably between 0.5 and 90%, and additionally preferably extenders and/or surfactants.

30 The active compound content of the use forms prepared from the commercially available formulations can vary within wide ranges. The active compound

concentration of the use forms can be in the range of from 0.0000001 up to 95% by weight of active compound, preferably between 0.0001 and 1% by weight.

Application is in a customary manner which is appropriate for the use forms.

5 Use examples

Gall-making aphids (Pemphigidae)

Very particular preference is given to controlling the following species from the family of the gall-making aphids (Pemphigidae):

Eriosoma lanigerum in pomme fruit, such as, for example, apples, pears, and stone
10 fruit, such as, for example, cherries, plums, garden plums,

Eriosoma pyricola in pomme fruit, such as, for example, apples and pears,

Pemphigus bursarius, in ornamental plants, such as, for example, chrysanthemums, in
vegetables, such as, for example, head lettuce,

Pemphigus fuscicornis in beet, leafy vegetables, such as, for example, head lettuce,
15 root vegetables, such as, for example, carrots, ornamental plants, such as, for example,
chrysanthemums,

Anuraphis cardui in vegetables, such as, for example, artichokes.

Example 1

20 Two about 23-year-old apple trees of the cultivar "Idared" infested by Eriosoma
lanigerum are, under practical conditions, treated with Example (I-9) (Comparative
Example, not falling within the scope of the invention) (240 SC) and Example (I-4)
(240 SC) in comparison to the commercial standard imidacloprid 200 SL at the stated
application rates. Application is with a motor-operated knapsack sprayer. The
25 application rate is 1500 l of water/ha.

Evaluation is carried out 15 and 37 days after the application by rating the kill in per
cent on the branches.

30

Active compound	Application rate a.i. in %	Kill (%)	
		15 d	37 d
imidacloprid	0.01	97	100
Example (I-9)	0.0144	99	100
Example (I-4)	0.0144	100	99

Example 2

In three replications, in each case 10 109-day-old chrysanthemums of the cultivar “Camilla” in 2 l-vessels are treated against the lettuce root aphid Pemphigus bursarius. Here, the active compounds Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC) and Example (I-2) (Comparative Example, not falling within the scope of the invention) (240 SC) are applied with a knapsack sprayer operated by pressurized air at the stated application rates only to the above-ground parts of the plants. The soil is covered with a film. The application rate is 300 l of water/ha. 0.1% a.i. of rapeseed oil methyl ester (500 EW) is added to the spray liquor.

The kill in per cent is determined on the roots. 21 and 29 days after the application, the following results are obtained:

Active compound	Application rate a.i. in %	Kill (%)	
		21 d	29 d
Example (I-9)	144	76.5	94.0
Example (I-2)	96	80.8	91.8

Example 3

In three replications, in each case 10 about 5-month-old chrysanthemums (Camilla) in 2 l-vessels are treated against the lettuce root aphid Pemphigus bursarius. Here, the active compound Example (I-4) (240 SC) is applied with a knapsack sprayer operated by pressurized air at the beginning of the infestation at the stated application rates to the above-ground parts of the plants. The soil is covered with a film. The application rate is 600 l of water/ha. 0.1% a.i. of rapeseed oil methyl ester (500 EW) is added to

the spray liquor. Omethoate as drip irrigation in a concentration of 0.1% is used for comparison. The application is carried out two days later.

The kill in per cent is determined on the roots. After 9 and 17 days, the following kills
5 are obtained:

Active compound	Application rate	Kill (%)	
		Example (I-4)	96 g of a.i./ha
omethoate	drip irrigation 0.1%	20 (7d)	70.6 (15d)

Phylloxerans (Phylloxeridae)

10 Very particular preference is given to controlling the following species from the family of the phylloxerans (Phylloxeridae), preferably after foliar application:

- Phylloxera devastatrix in grapevines, in nuts, such as, for example, pecan nuts,
- 15 Phylloxera vastatrix, (Δ Viteus vitifolii) in grapevines.

Example 4

In four replications, three in each case about 12-year-old vines of the cultivar "Auvernat" are treated against Viteus vitifolii. As commercial standard, imidacloprid is used at the recommended application rate by drip irrigation. The application of the
20 active compounds is by spray application to the leaves using a knapsack operated with pressurized air. Here, the active compounds Example (I-4) (240 SC) and Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC) are applied in a tank mix with 0.1% a.i. of rapeseed oil methyl ester (500 EW) at the stated
25 amount. There are three applications on day 1, 2 and 15. The application rate is 1776 l of water/ha.

Evaluation is carried out 60 days after the last treatment by rating the kill on the roots in per cent.

Active compound	Application rate a.i.	Kill (%)
imidacloprid	drip irrigation 560 g/ha	26
Example (I-4)	0.0168%	55
Example (I-9)	0.0144%	42

5 **Jumping plant lice (Psyllidae)**

Very particular preference is given to controlling the following species from the family of the jumping plant lice (Psyllidae):

- 10 *Psylla pyricola* in pomme fruit, such as, for example, pears, apples, in stone fruit, such as, for example, cherries, plums, garden plums, peaches, nectarines,
- Psylla piri* in pomme fruit, such as, for example, pears,
- Psylla pyrisuga* in pomme fruit, such as, for example, pears,
- Psylla costalis* in pomme fruit, such as, for example, apples,
- 15 *Paratrioza cockerelli* in fruit vegetables, such as, for example, tomatoes, bell peppers, chilli peppers, in root vegetables, such as, for example, carrots, in potatoes,
- Tenalaphara malayensis* in tropical crops, such as, for example, durians,
- 20 *Diaphorina citri* in citrus fruit, such as, for example, oranges, mandarins, limes, grapefruits,
- Trioza erythrae* in citrus fruits, such as, for example, oranges, grapefruits.

Example 5

In three replications, pear trees of the cultivar "Williams Christ" are treated against 25 *Psylla piri*. Application is shortly before the eggs hatch. The application is carried out

using a barrow-mounted sprayer operated with pressurized air. Here, the active compound Example (I-4) (240 SC) is tested in a tank mix with 0.1% a.i. rapeseed oil methyl ester (500 EW) at the stated amount against the standard amitraz (200 EC) at the stated amount. The application rate is 1000 l of water/ha.

5

Evaluation is carried out 7, 14 and 21 days after the treatment by rating the kill of the nymphs on the shoots.

Active compound	Application rate g of a.i./ha/height of crown in m	Kill (%)		
		7d	14d	21d
amitraz	266	100	95.2	75
Example (I-4)	72	100	100	100

10 Example 6

In three replications, in each case 4 about 4-year-old pear trees of the cultivar "Williams Christ" are treated against *Psylla piri*. Two applications are carried out at an interval of 11 days using a motor-operated barrow-mounted sprayer. Here, the active compounds Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC), Example (I-2) (Comparative Example, not falling within the scope of the invention) (240 SC) and Example (I-1) (Comparative Example, not falling within the scope of the invention) (240 SC) are tested against the commercial standard Amitraz (200 EC) at the stated amounts. The application rate is 2000 l of water/ha.

15

Evaluation is carried out 3, 10 and 20 days after the last treatment by rating the kill of the larvae in per cent on the shoots.

20

Active compound	Application rate (%) of a.i.	Kill (%)		
		3d	10d	20d
amitraz	0.05	54.3	56.7	21.4

Example (I-9)	0.096	97.7	100	100
Example (I-2)	0.096	96.7	99	97.9
Example (I-1)	0.096	90.0	96.6	95.0

Example 7

In four replications, plots of a size of about 7 m² with bell peppers of the cultivar “Jupiter” are treated against *Paratrioza cockerelli*. The application is carried out with a knapsack sprayer operated with pressurized air. Here, the active compound Example (I-4) (240 SC) is applied in a tank mix with 0.2% a.i. of rapeseed oil methyl ester (500 EW) and the commercial standards imidacloprid 192 SC and dimethoate (480 EC) are applied in a tank mix with 0.125% Induce at the stated application rates. The application is carried out with an application rate of 467 l of water/ha.

