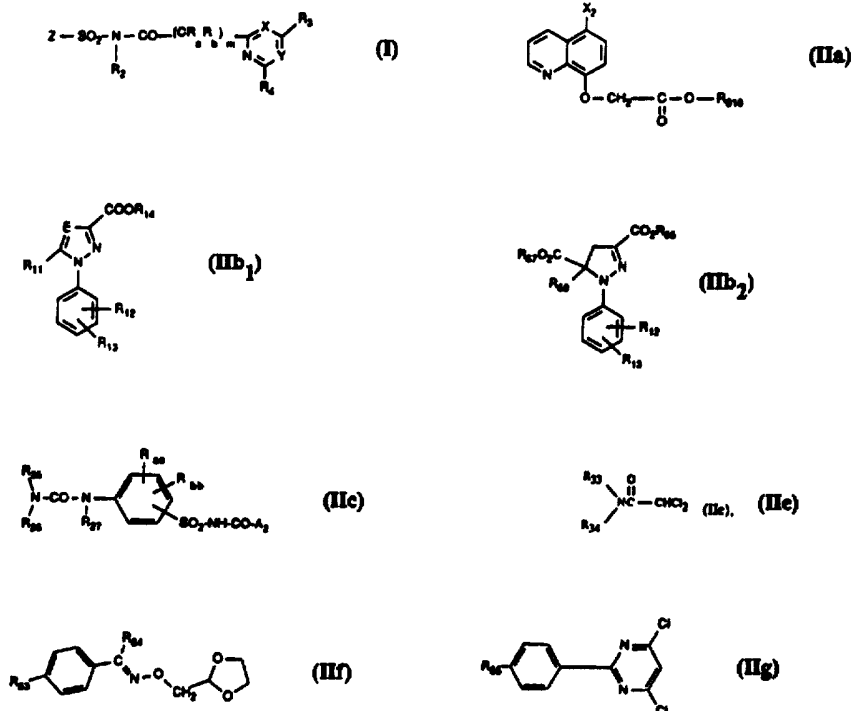




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## (54) Title: HERBICIDAL COMPOSITION



## (57) Abstract

Selective-herbicidal composition which comprises, in addition to customary inert formulation auxiliaries, an active substance comprising a mixture of a) a herbicidally effective quantity of a herbicide of formula (I), and b) a herbicide-antagonistically effective quantity of a compound of formulae (IIa), (IIb<sub>1</sub>), (IIb<sub>2</sub>), (IIc), (IIe), (IIf), or (IIg), in which the substituents are as defined in claim 1.

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### Herbicidal composition

The present invention relates to a selective-herbicidal composition for controlling grasses and broad-leaved weeds in crops of useful plants, in particular in crops of maize and cereals such as rye, barley, oats and, in particular, wheat, which composition comprises a herbicide and a safener (counteracting agent, antidote) and which safeguards the useful plants, but not the weeds, against the phytotoxic effect of the herbicide, and to the use of this composition for weed control in crops of useful plants.

When herbicides are used it is possible, depending for example on the rate and mode of application of the herbicide, on the crop plant, on the nature of the soil and on the climatic conditions, such as period of exposure to light, temperature and amounts of precipitation, for the crop plants too to be damaged to a considerable extent.

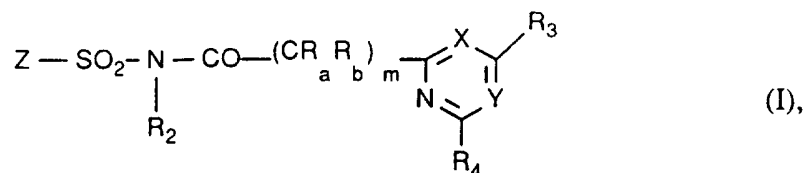
In order to counter this and similar problems, a variety of substances have already been proposed as safeners, which are capable of antagonizing the damaging effect of the herbicide on the crop plant, i.e. of protecting the crop plant from this effect while causing virtually no impairment of the herbicidal effect on the weeds to be controlled. In this context it has been found that the safeners proposed often have a very specific action both with regard to the crop plants and with regard to the herbicide and in some cases, in addition, depending on the mode of application; in other words, a particular safener is often suitable only for a specific crop plant and a specific class of herbicidal substance, or a specific herbicide.

It has now been found that safeners known from EP-A-492 366, WO 91/7874 and WO 94/987 are suitable for protecting crop plants against the phytotoxic effect of a certain class of N-acylsulfonamide herbicides. Such herbicides are known, for example, from EP-A-592 680, EP-A-514 551, EP-A-353 640, WO 94/5644, WO 92/16511, EP-A-444 286 and WO 92/1677.

In accordance with the invention, therefore, a selective-herbicidal composition is proposed which comprises, in addition to customary inert formulation auxiliaries such as carriers, solvents and wetting agents, an active substance comprising a mixture of

a) a herbicidally effective quantity of a herbicide of the formula I

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in which

Z is C<sub>1</sub>-C<sub>10</sub>alkyl, C<sub>1</sub>-C<sub>10</sub>alkyl substituted by halogen, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, R<sub>7</sub>R<sub>8</sub>N-, R<sub>8</sub>CO-, R<sub>9</sub>ON=CR<sub>8</sub>-, (CH<sub>3</sub>)<sub>3</sub>Si-, -CN or oxiranyl, C<sub>2</sub>-C<sub>8</sub>alkenyl, C<sub>2</sub>-C<sub>8</sub>alkenyl substituted by halogen, phenyl, phenyl substituted by halogen, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>haloalkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>haloalkoxy or C<sub>1</sub>-C<sub>6</sub>alkoxycarbonyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, R<sub>7</sub>R<sub>8</sub>N-, (CH<sub>3</sub>)<sub>3</sub>Si-, -CN, R<sub>8</sub>CO- or R<sub>9</sub>ON=CR<sub>8</sub>-, C<sub>2</sub>-C<sub>8</sub>alkynyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl substituted by halogen, C<sub>1</sub>-C<sub>10</sub>alkyl, phenyl, phenyl substituted by halogen, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>haloalkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>haloalkoxy or C<sub>1</sub>-C<sub>6</sub>alkoxycarbonyl, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, R<sub>7</sub>R<sub>8</sub>N-, (CH<sub>3</sub>)<sub>3</sub>Si-, -CN, oxo, =NOR<sub>7</sub>, R<sub>8</sub>CO- or R<sub>9</sub>ON=CR<sub>8</sub>-, C<sub>3</sub>-C<sub>8</sub>cycloalkenyl, C<sub>3</sub>-C<sub>8</sub>cycloalkenyl substituted by halogen, C<sub>1</sub>-C<sub>10</sub>alkyl, phenyl, phenyl substituted by halogen, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>haloalkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>haloalkoxy or C<sub>1</sub>-C<sub>6</sub>alkoxycarbonyl, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, R<sub>7</sub>R<sub>8</sub>N-, (CH<sub>3</sub>)<sub>3</sub>Si-, -CN, oxo, =NOR<sub>7</sub>, R<sub>8</sub>CO- or R<sub>9</sub>ON=CR<sub>8</sub>-, -NR<sub>5</sub>R<sub>6</sub>, R<sub>10</sub>CON(R<sub>6</sub>)- or R<sub>10</sub>SO<sub>2</sub>N(R<sub>6</sub>)-, where

R<sub>7</sub> is hydrogen, C<sub>1</sub>-C<sub>10</sub>alkyl, C<sub>2</sub>-C<sub>8</sub>alkenyl, C<sub>2</sub>-C<sub>8</sub>alkynyl, phenyl or phenyl substituted by halogen, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>haloalkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>haloalkoxy or C<sub>1</sub>-C<sub>6</sub>-alkoxy-carbonyl,

n is 0, 1 or 2,

R<sub>8</sub> is as defined for R<sub>7</sub> or is C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>3</sub>-C<sub>8</sub>alkenyloxy or C<sub>3</sub>-C<sub>8</sub>alkynyloxy,

R<sub>9</sub> is C<sub>1</sub>-C<sub>10</sub>alkyl, C<sub>2</sub>-C<sub>8</sub>alkenyl or C<sub>2</sub>-C<sub>8</sub>alkynyl,

R<sub>10</sub> is C<sub>1</sub>-C<sub>10</sub>alkyl, C<sub>1</sub>-C<sub>10</sub>alkyl substituted by halogen, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, -NR<sub>7</sub>R<sub>8</sub> or -CN, C<sub>2</sub>-C<sub>8</sub>alkenyl, C<sub>2</sub>-C<sub>8</sub>alkenyl substituted by halogen, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, -NR<sub>7</sub>R<sub>8</sub> or -CN, phenyl or phenyl substituted by halogen, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>haloalkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>haloalkoxy or C<sub>1</sub>-C<sub>6</sub>alkoxycarbonyl, in which R<sub>7</sub>, n and R<sub>8</sub> are as defined,

R<sub>5</sub> is C<sub>1</sub>-C<sub>10</sub>alkyl, C<sub>1</sub>-C<sub>10</sub>alkyl substituted by halogen, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, R<sub>7</sub>R<sub>8</sub>N-, R<sub>8</sub>CO-, R<sub>9</sub>ON=CR<sub>8</sub>-, (CH<sub>3</sub>)<sub>3</sub>Si-, -CN or oxiranyl, C<sub>2</sub>-C<sub>8</sub>alkenyl, C<sub>2</sub>-C<sub>8</sub>alkenyl substituted by halogen, phenyl, phenyl substituted by halogen, C<sub>1</sub>-C<sub>6</sub>alkyl,

