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PCT
 WELTORGANISATION FÜR GEISTIGES EIGENTUM
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(21) Internationales Aktenzeichen: PCT/EP99/03779 (22) Internationales Anmeldedatum: 1. Juni 1999 (01.06.99) (30) Prioritätsdaten: 198 25 333.8 5. Juni 1998 (05.06.98) DE AVENTIS CROPS SCIENCE GMBH (71) Anmelder: HOECHST-SCHERING-AGREVO GMBH (DE/DE): Mariastrasse 54, D-12509 Berlin (DE). Bruningstrasse 50 D-65929 Frankfurt (72) Erfinder: KERN, Manfred; Trammernweg 8, D-55296 Lörzweiler (DE).	(81) Bestimmungsstaaten: AE, AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KG, KP, KR, KZ, LC, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UZ, VN, YU, ZA, ARIPO Patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), eurasisches Patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), europäisches Patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI Patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Veröffentlicht Ohne internationalen Recherchenbericht und erneut zu veröffentlichen nach Erhalt des Berichts. 	
(54) Title: METHOD FOR CONTROLLING PESTS IN CROP CULTURES (54) Bezeichnung: VERFAHREN ZUR KONTROLLE VON SCHADORGANISMEN IN NUTZPFLANZENKULTUREN (57) Abstract The invention relates to a method for combating pests in genetically modified cotton plants. The plants contain a gene derived from <i>Bacillus thuringiensis</i> . This gene codes for and expresses a protein with an insecticide effect. The inventive method is characterised in that an insecticidally effective quantity of one or more compounds from the following groups a-e is applied to the plants, to their seeds or reproductive material and/or to their growing area: a) organophosphorus compounds: triazophos (726), monocrotophos (502), methamidophos (479), chloropyrifos (137), parathion (551), acephate (4), profenofos (594), malathion (448), heptenphos (395); b) tralomethrin (718), cypermethrin (183), cyhalothrin (179), lambda-cyhalothrin (180), deltamethrin (204), fenvalerate (319), (alpha)cypemethrin (183/184), cyfluthrin (176), fenpropathin (312), etofenprox (292); c) carbamates: aldicarb (16), bendiocarb (56), carbaryl (106), carbofuran (109), formetanate (369), pirimicarb (583); d) biopesticides: <i>Bacillus thuringiensis</i> (46, 47), granulose and core polyhedron viruses, <i>Beauveria bassiana</i> (52), <i>Beauveria brogniartii</i> (53), baculoviruses such as <i>Autographa californica</i> ; e) others: endosulphane (270), abamectin (1), XDE-105 (754), diafenthion (208), fipronil (323), chlorofenapyr (123), tebufenocide (679), fenaziquin (301), imidacloprid (418), triazamate (724), fentin (317), amitraz (22), MK-242; f) 4-haloalkyl-3-heterocyclypyrimidines and 4-haloalkyl-5-heterocyclypyrimidines of general formula (I), optionally also in the form of their salts. The inventive method enables a reduced quantity of pesticides to be used, said pesticides working synergistically with the transgenic plants, and increases and diversifies the efficiency of the transgenic plants. As a result, the invention presents both economic and ecological advantages.		

Description

Method for controlling harmful organisms in crops of useful plants

- 5 The invention relates to a method for controlling harmful organisms in crops of Bt cotton.

Genetically modified cotton plants which express toxins from *Bacillus thuringiensis* (Bt) and which are consequently resistant to attack by certain harmful insects are known and are increasingly employed in commercial agriculture (see, for example, US-A 5,322,938).

Although cotton which is genetically modified in this way already has very good properties, there are still a number of problems, so that a wide scope for improvement still exists.

- 15 For example, Bt toxins are not effective against all important cotton pests (see, for example, Flint, H.M. et al. (1995) *Southwestern Entomologist* 20/3, 281-292), the efficacy is insufficient at a high infestation intensity (see, for example, EPA Hearing Docket OPP-0478 (1997) *Plant Pesticides Resistance Management*, The Agriculture Program, The Texas A&M University System, College Station, Texas 77843), Bt-resistance or Bt-cross-resistance may occur (see, for example, Gould, F. et al. (1997) *Proc. Natl. Acad. Sci. USA* 94, 3519-3523 or Bauer, L.S. (1995) *Florida Entomologist* 78/3, 414), or particular parts of plants may differ
- 20 considerably in their insecticidal activity (see, for example, Lozzia, G.C. and Rigamonti, I.E. (1996) *Boll. Zool. agr. Buchic Ser II*, 28/1, 51-69).

- It was therefore another object to provide the most effective and environmentally compatible problem solutions possible for controlling pests
- 30 of cotton.



WO-A 97/45 017 describes a process for controlling Lepidoptera in Bt cotton where an insecticidally active benzoylurea derivative is additionally

used. It is not possible to draw conclusions with respect to the activity of other classes of insecticides from this publication.

Surprisingly, it has now been found that certain classes of insecticides
5 show synergistic effects when used in combination with Bt cotton.

The invention therefore provides a method for controlling harmful organisms in genetically modified cotton plants which contain a gene derived from *Bacillus thuringiensis* which encodes and expresses an
10 insecticidally active protein, which comprises applying an insecticidally effective amount of one or more compounds from the following groups a-f to the plants, to their seeds or propagation stock and/or to the area in which they are cultivated:

- 15 a) Organophosphorus compounds:
triazophos (726), monocrotophos (502), methamidophos (479), chlorpyrifos (137), parathion (551), acephate (4), profenofos (594), malathion (448), heptenophos (395);
- 20 b) Pyrethroids:
tralomethrin (718), cypermethrin (183), cyhalothrin (179), (lambda)-cyhalothrin (180), deltamethrin (204), fenvalerates (319), (alpha)-cypermethrin (183/184), cyfluthrin (176), fenpropathrin (312), etofenprox (292);
- 25 c) Carbamates:
aldicarb (16), bendiocarb (56), carbaryl (106), carbofuran (109), formetanates (369), pirimicarb (583)



d) Biopesticides:

Bacillus thuringiensis (46, 47), granuloses and nuclear polyhedrosis viruses, *beauveria bassiana* (52), *beauveria brogniartii* (53), baculoviruses, such as *autographa californica*;

5

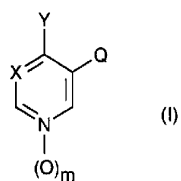
e) Others:

endosulfan (270), abamectin (1), XDE-105 (754), diafenthiuron (208), fipronil (323), chlorfenapyr (123), tebufenocides (679), fenazaquin (301), imidacloprid (418), triazamates (724), fentin (317), amitraz (22), MK-242;

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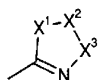
f) 4-Haloalkyl-3-heterocyclypyridines and 4-haloalkyl-5-heterocyclypyrimidines of the formula (I), if appropriate also in the form of their salts,

15



where the symbols and indices have the following meanings:

- 20 Y is halo-C₁-C₆-alkyl;
 X is CH or N;
 m is 0 or 1;
 Q is a 5-membered heterocyclic group



25 in which

- a) $X^1 = W$, $X^2 = NR^a$, $X^3 = CR^bR^1$ or
 b) $X^1 = NR^a$, $X^2 = CR^bR^1$, $X^3 = W$ or
 c) $X^1 = V$, $X^2 = CR^aR^1$, $X^3 = NR^b$ or



4

- d) $X^1 = V$, $X^2 = CR^aR^2$, $X^3 = CR^bR^3$ or
 e) $X^1 = V$, $X^2 = CR^4R^5$, $X^3 = CR^6R^7$ or
 f) $X^1 = NR^a$, $X^2 = CR^bR^1$, $X^3 = NR^8$;

5 R^a and R^b together are a bond

V is oxygen, sulfur or NR^9 ;

W is oxygen or sulfur;

R^1 is hydrogen,

(C₁-C₂₀)-alkyl, (C₂-C₂₀)-alkenyl, (C₂-C₂₀)-alkynyl, (C₃-C₈)-
 10 cycloalkyl,

(C₄-C₈)-cycloalkenyl, (C₆-C₈)-cycloalkynyl,

where the six last-mentioned radicals are optionally substituted
 by one or more radicals from the group

15 halogen, cyano, nitro, hydroxyl, $-C(=W)R^{10}$, $-C(=NOR^{10})R^{10}$,
 $-C(=NNR^{10}_2)R^{10}$, $-C(=W)OR^{10}$, $-C(=W)NR^{10}_2$, $-OC(=W)R^{10}$,
 $-OC(=W)OR^{10}$, $-NR^{10}C(=W)R^{10}$, $-N[C(=W)R^{10}]_2$,
 $-NR^{10}C(=W)OR^{10}$, $-C(=W)NR^{10}-NR^{10}_2$,
 $-C(=W)NR^{10}-NR^{10}[C(=W)R^{10}]$, $-NR^{10}-C(=W)NR^{10}_2$,
 $-NR^{10}-NR^{10}C(=W)R^{10}$, $-NR^{10}-N[C(=W)R^{10}]_2$, $-N[(C=W)R^{10}]$ -
 20 NR^{10}_2 ,
 $-NR^{10}-NR^{10}[(C=W)R^{10}]$, $-NR^{10}-NR^{10}[(C=W)WR^{10}]$,
 $-NR^{10}-R^{10}[(C=W)NR^{10}_2]$, $-NR^{10}(C=NR^{10})R^{10}$,
 $-NR^{10}(C=NR^{10})NR^{10}_2$,
 $-O-NR^{10}_2$, $-O-NR^{10}(C=W)R^{10}$, $-SO_2NR^{10}_2$, $-NR^{10}SO_2R^{10}$,
 $-SO_2OR^{10}$, $-OSO_2R^{10}$, $-OR^{10}$, $-NR^{10}_2$, $-SR^{10}$, $-SiR^{10}_3$,
 $-SeR^{10}$, $-PR^{10}_2$, $-P(=W)R^{10}_2$,



$-\text{SOR}^{10}$, $-\text{SO}_2\text{R}^{10}$, $-\text{PW}_2\text{R}^{10}_2$, $-\text{PW}_3\text{R}^{10}_2$, aryl and

heterocyclyl,

the two last-mentioned radicals optionally being substituted
by one or more radicals from the group

5

(C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl, (C₃-

C₈)-cycloalkyl, (C₄-C₈)-cycloalkenyl, (C₆-C₈)-cycloalkynyl,

(C₁-C₆)-haloalkyl, (C₂-C₆)-haloalkenyl, (C₂-C₆)-

haloalkynyl, halogen, $-\text{OR}^{10}$, $-\text{NR}^{10}_2$, $-\text{SR}^{10}$, $-\text{SiR}^{10}_3$, -

$\text{C}(=\text{W})\text{R}^{10}$, $-\text{C}(=\text{W})\text{OR}^{10}$, $-\text{C}(=\text{W})\text{NR}^{10}_2$, $-\text{SOR}^{10}$,

10

$-\text{SO}_2\text{R}^{10}$, nitro, cyano and hydroxyl,

aryl,

which is optionally substituted by one or more radicals from the
group

(C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl, (C₃-C₈)-

15

cycloalkyl, (C₄-C₈)-cycloalkenyl and (C₆-C₈)-cycloalkynyl,

where these six abovementioned radicals are optionally
substituted by one or more radicals from the group

halogen, cyano, nitro, $-\text{C}(=\text{W})\text{R}^{10}$, $-\text{C}(=\text{W})\text{OR}^{10}$,

$-\text{C}(=\text{W})\text{NR}^{10}_2$, $-\text{OR}^{10}$, $-\text{NR}^{10}_2$, $-\text{SR}^{10}$, $-\text{SOR}^{10}$ and

20

$-\text{SO}_2\text{R}^{10}$,

halogen, cyano, nitro, $-\text{C}(=\text{W})\text{R}^{10}$, $-\text{C}(=\text{NOR}^{10})\text{R}^{10}$,

$-\text{C}(=\text{NNR}^{10}_2)\text{R}^{10}$, $-\text{C}(=\text{W})\text{OR}^{10}$, $-\text{C}(=\text{W})\text{NR}^{10}_2$, $-\text{OC}(=\text{W})\text{R}^{10}$,

$-\text{OC}(=\text{W})\text{OR}^{10}$, $-\text{NR}^{10}\text{C}(=\text{W})\text{R}^{10}$, $-\text{N}[\text{C}(=\text{W})\text{R}^{10}]_2$,

$-\text{NR}^{10}\text{C}(=\text{W})\text{OR}^{10}$, $-\text{OR}^{10}$, $-\text{NR}^{10}_2$, $-\text{SR}^{10}$, $-\text{SiR}^{10}_3$, $-\text{PR}^{10}_2$, -

25

SOR^{10} , $-\text{SO}_2\text{R}^{10}$, $-\text{PW}_2\text{R}^{10}_2$ and $-\text{PW}_3\text{R}^{10}_2$,

heterocyclyl,

which is optionally substituted by one or more radicals from the
group



(C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl, (C₃-C₈)-cycloalkyl, (C₄-C₈)-cycloalkenyl and (C₆-C₈)-cycloalkynyl,

where the six abovementioned radicals are optionally substituted by one or more radicals from the group

- 5 cyano, nitro, halogen, -C(=W)R¹⁰, -C(=W)OR¹⁰,
 -C(=W)NR¹⁰₂, -NR¹⁰C(=W)R¹⁰, -N[C(=W)R¹⁰]₂,
 -OC(=W)R¹⁰, -OC(=W)OR¹⁰, -OR¹⁰, -NR¹⁰₂, -SR¹⁰,
 -SOR¹⁰ and -SO₂R¹⁰,
 halogen, cyano, nitro, -C(=W)R¹⁰, -C(=W)OR¹⁰,
 10 -C(=W)NR¹⁰₂, -OC(=W)R¹⁰, -OR¹⁰, -NR¹⁰₂, -SR¹⁰, -SOR¹⁰
 and -SO₂R¹⁰,
 -OR¹⁰, -NR¹⁰₂, -SR¹⁰, -SOR¹⁰, -SO₂R¹⁰, -C(=W)R¹⁰,
 -C(=NOR¹⁰)R¹⁰, -C(=NNR¹⁰₂)R¹⁰, -C(=W)OR¹⁰,
 -C(=W)NR¹⁰₂, -OC(=W)R¹⁰, -OC(=W)OR¹⁰, -NR¹⁰C(=W)R¹⁰,
 15 -N[C(=W)R¹⁰]₂, -NR¹⁰C(=W)OR¹⁰, -C(=W)NR¹⁰-NR¹⁰₂,
 -C(=W)NR¹⁰-NR¹⁰[C(=W)R¹⁰], -NR¹⁰-C(=W)NR¹⁰₂, -NR¹⁰-
 NR¹⁰C(=W)R¹⁰, -NR¹⁰-NC(=W)R¹⁰₂, -N(C=W)R¹⁰-NR¹⁰₂,
 -NR¹⁰-NR¹⁰[(C=W)R¹⁰], -NR¹⁰-NR¹⁰[(C=W)WR¹⁰], -NR¹⁰-
 NR¹⁰[(C=W)NR¹⁰₂], -NR¹⁰(C=NR¹⁰)R¹⁰,
 20 -NR¹⁰(C=NR¹⁰)NR¹⁰₂, -O-NR¹⁰₂, -O-NR¹⁰(C=W)R¹⁰,
 -SO₂NR¹⁰₂, -NR¹⁰SO₂R¹⁰, -SO₂OR¹⁰, -OSO₂R¹⁰,
 -SC(=W)R¹⁰, -SC(=W)OR¹⁰, -SC(=W)R¹⁰, -PR¹⁰₂, -PW₂R¹⁰₂,
 -PW₃R¹⁰₂, SiR¹⁰₃ or halogen;

- 25 R² and R³ independently of one another have the definitions given in R¹;



R^2 and R^3 together form a 5- to 7-membered ring which may be partially or fully unsaturated and may be interrupted by one or more atoms from the group nitrogen, oxygen and sulfur, the oxygen atoms not being directly adjacent to one another, and the ring optionally being substituted by one or more, but at most 5, radicals R^1 ;

R^4 and R^6 independently of one another have the definitions given in R^1 ;

R^4 and R^6 together form a 4- to 7-membered ring which may be partially or fully unsaturated and may be interrupted by one or more atoms from the group nitrogen, oxygen and sulfur, the oxygen atoms not being directly adjacent to one another, and the ring optionally being substituted by one or more, but at most 5, radicals R^1 ;

R^5 and R^7 independently of one another are hydrogen,

(C_1-C_{20})-alkyl, (C_2-C_{20})-alkenyl, (C_2-C_{20})-alkynyl, (C_3-C_8)-

cycloalkyl, (C_4-C_8)-cycloalkenyl, (C_6-C_8)-cycloalkynyl,

where the six last-mentioned radicals are optionally substituted by one or more radicals from the group

halogen, cyano, nitro, hydroxyl, $-C(=W)R^{10}$, $-C(=NOR^{10})R^{10}$,
 $-C(=NNR^{10}_2)R^{10}$, $-C(=W)OR^{10}$, $-C(=W)NR^{10}_2$, $-OC(=W)R^{10}$,
 $-OC(=W)OR^{10}$, $-NR^{10}C(=W)R^{10}$, $-N[C(=W)R^{10}]_2$,
 $-NR^{10}C(=W)OR^{10}$, $-C(=W)NR^{10}-NR^{10}_2$,
 $-C(=W)NR^{10}-NR^{10}[C(=W)R^{10}]$, $-NR^{10}-C(=W)NR^{10}_2$,
 $-NR^{10}-NR^{10}C(=W)R^{10}$, $-NR^{10}-N[C(=W)R^{10}]_2$, $-N[(C=W)R^{10}]$,
 NR^{10}_2 , $-NR^{10}-NR^{10}[(C=W)R^{10}]$, $-NR^{10}-NR^{10}[(C=W)WR^{10}]$,
 $-NR^{10}-NR^{10}[(C=W)NR^{10}_2]$, $-NR^{10}(C=NR^{10})R^{10}$,
 $-NR^{10}(C=NR^{10})NR^{10}_2$, $-O-NR^{10}_2$, $-O-NR^{10}C(=W)R^{10}$,



$-\text{OR}^{10}$, $-\text{NR}^{10}_2$, $-\text{SR}^{10}$, $-\text{SiR}^{10}_3$, $-\text{SeR}^{10}$, $-\text{PR}^{10}_2$,
 $-\text{P}(=\text{W})\text{R}^{10}_2$, $-\text{SOR}^{10}$, $-\text{SO}_2\text{R}^{10}$, $-\text{PW}_2\text{R}^{10}_2$, $-\text{PW}_3\text{R}^{10}_2$,

aryl and heterocyclyl,

of which the two mentioned last are optionally substituted by
 one or more radicals from the group

(C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl, (C₃-
 C₈)-cycloalkyl, (C₄-C₈)-cycloalkenyl, (C₆-C₈)-cycloalkynyl,
 (C₁-C₆)-haloalkyl, (C₂-C₆)-haloalkenyl, (C₂-C₆)-
 haloalkynyl, halogen, $-\text{OR}^{10}$, $-\text{NR}^{10}_2$, $-\text{SR}^{10}$, $-\text{SiR}^{10}_3$,
 $-\text{C}(=\text{W})\text{R}^{10}$, $-\text{C}(=\text{W})\text{OR}^{10}$, $-\text{C}(=\text{W})\text{NR}^{10}_2$, $-\text{SOR}^{10}$,
 $-\text{SO}_2\text{R}^{10}$, nitro, cyano and hydroxyl,

aryl,

which is optionally substituted by one or more radicals from the
 group

(C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl, (C₃-C₈)-
 cycloalkyl, (C₄-C₈)-cycloalkenyl and (C₆-C₈)-cycloalkynyl,

where these six abovementioned radicals are optionally
 substituted by one or more radicals from the group

halogen, cyano, nitro, $-\text{C}(=\text{W})\text{R}^{10}$, $-\text{C}(=\text{W})\text{OR}^{10}$,
 $-\text{C}(=\text{W})\text{NR}^{10}_2$, $-\text{OR}^{10}$, $-\text{NR}^{10}_2$, $-\text{SR}^{10}$, $-\text{SOR}^{10}$ and
 $-\text{SO}_2\text{R}^{10}$,

halogen, cyano, nitro, $-\text{C}(=\text{W})\text{R}^{10}$, $-\text{C}(=\text{NOR}^{10})\text{R}^{10}$,
 $-\text{C}(=\text{NNR}^{10}_2)\text{R}^{10}$, $-\text{C}(=\text{W})\text{OR}^{10}$, $-\text{C}(=\text{W})\text{NR}^{10}_2$, $-\text{OC}(=\text{W})\text{R}^{10}$,
 $-\text{OC}(=\text{W})\text{OR}^{10}$, $-\text{NR}^{10}\text{C}(=\text{W})\text{R}^{10}$, $-\text{N}[\text{C}(=\text{W})\text{R}^{10}]_2$,
 $-\text{NR}^{10}\text{C}(=\text{W})\text{OR}^{10}$, $-\text{OR}^{10}$, $-\text{NR}^{10}_2$, $-\text{SR}^{10}$, $-\text{SiR}^{10}_3$, $-\text{PR}^{10}_2$,
 $-\text{SOR}^{10}$, $-\text{SO}_2\text{R}^{10}$, $-\text{PW}_2\text{R}^{10}_2$ and $-\text{PW}_3\text{R}^{10}_2$,

pyridyl,



which is optionally substituted by one or more radicals from the group

- 5 (C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl, (C₃-C₈)-cycloalkyl, (C₄-C₈)-cycloalkenyl and (C₆-C₈)-cycloalkynyl, where the six abovementioned radicals are optionally substituted by one or more radicals from the group
- 10 cyano, nitro, halogen, -C(=W)R¹⁰, -C(=W)OR¹⁰, -C(=W)NR¹⁰₂, -OR¹⁰, -NR¹⁰₂, -SR¹⁰, -SOR¹⁰ and -SO₂R¹⁰,
- halogen, cyano, nitro, -C(=W)R¹⁰, -C(=W)OR¹⁰, -C(=W)NR¹⁰₂, -OC(=W)R¹⁰, -OR¹⁰, -NR¹⁰₂, -SR¹⁰, -SOR¹⁰ and -SO₂R¹⁰,
- 15 -C(=W)R¹⁰, -C(=NOR¹⁰)R¹⁰, -C(=NNR¹⁰₂)R¹⁰, -C(=W)OR¹⁰, -C(=W)NR¹⁰₂ or halogen;

- 20 R⁴ and R⁵ together form a 4- to 7-membered ring which may be partially unsaturated and may be interrupted by one or more atoms from the group nitrogen, oxygen and sulfur, oxygen atoms not being directly adjacent to one another, and the ring optionally being substituted by one or more, but at most 5, radicals R¹;

R⁴ and R⁵ together form one of the groups =O, =S or =N-R⁹;

- 25 R⁶ and R⁷ together form a 5- to 7-membered ring which may be partially unsaturated and may be interrupted by one or more atoms from the group nitrogen, oxygen and sulfur, oxygen atoms not being directly adjacent to one another, and the ring optionally being substituted by one or more, but at most 5, radicals R¹;



R^6 and R^7 together form one of the groups $=O$, $=S$ or $=N-R^9$;

R^8 is hydrogen,

(C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl, (C₃-C₈)-
 5 cycloalkyl, (C₄-C₈)-cycloalkenyl, (C₃-C₈)-cycloalkyl-(C₁-C₄)-
 alkyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkyl, (C₃-C₈)-cycloalkyl-(C₂-
 C₄)-alkenyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenyl, (C₁-C₆)-alkyl-
 (C₃-C₈)-cycloalkyl, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkyl, (C₂-C₆)-
 alkynyl-(C₃-C₈)-cycloalkyl, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenyl,
 10 (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenyl,

where the fourteen last-mentioned radicals are optionally
 substituted by one or more radicals from the group

15 halogen, cyano, nitro, hydroxyl, thio, amino, formyl, (C₁-C₆)-
 alkoxy, (C₂-C₆)-alkenyloxy, (C₂-C₆)-alkynyloxy, (C₁-C₆)-
 haloalkyloxy, (C₂-C₆)-haloalkenyloxy, (C₂-C₆)-haloalkynyloxy,
 (C₃-C₈)-cycloalkoxy, (C₄-C₈)-cycloalkenyloxy, (C₃-C₈)-
 halocycloalkoxy, (C₄-C₈)-halocycloalkenyloxy, (C₃-C₈)-
 20 cycloalkyl-(C₁-C₄)-alkoxy, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-
 alkoxy, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenyloxy, (C₄-C₈)-
 cycloalkenyl-(C₁-C₄)-alkenyloxy, (C₁-C₆)-alkyl-(C₃-C₈)-
 cycloalkoxy, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkoxy, (C₂-C₆)-
 alkynyl-(C₃-C₈)-cycloalkoxy, (C₁-C₆)-alkyl-(C₄-C₈)-
 25 cycloalkenyloxy, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenyloxy,
 (C₁-C₄)-alkoxy-(C₁-C₆)-alkoxy, (C₁-C₄)-alkoxy-(C₂-C₆)-
 alkenyloxy, carbamoyl, (C₁-C₆)-mono- or dialkylcarbamoyl,



(C₁-C₆)-mono- or dihaloalkylcarbamoyl, (C₃-C₈)-mono- or
 dicycloalkylcarbamoyl, (C₁-C₆)-alkoxycarbonyl, (C₃-C₈)-
 cycloalkoxycarbonyl, (C₁-C₆)-alkanoyloxy, (C₃-C₈)-
 cycloalkanoyloxy, (C₁-C₆)-haloalkoxycarbonyl, (C₁-C₆)-
 haloalkanoyloxy, (C₁-C₆)-alkaneamido, (C₁-C₆)-
 haloalkaneamido, (C₂-C₆)-alkeneamido, (C₃-C₈)-
 cycloalkaneamido, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkaneamido,
 (C₁-C₆)-alkylthio, (C₂-C₆)-alkenylthio, (C₂-C₆)-alkynylthio,
 (C₁-C₆)-haloalkylthio, (C₂-C₆)-haloalkenylthio, (C₂-C₆)-
 haloalkynylthio, (C₃-C₈)-cycloalkylthio, (C₄-C₈)-
 cycloalkenylthio, (C₃-C₈)-halocycloalkylthio, (C₄-C₈)-
 halocycloalkenylthio, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkylthio,
 (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylthio, (C₃-C₈)-cycloalkyl-
 (C₂-C₄)-alkenylthio, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenylthio,
 (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkylthio, (C₂-C₆)-alkenyl-(C₃-C₈)-
 cycloalkylthio, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylthio, (C₁-C₆)-
 alkyl-(C₄-C₈)-cycloalkenylthio, (C₂-C₆)-alkenyl-(C₄-C₈)-
 cycloalkenylthio, (C₁-C₆)-alkylsulfinyl, (C₂-C₆)-alkenylsulfinyl,
 (C₂-C₆)-alkynylsulfinyl, (C₁-C₆)-haloalkylsulfinyl, (C₂-C₆)-
 haloalkenylsulfinyl, (C₂-C₆)-haloalkynylsulfinyl, (C₃-C₈)-
 cycloalkylsulfinyl, (C₄-C₈)-cycloalkenylsulfinyl, (C₃-C₈)-
 halocycloalkylsulfinyl, (C₄-C₈)-halocycloalkenylsulfinyl, (C₃-C₈)-
 cycloalkyl-(C₁-C₄)-alkylsulfinyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-
 alkylsulfinyl, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenylsulfinyl, (C₄-
 C₈)-cycloalkenyl-(C₁-C₄)-alkenylsulfinyl, (C₁-C₆)-alkyl-(C₃-



- C₈-cycloalkylsulfinyl, (C₂-C₆)-alkenyl-(C₃-C₈)-
 cycloalkylsulfinyl, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylsulfinyl,
 (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenylsulfinyl, (C₂-C₆)-alkenyl-
 (C₄-C₈)-cycloalkenylsulfinyl, (C₁-C₆)-alkylsulfonyl, (C₂-C₆)-
 5 alkenylsulfonyl, (C₂-C₆)-alkynylsulfonyl, (C₁-C₆)-
 haloalkylsulfonyl, (C₂-C₆)-haloalkenylsulfonyl, (C₂-C₆)-
 haloalkynylsulfonyl, (C₃-C₈)-cycloalkylsulfonyl, (C₄-C₈)-
 cycloalkenylsulfonyl, (C₃-C₈)-halocycloalkylsulfonyl, (C₄-C₈)-
 halocycloalkenylsulfonyl, (C₃-C₈)-cycloalkyl-(C₁-C₄)-
 10 alkylsulfonyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylsulfonyl, (C₃-
 C₈)-cycloalkyl-(C₂-C₄)-alkenylsulfonyl, (C₄-C₈)-cycloalkenyl-
 (C₁-C₄)-alkenylsulfonyl, (C₁-C₆)-alkyl-(C₃-C₈)-
 cycloalkylsulfonyl, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkylsulfonyl,
 (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylsulfonyl, (C₁-C₆)-alkyl-(C₄-
 15 C₈)-cycloalkenylsulfonyl, (C₂-C₆)-alkenyl-(C₄-C₈)-
 cycloalkenylsulfonyl, (C₁-C₆)-alkylamino, (C₂-C₆)-
 alkenylamino, (C₂-C₆)-alkynylamino, (C₁-C₆)-haloalkylamino,
 (C₂-C₆)-haloalkenylamino, (C₂-C₆)-haloalkynylamino, (C₃-
 C₈)-cycloalkylamino, (C₄-C₈)-cycloalkenylamino, (C₃-C₈)-
 20 halocycloalkylamino, (C₄-C₈)-halocycloalkenylamino, (C₃-C₈)-
 cycloalkyl-(C₁-C₄)-alkylamino, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-
 alkylamino, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenylamino, (C₄-C₈)-
 cycloalkenyl-(C₁-C₄)-alkenylamino, (C₁-C₆)-alkyl-(C₃-C₈)-
 cycloalkylamino, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkylamino,
 (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylamino, (C₁-C₆)-alkyl-(C₄-



C₈-cycloalkenylamino, (C₂-C₆)-alkenyl-(C₄-C₈)-
 cycloalkenylamino, (C₁-C₆)-trialkylsilyl, aryl, aryloxy, arylthio,
 arylamino, arylcarbamoyl, aroyl, aroyloxy, aryloxy carbonyl,
 aryl-(C₁-C₄)-alkoxy, aryl-(C₂-C₄)-alkenyloxy, aryl-(C₁-C₄)-
 5 alkylthio, aryl-(C₂-C₄)-alkenylthio, aryl-(C₁-C₄)-alkylamino,
 aryl-(C₂-C₄)-alkenylamino, aryl-(C₁-C₆)-dialkylsilyl, diaryl-(C₁-
 C₆)-alkylsilyl, triarylsilyl and 5- or 6-membered heterocyclyl,
 of which the nineteen last-mentioned radicals are optionally
 substituted in their cyclic moiety by one or more substituents
 10 from the group
 halogen, cyano, nitro, amino, hydroxyl, thio,
 (C₁-C₄)-alkyl, (C₁-C₄)-haloalkyl, (C₁-C₄)-alkoxy,
 (C₁-C₄)-haloalkoxy, (C₁-C₄)-alkylthio, (C₁-C₄)-
 haloalkylthio, (C₁-C₄)-alkylamino, (C₁-C₄)-haloalkylamino,
 15 formyl and (C₁-C₄)-alkanoyl,
 aryl, which is optionally substituted by one or more radicals from
 the group
 halogen, cyano, nitro, hydroxyl, thio, amino, formyl, (C₁-C₆)-
 alkoxy, (C₂-C₆)-alkenyloxy, (C₂-C₆)-alkynyloxy, (C₁-C₆)-
 20 haloalkyloxy, (C₂-C₆)-haloalkenyloxy, (C₂-C₆)-haloalkynyloxy,
 (C₃-C₈)-cycloalkoxy, (C₄-C₈)-cycloalkenyloxy, (C₃-C₈)-
 halocycloalkoxy, (C₄-C₈)-halocycloalkenyloxy, carbamoyl,
 (C₁-C₆)-mono- or dialkylcarbamoyl, (C₁-C₆)-alkoxycarbonyl,
 (C₁-C₆)-alkanoyloxy, (C₁-C₆)-mono- or dihaloalkylcarbamoyl,
 25 (C₁-C₆)-haloalkoxycarbonyl, (C₁-C₆)-haloalkanoyloxy, (C₁-
 C₆)-alkaneamido, (C₁-C₆)-haloalkaneamido, (C₂-C₆)-
 alkeneamido, (C₁-C₆)-alkylthio, (C₂-C₆)-alkenylthio, (C₂-C₆)-



- alkynylthio, (C₁-C₆)-haloalkylthio, (C₂-C₆)-haloalkenylthio, (C₂-C₆)-haloalkynylthio, (C₃-C₈)-cycloalkylthio, (C₄-C₈)-cycloalkenylthio, (C₃-C₈)-halocycloalkthio, (C₃-C₈)-halocycloalkenylthio, (C₁-C₆)-alkylsulfanyl, (C₂-C₆)-alkenylsulfanyl, (C₂-C₆)-alkynylsulfanyl, (C₁-C₆)-haloalkylsulfanyl, (C₂-C₆)-haloalkenylsulfanyl, (C₂-C₆)-haloalkynylsulfanyl, (C₃-C₈)-cycloalkylsulfanyl, (C₄-C₈)-cycloalkenylsulfanyl, (C₃-C₈)-halocycloalksulfanyl, (C₄-C₈)-halocycloalkenylsulfanyl, (C₁-C₆)-alkylsulfonyl, (C₂-C₆)-alkenylsulfonyl, (C₂-C₆)-alkynylsulfonyl, (C₁-C₆)-haloalkylsulfonyl, (C₂-C₆)-haloalkenylsulfonyl, (C₂-C₆)-haloalkynylsulfonyl, (C₃-C₈)-cycloalkylsulfonyl, (C₄-C₈)-cycloalkenylsulfonyl, (C₃-C₈)-halocycloalksulfonyl, (C₄-C₈)-halocycloalkenylsulfonyl, (C₁-C₆)-alkylamino, (C₂-C₆)-alkenylamino, (C₂-C₆)-alkynylamino, (C₁-C₆)-haloalkylamino, (C₂-C₆)-haloalkenylamino, (C₂-C₆)-haloalkynylamino, (C₃-C₈)-cycloalkylamino, (C₄-C₈)-cycloalkenylamino, (C₃-C₈)-halocycloalkamino and (C₄-C₈)-halocycloalkenylamino, -C(=W)R¹¹, OR¹¹ or NR¹¹₂;
- 20 R⁹ is (C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl, (C₃-C₈)-cycloalkyl, (C₄-C₈)-cycloalkenyl, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkyl, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenyl, where the nine last-mentioned radicals are optionally substituted by one or more radicals from the group



halogen, cyano, (C₁-C₆)-alkoxy, (C₂-C₆)-alkenyloxy, (C₂-C₆)-alkynyloxy and (C₁-C₆)-haloalkyloxy;