10

Evaluation is carried out 7 and 15 days after the treatment by rating the kill of the animals (nymphs) on the leaves.

Active compound	Application rate g of a.i./ha	Kill (%)	
		7 d	15 d
Imidacloprid	52.6	90	0
Example (I-4)	72	90	100
dimethoate	561	63	0

15 Example 8

In three replications, about 2-year-old orange trees are treated against *Trioza erythrae*. The application is carried out using a knapsack sprayer operated with pressurized air. Here, the active compound Example (I-4) (240 SC) is tested in a tank mix with 0.2% a.i. of rapeseed oil methyl ester (500 EW) against the commercial standard imidacloprid (100 SL) at the stated application rates. The application rate is 540 l of water/ha. Two treatments are carried out, at an interval of 7 days.

20

Evaluation is carried out 7, 14 and 20 days after the first treatment by rating the kill of the nymphs on the branches.

Active compound	Application rate (%)	Kill (%)		
		7d	14d	20d
imidacloprid	0.004	98.4	99.2	98.6
Example (I-4)	0.0144	97.9	98.9	98.3

5 Example 9

In three replications, plots of a size of 10 m² with tomatoes are treated against *Paratrioza cockerelli*. Application is carried out using a knapsack sprayer operated with pressurized air. Here, the active compound Example (I-4) (240 SC) in a tank mix with 0.2% a.i. of rapeseed oil methyl ester (500 EW) and the commercial standard Leverage (324 SE) are tested at the stated application rates. There are two applications at an interval of 7 days. The application rate is 345 l of water/ha.

Evaluation is carried out 7, 14 and 21 days after the first treatment by rating the kill of the animals (nymphs) on the leaves.

15

Active compound	Application rate g of a.i./ha	Kill (%)		
		7d	14d	21d
Leverage	81	75.4	81.1	92.1
Example (I-4)	48	71.3	90.3	95.5

Soft scales (Coccidae)

Very particular preference is given to controlling the following species from the family of the soft scales (Coccidae) in the following crops, preferably after foliar application:

<i>Ceroplastes ceriferus</i>	in citrus fruit, such as, for example, oranges, grapefruits,
<i>Ceroplastes floridensis</i>	mandarins, lemons, limes, satsumas
<i>Ceroplastes rubens</i>	
<i>Ceroplastes rusci</i>	
<i>Drosicha mangiferae</i>	in tropical crops, for example mangoes
<i>Drosicha stebbengii</i>	
<i>Pulvinaria aurantii</i>	in citrus fruit, such as, for example, oranges, grapefruits,
<i>Pulvinaria aethiopicus</i>	mandarins, lemons, limes, satsumas, in grapevines
<i>Pulvinaria vitis</i>	
<i>Protopulminaria pyriformis</i>	in pomme fruit and stone fruit
<i>Saissetia oleae</i>	in citrus fruit, such as, for example, oranges, grapefruits, mandarins, limes
<i>Saissetia nigra</i>	in citrus fruit, such as, for example, lemons, satsumas, in olives, in tropical crops, for example bananas
<i>Coccus viridis</i>	in citrus fruit, such as, for example, oranges, mandarins, grapefruits, limes, lemons, satsumas, in tropical crops, for example pineapples
<i>Coccus hesperidum</i>	in pomme fruit, such as, for example, apples, pears, in stone

fruit, such as, for example, peaches, nectarines, plums, apricots, cherries, in coffee, in olives, in tea, in vegetables, such as, for example, beans, in grapevines

Example 10

In three replications, about 6-year-old mandarin trees of the cultivar "Naartje" are treated against *Pulvinaria aethiopicus*. Two applications are carried out at an interval of 32 days as eradication treatment using a knapsack operated with pressurized air. Here, the active compounds Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC) and Example (I-2) (Comparative Example, not falling within the scope of the invention) (240SC) are tested against a commercial tank mix of a mineral oil (835 EC) which is commercially available in South Africa and customarily used in this country and pyriproxifen (100 EC) at the stated amounts. The application rate is 8.3 l of water/tree.

Evaluation is carried out 45 days after the last treatment by rating the kill in per cent on the fruits.

15

Active compound	Application rate (%) of a.i.	Kill (%)
Mineral oil	0.251	90
+ pyriproxifen	0.003	
Example (I-9)	0.0096	91
Example (I-2)	0.0144	72

Example 11

In three replications, in each case one about 4-year-old satsuma tree of the cultivar "Nankan 20" is treated against *Pulvinaria aurantii*. Here, the active compound Example (I-4) (240 SC) in a tank mix with 0.2% of rapeseed oil methyl ester (500 EW) at the stated application rate is tested against the commercial standard buprofezin at the

20

stated application rate. The application is carried out using a motor-operated knapsack sprayer. Here, each plant is treated with 400 ml of spray liquor.

5 Evaluation is carried out before and 41 days after the treatment by counting the live animals. The efficacy in per cent is then calculated according to Henderson and Tilton.

Active compound	Application rate (%) of a.i.	Effect (%)
buprofezin	0.025	68
Example (I-4)	0.0144	100

Example 12

10 In three replications, in each case one about 4-year-old satsuma tree of the cultivar "Nankan 20" is treated against *Ceroplastes rubens*. Here, the active compound Example (I-4) (240 SC) in a tank mix with 0.1% of rapeseed oil methyl ester (500 EW) at the stated application rate is tested against the commercial standard buprofezin (25 WP) at the stated application rate. The application is carried out using a motor-operated knapsack sprayer. Here, treatment is carried out using an application rate of
15 400 l of water/ha.

Evaluation is carried out before and 41 days after the treatment by counting the live animals. The efficacy in per cent is then calculated according to Henderson and Tilton.

Active compound	Application rate (%) of a.i.	Effect (%)
buprofezin	0.025	50
Example (I-4)	0.0072	98

20

Example 13

In three replications, in each case two about 8-year-old orange trees are treated against *Saissetia oleae*. Here, the active compounds Example (I-4) (240 SC) and Example (I-8)

(Comparative Example, not falling within the scope of the invention) (250 SC) in a tank mix with 0.2% a.i. of rapeseed oil methyl ester (500 EW) at the stated application rate are tested against the commercial standard buprofezin in a tank mix with 0.4% a.i. of Oliocin (800 EW) at the stated application rate. The application is carried out using a motor-operated knapsack sprayer. The application rate is 3000 l of water/ha. Two treatments are carried out, at an interval of 29 days.

Evaluation is carried out 24 and 44 days after the last treatment by rating the kill of the nymphs on the leaves.

10

Active compound	Application rate g of a.i./ha/height of crown in m	Kill (%)	
		24 d	44 d
buprofezin	500	33.5	50.5
Example (I-4)	72	53.5	56.1
Example (I-8)	30	66.5	56.1

Example 14

In three replications, orange trees of the cultivar "Navelina" are treated against *Saissetia oleae*. Here, the active compounds Example (I-4) (240 SC) and Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC) in a tank mix with 0.1% of rapeseed oil methyl ester (500 EW) at the stated application rate are tested against the commercial standards Dursban (480 EC) and pyriproxyfen (100 EC) at the stated application rate. The application is carried out using a motor-operated knapsack sprayer. The application rate is 3200 l of water/ha.

20

Evaluation is carried out 120 days after the treatment by rating the kill of the animals on the branches.