C<sub>1</sub>-C<sub>6</sub>haloalkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>haloalkoxy or C<sub>1</sub>-C<sub>6</sub>alkoxycarbonyl,

C<sub>3</sub>-C<sub>8</sub>cycloalkyl, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, R<sub>7</sub>R<sub>8</sub>N-, (CH<sub>3</sub>)<sub>3</sub>Si-, -CN, R<sub>8</sub>CO- or R<sub>9</sub>ON=CR<sub>8</sub>-,

C<sub>2</sub>-C<sub>8</sub>alkynyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl substituted by halogen, C<sub>1</sub>-C<sub>10</sub>alkyl,

phenyl, phenyl substituted by halogen, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>haloalkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy,

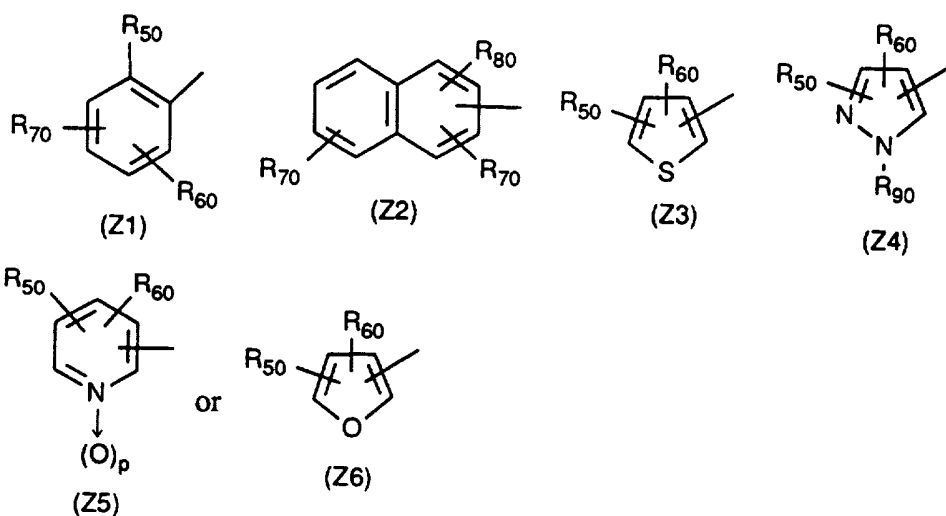
C<sub>1</sub>-C<sub>6</sub>haloalkoxy or C<sub>1</sub>-C<sub>6</sub>alkoxycarbonyl, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, R<sub>7</sub>R<sub>8</sub>N-, (CH<sub>3</sub>)<sub>3</sub>Si-, -CN, oxo,

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=NOR<sub>7</sub>, R<sub>8</sub>CO- or R<sub>9</sub>ON=CR<sub>8</sub>-, C<sub>3</sub>-C<sub>8</sub>cycloalkenyl, C<sub>3</sub>-C<sub>8</sub>cycloalkenyl substituted by halogen, C<sub>1</sub>-C<sub>10</sub>alkyl, phenyl, phenyl substituted by halogen, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>haloalkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>haloalkoxy or C<sub>1</sub>-C<sub>6</sub>alkoxycarbonyl, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, R<sub>7</sub>R<sub>8</sub>N-, (CH<sub>3</sub>)<sub>3</sub>Si-, -CN, oxo, =NOR<sub>7</sub>, R<sub>8</sub>CO- or R<sub>9</sub>ON=CR<sub>8</sub>-, or is R<sub>7</sub>O- in which R<sub>7</sub> is as defined, and

R<sub>6</sub> is as defined for R<sub>5</sub> or is hydrogen or together with R<sub>5</sub> forms a C<sub>4</sub>-C<sub>7</sub>alkylene radical, or

Z is a radical of the formula



in which

R<sub>50</sub> is hydrogen, halogen, -NO<sub>2</sub>, -CN, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkyl substituted by halogen, -CN, -OCH<sub>3</sub> or -SCH<sub>3</sub>, C<sub>2</sub>-C<sub>4</sub>alkenyl, C<sub>2</sub>-C<sub>4</sub>alkenyl substituted by halogen or OCH<sub>3</sub>, C<sub>2</sub>-C<sub>4</sub>alkynyl, C<sub>2</sub>-C<sub>4</sub>alkynyl substituted by halogen, -OCH<sub>3</sub> or -Si(CH<sub>3</sub>)<sub>3</sub>, C<sub>3</sub>-C<sub>6</sub>cycloalkyl, C<sub>3</sub>-C<sub>6</sub>cycloalkyl substituted by -F, -Cl or -CH<sub>3</sub>, -C(O)R<sub>100</sub>, -OCH<sub>2</sub>CH<sub>2</sub>OR<sub>100</sub>, -OH, -C(R<sub>100</sub>)(OR<sub>110</sub>)(OR<sub>120</sub>), -CO<sub>2</sub>R<sub>130</sub>, -C(O)NR<sub>140</sub>R<sub>150</sub>, -N<sub>3</sub>, -SO<sub>2</sub>NR<sub>140</sub>R<sub>150</sub>, -SO<sub>3</sub>R<sub>160</sub>, -OSO<sub>2</sub>R<sub>170</sub>, phenyl, phenyl substituted by halogen, -CH<sub>3</sub> or -OCH<sub>3</sub>, -O-R<sub>180</sub>, -S(O)<sub>b</sub>R<sub>180</sub> or -(CH<sub>2</sub>)<sub>s</sub>G, in which b and s independently of one another are 0 or 1,

R<sub>60</sub> is hydrogen, halogen, -CN, -NO<sub>2</sub>, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkyl substituted by halogen, -CO<sub>2</sub>R<sub>130</sub>, -SO<sub>2</sub>NR<sub>140</sub>R<sub>150</sub>, -NR<sub>140</sub>R<sub>150</sub>, C<sub>1</sub>- or C<sub>2</sub>alkoxy, -OR<sub>190</sub>, -S(O)<sub>b</sub>R<sub>190</sub>, C<sub>1</sub>- or C<sub>2</sub>haloalkoxy, C<sub>1</sub>- or C<sub>2</sub>alkylthio, C<sub>1</sub>- or C<sub>2</sub>haloalkylthio, -CN, -OH or -SH, -CO<sub>2</sub>R<sub>130</sub>, -SO<sub>2</sub>NR<sub>140</sub>R<sub>150</sub>, -NR<sub>140</sub>R<sub>150</sub>, -S(O)<sub>b</sub>R<sub>190</sub> or -OR<sub>190</sub>,

R<sub>70</sub> independently at each occurrence is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl, C<sub>2</sub>-C<sub>4</sub>alkenyl, phenyl, phenyl substituted by halogen, -S(O)<sub>b</sub>R<sub>190</sub> or -OR<sub>190</sub>, -S(O)<sub>b</sub>R<sub>190</sub>, -OR<sub>190</sub> or halogen,

R<sub>80</sub> is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl, halogen, -CO<sub>2</sub>R<sub>130</sub>, -SO<sub>2</sub>NR<sub>140</sub>R<sub>150</sub>,

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-OSO<sub>2</sub>R<sub>170</sub>, -S(O)<sub>b</sub>R<sub>180</sub>, -CN or -NO<sub>2</sub>, and

R<sub>90</sub> is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkyl substituted by halogen or phenyl, C<sub>2</sub>-C<sub>4</sub>alkenyl, phenyl or phenyl substituted by halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, -NO<sub>2</sub>, -CN or C<sub>1</sub>-C<sub>4</sub>alkoxy, where R<sub>100</sub> is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkyl substituted by halogen or -OCH<sub>3</sub>, C<sub>3</sub>-C<sub>6</sub>cycloalkyl, C<sub>3</sub>-C<sub>6</sub>cycloalkyl substituted by halogen or -CH<sub>3</sub>, C<sub>2</sub>-C<sub>4</sub>alkenyl or C<sub>2</sub>-C<sub>4</sub>alkynyl,

R<sub>110</sub> and R<sub>120</sub> independently of one another are C<sub>1</sub>-C<sub>4</sub>alkyl or R<sub>110</sub> and R<sub>120</sub> together are -CH<sub>2</sub>CH<sub>2</sub>-, -CH<sub>2</sub>OCH<sub>2</sub>- or -CH<sub>2</sub>C(CH<sub>3</sub>)<sub>2</sub>CH<sub>2</sub>-,

R<sub>130</sub> is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkyl substituted by halogen, -CN, -CO<sub>2</sub>R<sub>100</sub>, -NR<sub>140</sub>R<sub>150</sub>, -OR<sub>100</sub> or -Si(CH<sub>3</sub>)<sub>3</sub>, C<sub>3</sub>-C<sub>4</sub>alkynyl, C<sub>3</sub>-C<sub>4</sub>alkynyl substituted by -CH<sub>3</sub> or -Si(CH<sub>3</sub>)<sub>3</sub>, C<sub>3</sub>-C<sub>6</sub>cycloalkyl, C<sub>3</sub>-C<sub>6</sub>cycloalkyl-C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy or -Si(CH<sub>3</sub>)<sub>3</sub>,