R¹⁰ is hydrogen,

- 5 (C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl, (C₃-C₈)-cycloalkyl, (C₄-C₈)-cycloalkenyl, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkyl, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenyl, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkyl, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkyl,
- 10 (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkyl, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenyl, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenyl, where the fourteen last-mentioned radicals are optionally substituted by one or more radicals from the group
- 15 halogen, cyano, nitro, hydroxyl, thio, amino, formyl, (C₁-C₆)-alkoxy, (C₂-C₆)-alkenyloxy, (C₂-C₆)-alkynyloxy, (C₁-C₆)-haloalkyloxy, (C₂-C₆)-haloalkenyloxy, (C₂-C₆)-haloalkynyloxy, (C₃-C₈)-cycloalkoxy, (C₄-C₈)-cycloalkenyloxy, (C₃-C₈)-halocycloalkoxy, (C₄-C₈)-halocycloalkenyloxy, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkoxy, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkoxy, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenyloxy, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenyloxy, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkoxy, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkoxy, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkoxy, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenyloxy, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenyloxy,
- 20 (C₁-C₄)-alkoxy-(C₁-C₆)-alkoxy, (C₁-C₄)-alkoxy-(C₂-C₆)-alkenyloxy, carbamoyl,

25



- (C₁-C₆)-mono- or dialkylcarbamoyl, (C₁-C₆)-mono- or dihaloalkylcarbamoyl, (C₃-C₈)-mono- or dicycloalkylcarbamoyl, (C₁-C₆)-alkoxycarbonyl, (C₃-C₈)-cycloalkoxycarbonyl, (C₁-C₆)-alkanoyloxy, (C₃-C₈)-cycloalkanoyloxy, (C₁-C₆)-haloalkoxycarbonyl, (C₁-C₆)-haloalkanoyloxy, (C₁-C₆)-alkaneamido, (C₁-C₆)-haloalkaneamido, (C₂-C₆)-alkeneamido, (C₃-C₈)-cycloalkaneamido, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkaneamido, (C₁-C₆)-alkylthio, (C₂-C₆)-alkenylthio, (C₂-C₆)-alkynylthio, (C₁-C₆)-haloalkylthio, (C₂-C₆)-haloalkenylthio, (C₂-C₆)-haloalkynylthio, (C₃-C₈)-cycloalkylthio, (C₄-C₈)-cycloalkenylthio, (C₃-C₈)-halocycloalkthio, (C₄-C₈)-halocycloalkenylthio, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkylthio, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylthio, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenylthio, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenylthio, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkylthio, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkylthio, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylthio, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenylthio, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenylthio, (C₁-C₆)-alkylsulfanyl, (C₂-C₆)-alkenylsulfanyl, (C₂-C₆)-alkynylsulfanyl, (C₁-C₆)-haloalkylsulfanyl, (C₂-C₆)-haloalkenylsulfanyl, (C₂-C₆)-haloalkynylsulfanyl, (C₃-C₈)-cycloalkylsulfanyl, (C₄-C₈)-cycloalkenylsulfanyl, (C₃-C₈)-halocycloalksulfanyl, (C₄-C₈)-halocycloalkenylsulfanyl, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkylsulfanyl,



- (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylsulfinyl, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenylsulfinyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenylsulfinyl, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkylsulfinyl, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkylsulfinyl, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylsulfinyl, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenylsulfinyl, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenylsulfinyl, (C₁-C₆)-alkylsulfonyl, (C₂-C₆)-alkenylsulfonyl, (C₂-C₆)-alkynylsulfonyl, (C₁-C₆)-haloalkylsulfonyl, (C₂-C₆)-haloalkenylsulfonyl, (C₂-C₆)-haloalkynylsulfonyl, (C₃-C₈)-cycloalkylsulfonyl, (C₄-C₈)-cycloalkenylsulfonyl, (C₃-C₈)-halocycloalkylsulfonyl, (C₄-C₈)-halocycloalkenylsulfonyl, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkylsulfonyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylsulfonyl, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenylsulfonyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenylsulfonyl, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkylsulfonyl, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkylsulfonyl, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylsulfonyl, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenylsulfonyl, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenylsulfonyl,
- (C₁-C₆)-alkylamino, (C₂-C₆)-alkenylamino, (C₂-C₆)-alkynylamino, (C₁-C₆)-haloalkylamino, (C₂-C₆)-haloalkenylamino, (C₂-C₆)-haloalkynylamino, (C₃-C₈)-cycloalkylamino, (C₄-C₈)-cycloalkenylamino, (C₃-C₈)-halocycloalkylamino, (C₄-C₈)-halocycloalkenylamino, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkylamino, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylamino, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenylamino, (C₄-C₈)-



- cycloalkenyl-(C₁-C₄)-alkenylamino, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkylamino, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkylamino, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylamino, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenylamino, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenylamino, (C₁-C₆)-trialkylsilyl, aryl, aryloxy, arylthio, arylamino, aryl-(C₁-C₄)-alkoxy, aryl-(C₂-C₄)-alkenyloxy, aryl-(C₁-C₄)-alkylthio, aryl-(C₂-C₄)-alkenylthio, aryl-(C₁-C₆)-alkylamino, aryl-(C₂-C₄)-alkenylamino, aryl-(C₁-C₆)-dialkylsilyl, diaryl-(C₁-C₆)-alkylsilyl, triarylsilyl and 5- or 6-membered heterocyclyl,
- where the cyclic moiety of the fourteen last-mentioned radicals is optionally substituted by one or more radicals from the group
- halogen, cyano, nitro, amino, hydroxyl, thio, (C₁-C₄)-alkyl, (C₁-C₄)-haloalkyl, (C₃-C₈)-cycloalkyl, (C₁-C₄)-alkoxy, (C₁-C₄)-haloalkoxy, (C₁-C₄)-alkylthio, (C₁-C₄)-haloalkylthio, (C₁-C₄)-alkylamino, (C₁-C₄)-haloalkylamino, formyl and (C₁-C₄)-alkanoyl,
- aryl, 5- or 6-membered heteroaromatic,
- where the two last-mentioned radicals are optionally substituted by one or more radicals from the group
- halogen, cyano, nitro, hydroxyl, thio, amino, formyl, (C₁-C₆)-alkoxy, (C₂-C₆)-alkenyloxy, (C₂-C₆)-alkynyloxy, (C₁-C₆)-haloalkyloxy, (C₂-C₆)-haloalkenyloxy, (C₂-C₆)-haloalkynyloxy, (C₃-C₈)-cycloalkoxy, (C₄-C₈)-cycloalkenyloxy, (C₃-C₈)-halocycloalkoxy, (C₄-C₈)-halocycloalkenyloxy, carbamoyl,



(C₁-C₆)-mono- or dialkylcarbamoyl, (C₁-C₆)-alkoxycarbonyl,
 (C₁-C₆)-alkanoyloxy,
 (C₁-C₆)-mono- or dihaloalkylcarbamoyl, (C₁-C₆)-
 haloalkoxycarbonyl, (C₁-C₆)-haloalkanoyloxy, (C₁-C₆)-
 5 alkaneamido, (C₁-C₆)-haloalkaneamido, (C₂-C₆)-
 alkeneamido, (C₁-C₆)-alkylthio, (C₂-C₆)-alkenylthio, (C₂-C₆)-
 alkynylthio, (C₁-C₆)-haloalkylthio, (C₂-C₆)-haloalkenylthio,
 (C₂-C₆)-haloalkynylthio, (C₃-C₈)-cycloalkylthio, (C₄-C₈)-
 cycloalkenylthio,
 10 (C₃-C₈)-halocycloalkthio, (C₄-C₈)-halocycloalkenylthio, (C₁-
 C₆)-alkylsulfinyl, (C₂-C₆)-alkenylsulfinyl, (C₂-C₆)-
 alkynylsulfinyl, (C₁-C₆)-haloalkylsulfinyl, (C₂-C₆)-
 haloalkenylsulfinyl, (C₂-C₆)-haloalkynylsulfinyl, (C₃-C₈)-
 cycloalkylsulfinyl, (C₄-C₈)-cycloalkenylsulfinyl, (C₃-C₈)-
 15 halocycloalksulfinyl, (C₄-C₈)-halocycloalkenylsulfinyl, (C₁-C₆)-
 alkylsulfonyl, (C₂-C₆)-alkenylsulfonyl, (C₂-C₆)-alkynylsulfonyl,
 (C₁-C₆)-haloalkylsulfonyl, (C₂-C₆)-haloalkenylsulfonyl, (C₂-
 C₆)-haloalkynylsulfonyl, (C₃-C₈)-cycloalkylsulfonyl, (C₄-C₈)-
 cycloalkenylsulfonyl, (C₃-C₈)-halocycloalksulfonyl, (C₄-C₈)-
 20 halocycloalkenylsulfonyl, (C₁-C₆)-alkylamino, (C₂-C₆)-
 alkenylamino, (C₂-C₆)-alkynylamino, (C₁-C₆)-haloalkylamino,
 (C₂-C₆)-haloalkenylamino, (C₂-C₆)-haloalkynylamino, (C₃-
 C₈)-cycloalkylamino, (C₄-C₈)-cycloalkenylamino, (C₃-C₈)-
 halocycloalkylamino and (C₄-C₈)-halocycloalkenylamino;

R¹¹is (C₁-C₁₀)-alkyl, haloalkyl, aryl,

which is optionally substituted by one or more radicals from the group

halogen, cyano, nitro, (C₁-C₄)-alkoxy, (C₁-C₄)-alkyl, amino, (C₁-C₄)-monoalkylamino and (C₁-C₄)-dialkylamino,

5 NR¹⁰₂, OR¹⁰ or SR¹⁰.

The numbers in brackets are the reference numbers from The Pesticide Manual, 11th edition, British Crop Protection Council, Farnham 1997.

10 The method according to the invention makes it possible to reduce the application rate of crop protection agents which act synergistically with the transgenic plants, and also to increase and widen the efficacy of the transgenic plants, and therefore offers economical and ecological advantages.

15 The advantages of the method are, on the one hand, synergisms with the *Bacillus thuringiensis* toxins (Bt toxins) produced in the transgenic plant and, on the other hand, for example, a reduced number of applications or a reduction of the application rates to in some instances sublethal dosages
20 (compared to the conventional application of the individual insecticides) and an associated considerably reduced environmental burden.

In particular combinations of the abovementioned active compounds show, together with the endogenously produced Bt toxins (i.e. produced within
25 the transgenic plants) a distinct synergistic effect on a large number of harmful organisms to be controlled.

The invention also provides the use of compounds from the abovementioned groups a-f for controlling harmful organisms in genetically
30 modified cotton plants which contain a gene derived from *Bacillus thuringiensis* which encodes and expresses an insecticidally active protein.



For the purpose of the invention, the term "insecticidally active" includes insecticidal, nematocidal, ovicidal action, and a repellent, behavior-modifying and sterilent action.

5 Preferred insecticidally active compounds are the abovementioned groups (a) to (e), in particular the organophosphorus compounds, pyrethroids, carbamates, endosulfan, fipronil, abamectin, piperonyl butoxide, XDE-105 and *Bacillus thuringiensis*.

10 Particular preference is given to triazaphos, endosulfan, deltamethrin, fipronil, abamectin, piperonyl butoxide and *Bacillus thuringiensis*.

Preference is also given to mixtures of two or more, preferably two or three, particularly preferably two, of the insecticidally active compounds.

15 Particular preference is given to mixtures of the abovementioned organophosphorus compounds with the abovementioned pyrethroids, for example of triazaphos with deltamethrin.

Likewise, particular preference is given to the mixtures listed below:

20 deltamethrin and piperonyl butoxide, deltamethrin and fipronil, deltamethrin and endosulfan, deltamethrin and XDE-105, deltamethrin and chlorphenapyr, deltamethrin and *Bacillus thuringiensis*, endosulfan and amitraz, endosulfan and *Bacillus thuringiensis*, cyfluthrin and chlorpyrifos.

Likewise, preference is given to the 4-haloalkyl-3-heterocyclylpyridines and
25 4-haloalkyl-5-heterocyclylpyrimidines of group (f).

For these compounds:

The term "halogen" includes fluorine, chlorine, bromine and iodine.

30

The term "(C₁-C₄)-alkyl" is to be understood as a straight-chain or branched hydrocarbon radical having 1, 2, 3 or 4 carbon atoms, such as, for example, the methyl, ethyl, propyl, isopropyl, 1-butyl, 2-butyl, 2-methylpropyl or tert-butyl radical. Correspondingly, alkyl radicals having a



greater range of carbon atoms are to be understood as straight-chain or branched saturated hydrocarbon radicals which contain a number of carbon atoms which corresponds to the range stated. Thus, the term "(C₁-C₆)-alkyl" includes the abovementioned alkyl radicals, and, for

5 example, the pentyl, 2-methylbutyl, 1,1-dimethylpropyl, hexyl radical. The term "(C₁-C₁₀)-alkyl" is to be understood as the abovementioned alkyl radicals, and, for example, the nonyl, 1-decyl or 2-decyl radical and the term "(C₁-C₂₀)-alkyl" is to be understood as the abovementioned alkyl radicals, and, for example, the undecyl, dodecyl, pentadecyl or eicosyl
10 radical.

"(C₁-C₄)-Haloalkyl" is to be understood as an alkyl group mentioned under the term "(C₁-C₄)-alkyl" in which one or more hydrogen atoms are replaced by the same number of identical or different halogen atoms,
15 preferably by fluorine or chlorine, such as the trifluoromethyl, the 1-fluoroethyl, the 2,2,2-trifluoroethyl, the chloromethyl, fluoromethyl, the difluoromethyl and the 1,1,2,2-tetrafluoroethyl group.

"(C₁-C₄)-Alkoxy" is to be understood as an alkoxy group whose
20 hydrocarbon radical has the meaning given under the term "(C₁-C₄)-alkyl". Alkoxy groups embracing a greater range of carbon atoms are to be understood correspondingly.

The terms "alkenyl" and "alkynyl" having a prefix stating the range of
25 carbon atoms denote a straight-chain or branched hydrocarbon radical having a number of carbon atoms corresponding to the range stated which comprises at least one multiple bond which may be in any position of the unsaturated radical in question. "(C₂-C₄)-Alkenyl" is thus, for example, the vinyl, allyl, 2-methyl-2-propene or 2-butenyl group; "(C₂-C₆)-alkenyl"
30 denotes the abovementioned radicals and, for example, the pentenyl, 2-methylpentenyl or the hexenyl group. The term "(C₂-C₂₀)-alkenyl" is to be understood as the abovementioned radicals and, for example, the



2-decenyl or the 2-eicosenyl group. "(C₂-C₄)-Alkynyl" is, for example, the ethynyl, propargyl, 2-methyl-2-propyne or 2-butyne group. "(C₂-C₆)-Alkynyl" is to be understood as the abovementioned radicals and, for example, the 2-pentynyl- or the 2-hexynyl group and "(C₂-C₂₀)-alkynyl" is to be understood as the abovementioned radicals and, for example, the 2-octynyl or the 2-decynyl group.

"(C₃-C₈)-Cycloalkyl" denotes monocyclic alkyl radicals, such as the cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl or cyclooctyl radical and bicyclic alkyl radicals, such as the norbornyl radical.

The term "(C₃-C₈)-cycloalkyl-(C₁-C₄)-alkyl" is to be understood as, for example, the cyclopropylmethyl, cyclopentylmethyl, cyclohexylmethyl, cyclohexylethyl and cyclohexylbutyl radical, and the term "(C₁-C₆)-alkyl-(C₃-C₈)-cycloalkyl is to be understood as, for example, the 1-methylcyclopropyl, 1-methylcyclopentyl, 1-methylcyclohexyl, 3-hexylcyclobutyl and 4-tert-butyl-cyclohexyl radical.

"(C₁-C₄)-Alkoxy-(C₁-C₆)-alkyloxy" is an alkoxy group as defined above which is substituted by a further alkoxy group, such as, for example, 1-ethoxyethoxy.

"(C₃-C₈)-Cycloalkoxy" or "(C₃-C₈)-cycloalkylthio" is to be understood as one of the abovementioned (C₃-C₈)-cycloalkyl radicals which is linked via an oxygen or sulfur atom.

"(C₃-C₈)-Cycloalkyl-(C₁-C₆)-alkoxy" is, for example, the cyclopropylmethoxy, cyclobutylmethoxy, cyclopentylmethoxy, cyclohexylmethoxy, cyclohexylethoxy or the cyclohexylbutoxy group;

The term "(C₁-C₄)-alkyl-(C₃-C₈)-cycloalkoxy" is, for example, the methylcyclopropyloxy, methylcyclobutyloxy or the butylcyclohexyloxy group.



"(C₁-C₆)-Alkylthio" is an alkylthio group whose hydrocarbon radical has the meaning given under the term "(C₁-C₆)-alkyl".

Correspondingly, "(C₁-C₆)-alkylsulfinyl" is, for example, the methyl-, ethyl-,
 5 propyl-, isopropyl-, butyl-, isobutyl-, sec-butyl- or tert-butylsulfinyl group and
 "(C₁-C₆)-alkylsulfonyl" is, for example, the methyl-, ethyl-, propyl-,
 isopropyl-, butyl-, isobutyl-, sec-butyl- or tert-butylsulfonyl group.

"(C₁-C₆)-Alkylamino" is a nitrogen atom which is substituted by one or two
 10 identical or different alkyl radicals of the above definition.

The term "(C₁-C₆)-mono- or dialkylcarbamoyl" is a carbamoyl group having
 one or two hydrocarbon radicals which have the meaning given under the
 term "(C₁-C₆)-alkyl" and which, in the case of two hydrocarbon radicals,
 15 may be identical or different.

Correspondingly, "(C₁-C₆)-dihaloalkylcarbamoyl" is a carbamoyl group
 which carries two (C₁-C₆)-haloalkyl radicals in accordance with the above
 definition or one (C₁-C₆)-haloalkyl radical and one (C₁-C₆)-alkyl radical in
 20 accordance with the above definition.

"(C₁-C₆)-Alkanoyl" is, for example, the acetyl, propionyl, butyryl or
 2-methylbutyryl group.

25 The term "aryl" is to be understood as an isocyclic aromatic radical
 preferably having 6 to 14, in particular 6 to 12, carbon atoms, such as, for
 example, phenyl, naphthyl or biphenyl, preferably phenyl. "Aroyl" is thus
 an aryl radical as defined above which is attached via a carbonyl group,
 such as, for example, the benzoyl group.



The term "heterocyclyl" denotes a cyclic radical which may be fully saturated, partially unsaturated or fully unsaturated and which may be interrupted by at least one or more identical atoms from the group nitrogen, sulfur or oxygen, oxygen atoms, however, not being directly adjacent to one another and at least one carbon atom being present in the ring, such as, for example, a thiophene, furan, pyrrole, thiazole, oxazole, imidazole, isothiazole, isoxazole, pyrazole, 1,3,4-oxadiazole, 1,3,4-thiadiazole, 1,3,4-triazole, 1,2,4-oxadiazole, 1,2,4-thiadiazole, 1,2,4-triazole, 1,2,3-triazole, 1,2,3,4-tetrazole, benzo[b]thiophene, benzo[b]furan, indole, benzo[c]thiophene, benzo[c]furan, isoindole, benzoxazole, benzothiazole, benzimidazole, benzisoxazole, benzisothiazole, benzopyrazole, benzothiadiazole, benzotriazole, dibenzofuran, dibenzothiophene, carbazole, pyridine, pyrazine, pyrimidine, pyridazine, 1,3,5-triazine, 1,2,4-triazine, 1,2,4,5-tetrazine, quinoline, isoquinoline, quinoxaline, quinazoline, cinnoline, 1,8-naphthyridine, 1,5-naphthyridine, 1,6-naphthyridine, 1,7-naphthyridine, phthalazine, pyridopyrimidine, purine, pteridine 4H-quinolizine; piperidine, pyrrolidine, oxazoline, tetrahydrofuran, tetrahydropyran, isoxazolidine or thiazolidine radical. The term "heteroaromatic" thus embraces, from among the meanings mentioned above under "heterocyclyl", in each case the fully unsaturated aromatic heterocyclic compounds.

"Aryl-(C₁-C₄)-alkoxy" is an aryl radical which is attached via a (C₁-C₄)-alkoxy group, for example the benzyloxy, phenylethoxy, phenylbutoxy or naphthylmethoxy radical.

"Arylthio" is an aryl radical attached via a sulfur atom, for example the phenylthio or the 1- or 2-naphthylthio radical. Correspondingly, "aryloxy" is, for example, the phenoxy or 1- or 2-naphthyloxy radical.

"Aryl-(C₁-C₄)-alkylthio" is an aryl radical which is attached via an alkylthio radical, for example the benzylthio, naphthylmethylthio or the phenylethylthio radical.



The term "(C₁-C₆)-trialkylsilyl" denotes a silicon atom which carries three identical or different alkyl radicals in accordance with the above definition. Correspondingly "aryl-(C₁-C₆)-dialkylsilyl" is a silicon atom which carries
 5 one aryl radical and two identical or different radicals in accordance with the above definition, "diaryl-(C₁-C₆)-alkylsilyl" is a silicon atom which carries one alkyl radical and two identical or different aryl radicals in accordance with the above definition, and "triarylsilyl" is a silicon atom which carries
 10 three identical or different aryl radicals in accordance with the above definition.

In cases where two or more radicals R¹⁰ are present in a substituent, such as, for example, in -C(=W)NR¹⁰₂, these radicals may be identical or
 15 different.

Y in the formula (I) is preferably CF₃. Furthermore, X is preferably the group CH. Likewise, preference is given to compounds in which:
 $X^1 = 0$ and $X^2 = N$ and $X^3 = CR^1$. Likewise, preference is given to
 20 compounds where $m = 0$.

Particular preference is given to compounds of the formula (I) from the group (f) in which the symbols Y, X, X¹, X², X³ have the preferred meanings given above, in particular to compounds in which m likewise has the preferred meaning.

25 Preference is given to those compounds from the group (f) with the formula (I) in which

Y is C₁-C₆-alkyl which is mono- or polysubstituted by chlorine and/or fluorine;
 30 m is zero;



Q is a 5-membered heterocyclic group



in which

- 5 a) $X^2 = NR^a$ and $X^3 = CR^bR^1$ or
 b) $X^2 = CR^aR^2$ and $X^3 = CR^bR^3$ or
 c) $X^2 = CR^4R^5$ and $X^3 = CR^6R^7$;

R^a and R^b together are a bond ;

R^1, R^2, R^3, R^4 and R^6 are each independently of one another

- 10 hydrogen, halogen, C_1 - C_{12} -alkyl, C_3 - C_8 -cycloalkyl, C_2 - C_8 -alkenyl, C_2 - C_8 -alkynyl, where the four last-mentioned hydrocarbon radicals are optionally mono- or polysubstituted by identical or different radicals from a group A1 consisting of
- 15 C_1 - C_6 -alkylcarbonyl, C_1 - C_6 -alkylaminocarbonyl, C_1 - C_6 -alkoxy, C_1 - C_6 -alkylthio, C_1 - C_6 -alkylamino, C_1 - C_6 -alkylcarbonylamino, C_1 - C_6 -alkylsulfonylamino, phenyl, furyl, pyrrolyl, thienyl, halogen, cyano, phenyloxy, phenylthio and phenylamino, where the eleven first-mentioned radicals of group A1 are each optionally mono- or polysubstituted by
- 20 identical or different radicals from a group B1 consisting of halogen, cyano, C_1 - C_3 -alkoxy and phenyl which is optionally mono- or polysubstituted by one or more halogen atoms and where the three last-mentioned radicals of group A1 are each optionally mono- or polysubstituted by identical or different
- 25 radicals from a group B2 consisting of halogen, cyano, nitro, C_1 - C_3 -alkyl and C_1 - C_3 -alkoxy, or are C_1 - C_6 -alkylcarbonyl, C_1 - C_6 -alkylaminocarbonyl, C_1 - C_6 -alkoxycarbonyl, phenyl, pyridyl, furyl, thienyl, pyrrolyl, where the eight last-mentioned



radicals are optionally mono- or polysubstituted by identical or different radicals from group B1, or are OR^{10} , SR^{10} or $N(R^{10})_2$;

- R^5 and R^7 are each independently of one another hydrogen, halogen,
- 5 C_1-C_{12} -alkyl, C_3-C_8 -cycloalkyl, C_2-C_8 -alkenyl, C_2-C_8 -alkynyl, where the four last-mentioned hydrocarbon radicals are optionally mono- or polysubstituted by identical or different radicals from a group A2 consisting of C_1-C_6 -alkylcarbonyl, C_1-C_6 -alkylaminocarbonyl, C_1-C_6 -alkoxy, C_1-C_6 -alkylthio, C_1-
- 10 C_6 -alkylamino, C_1-C_6 -alkylcarbonylamino, phenyl, furyl, pyrrol, thienyl, halogen, cyano, phenyloxy, phenylthio and phenylamino, where the ten first-mentioned radicals of group A2 are each optionally mono- or polysubstituted by identical or different radicals from the group B1 and the three last-
- 15 mentioned radicals of group A2 are each optionally mono- or polysubstituted by identical or different radicals from the group B2, or are C_1-C_6 -alkylcarbonyl, C_1-C_6 -alkylaminocarbonyl, C_1-C_6 -alkoxycarbonyl, phenyl, pyridyl, furyl, thienyl, pyrrol, where the eight last-mentioned radicals
- 20 are optionally mono- or polysubstituted by identical or different radicals from the group B1, or are OR^{10} , SR^{10} or $N(R^{10})_2$;
- R^{10} is hydrogen, benzyl, C_1-C_6 -alkyl, C_1-C_6 -cycloalkyl, C_2-C_6 -alkenyl, C_2-C_6 -alkynyl, phenyl, C_1-C_6 -alkylcarbonyl or C_1-C_6 -alkylsulfonyl, where the eight last-mentioned radicals are
- 25 optionally mono- or polysubstituted by identical or different halogen atoms.

Particular preference is given to compounds from the group (f) with the formula (I) in which



Y is trifluoromethyl;

R^1, R^2, R^3, R^4 and R^6 are each independently of one another halogen,

5 C_1 - C_{12} -alkyl, C_2 - C_{12} -alkenyl, where the two last-mentioned radicals are optionally mono- or polysubstituted by identical or different radicals from a group A3 consisting of C_1 - C_4 -alkylcarbonyl, C_1 - C_4 -alkylaminocarbonyl, C_1 - C_4 -alkoxy, C_1 - C_4 -alkylthio, C_1 - C_4 -alkylamino, C_1 - C_4 -alkylcarbonylamino, C_1 - C_4 -alkylsulfonylamino, phenyl, furyl, pyrrol, thienyl, fluorine, chlorine, bromine, cyano, phenyloxy, phenylthio and phenylamino, where the eleven first-mentioned radicals of group A3 are each optionally mono- or polysubstituted by identical or different radicals from the group B1 and the three last-mentioned radicals of group A3 are each optionally mono- or polysubstituted by identical or different radicals from the group B2, or are OR^{10} , SR^{10} or $N(R^{10})_2$;

15 R^5 and R^7 are each independently of one another halogen, C_1 - C_{12} -alkyl, C_2 - C_{12} -alkenyl, where the two last-mentioned radicals are optionally mono- or polysubstituted by identical or different radicals from a group A4 consisting of C_1 - C_4 -alkylcarbonyl, C_1 - C_4 -alkylaminocarbonyl, C_1 - C_4 -alkoxy, C_1 - C_4 -alkylthio, C_1 - C_4 -alkylamino, C_1 - C_4 -alkylcarbonylamino, phenyl, furyl, pyrrol, thienyl, fluorine, chlorine, bromine, cyano, phenyloxy, phenylthio and phenylamino, where the ten first-mentioned radicals of group A4 are each optionally mono- or polysubstituted by identical or different radicals from the group B1 and the three last-mentioned radicals of group A4 are each optionally mono- or polysubstituted by identical or different radicals from the group B2, or are OR^{10} , SR^{10} or $N(R^{10})_2$;



R^{10} is hydrogen, C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, phenyl, C₁-C₄-alkylcarbonyl or C₁-C₄-alkylsulfonyl, where the six last-mentioned radicals are optionally mono- or polysubstituted by identical or different halogen atoms.

5

Very particular preference is given to compounds from the group (f) with the formula (I) in which

R^1, R^2, R^3, R^4 and R^6 are each independently of one another C₁-C₁₀-

alkyl, C₂-C₁₀-alkenyl, where the two last-mentioned radicals are optionally mono- or polysubstituted by identical or different radicals from a group A5 consisting of C₁-C₄-alkylcarbonyl, C₁-C₄-alkylaminocarbonyl, C₁-C₄-alkoxy, C₁-C₄-alkylthio, C₁-C₄-alkylamino, C₁-C₄-alkylcarbonylamino, C₁-C₄-alkylsulfonylamino, phenyl, fluorine, chlorine, bromine, cyano, phenyloxy, phenylthio and phenylamino, where the eight first-mentioned radicals of group A5 are each optionally mono- or polysubstituted by identical or different radicals from the group B1 and the three last-mentioned radicals of group A5 are each optionally mono- or polysubstituted by identical or different radicals from the group B2;

15

20

R^5 and R^7 are each independently of one another C₁-C₁₀-alkyl, C₂-C₁₀-alkenyl, where the two last-mentioned radicals are optionally mono- or polysubstituted by identical or different radicals from a group A6 consisting of

25

30

C₁-C₄-alkylcarbonyl, C₁-C₄-alkylaminocarbonyl, C₁-C₄-alkoxy, C₁-C₄-alkylthio, C₁-C₄-alkylamino, C₁-C₄-alkylcarbonylamino, phenyl, fluorine, chlorine, bromine, cyano, phenyloxy, phenylthio and phenylamino, where the seven first-mentioned radicals of group A6 are each optionally mono- or polysubstituted by identical or different radicals from the group B1 and the three last-mentioned radicals of group A6 are each optionally mono- or

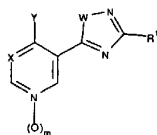


polysubstituted by identical or different radicals from the group B2.