Active compound	Application rate (%) of a.i.	Effect (%) 120 d
Dursban	0.096	0
Example (I-4)	0.012	98
Example (I-9)	0.0054	79
pyriproxifen	0.005	100

Armoured scales (Diaspididae)

5 Very particular preference is given to controlling the following species from the family of the armoured scales (Diaspididae) in the following crops, preferably after foliar application:

Quadraspidotus perniciosus	in citrus fruit, such as, for example, oranges, mandarins, limes, grapefruits, in pomme fruit, such as, for example, apples, pears, quince, in stone fruit, such as, for example, peaches, nectarines,
Quadraspidotus juglansregiae	apricots, plums, cherries, in nuts, such as, for example, almonds, pistachios, walnuts, hazelnuts, in ornamental plants, such as, for example, shrubs, conifers, potted plants, in tropical crops, for example litchis,
Aonidiella aurantii	in citrus fruit, such as, for example, oranges, mandarins,
Aonidiella citrina	grapefruits, limes, lemons, satsumas,
Lepidosaphes ulmi	in citrus fruit, such as, for example, oranges, mandarins,
Lepidosaphes beckii	grapefruits, limes, lemons, satsumas, in pomme fruit, such as, for example, apples and pears, in stone fruit, such as, for example, peaches, nectarines, plums, apricots, cherries,
Aspidiotus destructor	in citrus fruit, such as, for example, oranges, mandarins, grapefruits, limes, lemons, satsumas, in ornamental plants, such

<i>Aspidiotus hederæ</i>	as, for example, shrubs, potted plants, in olives, in tropical
<i>Aspidiotus nerii</i>	crops, for example mangoes, limes,
<i>Aspidiotus ficus</i>	
<i>Pseudaulacaspis pentagona</i>	in pomme fruit, such as, for example, apples, pears, in stone fruit, such as, for example, peaches, apricots, nectarines, cherries, plums, garden plums, in tea,
<i>Unaspis yanonensis</i>	in citrus fruit, such as, for example, oranges, mandarins, limes,
<i>Unaspis citri</i>	grapefruits, lemons, satsumas, in tropical crops, for example pineapples, mangoes,
<i>Pinnaspis aspidistrae</i>	
<i>Parlatoria ziziphus</i>	in citrus fruit, such as, for example, oranges, mandarins, limes,
<i>Parlatoria pergandei</i>	lemons, satsumas, grapefruits, in olives,
<i>Parlatoria oleae</i>	
<i>Selenaspidus articulatus</i>	in citrus fruit, such as, for example, oranges, mandarins, limes, grapefruits, lemons, satsumas

Example 15

In three replications, 3-year-old orange trees of the cultivar "Midnight Valencia" are treated against *Aonidiella aurantii*. Two applications are carried out at an interval of 72 days, using a motor-operated knapsack sprayer. Here, the active compounds Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC) and Example (I-2) (Comparative Example, not falling within the scope of the invention) (240 SC) in a tank mix with 0.1% a.i. of rapeseed oil methyl ester (500 EW) at the stated application rate are tested against the standard Tokuthion (960 EC) at the stated amounts, applied once. The application rate is 4 l of water per tree.

Evaluation is carried out 130 and 176 days after the treatment by rating the kill on the fruits.

Active compound	Application rate (%) of a.i.	Kill (%)	
		130d	176d
Tokuthion	0.048	12	0
Example (I-9)	0.0096	86	100
Example (I-2)	0.0096	52	76

5 Example 16

In four replications, an about 10-year-old grapefruit tree of the cultivar "Rio Red" is treated against *Aonidiella aurantii*. The application is carried out using a motor-operated barrow-mounted sprayer. Here, the active compound Example (I-4) (240 SC) and the commercial standard Dursban (480 EC) are tested at the stated application rates. The amount of spray liquor is 5.8 gallons per tree.

Evaluation is carried out 28, 59 and 90 days after the treatment by rating the kill of the animals on the fruits.

Active compound	Application rate per metre of crown height a.i.	Kill (%)		
		28d	59d	90d
Dursban	6.01 pounds/acre	100	100	100
Example (I-4)	72 g/ha	92.7	100	100

15

Example 17

In three replications, four about 18-year-old apple trees of the cultivar "Red Chief" are treated against the San José scale louse *Quadraspidiotus perniciosus*. Two applications are carried out at an interval of 15 days using a motor-operated barrow-mounted sprayer. Here, the active compound Example (I-4) (240 SC) is applied in a tank mix

20

with 0.2% a.i. of rapeseed oil methyl ester (500 EW) at the stated application rate and the commercial standard Dursban (446 EC) is applied at the stated application rate. The application rate is 1500 l of water/ha.

- 5 Evaluation is carried out 43 days after the last treatment by rating the kill on the shoots.

Active compound	Application rate g of a.i./ha/crown height in m	Kill (%)
Dursban	223	68.3
Example (I-4)	72	90.4

Example 18

10 In three replications, in plots of a size of about 20 m², citrus trees of the cultivar "Oro Nules" are treated against *Lepidosaphes beckii*. The application is carried out using a high-pressure sprayer. Here, the active compound Example (I-4) (240 SC) in a tank mix with 0.1% a.i. of rapeseed oil methyl ester (500 EW) is tested against the commercial standard pyriproxyfen (100 EC), at the stated application rates. The application rate is 2500 l of water/ha.

15 Evaluation is carried out 140 days after the treatment by rating the kill of the larvae on the fruits.

Active compound	Application rate g of a.i./ha/crown height in m	Kill (%) 140 days
pyriproxyfen	50	100
Example (I-4)	48	100

20 Example 18a

The evaluation for Example 18a against *Parlatoria pergandei* is carried out as part of the test as described in Example 27 and is listed separately in Example 27.

Example 19

In three replications, 3-year-old orange trees of the cultivar "Pera natal" are treated against *Selenaspidium articulatus*. The application is carried out using a motor-operated knapsack sprayer. Here, the active compounds Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC) and Example (I-4) (240 SC) at the stated application rate are tested against the standard methidathion (400 EC) in the stated amounts, applied once. The application rate is 3.3 l of water per tree.

Evaluation is carried out 100 days after the treatment by rating the kill on the leaves.

10

Active compound	Application rate (%) of a.i.	Kill (%)
		100d
methidathion	0.05	77
Example (I-9)	0.0288	77
Example (I-4)	0.0144	70

Example 20

In four replications, about 5-year-old lime trees of the cultivar "Fino" are treated against *Aspidiotus neri*. The application is carried out using a knapsack sprayer. Here, the active compound Example (I-4) (240 SC) in a tank mix with 0.1% a.i. of rapeseed oil methyl ester (500 EW) at the stated application rate is tested against the standards Dursban (480 EC) and Juvinal (100 EC) at the stated amounts, applied once. The application rate is 3000 l of water/ha per tree.

20 Evaluation is carried out 167 days after the treatment by rating the kill on the fruits.

Active compound	Application rate (%) of a.i.	Kill (%)
		167d
Dursban	0.096	76.9

Juvinal	0.005	86.5
Example (I-4)	0.0072	96.2

Example 21

In four replications, an about 20-year-old almond tree of the cultivar "Non-Pareil" is treated against *Quadraspidiotus perniciosus*. The application is carried out using a high-pressure sprayer. Here, the active compound Example (I-4) (240 SC) in a tank mix with 0.125% a.i. of methylated seed oil (1000 EC) and the commercial standard Lorsban (480 EC) are tested at the stated application rates. The amount of spray liquor is 935 l/ha.

- 10 Evaluation is carried out 21, 42 and 63 days after the treatment by rating the kill of the animals on the branches.

Active compound	Application rate per metre of crown height a.i.	Kill (%)		
		21d	42d	63d
Dursban	2240 g/ha	82.2	73.3	78.4
Example (I-4)	110 g/ha	84.9	90	94.6

Example 22

- 15 In ten replications, on about 46 m², peach trees are treated against *Pseudaulacaspis pentagona*. Two applications are carried out at an interval of 57 days using a sprayer operated with pressurized air. Here, the active compound Example (I-4) (240 SC) in a tank mix with 0.2% of Dynamic (910 XL) is applied at the stated application rate and the commercial standard Esteem (35 WP) is applied at the stated application rate. The application rate is 935 l of water/ha.