R<sub>140</sub> is hydrogen or C<sub>1</sub>-C<sub>4</sub>alkyl,

R<sub>150</sub> is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy or C<sub>2</sub>-C<sub>4</sub>alkenyl, or R<sub>140</sub> and R<sub>150</sub> together are -(CH<sub>2</sub>)<sub>2</sub>(CH<sub>2</sub>)<sub>a</sub>-(CH<sub>2</sub>)<sub>2</sub>- or -(CH<sub>2</sub>)<sub>2</sub>O(CH<sub>2</sub>)<sub>2</sub>-, in which a is 0 or 1,

R<sub>160</sub> is C<sub>1</sub>-C<sub>4</sub>alkyl or C<sub>1</sub>-C<sub>4</sub>haloalkyl,

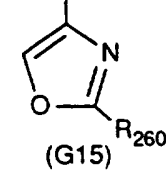
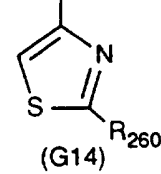
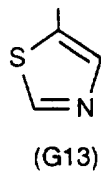
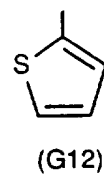
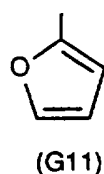
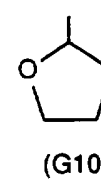
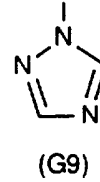
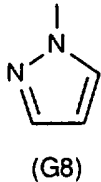
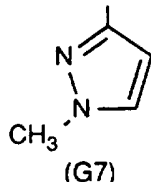
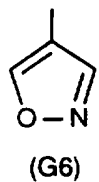
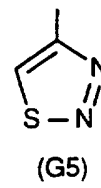
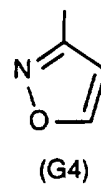
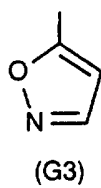
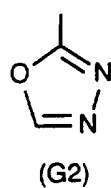
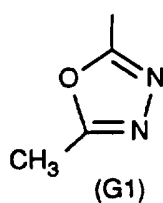
R<sub>170</sub> is C<sub>1</sub>-C<sub>4</sub>alkyl or -NR<sub>140</sub>R<sub>150</sub>, in which R<sub>140</sub> and R<sub>150</sub> are as defined,

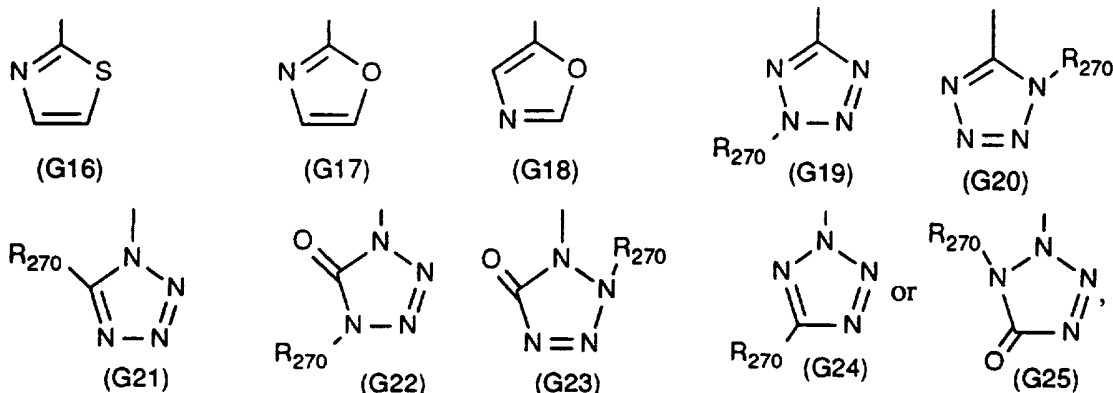
R<sub>180</sub> is C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl, C<sub>2</sub>-C<sub>4</sub>alkoxyalkyl, C<sub>2</sub>-C<sub>4</sub>alkenyl, C<sub>3</sub>-C<sub>4</sub>alkynyl, phenyl or phenyl substituted by halogen, C<sub>1</sub>-C<sub>3</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy or C<sub>1</sub>-C<sub>3</sub>haloalkyl,

R<sub>190</sub> is C<sub>1</sub>-C<sub>4</sub>alkyl or C<sub>1</sub>-C<sub>4</sub>alkyl substituted by -F, -Cl or -OR<sub>160</sub>,

q is 0 or 1,

G is a radical of the formula





in which  $R_{260}$  is hydrogen or  $C_1$ - $C_3$ alkyl and

$R_{270}$  is hydrogen,  $C_1$ - $C_3$ alkyl or  $C_2$ - $C_4$ alkenyl,

$R_2$  is hydrogen,  $C_1$ - $C_{10}$ alkyl,  $C_1$ - $C_{10}$ alkyl substituted by  $C_1$ - $C_6$ alkoxy or  $C_1$ - $C_6$ alkoxycarbonyl,  $C_3$ - $C_8$ alkenyl or benzyl,

X and Y independently of one another are =N-, =CH- or =CR-, where either X or Y must be =N-, and in which R is halogen,  $C_1$ - $C_6$ alkyl,  $C_1$ - $C_6$ alkyl substituted by halogen,

$C_1$ - $C_6$ alkoxy or  $C_1$ - $C_6$ haloalkoxy,  $C_1$ - $C_6$ alkoxy or  $C_1$ - $C_6$ haloalkoxy,

$R_3$  and  $R_4$  independently of one another are hydrogen, halogen,  $C_1$ - $C_{10}$ alkyl,  $R_7O$ -,  $R_7S(O)_n$ -,  $R_7R_8N$ -,  $C_1$ - $C_{10}$ haloalkyl,  $C_1$ - $C_{10}$ haloalkoxy,  $C_1$ - $C_6$ alkoxy- $C_1$ - $C_6$ alkyl or phenylthio, where  $R_7$ , n and  $R_8$  are as defined, or

$R_3$  or  $R_4$ , together with R, form a radical  $-OCH_2CH_2(CH_2)_m-$  or  $-(CH_2)_mCH_2CH_2O-$ , in which m is 0 or 1,

$R_a$  is hydrogen,  $C_1$ - $C_8$ alkyl,  $C_1$ - $C_8$ alkyl substituted by hydroxy,  $C_1$ - $C_8$ alkoxy, phenoxy,  $C_1$ - $C_8$ alkylthio, phenylthio,  $(CH_3)_3Si$ -,  $C_3$ - $C_8$ cycloalkyl, phenyl or di- $C_1$ - $C_8$ alkylamino,  $C_2$ - $C_6$ alkenyl,  $C_2$ - $C_6$ alkenyl substituted by halogen, or  $R_a$  is  $C_2$ - $C_6$ alkynyl,

$C_3$ - $C_8$ cycloalkyl,  $C_3$ - $C_8$ cycloalkyl substituted by  $C_1$ - $C_3$ alkyl, or  $R_a$  is  $C_3$ - $C_6$ cycloalkenyl, phenyl, phenyl substituted by  $C_1$ - $C_8$ alkyl, halogen, nitro, -CN,  $C_1$ - $C_6$ alkoxy,

$C_1$ - $C_6$ haloalkoxy, phenoxy,  $-NR_7R_8$  or  $R_8CO$ -, in which  $R_7$  and  $R_8$  are as defined, or  $R_a$  is hydroxyl, halogen, tetrahydrothienyl, tetrahydrofuryl, furyl, pyridyl or thienyl,

$R_b$  is hydrogen,  $C_1$ - $C_8$ alkyl or phenyl, or

$R_a$  and  $R_b$ , together with the carbon atom to which they are attached, form a radical of the formula  $-CO$ -, and

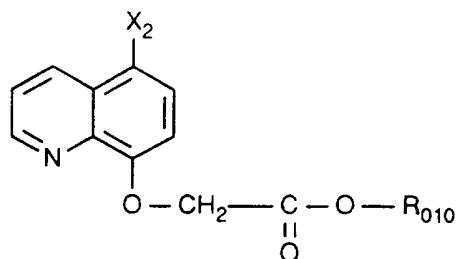
m is 0 or 1;

and also salts and stereoisomers of the compounds of the formula I

and

b) a herbicide-antagonistically effective quantity of a compound of the formula IIa

- 6 -



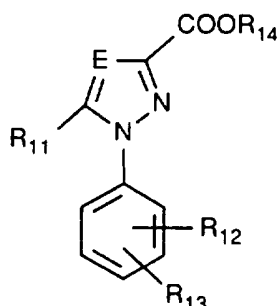
(IIa),

in which

$R_{010}$  is hydrogen,  $C_1$ - $C_8$ alkyl or  $C_1$ - $C_8$ alkyl which is substituted by  $C_1$ - $C_6$ alkoxy or  $C_3$ - $C_6$ alkenyloxy, and

$X_2$  is hydrogen or chlorine,

of a compound of the formula I**b**<sub>1</sub>

(I**b**<sub>1</sub>)

in which

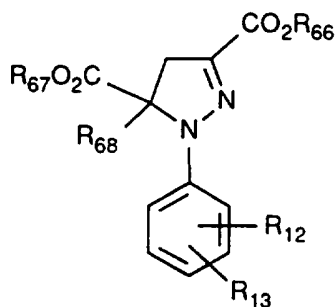
E is nitrogen or methine,

$R_{11}$  is  $-CCl_3$  or unsubstituted or halogen-substituted phenyl,

$R_{12}$  and  $R_{13}$  independently of one another are hydrogen or halogen, and