Particularly preferred compounds from the group (f) with the formula (I) are
5 listed in the following Tables 1 to 5:



Table 1



No.	X	Y	m	W	R ¹	m.p. [°C]
1	N	CCl ₃	0	O	CH ₃	
2	N	CCl ₃	0	O	CH ₂ CH ₃	
3	N	CCl ₃	0	O	COOCH ₂ CH ₃	
4	CH	CCl ₃	0	O	CH ₃	
5	CH	CCl ₃	0	O	COOCH ₂ CH ₃	
6	N	(CF ₂) ₃ -CHF ₂	0	O	CH ₃	
7	N	(CF ₂) ₃ -CHF ₂	0	O	COOCH ₂ CH ₃	
8	CH	(CF ₂) ₃ -CHF ₂	0	O	CH ₃	
9	CH	(CF ₂) ₃ -CHF ₂	0	O	COOCH ₂ CH ₃	
10	N	(CF ₂) ₃ -CHF ₂	0	S	CH ₂ COOC(CH ₃) ₃	
11	N	(CF ₂) ₃ -CHF ₂	0	S	CH ₂ CONHCH ₃	
12	CH	(CF ₂) ₃ -CHF ₂	0	S	(CH ₂) ₂ CH ₃	
13	CH	(CF ₂) ₃ -CHF ₂	0	S	COOCH ₂ CH ₃	
14	N	(CF ₂) ₂ -CHF ₂	0	O	CH ₂ CH ₃	
15	N	(CF ₂) ₂ -CHF ₂	0	O	COOCH ₂ CH ₃	
16	N	(CF ₂) ₂ -CHF ₂	0	O	OH	



No.	X	Y	m	W	R ¹	m.p. [°C]
17	N	(CF ₂) ₂ -CHF ₂	0	O	OCH ₃	
18	CH	(CF ₂) ₂ -CHF ₂	0	O	CH ₃	
19	CH	(CF ₂) ₂ -CHF ₂	0	O	COOCH ₂ CH ₃	
20	CH	(CF ₂) ₂ -CHF ₂	0	O	OH	
21	CH	(CF ₂) ₂ -CHF ₂	0	O	NHCH ₃	
22	N	CF ₂ CF ₃	0	O	CH ₃	
23	N	CF ₂ CF ₃	0	O	CH ₂ CH ₃	
24	N	CF ₂ CF ₃	0	O	(CH ₂) ₂ CH ₃	
25	N	CF ₂ CF ₃	0	O	CH(CH ₃) ₂	
26	N	CF ₂ CF ₃	0	O	Cyclo-C ₆ H ₁₁	
27	N	CF ₂ CF ₃	0	O	CH ₂ C=CH ₂	
28	N	CF ₂ CF ₃	0	O	CH ₂ C≡CH	
29	N	CF ₂ CF ₃	0	O	CH ₂ CH ₂ C≡CH	
30	N	CF ₂ CF ₃	0	O	CH ₂ C≡CCH ₂ CH ₃	
31	N	CF ₂ CF ₃	0	O	(CH ₂) ₄ C≡CH	
32	N	CF ₂ CF ₃	0	O	CHFCF ₃	
33	N	CF ₂ CF ₃	0	O	COOCH ₂ CH ₃	
34	N	CF ₂ CF ₃	0	O	CH ₂ COOC(CH ₃) ₃	
35	N	CF ₂ CF ₃	0	O	CH ₂ CONHCH ₃	
36	N	CF ₂ CF ₃	0	O	NH ₂	
37	N	CF ₂ CF ₃	0	O	NHCH ₂ CH ₃	
38	CH	CF ₂ CF ₃	0	O	CH ₃	
39	CH	CF ₂ CF ₃	0	O	CH ₂ CH ₃	
40	CH	CF ₂ CF ₃	0	O	(CH ₂) ₂ CH ₃	
41	CH	CF ₂ CF ₃	0	O	CH(CH ₃) ₂	
42	CH	CF ₂ CF ₃	0	O	Cyclo-C ₆ H ₁₁	
43	CH	CF ₂ CF ₃	0	O	CH ₂ C=CH ₂	
44	CH	CF ₂ CF ₃	0	O	CH ₂ COOC(CH ₃) ₃	
45	CH	CF ₂ CF ₃	0	O	NH ₂	
46	CH	CF ₂ CF ₃	0	O	NHCOCH ₃	



No.	X	Y	m	W	R ¹	m.p. [°C]
47	CH	CF ₂ CF ₃	0	O	NHCOCH ₂ CH ₃	
48	N	CF ₂ CF ₃	0	S	CH ₃	
49	N	CF ₂ CF ₃	0	S	CH ₂ CH ₃	
50	N	CF ₂ CF ₃	0	S	(CH ₂) ₂ CH ₃	
51	N	CF ₂ Cl	0	O	CH ₃	
52	N	CF ₂ Cl	0	O	CH ₂ CH ₃	
53	N	CF ₂ Cl	0	O	(CH ₂) ₂ CH ₃	
54	N	CF ₂ Cl	0	O	CH(CH ₃) ₂	
55	N	CF ₂ Cl	0	O	CH ₂ COOC(CH ₃) ₃	
56	N	CF ₂ Cl	0	O	CH ₂ CONHCH ₃	
57	N	CF ₂ Cl	0	O	OH	
58	N	CF ₂ Cl	0	O	OCH ₃	
59	N	CF ₂ Cl	0	O	OCH ₂ CH ₃	
60	N	CF ₂ Cl	0	O	NHCH ₃	
61	CH	CF ₂ Cl	0	O	CH ₃	
62	CH	CF ₂ Cl	0	O	CH ₂ CH ₃	
63	CH	CF ₂ Cl	0	O	(CH ₂) ₂ CH ₃	
64	CH	CF ₂ Cl	0	O	CH(CH ₃) ₂	
65	CH	CF ₂ Cl	0	O	CH ₂ COOC(CH ₃) ₃	
66	CH	CF ₂ Cl	0	O	CH ₂ CONHCH ₃	
67	CH	CF ₂ Cl	0	O	OH	
68	CH	CF ₂ Cl	0	O	OCH ₃	
69	CH	CF ₂ Cl	0	O	OCH ₂ CH ₃	
70	CH	CF ₂ Cl	0	O	NHCH ₃	
71	CH	CF ₂ Cl	0	O	Cyclo-C ₆ H ₁₁	
72	CH	CF ₂ Cl	0	O	CH ₂ C=CH ₂	
73	CH	CF ₂ Cl	0	O	COOCH ₂ CH ₃	
74	CH	CF ₂ Cl	0	O	CH ₂ COOC(CH ₃) ₃	
75	CH	CF ₂ Cl	0	O	CH ₂ CONHCH ₃	
76	CH	CF ₂ Cl	0	O	OCH ₃	
77	CH	CF ₂ Cl	0	O	NHCH ₃	
78	CH	CF ₃	0	O	CH ₃	oil
79	CH	CF ₃	0	O	CH ₂ CH ₃	oil
80	CH	CF ₃	0	O	(CH ₂) ₂ CH ₃	oil
81	CH	CF ₃	0	O	CH(CH ₃) ₂	oil



No.	X	Y	m	W	R ¹	m.p. [°C]
82	CH	CF ₃	0	O	Cyclo-C ₃ H ₅	oil
83	CH	CF ₃	0	O	(CH ₂) ₃ CH ₃	oil
84	CH	CF ₃	0	O	CH(CH ₃)CH ₂ CH ₃	oil
85	CH	CF ₃	0	O	CH ₂ CH(CH ₃) ₂	oil
86	CH	CF ₃	0	O	C(CH ₃) ₃	oil
87	CH	CF ₃	0	O	Cyclo-C ₄ H ₇	
88	CH	CF ₃	0	O	(CH ₂) ₄ CH ₃	oil
89	CH	CF ₃	0	O	CH(CH ₃)(CH ₂) ₂ CH ₃	
90	CH	CF ₃	0	O	(CH ₂) ₂ CH(CH ₃) ₂	
91	CH	CF ₃	0	O	CH ₂ C(CH ₃) ₃	
92	CH	CF ₃	0	O	Cyclo-C ₅ H ₉	oil
93	CH	CF ₃	0	O	(CH ₂) ₅ CH ₃	
94	CH	CF ₃	0	O	C(CH ₂ CH ₃) ₂ CH ₃	
95	CH	CF ₃	0	O	Cyclo-C ₆ H ₁₁	
96	CH	CF ₃	0	O	(CH ₂) ₆ CH ₃	
97	CH	CF ₃	0	O	CH(CH ₃)(CH ₂) ₄ CH ₃	
98	CH	CF ₃	0	O	Cyclo-C ₇ H ₁₃	
99	CH	CF ₃	0	O	CH ₂ -cyclo-C ₆ H ₁₁	
100	CH	CF ₃	0	O	2-Norbornyl	
101	CH	CF ₃	0	O	(CH ₂) ₇ CH ₃	
102	CH	CF ₃	0	O	CH(CH ₂ CH ₃)(CH ₂) ₅ CH ₃	
103	CH	CF ₃	0	O	(CH ₂) ₈ CH ₃	
104	CH	CF ₃	0	O	(CH ₂) ₃ -cyclo-C ₆ H ₁₁	
105	CH	CF ₃	0	O	(CH ₂) ₉ CH ₃	
106	CH	CF ₃	0	O	1-Adamantyl	
107	CH	CF ₃	0	O	(CH ₂) ₁₀ CH ₃	
108	CH	CF ₃	0	O	(CH ₂) ₁₁ CH ₃	
109	CH	CF ₃	0	O	CH(CH ₃)(CH ₂) ₉ CH ₃	
110	CH	CF ₃	0	O	(CH ₂) ₁₂ CH ₃	
111	CH	CF ₃	0	O	(CH ₂) ₁₃ CH ₃	
112	CH	CF ₃	0	O	(CH ₂) ₁₄ CH ₃	
113	CH	CF ₃	0	O	(CH ₂) ₁₅ CH ₃	
114	CH	CF ₃	0	O	(CH ₂) ₁₇ CH ₃	
115	CH	CF ₃	0	O	(CH ₂) ₁₉ CH ₃	
116	CH	CF ₃	0	O	CHO	



No.	X	Y	m	W	R ¹	m.p. [°C]
117	CH	CF ₃	0	O	CH=CH ₂	oil
118	CH	CF ₃	0	O	CH ₂ C=C(CH ₃) ₂	
119	CH	CF ₃	0	O	CH ₂ CH ₂ C=CH ₂	
120	CH	CF ₃	0	O	CH ₂ C=CH ₂	
121	CH	CF ₃	0	O	C(CH ₃)=CH ₂	
122	CH	CF ₃	0	O	(E)-CH ₂ CH=CHCH ₂ CH ₃	
123	CH	CF ₃	0	O	(Z)-CH ₂ CH=CHCH ₂ CH ₃	
124	CH	CF ₃	0	O	(CH ₂) ₅ C=CH ₂	
125	CH	CF ₃	0	O	C(=CHCH ₃)CH ₃	62-64
126	CH	CF ₃	0	O	Geranyl	
127	CH	CF ₃	0	O	3-Menthyl	
128	CH	CF ₃	0	O	C≡CH	
129	CH	CF ₃	0	O	CH ₂ C≡CH	
130	CH	CF ₃	0	O	CH ₂ CH ₂ C≡CH	
131	CH	CF ₃	0	O	CH ₂ CH ₂ C≡CH	
132	CH	CF ₃	0	O	(CH ₂) ₄ C≡CH	
133	CH	CF ₃	0	O	CHFCF ₃	oil
134	CH	CF ₃	0	O	COOCH ₂ CH ₃	oil
135	CH	CF ₃	0	O	CH ₂ CH ₂ OH	oil
136	CH	CF ₃	0	O	CH ₂ CH ₂ OCH ₃	oil
137	CH	CF ₃	0	O	CH ₂ COOC(CH ₃) ₃	oil
138	CH	CF ₃	0	O	CH ₂ SC ₆ H ₅	oil
139	CH	CF ₃	0	O	CH ₂ CONHCH ₃	109-111
140	CH	CF ₃	0	O	CH ₂ CH(OH)CH ₂ OH	
141	CH	CF ₃	0	O	CH ₂ COCH ₃	
142	CH	CF ₃	0	O	COCH ₃	
143	CH	CF ₃	0	O	CH ₂ OC ₆ H ₅	
144	CH	CF ₃	0	O	COC ₆ H ₅	
145	CH	CF ₃	0	O	CO(4-Cl)-C ₆ H ₄	
146	CH	CF ₃	0	O	CF ₂ CH ₃	
147	CH	CF ₃	0	O	CH ₂ CN	
148	CH	CF ₃	0	O	CH ₂ CH ₂ CN	
149	CH	CF ₃	0	O	CH ₂ CH(-O-)CH ₂	
150	CH	CF ₃	0	O	CH ₂ (4-OCH ₃)C ₆ H ₅	
151	CH	CF ₃	0	O	CH ₂ -cyclo-(4-Oxo)-C ₆ H ₈	



No.	X	Y	m	W	R ¹	m.p. [°C]
152	CH	CF ₃	0	O	CH ₂ CH(OH)CH ₂ SC ₆ H ₅	
153	CH	CF ₃	0	O	CH ₂ CH ₂ Si(CH ₃) ₃	
154	CH	CF ₃	0	O	CH=CF ₂	
155	CH	CF ₃	0	O	CCl=CHCl	
156	CH	CF ₃	0	O	2-Pyridyl	99 - 101
157	CH	CF ₃	0	O	2-Furyl	
158	CH	CF ₃	0	O	2-Thienyl	106 - 108
159	CH	CF ₃	0	O	CH ₂ C≡CCH ₂ CH ₂ OTHP	
160	CH	CF ₃	0	O	CH ₂ CH ₂ Cl	oil
161	CH	CF ₃	0	O	Si(CH ₃) ₃	
162	CH	CF ₃	0	O	OC ₆ H ₅	
163	CH	CF ₃	0	O	OH	
164	CH	CF ₃	0	O	OCH ₃	
165	CH	CF ₃	0	O	OCH ₂ CH ₃	
166	CH	CF ₃	0	O	OCHF ₂	
167	CH	CF ₃	0	O	OCH ₂ C ₆ H ₅	
168	CH	CF ₃	0	O	CH ₂ SCH ₃	48-49
169	CH	CF ₃	0	O	SC ₆ H ₅	
170	CH	CF ₃	0	O	SeC ₆ H ₅	
171	CH	CF ₃	0	O	NH ₂	116 - 118
172	CH	CF ₃	0	O	NHCH ₃	
173	CH	CF ₃	0	O	NHCH ₂ CH ₃	
174	CH	CF ₃	0	O	N(CH ₂ CH ₃) ₂	
175	CH	CF ₃	0	O	CONHCH ₂ C=CH ₂	105 - 107
176	CH	CF ₃	0	O	Cl	
177	CH	CF ₃	0	O	Br	
178	CH	CF ₃	0	O	CONH ₂	206 - 208
179	CH	CF ₃	0	O	NHCOCH ₃	129-131
180	CH	CF ₃	0	O	NHCOCH ₂ CH ₃	
181	CH	CF ₃	0	O	OSO ₂ CH ₃	
182	CH	CF ₃	0	O	SOCH ₂ (4-Br)-C ₆ H ₄	
183	CH	CF ₃	0	O	N(CH ₃)COOCH ₂ C ₆ H ₅	
184	CH	CF ₃	0	O	NHNH ₂	
185	CH	CF ₃	0	O	NHN(CH ₃) ₂	
186	N	CF ₃	0	O	CH ₃	



No.	X	Y	m	W	R ¹	m.p. [°C]
187	N	CF ₃	0	O	CH ₂ CH ₃	oil
188	N	CF ₃	0	O	(CH ₂) ₂ CH ₃	oil
189	N	CF ₃	0	O	CH(CH ₃) ₂	oil
190	N	CF ₃	0	O	(CH ₂) ₃ CH ₃	oil
191	N	CF ₃	0	O	CH ₂ CH(CH ₃) ₂	oil
192	N	CF ₃	0	O	C(CH ₃) ₃	
193	N	CF ₃	0	O	(CH ₂) ₄ CH ₃	oil
194	N	CF ₃	0	O	CH(CH ₃)(CH ₂) ₂ CH ₃	
195	N	CF ₃	0	O	CH ₂ C(CH ₃) ₃	
196	N	CF ₃	0	O	Cyclo-C ₅ H ₉	
197	N	CF ₃	0	O	(CH ₂) ₅ CH ₃	
198	N	CF ₃	0	O	Cyclo-C ₆ H ₁₁	
199	N	CF ₃	0	O	CH(CH ₃)(CH ₂) ₄ CH ₃	
200	N	CF ₃	0	O	CH ₂ -cyclo-C ₆ H ₁₁	
201	N	CF ₃	0	O	(CH ₂) ₇ CH ₃	
202	N	CF ₃	0	O	(CH ₂) ₈ CH ₃	
203	N	CF ₃	0	O	(CH ₂) ₉ CH ₃	
204	N	CF ₃	0	O	CH(CH ₃)(CH ₂) ₉ CH ₃	
205	N	CF ₃	0	O	(CH ₂) ₁₅ CH ₃	
206	N	CF ₃	0	O	(CH ₂) ₁₇ CH ₃	
207	N	CF ₃	0	O	(CH ₂) ₁₉ CH ₃	
208	N	CF ₃	0	O	CH ₂ CH=C(CH ₃) ₂	
209	N	CF ₃	0	O	CH ₂ CH ₂ CH=CH ₂	
210	N	CF ₃	0	O	CH ₂ CH=CH ₂	
211	N	CF ₃	0	O	(Z)-CH ₂ CH=CHCH ₂ CH ₃	
212	N	CF ₃	0	O	(CH ₂) ₅ CH=CH ₂	
213	N	CF ₃	0	O	CH ₂ C≡CH	
214	N	CF ₃	0	O	CH ₂ C≡CCH ₂ CH ₃	
215	N	CF ₃	0	O	CHF ₂ CF ₃	
216	N	CF ₃	0	O	COOCH ₂ CH ₃	
217	N	CF ₃	0	O	CH ₂ CH ₂ OH	
218	N	CF ₃	0	O	CH ₂ CH ₂ OCH ₃	
219	N	CF ₃	0	O	CH ₂ COOC(CH ₃) ₃	
220	N	CF ₃	0	O	CH ₂ SC ₆ H ₅	
221	N	CF ₃	0	O	CH ₂ CONHCH ₃	



No.	X	Y	m	W	R ¹	m.p. [°C]
222	N	CF ₃	0	O	CH ₂ CH(OH)CH ₂ OH	
223	N	CF ₃	0	O	CHO	
224	N	CF ₃	0	O	COCH ₃	
225	N	CF ₃	0	O	CH ₂ OC ₆ H ₅	
226	N	CF ₃	0	O	COC ₆ H ₅	
227	N	CF ₃	0	O	CF ₂ CH ₃	
228	N	CF ₃	0	O	CH ₂ CN	
229	N	CF ₃	0	O	CH ₂ CH ₂ CN	
230	N	CF ₃	0	O	CH=CF ₂	
231	N	CF ₃	0	O	2-Furyl	
232	N	CF ₃	0	O	CH ₂ C≡C-I	
233	N	CF ₃	0	O	OH	
234	N	CF ₃	0	O	OCH ₃	
235	N	CF ₃	0	O	OCH ₂ CH ₃	
236	N	CF ₃	0	O	OCHF ₂	
237	N	CF ₃	0	O	OCH ₂ C ₆ H ₅	
238	N	CF ₃	0	O	SC ₆ H ₅	
239	N	CF ₃	0	O	NH ₂	
240	N	CF ₃	0	O	NHCH ₃	
241	N	CF ₃	0	O	NHCH ₂ CH ₃	
242	N	CF ₃	0	O	N(CH ₂ CH ₃) ₂	
243	N	CF ₃	0	O	N(CH ₂ CN) ₂	
244	N	CF ₃	0	O	N(CH ₃) ₂	
245	N	CF ₃	0	O	NHCOCH ₃	
246	N	CF ₃	0	O	NHCOCH ₂ CH ₃	
247	N	CF ₃	0	O	OSO ₂ CH ₃	
248	N	CF ₃	0	O	NHNNH ₂	
249	CH	CF ₃	0	S	CH ₃	
250	CH	CF ₃	0	S	CH ₂ CH ₃	
251	CH	CF ₃	0	S	(CH ₂) ₂ CH ₃	
252	CH	CF ₃	0	S	CHO	
253	CH	CF ₃	0	S	CHFCH ₃	
254	CH	CF ₃	0	S	CH ₂ C≡CH	
255	CH	CF ₃	0	S	COOCH ₂ CH ₃	
256	CH	CF ₃	0	S	CH ₂ COOC(CH ₃) ₃	

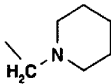
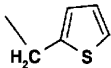
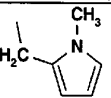
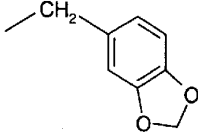


No.	X	Y	m	W	R ¹	m.p. [°C]
257	CH	CF ₃	0	S	CH ₂ CN	
258	CH	CF ₃	0	S	SeC ₆ H ₅	
259	N	CF ₃	0	S	CH ₃	
260	N	CF ₃	0	S	CH ₂ CH ₃	
261	N	CF ₃	0	S	(CH ₂) ₂ CH ₃	
262	N	CF ₃	0	S	CHF ₂ CF ₃	
263	N	CF ₃	0	S	CH ₂ CH ₂ OH	
264	N	CF ₃	0	S	CH ₂ COOC(CH ₃) ₃	
265	CH	CH ₂ CH ₂ - Cl	0	O	CH ₃	
266	CH	CH ₂ CH ₂ - Cl	0	O	CH ₂ CH ₃	
267	CH	CH ₂ CH ₂ - Cl	0	O	(CH ₂) ₂ CH ₃	
268	CH	CH ₂ CH ₂ - Cl	0	O	CH(CH ₃) ₂	
269	CH	CH ₂ CH ₂ - Cl	0	O	CH ₂ SC ₆ H ₅	
270	CH	CH ₂ CH ₂ - Cl	0	O	CH ₂ CONHCH ₃	
271	CH	CH ₂ CH ₂ - Cl	0	O	NH ₂	
272	CH	CH ₂ CH ₂ - Cl	0	O	NHCH ₂ CH ₃	
273	N	CH ₂ CH ₂ - Cl	0	O	CH ₂ CH ₃	
274	N	CH ₂ CH ₂ - Cl	0	O	NH ₂	
275	N	CH ₂ Cl	0	O	CH ₃	
276	CH	CH ₂ Cl	0	O	CH ₃	
277	CH	CHF ₂	0	O	CH ₃	
278	CH	CHF ₂	0	O	CH ₂ CH ₃	
279	CH	CHF ₂	0	O	(CH ₂) ₂ CH ₃	
280	CH	CHF ₂	0	O	CH ₂ CH=CH ₂	
281	CH	CHF ₂	0	O	C(CH ₃)=CH ₂	

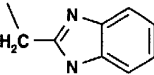
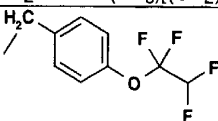


No.	X	Y	m	W	R ¹	m.p. [°C]
282	CH	CHF ₂	0	O	COOCH ₂ CH ₃	
283	CH	CHF ₂	0	O	CH ₂ CONHCH ₃	
284	CH	CHF ₂	0	O	CF ₂ CH ₃	
285	CH	CHF ₂	0	O	CHO	
286	CH	CHF ₂	0	O	NH ₂	
287	CH	CHF ₂	0	O	Cl	
288	CH	CHF ₂	0	O	NHCOCH ₃	
289	CH	CHF ₂	0	O	NHNH ₂	
290	N	CHF ₂	0	O	CH ₃	
291	N	CHF ₂	0	O	CH ₂ CH ₃	
292	N	CHF ₂	0	O	CH(CH ₃)(CH ₂) ₄ CH ₃	
293	N	CHF ₂	0	O	CH ₂ CH=CH ₂	
294	N	CHF ₂	0	O	COOCH ₂ CH ₃	
295	N	CHF ₂	0	O	NH ₂	
296	CH	CF ₃	1	O	CH ₃	
297	CH	CF ₃	1	O	COOCH ₂ CH ₃	
298	CH	CF ₃	1	O	CH ₂ COOC(CH ₃) ₃	
299	CH	CF ₃	1	O	CHFCF ₃	
300	N	CF ₃	0	O	CH ₂ NHSO ₂ CH ₃	
301	N	CF ₃	0	O	(CH ₂) ₂ NHSO ₂ CH ₃	
302	N	CF ₃	0	O	CH ₂ NHSO ₂ CH ₂ CH ₃	
303	N	CF ₃	0	O	CH ₂ NHSO ₂ CH ₂ C ₆ H ₅	
304	CH	CF ₃	0	O	(CH ₂) ₄ NHSO ₂ CF ₃	
305	CH	CF ₃	0	O	(CH ₂) ₂ S(CH ₂) ₂ CH ₃	
306	CH	CF ₃	0	O	(CH ₂) ₄ S(CH ₂) ₄ OCH ₃	
307	CH	CF ₃	0	S	(CH ₂) ₂ S(CH ₂) ₂ CN	
308	CH	CF ₃	0	S	CH ₂ NHSO ₂ CH ₂ CH ₃	
309	CH	CF ₃	0	S	CH ₂ NHSO ₂ CH ₂ C ₆ H ₅	
310	CH	CF ₃	0	S	(CH ₂) ₂ NHSO ₂ CH ₃	
311	CH	CF ₃	0	S	CH ₂ NHSO ₂ CH ₃	
312	CH	CF ₃	0	S	CH(CH ₃)CH ₂ NHC ₆ H ₅	
313	CH	CF ₃	0	S	(CH ₂) ₂ S(2-F)-C ₆ H ₄	
314	CH	CF ₃	0	S	(CH ₂) ₆ NHCH ₂) ₆ OCH ₃	
315	CH	CF ₃	0	S	(CH ₂) ₂ NH-(2-F)-C ₆ H ₄	
316	CH	CF ₃	0	S	(CH ₂) ₃ NHCH ₂ CN	



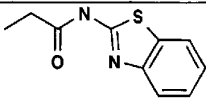
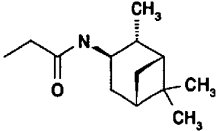
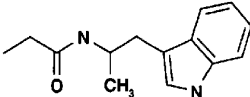
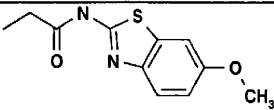
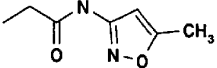
No.	X	Y	m	W	R ¹	m.p. [°C]
317	CH	CF ₃	0	S	(CH ₂) ₂ O(3-Cl)-C ₆ H ₄	
318	CH	CF ₃	0	S	(CH ₂) ₆ NHCH ₂ CF ₃	
319	CH	CF ₃	0	S	(CH ₂) ₂ O(3-CH ₃)-C ₆ H ₄	
320	CH	CF ₃	0	O	CH ₂ NHC ₆ H ₅	
321	CH	CF ₃	0	O	(CH ₂) ₄ S(2-Br)-C ₆ H ₄	
322	CH	CF ₃	0	O	(CH ₂) ₆ NH(CH ₂) ₂ OCH ₃	
323	CH	CF ₃	0	O	(CH ₂) ₂ NH(CH ₂) ₄ OCH ₃	
324	CH	CF ₃	0	O	(CH ₂) ₃ NH-(4-CN)-C ₆ H ₄	
325	CH	CF ₃	0	O	(CH ₂) ₂ O(3-CH ₃)-C ₆ H ₄	
326	CH	CF ₃	0	O	(CH ₂) ₄ NHCH ₂ CF ₃	
327	CH	CF ₃	0	O	(CH ₂) ₄ NHCH ₂ CN	
328	CH	CF ₃	0	O	(CH ₂) ₃ O(4-OCH ₃)-C ₆ H ₄	
329	CH	CF ₃	0	O	CH ₂ SO ₂ -tert-C ₄ H ₉	oil
330	CH	CF ₃	0	O	CH ₂ SO ₂ -(4-F)-C ₆ H ₄	oil
331	CH	CF ₃	0	O	CH ₂ SO ₂ -C ₆ H ₅	oil
332	CH	CF ₃	0	O	CH ₂ SOCH ₃	63
333	CH	CF ₃	0	O	CH ₂ SO-C ₆ H ₅	oil
334	CH	CF ₃	0	O	CH ₂ CONH(CH ₂) ₂ CH ₃	80 – 82
335	CH	CF ₃	0	O	(4-OCF ₃)-C ₆ H ₄	57 – 59
336	CH	CF ₃	0	O	CH ₂ OCH ₃	oil
337	CH	CF ₃	0	O		53 – 54
338	CH	CF ₃	0	O		oil
339	CH	CF ₃	0	O	CH ₂ CH ₂ OCH ₂ CH ₃	oil
340	CH	CF ₃	0	O	CH ₂ CH ₂ NC ₆ H ₅	80-83
341	CH	CF ₃	0	O		80 – 81
342	CH	CF ₃	0	O		110 - 111



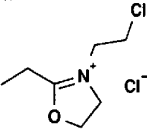
No.	X	Y	m	W	R ¹	m.p. [°C]
343	CH	CF ₃	0	O	CH ₂ CH ₂ O(CO)-(4-Cl)-C ₆ H ₄	80 – 82
344	CH	CF ₃	0	O	CH ₂ -(4-OCH ₃)-C ₆ H ₄	54 – 55
345	CH	CF ₃	0	O	CH ₂ -(3-Cl)-C ₆ H ₄	51 – 52
346	CH	CF ₃	0	O	CH ₂ -cyclo-C ₃ H ₅	oil
347	CH	CF ₃	0	O	CH ₂ -(4-C ₆ H ₅)-C ₆ H ₄	oil
348	CH	CF ₃	0	O		143 - 144
349	CH	CF ₃	0	O	CH ₂ CH ₂ O(CO)-(2,6-F ₂)-C ₆ H ₃	57 - 58
350	CH	CF ₃	0	O	CH ₂ CH ₂ O(CO)-(4-NO ₂)-C ₆ H ₄	80 - 81
351	CH	CF ₃	0	O	CH ₂ -(2,6-Cl ₂)-C ₆ H ₃	91 - 92
352	CH	CF ₃	0	O	CH ₂ CH ₂ OSO ₂ CH ₃	oil
353	CH	CF ₃	0	O	CH ₂ CH ₂ O(CO)-tert-C ₄ H ₉	oil
354	CH	CF ₃	0	O	CH ₂ -(3-F)-C ₆ H ₄	50 - 51
355	CH	CF ₃	0	O	CH ₂ CONCH ₂ C≡CH	129 - 131
356	CH	CF ₃	0	O	CH ₂ CH ₂ O(CO)-cyclo-C ₃ H ₇	oil
357	CH	CF ₃	0	O	CH ₂ CH ₂ O(CO)CH ₃	oil
358	CH	CF ₃	0	O	CH ₂ -[2,4-(CH ₃) ₂]-C ₆ H ₃	85 - 86
359	CH	CF ₃	0	O	CH ₂ CONCH ₂ CH=CH ₂	210 - 212
360	CH	CF ₃	0	O	CH ₂ CON(CH ₂ CH ₃) ₂	oil
361	CH	CF ₃	0	O	CH ₂ CON(CH ₂) ₃ CH ₃	77 - 79
362	CH	CF ₃	0	O	CH ₂ CONCH ₂ -(2-furyl)	139 - 141
363	CH	CF ₃	0	O	CH ₂ CONCH(CH ₃) ₂	112 - 114
364	CH	CF ₃	0	O	CH ₂ CONCH(CH ₃)[(CH ₂) ₄ CH ₃]	73 - 75
365	CH	CF ₃	0	O	CH ₂ CONCH ₂ CH ₂ C ₆ H ₅	120 - 122
366	CH	CF ₃	0	O	CH ₂ CONCH ₂ CH ₂ OCH ₂ CH ₃	78
367	CH	CF ₃	0	O	CH ₂ CONCH ₂ CF ₃	176 - 178
368	CH	CF ₃	0	O	CH ₂ CONCH(CH ₃)[(CH ₂) ₅ CH ₃]	85 - 86
369	CH	CF ₃	0	O		oil



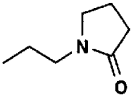
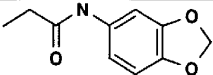
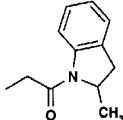
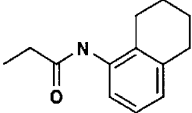
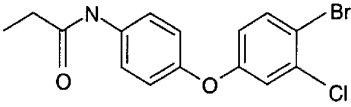
-46-

No.	X	Y	m	W	R ¹	m.p. [°C]
397	CH	CF ₃	0	O		190 - 192
398	CH	CF ₃	0	O	CH ₂ CON(3-CF ₃)C ₆ H ₄	136 - 138
399	CH	CF ₃	0	O	CH ₂ CON-cyclo-C ₈ H ₁₇	115 - 117
400	CH	CF ₃	0	O		oil
401	CH	CF ₃	0	O	CH ₂ CON-Adamantyl	oil
402	CH	CF ₃	0	O	CH ₂ CON(CH ₂ CH ₂ CH ₃) ₂	oil
403	CH	CF ₃	0	O	CH ₂ CONCH(CH ₃)[(4-F)-C ₆ H ₄]	111 - 113
404	CH	CF ₃	0	O	CH ₂ CONCH ₂ CH(CH ₃) ₂	91 - 93
405	CH	CF ₃	0	O		Oil
406	CH	CF ₃	0	O	CH ₂ CONCH ₂ CH ₂ OC ₆ H ₅	99 - 101
407	CH	CF ₃	0	O	CH ₂ CH=NOCH ₃	oil
408	CH	CF ₃	0	O	CH ₂ CONCH ₂ CH ₂ -[3,4-(OCH ₃) ₂]C ₆ H ₃	123-125
409	CH	CF ₃	0	O	CH ₂ CON-(2-Cl)C ₆ H ₄	138 - 140
410	CH	CF ₃	0	O	CH ₂ CON-(2-SCH ₃)C ₆ H ₄	136 - 138
411	CH	CF ₃	0	O		222 - 225
412	CH	CF ₃	0	O		207 - 209
413	CH	CF ₃	0	O	CH ₂ CON-(3-Br)C ₆ H ₄	129 - 131
414	CH	CF ₃	0	O	CH ₂ CON-N-(2,4,6-Cl ₃)C ₆ H ₂	153 - 155
415	CH	CF ₃	0	O	CH ₂ CON-(4-I)C ₆ H ₄	143 - 145
416	CH	CF ₃	0	O	CH ₂ CON-NCOCH ₂ (3-Thienyl)	185 - 187
417	CH	CF ₃	0	O	CH ₂ CH ₂ CHO	oil
418	CH	CF ₃	0	O	CH ₂ CON(CH ₃)[(CH ₂) ₃ CH ₃]	oil
419	CH	CF ₃	0	O	CH ₂ CON-(3,5-Cl ₂ -2,4-F ₂)C ₆ H	166 - 167

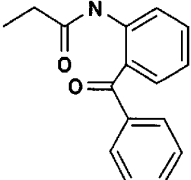
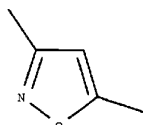


No.	X	Y	m	W	R ¹	m.p. [°C]
420	CH	CF ₃	0	O	CH ₂ CON-C ₆ H ₅	215 - 217
421	CH	CF ₃	0	O	CH ₂ CON(CH ₃)(C ₆ H ₁₁)	oil
422	CH	CF ₃	0	O	CH ₂ CON(CH ₂ CH ₃)(CH ₂ CH=CH ₂)	oil
423	CH	CF ₃	0	O	CH ₂ CON(CH ₂ CH ₃)[CH(CH ₃) ₂]	oil
424	CH	CF ₃	0	O	CH ₂ CONCH(CH ₃)[(CH ₃) ₂]	108 - 110
425	CH	CF ₃	0	O	CH ₂ CON(CH ₂ CH ₃)[CH ₂ C(=CH ₂)- (CH ₃)]	oil
426	CH	CF ₃	0	O	CH ₂ CONCH ₂ (4-tert-C ₄ H ₉)C ₆ H ₄	oil
427	CH	CF ₃	0	O	CH ₂ CONCH(CH ₃)(tert-C ₄ H ₉)	oil
428	CH	CF ₃	0	O	CH ₂ CONCH(CH ₃)[CH ₂ CH(CH ₃)- (CH ₂ CH ₃)]	oil
429	CH	CF ₃	0	O	CH ₂ CONCH ₂ COOCH ₂ CH ₃	103 - 105
430	CH	CF ₃	0	O	CH ₂ CON[(CH ₂) ₂ CH ₃](CH ₂ -cyclo- C ₃ H ₇)	oil
431	CH	CF ₃	0	O	CH ₂ CONCH(CH ₃)CH ₂ CH ₂ CH(CH ₃) ₂	80 - 82
432	CH	CF ₃	0	O	CH ₂ CONCH(CH ₂ CH ₃)[CH ₂ CH(CH ₃) ₂]	oil
433	CH	CF ₃	0	O	CH ₂ C=O-(1-PiperidinyI)	oil
434	CH	CF ₃	0	O		180 - 182
435	CH	CF ₃	0	O	CH ₂ CONCH ₂ C(=CH ₂)(CH ₃)	86 - 87
436	CH	CF ₃	0	O	CH ₂ CONCH[CH(CH ₃) ₂](COOCH ₃)	oil
437	CH	CF ₃	0	O	CH ₂ CONCH ₂ -cyclo-C ₃ H ₇	oil
438	CH	CF ₃	0	O	CH ₂ CON(CH ₂) ₅ OH	oil
439	CH	CF ₃	0	O	CH ₂ CON(CH ₃)(CH ₂ CO ₂ CH ₃)	oil
440	CH	CF ₃	0	O	CH ₂ CON(CH ₃)(CH ₂ CN)	oil
441	CH	CF ₃	0	O	CH ₂ CONCH[CH ₂ CH(CH ₃) ₂](CO ₂ CH ₃)	oil
442	CH	CF ₃	0	O	CH ₂ CON-(1-PiperidinyI)	oil
443	CH	CF ₃	0	O	CH ₂ CONCH ₂ CH ₂ OCH ₃	97 - 99
444	CH	CF ₃	0	O	CH ₂ CH ₂ SC ₆ H ₅	oil
445	CH	CF ₃	0	O	CH ₂ CH ₂ SCH ₃	oil
446	CH	CF ₃	0	O	CH ₂ CH ₂ SCH ₂ C ₆ H ₅	oil