Evaluation is carried out 35 and 79 days after the last treatment by rating the kill of the crawlers on the shoots.

Active compound	Application rate g of a.i./ha/height of crown in m	Kill (%)	
		35d	79d
Esteem	98	98	94
Example (I-4)	120	90	87

Example 23

In six replications, about 16-year-old Japanese apricot trees of the cultivar "Shirokag" are treated against *Pseudaulacaspis prunicola*. The application is carried out using a sprayer. Here, the active compound Example (I-4) (200 SC) is tested against the commercial standard Supracide EC (400 EC), at the stated application rates. The application rate is 1500 l of water/ha.

Evaluation is carried out 58 days after the treatment by rating the kill of the nymphs on the shoots.

Active compound	Application rate (%) of a.i.	Kill (%)
		58 days
Supracide EC	0.04	91.6
Example (I-4)	0.0075	92.3

Example 24

In nine replications, about 7-week-old tea plants of the cultivar "Yakubita" are treated against *Pseudaulacaspis pentagona*. Here, the active compound Example (I-4) (200 SC) is tested against the commercial standard Supracide EC (400 EC) at the stated application rates. The application is carried out using a sprayer operated with pressurized air. Evaluation is carried out 16 and 35 days after the treatment by rating the kill of the crawlers on the plants.

Active compound	Application rate (%) of a.i.	Kill (%)	
		16d	35d
Supracide EC	0.04	60.3	100
Example (I-4)	0.01	81.8	75

Ensign coccids (Ortheziidae)

Very particular preference is given to controlling the following species from the family of the ensign coccids (Ortheziidae) in the following crops, preferably after foliar application:

Orthezia praelonga in citrus fruit, such as, for example, oranges, mandarins, limes, grapefruits, lemons, satsumas

Example 25

In two replications, two about 7-year-old orange trees of the cultivar "Pera Rio" are treated against *Orthezia praelonga*. Here, the active compounds Example (I-4) (240 SC) and Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC), in a tank mix with 0.1% a.i. of Renex, are tested against the commercial standard Methidathion (400 EC), at the stated application rates. The application is carried out using a knapsack sprayer operated with pressurized air. Evaluation is carried out 6 and 16 days after the treatment by rating the kill of the population on the leaves.

Active compound	Application rate (%) of a.i.	Kill (%)	
		6d	16d
methidathion	0.05	91	61
Example (I-4)	0.0144	94	76
Example (I-9)	0.0144	89	63

Mealy bugs (Pseudococcidae)

5 Very particular preference is given to controlling the following species from the family of the mealy bugs (Pseudococcidae) in the following crops:

Pseudococcus citri	in citrus fruit, such as, for example, oranges, mandarins,
Pseudococcus comstocki	grapefruits, limes, lemons, satsumas, in pomme fruit, such as, for example, apples and pears, in grapevines, in
Pseudococcus maritimus	ornamental plants, in tropical crops, such as, for example, pineapple
Dysmicoccus boninsis	in pomme fruit, such as, for example, apples, pears, in tea,
Dysmicoccus cryptus	in tropical crops, such as, for example, pineapples,
Dysmicoccus brevipes	guyabano
Planococcus lilacinus	in citrus fruit, such as, for example, oranges, mandarins,
Planococcus citri	grapefruits, limes, lemons, satsumas, in grapevines
Pericerga purchasi	in citrus fruit, such as, for example, oranges, mandarins, grapefruits, limes, lemons, satsumas

Example 26

10 In three replications, in plots of a size of about 20 m², citrus trees of the cultivar "Oro Nules" are treated against Pseudococcus citri. The application is carried out using a high-pressure sprayer. Here, the active compound Example (I-4) (240SC), in a tank mix with 0.1% a.i. of rapeseed oil methyl ester (500 EW), is tested against the commercial standard Dursban (480 EC), at the stated application rates. The application rate is 2500 l of water/ha.

15

Evaluation is carried out 62 days after the treatment by rating the kill of the larvae on the fruits.

Active compound	Application rate g of a.i./ha/crown height in m	Kill (%) 62 days
Dursban	960	100
Example (I-4)	72	99

Example 27

In three replications, orange trees of the cultivar "Navelina" are treated against *Parlatoria pergandei* and *Pseudococcus citri*. Two applications are carried out at an interval of 77 days using a motor-operated knapsack sprayer. Here, the active compound Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC), in a tank mix with 0.1% a.i. of rapeseed oil methyl ester (500 EW), at the stated amount, is tested against the commercial standard pyriproxyfen (100 EC), at the stated amounts. The application rate is 3000 l of water/ha.

10

Evaluation is carried out 56 days or 73 days after the last treatment by rating the kill in per cent on the fruits.

Parlatoria pergandei (Example 18a)

15

Active compound	Application rate (%) of a.i.	Kill (%) 73d
pyriproxyfen	0.005	97.5
Example (I-9)	0.0096	98.7

Pseudococcus citri

Active compound	Application rate (%) of a.i.	Kill (%) 56d
pyriproxyfen	0.005	28.8
Example (I-9)	0.0096	94.6

Example 28

In four replications, three in each case about 12-year-old vines of the cultivar "Auvernat" are treated against *Pseudococcus* spp. The commercial standard used is an application with imidacloprid at the recommended application rate, by drip irrigation.

5 The active compounds are applied by spraying using a knapsack sprayer operated with pressurized air. Here, the active compounds Example (I-4) (240 SC) and Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC) are applied in a tank mix with 0.1% a.i. of rapeseed oil methyl ester (500 EW), at the stated amount. Two applications are carried out at an interval of 15 days.

10 The application rate is 1776 l of water/ha. Evaluation is carried out 28 days after the last treatment by rating the kill on grapes in per cent.

Active compound	Application rate of a.i.	Kill (%)
imidacloprid	drip irrigation 560 g/ha	100
Example (I-4)	0.0168 %	99
Example (I-9)	0.0144 %	100

Example 29

15 In three replications, in plots of a size of 54 m², about 10-year-old vines of the cultivar "Napoleon" are treated against *Planococcus* spp. The application is carried out using a knapsack sprayer. Here, the active compound Example (I-4) (240 SC), in a tank mix with 0.1% a.i. of rapeseed oil methyl ester (500 EW), is tested against the commercial standard Dursban (480 EC), at the stated application rates. The application rate is 864 l

20 of water/ha. Two treatments are carried out, at an interval of 19 days.

Evaluation is carried out 16 and 38 days after the second treatment by rating the kill of the larvae on the grapes.

Active compound	Application rate % / l	Kill (%)

		16d	38d
Dursban	0.096	72.2	64
Example (I-4)	0.0096	94.4	91.9

Example 30

In five replications, pineapple plants of the cultivar "MD2" of a height of about 35 cm are treated against *Dysmicoccus brevipes*. The application is carried out using a motor-operated knapsack sprayer. Here, the active compound Example (I-4) (150 OD) is tested against the commercial standard Confidor OD (240 OD), at the stated application rates. The application rate is 4000 l of water/ha. Both active compounds are sprayed as a tank mix with 500 g of a.i./ha of adjuvant NP-7 and 4 l of a.i./ha of mineral oil.

10

Evaluation is carried out 9, 23 and 37 days after the treatment by rating the kill of the nymphs on the plants.