$R_{14}$  is  $C_1$ - $C_4$ alkyl,

of a compound of the formula I**b**<sub>2</sub>

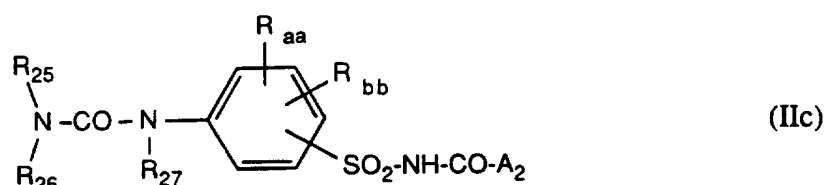
(I**b**<sub>2</sub>)

in which

$R_{12}$  and  $R_{13}$  are as defined above, and

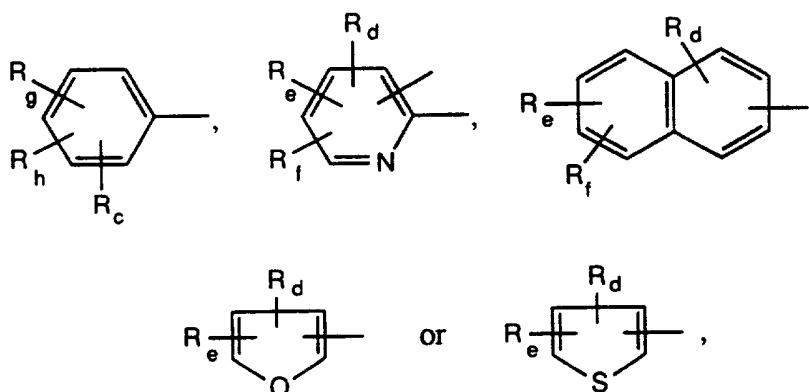
$R_{66}$ ,  $R_{67}$  and  $R_{68}$  independently of one another are  $C_1$ - $C_4$ alkyl,

of a compound of the formula IIc



in which

A<sub>2</sub> is a group



R<sub>25</sub> and R<sub>26</sub> independently of one another are hydrogen, C<sub>1</sub>-C<sub>8</sub>alkyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl,

C<sub>3</sub>-C<sub>6</sub>alkenyl, C<sub>3</sub>-C<sub>6</sub>alkynyl, , or C<sub>1</sub>-C<sub>4</sub>alkyl which is substituted by

C<sub>1</sub>-C<sub>4</sub>alkoxy or ; or R<sub>1</sub> and R<sub>2</sub> together form a C<sub>4</sub>-C<sub>6</sub>alkylene bridge

which can be interrupted by oxygen, sulfur, SO, SO<sub>2</sub>, NH or -N(C<sub>1</sub>-C<sub>4</sub>alkyl)-,

R<sub>27</sub> is hydrogen or C<sub>1</sub>-C<sub>4</sub>alkyl;

R<sub>aa</sub> is hydrogen, halogen, cyano, trifluoromethyl, nitro, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, C<sub>1</sub>-C<sub>4</sub>alkylsulfinyl, C<sub>1</sub>-C<sub>4</sub>alkylsulfonyl, -COOR<sub>j</sub>, -CONR<sub>k</sub>R<sub>m</sub>, -COR<sub>n</sub>, -SO<sub>2</sub>NR<sub>k</sub>R<sub>m</sub> or -OSO<sub>2</sub>-C<sub>1</sub>-C<sub>4</sub>alkyl;

R<sub>g</sub> is hydrogen, halogen, cyano, nitro, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl, C<sub>1</sub>-C<sub>4</sub>alkylthio, C<sub>1</sub>-C<sub>4</sub>alkylsulfinyl, C<sub>1</sub>-C<sub>4</sub>alkylsulfonyl, -COOR<sub>j</sub>, -CONR<sub>k</sub>R<sub>m</sub>, -COR<sub>n</sub>, -SO<sub>2</sub>NR<sub>k</sub>R<sub>m</sub>, -OSO<sub>2</sub>-C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, or C<sub>1</sub>-C<sub>6</sub>alkoxy substituted by C<sub>1</sub>-C<sub>4</sub>alkoxy or halogen,

C<sub>3</sub>-C<sub>6</sub>alkenyloxy, or C<sub>3</sub>-C<sub>6</sub>alkenyloxy substituted by halogen, or C<sub>3</sub>-C<sub>6</sub>alkynyloxy, or R<sub>a</sub> and R<sub>b</sub> together form a C<sub>3</sub>-C<sub>4</sub>alkylene bridge which can be substituted by halogen or C<sub>1</sub>-C<sub>4</sub>alkyl, or form a C<sub>3</sub>-C<sub>4</sub>alkenylene bridge which can be substituted by halogen or C<sub>1</sub>-C<sub>4</sub>alkyl, or form a C<sub>4</sub>alkadienylene bridge which can be substituted by halogen or C<sub>1</sub>-C<sub>4</sub>alkyl;

R<sub>bb</sub> and R<sub>n</sub> independently of one another are hydrogen, halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>alkylthio or -COOR<sub>j</sub>;

R<sub>c</sub> is hydrogen, halogen, nitro, C<sub>1</sub>-C<sub>4</sub>alkyl or methoxy; R<sub>d</sub> is hydrogen, halogen, nitro, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, C<sub>1</sub>-C<sub>4</sub>alkylsulfinyl, C<sub>1</sub>-C<sub>4</sub>alkylsulfonyl, -COOR<sub>j</sub> or CONR<sub>k</sub>R<sub>m</sub>;

R<sub>e</sub> is hydrogen, halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, -COOR<sub>j</sub>, trifluoromethyl or methoxy, or R<sub>d</sub> and R<sub>e</sub> together form a C<sub>3</sub>-C<sub>4</sub>alkylene bridge;

R<sub>f</sub> is hydrogen, halogen or C<sub>1</sub>-C<sub>4</sub>alkyl;

R<sub>x</sub> and R<sub>y</sub> independently of one another are hydrogen, halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, -COOR<sub>28</sub>, trifluoromethyl, nitro or cyano;

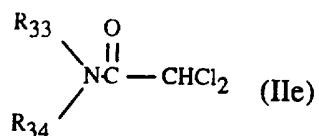
R<sub>j</sub>, R<sub>x</sub> and R<sub>m</sub> independently of one another are hydrogen or C<sub>1</sub>-C<sub>4</sub>alkyl; or

R<sub>k</sub> and R<sub>m</sub> together form a C<sub>4</sub>-C<sub>6</sub>alkylene bridge, which can be interrupted by oxygen, NH or -N(C<sub>1</sub>-C<sub>4</sub>alkyl)-;

R<sub>n</sub> is C<sub>1</sub>-C<sub>4</sub>alkyl, phenyl, or phenyl which is substituted by halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, methoxy, nitro or trifluoromethyl;

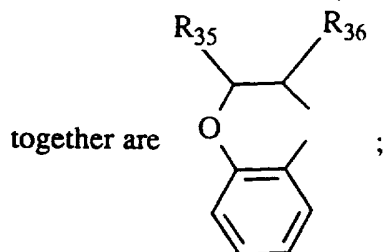
R<sub>28</sub> is hydrogen, C<sub>1</sub>-C<sub>10</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy-C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkylthio-C<sub>1</sub>-C<sub>4</sub>alkyl, di-C<sub>1</sub>-C<sub>4</sub>alkylamino-C<sub>1</sub>-C<sub>4</sub>alkyl, halogen-C<sub>1</sub>-C<sub>8</sub>alkyl, C<sub>2</sub>-C<sub>8</sub>alkenyl, halo-C<sub>2</sub>-C<sub>8</sub>alkenyl, C<sub>3</sub>-C<sub>8</sub>alkynyl, C<sub>3</sub>-C<sub>7</sub>cycloalkyl, halo-C<sub>3</sub>-C<sub>7</sub>cycloalkyl, C<sub>1</sub>-C<sub>8</sub>alkylcarbonyl, allylcarbonyl, C<sub>3</sub>-C<sub>7</sub>cycloalkylcarbonyl, benzoyl which is unsubstituted or is substituted on the phenyl ring by up to three identical or different substituents consisting of halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, halo-C<sub>1</sub>-C<sub>4</sub>alkyl, halo-C<sub>1</sub>-C<sub>4</sub>alkoxy or C<sub>1</sub>-C<sub>4</sub>alkoxy; or furoyl, thienyl; or C<sub>1</sub>-C<sub>4</sub>alkyl substituted by phenyl, halophenyl, C<sub>1</sub>-C<sub>4</sub>alkylphenyl, C<sub>1</sub>-C<sub>4</sub>alkoxyphenyl, halo-C<sub>1</sub>-C<sub>4</sub>-alkylphenyl, halo-C<sub>1</sub>-C<sub>4</sub>alkoxyphenyl, C<sub>1</sub>-C<sub>6</sub>alkoxycarbonyl, C<sub>1</sub>-C<sub>4</sub>alkoxy-C<sub>1</sub>-C<sub>8</sub>-alkoxycarbonyl, C<sub>3</sub>-C<sub>8</sub>alkenyloxycarbonyl, C<sub>3</sub>-C<sub>8</sub>alkynyloxycarbonyl, C<sub>1</sub>-C<sub>8</sub>alkylthiocarbonyl, C<sub>3</sub>-C<sub>8</sub>alkenylthiocarbonyl, C<sub>3</sub>-C<sub>8</sub>alkynylthiocarbonyl, carbamoyl, mono-C<sub>1</sub>-C<sub>4</sub>-alkylaminocarbonyl, di-C<sub>1</sub>-C<sub>4</sub>alkylaminocarbonyl; or phenylaminocarbonyl which is unsubstituted or is substituted on the phenyl by up to three identical or different substituents consisting of halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, halo-C<sub>1</sub>-C<sub>4</sub>alkyl, halo-C<sub>1</sub>-C<sub>4</sub>alkoxy or C<sub>1</sub>-C<sub>4</sub>alkoxy or by a single cyano or nitro substituent, or dioxolan-2-yl which is unsubstituted or is substituted by one or two C<sub>1</sub>-C<sub>4</sub>alkyl radicals, or dioxan-2-yl which is unsubstituted or is substituted by one or two C<sub>1</sub>-C<sub>4</sub>alkyl radicals, or C<sub>1</sub>-C<sub>4</sub>alkyl which is substituted by cyano, nitro, carboxyl or C<sub>1</sub>-C<sub>8</sub>alkylthio-C<sub>1</sub>-C<sub>8</sub>alkoxycarbonyl,