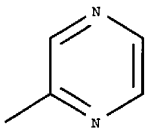
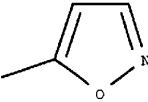
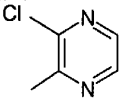
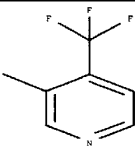
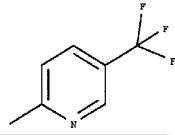
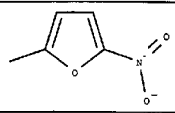


No.	X	Y	m	W	R ¹	m.p. [°C]
447	CH	CF ₃	0	O		oil
448	CH	CF ₃	0	O	CH ₂ CON-(2-OH)C ₆ H ₄	162 - 164
449	CH	CF ₃	0	O	CH ₂ CON-(3-OH)C ₆ H ₄	oil
450	CH	CF ₃	0	O	CH ₂ CON-(2-CH ₃)C ₆ H ₄	163 - 164
451	CH	CF ₃	0	O	CH ₂ CON-(3-NO ₂)C ₆ H ₄	176 - 178
452	CH	CF ₃	0	O	CH ₂ CON-(3-OCF ₂ CHFCl)C ₆ H ₄	120 - 121
453	CH	CF ₃	0	O	CH ₂ CON-(3-CF ₃ -4-F)C ₆ H ₃	168 - 170
454	CH	CF ₃	0	O	CH ₂ CON-(2,4-Cl ₂)C ₆ H ₃	120 - 122
455	CH	CF ₃	0	O	CH ₂ CON-(2-F-4-Cl)C ₆ H ₃	148 - 151
456	CH	CF ₃	0	O	CH ₂ CON-[2,4-(CH ₃) ₂]C ₆ H ₃	123 - 125
457	CH	CF ₃	0	O	CH ₂ CON-[2,3-(CH ₃) ₂]C ₆ H ₃	waxy
458	CH	CF ₃	0	O		waxy
459	CH	CF ₃	0	O	CH ₂ CON-(2-CH ₃ -3-Cl)C ₆ H ₃	160 - 162
460	CH	CF ₃	0	O	CH ₂ CON(CH ₂ CH ₃)(C ₆ H ₅)	oil
461	CH	CF ₃	0	O		124 - 126
462	CH	CF ₃	0	O	CH ₂ CON(2-OCH ₃ -5-Ph)C ₆ H ₃	167 - 169
463	CH	CF ₃	0	O		157 - 158
464	CH	CF ₃	0	O	CH ₂ CON-(3-NO ₂ -4-Cl)C ₆ H ₃	oil
465	CH	CF ₃	0	O	CH ₂ CON-(2-Cl-4-CH ₃)C ₆ H ₃	106 - 108
466	CH	CF ₃	0	O	CH ₂ CON-(3-OCH ₂ CH ₃)C ₆ H ₄	waxy
467	CH	CF ₃	0	O		169 - 171
468	CH	CF ₃	0	O	CH ₂ CON-(4-CH ₃)C ₆ H ₄	139 - 141
469	CH	CF ₃	0	O	CH ₂ CON-(1-Naphthyl)	155 - 157

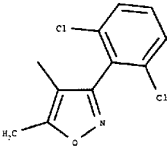
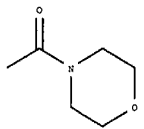


No.	X	Y	m	W	R ¹	m.p. [°C]
470	CH	CF ₃	0	O	CH ₂ CON-(3-I)C ₆ H ₄	135 - 137
471	CH	CF ₃	0	O	CH ₂ CON-(2-OCH ₂ CH ₃)C ₆ H ₄	138
472	CH	CF ₃	0	O	CH ₂ CON-(2-OCH ₃)C ₆ H ₄	130 - 132
473	CH	CF ₃	0	O	CH ₂ CON-[3,5-(OCH ₃) ₂]C ₆ H ₃	130 - 132
474	CH	CF ₃	0	O	CH ₂ CON-(4-Cl)C ₆ H ₄	139 - 141
475	CH	CF ₃	0	O	CH ₂ CON-(3-CH ₃)C ₆ H ₄	oil
476	CH	CF ₃	0	O	CH ₂ CON-(3-OCH ₃)C ₆ H ₄	oil
477	CH	CF ₃	0	O	CH ₂ CON-(4-CH ₂ CH ₃)C ₆ H ₄	122 - 123
478	CH	CF ₃	0	O	CH ₂ CON-(4-CF ₃)C ₆ H ₄	151 - 152
479	CH	CF ₃	0	O	CH ₂ CON-(2-CH ₃ -4-Cl)C ₆ H ₃	165 - 167
480	CH	CF ₃	0	O	CH ₂ CH ₂ NCH ₂ C ₆ H ₅	oil
481	CH	CF ₃	0	O	CH ₂ CH ₂ NCH ₂ -(3-Pyridyl)	oil
482	CH	CF ₃	0	O	CH ₂ CH=NOCH ₂ CH ₃	oil
483	CH	CF ₃	0	O	CH ₂ CH=NOC ₆ H ₅	oil
484	CH	CF ₃	0	O	CH ₂ CON-(4-NO ₂)C ₆ H ₄	181 - 183
485	CH	CF ₃	0	O	CH ₂ CON-(2-CH ₃ -4-NO ₂)C ₆ H ₃	129 - 131
486	CH	CF ₃	0	O	CH ₂ CON-(2-Cl-3-CF ₃)C ₆ H ₃	136
487	CH	CF ₃	0	O	CH ₂ CON-(2-CN-4-Cl)C ₆ H ₃	157 - 159
488	CH	CF ₃	0	O	CH ₂ CON-(3,5-Cl ₂)C ₆ H ₃	167 - 169
489	CH	CF ₃	0	O	CH ₂ CON-(3,5-Cl ₂ -4-OCF ₂ CHF ₂)C ₆ H ₂	132 - 134
490	CH	CF ₃	0	O	CH ₂ CON-(2,4,5-Cl ₃)C ₆ H ₂	146
491	CH	CF ₃	0	O	CH ₂ CON-(3,5-Cl ₂ -4-OCF ₂ CHF ₂)C ₆ H ₂	124 - 126
492	CH	CF ₃	0	O	CH ₂ CON-(2-CF ₃ -4-Cl)C ₆ H ₃	136
493	CH	CF ₃	0	O		oil
494	CH	CF ₃	0	O		91-93

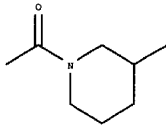
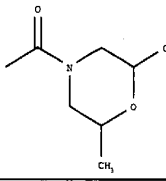
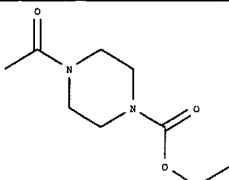
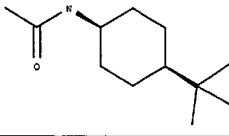
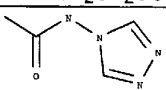


No.	X	Y	m	W	R ¹	m.p. [°C]
495	CH	CF ₃	0	O		123-125
496	CH	CF ₃	0	O		81-83
497	CH	CF ₃	0	O		113-115
498	CH	CF ₃	0	O	COOH	155-157
499	CH	CF ₃	0	O	4-F-C ₆ H ₄	104-106
500	CH	CF ₃	0	O	CON(C ₂ H ₅) ₂	oil
501	CH	CF ₃	0	O	CONCH(CH ₃) ₂	oil
502	CH	CF ₃	0	O	CON(CH ₃) ₂	52-54
503	CH	CF ₃	0	O	CONHCH ₂ CCH	105-107
504	CH	CF ₃	0	O	CONH-cyclo-C ₃ H ₅	101-103
505	CH	CF ₃	0	O	CONH ₂	206-208
506	CH	CF ₃	0	O		72-74
507	CH	CF ₃	0	O		98-100
508	CH	CF ₃	0	O		108-110

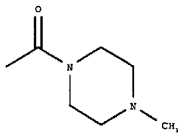


No.	X	Y	m	W	R ¹	m.p. [°C]
509	CH	CF ₃	0	O		140-142
510	CH	CF ₃	0	O	CONHCH ₃	127-129
511	CH	CF ₃	0	O	CONHCH ₂ CH=CH ₂	oil
512	CH	CF ₃	0	O	CON(CH ₂ CN) ₂	90-92
513	CH	CF ₃	0	O	4-(t-C ₄ H ₉)-C ₆ H ₄	64-66
514	CH	CF ₃	0	O	4-CF ₃ -C ₆ H ₄	89-91
515	CH	CF ₃	0	O	4-CH ₃ -3-F-C ₆ H ₃	104-106
516	CH	CF ₃	0	O	2,4-di-Cl-C ₆ H ₃	70-72
517	CH	CF ₃	0	O	4-(NHSO ₂ CH ₃)-C ₆ H ₄	204-206
518	CH	CF ₃	0	O	2,6-di-Cl-C ₆ H ₃	139-141
519	CH	CF ₃	0	O	COOCH ₂ C ₆ H ₅	83-85
520	CH	CF ₃	0	O	CONHC ₃ H ₇	oil
521	CH	CF ₃	0	O	3,5-di-Br-4-(OCH ₃)-C ₆ H ₂	132-134
522	CH	CF ₃	0	O	CHCl ₂	oil
523	CH	CF ₃	0	O	CCl ₃	oil
524	CH	CF ₃	0	O	CH(OCH ₃) ₂	oil
525	CH	CF ₃	0	O	3-CF ₃ -C ₆ H ₄	57-59
526	CH	CF ₃	0	O	CON(CH ₂) ₅	oil
527	CH	CF ₃	0	O	CON(CH ₃)CH ₂ C ₆ H ₅	oil
528	CH	CF ₃	0	O	CONHCH ₂ C ₆ H ₅	96-98
529	CH	CF ₃	0	O		oil
530	CH	CF ₃	0	O	CONH-n-C ₆ H ₁₃	oil
531	CH	CF ₃	0	O	CON(CH ₂ CH ₃)CH ₂ C ₆ H ₅	oil
532	CH	CF ₃	0	O	CONH-c-C ₆ H ₁₁	115-117
533	CH	CF ₃	0	O	CON(n-C ₄ H ₉) ₂	oil

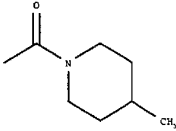
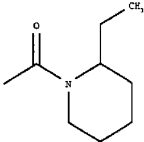
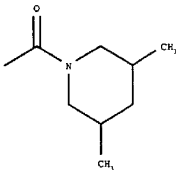
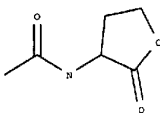
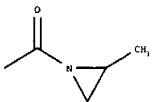


No.	X	Y	m	W	R ¹	m.p. [°C]
534	CH	CF ₃	0	O		oil
535	CH	CF ₃	0	O	CONH-i-C ₄ H ₉	oil
536	CH	CF ₃	0	O		oil
537	CH	CF ₃	0	O	CON(CH ₂) ₄	68-70
538	CH	CF ₃	0	O	CON(CH ₃)-n-C ₆ H ₁₃	oil
539	CH	CF ₃	0	O		oil
540	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CH ₃	oil
541	CH	CF ₃	0	O	CONHOCH ₃	oil
542	CH	CF ₃	0	O		oil
543	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CH ₂ CH ₃	oil
544	CH	CF ₃	0	O	CONHCH ₂ CH(OCH ₃) ₂	oil
545	CH	CF ₃	0	O	CONH-t-C ₄ H ₉	113-115
546	CH	CF ₃	0	O	CONHCH ₂ -4-Cl-C ₆ H ₄	oil
547	CH	CF ₃	0	O	CONHCH(CH ₃)C ₆ H ₅	oil
548	CH	CF ₃	0	O	CONHCH ₂ CH ₂ OCH ₃	92-94
549	CH	CF ₃	0	O		190-192
550	CH	CF ₃	0	O	CONHC(CH ₃) ₂ CCH	90-92
551	CH	CF ₃	0	O	CONHCH ₂ -2-Furyl	93-95

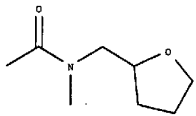
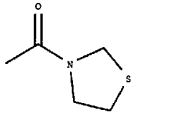
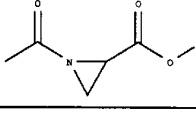
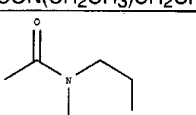
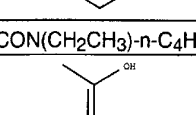
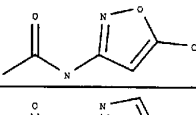
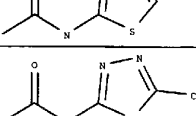


No.	X	Y	m	W	R ¹	m.p. [°C]
552	CH	CF ₃	0	O	CON(CH ₂) ₃	91-93
553	CH	CF ₃	0	O	CONHCH ₂ -c-C ₃ H ₅	oil
554	CH	CF ₃	0	O	CONHC(CH ₃) ₂ CH ₂ CH ₃	oil
555	CH	CF ₃	0	O	CONH(CH ₂) ₃ C ₆ H ₅	oil
556	CH	CF ₃	0	O	CONHCH ₂ -3-Pyridyl	132-134
557	CH	CF ₃	0	O	CON(CH ₃)-n-C ₄ H ₉	oil
558	CH	CF ₃	0	O	CON(CH ₂ CH ₃)-i-C ₃ H ₇	oil
559	CH	CF ₃	0	O		oil
560	CH	CF ₃	0	O	CONHCH ₂ CH ₂ Cl	oil
561	CH	CF ₃	0	O	CONHCH ₂ CN	152-157
562	CH	CF ₃	0	O	CON(CH ₃)OCH ₃	oil
563	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CH=CH ₂	oil
564	CH	CF ₃	0	O	CONHCH ₂ COOCH ₃	oil
565	CH	CF ₃	0	O	CON(CH ₃)-i-C ₃ H ₇	oil
566	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CH ₂ CN	oil
567	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CH(OCH ₃) ₂	oil
568	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CH(-CH ₂ CH ₂ O-)	oil
569	CH	CF ₃	0	O	CONHCH ₂ C(=CH ₂)CHH ₃	oil
570	CH	CF ₃	0	O	CON(CH ₂ CH ₃)CH ₂ CH=CH ₂	oil
571	CH	CF ₃	0	O	CONHC ₆ H ₅	83-85
572	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CCH	oil
573	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CN	oil
574	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CH ₂ N(CH ₃) ₂	oil
575	CH	CF ₃	0	O	CONHOCH ₂ CH ₃	114-116
576	CH	CF ₃	0	O	CONHCH ₂ CF ₃	74-76
577	CH	CF ₃	0	O	CON(CH ₂ CH ₂ Cl) ₂	oil
578	CH	CF ₃	0	O	CONH-c-C ₄ H ₇	oil
579	CH	CF ₃	0	O	CON(CH ₂ CH ₂ CH ₃)CH ₂ -c-C ₃ H ₅	oil
580	CH	CF ₃	0	O	CON(CH ₃)-c-C ₆ H ₁₁	oil
581	CH	CF ₃	0	O	CON(CH ₂ CH ₃)CH ₂ C(=CH ₂)CH ₃	oil
582	CH	CF ₃	0	O	CONHOCH ₂ CH=CH ₂	90-92

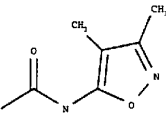
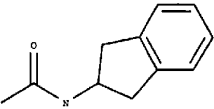
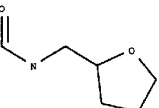
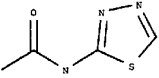


No.	X	Y	m	W	R ¹	m.p. [°C]
583	CH	CF ₃	0	O	CONHOCH ₂ C ₆ H ₅	126-128
584	CH	CF ₃	0	O	CON(CH ₃)CH ₂ COOCH ₃	oil
585	CH	CF ₃	0	O	COONHCH ₃	230-232
586	CH	CF ₃	0	O	CONHCH ₂ CH ₃	83-85
587	CH	CF ₃	0	O	CONHCH(CH ₃)COOCH ₃	104-106
588	CH	CF ₃	0	O	CONHCH(i-C ₃ H ₇)COOCH ₃	oil
589	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CON(CH ₃) ₂	oil
590	CH	CF ₃	0	O	CON(CH ₃)-t-C ₄ H ₉	oil
591	CH	CF ₃	0	O	CONHO-t-C ₄ H ₉	103-105
592	CH	CF ₃	0	O	CON(CH ₃)CH(i-C ₃ H ₇)COOCH ₃	oil
593	CH	CF ₃	0	O	CH(OCH ₂ CH ₃) ₂	oil
594	CH	CF ₃	0	O		oil
595	CH	CF ₃	0	O		oil
596	CH	CF ₃	0	O		oil
597	CH	CF ₃	0	O		oil
598	CH	CF ₃	0	O		oil
599	CH	CF ₃	0	O	CONHCH ₂ CONHCH ₃	101-103
600	CH	CF ₃	0	O	CON(CH ₂) ₇	oil
601	CH	CF ₃	0	O	CON(CH ₂) ₆	oil

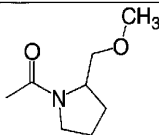
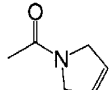
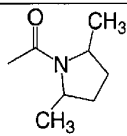
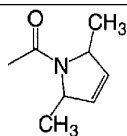


No.	X	Y	m	W	R ¹	m.p. [°C]
602	CH	CF ₃	0	O	CON(CH ₂ CH ₃)CH ₂ CH ₂ OCH ₃	oil
603	CH	CF ₃	0	O		oil
604	CH	CF ₃	0	O		oil
605	CH	CF ₃	0	O		oil
606	CH	CF ₃	0	O	CON(CH ₂ CH ₃)CH ₂ CH ₂ CN	oil
607	CH	CF ₃	0	O		oil
608	CH	CF ₃	0	O	CON(CH ₂ CH ₃)-n-C ₄ H ₉	oil
609	CH	CF ₃	0	O		179-181
610	CH	CF ₃	0	O	CONHCH(CH ₃)CONHCH ₃	136-138
611	CH	CF ₃	0	O	COON(CH ₂) ₄	64-66
612	CH	CF ₃	0	O	CONHCH ₂ CON(CH ₃) ₂	107-109
613	CH	CF ₃	0	O	CON(CH ₂ COOCH ₂ CH ₃) ₂	oil
614	CH	CF ₃	0	O		180-182
615	CH	CF ₃	0	O		221-223
616	CH	CF ₃	0	O		234-236



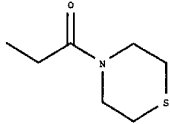
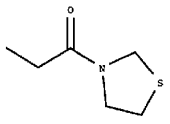
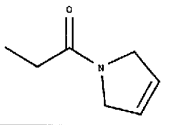
No.	X	Y	m	W	R ¹	m.p. [°C]
617	CH	CF ₃	0	O		oil
618	CH	CF ₃	0	O	CON(CH ₃)CH ₂ -6-Cl-3-pyridyl	oil
619	CH	CF ₃	0	O		105-107
620	CH	CF ₃	0	O	CONHCH(CH ₃)CH(OCH ₃) ₂	oil
621	CH	CF ₃	0	O	CONHCH ₂ CH ₂ SCH ₃	oil
622	CH	CF ₃	0	O	CONHCH(CH ₃)CH ₂ OCH ₃	70-72
623	CH	CF ₃	0	O	CONHCH ₂ CH ₂ NHCOCH ₃	124-126
624	CH	CF ₃	0	O	CONH(CH ₂) ₃ OCH ₂ CH ₃	oil
625	CH	CF ₃	0	O	CON(CH ₂ CH ₃)CH ₂ CH ₂ CH ₃	oil
626	CH	CF ₃	0	O	CON(CH ₂ CH ₃)CH ₂ OCH ₃	oil
627	CH	CF ₃	0	O	CONHCH ₂ CH ₂ SCH ₂ CH ₃	oil
628	CH	CF ₃	0	O	CONHCH ₂ CH ₂ OCH ₂ CH ₃	59-61
629	CH	CF ₃	0	O		oil
630	CH	CF ₃	0	O		174-176
631	CH	CF ₃	0	O	CONHCH(CH ₃)CH(OCH ₃) ₂	oil
632	CH	CF ₃	0	O	CONHCH ₂ CH ₂ SCH ₃	oil
633	CH	CF ₃	0	O	CONHCH(CH ₃)CH ₂ OCH ₃	70-72
634	CH	CF ₃	0	O	CONHCH ₂ CH ₂ NHCOCH ₃	124-126
635	CH	CF ₃	0	O	CONH(CH ₂) ₃ OCH ₂ CH ₃	oil
636	CH	CF ₃	0	O	CON(CH ₂ CH ₃)CH ₂ CH ₂ CH ₃	oil
637	CH	CF ₃	0	O	CON(CH ₂ CH ₃)CH ₂ OCH ₃	oil
638	CH	CF ₃	0	O	CONHCH ₂ CH ₂ SCH ₂ CH ₃	oil
639	CH	CF ₃	0	O	CONHCH(CH ₃)CH ₂ COOCH ₂ CH ₃	oil
640	CH	CF ₃	0	O	CONH-4-COOCH ₃ -C ₆ H ₄	189-191
641	CH	CF ₃	0	O	CONH-4-CONH ₂ -C ₆ H ₄	265-267



No.	X	Y	m	W	R ¹	m.p.[°C]
642	CH	CF ₃	0	O	CONHCH ₂ CH ₂ Br	oil
643	CH	CF ₃	0	O	CONHCH ₂ CH=CHCH ₂ Cl	oil
644	CH	CF ₃	0	O	CONH-4-CONHCH ₃ -C ₆ H ₄	219-221
645	CH	CF ₃	0	O	CONHCH ₂ CH ₂ CH ₂ Br	oil
646	CH	CF ₃	0	O	CONHCH ₂ CH ₂ CH ₂ OCH ₃	oil
647	CH	CF ₃	0	O	CONH-4-CH ₂ CH ₃ -C ₆ H ₄	97-99
648	CH	CF ₃	0	O	CONHCH ₂ CH ₂ OCH(CH ₃) ₂	oil
649	CH	CF ₃	0	O	CONHCH ₂ CH ₂ CH ₂ OCH ₂ CH ₃	oil
650	CH	CF ₃	0	O		oil
651	CH	CF ₃	0	O		64-66
652	CH	CF ₃	0	O		oil
653	CH	CF ₃	0	O		oil

653 652 651 650



No.	X	Y	m	W	R ¹	m.p. [°C]
654	CH	CF ₃	0	O	CH ₂ CON(CH ₃)CH ₂ CH ₃	oil
655	CH	CF ₃	0	O	CH ₂ CON(CH ₃) ₂	58-60
656	CH	CF ₃	0	O	CH ₂ CON(CH ₂) ₄	101-103
657	CH	CF ₃	0	O		oil
658	CH	CF ₃	0	O		90-92
659	CH	CF ₃	0	O	CH ₂ CONHCH ₂ CH ₃	104-106
660	CH	CF ₃	0	O	CH ₂ CON(CH ₃)CH ₂ CH ₂ OH	oil
661	CH	CF ₃	0	O	CH ₂ CON(CH ₃)CH ₂ CH ₂ CH ₃	oil
662	CH	CF ₃	0	O	CH ₂ CON(CH ₃)CH ₂ CH(-OCH ₂ CH ₂ O-)	oil
663	CH	CF ₃	0	O	CH ₂ CONHCH ₂ CH ₃	104-106
664	CH	CF ₃	0	O	CH ₂ CON(CH ₃)CH ₂ CH ₂ OH	oil
665	CH	CF ₃	0	O	CH ₂ CON(CH ₃)CH ₂ CH ₂ CH ₃	oil
667	CH	CF ₃	0	O	CH ₂ CON(CH ₃)CH ₂ CH(-OCH ₂ CH ₂ O-)	oil
668	CH	CF ₃	0	O		79-81
669	CH	CF ₃	0	O	CH ₂ CONHCH ₂ CH ₂ SCH ₃	65-67
670	CH	CF ₃	0	O	CH ₂ CONHCH(CH ₃)CH ₂ OCH ₃	86-88
671	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CH ₂ OCO-c-C ₄ H ₇	oil
672	CH	CF ₃	0	O	CH ₂ CONHCH ₂ CH ₂ Br	87-89
673	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CH ₂ OCOC ₆ H ₅	oil
674	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CH ₂ OCO-c-C ₃ H ₅	oil
675	CH	CF ₃	0	O	CONH-2-CH ₃ -C ₆ H ₄	104-106
676	CH	CF ₃	0	O	CH ₂ CON(i-C ₃ H ₇)-4-F-C ₆ H ₄	102-104



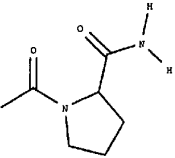
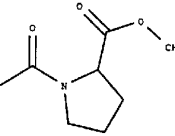
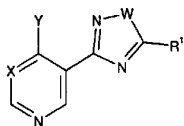
No.	X	Y	m	W	R ¹	m.p. [°C]
677	CH	CF ₃	0	O		oil
678	CH	CF ₃	0	O		oil
679	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CH ₂ OCONHC ₆ H ₅	100-102
680	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CH ₂ OCONHCH ₂ CH ₃	oil
681	CH	CF ₃	0	O	CON(CH ₃)CH ₂ CH ₂ OSO ₂ CH ₃	oil
682	CH	CF ₃	0	O	CH ₂ CONH-c-C ₄ H ₇	133-135
683	CH	CF ₃	0	O	CH ₂ CONHCH ₂ CN	158-160



Table 2



No.	X	Y	W	R ¹	m.p. [°C]
684	N	(CF ₂) ₃ - CHF ₂	O	CH ₃	
685	N	(CF ₂) ₂ - CF ₃	O	CH ₂ CH ₃	
686	N	(CF ₂) ₂ - CF ₃	O	COOCH ₂ CH ₃	
687	N	(CF ₂) ₂ - CF ₃	O	OH	
688	N	(CF ₂) ₂ - CF ₃	O	OCH ₃	
689	N	CF ₂ CF ₃	O	CH ₃	
690	N	CF ₂ CF ₃	O	CH ₂ CH ₃	
691	N	CF ₂ CF ₃	S	CH ₃	
692	N	CF ₂ CF ₃	S	CH ₂ CH ₃	
693	N	CF ₂ CF ₃	S	(CH ₂) ₂ CH ₃	
694	CH	CF ₃	O	CH ₃	oil
695	CH	CF ₃	O	CH ₂ CH ₃	
696	CH	CF ₃	O	(CH ₂) ₂ CH ₃	
697	CH	CF ₃	O	CH(CH ₃) ₂	
698	CH	CF ₃	O	(CH ₂) ₃ CH ₃	
699	CH	CF ₃	O	CH(CH ₃)CH ₂ CH ₃	
700	CH	CF ₃	O	CH ₂ CH(CH ₃) ₂	
701	CH	CF ₃	O	C(CH ₃) ₃	oil
702	CH	CF ₃	O	(CH ₂) ₄ CH ₃	
703	CH	CF ₃	O	CH(CH ₃)(CH ₂) ₂ - CH ₃	
704	CH	CF ₃	O	(CH ₂) ₂ CH(CH ₃) ₂	
705	CH	CF ₃	O	CH ₂ C(CH ₃) ₃	



No.	X	Y	W	R ¹	m.p. [°C]
706	CH	CF ₃	O	cyclo-C ₅ H ₉	
707	CH	CF ₃	O	cyclo-C ₆ H ₁₁	
708	CH	CF ₃	O	CHO	
709	CH	CF ₃	O	CH=CH ₂	
710	CH	CF ₃	O	CH ₂ CH=C(CH ₃) ₂	
711	CH	CF ₃	O	CH ₂ CH=CH ₂	
712	CH	CF ₃	O	C(CH ₃)=CH ₂	
713	CH	CF ₃	O	(CH ₂) ₅ C=CH ₂	
714	CH	CF ₃	O	C(=CHCH ₃)CH ₃	
715	CH	CF ₃	O	CH ₂ C≡CH	
716	CH	CF ₃	O	CH ₂ CH ₂ C≡CH	
717	CH	CF ₃	O	CH ₂ C≡CCH ₂ CH ₃	
718	CH	CF ₃	O	(CH ₂) ₄ C≡CH	
719	CH	CF ₃	O	CHFCF ₃	
720	CH	CF ₃	O	COOCH ₂ CH ₃	
721	CH	CF ₃	O	CH ₂ CH ₂ OH	
722	CH	CF ₃	O	CH ₂ CH ₂ OCH ₃	
723	CH	CF ₃	O	CH ₂ COOC(CH ₃) ₃	
724	CH	CF ₃	O	CH ₂ SC ₆ H ₅	
725	CH	CF ₃	O	CH ₂ CONHCH ₃	
726	CH	CF ₃	O	CH ₂ CH(OH)- CH ₂ OH	
727	CH	CF ₃	O	CH ₂ COCH ₃	
728	CH	CF ₃	O	COCH ₃	
729	CH	CF ₃	O	CH ₂ OC ₆ H ₅	
730	CH	CF ₃	O	COC ₆ H ₅	
731	CH	CF ₃	O	CF ₂ CH ₃	
732	CH	CF ₃	O	CH ₂ CN	
733	CH	CF ₃	O	CH ₂ CH(-O-)CH ₂	
734	CH	CF ₃	O	CH ₂ (4-OCH ₃) - C ₆ H ₅	
735	CH	CF ₃	O	CH ₂ CH(OH)CH ₂ S- C ₆ H ₅	
736	CH	CF ₃	O	CH=CF ₂	
737	CH	CF ₃	O	CCl=CHCl	



No.	X	Y	W	R ¹	m.p. [°C]
738	CH	CF ₃	O	2-Pyridyl	
739	CH	CF ₃	O	OC ₆ H ₅	
740	CH	CF ₃	O	OH	
741	CH	CF ₃	O	OCH ₃	
742	CH	CF ₃	O	OCH ₂ CH ₃	
743	CH	CF ₃	O	OCHF ₂	
744	CH	CF ₃	O	OCH ₂ C ₆ H ₅	
745	CH	CF ₃	O	SCH ₃	
746	CH	CF ₃	O	SC ₆ H ₅	
747	CH	CF ₃	O	NH ₂	
748	CH	CF ₃	O	NHCH ₃	
749	CH	CF ₃	O	NHCH ₂ CH ₃	
750	CH	CF ₃	O	N(CH ₂ CH ₃) ₂	
751	CH	CF ₃	O	N(CH ₂ CN) ₂	
752	CH	CF ₃	O	N(CH ₃) ₂	
753	CH	CF ₃	O	NHCOCH ₃	
754	CH	CF ₃	O	NHCOCH ₂ CH ₃	
755	CH	CF ₃	O	OSO ₂ CH ₃	
756	CH	CF ₃	O	SOCH ₂ (4-Br)- C ₆ H ₄	
757	CH	CF ₃	O	N(CH ₃)COOCH ₂ - C ₆ H ₅	
758	N	CF ₃	O	CH ₃	
759	N	CF ₃	O	CH ₂ CH ₃	
760	N	CF ₃	O	(CH ₂) ₂ CH ₃	
761	N	CF ₃	O	CH(CH ₃) ₂	
762	N	CF ₃	O	(CH ₂) ₃ CH ₃	
763	N	CF ₃	O	CH ₂ CH(CH ₃) ₂	
764	N	CF ₃	O	C(CH ₃) ₃	
765	N	CF ₃	O	CH ₂ C(CH ₃) ₃	
766	N	CF ₃	O	cyclo-C ₅ H ₉	
767	N	CF ₃	O	cyclo-C ₆ H ₁₁	
768	N	CF ₃	O	CH ₂ C=C(CH ₃) ₂	
769	N	CF ₃	O	CH ₂ CH ₂ C=CH ₂	
770	N	CF ₃	O	CH ₂ CH=CH ₂	



No.	X	Y	W	R ¹	m.p. [°C]
771	N	CF ₃	O	(CH ₂) ₅ CH=CH ₂	
772	N	CF ₃	O	CH ₂ C=CH	
773	N	CF ₃	O	CH ₂ C≡CCH ₂ CH ₃	
774	N	CF ₃	O	CHFCF ₃	
775	N	CF ₃	O	COOCH ₂ CH ₃	
776	N	CF ₃	O	CH ₂ CH ₂ OH	
777	N	CF ₃	O	CH ₂ CH ₂ OCH ₃	
778	N	CF ₃	O	CH ₂ COOC(CH ₃) ₃	
779	N	CF ₃	O	CH ₂ SC ₆ H ₅	
780	N	CF ₃	O	CH ₂ CONHCH ₃	
781	N	CF ₃	O	CH ₂ CH(OH) - CH ₂ OH	
782	N	CF ₃	O	CHO	
783	N	CF ₃	O	COCH ₃	
784	N	CF ₃	O	CH ₂ OC ₆ H ₅	
785	N	CF ₃	O	COC ₆ H ₅	
786	N	CF ₃	O	CF ₂ CH ₃	
787	N	CF ₃	O	CH ₂ CN	
788	N	CF ₃	O	CH ₂ CH ₂ CN	
789	N	CF ₃	O	CH=CF ₂	
790	N	CF ₃	O	2-Furyl	
791	N	CF ₃	O	OH	
792	N	CF ₃	O	OCH ₃	
793	N	CF ₃	O	OCH ₂ CH ₃	
794	N	CF ₃	O	OCHF ₂	
795	N	CF ₃	O	OCH ₂ C ₆ H ₅	
796	N	CF ₃	O	NH ₂	
797	N	CF ₃	O	NHCH ₃	
798	N	CF ₃	O	NHCH ₂ CH ₃	
799	N	CF ₃	O	N(CH ₂ CH ₃) ₂	
800	N	CF ₃	O	N(CH ₂ CN) ₂	
801	N	CF ₃	O	N(CH ₃) ₂	
802	N	CF ₃	O	NHCOCH ₃	
803	N	CF ₃	O	NHCOCH ₂ CH ₃	
804	N	CF ₃	O	OSO ₂ CH ₃	