Active compound	Application rate g of a.i./ha	Kill (%)		
		9 days	23 days	37 days
Confidor OD	140	93.9	98.6	76.8
Example (I-4)	75	80.9	84.0	91.3

15 Example 30a

In three replications, in each case one guyabano tree is treated against *Dysmicoccus brevipes*. Here, the active compound Example (I-4) (240 SC), in a tank mix with 0.1% of rapeseed oil methyl ester (500 EW), is, at the stated application rate, tested against the commercial standard Lorsban (500 EC), at the stated application rate. The application is carried out using a motor-operated knapsack sprayer. Here, each plant is treated with spray liquor.

20

Evaluation is carried out 3, 7 and 14 days after the treatment by rating the kill in per cent on the fruits.

Active compound	Application rate (g) of a.i./crown height in m	Kill (%)		
		3 days	7 days	14 days
Lorsban	180	78.3	94.7	100
Example (I-4)	48	89.8	100	100

5 **Whiteflies (Aleyrodidae)**

Very particular preference is furthermore given to controlling the following species from the family of the whiteflies (Aleyrodidae), in the following crops:

Bemisia tabaci in vegetables, such as bell peppers, tomatoes, cucumbers, cabbage, for example broccoli, beans, lettuce, aubergines, courgettes, cucurbits, in soft fruits, in melons, for example watermelons, net melons, cantaloupe melons, in ornamental plants, such as roses, hibiscus, in citrus fruit, such as oranges, mandarins, grapefruits, and also in potatoes, in tobacco and in tropical crops, such as, for example, papayas, bananas,

Bemisia argentifolii in cotton, in vegetables, such as bell peppers, tomatoes, cucumbers, beans, cucurbits, aubergines, courgettes, cabbage, in soft fruit, in melons, for example watermelons, net melons, cantaloupe melons, in ornamental plants, such as, for example, roses, hibiscus, in tropical crops, such as, for example, papayas, bananas,

- Trialeurodes vaporariorum in vegetables, such as tomatoes, bell peppers, beans, cucumbers, cucurbits, aubergines, in soft fruit, in melons and also in ornamental plants, such as, for example roses, hibiscus,
- Aleurothrixus floccosus in citrus fruit, such as, for example, oranges, mandarins, lemons
- Aleurodes citri in citrus fruit, such as oranges, mandarins, lemons, grapefruits, limes, cumquats
- Aleurodes fragariae in soft fruit, such as, for example, strawberries
- Aleurodes azaleae in ornamental plants, such as, for example, azalea

Example 31

In four replications, in each case one orange tree of the cultivar "Newhall" is treated against Aleurodes citri. Here, the active compound Example (I-4) (240 SC) is, at the stated application rate, tested against the commercial standard imidacloprid. The active compounds are applied in a tank mix with 0.5% a.i. of Oliocin (700 EW), at an application rate of 1500 l of water/ha. The application is carried out using a motor-operated knapsack sprayer.

5

10 Evaluation is carried out 7, 14 and 21 days after the treatment by rating the kill of the animals on the leaves.

Active compound	Application rate g of a.i./ha/crown height in m	Kill (%)		
		7d	14d	21d
imidacloprid	75	98.4	99.6	99.4
Example (I-4)	72	90.9	99.5	99.9

Example 32

In three replications, plots of a size of 10 m² with bell peppers of the cultivar "Italiano" are treated against *Bemisia tabaci*. The application is carried out using a motor-operated knapsack sprayer. Here, the active compounds Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC), Example (I-2) (Comparative Example, not falling within the scope of the invention) (60 SC) and Example (I-11) (Comparative Example, not falling within the scope of the invention) (60 SC) and the commercial standard imidacloprid (200 SL) are applied at the stated application rates. Three applications at an interval of 14 or 15 days are carried out, at an application rate of 1000 or 1100 l of water/ha.

Evaluation is carried out 7, 14 and 22 days after the second treatment by rating the kill of the animals (larvae) on the leaves.

Active compound	Application rate % of a.i.	Kill (%)		
		7d	14d	22d
imidacloprid	0.02	75.8	67.2	69.4
Example (I-9)	0.0144	90.4	95.1	92.6
Example (I-2)	0.0144	84.7	92.6	85.6
Example (I-11)	0.0144	85.4	93.3	91.3

15

Example 33

In four replications, plots of a size of 26 m² with cucumbers of the cultivar "Beta alpha" are treated against *Bemisia tabaci*. The application is carried out using a knapsack sprayer operated with pressurized air. Here, the active compound Example (I-4) (240 SC), in a tank mix with 0.1% a.i. of rapeseed oil methyl ester (500 EW), and the commercial standard imidacloprid (200 SC) are tested at the stated application rates. Two applications are carried out, at an interval of 10 days. The application rate is 1000 l of water/ha.

20

Evaluation is carried out 7, 11 and 21 days after the first treatment by rating the kill of the animals (nymphs) on leaves.

Active compound	Application rate % of a.i.	Kill (%)		
		7d	11d	21d
imidacloprid	0.144	89	96	96
Example (I-4)	0.084	75	87	90

5 Example 34

In three replications, plots of a size of 5 m² with tomatoes of the cultivar "Rio Grande" are treated against *Trialeurodes vaporariorum*. The application is carried out using a motor-operated knapsack apparatus. Here, the active compounds Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC) and
 10 Example (I-4) (240 SC) and the commercial standard imidacloprid (200 SL) are tested at the stated application rates. The application rate is 1000 l of water/ha. Three applications are carried out, at an interval of 11 or 10 days.

Evaluation is in each case carried out 7 or 10 days after each treatment, by rating the
 15 kill of the larvae on the leaves.

Active compound	Application rate % of a.i.	Kill (%)		
		10d after the 1st treatment	7d after the 2nd treatment	10d after the 3rd treatment
imidacloprid	0.015	53.5	88.4	67.5
Example (I-9)	0.0144	63.3	99.6	94.3
Example (I-4)	0.0144	81.9	100	94.3

Example 35

In three replications, plots of a size of 10 m² with aubergines of the cultivar "F 100" are treated against *Bemisia argentifolii*. The application is carried out using a knapsack sprayer operated with pressurized air. Here, the active compounds Example (I-9) (Comparative Example, not falling within the scope of the invention) (60 SC), Example (I-2) (Comparative Example, not falling within the scope of the invention) (60 SC) and Example (I-11) (Comparative Example, not falling within the scope of the invention) (60 SC) and the commercial standard imidacloprid (70 WG) are tested at the stated application rates. Three applications are carried out, at an interval of 7 or 8 days.

10 The application rate is 1000 l of water/ha.

Evaluation is carried out 7 days after the last treatment by rating the kill of the nymphs on the leaves.

Active compound	Application rate a.i.	% of Kill (%)
		7d
imidacloprid	0.014	100
Example (I-9)	0.0144	98
Example (I-2)	0.0144	100
Example (I-11)	0.0144	94

15

Example 36

In three replications, in each case four aubergine plants of the cultivar "Ryoma" are treated against *Bemisia argentifolii*. The application is carried out using a motor-operated knapsack sprayer. Here, the active compounds Example (I-4) and Example (I-8) (Comparative Example, not falling within the scope of the invention), in a tank mix with 0.2% a.i. of rapeseed oil methyl ester (500 EW), and the commercial standard pymetrozine (25 WP) are tested at the stated application rates. The application rate is 3200 l of water/ha.

20

Evaluation is carried out 13, 20 and 27 days after the treatment by rating the kill of the nymphs on the leaves.

Active compound	Application rate % of a.i.	Kill (%)		
		13d	20d	27d
pymetrozine	0.0125	79	74	75
Example (I-4)	0.072	99.6	100	97
Example (I-8)	0.06	99.5	99.9	97

5 Example 37

In four replications, plots of a size of about 39 m² with cantaloupe melons of the cultivar "Western Shipper" are treated against *Bemisia argentifolii*. The application is carried out using a knapsack sprayer operated with pressurized air. Here, the active compound Example (I-4) (240 SC), in a tank mix with 0.2 a.i. of rapeseed oil methyl ester (500 EW), and the commercial standard endosulfan (360 EC) are tested at the stated application rates. Two applications are carried out at an interval of 16 days. The application rate is 187 l of water/ha.