of a compound of the formula IIe

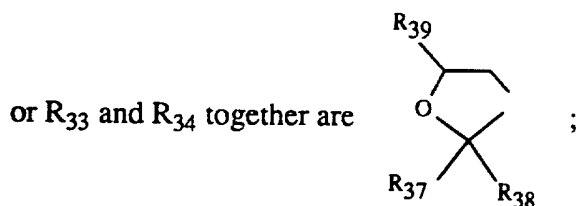


in which

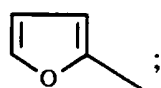
$\text{R}_{33}$  and  $\text{R}_{34}$  independently of one another are  $\text{C}_1$ - $\text{C}_6$ alkyl or  $\text{C}_2$ - $\text{C}_6$ alkenyl; or  $\text{R}_{33}$  and  $\text{R}_{34}$

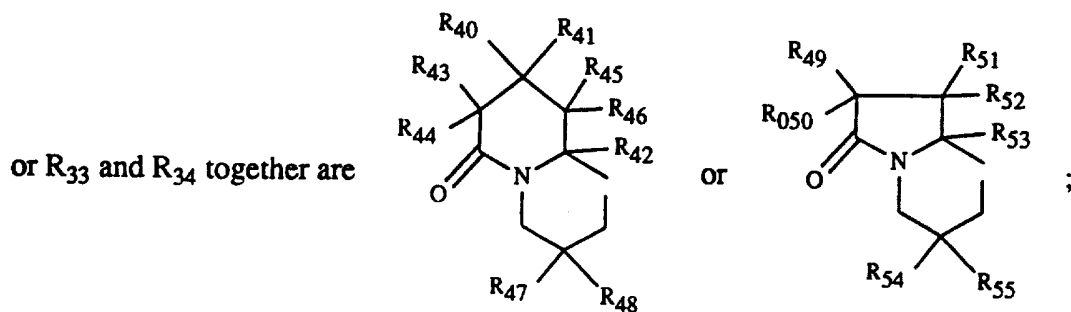


$\text{R}_{35}$  and  $\text{R}_{36}$  independently of one another are hydrogen or  $\text{C}_1$ - $\text{C}_6$ alkyl;

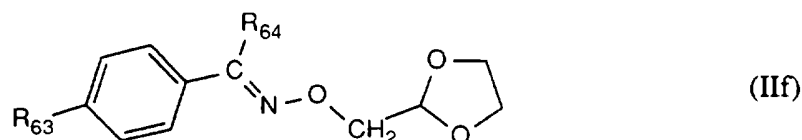


$\text{R}_{37}$  and  $\text{R}_{38}$  independently of one another are  $\text{C}_1$ - $\text{C}_4$ alkyl, or  $\text{R}_{37}$  and  $\text{R}_{38}$  together are  $-(\text{CH}_2)_5-$  ;

$\text{R}_{39}$  is hydrogen,  $\text{C}_1$ - $\text{C}_4$ alkyl or  ;



$\text{R}_{40}$ ,  $\text{R}_{41}$ ,  $\text{R}_{42}$ ,  $\text{R}_{43}$ ,  $\text{R}_{44}$ ,  $\text{R}_{45}$ ,  $\text{R}_{46}$ ,  $\text{R}_{47}$ ,  $\text{R}_{48}$ ,  $\text{R}_{49}$ ,  $\text{R}_{050}$ ,  $\text{R}_{51}$ ,  $\text{R}_{52}$ ,  $\text{R}_{53}$ ,  $\text{R}_{54}$  and  $\text{R}_{55}$  independently of one another are hydrogen or  $\text{C}_1$ - $\text{C}_4$ alkyl; of a compound of the formula IIf

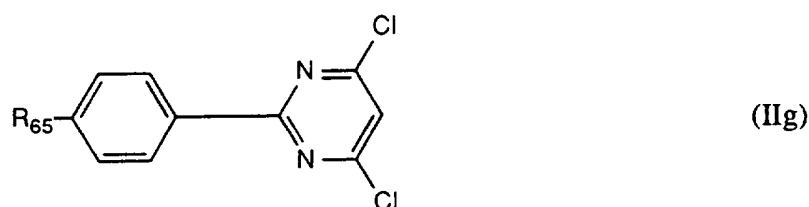


in which

$R_{63}$  is hydrogen or chlorine and

$R_{64}$  is cyano or trifluoromethyl,

or of a compound of the formula IIg



in which

$R_{65}$  is hydrogen or methyl.

The invention also relates to a process for the selective control of weeds in crops of useful plants, which comprises treating the useful plants, their seeds or seedlings or their cultivation area, simultaneously or separately, with a herbicidally effective quantity of a herbicide of the formula I and a herbicide-antagonistically effective quantity of a safener of one of the formulae IIa to IIg.

Among crop plants which can be protected by the safeners of the formulae IIa to IIg against the damaging effect of the abovementioned herbicides, maize and cereals such as rye, barley, oats and, in particular, wheat are particularly suitable.

The term crops should also be understood as referring to those which have been made tolerant to herbicides or classes of herbicide by means of conventional breeding or genetic manipulation methods.

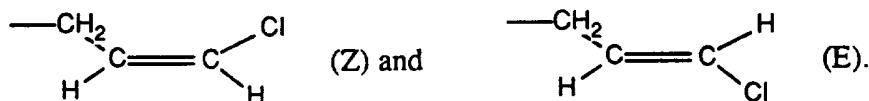
The weeds to be controlled may be both monocotyledon and dicotyledon weeds.

The areas regarded as cultivation areas are the soil areas on which the crop plants are already growing, or soil areas sown with the seed of these crop plants, and also the areas

intended for cultivation with these crop plants.

The alkyl groups mentioned in the definitions of substituents of the compounds of the formulae I and IIa to IIg can be straight-chain or branched and are for example methyl, ethyl, n-propyl, isopropyl, n-butyl, sec-butyl, isobutyl, tert-butyl and also pentyl, hexyl, heptyl, octyl, nonyl, decyl and branched isomers thereof. These alkyl groups can carry further substituents, for example halogen, especially fluorine, chlorine or bromine, alkoxy, thioalkyl, cycloalkyl, phenyl, amino, acyl (e.g.  $R_8CO-$ ) or oxo ( $O=$ ). Suitable alkoxy, thioalkyl, haloalkyl and haloalkoxy groups are derived from the alkyl groups mentioned.

Examples of unsaturated substituent groups are ethenyl, propenyl, butenyl, pentenyl, hexenyl, heptenyl, octenyl, ethynyl, propynyl, butynyl, pentynyl, hexynyl, heptynyl, octynyl and isomers, which differ in the different position of the unsaturated bond or bonds in the molecule, isomers which include branching points, and cis and trans isomers in the case of the alkenes. For example, chlorine-substituted propenyl can exist in the two forms



Thus substituted compounds of the formula I also constitute isomers which can be obtained and/or employed in pure form or as a mixture.

Examples of alkenyloxy, alkynyloxy, haloalkenyl and haloalkenyloxy groups can be derived from the alkyl groups mentioned.

Cycloalkyl groups comprise, for example, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl and cyclooctyl. Corresponding cycloalkenes can be mono- or polyunsaturated.

The expression "substituted" refers, where possible in the corresponding group, not only to monosubstitution but also to polysubstitution.

The invention likewise embraces agriculturally compatible salts which the compounds of the formula I can form, for example, with amines, alkali metal and alkaline earth metal bases or quaternary ammonium bases.

Among the alkali metal and alkaline earth metal hydroxides, as salt formers, particular emphasis should be placed on the hydroxides of lithium, sodium, potassium, magnesium or calcium, but especially on those of sodium or potassium.