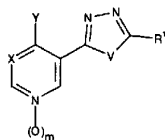
No.	X	Y	W	R ¹	m.p. [°C]
805	CH	CF ₃	S	CH ₃	
806	CH	CF ₃	S	CH ₂ CH ₃	
807	CH	CF ₃	S	(CH ₂) ₂ CH ₃	
808	CH	CF ₃	S	CHO	
809	CH	CF ₃	S	CHFCF ₃	
810	CH	CF ₃	S	CH ₂ C=CH	
811	CH	CF ₃	S	COOCH ₂ CH ₃	
812	CH	CF ₃	S	CH ₂ COOC(CH ₃) ₃	
813	CH	CF ₃	S	CH ₂ CN	
814	N	CF ₃	S	CH ₃	
815	N	CF ₃	S	CH ₂ CH ₃	
816	N	CF ₃	S	(CH ₂) ₂ CH ₃	
817	N	CF ₃	S	CHFCF ₃	
818	N	CF ₃	S	CH ₂ CH ₂ OH	
819	N	CF ₃	S	CH ₂ COOC(CH ₃) ₃	
820	N	CH ₂ CH ₂ - Cl	O	CH ₂ CH ₃	
821	N	CH ₂ CH ₂ - Cl	O	NH ₂	
822	N	CH ₂ Cl	O	CH ₃	
823	CH	CHF ₂	O	CH ₃	
824	CH	CHF ₂	O	CH ₂ CH ₃	
825	CH	CHF ₂	O	(CH ₂) ₂ CH ₃	
826	CH	CHF ₂	O	CH ₂ C=CH ₂	
827	CH	CHF ₂	O	C(CH ₃)=CH ₂	
828	CH	CHF ₂	O	COOCH ₂ CH ₃	
829	CH	CHF ₂	O	CH ₂ CONHCH ₃	
830	CH	CHF ₂	O	CF ₂ CH ₃	
831	CH	CHF ₂	O	CHO	
832	CH	CHF ₂	O	NH ₂	
833	CH	CHF ₂	O	NHCOCH ₃	
834	N	CHF ₂	O	CH ₃	
835	N	CHF ₂	O	CH ₂ CH ₃	
836	N	CHF ₂	O	CH(CH ₃)(CH ₂) ₄ - CH ₃	



No.	X	Y	W	R ¹	m.p. [°C]
837	N	CHF ₂	O	CH ₂ CH=CH ₂	
838	N	CHF ₂	O	COOCH ₂ CH ₃	
839	N	CHF ₂	O	NH ₂	



Table 3



No.	X	Y	m	V	R ¹	m.p. [°C]
840	N	(CF ₂) ₃ CHF ₂	0	O	CH ₃	
841	N	(CF ₂) ₂ CF ₃	0	O	CH ₂ CH ₃	
842	N	(CF ₂) ₂ CF ₃	0	O	COOCH ₂ CH ₃	
843	N	(CF ₂) ₂ CF ₃	0	O	SH	
844	N	(CF ₂) ₂ CF ₃	0	O	SCH ₃	
845	N	(CF ₂) ₂ CF ₃	0	O	SCH ₂ C=CH	
846	N	CF ₂ CF ₃	0	O	CH ₃	
847	N	CF ₂ CF ₃	0	O	CH ₂ CH ₃	
848	N	CF ₃	0	O	CH ₃	
849	N	CF ₃	0	O	CH ₂ CH ₃	
850	N	CF ₃	0	O	(CH ₂) ₂ CH ₃	
851	N	CF ₃	0	O	CH(CH ₃) ₂	
852	N	CF ₃	0	O	(CH ₂) ₃ CH ₃	
853	N	CF ₃	0	O	CH ₂ CH(CH ₃) ₂	
854	N	CF ₃	0	O	C(CH ₃) ₃	
855	N	CF ₃	0	O	CH ₂ C(CH ₃) ₃	
856	N	CF ₃	0	O	Cyclo-C ₅ H ₉	
857	N	CF ₃	0	O	Cyclo-C ₆ H ₁₁	
858	N	CF ₃	0	O	CH ₂ CH=C(CH ₃) ₂	
859	N	CF ₃	0	O	CH ₂ CH ₂ CH=CH ₂	
860	N	CF ₃	0	O	CH ₂ CH=CH ₂	
861	N	CF ₃	0	O	(CH ₂) ₅ CH=CH ₂	
862	N	CF ₃	0	O	CH ₂ C=CH	
863	N	CF ₃	0	O	CH ₂ C=CCH ₂ CH ₃	
864	N	CF ₃	0	O	CHFCF ₃	



No.	X	Y	m	V	R ¹	m.p. [°C]
865	N	CF ₃	0	O	COOCH ₂ CH ₃	
866	N	CF ₃	0	O	CH ₂ CH ₂ OH	
867	N	CF ₃	0	O	CH ₂ CH ₂ OCH ₃	
868	N	CF ₃	0	O	CH ₂ COOC(CH ₃) ₃	
869	N	CF ₃	0	O	CH ₂ SPh	
870	N	CF ₃	0	O	CH ₂ CONHCH ₃	
871	N	CF ₃	0	O	CH ₂ CH(OH)CH ₂ OH	
872	N	CF ₃	0	O	CHO	
873	N	CF ₃	0	O	COCH ₃	
874	N	CF ₃	0	O	CH ₂ OC ₆ H ₅	
875	N	CF ₃	0	O	COPh	
876	N	CF ₃	0	O	CF ₂ CH ₃	
877	N	CF ₃	0	O	CH ₂ CN	
878	N	CF ₃	0	O	CH ₂ CH ₂ CN	
879	N	CF ₃	0	O	CH=CF ₂	
880	N	CF ₃	0	O	2-Furyl	
881	N	CF ₃	0	O	OH	
882	N	CF ₃	0	O	OCH ₃	
883	N	CF ₃	0	O	OCH ₂ CH ₃	
884	N	CF ₃	0	O	OCHF ₂	
885	N	CF ₃	0	O	OCH ₂ Ph	
886	N	CF ₃	0	O	NH ₂	
887	N	CF ₃	0	O	NHCH ₃	
888	N	CF ₃	0	O	NHCH ₂ CH ₃	
889	N	CF ₃	0	O	N(CH ₂ CH ₃) ₂	
890	N	CF ₃	0	O	N(CH ₂ CN) ₂	
891	N	CF ₃	0	O	N(CH ₃) ₂	
892	N	CF ₃	0	O	NHCOCH ₃	
893	N	CF ₃	0	O	NHCOCH ₂ CH ₃	
894	N	CF ₃	0	O	OSO ₂ CH ₃	
895	N	CH ₂ CH ₂ Cl	0	O	CH ₂ CH ₃	
896	N	CH ₂ CH ₂ Cl	0	O	NH ₂	
897	N	CH ₂ Cl	0	O	CH ₃	
898	N	CHF ₂	0	O	CH ₃	



No.	X	Y	m	V	R ¹	m.p. [°C]
899	N	CHF ₂	0	O	CH ₂ CH ₃	
900	N	CHF ₂	0	O	CH(CH ₃)(CH ₂) ₄ CH ₃	
901	N	CHF ₂	0	O	CH ₂ CH=CH ₂	
902	N	CHF ₂	0	O	COOCH ₂ CH ₃	
903	N	CHF ₂	0	O	NH ₂	
904	CH	CF ₃	0	O	CH ₃	60-61
905	CH	CF ₃	1	O	CH ₃	
906	CH	CF ₃	0	O	CH ₂ CH ₃	oil
907	CH	CF ₃	1	O	CH ₂ CH ₃	oil
908	CH	CF ₃	0	O	(CH ₂) ₂ CH ₃	oil
909	CH	CF ₃	1	O	(CH ₂) ₂ CH ₃	oil
910	CH	CF ₃	0	O	CH(CH ₃) ₂	
911	CH	CF ₃	1	O	CH(CH ₃) ₂	
912	CH	CF ₃	0	O	(CH ₂) ₃ CH ₃	
913	CH	CF ₃	1	O	(CH ₂) ₃ CH ₃	
914	CH	CF ₃	0	O	CH(CH ₃)CH ₂ CH ₃	
915	CH	CF ₃	1	O	CH(CH ₃)CH ₂ CH ₃	
916	CH	CF ₃	0	O	CH ₂ CH(CH ₃) ₂	
917	CH	CF ₃	1	O	CH ₂ CH(CH ₃) ₂	
918	CH	CF ₃	0	O	C(CH ₃) ₃	
919	CH	CF ₃	1	O	C(CH ₃) ₃	
920	CH	CF ₃	0	O	(CH ₂) ₄ CH ₃	
921	CH	CF ₃	1	O	(CH ₂) ₄ CH ₃	
922	CH	CF ₃	0	O	CH(CH ₃)(CH ₂) ₂ CH ₃	
923	CH	CF ₃	0	O	(CH ₂) ₂ CH(CH ₃) ₂	
924	CH	CF ₃	0	O	CH ₂ C(CH ₃) ₃	
925	CH	CF ₃	0	O	cyclo-C ₅ H ₉	
926	CH	CF ₃	0	O	cyclo-C ₆ H ₁₁	
927	CH	CF ₃	0	O	CH ₂ (3-Thienyl)	oil
928	CH	CF ₃	0	O	CHO	
929	CH	CF ₃	0	O	CH=CH ₂	
930	CH	CF ₃	0	O	CH ₂ Ph	61-63
931	CH	CF ₃	0	O	CH ₂ CH=C(CH ₃) ₂	
932	CH	CF ₃	0	O	CH ₂ CH=CH ₂	



No.	X	Y	m	V	R ¹	m.p. [°C]
933	CH	CF ₃	0	O	C(CH ₃)=CH ₂	
934	CH	CF ₃	0	O	(CH ₂) ₅ C=CH ₂	
935	CH	CF ₃	0	O	C(=CHCH ₃)CH ₃	
936	CH	CF ₃	0	O	CH ₂ C=CH	
937	CH	CF ₃	0	O	CH ₂ CH ₂ C=CH ₂	
938	CH	CF ₃	0	O	CH ₂ C≡CCH ₂ CH ₃	
939	CH	CF ₃	0	O	(CH ₂) ₄ C≡CH	
940	CH	CF ₃	0	O	CHFCF ₃	
941	CH	CF ₃	0	O	COOCH ₂ CH ₃	
942	CH	CF ₃	0	O	CH ₂ CH ₂ OH	
943	CH	CF ₃	0	O	CH ₂ CH ₂ OCH ₃	
944	CH	CF ₃	0	O	CH ₂ COOC(CH ₃) ₃	
945	CH	CF ₃	0	O	CH ₂ SPh	
946	CH	CF ₃	0	O	CH ₂ CONHCH ₃	
947	CH	CF ₃	0	O	CH ₂ CH(OH)CH ₂ OH	
948	CH	CF ₃	0	O	CH ₂ COCH ₃	
949	CH	CF ₃	0	O	COCH ₃	
950	CH	CF ₃	0	O	CH ₂ Oph	
951	CH	CF ₃	0	O	COPh	
952	CH	CF ₃	0	O	CF ₂ CH ₃	
953	CH	CF ₃	0	O	CH ₂ CN	oil
954	CH	CF ₃	0	O	CH ₂ CH(-O-)CH ₂	
955	CH	CF ₃	0	O	CH ₂ (4-OCH ₃)Ph	
956	CH	CF ₃	0	O	CH ₂ CH(OH)CH ₂ SPh	
957	CH	CF ₃	0	O	CH=CF ₂	
958	CH	CF ₃	0	O	CCl=CHCl	
959	CH	CF ₃	0	O	Ph	120-121
960	CH	CF ₃	0	O	2-Thienyl	87-89
961	CH	CF ₃	0	O	Oph	
962	CH	CF ₃	0	O	OH	
963	CH	CF ₃	0	O	OCH ₃	
964	CH	CF ₃	0	O	OCH ₂ CH ₃	
965	CH	CF ₃	0	O	OCHF ₂	



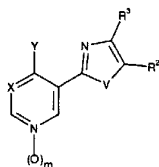
No.	X	Y	m	V	R ¹	m.p. [°C]
966	CH	CF ₃	0	O	OCH ₂ Ph	
967	CH	CF ₃	0	O	SCH ₃	
968	CH	CF ₃	0	O	SPh	
969	CH	CF ₃	0	O	NH ₂	190-191
970	CH	CF ₃	0	O	NHCH ₃	
971	CH	CF ₃	0	O	NHCH ₂ CH ₃	
972	CH	CF ₃	0	O	N(CH ₂ CH ₃) ₂	
973	CH	CF ₃	0	O	N(CH ₂ CN) ₂	
974	CH	CF ₃	0	O	N(CH ₃) ₂	
975	CH	CF ₃	0	O	NHCOCH ₃	
976	CH	CF ₃	0	O	NHCOCH ₂ CH ₃	
977	CH	CF ₃	0	O	OSO ₂ CH ₃	
978	CH	CF ₃	0	O	SOCH ₂ (4-Br)-C ₆ H ₄	
979	CH	CF ₃	0	O	N(CH ₃)COOCH ₂ Ph	
980	CH	CF ₃	0	NCH ₃	CH ₃	
981	CH	CF ₃	0	NCH ₂ CH ₃	CH ₃	
982	CH	CF ₃	0	NCH ₂ CH ₃	CH ₂ CH ₃	
983	CH	CF ₃	0	NCH ₂ CN	CH ₂ CH ₃	
984	CH	CF ₃	0	NCH ₂ OCH ₃	NHCH ₃	
985	CH	CF ₃	0	NCH ₂ OCH ₂ CH ₃	CN	
986	CH	CF ₃	0	NCH ₂ CH=CH ₂	CH ₃	
987	CH	CF ₃	0	NCH ₂ CH=CF ₂	SCH ₃	
988	CH	CF ₃	0	NCH ₂ OCH ₃	SCH ₂ CH ₃	
989	CH	CF ₃	0	NCH ₂ OCH ₃	SCH ₂ Ph	
990	CH	CHF ₂	0	O	CH ₃	
991	CH	CHF ₂	0	O	CH ₂ CH ₃	
992	CH	CHF ₂	0	O	(CH ₂) ₂ CH ₃	
993	CH	CHF ₂	0	O	CH ₂ CH=CH ₂	
994	CH	CHF ₂	0	O	C(CH ₃)=CH ₂	
995	CH	CHF ₂	0	O	COOCH ₂ CH ₃	
996	CH	CHF ₂	0	O	CH ₂ CONHCH ₃	
997	CH	CHF ₂	0	O	CF ₂ CH ₃	
998	CH	CHF ₂	0	O	CHO	



No.	X	Y	m	V	R ¹	m.p. [°C]
999	CH	CHF ₂	0	O	NH ₂	
1000	CH	CHF ₂	0	O	NHCOCH ₃	
1001	N	CF ₂ CF ₃	0	S	CH ₃	
1002	N	CF ₂ CF ₃	0	S	CH ₂ CH ₃	
1003	N	CF ₂ CF ₃	0	S	(CH ₂) ₂ CH ₃	
1004	N	CF ₃	0	S	CH ₃	
1005	N	CF ₃	0	S	CH ₂ CH ₃	
1006	N	CF ₃	0	S	(CH ₂) ₂ CH ₃	
1007	N	CF ₃	0	S	CHFCH ₃	
1008	N	CF ₃	0	S	CH ₂ CH ₂ OH	
1009	N	CF ₃	0	S	CH ₂ COOC(CH ₃) ₃	
1010	CH	CF ₃	0	S	CH ₃	
1011	CH	CF ₃	0	S	CH ₂ CH ₃	
1012	CH	CF ₃	0	S	(CH ₂) ₂ CH ₃	
1013	CH	CF ₃	0	S	CHO	
1014	CH	CF ₃	0	S	CHFCH ₃	
1015	CH	CF ₃	0	S	CH ₂ C≡CH	
1016	CH	CF ₃	0	S	COOCH ₂ CH ₃	
1017	CH	CF ₃	0	S	CH ₂ COOC(CH ₃) ₃	
1018	CH	CF ₃	0	S	CH ₂ CN	



Table 4



No.	X	Y	m	V	R ²	R ³	m.p. [°C]
1019	N	(CF ₂) ₃ CHF ₂	0	S	H	CH ₂ CH ₃	
1020	N	CF ₂ CF ₂ CF ₃	0	S	H	CH ₂ CH ₃	
1021	N	CF ₂ CF ₃	0	S	H	CH ₂ CH ₃	
1022	N	CH ₂ CH ₂ Cl	0	S	H	CH ₂ CH ₃	
1023	N	CH ₂ Cl	0	S	H	CH ₂ CH ₃	
1024	N	CF ₃	0	S	CH ₂ CH ₃	CH ₂ CH ₃	
1025	N	CF ₃	0	S	(CH ₂) ₂ CH ₃	H	
1026	N	CF ₃	0	S	CH(CH ₃) ₂	H	
1027	N	CF ₃	0	S	CH ₂ CH(CH ₃) ₂	H	
1028	N	CF ₃	0	S	C(CH ₃) ₃	H	
1029	CH	CF ₃	0	S	H	CH ₃	oil
1030	CH	CF ₃	0	S	H	CH ₂ CH ₃	oil
1031	CH	CF ₃	0	S	H	C(CH ₃) ₃	oil
1032	CH	CF ₃	0	S	CH ₂ CH ₃	COOCH ₂ CH ₃	
1033	CH	CF ₃	0	S	(CH ₂) ₂ CH ₃	COOCH ₂ CH ₃	
1034	CH	CF ₃	0	S	CH(CH ₃) ₂	COOCH ₂ CH ₃	
1035	CH	CF ₃	0	S	CH(CH ₃) ₂	CONHCH ₂ CH ₃	
1036	CH	CF ₃	0	S	CH(CH ₃) ₂	CONHCH ₂ CH ₃	
1037	CH	CF ₃	0	S	CH(CH ₃) ₂	CON(CH ₂ CH ₃) ₂	
1038	CH	CF ₃	0	S	CH(CH ₃) ₂	CONH-cyclo-C ₃ H ₇	
1039	CH	CF ₃	0	S	C(CH ₃) ₃	COOCH ₂ CH ₃	
1040	CH	CF ₃	0	S	H	CONHCH ₂ CH ₃	
1041	CH	CF ₃	0	S	H	CON(CH ₂ CH ₃) ₂	
1042	CH	CF ₃	0	S	H	COOCH ₂ CH ₃	oil



No.	X	Y	m	V	R ²	R ³	m.p. [°C]
1043	CH	CF ₃	0	S	H	CH ₂ COOCH ₂ CH ₃	oil
1044	CH	CF ₃	0	S	H	CH ₂ CHO	
1045	CH	CF ₃	0	S	H	CH ₂ OCH ₃	
1046	CH	CF ₃	0	S	H	CH ₂ OCH ₂ Ph	
1047	CH	CF ₃	0	S	H	H	
1048	CH	CF ₃	0	S	cyclo-C ₅ H ₉	H	
1049	CH	CF ₃	0	S	CON(CH ₃) ₂	CH ₃	oil
1050	CH	CF ₃	0	S	CH ₃	CH ₂ CH ₂ OH	
1051	CH	CF ₃	0	S	CH ₃	CH ₂ CH ₂ OCH ₃	
1052	CH	CF ₃	0	S	CH ₃	CH ₂ CH ₂ OCH ₂ Ph	
1053	CH	CF ₃	0	S	CH ₃	CH ₂ CH ₂ SPh	
1054	CH	CF ₃	0	S	CH ₃	CH ₃	oil
1055	CH	CF ₃	0	S	CH ₃	CH ₂ CH ₂ CHO	
1055	CH	CF ₃	0	S	CH ₃	CH ₂ CH ₂ CHNPh	
1057	CH	CF ₃	0	S	CH ₃	CH ₂ CH ₂ CONH ₂	
1058	CH	CF ₃	0	S	H	(4-CF ₃ O)C ₆ H ₄	120- 121
1059	CH	CF ₃	0	S	CH ₂ C=CH	H	
1060	CH	CF ₃	0	S	CH ₂ CH ₂ C=CH	H	
1061	CH	CF ₃	0	S	CH ₂ C=CCH ₂ CH ₃	H	
1062	CH	CF ₃	0	S	CH ₂ CH=C(CH ₃) ₂	H	
1063	CH	CF ₃	0	S	CH ₂ CH ₂ CH=CH ₂	H	
1064	CH	CF ₃	0	S	CH ₂ CH=CH ₂	H	
1065	CH	CF ₃	0	S	C(CH ₃)=CH ₂	H	
1066	CH	CF ₃	0	S	CHFCF ₃	H	
1067	CH	CF ₃	0	S	COOCH ₂ CH ₃	H	
1068	CH	CF ₃	0	S	CH ₂ CH ₂ OH	H	
1069	CH	CF ₃	0	S	CH ₂ CH ₂ OCH ₃	H	
1070	CH	CF ₃	0	S	CH ₂ COOC(CH ₃) ₃	H	
1071	CH	CF ₃	0	S	CH ₂ COCH ₃	H	
1072	CH	CF ₃	0	S	COCH ₃	H	
1073	CH	CF ₃	0	S	CH ₂ Oph	H	
1074	CH	CF ₃	0	S	COPh	H	
1075	CH	CF ₃	0	S	CO(4-Cl)-C ₆ H ₄	H	



No.	X	Y	m	V	R ²	R ³	m.p. [°C]
1076	CH	CF ₃	0	S	CF ₂ CH ₃	H	
1077	CH	CF ₃	0	S	CH ₂ CN	H	
1078	CH	CF ₃	0	S	CH ₂ CH ₂ CN	H	
1079	N	CF ₃	0	S	H	H	
1080	N	CF ₃	0	S	H	CH ₂ CH ₂ CN	
1081	N	CF ₃	0	S	H	CH ₂ CO ₂ C(CH ₃) ₃	
1082	N	CF ₃	0	S	H	CH ₂ CHO	
1083	N	CF ₃	0	S	H	CH ₂ CH ₂ OH	
1084	N	CF ₃	0	S	H	CH ₂ CH ₂ OCH ₃	
1085	N	CF ₃	0	S	cyclo-C ₅ H ₉	H	
1086	N	CF ₃	0	S	CH ₃	COOCH ₂ CH ₃	
1087	N	CF ₃	0	S	CH ₃	COOH	
1088	N	CF ₃	0	S	CH ₃	CONH ₂	
1089	N	CF ₃	0	S	CH ₃	CONHCH ₂ CH ₃	
1090	N	CF ₃	0	S	CH ₃	CON(CH ₂ CH ₃) ₂	
1091	N	CF ₃	0	S	CH ₃	CONHCH ₃	
1092	N	CF ₃	0	S	CH ₃	CONHCH ₂ CN	
1093	N	CF ₃	0	S	CH ₃	CON(CH ₂ CN) ₂	
1094	N	CF ₃	0	S	CH ₃	CON(CH ₃) ₂	
1095	N	CF ₃	0	S	CH ₂ C≡CH	OCH ₂ CH ₃	
1096	N	CF ₃	0	S	CH ₂ CH ₂ C≡CH	OCH ₂ CH ₃	
1097	N	CF ₃	0	S	CH ₂ C≡CCH ₂ CH ₃	OCH ₂ CH ₃	
1098	N	CF ₃	0	S	CH ₂ CH=C(CH ₃) ₂	OCH ₂ CH ₃	
1099	N	CF ₃	0	S	CH ₂ CH ₂ CH=CH ₂	OCH ₂ CH ₃	
1100	N	CF ₃	0	S	CH ₂ CH=CH ₂	OCH ₂ CH ₃	
1101	N	CF ₃	0	S	C(CH ₃)=CH ₂	OCH ₂ CH ₃	
1102	N	CF ₃	0	S	CHFCF ₃	OCH ₂ CH ₃	
1103	N	CF ₃	0	S	COOCH ₂ CH ₃	OCH ₂ CH ₃	
1104	N	CF ₃	0	S	CH ₂ CH ₂ OH	OCH ₂ CH ₃	
1105	N	CF ₃	0	S	CH ₂ CH ₂ OCH ₃	OCH ₂ CH ₃	
1106	N	CF ₃	0	S	CH ₂ COOC(CH ₃) ₃	OCH ₂ CH ₃	
1107	N	CF ₃	0	S	CH ₂ COCH ₃	H	
1108	N	CF ₃	0	S	COCH ₃	H	
1109	N	CF ₃	0	S	CH ₂ Oph	H	



No.	X	Y	m	V	R ²	R ³	m.p. [°C]
1110	N	CF ₃	0	S	COPh	H	
1111	N	CF ₃	0	S	CO(4-Cl)-C ₆ H ₄	H	
1112	N	CF ₃	0	S	CF ₂ CH ₃	H	
1113	N	CF ₃	0	S	CH ₂ CN	H	
1114	N	CF ₃	0	S	CH ₂ CH ₂ CN	H	
1115	CH	CF ₃	0	O	CH ₂ CH ₃	CH ₂ CH ₃	
1116	CH	CF ₃	0	O	(CH ₂) ₂ CH ₃	H	
1117	CH	CF ₃	0	O	H	CH ₂ CH ₃	oil
1118	CH	CF ₃	0	O	CH(CH ₃) ₂	COOCH ₂ CH ₃	
1119	CH	CF ₃	0	O	CH(CH ₃) ₂	COOH	
1120	CH	CF ₃	0	O	CH(CH ₃) ₂	CONH ₂	
1121	CH	CF ₃	0	O	CH(CH ₃) ₂	CH ₃	
1122	CH	CF ₃	0	O	C(CH ₃) ₃	H	
1123	CH	CF ₃	0	O	H	CH ₃	
1124	CH	CF ₃	0	O	H	cyclo-C ₅ H ₉	
1125	CH	CF ₃	0	O	H	CH ₂ CH ₂ CH ₃	
1126	CH	CF ₃	0	O	H	Ph	103-104
1127	CH	CF ₃	0	O	H	2-Pyridyl	
1128	CH	CF ₃	0	O	H	2-Furyl	
1129	CH	CF ₃	0	O	cyclo-C ₅ H ₉	H	
1130	CH	CF ₃	0	O	CH ₃	COOCH ₂ CH ₃	
1131	CH	CF ₃	0	O	CH ₃	COOH	
1132	CH	CF ₃	0	O	CH ₃	CONH ₂	
1133	CH	CF ₃	0	O	CH ₃	CONHCH ₂ CH ₃	
1134	CH	CF ₃	0	O	CH ₃	CON(CH ₂ CH ₃) ₂	
1135	CH	CF ₃	0	O	CH ₃	CONHCH ₃	
1136	CH	CF ₃	0	O	CH ₃	CONHCH ₂ CN	
1137	CH	CF ₃	0	O	CH ₃	CON(CH ₂ CN) ₂	
1138	CH	CF ₃	0	O	CH ₃	CON(CH ₃) ₂	
1139	CH	CF ₃	0	O	CH ₂ C≡CH	H	
1140	CH	CF ₃	0	O	CH ₂ CH ₂ C≡CH	H	
1141	CH	CF ₃	0	O	CH ₂ C≡CCH ₂ CH ₃	H	
1142	CH	CF ₃	0	O	CH ₂ CH=C(CH ₃) ₂	H	



No.	X	Y	m	V	R ²	R ³	m.p. [°C]
1143	CH	CF ₃	0	O	CH ₂ CH ₂ C=CH	H	
1144	CH	CF ₃	0	O	CH ₂ CH=CH ₂	H	
1145	CH	CF ₃	0	O	C(CH ₃)=CH ₂	H	
1146	CH	CF ₃	0	O	CHF CF ₃	H	
1147	CH	CF ₃	0	O	COOCH ₂ CH ₃	H	
1148	CH	CF ₃	0	O	CH ₂ CH ₂ OH	H	
1149	CH	CF ₃	0	O	CH ₂ CH ₂ OCH ₃	H	
1150	CH	CF ₃	0	O	CH ₂ COOC(CH ₃) ₃	H	
1151	CH	CF ₃	0	O	CH ₂ COCH ₃	H	
1152	CH	CF ₃	0	O	COCH ₃	H	
1153	CH	CF ₃	0	O	CH ₂ Oph	H	
1154	CH	CF ₃	0	O	COPh	H	
1155	CH	CF ₃	0	O	CO(4-Cl)-C ₆ H ₄	H	
1156	CH	CF ₃	0	O	CF ₂ CH ₃	H	
1157	CH	CF ₃	0	O	CH ₂ CN	H	
1158	CH	CF ₃	0	O	CH ₂ CH ₂ CN	H	
1159	N	CF ₃	0	O	CH ₂ CH ₃	CH ₂ CH ₃	
1160	N	CF ₃	0	O	(CH ₂) ₂ CH ₃	H	
1161	N	CF ₃	0	O	CH(CH ₃) ₂	CONH ₂	
1162	N	CF ₃	0	O	CH(CH ₃) ₂	CH ₃	
1163	N	CF ₃	0	O	C(CH ₃) ₃	H	
1164	N	CF ₃	0	O	H	CH ₃	
1165	N	CF ₃	0	O	H	CH ₂ CH ₃	
1166	N	CF ₃	0	O	H	CH ₂ CH ₂ CH ₃	
1167	N	CF ₃	0	O	H	Ph	
1168	N	CF ₃	0	O	H	2-Pyridyl	
1169	N	CF ₃	0	O	H	2-Furyl	
1170	N	CF ₃	0	O	cyclo-C ₅ H ₉	H	
1171	N	CF ₃	0	O	CH ₃	COOCH ₂ CH ₃	
1172	N	CF ₃	0	O	CH ₃	COOH	
1173	N	CF ₃	0	O	CH ₃	CONH ₂	
1174	N	CF ₃	0	O	CH ₃	CONHCH ₂ CH ₃	
1175	N	CF ₃	0	O	CH ₃	CON(CH ₂ CH ₃) ₂	
1176	N	CF ₃	0	O	CH ₃	CONHCH ₃	



No.	X	Y	m	V	R ²	R ³	m.p. [°C]
1177	N	CF ₃	0	O	CH ₃	CONHCH ₂ CN	
1178	N	CF ₃	0	O	CH ₃	CON(CH ₂ CN) ₂	
1179	N	CF ₃	0	O	CH ₃	CON(CH ₃) ₂	
1180	N	CF ₃	0	O	CH ₂ C=CH	H	
1181	N	CF ₃	0	O	CH ₂ CH ₂ C≡CH	H	
1182	N	CF ₃	0	O	CH ₂ C≡CCH ₂ CH ₃	H	
1183	N	CF ₃	0	O	CH ₂ CH=C(CH ₃) ₂	H	
1184	N	CF ₃	0	O	CH ₂ CH ₂ CH=CH ₂	H	
1185	N	CF ₃	0	O	CH ₂ CH=CH ₂	H	
1186	N	CF ₃	0	O	C(CH ₃)=CH ₂	H	
1187	N	CF ₃	0	O	CHFCF ₃	H	
1188	N	CF ₃	0	O	COOCH ₂ CH ₃	H	
1189	N	CF ₃	0	O	CH ₂ CH ₂ OH	H	
1190	N	CF ₃	0	O	CH ₂ CH ₂ OCH ₃	H	
1191	N	CF ₃	0	O	CH ₂ COOC(CH ₃) ₃	H	
1192	N	CF ₃	0	O	CH ₂ COCH ₃	H	
1193	N	CF ₃	0	O	COCH ₃	H	
1194	N	CF ₃	0	O	CH ₂ Oph	H	
1195	N	CF ₃	0	O	COPh	H	
1196	N	CF ₃	0	O	CO(4-Cl)-C ₆ H ₄	H	
1197	N	CF ₃	0	O	CF ₂ CH ₃	H	
1198	N	CF ₃	0	O	CH ₂ CN	H	
1199	N	CF ₃	0	O	CH ₂ CH ₂ CN	H	
1200	N	CF ₃	0	O	CH ₂ NHSO ₂ CH ₃	CH ₃	
1201	N	CF ₃	0	O	(CH ₂) ₂ NHSO ₂ - CH ₃	CH ₃	
1202	N	CF ₃	0	O	CH ₂ NHSO ₂ CH ₂ - CH ₃	CH ₃	
1203	N	CF ₃	0	O	H	CH ₂ NHSO ₂ CH ₂ Ph	
1204	CH	CF ₃	0	O	(CH ₂) ₄ NHSO ₂ - CF ₃	CH ₃	
1205	CH	CF ₃	0	O	(CH ₂) ₂ S(CH ₂) ₂ - CH ₃	CH ₂ CH ₂ CH ₃	