15 Evaluation is carried out 5, 13, 21 and 29 days after the first treatment by rating the kill of the animals (nymphs) on the leaves.

Active compound	Application rate g of a.i./ha	Kill (%)			
		5d	13d	21d	29d
endosulfon	1120	0	100	80.8	66.7
Example (I-4)	48	100	100	98.1	90.5

Example 38

20 In three replications, plots of a size of about 7.5 m² with melons of the cultivar "Piel DE Sapo" are treated against *Bemisia tabaci*. The application is carried out with a

motor-operated knapsack sprayer. Here, the active compound Example (I-4) (240 SC), in a tank mix with 0.1% of a.i. of rapeseed oil methyl ester (500 EW), and the commercial standard Confidor (200 SL) are applied at the stated application rates. Two applications are carried out, at an interval of 7 days and at an application rate of 233 l of water/ha.

Evaluation is carried out 7 and 15 days after the second treatment by rating the kill of the animals (nymphs) on the leaves.

Active compound	Application rate g of a.i./ha	Kill (%)	
		7d	15d
Confidor	100	98.8	75.7
Example (I-4)	72	85.3	95.5

10

Example 39

In three replications, about 55-year-old orange trees of the cultivar "Amargo" are treated against *Aleurothrixus floccosus*. The application is carried out using a motor-operated knapsack sprayer. Here, the active compound Example (I-4) (240 SC), in a tank mix with 0.1% a.i. of rapeseed oil methyl ester (500 EW), is tested at the stated application rate against the standard Juvinal (100 EC) at the stated application rates, applied once. The application rate is 2630 l of water/ha.

Evaluation is carried out 36, 51, 62 and 76 days after the treatment by rating the kill on the branches.

20

Active compound	Application rate % of a.i.	Kill (%)			
		36d	51d	62d	76d
Juvinal	0.005	57.8	60.7	73.1	74.0
Example (I-4)	0.0072	81.1	81.5	92.1	92.9

Aphids (Aphididae)

Moreover, very particular preference is given to controlling the following species from the family of the aphids, in the following crops:

5

<i>Myzus persicae</i>	in tobacco, in beet, in fruit vegetables and leafy vegetables, such as, for example, bell peppers, tomatoes, aubergines, head lettuce, potatoes, in stone fruit, such as, for example, peaches, nectarines, plums, cherries, strawberries, melons, in ornamental plants, such as, for example, roses
<i>Myzus nicotianae</i>	in tobacco
<i>Myzus cerasi</i>	in stone fruit, such as, for example, cherries
<i>Aphis gossypii</i>	in cereals, such as, for example, wheat, in pomme fruit, such as, for example, apples, pears, in stone fruit, such as, for example, peaches, nectarines, cherries, plums, garden plums, apricots, in citrus fruit, such as, for example, oranges, mandarins, grapefruits, cucurbits, melons, strawberries, oilseed rape, potatoes, beet, in ornamental plants, such as, for example, roses
<i>Aphis pomi</i>	in pomme fruit, such as, for example, apples, pears
<i>Dysaphis plantaginea</i>	in pomme fruit, such as, for example, apples, pears
<i>Dysaphis piri</i>	in pomme fruit, such as, for example, apples, pears
<i>Aphis fabae</i>	in beet and beans
<i>Rhodobium porosum</i>	in strawberries
<i>Nasonovia ribisnigri</i>	in leafy vegetables, such as, for example, head lettuce
<i>Macrosiphum rosae</i>	in ornamental plants, such as, for example, roses

<i>Macrosiphum euphorbiae</i>	in leafy vegetables, fruit vegetables and brassica vegetables, such as, for example, aubergines, lettuce, bell peppers, white cabbage, strawberries
<i>Phorodon humuli</i>	in hops
<i>Brachycaudus helycrisii</i>	in stone fruit, such as, for example, in plums, garden plums
<i>Aulacorthum solani</i>	in citrus fruit, such as, for example, oranges, mandarins, grapefruits, limes, in fruit vegetables and leafy vegetables, such as, for example, head lettuce, tomatoes, bell peppers, aubergines
<i>Toxoptera citricola</i>	in citrus fruit, such as, for example, oranges, mandarins, limes, grapefruits, in stone fruit, such as, for example, peaches, apricots
<i>Toxoptera citricida</i>	in citrus fruit, such as, for example, oranges, mandarins, limes, grapefruits, in stone fruit, such as, for example, peaches, apricots
<i>Toxoptera aurantii</i>	in citrus fruit, such as, for example, oranges, mandarins, grapefruits, limes, in spices, such as, for example, pepper, in nuts, such as, for example, cashew nuts
<i>Toxoptera odinae</i>	in citrus fruit, such as, for example, oranges, mandarins, grapefruits, limes, in spices, such as, for example, pepper, in nuts, such as, for example, cashew nuts
<i>Toxoptera graminum</i>	in cereals, such as, for example, wheat, triticale, sorghum

Example 40

In three replications, three about 22-year-old apple trees of the cultivar "Golden Delicious" are treated eradically against *Dysaphis plantaginea* and *Aphis pomi*. The application is carried out using a motor-operated barrow-mounted sprayer. Here, the active compounds Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC) and Example (I-4) (240 SC) in the stated amount are tested against the commercial standard imidacloprid (200 SL), at the stated application rate. The application rate is 1200 l of water/ha.

10 Evaluation is carried out 14 d and 21 d after the treatment by rating the kill of the population on the shoots.

Dysaphis plantaginea

Active compound	Application rate (%) of a.i.	Kill (%)	
		14d	21d
imidacloprid	0.007	97.6	99.8
Example (I-9)	0.0144	99.8	100
Example (I-4)	0.0144	99.3	100

15 *Aphis pomi*

Active compound	Application rate (%) of a.i.	Kill (%)	
		14d	21d
imidacloprid	0.007	93.6	92.5
Example (I-9)	0.0144	98.5	97.3
Example (I-4)	0.0144	96.9	98.8

Example 41

In three replications, three about 8-year-old apple trees of the cultivar "Golden Delicious" are treated eradically against *Dysaphis plantaginea* and *Aphis pomi*. The

application is carried out using a motor-operated barrow-mounted sprayer. Here, the active compounds Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC) and Example (I-2) (Comparative Example, not falling within the scope of the invention) (240 SC) in the stated amount are tested against the commercial standard imidacloprid (200 SL), at the stated application rate. The application rate is 1200 l of water/ha.

Evaluation is carried out before and also 7 d and 14 d after the treatment by counting the live animals on the shoots. The efficacy is then calculated by calculating the effect on the population in per cent according to Henderson and Tilton.

Dysaphis plantaginea

Active compound	Application rate (%) of a.i.	Effect (%)	
		7d	14d
imidacloprid	0.007	99.6	99.5
Example (I-9)	0.0144	92.1	99.4
Example (I-2)	0.0144	92.3	99.2

Aphis pomi

Active compound	Application rate (%) of a.i.	Effect (%)	
		7d	14d
imidacloprid	0.007	99	83.5
Example (I-9)	0.0144	93	93.5
Example (I-2)	0.0144	99.1	97.1

15 Example 42

In four replications, plots of a size of 5 m² with head lettuce are, two weeks after transplantation, treated against *Nasonovia ribisnigri*. The application is carried out using a knapsack sprayer operated with pressurized air. Here, the active compounds Example (I-4) (240SC) and Example (I-8) (Comparative Example, not falling within

the scope of the invention) (240 SC) are, in a tank mix with 0.2% a.i. of rapeseed oil methyl ester (500 EW), tested against the commercial standard Pirimor, at the stated application rates. The application rate is 500 l of water/ha.