Examples of amines suitable for forming ammonium salts are not only ammonia but also primary, secondary and tertiary C<sub>1</sub>-C<sub>18</sub>alkylamines, C<sub>1</sub>-C<sub>4</sub>hydroxyalkylamines and C<sub>2</sub>-C<sub>4</sub>alkoxyalkylamines, for example methylamine, ethylamine, n-propylamine, isopropylamine, the four isomeric butylamines, n-amylamine, isoamylamine, hexylamine, heptylamine, octylamine, nonylamine, decylamine, pentadecylamine, hexadecylamine, heptadecylamine, octadecylamine, methylethylamine, methylisopropylamine, methylhexylamine, methylnonylamine, methylpentadecylamine, methyloctadecylamine, ethylbutylamine, ethylheptylamine, ethyloctylamine, hexylheptylamine, hexyloctylamine, dimethylamine, diethylamine, di-n-propylamine, diisopropylamine, di-n-butylamine, di-n-amylamine, diisoamylamine, dihexylamine, diheptylamine, dioctylamine, ethanolamine, n-propanolamine, isopropanolamine, N,N-diethanolamine, N-ethylpropanolamine, N-butylethanolamine, allylamine, n-butenyl-2-amine, n-pentenyl-2-amine, 2,3-dimethylbutenyl-2-amine, dibutenyl-2-amine, n-hexenyl-2-amine, propylenediamine, trimethylamine, triethylamine, tri-n-propylamine, triisopropylamine, tri-n-butylamine, triisobutylamine, tri-sec-butylamine, tri-n-amylamine, methoxyethylamine and ethoxyethylamine; heterocyclic amines such as, for example, pyridine, quinoline, isoquinoline, morpholine, piperidine, pyrrolidine, indoline, quinuclidine and azepine; primary arylamines such as, for example, anilines, methoxyanilines, ethoxyanilines, o-, m- and p-toluidines, phenylenediamines, benzidines, naphthylamines and o-, m- and p-chloroanilines; but especially triethylamine, isopropylamine and diisopropylamine.

Preferred compositions according to the present invention comprise as herbicide a compound of the formula I in which R<sub>3</sub> and R<sub>4</sub> are methoxy.

Another group of preferred compositions comprise as herbicide a compound of the formula I in which R<sub>3</sub> and R<sub>4</sub> are methoxy and Z is C<sub>1</sub>-C<sub>10</sub>alkyl, C<sub>2</sub>-C<sub>8</sub>alkenyl or C<sub>2</sub>-C<sub>8</sub>haloalkenyl.

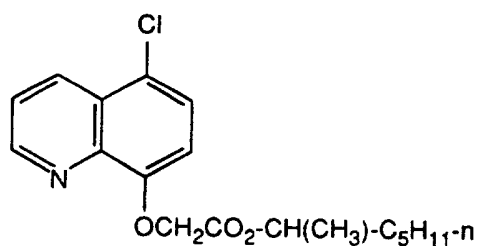
Among these compounds, particular preference is given to those which comprise as herbicide a compound of the formula I in which Z is -CH<sub>2</sub>-CH(CH<sub>3</sub>)<sub>2</sub>, -CH<sub>2</sub>-C(CH<sub>3</sub>)=CH<sub>2</sub> or -CH<sub>2</sub>-CH=CHCl.

Particular importance is attached to those compositions which comprise as herbicide a compound of the formula I in which Z is  $-\text{CH}_2-\text{CH}(\text{CH}_3)_2$ ,  $-\text{CH}_2-\text{C}(\text{CH}_3)=\text{CH}_2$  or  $-\text{CH}_2-\text{CH}=\text{CHCl}$  and m is 0.

Preferred compositions comprise as safener a compound of the formula IIa, IIb<sub>1</sub>, IIb<sub>2</sub> or IIc.

Among these, particular preference is given to those with the safeners of the formulae IIb<sub>1</sub> and IIb<sub>2</sub> and also to those with the safeners of the formula IIa.

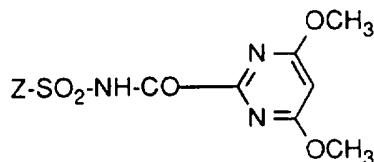
Particular value is possessed by compositions which comprise as herbicide a compound of the formula I in which Z is  $-\text{CH}_2-\text{CH}(\text{CH}_3)_2$ ,  $-\text{CH}_2-\text{C}(\text{CH}_3)=\text{CH}_2$  or  $-\text{CH}_2-\text{CH}=\text{CHCl}$  and m is 0, and as safener a compound of the formula IIa, in particular of the formula IIa<sub>1</sub>



(IIa<sub>1</sub>).

Preferred compounds of the formula I are listed in the following tables.

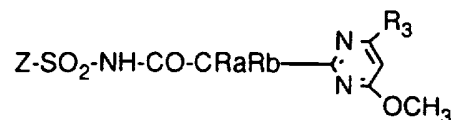
Table 1: Compounds of the formula Ia



Compd. No.	Z
1.01	-CH <sub>2</sub> -CH=CHCl (Z)
1.02	-CH <sub>2</sub> -CH=CHCl (E)
1.03	-CH <sub>2</sub> -CCl=CH <sub>2</sub>
1.04	-CH <sub>2</sub> -CCl=CHCl
1.05	-CH <sub>2</sub> -C(CH <sub>3</sub> )=CHCl
1.06	-CH <sub>2</sub> -CBr=CH <sub>2</sub>
1.07	-CH <sub>2</sub> -CCl=CHCH <sub>3</sub>
1.08	-CH <sub>2</sub> -CH=CHBr
1.09	-CH <sub>2</sub> -CHCl-CH <sub>2</sub> Cl
1.10	-CH <sub>2</sub> -
1.11	-CH <sub>2</sub> -C(CH <sub>3</sub> ) <sub>3</sub>
1.12	-CH <sub>2</sub> -
1.13	-CH <sub>2</sub> -CH <sub>2</sub> CN
1.14	-CH <sub>2</sub> -CH=CClCH <sub>3</sub>
1.15	-CH <sub>2</sub> -CH=C(CH <sub>3</sub> ) <sub>2</sub>
1.16	-CH <sub>2</sub> -CH <sub>2</sub> -C(CH <sub>3</sub> ) <sub>3</sub> =CH <sub>2</sub>
1.17	-CH <sub>2</sub> -CH=CCl <sub>2</sub>
1.18	-CH=CH-CH <sub>2</sub> CH <sub>3</sub>
1.19	-NH <sub>2</sub>
1.20	-CH <sub>2</sub> -CH=CHCl
1.21	-CH <sub>2</sub> -C(CH <sub>3</sub> ) <sub>3</sub> =CH <sub>2</sub>

The Compounds Nos. 1.01 to 1.21 and their preparation are described in EP-A-592 680.  
 The compounds 1.03 to 1.21 are mixtures of (Z) and (E) isomers.

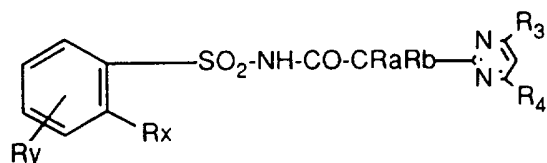
Table 2: Compounds of the formula Ib



Compd. No.	Z	R <sub>a</sub>	R <sub>b</sub>	R <sub>3</sub>
2.01	-CH <sub>3</sub>	-CH(CH <sub>3</sub> ) <sub>2</sub>	H	-OCH <sub>3</sub>
2.02	-CH <sub>3</sub>	-sC <sub>4</sub> H <sub>9</sub>	H	-OCH <sub>3</sub>
2.03	-CH <sub>3</sub>	-nC <sub>4</sub> H <sub>9</sub>	H	-OCH <sub>3</sub>
2.04	-CH <sub>3</sub>	-CH <sub>2</sub> cycloC <sub>3</sub> H <sub>5</sub> H	H	-OCH <sub>3</sub>
2.05	-CH <sub>3</sub>	-CHCH <sub>3</sub> -C <sub>3</sub> H <sub>7</sub>	H	-OCH <sub>3</sub>
2.06	-CH <sub>3</sub>	-CH(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>	H	-OCH <sub>3</sub>
2.07	-CH <sub>3</sub>	-cycloC <sub>5</sub> H <sub>9</sub>	H	-OCH <sub>3</sub>
2.08	-CH <sub>3</sub>	-cycloC <sub>5</sub> H <sub>9</sub>	H	-N(CH <sub>3</sub> ) <sub>2</sub>
2.09	-CH <sub>3</sub>	-CHCH <sub>3</sub> -C <sub>2</sub> H <sub>5</sub>	H	-N(CH <sub>3</sub> ) <sub>2</sub>
2.10	-CH=C(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>	-CH(CH <sub>3</sub> ) <sub>2</sub>	H	-OCH <sub>3</sub>
2.11	-CH <sub>3</sub>	-CH(CH <sub>3</sub> ) <sub>2</sub>	H	-OCH <sub>3</sub>
2.12	-CH <sub>3</sub>	-CHCH <sub>3</sub> -C <sub>2</sub> H <sub>5</sub>	H	-OCH <sub>3</sub>
2.13	-CH <sub>3</sub>	-C <sub>6</sub> H <sub>5</sub>	H	-OCH <sub>3</sub>
2.14	-CH <sub>3</sub>	-OH	-C <sub>6</sub> H <sub>5</sub>	-OCH <sub>3</sub>
2.15	-CH <sub>3</sub>	-F	-C <sub>6</sub> H <sub>5</sub>	-OCH <sub>3</sub>

The Compounds Nos. 2.01 to 2.10 and their preparation are described in EP-A-514 551, those of Nos. 2.11 to 2.13 in WO 92/1677, those of No. 14 in WO 94/5644 and those of No. 15 in WO 92/16511.