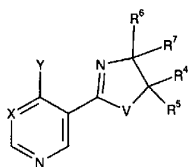
No.	X	Y	m	V	R ²	R ³	m.p. [°C]
1206	CH	CF ₃	0	O	(CH ₂) ₄ S(CH ₂) ₄ - OCH ₃	CH ₃	
1207	CH	CF ₃	0	S	CH ₃	(CH ₂) ₂ S(CH ₂) ₂ CN	
1208	CH	CF ₃	0	S	CH ₂ NHSO ₂ - CH ₂ CH ₃	CH ₃	
1209	CH	CF ₃	0	S	CH ₂ NHSO ₂ - CH ₂ Ph	CH ₂ CH ₂ CH ₃	
1210	CH	CF ₃	0	S	(CH ₂) ₂ NHSO ₂ - CH ₃	CF ₃	
1211	CH	CF ₃	0	S	H	CH ₂ NHSO ₂ CH ₃	
1212	CH	CF ₃	0	S	CH(CH ₃)CH ₂ NH- Ph	CF ₃	
1213	CH	CF ₃	0	S	(CH ₂) ₂ S(2-F)- C ₆ H ₄	CH ₂ CH ₂ CH ₃	
1214	CH	CF ₃	0	S	(CH ₂) ₆ NHCH ₂) ₆ - OCH ₃	CF ₃	
1215	CH	CF ₃	0	S	H	(CH ₂) ₂ NH-(2-F)- C ₆ H ₄	
1216	CH	CF ₃	0	S	(CH ₂) ₃ NHCH ₂ CN	H	
1217	CH	CF ₃	0	S	(CH ₂) ₂ O(3-Cl)- C ₆ H ₄	CH ₃	
1218	CH	CF ₃	0	S	CF ₃	(CH ₂) ₆ NHCH ₂ CF ₃	
1219	CH	CF ₃	0	S	CH ₃	(CH ₂) ₂ O(3-CH ₃)- C ₆ H ₄	
1220	CH	CF ₃	0	O	H	CH ₂ NHPh	
1221	CH	CF ₃	0	O	CH ₃	(CH ₂) ₄ S(2-Br)- C ₆ H ₄	
1222	CH	CF ₃	0	O	(CH ₂) ₆ NH(CH ₂) ₂ - OCH ₃	CH ₃	
1223	CH	CF ₃	0	O	(CH ₂) ₂ NH(CH ₂) ₄ - OCH ₃	H	
1224	CH	CF ₃	0	O	CF ₃	(CH ₂) ₃ NH-(4-CN)- C ₆ H ₄	



No.	X	Y	m	V	R ²	R ³	m.p. [°C]
1225	CH	CF ₃	0	O	(CH ₂) ₄ NHCH ₂ - CF ₃	CH ₃	
1226	CH	CF ₃	0	O	C ₂ F ₅	(CH ₂) ₂ O(3-CH ₃)- C ₆ H ₄	
1227	CH	CF ₃	0	O	(CH ₂) ₄ NHCH ₂ CN	H	
1228	CH	CF ₃	0	O	(CH ₂) ₃ O(4-Cl)- C ₆ H ₄	C ₂ F ₅	



Table 5



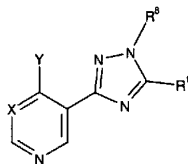
No.	X	Y	V	R ⁴	R ⁵	R ⁶	R ⁷	m.p. [°C]
1229	CH	CF ₃	O	H	H	H	H	oil
1230	CH	CF ₃	O	H	H	CH ₃	H	oil
1231	CH	CF ₃	O	H	H	CH ₂ CH ₃	H	oil
1232	CH	CF ₃	O	H	H	CH(CH ₃) ₂	H	
1233	CH	CF ₃	O	H	H	CH ₂ CH(CH ₃) ₂	H	
1234	CH	CF ₃	O	H	H	CH(CH ₃)CH ₂ - CH ₃	H	
1235	CH	CF ₃	O	H	H	CH ₂ OH	H	
1236	CH	CF ₃	O	H	H	CH(OH)CH ₃	H	
1237	CH	CF ₃	O	H	H	CH ₂ SH	H	
1238	CH	CF ₃	O	H	H	CH ₂ CH ₂ SCH ₃	H	
1239	CH	CF ₃	O	H	H	(CH ₂) ₃ NH ₂	H	
1240	CH	CF ₃	O	H	H	(CH ₂) ₄ NH ₂	H	
1241	CH	CF ₃	O	H	H	CH=CH ₂	H	
1242	CH	CF ₃	O	H	H	(CH ₂) ₂ - COOCH ₃	H	
1243	CH	CF ₃	O	H	H	(CH ₂) ₂ COOH	H	
1244	CH	CF ₃	O	H	H	(CH ₂) ₂ CONH ₂	H	
1245	CH	CF ₃	S	CH ₃	CH ₃	H	H	
1246	CH	CF ₃	O	H	H	CH ₃	CH ₃	oil
1247	CH	CF ₃	O	H	H	CH ₂ COOCH ₃	H	
1248	CH	CF ₃	O	H	H	CH ₂ COOH	H	
1249	CH	CF ₃	O	H	H	CH ₂ CONH ₂	H	
1250	CH	CF ₃	O	H	H	CH ₂ Ph	H	



No.	X	Y	V	R ⁴	R ⁵	R ⁶	R ⁷	m.p. [°C]
1251	CH	CF ₃	O	H	H	CH ₂ -(4-OH)- C ₆ H ₄	H	
1252	CH	CF ₃	O	H	H	CH ₂ -(3-Indolyl)	H	
1253	CH	CF ₃	O	CH ₃	CH ₃	H	H	oil
1254	CH	CF ₃	O	CH ₃	H	H	H	oil
1255	CH	CF ₃	O	CH ₃	H	H	Ph	
1256	CH	CF ₃	O	H		(CH ₂) ₄	H	
1257	CH	CF ₃	NH	H		(CH ₂) ₄	H	
1258	CH	CF ₃	NCH ₃	H		(CH ₂) ₄	H	
1259	CH	CF ₃	NCH ₂ - C ₆ H ₄	H		(CH ₂) ₄	H	
1260	CH	CF ₃	NCH- (CH ₃) ₂	H		(CH ₂) ₄	H	
1261	CH	CF ₃	O	Ph	H	Ph	H	
1262	CH	CF ₃	NH	Ph	H	Ph	H	
1263	CH	CF ₃	NCH ₃	Ph	H	Ph	H	
1264	CH	CF ₃	NCH ₂ - C ₆ H ₄	Ph	H	Ph	H	
1265	N	CF ₃	O	H	H	CH ₂ CH ₃	H	oil
1266	N	CF ₃	O	H	H	CH(CH ₃) ₂	H	
1267	N	CF ₃	O	H	H	CH ₂ CH(CH ₃) ₂	H	
1268	N	CF ₃	O	H	H	CH ₂ COOH	H	
1269	N	CF ₃	O	H	H	CH ₂ COOCH ₃	H	
1270	N	CF ₃	O	H	H	CH ₂ CONH ₂	H	
1271	N	CF ₃	O	CH ₃	CH ₃	H	H	
1272	N	CF ₃	O	H	(CH ₂) ₄		H	
1273	N	CF ₃	O	H	H	CH ₂ CH ₂ SCH ₃	H	
1274	CH	CF ₃	S	H	H	H	H	oil



Table 6



No.	X	Y	R ⁸	R ¹	m.p. [°C]
1275	CH	CF ₃	CH ₃	SH	209-210
1276	CH	CF ₃	CH ₃	SCH ₃	
1277	CH	CF ₃	CH ₃	SCH ₂ CH ₃	
1278	CH	CF ₃	CH ₃	S(CH ₂) ₂ CH ₃	
1279	CH	CF ₃	CH ₃	SCH(CH ₃) ₂	
1280	CH	CF ₃	CH ₃	SPh	
1281	CH	CF ₃	CH ₃	S(CH ₂) ₃ CH ₃	
1282	CH	CF ₃	CH ₃	SCH(CH ₃)CH ₂ CH ₃	
1283	CH	CF ₃	CH ₃	SCH ₂ CH(CH ₃) ₂	
1284	CH	CF ₃	CH ₃	OH	119-120
1285	CH	CF ₃	CH ₃	OCH ₃	
1286	CH	CF ₃	CH ₃	OCH ₂ CH ₃	
1287	CH	CF ₃	CH ₃	OCHF ₂	
1288	CH	CF ₃	CH ₃	OCH ₂ Ph	
1289	CH	CF ₃	CH ₃	OCONHPh	
1290	CH	CF ₃	CH ₃	OCONH-(4-F)-C ₆ H ₄	
1291	CH	CF ₃	CH ₃	OCONH-(3,5-di-Cl)-C ₆ H ₃	
1292	CH	CF ₃	CH ₂ CN	OCH ₃	
1293	CH	CF ₃	CH ₂ CN	OCH ₂ CH ₃	
1294	CH	CF ₃	CH ₂ CN	OCHF ₂	
1295	CH	CF ₃	CH ₂ CN	OCH ₂ Ph	
1296	CH	CF ₃	CH ₂ CN	OCONHPh	
1297	CH	CF ₃	CH ₂ CN	OCONH-(4-F)-C ₆ H ₄	
1298	CH	CF ₃	CH ₂ OCH ₂ CH ₃	OCH ₃	
1299	CH	CF ₃	CH ₂ OCH ₂ CH ₃	OCH ₂ CH ₃	
1300	CH	CF ₃	CH ₂ OCH ₂ CH ₃	OCHF ₂	



No.	X	Y	R ⁸	R ¹	m.p. [°C]
1301	CH	CF ₃	CH ₂ OCH ₂ CH ₃	OCH ₂ Ph	
1302	CH	CF ₃	CH ₂ OCH ₂ CH ₃	CONHPh	
1303	CH	CF ₃	H	CH ₃	203-204
1304	CH	CF ₃	H	CH ₂ CH ₃	134-135
1305	CH	CF ₃	H	(CH ₂) ₂ CH ₃	
1306	CH	CF ₃	H	CH(CH ₃) ₂	
1307	CH	CF ₃	H	Cyclo-C ₃ H ₅	
1308	CH	CF ₃	H	(CH ₂) ₃ CH ₃	
1309	CH	CF ₃	H	CH(CH ₃)CH ₂ CH ₃	
1310	CH	CF ₃	H	CH ₂ CH(CH ₃) ₂	
1311	CH	CF ₃	H	CH=CH ₂	
1312	CH	CF ₃	H	CH ₂ CH=C(CH ₃) ₂	
1313	CH	CF ₃	H	CH ₂ CH ₂ CH=CH ₂	
1314	CH	CF ₃	H	CH ₂ CH=CH ₂	
1315	CH	CF ₃	H	C(CH ₃)=CH ₂	
1316	CH	CF ₃	H	CHFCH ₃	
1317	CH	CF ₃	H	COOCH ₂ CH ₃	
1318	CH	CF ₃	H	CH ₂ CH ₂ OH	
1319	CH	CF ₃	H	CH ₂ CH ₂ OCH ₃	
1320	CH	CF ₃	H	CH ₂ COOC(CH ₃) ₃	
1321	CH	CF ₃	CH ₃	CH ₂ COOC(CH ₃) ₃	
1322	CH	CF ₃	CH ₂ CN	CH ₂ COOC(CH ₃) ₃	
1323	CH	CF ₃	CH ₂ OCH ₂ CH ₃	CH ₂ COOC(CH ₃) ₃	
1324	CH	CF ₃	H	CH ₂ SPh	
1325	CH	CF ₃	H	CH ₂ CONHCH ₃	
1326	CH	CF ₃	H	CH ₂ COCH ₃	
1327	CH	CF ₃	H	COCH ₃	
1328	CH	CF ₃	H	CH ₂ Oph	
1329	CH	CF ₃	H	COPh	
1330	CH	CF ₃	H	CO(3-Cl)-C ₆ H ₄	
1331	CH	CF ₃	H	CF ₂ CH ₃	
1332	CH	CF ₃	H	CH ₂ CN	
1333	CH	CF ₃	H	CH ₂ CH ₂ CN	
1334	CH	CF ₃	H	CH ₂ CH(-O-)CH ₂	
1336	CH	CF ₃	H	CH ₂ (4-OCH ₃)Ph	



No.	X	Y	R ⁸	R ¹	m.p. [°C]
1337	N	CF ₃	CH ₃	SH	
1338	N	CF ₃	CH ₃	SCH ₃	
1339	N	CF ₃	CH ₃	SCH ₂ CH ₃	
1340	N	CF ₃	CH ₃	SPh	
1341	N	CF ₃	CH ₃	SCH ₂ CH(CH ₃) ₂	
1342	N	CF ₃	CH ₃	OH	
1343	N	CF ₃	CH ₃	OCH ₃	
1344	N	CF ₃	CH ₃	OCH ₂ CH ₃	
1345	N	CF ₃	CH ₃	OCH ₂ Ph	
1346	N	CF ₃	CH ₃	OCONHPh	
1347	N	CF ₃	CH ₂ CN	OCH ₃	
1348	N	CF ₃	CH ₂ CN	OCH ₂ CH ₃	
1349	N	CF ₃	CH ₂ CN	OCH ₂ Ph	
1350	N	CF ₃	CH ₂ CN	OCONHPh	
1351	N	CF ₃	CH ₂ OCH ₂ CH ₃	OCH ₃	
1352	N	CF ₃	CH ₂ OCH ₂ CH ₃	OCH ₂ Ph	
1353	N	CF ₃	CH ₂ OCH ₂ CH ₃	OCONHPh	
1354	N	CF ₃	H	CH ₃	
1355	N	CF ₃	H	CH ₂ CH ₃	
1356	N	CF ₃	H	(CH ₂) ₂ CH ₃	
1357	N	CF ₃	H	CH(CH ₃) ₂	
1358	N	CF ₃	H	(CH ₂) ₃ CH ₃	
1359	N	CF ₃	H	CH(CH ₃)CH ₂ CH ₃	
1360	N	CF ₃	H	CH ₂ CH(CH ₃) ₂	
1361	N	CF ₃	H	CH ₂ C=C(CH ₃) ₂	
1362	N	CF ₃	H	CH ₂ CH=CH ₂	
1363	N	CF ₃	H	C(CH ₃)H=CH ₂	
1364	N	CF ₃	H	COOCH ₂ CH ₃	
1365	N	CF ₃	H	CH ₂ CH ₂ OH	
1366	N	CF ₃	H	CH ₂ CH ₂ OCH ₃	
1367	N	CF ₃	H	CH ₂ COOC(CH ₃) ₃	
1368	N	CF ₃	H	CH ₂ SPh	
1369	N	CF ₃	H	CH ₂ CONHCH ₃	
1370	N	CF ₃	H	CH ₂ COCH ₃	
1371	N	CF ₃	H	COCH ₃	



No.	X	Y	R ⁸	R ¹	m.p. [°C]
1372	N	CF ₃	H	CH ₂ Oph	
1373	N	CF ₃	H	COPh	
1374	N	CF ₃	H	CH ₂ CN	
1375	N	CF ₃	H	CH ₂ CH ₂ CN	
1376	CH	CF ₃	CH ₃	CH ₂ CH ₃	oil



The insecticidally active compounds used according to the invention are known and commercially available.

- 5 Deltamethrin, endosulfan, triazaphos, amitraz, piperonyl butoxide and Bacillus thuringiensis, for example, are obtainable from Hoechst Schering AgrEvo GmbH, Berlin, Germany.

The compounds are furthermore described in detail in The Pesticide Manual, 11th ed., British Crop Protection Council, Farnham 1997. Instructions for their preparation are likewise given in this publication.

10

Baculum viruses are described, for example, in J. Ind. Microbiol. & Biotech. 1997, 19, 192.

- 15 The compounds of group (f) are described in WO-A98/57 969, with preparation processes and use examples.

These sources and the literature cited therein are expressly referred to herewith; they are incorporated into this description by reference.

- 20 The insecticides used according to the invention are usually obtainable as commercial formulations. However, they can be formulated, if appropriate, in various ways, depending on the biological and/or chemical physical parameters which prevail. Possible formulations are, for example:

- 25 wettable powders (WP), emulsifiable concentrates (EC), aqueous solutions (SL), emulsions, sprayable solutions, oil- or water-based dispersions (SC), suspoemulsions (SE), dusting agents (DP), seed-dressing products, granules in the form of microgranules, spray granules, coated granules and adsorption granules, water-dispersible granules (WG), ULV formulations,
30 microcapsules, waxes or baits.

These individual types of formulation are known in principle and are described, for example, in:

Winnacker-Küchler, "Chemische Technologie" [Chemical Technology], Volume 7, C. Hauser Verlag Munich, 4th ed. 1986; van Falkenberg,



"Pesticides Formulations", Marcel Dekker N.Y., 2nd ed. 1972-73; K. Martens, "Spray Drying Handbook", 3rd ed. 1979, G. Goodwin Ltd. London.

- 5 The formulation auxiliaries required, such as inert materials, surfactants, solvents and other additives, are likewise known and are described, for example, in:

- Watkins, "Handbook of Insecticide Dust Diluents and Carriers", 2nd ed., Darland Books, Caldwell N.J.; H.v. Olphen, "Introduction to Clay Colloid
10 Chemistry", 2nd ed., J. Wiley & Sons, N.Y.; Marsden, "Solvents Guide", 2nd ed., Interscience, N.Y. 1950; McCutcheon's, "Detergents and Emulsifiers Annual", MC Publ. Corp., Ridgewood N.J.; Sisley and Wood, "Encyclopedia of Surface Active Agents", Chem. Publ. Co. Inc., N.Y. 1964; Schönfeldt, "Grenzflächenaktive Äthylenoxidaddukte" [Surface-Active
15 Ethylene Oxide Adducts], Wiss. Verlagsgesell., Stuttgart 1967; Winnacker-Küchler, "Chemische Technologie", Volume 7, C. Hauser Verlag Munich, 4th ed. 1986.

- Based on these formulations, it is also possible to produce combinations
20 with other pesticidally active compounds, fertilizers and/or growth regulators, for example in the form of a readymix or a tank mix. Wettable powders are preparations, uniformly dispersible in water, which contain, beside the active compound and in addition to a diluent or inert material, wetting agents, for example polyethoxylated alkylphenols, polyethoxylated
25 fatty alcohols, alkyl- or alkylphenolsulfonates, and dispersing agents, for example sodium ligninsulfonate or sodium 2,2'-dinaphthylmethane-6,6'-disulfonate.

- Emulsifiable concentrates are prepared by dissolving the active compound
30 in an organic solvent, for example butanol, cyclohexanone, dimethylformamide, xylene or higher-boiling aromatics or hydrocarbons, with addition of one or more emulsifiers. As emulsifiers, the following can be used, for example: calcium salts of alkylarylsulfonates, such as Ca dodecylbenzenesulfonate, or nonionic emulsifiers such as fatty acid
35 polyglycol esters, alkylaryl polyglycol ethers, fatty alcohol polyglycol ethers, propylene oxide/ethylene oxide condensation products, alkyl polyethers, sorbitan fatty acid esters, polyoxyethylene sorbitan fatty acid esters or polyoxyethylene sorbitol esters.



Dusting agents are obtained by grinding the active compound with finely divided solid substances, for example talc, natural clays such as kaolin, bentonite, pyrophyllite or diatomaceous earth. Granules can be prepared either by atomizing the active compound onto adsorptive, granulated inert material or by applying active compound concentrates onto the surface of carriers such as sand or kaolinites, or of granulated inert material, by means of adhesives, for example polyvinyl alcohol or sodium polyacrylate, or alternatively mineral oils. Suitable active compounds can also be granulated in the fashion conventional for the preparation of fertilizer granules, if desired as a mixture with fertilizers.

In wettable powders, the concentration of active compound is, for example, from approximately 10 to 90% by weight, the remainder to 100% by weight being composed of customary formulation components. In the case of emulsifiable concentrates, the concentration of active compound may be from approximately 5 to 80% by weight. Formulations in dust form comprise at most from 5 to 20% by weight of active compound, sprayable solutions from about 2 to 20% by weight. In the case of granules, the content of active compound depends partly on whether the active compound is in liquid or solid form and on which granulation auxiliaries, fillers, etc. are being used.

In addition, the abovementioned formulations of active compound comprise, if appropriate, the tackifiers, wetting agents, dispersants, emulsifiers, penetrants, solvents, fillers or carriers which are customary in each case.

The concentrates, which are in the commercially customary form, are if appropriate diluted in the customary manner for their use, for example using water in the case of wettable powders, emulsifiable concentrates, dispersions and some microgranules. Dust and granule preparations, and also sprayable solutions, are normally not diluted any further with other inert substances before being used.

The application rate required varies with the external conditions, such as temperature and humidity among others. It can fluctuate within wide limits, for example between 0.1 g/ha and 1.0 kg/ha or more of active compound, but is preferably between 0.1 g/ha and 0.3 kg/ha. Owing to the synergistic



effects between Bt cotton and insecticide, particular preference is given to application rates of from 0.5 to 50 g/ha.

- 5 For pyrethroids (b), application rates of from 0.1 to 10 g/ha are preferred and particular preference is given to application rates of from 0.1 to 6.0 g/ha.

- 10 The active compounds according to the invention may be present in their commercially customary formulations, and in the application forms prepared from these formulations, as mixtures with other active compounds, such as insecticides, attractants, sterilants, acaricides, nematocides, fungicides, growth regulators or herbicides.

Other preferred co-components for mixtures are

- 15 1. from the group of phosphorus compounds
 azamethiphos, azinphos-ethyl-, azinphosmethyl, bromophos, bromophos-ethyl, cadusafos (F-67825), chlorethoxyphos, chlorfenvinphos, chlormephos, chlorpyrifos-methyl, demeton, demeton-S-methyl, demeton-S-methyl sulfone, dialifos, diazinon, dichlorvos, dicrotophos, dimethoate,
 20 disulfoton, EPN, ethion, ethoprophos, etrimfos, famphur, fenamiphos, fenitrothion, fensulfothion, fenthion, fonofos, formothion, fosthiazate (ASC-66824), isozophos, isothioate, isoxathion, methacrifos, methidathion, salithion, mevinphos, naled, omethoate, oxydemeton-methyl, phenthoate,
 25 phorate, phosalone, phosfolan, phosphocarb (BAS-301), phosmet, phosphamidon, phoxim, pirimiphos, primiphos-ethyl, pirimiphos-methyl, propaphos, proetamphos, prothiofos, pyraclofos, pyridapenthion, quinalphos, sulprofos, temephos, terbufos, tebupirimfos, tetrachlorvinphos, thiometon, triazophos, trichlorphon, vamidothion;
 30 2. from the group of carbamates
 alanycarb, 2-sec-butylphenyl methylcarbamate (BPMC), carbosulfan, cloethocarb, benfuracarb, ethiofencarb, furathiocarb, HCN-801, isoprocarb, methomyl, 5-methyl-m-cumenyl butyryl(methyl)carbamate, oxamyl, propoxur, thiodicarb, thiofanox, 1-methylthio(ethylideneamino) N-methyl-N-(morpholiniothio)carbamate (UC 51717), triazamate;



3. from the group of carboxylic acid esters
acrinathrin, allethrin, alphamethrin, 5-benzyl-3-furylmethyl (E)-(1R)-cis, 2,2-di-methyl-3-(2-oxothiolan-3-ylidenemethyl)cyclopropanecarboxylate, beta-
- 5 cyfluthrin, beta-cypermethrin, bioallethrin, bioallethrin ((S)-cyclopentyl isomer), bioresmethrin, biphenethrin, (RS)-1-cyano-1-(6-phenoxy-2-pyridyl)-methyl (1RS)-trans-3-(4-tert-butylphenyl)-2,2-dimethylcyclopropane-carboxylate (NCI 85193), cycloprothrin, cythithrin, cyphenothrin, empenthin, esfenvalerate, fenfluthrin, flucythrinate, flumethrin, fluvalinate
- 10 (D isomer), imiprothrin (S-41311), permethrin, phenothrin ((R) isomer), prallethrin, pyrethrins (naturally occurring products), resmethrin, tefluthrin, tetramethrin, theta-cypermethrin (TD-2344), transfluthrin, zeta-cypermethrin (F-56701);
- 15 4. from the group of amidines
chlordimeform;
5. from the group of tin compounds
cyhexatin;
- 20 6. others
ABG-9008, acetamiprid, Anagrapha falcitera, AKD-1022, AKD-3059, ANS-118, Bacillus thuringiensis, Beauveria bassiana, bensultap, bifenazate (D-2341), binapacryl, BJL-932, bromopropylates, BTG-504, BTG-505,
- 25 buprofezin, camphechlor, cartap, chlorobenzilates, chlorfluazuron, 2-(4-chlorophenyl)-4,5-diphenylthiophene (UBI-T 930), chlorfentezines, chromafenozides, (ANS-118), CG-216, CG-217, CG-234, A-184699, (2-naphthylmethyl) cyclopropanecarboxylate (Ro12-0470), cyromazin, diaclofen (thiamethoxam), ethyl N-(3,5-dichloro-4-(1,1,2,3,3,3-hexafluoro-
- 30 1-propyloxy)phenyl)carbamoyl)-2-chloro-benzocarboximidate, DDT, dicofol, diflubenzuron, N-(2,3-dihydro-3-methyl-1,3-thiazol-2-ylidene)-2,4-xylylene, dinobuton, dinocap, diofenolan, DPX-062, emamectin-benzoates (MK-244), endosulfan, ethiproles, (sulfethiproles), ethofenprox, etoxazoles (YI-5301), fenoxycarb, fluazuron, flumites, (flufenzines, SZI-121), 2-fluoro-5-(4-



(4-ethoxyphenyl)-4-methyl-1-pentyl)diphenyl ether (MTI 800), granulosis and nuclear polyhedrosis viruses, fenpyroximates, fenthioncarb, flubenzimines, flucycloxuron, flufenoxuron, flufenprox (ICI-A5683), fluproxyfen, gamma-HCH, halofenocides (RH-0345), halofenprox (MTI-
 5 732), hexaflumuron (DE-473), hexythiazox, HOI-9004, hydramethylnon (AC 217300), lufenuron, indoxacarb (DPX-MP062), kanemites (AKD-2023), M-020, MIT-446, ivermectin, M-020, methoxyfenocides (Intrepid, RH-2485), milbemectin, NC-196, neemgard, nitenpyram (TI-304), 2-nitro-methyl-4,5-dihydro-6H-thiazine (DS 52618), 2-nitromethyl-3,4-dihydro-
 10 thiazole (SD 35651), 2-nitromethylene-1,2-thiazinan-3-ylcarbamide (WL 108477), pyriproxyfen (S-71639), NC-196, NC-1111, NNI-9768, novaluron (MCW-275), OK-9701, OK-9601, OK-9602, propargites, pymethrozines, pyridaben, pyrimidifen (SU-8801), RH-0345, RH-2485, RYI-210, S-1283, S-1833, SB7242, SI-8601, silafluofen, silomadines
 15 (CG-177), SU-9118, tebufenpyrad (MK-239), teflubenzuron, tetradifon, tetrasul, thiacloprid, thiocyclam, TI-435, tolfenpyrad (OMI-88), triflumuron, verbutin, vertalec (Mykotal), YI-5301.

The active compound content of the use forms prepared from the
 20 commercial formulations can be from 0.00000001 to 95% by weight, preferably between 0.00001 and 1% by weight, of active compound.

Owing to the synergistic effects with the Bt cotton plants and with one
 another, in particular mixtures of the active compounds used according to
 25 the invention can be employed in more dilute formulations.

Formulations of mixtures of pyrethroids and organophosphorus
 compounds contain correspondingly, for example, preferably from 0.05 to
 0.01% by weight of pyrethroid and from 0.25 to 0.20% by weight of
 30 organophosphorus compound, particularly preferably from 0.01 to 0.001%
 by weight of pyrethroid and from 0.2 to 0.1% by weight of
 organophosphorus compound.



For mixtures of pyrethroids and endosulfan, preference is given to a ratio of from 0.05 to 0.01% by weight of pyrethroid to from 0.7 to 0.2% by weight of endosulfan, and particular preference is given to from 0.01 to 0.001% by weight of pyrethroid and from 0.35 to 0.2% by weight of endosulfan.

5

For mixtures of pyrethroids and *Bacillus thuringiensis* Bt, the values given above for pyrethroids apply, and the Bt proportion is preferably from 0.01 to 0.001, particularly preferably from 0.005 to 0.001, % by weight.

- 10 Mixtures of endosulfan and amitraz preferably contain from 0.35 to 0.2% by weight of endosulfan and from 0.6 to 0.2% by weight of amitraz.

In their commercial formulations, the active compounds used according to the invention can also be employed in combination with other fungicides

- 15 which are known from the literature.

Suitable fungicides which are known from the literature are, for example, the following products:

- aldimorph, andoprim, anilazine, azoxystrobin, azaconazole, BAS 450F,
 20 benalaxyl, benodanil, benomyl, bethoxazin, binapacyl, bion (CGA-245704),
 bitertanol, bromuconazole, buthiobate, captafol, captan, carbendazim,
 carboxin, carpropamides, CGA 173506, cymoxanil, cyproconazoles,
 cyprodinil, cyprofuram, diflumetorim, dichlofluanid, dichlomezin,
 diclobutrazol, diclocymet (S-2900), diclomezine, diethofencarb,
 25 difenconazole (CGA 169374), difluconazole, dimethirimol, dimethomorph,
 diniconazole, dinocap, dithianon, dodemorph, dodine, edifenfos,
 epoxiconazole, ethirimol, etridiazol, famoxadone, (DPX-JE874), fenarimol,
 fenazaquin, fenbuconazole, fenfuram, fenhexamid, fencpiclonil, fenpropidin,
 fenpropimorph, fentin acetates, fentin hydroxides, ferimzone (TF164),
 30 fluazinam, fluobenzimine, fludioxonil, flumetover (RPA-403397),
 fluquinconazole, fluorimide, flusilazole, flusulfamide, flutolanil, flutriafol,
 folpet, fosetylaluminum, fuberidazole, furalaxyl, furconazole, furametpyr (S-
 82658), furmecyclox, guazatine, hexaconazole, imazalil, imibenconazole,
 ipconazole, iprobenfos, iprodione, isoprothiolane, KNF 317, kresoxime-



- methyl (BAS-490F), copper compounds such as Cu oxychloride, oxime-Cu, Cu oxides, mancozeb, maneb, mepanipyrim (KIF 3535), mepronil, metalaxyl, metalaxyl-M (CGA-329351), metconazole, methasulfocarb, methfuroxam, metominofen (SSF-126), mentominostrobin
- 5 (fenominostrobin, SSF-126), MON 24000, MON-6550, MON-41100, myclobutanil, nabam, nitrothalidopropyl, nuarimol, ofurace, OK-9601, OK-9603, oxadixyl, oxycarboxin, paclobutrazole, penconazole, pencycuron, PP 969, polyoxins, probenazole, propineb, prochloraz, procymidon, propamocarb, propiconazole, prothiocarb, pyracarbolid, pyrazophos,
- 10 pyrifenoxy, pyrimethanil, pyroquilon, quinoxifen (DE-795), rabenzazole, RH-7592, RH-7281, sulfur, spiroxamine, SSF-109, tebuconazole, tetraconazole, TTF 167, thiabendazole, thicyofen, thifluzamides (RH-130753), thiofanatemethyl, thiram, TM-402, tolclofos-methyl, tolyfluanid, triadimefon, triadimenol, triazoxide, trichoderma, harzianum(DHF-471),
- 15 tricyclazole, tridemorph, triflumizol, triforine, triflumizoles, (UCC-A815), triticonazoles, uniconazole, validamycin, vinchlozoline, XRD 563, zineb, sodium dodecylsulfonates, sodium dodecylsulfate, sodium C13-C15-alcohol ether sulfonate, sodium cetostearyl phosphate ester, dioctyl sodium sulfosuccinate, sodium isopropyl naphthalenesulfonate, sodium
- 20 methylenebisanthracene sulfonate, cetyl-trimethyl-ammonium chloride, salts of long-chain primary, secondary or tertiary amines, alkylpropyleneamines, laurylpyrimidinium bromide, ethoxylated quaternized fatty amines, alkylmethylbenzylammonium chloride and 1-hydroxyethyl-2-alkylimidazoline.

25

The abovementioned co-components are known active compounds, most of which are described in C.D.S. Tomlin, S.B. Walker, The Pesticide Manual, 11th edition (1997), British Crop Protection Council.

- The content of active compound of the use forms prepared from the
- 30 commercial formulations can vary within wide ranges; the active compound concentration of the use forms can be from 0.0001 to 95% by weight of active compound, and is preferably between 0.0001 and 1% by weight. Such mixtures contain, for example, from 0.05 to 0.01% by weight of a pyrethroid and from 0.5 to 2% by weight of a fungicide, such as pyrazofos



or prochloraz. The application is carried out in a customary manner adapted to the use forms.

5 The content of active compound of the use forms prepared from the commercial formulations can be from 0.00000001 to 95% by weight of active compound and is preferably between 0.00001 and 1% by weight.

In a preferred variant of the process according to the invention, the insecticidally active compound and a fungicide are applied together.

10

Application is carried out in a customary manner adapted to the use forms.

The process according to the invention is preferably suitable for application in the first (L1) larval stage, but preference is likewise given to application
15 in later (L2 and/or L3) larval stages and/or in adult insects, in particular when controlling Lepidoptera.

For the purpose of the invention, the term "Bt cotton" is to be understood as cotton plants or crops which are genetically modified in such a way that
20 they contain and express one or more genes from *Bacillus thuringiensis* which encode crystal proteins from the Cry family, see, for example, D.L. Prieto-Sansón et al., J. Ind. Microbiol. & Biotechnol. 1997, 19, 202 and 1997 BCPL Symposium Proceedings No. 68, 83-100).

25 Preference is given to genes encoding the proteins Cry1Aa, Cry1Ad, Cry1Ab, Cry1Ae, Cry1Ac, Cry1Fa, Cry1Fb, Cry1Ga, Cry1Gb, Cry1Da, Cry1Db, Cry1Ha, Cry1Hb, Cry1Ca, Cry1Cb, Cry1Ea, Cry1Eb, Cry1Ja, Cry1Jb, Cry1Bb, Cry1Bc, Cry1Bd, Cry1Ba, Cry1Ka, Cry1Ia, Cry1Ib, Cry7Aa, Cry7Ab, Cry9Ca, Cry9Da, Cry9Ba, Cry9Aa, Cry8Aa, Cry8Ba, Cry8Ca,
30 Cry3Aa, Cry3Ca, Cry3Ba, Cry3Bb, Cry4Aa, Cry4Ba, Cry10Aa, Cry19Aa, Cry19Ba, Cry16Aa, Cry17Aa, Cry5Ab, Cry5Ba, Cry12Aa, Cry13Aa, Cry14Aa, Cry15Aa, Cry2Aa, Cry2Ab, Cry2Ac, Cry18Aa, Cry11Aa, Cry11Ba, Cyt1Aa, Cyt1Ab, Cyt1Ba, Cyt2Aa, Cyt2Ba, Cry6Aa, Cry6Ba.



Particular preference is given to Cry3Ca, CryIAb, Cry7Aa, Cry9C and CryIDa.