- 5 Evaluation is carried out 7, 14 and 26 days after the treatment by rating the kill of the animals on the plants.

Active compound	Application rate g of a.i./ha	Kill (%)		
		7d	14d	26d
Pirimor	150	69.2	53.2	46.3
Example (I-4)	48	92.3	95.7	95.1
Example (I-8)	42	80.8	93.6	92.7

Example 43

- 10 In three replications, plots of a size of 10 m² with aubergines of the cultivar "F 100" are treated against *Macrosiphum euphorbiae*. The application is carried out using a knapsack sprayer operated with pressurized air. Here, the active compounds Example (I-9) (Comparative Example, not falling within the scope of the invention) (60 SC), Example (I-2) (Comparative Example, not falling within the scope of the invention)
- 15 (60 SC) and Example (I-11) (Comparative Example, not falling within the scope of the invention) (60 SC) and the commercial standard imidacloprid (70 WG) are tested at the stated application rates. Three applications are carried out, at an interval of 7 or 8 days. The application rate is 1000 l of water/ha.
- 20 Evaluation is carried out 7 and 14 days after the second treatment by rating the kill of the nymphs on the leaves.

Active compound	Application rate (%) of a.i.	Kill (%)	
		7d	14d
imidacloprid	0.014	100	100
Example (I-9)	0.0144	99	98
Example (I-2)	0.0144	99	91
Example (I-11)	0.0144	98	99

Very particular preference is given to controlling *Phorodon humuli* in hops.

Example 44

- 5 In two replications, about 4-year-old hop plants of the cultivar "Spalter" are treated against the hop aphid *Phorodon humuli*. The application is carried out using a knapsack sprayer operated with pressurized air. Here, the active compounds Example (I-9) (Comparative Example, not falling within the scope of the invention) (240SC) and Example (I-4) (240 SC), in a tank mix with 0.1% a.i. of rapeseed oil methyl ester (500 EW), and the standard imidacloprid are applied at the stated application rates. The application rate is 1200 l of water/ha.
- 10

The first evaluation is carried out 6 days and the last evaluation 46 days after the treatment by rating the kill of the animals on the leaves.

15

Active compound	Application rate (%) of a.i.	Kill (%)	
		6d	46d
imidacloprid	0.0053	99	97.6
Example (I-9)	0.0036	95	85.2
Example (I-4)	0.0084	95	98.7

Example 45

In three replications, in each case one about 8-year-old orange tree of the cultivar "Navel" is treated against *Toxoptera citricida*. Here, the active compounds Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC) and Example (I-4) (240 SC), in a tank mix with 0.1% a.i. of Marlipal, are tested against the commercial standard imidacloprid (350 SC), at the stated application rates. The application is carried out using a motor-operated knapsack sprayer, the application rate being 6.7 l of water/plant.

10 Evaluation is carried out 6 and 20 days after the treatment by rating the kill of the animals on the leaves.

Active compound	Application rate (%) of a.i.	Kill (%)	
		6d	20d
imidacloprid	0.0125	99	94
Example (I-9)	0.0144	96	97
Example (I-4)	0.0144	97	97

Example 46

15 In four replications, plots of a size of about 33 m² with head lettuce of the cultivar "PIC 714" are treated against *Aulacorthum solani*, *Macrosiphum euphorbiae* and *Myzus persicae*. The application is carried out using a tractor sprayer. Here, the active compound Example (I-4) (240 SC), in a tank mix with 0.2% a.i. of rapeseed oil methyl ester (500 EW), is tested against the commercial standard endosulfan (360 EC), at the stated application rates. The application rate is 187 l of water/ha. Two treatments are carried out, at an interval of 22 days.

Evaluation is carried out 8, 22, 30 and 40 days after the first treatment by rating the kill of the nymphs on the plants.

25

Aulacorthum solani

Active compound	Application rate g of a.i./ha	Kill (%)			
		8d	22d	30d	40d
endosulfan	1120	96	88	98	53
Example (I-4)	48	100	99	79	87

Macrosiphum euphorbiae

Active compound	Application rate g of a.i./ha	Kill (%)			
		8d	22d	30d	40d
endosulfan	1120	100	100	99	96
Example (I-4)	48	95	100	100	96

5 *Myzus persicae*

Active compound	Application rate g of a.i./ha	Kill (%)			
		8d	22d	30d	40d
endosulfan	1120	95	61	100	- *
Example (I-4)	48	95	100	88	- *

* no animals in the control

Example 47

10 In three replications, under practical conditions, about 18-year-old peach trees of the cultivar "Vivian" infested with *Myzus persicae* are treated with Example (I-4) (240 SC) in a tank mix with 0.2% a.i. of rapeseed oil methyl ester (500 EW) in comparison to the commercial standard imidacloprid 200 SL, at the stated application rates. The application is carried out using a motor-operated knapsack sprayer. The application rate is 1000 l of water/ha.

Evaluation is carried out 7, 14 and 21 days after the application by counting the live animals on the shoots. The efficacy is then calculated by calculating the effect on the population in per cent according to Henderson and Tiltan.

Active compound	Application rate of a.i. in g/ha/crown height in m	Effect (%)		
		7d	14d	21d
imidacloprid	25	97.6	95.8	78.1
Example (I-4)	24	94.0	98.9	93.3

5

Example 48

In three replications, four aubergine plants (age about 7 months) of the cultivar "Hayabusa" are treated against *Myzus persicae*. The application is carried out using a motor-operated knapsack sprayer. Here, the active compound Example (I-4) (240 SC), in a tank mix with 0.1% a.i. of rapeseed oil methyl ester (500 EW), and the commercial standard pymethroline (25 WP) are tested at the stated application rates. The application rate is 3000 l of water/ha.

Evaluation is carried out 7, 14, 21 and 29 days after the treatment by rating the kill of the animals on the leaves.

15

Active compound	Application rate g of a.i./ha	Kill (%)			
		7d	14d	21d	29d
pymethroline	0.0125	99.9	99	95	73
Example (I-4)	0.024	99.7	99.7	98	97

Example 49

In four replications, plots of a size of about 7.5 m² with potatoes of the cultivar "BP 1" are treated against *Myzus persicae*. The application is carried out using a knapsack sprayer operated with pressurized air. Here, the active compound Example (I-4) (240

20

SC), in a tank mix with 0.2% a.i. of rapeseed oil methyl ester (500 EW), and the commercial standard Tamaron (585 SL) are tested at the stated application rates. Two applications are carried out, at an interval of 7 days. The application rate is 500 l of water/ha.

5

Evaluation is carried out 7 and 13 days after the first treatment by counting the live animals (nymphs) on the leaves. The efficacy is then calculated by calculating the effect on the population in per cent according to Henderson and Tiltan.

Active compound	Application rate g of a.i./ha	Effect (%)	
		7d	13d
Tamaron	585	100	100
Example (I-4)	48	67	100

10

Example 50

In two replications, plots of a size of about 43 m² with tomatoes of the cultivar "Yaqui" are treated against *Myzus persicae*. The application is carried out using a motor-operated knapsack sprayer. Here, the active compounds Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC) and Example (I-4) (240 SC), in a tank mix with 0.1% a.i. of rapeseed oil methyl ester (500 EW), and the standard acetamiprid (20 WP) are applied at the stated application rates. The application rate is 208 l of water/ha.

15

20

Evaluation is carried out 3 and 10 days after the treatment by rating the kill of the nymphs on the leaves.