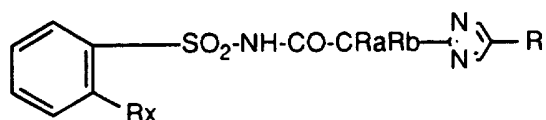
Table 3a: Compounds of the formula Ic



Compd. No.	R <sub>x</sub>	R <sub>y</sub>	CR <sub>a</sub> R <sub>b</sub>	R <sub>3</sub>	R <sub>4</sub>
3.01	-CO <sub>2</sub> CH <sub>3</sub>	H	----	-OCH <sub>3</sub>	-OCH <sub>3</sub>
3.02	-CO <sub>2</sub> CH <sub>3</sub>	H	-CO-	-OCH <sub>3</sub>	-OCH <sub>3</sub>
3.03	-CO <sub>2</sub> CH <sub>3</sub>	H	-CH <sub>2</sub> -	-OCH <sub>3</sub>	-OCH <sub>3</sub>
3.04	-NO <sub>2</sub>	H	-CH <sub>2</sub> -	-OCH <sub>3</sub>	-OCH <sub>3</sub>
3.05	-NO <sub>2</sub>	H	----	-OCH <sub>3</sub>	-OCH <sub>3</sub>
3.06	-CF <sub>3</sub>	H	-CO-	-OCH <sub>3</sub>	-OCH <sub>3</sub>
3.07	-CF <sub>3</sub>	H	-CO-	-CH <sub>3</sub>	-CH <sub>3</sub>
3.08	-CO <sub>2</sub> CH <sub>3</sub>	H	----	-OCH <sub>3</sub>	-CH <sub>3</sub>
3.09	-CO <sub>2</sub> CH <sub>3</sub>	H	-CO-	-OCH <sub>3</sub>	-CH <sub>3</sub>
3.10	-CF <sub>3</sub>	H	-CO-	-OCH <sub>3</sub>	-CH <sub>3</sub>
3.11	-Br	H	-CO-	-OCH <sub>3</sub>	-OCH <sub>3</sub>
3.12	-OC <sub>2</sub> H <sub>5</sub>	H	-CO-	-OCH <sub>3</sub>	-OCH <sub>3</sub>
3.13	-NO <sub>2</sub>	6-F	-CO-	-OCH <sub>3</sub>	-OCH <sub>3</sub>
3.14	-OCH <sub>3</sub>	H	-CO-	-OCH <sub>3</sub>	-OCH <sub>3</sub>
3.15	-CO <sub>2</sub> CH <sub>3</sub>	5-Cl	----	-OCH <sub>3</sub>	-OCH <sub>3</sub>
3.16	-H	H	----	-OCH <sub>3</sub>	-OCH <sub>3</sub>

The Compounds Nos. 3.01 to 3.16 and their preparation are described in EP-A-353 640.

Table 3b: Compound of the formula Id

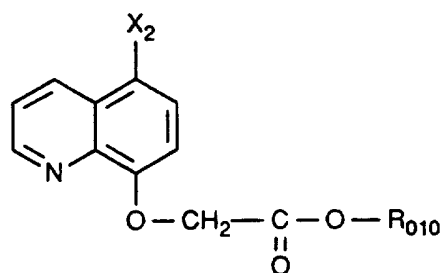


Compd. No.	R <sub>x</sub>	CR <sub>a</sub> R <sub>b</sub>	R
3.17	-SO <sub>2</sub> N(CH <sub>3</sub> ) <sub>2</sub>	-----	-OCH <sub>3</sub>

Compound No. 3.17 and its preparation is described in EP-A-444286.

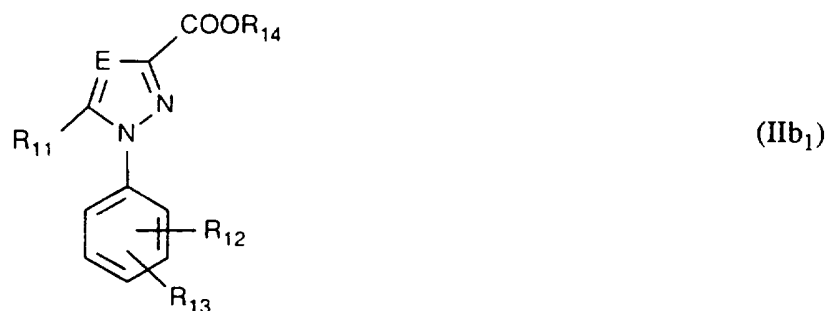
Safeners which are particularly suitable for use in the compositions according to the invention are listed in the following tables.

Table 4: Compounds of the formula IIa:

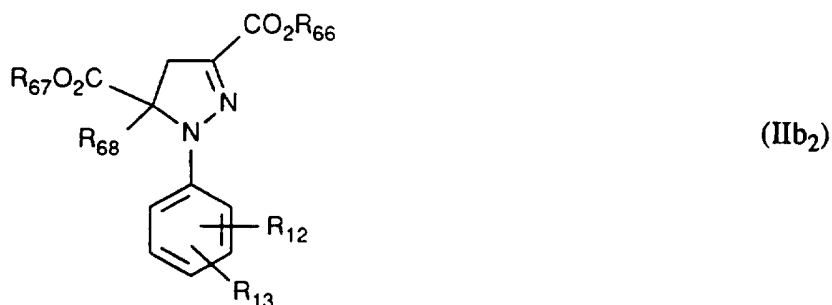


(IIa)

Compd. No.	X <sub>2</sub>	R <sub>010</sub>
4.01	Cl	-CH(CH <sub>3</sub> )-C <sub>5</sub> H <sub>11-n</sub>
4.02	Cl	-CH(CH <sub>3</sub> )-CH <sub>2</sub> OCH <sub>2</sub> CH=CH <sub>2</sub>
4.03	Cl	H
4.04	Cl	C <sub>4</sub> H <sub>9-n</sub>

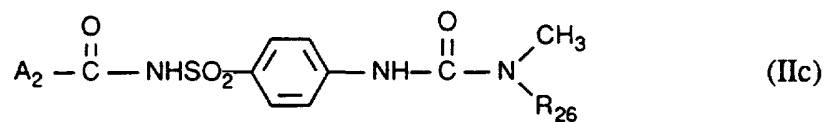
**Table 5:** Compounds of the formula I**b**<sub>1</sub>

Compd. No.	R <sub>14</sub>	R <sub>11</sub>	R <sub>12</sub>	R <sub>13</sub>	E
5.01	CH <sub>3</sub>	Phenyl	2-Cl	H	CH
5.02	CH <sub>3</sub>	Phenyl	2-Cl	4-Cl	CH
5.03	CH <sub>3</sub>	Phenyl	2-F	H	CH
5.04	CH <sub>3</sub>	2-Chlorophenyl	2-F	H	CH
5.05	C <sub>2</sub> H <sub>5</sub>	CCl <sub>3</sub>	2-Cl	4-Cl	N
5.06	CH <sub>3</sub>	Phenyl	2-Cl	4-CF <sub>3</sub>	N
5.07	CH <sub>3</sub>	Phenyl	2-Cl	4-CF <sub>3</sub>	N
5.08	CH <sub>3</sub>	2-Fluorophenyl	2-Cl	H	CH

**Table 6:** Compounds of the formula I**b**<sub>2</sub>

Compd. No.	R <sub>68</sub>	R <sub>67</sub>	R <sub>66</sub>	R <sub>12</sub>	R <sub>13</sub>
6.01	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	2-Cl	4-Cl
6.02	CH <sub>3</sub>	C <sub>2</sub> H <sub>5</sub>	CH <sub>3</sub>	2-Cl	4-Cl
6.03	CH <sub>3</sub>	C <sub>2</sub> H <sub>5</sub>	C <sub>2</sub> H <sub>5</sub>	2-Cl	4-Cl

Table 7: Compounds of the formula IIc



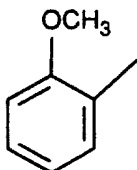
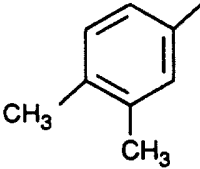
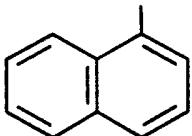
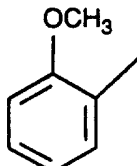
Compd. No.	A <sub>2</sub>	R <sub>26</sub>
7.001		H
7.002		H
7.003		CH <sub>3</sub>
7.004		CH <sub>3</sub>