Likewise, particular preference is given to CryIAa, CryIAb, CryIAc, CryIB,
5 CryIC, Cry2A, Cry3, Cry3A, Cry3C, Cry5 and Cry9C.

Very particular preference is given to the subfamilies CryI and Cry9, in particular to Cry IA, CryIC, CryIF, and Cry9C.

10 Preference is furthermore given to using plants containing genes for a plurality of Bt proteins.

In addition to the expression of toxins from *Bacillus thuringiensis* (Bt) for insect resistance, the transgenic crop plants may also have other
15 transgenic properties, for example further insect resistances (for example by expression of a protease or peptidase inhibitor, cf. WO-A-95/35031), herbicide resistances (for example against glufosinates or glyphosates by expression of the pat or bar gene) or else resistance against nematodes, fungi or viruses (for example by expression of a glucanase, chitinase), or
20 may also be genetically modified in their metabolic properties, resulting in a qualitative and/or quantitative change of ingredients (for example by modification of the energy, carbohydrate, fatty acid or nitrogen metabolism or by metabolite streams which influence these).

Preference is given, for example, to Bt cotton plants which additionally
25 have glufosinate or glyphosate resistance.

Bt cotton is known and, including methods for its preparation, described in detail, for example, in US-A-5,322,938; Prietro-Samsonór et al., J. Ind. Microbiol. & Biotechn. 1997, 19, 202, and H. Agaisse and D. Lereclus, J.
30 Bacteriol. 1996, 177, 6027.



Bt cotton is furthermore commercially available in different varieties, for example under the name NuCOTN® from Deltapine (USA).

For the method according to the invention, preference is given to the following types of Bt cotton: NuCOTN33® and NuCOTN33B®.

Routes for preparing transgenic plants which, in comparison to naturally occurring plants, have modified properties, consist, for example, in the use of genetic engineering process (see, for example, Willmitzer L., 1993, Transgenic plants. In: Biotechnology, A Multivolume Comprehensive Treatise, Rehm et al. (eds.) Vol.2, 627-659, VCH Weinheim, Germany; D'Halluin et al., 1992, Biotechnology 10, 309-314, McCormick et al., Plant Cell Reports, 1986, 5, 81-84; EP-A-0221044 and EP-A-0131624).

What is described is, for example, the preparation of genetically modified plants with respect to modifications of the hydrocarbon metabolism of the plant (for example WO 94/28146, WO 92/11376, WO 92/14827, WO 91/19806), resistances against certain herbicides, for example of the glufosinate type (cf., for example EP-A-0242236, EP-A-242246) or glyphosate type (for example WO 92/00377).

Numerous techniques of molecular biology which allow the preparation of novel transgenic plants having modified properties are known to the person skilled in the art; see, for example, Sambrook et al., 1989, Molecular Cloning, A Laboratory Manual, 2nd Ed. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY; or Winnacker, Gene und Klon [Genes and clones], VCH Weinheim 2nd Edition, 1996 or Christou, Trends in Plant Science 1 (1996) 423-431).

In order to carry out such genetic manipulations, it is possible to introduce suitable nucleic acid molecules into plants or plant cells, for example by using suitable vectors which allow mutagenesis or a change in the sequence to occur by recombination of DNA sequences. Using the abovementioned standard processes, it is possible, for example, to exchange bases, to remove partial sequences or to add natural or synthetic sequences. It is also possible, for example, to replace the naturally occurring genes completely by heterologous or synthetic genes,



preferably under the control of a promoter which is active in plant cells ("gene replacement"). To link the DNA fragments with each other, it is possible to attach adapters or linkers to the fragments.

- 5 Plant cells having a reduced activity of a gene product can be prepared, for example, by expressing at least one appropriate antisense-RNA, a sense-RNA to achieve a cosuppression effect, or by expressing at least one appropriately constructed ribozyme which specifically cleaves transcripts of the abovementioned gene product.

10

To this end, it is possible to employ both DNA molecules which comprise the entire coding sequence of the gene product including any flanking sequences that may be present, and DNA molecules which comprise only parts of the coding sequence, it being necessary for these parts to be long enough to cause an antisense effect in the cells. It is also possible to use DNA sequences which have a high degree of homology to the coding sequences of a gene product but which are not entirely identical.

15

When expressing nucleic acid molecules in plants, the synthesized protein can be localized in any desired compartment of the plant cells. However, to achieve localization in a certain compartment, it is, for example, possible to link the coding region with DNA sequences which ensure localization in a certain compartment or at a certain point of time (at a certain stage or chemically or biologically induced) (for example transit or signal peptides, time- or site-specific promoters). Such sequences are known to the person skilled in the art (see, for example, Braun et al., *EMBO J.* 11 (1992), 3219-3227; Wolter et al., *Proc. Natl. Acad. Sci. USA* 85 (1988), 846-850; Sonnewald et al., *Plant J.* 1 (1991), 95-106).

20

25

- 30 Transgenic plant cells can be regenerated to whole plants using known techniques.



In this manner, it is possible to obtain transgenic plants which have modified properties by overexpression, suppression or inhibition of

homologous (i.e. natural) genes or gene sequences or by expression of heterologous (i.e. foreign) genes or gene sequences.

- The process according to the invention is suitable for controlling a large
- 5 number of harmful organisms which occur, in particular, in cotton, in particular insects, arachnids and helminths, very particularly preferably insects and arachnids. The abovementioned pests include:
- From the order of the Acarina, for example *Acarus siro*, *Argas* spp., *Ornithodoros* spp., *Dermanyssus gallinae*, *Eriophyes ribis*, *Phyllocoptruta*
- 10 *oleivora*, *Boophilus* spp., *Rhipicephalus* spp., *Amblyomma* spp., *Hyalomma* spp., *Ixodes* spp., *Psoroptes* spp., *Chorioptes* spp., *Sarcoptes* spp., *Tarsonemus* spp., *Bryobia praetiosa*, *Panonychus* spp., *Tetranychus* spp., *Eotetranychus* spp., *Oligonychus* spp. and *Eutetranychus* spp.
- From the order of the Isopoda, for example, *Oniscus asellus*, *Armadium*
- 15 *vulgar* and *Porcellio scaber*.
- From the order of the Diplopoda, for example, *Blaniulus guttulatus*.
- From the order of the Chilopoda for example, *Geophilus carpophagus* and *Scutigera* spp.
- From the order of the Symphyla, for example, *Scutigrella immaculata*.
- 20 From the order of the Thysanura, for example, *Lepisma saccharina*.
- From the order of the Collembola, for example, *Onychiurus armatus*.
- From the order of the Orthoptera, for example, *Blatta orientalis*, *Periplaneta americana*, *Leucophaea madeirae*, *Blattella germanica*, *Acheta domesticus*, *Gryllotalpa* spp., *Locusta migratoria migratorioides*,
- 25 *Melanoplus differentialis* and *Schistocerca gregaria*.
- From the order of the Isoptera, for example, *Reticulitermes* spp.
- From the order of the Anoplura, for example, *Phylloera vastatrix*, *Pemphigus* spp., *Pediculus humanus corporis*, *Haematopinus* spp. and *Linognathus* spp.
- 30 From the order of the Mallophaga, for example, *Trichodectes* pp. and *Damalinae* spp.
- From the order of the Thysanoptera, for example, *Hercinothrips femoralis*, *Thrips tabaci*.



From the order of the Heteroptera, for example, *Eurygaster* spp.,
Dysdercus intermedius, *Piesma quadrata*, *Cimex lectularius*, *Rhodnius*
prolixus and *Triatoma* spp.

From the order of the Homoptera, for example, *Aleurodes brassicae*,

- 5 *Bemisia tabaci*, *Trialeurodes vaporariorum*, *Aphis gossypii*, *Brevicoryne*
brassicae, *Cryptomyzus ribis*, *Doralis fabae*, *Doralis pomi*, *Eriosoma*
lanigerum, *Hyalopterus arundinis*, *Macrosiphum avenae*, *Myzus* spp.,
Phorodon humuli, *Rhopalosiphum padi*, *Empoasca* spp., *Euscelus*
bilobatus, *Nephotettix cincticeps*, *Lecanium corni*, *Saissetia oleae*,

- 10 *Laodelphax striatellus*, *Nilaparvata lugens*, *Aonidiella aurantii*, *Aspidiotus*
hederae, *Pseudococcus* spp and *Psylla* spp.

From the order of the Lepidoptera, for example, *Pectinophora gossypiella*,
Bupalus piniarius, *Cheimatobia brumata*, *Lithocolletis blancardella*,
Hyponomeuta padella, *Plutella maculipennis*, *Malacosoma neustria*,

- 15 *Euproctis chrysorrhoea*, *Lymantria* spp., *Bucculatrix thurberiella*,
Phyllocnistis citrella, *Agrotis* spp., *Euxoa* spp., *Feltia* spp., *Earias insulana*,
Heliothis spp., *Laphygma exigua*, *Mamestra brassicae*, *Panolis flammea*,
Prodenia litura, *Spodoptera* spp., *Trichoplusia ni*, *Carpocapsa pomonella*,
Pieris spp., *Chilo* spp., *Pyrausta nubilalis*, *Ephestia kuehniella*, *Galleria*
20 *mellonella*, *Cacoecia podana*, *Capua reticulana*, *Choristoneura fumiferana*,
Clysia ambiguella, *Homona magnanima*, *Tortrix viridana*.

From the order of the Coleoptera, for example, *Anobium punctatum*,
Rhizopertha dominica, *Bruchidius obtectus*, *Acanthoscelides obtectus*,
Hylotrupes bajulus, *Agelastica alni*, *Leptinotarsa decemlineata*, *Phaedon*

- 25 *cochleariae*, *Diabrotica* spp., *Psylloides chrysocephala*, *Epilachna*
varivestis, *Atomaria* spp., *Oryzaephilus surinamensis*, *Anthonomus* spp.,
Sitophilus spp., *Otiorrhynchus sulcatus*, *Cosmopolites sordidus*,
Ceuthorrhynchus assimilis, *Hypera postica*, *Dermestes* spp., *Trogoderma*,
Anthrenus spp., *Attagenus* spp., *Lyctus* spp., *Meligethes aeneus*, *Ptinus*
30 spp., *Niptus hololeucus*, *Gibbium psylloides*, *Tribolium* spp., *Tenebrio*
molitor, *Agriotes* spp., *Conoderus* spp., *Melolontha melolontha*,
Amphimallon solstitialis, *Costelytra zealandica*.

From the order of the Hymenoptera, for example, *Diprion* spp.,
Hoplocampa spp., *Lasius* spp., *Monomorium pharaonis* and *Vespa* spp.



From the order of the Diptera, for example, *Aedes* spp., *Anopheles* spp., *Culex* spp., *Drosophila melanogaster*, *Musca* spp., *Fannia* spp., *Calliphora erythrocephala*, *Lucilia* spp., *Chrysomya* spp., *Cuterebra* spp., *Gastrophilus* spp., *Hypobosca* spp., *Stomoxys* spp., *Oestrus* spp.,

- 5 *Hypoderma* spp., *Tabanus* spp., *Tannia* spp., *Bibio hortulanus*, *Oscinella frit*, *Phorbia* spp., *Pegomyia hyoscyami*, *Ceratitis capitata*, *Dacus oleae* and *Tipula paludosa*.

From the order of the Siphonaptera, for example, *Xenopsylla cheopsis* and *Ceratophyllus* spp.

- 10 From the order of the Arachnida, for example, *Scorpio maurus* and *Latrodectus mactans*.

From the class of Helminthen, for example, *Haemonchus*, *Trichostrongylus*, *Ostertagia*, *Cooperia*, *Chabertia*, *Strongyloides*, *Oesophagostomum*, *Hyostromylus*, *Ancylostoma*, *Ascaris* and *Heterakis*

- 15 as well as *Fasciola*.

The method according to the invention is preferably suitable for controlling insects from the orders Homoptera, preferably *Bemisia tabaci*,

- 20 *Trialeurodes vaporariorum*, *Aphis gossypii*, *Myzus* spp., Lepidoptera, preferably *Agrotis* spp., *Heliothis* spp., *Mamestra brassicae*, *Prodenia litura*, *Spodoptera* spp., *Trichoplusia ni*, and Coleoptera, preferably *Anthonomus* spp.

- 25 The method according to the invention is particularly preferably suitable for controlling insects from the class of the Lepidoptera, particularly preferably of Spodoptera, *Agrotis*, *Heliothis*, and very particularly preferably of *Spodoptera littoralis*, *Agrotis segetum* and *Heliothis virescens*.

- 30 Surprisingly, the method is also suitable for controlling harmful organisms which are resistant to individual classes of insecticides, such as pyrethroids, organophosphorus compounds or Bt.

The invention is illustrated in more detail by the examples, without limiting it thereby.



The contents of German Patent Application 198 25 333.8, whose priority is claimed by the present application, and the contents of the appended abstract, are incorporated herein specifically by way of reference; they are
5 considered as part of the present description by way of citation.

Example 1

Heliothis virescens

10

Seven-week-old cotton plants (common cotton, Vulkano®) and Bt cotton (NuCOTN 33B®, Delta Pine) were sprayed with the insecticides to be tested with the aid of a track sprayer (200 l/ha). After drying, plants were infected with 8 (L3) larvae of *Heliothis virescens*. Feeding damage
15 and mortality were assessed after 2 and 4 days.

Test conditions: greenhouse, 23°C, 60 % atmospheric humidity.
All three active compounds showed a synergistic effect.



Compound g of active compound/ha	2 d				4 d			
	Feeding damage/mortality				Feeding damage/mortality			
	Cotton		Bt cotton		Cotton		Bt cotton	
Control 1	5	0	<1	0	7	0	1	75
Control 2	10	0	<1	25	15	0	1	88
Thiodan (endosulfan)								
EC 33	525	0 100	<1	63	0 100	<1	88	
	175	3 63	<1	0	3 63	<1	75	
	58	5 0	<1	0	7 0	<1	75	
	19	10 0	<1	0	15 0	<1	88	
	6.5	10 0	<1	0	20 0	2	75	
Decis (deltamethrin)								
EC 2.5	10	0 75	0	75	0 100	0	100	
	3.3	0 75	0	75	0 100	0	100	
	1.1	2 75	<1	75	2 100	<1	88	
	0.37	3 13	1	37	7 50	1	100	
	0.12	12 0	<1	37	12 25	1	88	
Dipel (Bt)								
WP 3	100	<1 0	<1	13	1 100	1	100	
	33	1 0	<1	75	2 100	<1	100	
	11	1 0	<1	50	2 100	<1	100	
	3.7	4 0	<1	25	4 50	<1	100	
	1.2	6 0	<1	0	10 0	1	100	

Decis and Dipel showed a synergistic effect.



Example 2

Spodoptera littoralis

- 5 Three-month-old cotton plants (common cotton, Vulkano) and Bt cotton (NuCOTN 33B®) were sprayed with the insecticide to be tested with the aid of a track sprayer (200 l/ha). After drying, plants were infected with 10 (L3) larvae of *Spodoptera littoralis*.
Feeding damage and mortality were assessed after 2, 4 and 7 days.

10

Test conditions: (as for Example 1)

	2d				4d				7d			
	Feeding damage/ mortality				Feeding damage/ mortality				Feeding damage/ mortality			
Compound active compounds/ha	Cotton		Bt cotton		Cotton		Bt cotton		Cotton		Bt cotton	
Control 1	8	10	8	0	15	10	12	0	20	10	35	0
Control 2	10	20	10	0	12	20	15	0	20	20	50	0
Control 3	6	20	10	0	15	20	10	0	20	20	45	0
Hostathion (triazophos)												
EC 40 125	3	100	1	100	3	100	1	100	3	100	1	100
42	8	20	2	40	10	30	2	60	15	30	2	100
14	5	10	3	40	10	20	5	40	15	20	15	50
5	5	40	7	10	6	40	8	20	10	40	25	20
1.5	5	30	6	0	8	30	10	0	20	30	25	0

A synergistic effect is clearly noticeable.



Example 3

Spodoptera littoralis

- 5 Six-week-old cotton plants (common cotton, Vulkano®) and Bt cotton (NuCOTN 33B®) were sprayed with the insecticide to be tested with the aid of a track sprayer (200 l/ha). After drying, plants were infected with 10 (L3) larvae of *Spodoptera littoralis*.
Feeding damage and mortality were assessed after 2, 4 and 7 days.

10

Test conditions: (see Example 1)

	2d		4d		7d	
	Feeding damage/ mortality		Feeding damage/ mortality		Feeding damage/ mortality	
Compound active compounds/ha	Cotton	Bt cotton	Cotton	Bt cotton	Cotton	Bt cotton
Control 1	8 0	10 0	20 0	20 0	60 0	50 0
Control 2	10 0	10 0	40 0	40 0	60 0	70 0
Control 3	10 0	10 0	25 0	50 0	70 0	40 0
Thiodan (endosulfan)						
EC 33 525	2 40	3 80	5 40	3 80	10 50	4 90
175	6 0	2 10	15 0	6 30	25 0	8 80
58	6 0	8 0	20 0	25 0	35 0	50 0
19	12 0	8 0	40 0	30 0	80 0	50 0
6.5	10 0	10 0	40 0	40 0	100 0	50 0

A synergistic effect is clearly noticeable.



Example 4

Spodoptera littoralis

- 5 Seven-week-old cotton plants (common cotton, Felix®) and Bt cotton (NuCOTN 33B®) were sprayed with the insecticides to be tested with the aid of a track sprayer (200 l/ha). After drying, plants were infected with 10 (L3) larvae of Spodoptera littoralis.

Feeding damage and mortality were assessed after 2, 4 and 7 days.

10

Test conditions: (see Example 1)

	2d		4d		7d	
	Feeding damage/ mortality		Feeding damage/ mortality		Feeding damage/ mortality	
Compound active compounds/ha	Cotton	Bt cotton	Cotton	Bt cotton	Cotton	Bt cotton
Control 1	12 0	10 0	20 0	20 0	40 0	50 0
Control 2	12 0	10 0	25 0	25 0	40 0	50 0
Control 3	12 0	10 0	30 0	30 0	40 0	40 0
Brestan (fentin) WP 60						
1000	3 0	3 20	4 0	3 50	4 80	3 100
300	8 0	10 0	10 20	10 20	10 70	12 80
100	10 0	10 0	25 0	25 0	30 0	40 30
30	10 0	10 0	30 0	20 0	50 0	40 0
Piperonyl butoxide						
1500	10 0	10 0	20 20	25 20	50 20	30 50
500	10 0	10 0	20 0	25 20	40 0	40 40
166	10 0	10 0	25 0	25 0	50 0	35 20
56	10 0	8 0	20 0	20 0	40 0	40 0
Vertimec (acemectin) EC 1.8						
300	7 20	5 20	8 20	5 90	10 100	8 100
100	8 0	8 10	8 20	12 50	10 80	12 100
30	10 0	10 0	15 0	10 50	25 20	10 90
10	10 0	8 0	30 0	12 30	50 0	30 70



A synergistic effect is clearly noticeable.

Example 5

Spodoptera littoralis

- 5 Five-week-old cotton plants (common cotton, Vulkano®) and Bt cotton (NuCOTN 33B®) were sprayed with the insecticides to be tested with the aid of a track sprayer (200 l/ha). After drying, plants were infected with 10 (L3) larvae of *Spodoptera littoralis*.
Feeding damage and mortality were assessed after 2, 4 and 7 days.

10

Test conditions: (see Example 1)

Compound active compounds/ha	2d				4d				7d			
	Feeding damage/mortality				Feeding damage/mortality				Feeding damage/mortality			
	Cotton		Bt cotton		Cotton		Bt cotton		Cotton		Bt cotton	
Control	10	0	10	0	35	0	15	0	50	0	20	0
Decis EC 2.5												
30	0	80	1	100	0	100	1	100	0	100	1	100
10	1	90	3	70	1	100	3	80	1	100	8	100
3	5	20	5	70	25	20	6	80	40	20	8	100
1	10	10	8	10	25	10	12	10	40	10	25	10
Thiodan EC33												
1000	1	90	0	80	1	100	0	100	1	100	0	100
300	4	40	0	80	5	40	0	80	8	40	0	100
100	5	40	3	60	10	40	6	60	20	40	10	60
Decisdan EC 0.5 (5+350g/l)												
30+2100	0	100	0	100	0	100	0	100	0	100	0	100
10+700	0	100	0	100	0	100	0	100	0	100	0	100
3+210	1	90	0	100	2	90	0	100	2	90	0	100
1+70	5	30	5	60	15	30	12	60	25	30	25	60
Decisdan EC 0.5 (5+300g/l)												
30+2100	0	100	0	100	0	100	0	100	0	100	0	100
10+700	0	100	0	80	0	100	0	100	0	100	0	100
3+210	1	90	1	90	1	90	3	90	1	90	5	90
1+70	5	50	3	60	10	50	8	60	25	50	15	60



Decis, Thiodan and Decisdan (5 + 350 g/l) showed a synergistic effect.

Example 6

Agrotis segetum

- 5 Eight-week-old cotton plants (common cotton, Felix®) and Bt cotton (NuCOTN 33B®) were sprayed with the insecticides to be tested with the aid of a track sprayer (200 l/ha). After drying, plants were infected with 10 (L3) larvae of *Agrotis segetum*.
Feeding damage and mortality were assessed after 2, 4 and 7 days.

10

Test conditions: (see Example 1)

	2 d				4 d			
	Feeding damage/mortality				Feeding damage/mortality			
Compound active compounds/ha	Cotton		Bt cotton		Cotton		Bt cotton	
Control 1	3	0	3	0	10	0	4	0
Control 2	0	0	3	0	10	0	3	0
Piperonyl butoxide								
3000	1	80	0	80	1	90	0	100
1000	1	30	0	30	2	60	1	90
300	0	50	1	60	2	60	1	90
Vertimec EC (avamectin)								
1.8								
300	0	40	1	80	3	60	2	100
100	0	50	1	90	1	80	1	90
30	1	10	1	0	1	10	1	20

A synergistic effect is clearly noticeable.



Example 7

Agrotis segetum

- 5 Seven-week-old cotton plants (common cotton, Felix®) and Bt cotton (NuCOTN 33B®) were sprayed with the insecticide to be tested with the aid of a track sprayer (200 l/ha). After drying, plants were infected with 10 (L3) larvae of *Agrotis segetum*.
Feeding damage and mortality were assessed after 2, 4 and 7 days.

10

Test conditions: (see Example 1)

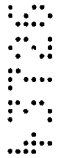
	2d				4d				7d			
	Feeding damage/ mortality				Feeding damage/ mortality				Feeding damage/ mortality			
Compound active compounds/ha	Cotton		Bt cotton		Cotton		Bt cotton		Cotton		Bt cotton	
Control 1	10	0	35	0	10	0	40	0	10	0	50	0
Control 2	40	0	10	0	50	0	20	0	50	0	20	0
Control 3	20	0	20	0	30	0	30	0	40	0	35	0
Control 4	30	0	30	0	40	0	40	0	40	0	45	0
Decis (deltamethrin) EC 2.5												
10	1	60	0	50	2	70	0	90	2	80	0	100
3.3	0	0	0	40	3	30	0	50	3	30	0	50
1.1	2	0	0	20	2	20	0	30	3	20	0	30
0.37	3	0	10	20	5	20	15	20	5	10	15	20
0.12	2	0	3	0	5	0	0	0	5	0	0	0

- 15 A synergistic effect is clearly noticeable.



107a

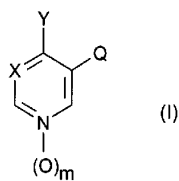
Comprises/comprising and grammatical variations thereof when used in this specification are to be taken to specify the presence of stated features, integers, steps or components or groups thereof, but do not preclude the presence or addition of one or more other features, integers, steps, components
5 or groups thereof.



THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A method for controlling harmful organisms in genetically modified cotton plants which contain a gene derived from *Bacillus thuringiensis* which encodes and expresses an insecticidally active protein, which comprises applying an insecticidally effective amount of one or more compounds from the following groups a-f to the plants, to their seeds or propagation stock and/or to the area in which they are cultivated:

- a) Organophosphorus compounds:
triazophos, monocrotophos, methamidophos, chlorpyrifos, parathion, acephate, profenofos, malathion, heptenophos;
- b) Pyrethroids:
tralomethrin, cypermethrin, cyhalothrin, lambda-cyhalothrin, deltamethrin, fenvalerates, (alpha)-cypermethrin, cyfluthrin, fenpropathrin, etofenprox;
- c) Carbamates:
aldicarb, bendiocarb, carbaryl, carbofuran, formetanates, pirimicarb;
- d) Biopesticides:
Bacillus thuringiensis, granuloses and nuclear polyhedrosis viruses, *Beauveria bassiana*, *Beauveria brogniartii*, baculoviruses, such as *Autographa californica*;
- e) Others:
endosulfan, abamectin, XDE-105, diafenthiuron, fipronil, chlorfenapyr, tebufenocides, fenazaquin, imidacloprid, triazamates, fentin, amitraz, MK-242;
- f) 4-Haloalkyl-3-heterocyclylpyridines and 4-haloalkyl-5-heterocyclylpyrimidines of the formula (I), if appropriate also in the form of their salts,



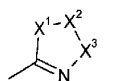
where the symbols and indices have the following meanings:

Y is halo-C₁-C₆-alkyl;

X is CH or N;

m is 0 or 1;

Q is a 5-membered heterocyclic group



in which

a) $X^1 = W$, $X^2 = NR^a$, $X^3 = CR^bR^1$ or

b) $X^1 = NR^a$, $X^2 = CR^bR^1$, $X^3 = W$ or

c) $X^1 = V$, $X^2 = CR^aR^1$, $X^3 = NR^b$ or

d) $X^1 = V$, $X^2 = CR^aR^2$, $X^3 = CR^bR^3$ or

e) $X^1 = V$, $X^2 = CR^4R^5$, $X^3 = CR^6R^7$ or

f) $X^1 = NR^a$, $X^2 = CR^bR^1$, $X^3 = NR^8$;

R^a and R^b together are a bond

V is oxygen, sulfur or NR^9 ;

W is oxygen or sulfur;

R^1 is hydrogen,

(C₁-C₂₀)-alkyl, (C₂-C₂₀)-alkenyl, (C₂-C₂₀)-alkynyl, (C₃-C₈)-cycloalkyl,

(C₄-C₈)-cycloalkenyl, (C₆-C₈)-cycloalkynyl,

5 where the six last-mentioned radicals are optionally substituted by one or more radicals from the group

halogen, cyano, nitro, hydroxyl, $-C(=W)R^{10}$, $-C(=NOR^{10})R^{10}$,

$-C(=NNR^{10}_2)R^{10}$, $-C(=W)OR^{10}$, $-C(=W)NR^{10}_2$, $-OC(=W)R^{10}$,

$-OC(=W)OR^{10}$, $-NR^{10}C(=W)R^{10}$, $-N[C(=W)R^{10}]_2$,

10 $-NR^{10}C(=W)OR^{10}$, $-C(=W)NR^{10}NR^{10}_2$,

$-C(=W)NR^{10}NR^{10}[C(=W)R^{10}]$, $-NR^{10}C(=W)NR^{10}_2$,

$-NR^{10}NR^{10}C(=W)R^{10}$, $-NR^{10}N[C(=W)R^{10}]_2$, $-N[(C=W)R^{10}]$ -

NR^{10}_2 ,

$-NR^{10}NR^{10}[(C=W)R^{10}]$, $-NR^{10}NR^{10}[(C=W)WR^{10}]$,

15 $-NR^{10}R^{10}[(C=W)NR^{10}_2]$, $-NR^{10}(C=NR^{10})R^{10}$,

$-NR^{10}(C=NR^{10})NR^{10}_2$,

$-O-NR^{10}_2$, $-O-NR^{10}(C=W)R^{10}$, $-SO_2NR^{10}_2$, $-NR^{10}SO_2R^{10}$,

$-SO_2OR^{10}$, $-OSO_2R^{10}$, $-OR^{10}$, $-NR^{10}_2$, $-SR^{10}$, $-SiR^{10}_3$,

$-SeR^{10}$, $-PR^{10}_2$, $-P(=W)R^{10}_2$,

20 $-SOR^{10}$, $-SO_2R^{10}$, $-PW_2R^{10}_2$, $-PW_3R^{10}_2$, aryl and

heterocyclyl,

the two last-mentioned radicals optionally being substituted by one or more radicals from the group

(C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl, (C₃-

C₈)-cycloalkyl, (C₄-C₈)-cycloalkenyl, (C₆-C₈)-cycloalkynyl,

(C₁-C₆)-haloalkyl, (C₂-C₆)-haloalkenyl, (C₂-C₆)-

haloalkynyl, halogen, $-OR^{10}$, $-NR^{10}_2$, $-SR^{10}$, $-SiR^{10}_3$, -

25



$C(=W)R^{10}$, $-C(=W)OR^{10}$, $-C(=W)NR^{10}_2$, $-SOR^{10}$,
 $-SO_2R^{10}$, nitro, cyano and hydroxyl,

aryl,

which is optionally substituted by one or more radicals from the
 group

5

(C_1-C_6) -alkyl, (C_2-C_6) -alkenyl, (C_2-C_6) -alkynyl, (C_3-C_8) -
 cycloalkyl, (C_4-C_8) -cycloalkenyl and (C_6-C_8) -cycloalkynyl,
 where these six abovementioned radicals are optionally
 substituted by one or more radicals from the group

10

halogen, cyano, nitro, $-C(=W)R^{10}$, $-C(=W)OR^{10}$,
 $-C(=W)NR^{10}_2$, $-OR^{10}$, $-NR^{10}_2$, $-SR^{10}$, $-SOR^{10}$ and
 $-SO_2R^{10}$,

15

halogen, cyano, nitro, $-C(=W)R^{10}$, $-C(=NOR^{10})R^{10}$,
 $-C(=NNR^{10}_2)R^{10}$, $-C(=W)OR^{10}$, $-C(=W)NR^{10}_2$, $-OC(=W)R^{10}$,
 $-OC(=W)OR^{10}$, $-NR^{10}C(=W)R^{10}$, $-N[C(=W)R^{10}]_2$,
 $-NR^{10}C(=W)OR^{10}$, $-OR^{10}$, $-NR^{10}_2$, $-SR^{10}$, $-SiR^{10}_3$, $-PR^{10}_2$,
 $-SOR^{10}$, $-SO_2R^{10}$, $-PW_2R^{10}_2$ and $-PW_3R^{10}_2$,

heterocyclyl,

which is optionally substituted by one or more radicals from the
 group

20

(C_1-C_6) -alkyl, (C_2-C_6) -alkenyl, (C_2-C_6) -alkynyl, (C_3-C_8) -
 cycloalkyl, (C_4-C_8) -cycloalkenyl and (C_6-C_8) -cycloalkynyl,
 where the six abovementioned radicals are optionally
 substituted by one or more radicals from the group

25

cyano, nitro, halogen, $-C(=W)R^{10}$, $-C(=W)OR^{10}$,
 $-C(=W)NR^{10}_2$, $-NR^{10}C(=W)R^{10}$, $-N[C(=W)R^{10}]_2$,
 $-OC(=W)R^{10}$, $-OC(=W)OR^{10}$, $-OR^{10}$, $-NR^{10}_2$, $-SR^{10}$,
 $-SOR^{10}$ and $-SO_2R^{10}$,



- halogen, cyano, nitro, $-C(=W)R^{10}$, $-C(=W)OR^{10}$,
 $-C(=W)NR^{10}_2$, $-OC(=W)R^{10}$, $-OR^{10}$, $-NR^{10}_2$, $-SR^{10}$, $-SOR^{10}$
 and $-SO_2R^{10}$,
 $-OR^{10}$, $-NR^{10}_2$, $-SR^{10}$, $-SOR^{10}$, $-SO_2R^{10}$, $-C(=W)R^{10}$,
 5 $-C(=NOR^{10})R^{10}$, $-C(=NNR^{10}_2)R^{10}$, $-C(=W)OR^{10}$,
 $-C(=W)NR^{10}_2$, $-OC(=W)R^{10}$, $-OC(=W)OR^{10}$, $-NR^{10}C(=W)R^{10}$,
 $-N[C(=W)R^{10}]_2$, $-NR^{10}C(=W)OR^{10}$, $-C(=W)NR^{10}-NR^{10}_2$,
 $-C(=W)NR^{10}-NR^{10}[C(=W)R^{10}]$, $-NR^{10}-C(=W)NR^{10}_2$, $-NR^{10}-$
 $NR^{10}C(=W)R^{10}$, $-NR^{10}-NC(=W)R^{10}_2$, $-N(C=W)R^{10}-NR^{10}_2$,
 10 $-NR^{10}-NR^{10}[(C=W)R^{10}]$, $-NR^{10}-NR^{10}[(C=W)WR^{10}]$, $-NR^{10}-$
 $NR^{10}[(C=W)NR^{10}_2]$, $-NR^{10}(C=NR^{10})R^{10}$,
 $-NR^{10}(C=NR^{10})NR^{10}_2$, $-O-NR^{10}_2$, $-O-NR^{10}(C=W)R^{10}$,
 $-SO_2NR^{10}_2$, $-NR^{10}SO_2R^{10}$, $-SO_2OR^{10}$, $-OSO_2R^{10}$,
 $-SC(=W)R^{10}$, $-SC(=W)OR^{10}$, $-SC(=W)R^{10}$, $-PR^{10}_2$, $-PW_2R^{10}_2$,
 15 $-PW_3R^{10}_2$, SiR^{10}_3 or halogen;

R^2 and R^3 independently of one another have the definitions given in R^1 ;

- R^2 and R^3 together form a 5- to 7-membered ring which may be partially or
 20 fully unsaturated and may be interrupted by one or more atoms from the
 group nitrogen, oxygen and sulfur, the oxygen atoms not being directly
 adjacent to one another, and the ring optionally being substituted by one or
 more, but at most 5, radicals R^1 ;

- 25 R^4 and R^6 independently of one another have the definitions given in R^1 ;



R^4 and R^6 together form a 4- to 7-membered ring which may be partially or fully unsaturated and may be interrupted by one or more atoms from the group nitrogen, oxygen and sulfur, the oxygen atoms not being directly adjacent to one another, and the ring optionally being substituted by one or more, but at most 5, radicals R^1 ;

R^5 and R^7 independently of one another are hydrogen,

(C_1 - C_{20})-alkyl, (C_2 - C_{20})-alkenyl, (C_2 - C_{20})-alkynyl, (C_3 - C_8)-cycloalkyl, (C_4 - C_8)-cycloalkenyl, (C_6 - C_8)-cycloalkynyl,

where the six last-mentioned radicals are optionally substituted by one or more radicals from the group

halogen, cyano, nitro, hydroxyl, $-C(=W)R^{10}$, $-C(=NOR^{10})R^{10}$,
 $-C(=NNR^{10}_2)R^{10}$, $-C(=W)OR^{10}$, $-C(=W)NR^{10}_2$, $-OC(=W)R^{10}$,
 $-OC(=W)OR^{10}$, $-NR^{10}C(=W)R^{10}$, $-N[C(=W)R^{10}]_2$,
 $-NR^{10}C(=W)OR^{10}$, $-C(=W)NR^{10}-NR^{10}_2$,
 $-C(=W)NR^{10}-NR^{10}[C(=W)R^{10}]$, $-NR^{10}-C(=W)NR^{10}_2$,
 $-NR^{10}-NR^{10}C(=W)R^{10}$, $-NR^{10}-N[C(=W)R^{10}]_2$, $-N[(C=W)R^{10}]$,
 $-NR^{10}_2$, $-NR^{10}-NR^{10}[(C=W)R^{10}]$, $-NR^{10}-NR^{10}[(C=W)WR^{10}]$,
 $-NR^{10}-NR^{10}[(C=W)NR^{10}_2]$, $-NR^{10}(C=NR^{10})R^{10}$,
 $-NR^{10}(C=NR^{10})NR^{10}_2$, $-O-NR^{10}_2$, $-O-NR^{10}(C=W)R^{10}$,
 $-OR^{10}$, $-NR^{10}_2$, $-SR^{10}$, $-SiR^{10}_3$, $-SeR^{10}$, $-PR^{10}_2$,
 $-P(=W)R^{10}_2$, $-SOR^{10}$, $-SO_2R^{10}$, $-PW_2R^{10}_2$, $-PW_3R^{10}_2$.

aryl and heterocyclyl,

of which the two mentioned last are optionally substituted by one or more radicals from the group

(C_1 - C_6)-alkyl, (C_2 - C_6)-alkenyl, (C_2 - C_6)-alkynyl, (C_3 - C_8)-cycloalkyl, (C_4 - C_8)-cycloalkenyl, (C_6 - C_8)-cycloalkynyl,
(C_1 - C_6)-haloalkyl, (C_2 - C_6)-haloalkenyl, (C_2 - C_6)-



haloalkynyl, halogen, $-\text{OR}^{10}$, $-\text{NR}^{10}_2$, $-\text{SR}^{10}$, $-\text{SiR}^{10}_3$,
 $-\text{C}(=\text{W})\text{R}^{10}$, $-\text{C}(=\text{W})\text{OR}^{10}$, $-\text{C}(=\text{W})\text{NR}^{10}_2$, $-\text{SOR}^{10}$,
 $-\text{SO}_2\text{R}^{10}$, nitro, cyano and hydroxyl,

aryl,

5 which is optionally substituted by one or more radicals from the group

(C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl, (C₃-C₈)-
 cycloalkyl, (C₄-C₈)-cycloalkenyl and (C₆-C₈)-cycloalkynyl,

10 where these six abovementioned radicals are optionally substituted by one or more radicals from the group

halogen, cyano, nitro, $-\text{C}(=\text{W})\text{R}^{10}$, $-\text{C}(=\text{W})\text{OR}^{10}$,
 $-\text{C}(=\text{W})\text{NR}^{10}_2$, $-\text{OR}^{10}$, $-\text{NR}^{10}_2$, $-\text{SR}^{10}$, $-\text{SOR}^{10}$ and
 $-\text{SO}_2\text{R}^{10}$,

15 halogen, cyano, nitro, $-\text{C}(=\text{W})\text{R}^{10}$, $-\text{C}(=\text{NOR}^{10})\text{R}^{10}$,
 $-\text{C}(=\text{NNR}^{10}_2)\text{R}^{10}$, $-\text{C}(=\text{W})\text{OR}^{10}$, $-\text{C}(=\text{W})\text{NR}^{10}_2$, $-\text{OC}(=\text{W})\text{R}^{10}$,
 $-\text{OC}(=\text{W})\text{OR}^{10}$, $-\text{NR}^{10}\text{C}(=\text{W})\text{R}^{10}$, $-\text{N}[\text{C}(=\text{W})\text{R}^{10}]_2$,
 $-\text{NR}^{10}\text{C}(=\text{W})\text{OR}^{10}$, $-\text{OR}^{10}$, $-\text{NR}^{10}_2$, $-\text{SR}^{10}$, $-\text{SiR}^{10}_3$, $-\text{PR}^{10}_2$,
 $-\text{SOR}^{10}$, $-\text{SO}_2\text{R}^{10}$, $-\text{PW}_2\text{R}^{10}_2$ and $-\text{PW}_3\text{R}^{10}_2$.