Active compound	Application rate g of a.i./ha	Kill (%)	
		3d	10d
acetamiprid	50	78.7	73.5

Example (I-9)	36	87.5	95.9
Example (I-4)	48	92.6	95.9

Example 51

In three replications, plots of a size of 10 m² with broad beans of the cultivar “Frühe Weisskeimige” are treated against *Aphis fabae*. The application is carried out using a knapsack sprayer operated with pressurized air. Here, the active compounds Example (I-9) (Comparative Example, not falling within the scope of the invention) (240 SC), Example (I-2) (Comparative Example, not falling within the scope of the invention) (240 SC) and Example (I-4) (240 SC), in a tank mix with 0.2% of rapeseed oil methyl ester (500 EW), and the commercial standard Pirimor (50 WG) are tested at the stated application rates. Application is carried out once. The application rate is 500 l of water/ha.

Evaluation is carried out 7 and 15 days after the treatment by rating the kill of the nymphs on the leaves.

15

Active compound	Application rate g of a.i./ha	Kill (%)	
		7d	15d
Pirimor	250	100	100
Example (I-9)	36	99.7	100
Example (I-2)	36	98.6	100
Example (I-4)	42	100	100

Example 52

In three replications, plots of a size of 15 m² with melons are treated against *Aphis gossypii*. The application is carried out using a knapsack sprayer operated with pressurized air. Here, the active compound Example (I-4) (240 SC), in a tank mix with 0.1% a.i. of rapeseed oil methyl ester (500 EW), and the standard imidacloprid (200 SL) are applied at the stated application rates. The application rate is 500 l of water/ha.

20

Evaluation is carried out 3 days and 7 days after the treatment by rating the kill of the animals on the shoots.

Active compound	Application rate g of a.i./ha	Kill (%)	
		3d	7d
imidacloprid	100	98.2	100
Example (I-4)	48	94.7	100

5 Example 53

In four replications, plum trees of the cultivar "Angeleno" of a height of about 2.8 m are treated against *Myzus persicae*. The application is carried out using a high-pressure sprayer. Here, the active compound Example (I-4) (100 OD), in the stated amount, is tested against the commercial standard Actara (25 WG), at the stated application rate.

10 The application rate is 500 l of water/ha/crown height in m.

Evaluation is carried out 6, 9, 12, 20 days after the treatment by rating the kill of the population on the shoots.

Active compound	Application rate g of a.i./ha/crown height in m	Kill (%)				
		6d	9d	12d	20d	27d
Actara	33.5	96.7	96.6	86.9	88.4	89.2
Example (I-4)	48	96.4	99.7	99.8	99.9	99.9

15

Example 54

In four replications, plots of a size of about 8.4 m² with 36 11-week-old bell pepper plants of the cultivar "Casea dura ikeda" are treated against *Myzus persicae*. The application is carried out using a knapsack sprayer operated with pressurized air. Here,

20 the active compound Example (I-4) (240SC), in a tank mix with 0.2% a.i. of rapeseed

oil methyl ester (500 EW), is tested against the commercial standard Provado (200 SC), at the stated application rates. The application rate is 600 l of water/ha. There are three applications, in each case at an interval of 7 d.

- 5 Evaluation is carried out 1, 7, and 14 days after the last treatment by rating the kill of the animals on the leaves.

Active compound	Application rate g of a.i./ha	Kill (%)		
		1d	7d	14d
Provado	50	99.7	100	98.7
Example (I-4)	48	99.1	98.5	100

Example 55

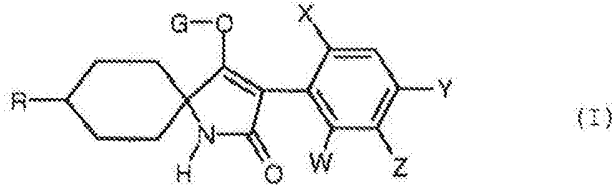
- 10 In four replications, plots of a size of about 3 m² with 3-week-old strawberry plants are treated against *Macrosiphum euphorbiae* and *Rhodobium porosum*. The application is carried out using a knapsack sprayer operated with pressurized air. Here, the active compound Example (I-4) (150 OD) and the commercial standard Calypso (480 SC) are tested at the stated application rates. Here, the standard is sprayed as a tank mix with
- 15 0.03% of Motto (adjuvant). The application rate is 500 l of water/ha.

Evaluation is carried out 7 and 14 days after the second treatment by rating the kill of the nymphs on the plants.

Active compound	Application rate g of a.i./ha	Rhodobium porosum Kill (%)		Macrosiphum euphorbiae Kill (%)	
		7d	14d	7d	14d
Calypso	120	99	98	67.7	96
Example (I-4)	75	97	96	62.2	94

Szabadalmi igénypontok

1. Az (I) képletű vegyület



- a képletben a W, X, Y, Z, R és G szubsztituensek jelentése a táblázatban megadott:

W	X	Y	Z	R	G
H	CH ₃	H	CH ₃	CH ₃	CO ₂ -C ₂ H ₅

alkalmazása izomerkeverékei vagy tiszta izomerjei formájában a növénytetvek (Sternorrhyncha) alrendbe tartozó rovarok irtására.

2. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása a gubacstetvek (Pemphigidae) családjába tartozó rovarok irtására.

3. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása a törpetetvek (Phylloxeridae) családjába tartozó rovarok irtására.

4. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása a levélbolhák (Psyllidae) családjába tartozó rovarok irtására.

5. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása a teknős pajzstetvek (Coccidae) családjába tartozó rovarok irtására.

6. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása kagylós pajzstetvek (Diaspididae) családjába tartozó rovarok irtására.

7. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása lemezes pajzstetvek (Ortheziidae) családjába tartozó rovarok irtására.

8. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása a viaszos pajzstetvek (*Pseudococcidae*) családjába tartozó rovarok irtására.

9. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása a liszteskék (*Aleyrodidae*) családjába tartozó rovarok irtására, kivéve az 1. igénypont szerinti (I) képletű vegyületek alkalmazását a dohányliszteske *Bemisia tabaci* (*Aleyrodidae*) irtására gyapoton.

10. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása a *Myzus* spp. irtására dohányban, gabonafélékben, csonthéjasokban, bogyós gyümölcsökben, gyümölcs-zöldségekben, leveles zöldségekben, gumós és gyökérszöldségekben, dinnyefélékben, burgonyafélékben, cukorrépában, olajrepcében és dísznövényekben.

11. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása az *Aphis* spp. irtására dohányban, citrusfélékben, almatermésűekben, csonthéjasokban, gabonafélékben, dinnyefélékben, cukorrépában, bogyós gyümölcsökben, olajrepcében, gyümölcs-zöldségekben, leveles zöldségekben, káposztafélékben, gumós és gyökérszöldségekben, dísznövényekben, burgonyafélékben és tökfélékben.

12. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása *Rhodobium porosum* irtására eperben.

13. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása *Nasonovia ribisnigri* irtására leveles zöldségekben.

14. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása a *Dysaphis* spp. irtására almatermésűekben.

15. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása a *Macrosiphum* spp. irtására dísznövényekben, gabonafélékben, burgonyafélékben, leveles zöldségekben, káposztafélékben, gyümölcs-zöldségekben és eperben.

16. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása a *Rhopalosiphum padi*, *Sitobion avenae*, *Methopolophium dirhodum* és *Brachycolus noxius* irtására gabonafélékben.

17. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása a *Phorodon humuli* irtására komlóban.

18. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása a *Brachycaudus helychrisii* irtására csonthéjasokban.

19. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása a *Toxoptera* spp. irtására citrusfélékben, csonthéjasokban, mandulában, mogyoróban, gabonafélékben és fűszernövényekben.

20. Az 1. igénypont szerinti (I) képletű vegyületek alkalmazása az *Aulacorthum* spp. irtására citrusfélékben, burgonyafélékben, gyümölcs-zöldségekben és leveles zöldségekben.