20 pyridyl,

which is optionally substituted by one or more radicals from the group

(C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl, (C₃-C₈)-
 25 cycloalkyl, (C₄-C₈)-cycloalkenyl and (C₆-C₈)-cycloalkynyl,

where the six abovementioned radicals are optionally substituted by one or more radicals from the group

cyano, nitro, halogen, $-\text{C}(=\text{W})\text{R}^{10}$, $-\text{C}(=\text{W})\text{OR}^{10}$,



$-C(=W)NR^{10}_2$, $-OR^{10}$, $-NR^{10}_2$, $-SR^{10}$, $-SOR^{10}$ and
 $-SO_2R^{10}$,

halogen, cyano, nitro, $-C(=W)R^{10}$, $-C(=W)OR^{10}$,
 $-C(=W)NR^{10}_2$, $-OC(=W)R^{10}$, $-OR^{10}$, $-NR^{10}_2$, $-SR^{10}$, $-SOR^{10}$
 5 and $-SO_2R^{10}$,

$-C(=W)R^{10}$, $-C(=NOR^{10})R^{10}$, $-C(=NNR^{10}_2)R^{10}$, $-C(=W)OR^{10}$,
 $-C(=W)NR^{10}_2$ or halogen;

R^4 and R^5 together form a 4- to 7-membered ring which may be partially

10 unsaturated and may be interrupted by one or more atoms from the group
 nitrogen, oxygen and sulfur, oxygen atoms not being directly adjacent to
 one another, and the ring optionally being substituted by one or more, but
 at most 5, radicals R^1 ;

R^4 and R^5 together form one of the groups $=O$, $=S$ or $=N-R^9$;

15

R^6 and R^7 together form a 5- to 7-membered ring which may be partially
 unsaturated and may be interrupted by one or more atoms from the group
 nitrogen, oxygen and sulfur, oxygen atoms not being directly adjacent to
 one another, and the ring optionally being substituted by one or more, but

20 at most 5, radicals R^1 ;

R^6 and R^7 together form one of the groups $=O$, $=S$ or $=N-R^9$;

R^8 is hydrogen,

25

(C_1-C_6)-alkyl, (C_2-C_6)-alkenyl, (C_2-C_6)-alkynyl, (C_3-C_8)-
 cycloalkyl, (C_4-C_8)-cycloalkenyl, (C_3-C_8)-cycloalkyl-(C_1-C_4)-
 alkyl, (C_4-C_8)-cycloalkenyl-(C_1-C_4)-alkyl, (C_3-C_8)-cycloalkyl-(C_2 -
 C_4)-alkenyl, (C_4-C_8)-cycloalkenyl-(C_1-C_4)-alkenyl, (C_1-C_6)-alkyl-



(C₃-C₈)-cycloalkyl, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkyl, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkyl, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenyl, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenyl,

5 where the fourteen last-mentioned radicals are optionally substituted by one or more radicals from the group

halogen, cyano, nitro, hydroxyl, thio, amino, formyl, (C₁-C₆)-alkoxy, (C₂-C₆)-alkenyloxy, (C₂-C₆)-alkynyloxy, (C₁-C₆)-haloalkyloxy, (C₂-C₆)-haloalkenyloxy, (C₂-C₆)-haloalkynyloxy, (C₃-C₈)-cycloalkoxy, (C₄-C₈)-cycloalkenyloxy, (C₃-C₈)-halocycloalkoxy, (C₄-C₈)-halocycloalkenyloxy, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkoxy, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkoxy, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenyloxy, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenyloxy, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkoxy, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkoxy, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkoxy, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenyloxy, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenyloxy, (C₁-C₄)-alkoxy-(C₁-C₆)-alkoxy, (C₁-C₄)-alkoxy-(C₂-C₆)-alkenyloxy, carbamoyl, (C₁-C₆)-mono- or dialkylcarbamoyl, (C₁-C₆)-mono- or dihaloalkylcarbamoyl, (C₃-C₈)-mono- or dicycloalkylcarbamoyl, (C₁-C₆)-alkoxycarbonyl, (C₃-C₈)-cycloalkoxycarbonyl, (C₁-C₆)-alkanoyloxy, (C₃-C₈)-cycloalkanoyloxy, (C₁-C₆)-haloalkoxycarbonyl, (C₁-C₆)-haloalkanoyloxy, (C₁-C₆)-alkaneamido, (C₁-C₆)-haloalkaneamido, (C₂-C₆)-alkeneamido, (C₃-C₈)-



- cycloalkaneamido, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkaneamido,
 (C₁-C₆)-alkylthio, (C₂-C₆)-alkenylthio, (C₂-C₆)-alkynylthio,
 (C₁-C₆)-haloalkylthio, (C₂-C₆)-haloalkenylthio, (C₂-C₆)-
 haloalkynylthio, (C₃-C₈)-cycloalkylthio, (C₄-C₈)-
 5 cycloalkenylthio, (C₃-C₈)-halocycloalkylthio, (C₄-C₈)-
 halocycloalkenylthio, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkylthio,
 (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylthio, (C₃-C₈)-cycloalkyl-
 (C₂-C₄)-alkenylthio, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenylthio,
 (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkylthio, (C₂-C₆)-alkenyl-(C₃-C₈)-
 10 cycloalkylthio, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylthio, (C₁-C₆)-
 alkyl-(C₄-C₈)-cycloalkenylthio, (C₂-C₆)-alkenyl-(C₄-C₈)-
 cycloalkenylthio, (C₁-C₆)-alkylsulfinyl, (C₂-C₆)-alkenylsulfinyl,
 (C₂-C₆)-alkynylsulfinyl, (C₁-C₆)-haloalkylsulfinyl, (C₂-C₆)-
 haloalkenylsulfinyl, (C₂-C₆)-haloalkynylsulfinyl, (C₃-C₈)-
 15 cycloalkylsulfinyl, (C₄-C₈)-cycloalkenylsulfinyl, (C₃-C₈)-
 halocycloalkylsulfinyl, (C₄-C₈)-halocycloalkenylsulfinyl, (C₃-C₈)-
 cycloalkyl-(C₁-C₄)-alkylsulfinyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-
 alkylsulfinyl, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenylsulfinyl, (C₄-
 C₈)-cycloalkenyl-(C₁-C₄)-alkenylsulfinyl, (C₁-C₆)-alkyl-(C₃-
 20 C₈)-cycloalkylsulfinyl, (C₂-C₆)-alkenyl-(C₃-C₈)-
 cycloalkylsulfinyl, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylsulfinyl,
 (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenylsulfinyl, (C₂-C₆)-alkenyl-
 (C₄-C₈)-cycloalkenylsulfinyl, (C₁-C₆)-alkylsulfonyl, (C₂-C₆)-
 alkenylsulfonyl, (C₂-C₆)-alkynylsulfonyl, (C₁-C₆)-
 haloalkylsulfonyl, (C₂-C₆)-haloalkenylsulfonyl, (C₂-C₆)-



- haloalkynylsulfonyl, (C₃-C₈)-cycloalkylsulfonyl, (C₄-C₈)-
 cycloalkenylsulfonyl, (C₃-C₈)-halocycloalkylsulfonyl, (C₄-C₈)-
 halocycloalkenylsulfonyl, (C₃-C₈)-cycloalkyl-(C₁-C₄)-
 alkylsulfonyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylsulfonyl, (C₃-
 5 C₈)-cycloalkyl-(C₂-C₄)-alkenylsulfonyl, (C₄-C₈)-cycloalkenyl-
 (C₁-C₄)-alkenylsulfonyl, (C₁-C₆)-alkyl-(C₃-C₈)-
 cycloalkylsulfonyl, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkylsulfonyl,
 (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylsulfonyl, (C₁-C₆)-alkyl-(C₄-
 C₈)-cycloalkenylsulfonyl, (C₂-C₆)-alkenyl-(C₄-C₈)-
 10 cycloalkenylsulfonyl, (C₁-C₆)-alkylamino, (C₂-C₆)-
 alkenylamino, (C₂-C₆)-alkynylamino, (C₁-C₆)-haloalkylamino,
 (C₂-C₆)-haloalkenylamino, (C₂-C₆)-haloalkynylamino, (C₃-
 C₈)-cycloalkylamino, (C₄-C₈)-cycloalkenylamino, (C₃-C₈)-
 halocycloalkamino, (C₄-C₈)-halocycloalkenylamino, (C₃-C₈)-
 15 cycloalkyl-(C₁-C₄)-alkylamino, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-
 alkylamino, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenylamino, (C₄-C₈)-
 cycloalkenyl-(C₁-C₄)-alkenylamino, (C₁-C₆)-alkyl-(C₃-C₈)-
 cycloalkylamino, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkylamino,
 (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylamino, (C₁-C₆)-alkyl-(C₄-
 20 C₈)-cycloalkenylamino, (C₂-C₆)-alkenyl-(C₄-C₈)-
 cycloalkenylamino, (C₁-C₆)-trialkylsilyl, aryl, aryloxy, arylthio,
 arylamino, arylcarbonyl, aroyl, aroyloxy, aryloxy, carbonyl,
 aryl-(C₁-C₄)-alkoxy, aryl-(C₂-C₄)-alkenyloxy, aryl-(C₁-C₄)-
 alkylthio, aryl-(C₂-C₄)-alkenylthio, aryl-(C₁-C₄)-alkylamino,
 aryl-(C₂-C₄)-alkenylamino, aryl-(C₁-C₆)-dialkylsilyl, diaryl-(C₁-
 C₆)-alkylsilyl, triarylsilyl and 5- or 6-membered heterocyclyl,



of which the nineteen last-mentioned radicals are optionally substituted in their cyclic moiety by one or more substituents from the group

- 5 halogen, cyano, nitro, amino, hydroxyl, thio,
 (C₁-C₄)-alkyl, (C₁-C₄)-haloalkyl, (C₁-C₄)-alkoxy,
 (C₁-C₄)-haloalkoxy, (C₁-C₄)-alkylthio, (C₁-C₄)-
 haloalkylthio, (C₁-C₄)-alkylamino, (C₁-C₄)-haloalkylamino,
 formyl and (C₁-C₄)-alkanoyl,
 10 aryl, which is optionally substituted by one or more radicals from
 the group
 halogen, cyano, nitro, hydroxyl, thio, amino, formyl, (C₁-C₆)-
 alkoxy, (C₂-C₆)-alkenyloxy, (C₂-C₆)-alkynyloxy, (C₁-C₆)-
 haloalkyloxy, (C₂-C₆)-haloalkenyloxy, (C₂-C₆)-haloalkynyloxy,
 (C₃-C₈)-cycloalkoxy, (C₄-C₈)-cycloalkenyloxy, (C₃-C₈)-
 15 halocycloalkoxy, (C₄-C₈)-halocycloalkenyloxy, carbamoyl,
 (C₁-C₆)-mono- or dialkylcarbamoyl, (C₁-C₆)-alkoxycarbonyl,
 (C₁-C₆)-alkanoyloxy, (C₁-C₆)-mono- or dihaloalkylcarbamoyl,
 (C₁-C₆)-haloalkoxycarbonyl, (C₁-C₆)-haloalkanoyloxy, (C₁-
 C₆)-alkaneamido, (C₁-C₆)-haloalkaneamido, (C₂-C₆)-
 20 alkeneamido, (C₁-C₆)-alkylthio, (C₂-C₆)-alkenylthio, (C₂-C₆)-
 alkynylthio, (C₁-C₆)-haloalkylthio, (C₂-C₆)-haloalkenylthio,
 (C₂-C₆)-haloalkynylthio, (C₃-C₈)-cycloalkylthio, (C₄-C₈)-
 cycloalkenylthio, (C₃-C₈)-halocycloalkthio, (C₃-C₈)-
 halocycloalkenylthio, (C₁-C₆)-alkylsulfinyl, (C₂-C₆)-
 25 alkenylsulfinyl, (C₂-C₆)-alkynylsulfinyl, (C₁-C₆)-
 haloalkylsulfinyl, (C₂-C₆)-haloalkenylsulfinyl, (C₂-C₆)-
 haloalkynylsulfinyl, (C₃-C₈)-cycloalkylsulfinyl, (C₄-C₈)-



cycloalkenylsulfinyl, (C₃-C₈)-halocycloalkylsulfinyl, (C₄-C₈)-
 halocycloalkenylsulfinyl, (C₁-C₆)-alkylsulfonyl, (C₂-C₆)-
 alkenylsulfonyl, (C₂-C₆)-alkynylsulfonyl, (C₁-C₆)-
 haloalkylsulfonyl, (C₂-C₆)-haloalkenylsulfonyl, (C₂-C₆)-
 haloalkynylsulfonyl, (C₃-C₈)-cycloalkylsulfonyl, (C₄-C₈)-
 cycloalkenylsulfonyl, (C₃-C₈)-halocycloalkylsulfonyl, (C₄-C₈)-
 halocycloalkenylsulfonyl, (C₁-C₆)-alkylamino, (C₂-C₆)-
 alkenylamino, (C₂-C₆)-alkynylamino, (C₁-C₆)-haloalkylamino,
 (C₂-C₆)-haloalkenylamino, (C₂-C₆)-haloalkynylamino, (C₃-
 C₈)-cycloalkylamino, (C₄-C₈)-cycloalkenylamino, (C₃-C₈)-
 halocycloalkylamino and (C₄-C₈)-halocycloalkenylamino,
 -C(=W)R¹¹, OR¹¹ or NR¹¹₂;

R⁹ is (C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl, (C₃-C₈)-
 cycloalkyl, (C₄-C₈)-cycloalkenyl, (C₃-C₈)-cycloalkyl-(C₁-C₄)-
 alkyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkyl, (C₃-C₈)-cycloalkyl-(C₂-
 C₄)-alkenyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenyl,
 where the nine last-mentioned radicals are optionally substituted
 by one or more radicals from the group
 halogen, cyano, (C₁-C₆)-alkoxy, (C₂-C₆)-alkenyloxy, (C₂-C₆)
 alkynyloxy and (C₁-C₆)-haloalkyloxy;

R¹⁰ is hydrogen,
 (C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl, (C₃-C₈)-
 cycloalkyl, (C₄-C₈)-cycloalkenyl, (C₃-C₈)-cycloalkyl-(C₁-C₄)-
 alkyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkyl, (C₃-C₈)-cycloalkyl-



(C₂-C₄)-alkenyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenyl, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkyl, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkyl, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkyl, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenyl, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenyl,

5 where the fourteen last-mentioned radicals are optionally substituted by one or more radicals from the group

halogen, cyano, nitro, hydroxyl, thio, amino, formyl, (C₁-C₆)-alkoxy, (C₂-C₆)-alkenyloxy, (C₂-C₆)-alkynyloxy, (C₁-C₆)-haloalkyloxy, (C₂-C₆)-haloalkenyloxy, (C₂-C₆)-haloalkynyloxy,

10 (C₃-C₈)-cycloalkoxy, (C₄-C₈)-cycloalkenyloxy, (C₃-C₈)-halocycloalkoxy, (C₄-C₈)-halocycloalkenyloxy, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkoxy, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkoxy, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenyloxy, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenyloxy, (C₁-C₆)-alkyl-(C₃-C₈)-

15 cycloalkoxy, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkoxy, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkoxy, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenyloxy, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenyloxy, (C₁-C₄)-alkoxy-(C₁-C₆)-alkoxy, (C₁-C₄)-alkoxy-(C₂-C₆)-alkenyloxy, carbamoyl,

20 (C₁-C₆)-mono- or dialkylcarbamoyl, (C₁-C₆)-mono- or dihaloalkylcarbamoyl, (C₃-C₈)-mono- or dicycloalkylcarbamoyl, (C₁-C₆)-alkoxycarbonyl, (C₃-C₈)-cycloalkoxycarbonyl, (C₁-C₆)-alkanoyloxy, (C₃-C₈)-cycloalkanoyloxy, (C₁-C₆)-haloalkoxycarbonyl, (C₁-C₆)-haloalkanoyloxy, (C₁-C₆)-alkaneamido, (C₁-C₆)-haloalkaneamido, (C₂-C₆)-alkeneamido, (C₃-C₈)-



- cycloalkaneamido, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkaneamido,
 (C₁-C₆)-alkylthio, (C₂-C₆)-alkenylthio, (C₂-C₆)-alkynylthio,
 (C₁-C₆)-haloalkylthio, (C₂-C₆)-haloalkenylthio, (C₂-C₆)-
 haloalkynylthio, (C₃-C₈)-cycloalkylthio, (C₄-C₈)-
 5 cycloalkenylthio, (C₃-C₈)-halocycloalkthio, (C₄-C₈)-
 halocycloalkenylthio, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkylthio,
 (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylthio, (C₃-C₈)-cycloalkyl-
 (C₂-C₄)-alkenylthio, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenylthio,
 (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkylthio, (C₂-C₆)-alkenyl-(C₃-C₈)-
 10 cycloalkylthio, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylthio, (C₁-C₆)-
 alkyl-(C₄-C₈)-cycloalkenylthio, (C₂-C₆)-alkenyl-(C₄-C₈)-
 cycloalkenylthio, (C₁-C₆)-alkylsulfinyl, (C₂-C₆)-alkenylsulfinyl,
 (C₂-C₆)-alkynylsulfinyl, (C₁-C₆)-haloalkylsulfinyl, (C₂-C₆)-
 haloalkenylsulfinyl, (C₂-C₆)-haloalkynylsulfinyl, (C₃-C₈)-
 15 cycloalkylsulfinyl, (C₄-C₈)-cycloalkenylsulfinyl, (C₃-C₈)-
 halocycloalksulfinyl, (C₄-C₈)-halocycloalkenylsulfinyl, (C₃-C₈)-
 cycloalkyl-(C₁-C₄)-alkylsulfinyl,
 (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylsulfinyl, (C₃-C₈)-cycloalkyl-
 (C₂-C₄)-alkenylsulfinyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-
 20 alkenylsulfinyl, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkylsulfinyl, (C₂-
 C₆)-alkenyl-(C₃-C₈)-cycloalkylsulfinyl, (C₂-C₆)-alkynyl-(C₃-
 C₈)-cycloalkylsulfinyl, (C₁-C₆)-alkyl-(C₄-C₈)-
 cycloalkenylsulfinyl, (C₂-C₆)-alkenyl-(C₄-C₈)-
 cycloalkenylsulfinyl, (C₁-C₆)-alkylsulfonyl, (C₂-C₆)-
 alkenylsulfonyl,



- (C₂-C₆)-alkynylsulfonyl, (C₁-C₆)-haloalkylsulfonyl, (C₂-C₆)-haloalkenylsulfonyl, (C₂-C₆)-haloalkynylsulfonyl, (C₃-C₈)-cycloalkylsulfonyl, (C₄-C₈)-cycloalkenylsulfonyl, (C₃-C₈)-halocycloalkylsulfonyl, (C₄-C₈)-halocycloalkenylsulfonyl, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkylsulfonyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylsulfonyl, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenylsulfonyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenylsulfonyl, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkylsulfonyl, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkylsulfonyl, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylsulfonyl, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenylsulfonyl, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenylsulfonyl,
- (C₁-C₆)-alkylamino, (C₂-C₆)-alkenylamino, (C₂-C₆)-alkynylamino, (C₁-C₆)-haloalkylamino, (C₂-C₆)-haloalkenylamino, (C₂-C₆)-haloalkynylamino, (C₃-C₈)-cycloalkylamino, (C₄-C₈)-cycloalkenylamino, (C₃-C₈)-halocycloalkylamino, (C₄-C₈)-halocycloalkenylamino, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkylamino, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylamino, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenylamino, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkenylamino, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkylamino, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkylamino, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylamino, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenylamino, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenylamino, (C₁-C₆)-trialkylsilyl, aryl, aryloxy, arylthio, arylamino, aryl-(C₁-C₄)-alkoxy, aryl-(C₂-C₄)-alkenyloxy, aryl-(C₁-C₄)-alkylthio, aryl-(C₂-C₄)-alkenylthio, aryl-(C₁-C₄)-



alkylamino, aryl-(C₂-C₄)-alkenylamino, aryl-(C₁-C₆)-

dialkylsilyl, diaryl-(C₁-C₆)-alkylsilyl, triarylsilyl and 5- or 6-membered heterocyclyl,

5 where the cyclic moiety of the fourteen last-mentioned radicals is optionally substituted by one or more radicals from the group

halogen, cyano, nitro, amino, hydroxyl, thio, (C₁-C₄)-alkyl, (C₁-C₄)-haloalkyl, (C₃-C₈)-cycloalkyl, (C₁-C₄)-alkoxy, (C₁-C₄)-haloalkoxy, (C₁-C₄)-alkylthio, (C₁-C₄)-haloalkylthio, 10 (C₁-C₄)-alkylamino, (C₁-C₄)-haloalkylamino, formyl and (C₁-C₄)-alkanoyl,

aryl, 5- or 6-membered heteroaromatic,

where the two last-mentioned radicals are optionally substituted by one or more radicals from the group

15 halogen, cyano, nitro, hydroxyl, thio, amino, formyl, (C₁-C₆)-alkoxy, (C₂-C₆)-alkenyloxy, (C₂-C₆)-alkynyloxy, (C₁-C₆)-haloalkyloxy, (C₂-C₆)-haloalkenyloxy, (C₂-C₆)-haloalkynyloxy, (C₃-C₈)-cycloalkoxy, (C₄-C₈)-cycloalkenyloxy, (C₃-C₈)-halocycloalkoxy, (C₄-C₈)-halocycloalkenyloxy, carbamoyl, 20 (C₁-C₆)-mono- or dialkylcarbamoyl, (C₁-C₆)-alkoxycarbonyl, (C₁-C₆)-alkanoyloxy, (C₁-C₆)-mono- or dihaloalkylcarbamoyl, (C₁-C₆)-haloalkoxycarbonyl, (C₁-C₆)-haloalkanoyloxy, (C₁-C₆)-alkaneamido, (C₁-C₆)-haloalkaneamido, (C₂-C₆)-alkeneamido, 25 (C₁-C₆)-alkylthio, (C₂-C₆)-alkenylthio, (C₂-C₆)-alkynylthio, (C₁-C₆)-haloalkylthio, (C₂-C₆)-haloalkenylthio,



(C₂-C₆)-haloalkynylthio, (C₃-C₈)-cycloalkylthio, (C₄-C₈)-cycloalkenylthio, (C₃-C₈)-halocycloalkthio, (C₄-C₈)-halocycloalkenylthio, (C₁-C₆)-alkylsulfinyl, (C₂-C₆)-alkenylsulfinyl, (C₂-C₆)-alkynylsulfinyl, (C₁-C₆)-haloalkylsulfinyl, (C₂-C₆)-haloalkenylsulfinyl, (C₂-C₆)-haloalkynylsulfinyl, (C₃-C₈)-cycloalkylsulfinyl, (C₄-C₈)-cycloalkenylsulfinyl, (C₃-C₈)-halocycloalksulfinyl, (C₄-C₈)-halocycloalkenylsulfinyl, (C₁-C₆)-alkylsulfonyl, (C₂-C₆)-alkenylsulfonyl, (C₂-C₆)-alkynylsulfonyl, (C₁-C₆)-haloalkylsulfonyl, (C₂-C₆)-haloalkenylsulfonyl, (C₂-C₆)-haloalkynylsulfonyl, (C₃-C₈)-cycloalkylsulfonyl, (C₄-C₈)-cycloalkenylsulfonyl, (C₃-C₈)-halocycloalksulfonyl, (C₄-C₈)-halocycloalkenylsulfonyl, (C₁-C₆)-alkylamino, (C₂-C₆)-alkenylamino, (C₂-C₆)-alkynylamino, (C₁-C₆)-haloalkylamino, (C₂-C₆)-haloalkenylamino, (C₂-C₆)-haloalkynylamino, (C₃-C₈)-cycloalkylamino, (C₄-C₈)-cycloalkenylamino, (C₃-C₈)-halocycloalkylamino and (C₄-C₈)-halocycloalkenylamino;

R¹¹ is (C₁-C₁₀)-alkyl, haloalkyl, aryl, which is optionally substituted by one or more radicals from the group halogen, cyano, nitro, (C₁-C₄)-alkoxy, (C₁-C₄)-alkyl, amino, (C₁-C₄)-monoalkylamino and (C₁-C₄)-dialkylamino,

NR¹⁰₂, OR¹⁰ or SR¹⁰.

2. The method as claimed in claim 1, wherein a compound from the group consisting of

a) triazophos, monocrotophos, parathion, malathion, heptenophos;

- b) tralomethrin, cypermethrin, cyhalothrin, fenvalerates, (alpha)-cypermethrin, fenpropathrin, etofenprox;
- c) bendiocarb, carbaryl, carbofuran, formetanates, pirimicarb;
- d) *Bacillus thuringiensis*, granuloses and nuclear polyhedrosis viruses, *Beauveria brogniartii*, baculoviruses, such as *Autographa californica*;
- e) abamectin, diafenthiuron, tebufenocides, fenazaquin, triazamates, fentin, MK-242;

is used.

3. The method as claimed in claim 2, wherein a compound from the group consisting of monocrotophos and malathion is used.

4. The method as claimed in any one of claims 1 to 3, wherein a mixture of two or more of the insecticidally active compounds is used.

5. The method as claimed in any one of claims 1 to 4, wherein the insecticidally active compound is applied at an application rate of from 0.001 to 0.3 kg/ha.

6. The method as claimed in any one of claims 1 to 5, wherein the insecticidally active compound is employed as from 0.00001 to 1% by weight strength formulation.

7. The method as claimed in any one of claims 1 to 6, wherein the insecticidally active Bt-protein in the cotton plant is a crystal protein from the subfamily CryI or IX.

8. The method as claimed in any one of claims 1 to 7, wherein cotton plants are used which are glufosinate- or glyphosate-resistant.

9. The method as claimed in any one of claims 1 to 8, wherein the harmful organisms are insects which belong to the orders Homoptera, Lepidoptera and/or Coleoptera.

10. The method as claimed in any one of claims 1 to 9, wherein the insecticidally active compound is used against larvae in the L1 stage.

11. The method as claimed in any one of claims 1 to 9, wherein the insecticidally active compound is used against larvae in the L2 and/or L3 stage and/or against adult animals.

12. The method as claimed in any one of claims 1 to 11, wherein, in addition to one or more insecticidally active compounds from the group a-f, one or more other insecticidally, fungicidally or herbicidally active compounds are employed.

13. The method as claimed in claim 7, wherein the insecticidally active protein in the cotton plant is Cry3Ca, CryIAb, Cry7Aa, Cry9C and CryIDa.

14. The method as claimed in claim 7, wherein the insecticidally active protein in the cotton plant is CryIAa, CryIAb, CryIAc, CryIB, CryIC, Cry2A, Cry3, Cry3A, Cry3C, Cry5, Cry9C.

15. The use of compounds from groups a-f

a) Organophosphorus compounds:

triazophos, monocrotophos, methamidophos, chlorpyrifos, parathion, acephate, profenofos, malathion, heptenophos;

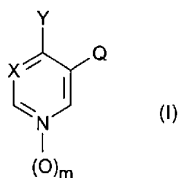
b) Pyrethroids:

tralomethrin, cypermethrin, cyhalothrin, lambda-cyhalothrin, deltamethrin, fenvalerates, (alpha)-cypermethrin, cyfluthrin, fenpropathrin, etofenprox;

c) Carbamates:

aldicarb, bendiocarb, carbaryl, carbofuran, formetanates, pirimicarb;

- d) Biopesticides:
Bacillus thuringiensis, granuloses and nuclear polyhedrosis viruses, Beauveria bassiana, Beauveria brogniartii, baculoviruses, such as Autographa californica;
- e) Others:
endosulfan, abamectin, XDE-105, diafenthiuron, fipronil, chlorfenapyr, tebufenocides, fenazaquin, imidacloprid, triazamates, fentin, amitraz, MK-242;
- f) 4-Haloalkyl-3-heterocyclypyridines and 4-haloalkyl-5-heterocyclypyrimidines of the formula (I) in claim 1, if appropriate also in the form of their salts,



for controlling harmful organisms in genetically modified cotton plants which contain a gene derived from Bacillus thuringiensis which encodes and expresses an insecticidally active protein.

16. The use as claimed in claim 15 of compounds from groups a-e
- a) triazophos, monocrotophos, parathion, malathion, heptenophos;
- b) tralomethrin, cypermethrin, cyhalothrin, fenvalerates, (alpha)-cypermethrin, fenpropathrin, etofenprox;
- c) bendiocarb, carbaryl, carbofuran, formetanates, pirimicarb;

d) *Bacillus thuringiensis*, granuloses and nuclear polyhedrosis viruses, *Beauveria brogniartii*, baculoviruses, such as *Autographa californica*;

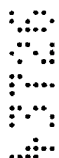
e) abamectin, diafenthiuron, tebufenocides, fenazaquin, triazamates, fentin, MK-242.

17. The use as claimed in claim 16 of the compounds monocrotophos and malathion.

18. A method for controlling harmful organisms in genetically modified cotton plants which contain a gene derived from the *Bacillus thuringiensis* which encodes and expresses an insecticidally active protein substantially as hereinbefore described with reference to the examples.

DATED this 14th day of July 2003

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