Table 8: Compounds of the formula IIe



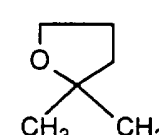
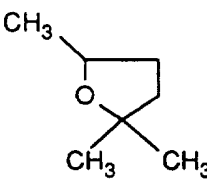
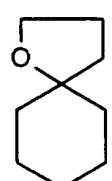
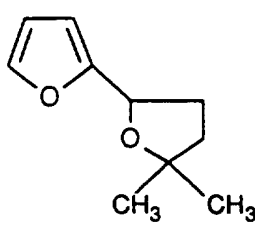
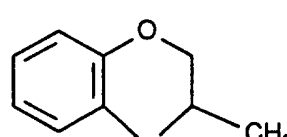
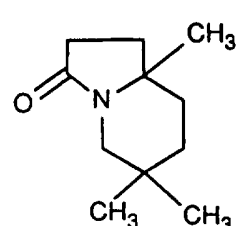
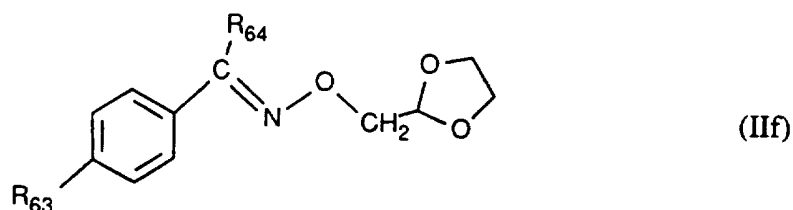
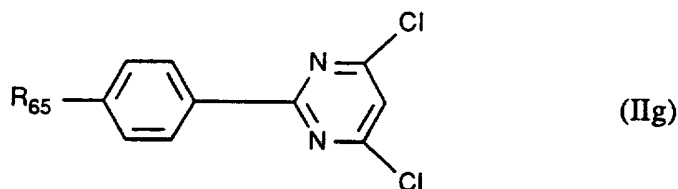
Compd. No.	R <sub>33</sub>	R <sub>34</sub>	R <sub>33</sub> +R <sub>34</sub>
8.001	CH <sub>2</sub> =CHCH <sub>2</sub>	CH <sub>2</sub> =CHCH <sub>2</sub>	-
8.002	-	-	
8.003	-	-	
8.004	-	-	
8.005	-	-	
8.006	-	-	
8.007	-	-	

Table 9: Compounds of the formula II f

Compd. No.	R <sub>63</sub>	R <sub>64</sub>
9.01	H	CN
9.02	Cl	CF <sub>3</sub>

Table 10: Compounds of the formula II g

Compd. No.	R <sub>65</sub>
10.01	H
10.02	CH <sub>3</sub>

The safeners listed in Tables 4 to 10 and their preparation are known, for example, from EP-A-492 366, WO 91/7874 and WO 94/987.

Depending on the intended use, a safener of the formulae IIa to IIg can be used for pretreating the seed of the crop plant (dressing of the seed or of the seedlings), or placed in the soil before or after sowing. It can, however, also be applied, on its own or together with the herbicide, following the emergence of the plants. The treatment of the plants or of the seed with the safener can therefore, in principle, take place independently of the point in time of the application of the herbicide. The plant treatment, however, can also be

carried out by simultaneous application of herbicide and safener (for example as a tank mix).

The application rate of safener to herbicide to be applied depends largely on the method of application. In a field treatment carried out either using a tank mix comprising a combination of safener and herbicide or by separate application of safener and herbicide, the ratio of herbicide to safener is in general from 1:100 to 1:1, preferably from 1:50 to 1:5.

In general, in field treatment, from 0.001 to 5.0 kg of safener/ha, preferably from 0.001 to 0.5 kg of safener/ha, are applied.

The application rates of herbicide are generally between 0.001 and 2 kg/ha, but preferably between 0.005 and 1 kg/ha.

The compositions according to the invention are suitable for all application methods which are customary in agriculture, for example preemergence application, postemergence application and seed dressing.

In general, in seed dressing, from 0.001 to 10 kg of safener/kg of seed, preferably from 0.05 to 2 g of safener/kg of seed, are applied. If the safener is applied in liquid form shortly before sowing, accompanied by seed swelling, then it is expedient to use safener solutions which comprise the active substance in a concentration of from 1 to 10 000 ppm, preferably from 100 to 1000 ppm.

For application, the safeners of the formula II, or combinations of these safeners with the herbicides of the formula I, are advantageously processed together with the auxiliaries which are customary in the art of formulation to give particular formulations, for example emulsion concentrates, brushable pastes, directly sprayable or dilutable solutions, dilute emulsions, wettable powders, soluble powders, dusts, granules or microcapsules. The formulations are produced in a known manner, for example by intimate mixing and/or grinding of the active substances with liquid or solid formulation auxiliaries such as, for example, solvents or solid carriers. Furthermore, it is possible in addition to use surface-active compounds (surfactants) for producing the formulations.

Suitable solvents can be aromatic hydrocarbons, preferably C<sub>8</sub> to C<sub>12</sub> fractions, for example xylene mixtures or substituted naphthalenes, phthalates such as dibutyl or dioctyl

phthalate, aliphatic hydrocarbons such as cyclohexane or paraffins, alcohols and glycols, and ethers and esters thereof, such as ethanol, diethylene glycol, 2-methoxyethanol or 2-ethoxyethanol, ketones, such as cyclohexanone, strongly polar solvents such as N-methyl-2-pyrrolidone, dimethyl sulfoxide or dimethylformamide, and unmodified or epoxidized vegetable oils, such as epoxidized coconut oil or soya oil; or water.

As solid carriers, for example for dusts and dispersible powders, use is generally made of ground natural minerals, such as calcite, talc, kaolin, montmorillonite or attapulgite. In order to improve the physical properties of the formulation, it is also possible to add highly disperse silica or highly disperse absorbent polymers. Suitable granulated, adsorptive granule carriers are porous types, for example pumice, broken brick, sepiolite or bentonite, while suitable nonsorbent carrier materials are, for example, calcite or sand. In addition, it is possible to use a large number of pregranulated materials of inorganic or organic nature, such as, in particular, dolomite or comminuted plant residues.

Suitable surface-active compounds, depending on the safener and, if appropriate, on the herbicide as well, are nonionic, cationic and/or anionic surfactants having good emulsifying, dispersing and wetting properties. References to surfactants also include surfactant mixtures.

Suitable anionic surfactants can be both water-soluble soaps and water-soluble synthetic surface-active compounds.

Soaps which may be mentioned are the alkali metal, alkaline earth metal or substituted or unsubstituted ammonium salts of higher fatty acids ( $C_{10}$ - $C_{22}$ ), for example the sodium or potassium salts or oleic or stearic acid, or of natural fatty acid mixtures which can be obtained, for example, from coconut oil or tallow oil. Other salts which can be mentioned are the fatty acid methyltaurine salts.

More often, however, so-called synthetic surfactants are used, especially fatty sulfonates, fatty sulfates, sulfonated benzimidazole derivatives or alkylarylsulfonates.

The fatty sulfonates or fatty sulfates are generally present as alkali metal, alkaline earth metal or substituted or unsubstituted ammonium salts and have an alkyl radical of 8 to 22 carbon atoms, alkyl also including the alkyl moiety of acyl radicals, examples being the sodium or calcium salt of ligninsulfonic acid, of dodecylsulfuric ester or of a fatty alcohol sulfate mixture prepared from natural fatty acids. Also included here are the salts of

sulfuric esters and sulfonic acids with fatty alcohol-ethylene oxide adducts. The sulfonated benzimidazole derivatives preferably contain 2 sulfonic acid groups and a fatty acid radical having 8 to 22 carbon atoms. Examples of alkylarylsulfonates are the sodium, calcium or triethanolamine salts of dodecylbenzenesulfonic acid, of dibutyl-naphthalenesulfonic acid or of a naphthalenesulfonic acid-formaldehyde condensation product.

Also suitable are appropriate phosphates, for example salts of the phosphoric ester of a p-nonylphenol-(4-14)-ethylene oxide adduct or phospholipids.

Suitable nonionic surfactants are primarily polyglycol ether derivatives of aliphatic or cycloaliphatic alcohols, saturated or unsaturated fatty acids and alkylphenols, which can contain 3 to 30 glycol ether groups and 8 to 20 carbon atoms in the (aliphatic) hydrocarbon radical, and 6 to 18 carbon atoms in the alkyl radical of the alkylphenols.

Further suitable nonionic surfactants are the water-soluble adducts, containing 20 to 250 ethylene glycol ether groups and 10 to 100 propylene glycol ether groups, of polyethylene oxide and polypropylene glycol, ethylenediaminopolypropylene glycol and alkylpolypropylene glycol having 1 to 10 carbon atoms in the alkyl chain. The compounds mentioned customarily contain 1 to 5 ethylene glycol units per propylene glycol unit.

Examples of nonionic surfactants which can be mentioned are nonylphenolpolyethoxyethanols, castor oil polyglycol ethers, polypropylene-polyethylene oxide adducts, tributylphenoxypolyethoxyethanol, polyethylene glycol and octylphenoxypolyethoxyethanol.

Also suitable are fatty acid esters of polyoxyethylenesorbitan, such as polyoxyethylenesorbitan trioleate.

The cationic surfactants are primarily quaternary ammonium salts which have, as N-substituent, at least one alkyl radical having 8 to 22 carbon atoms and, as further substituents, lower, unmodified or halogenated alkyl, benzyl or lower hydroxyalkyl radicals. The salts are preferably in the form of halides, methyl sulfates or ethyl sulfates, for example the stearyltrimethylammonium chloride or the benzyldi(2-chloroethyl)ethylammonium bromide.

The surfactants customary in the art of formulation, which can also be used in the

compositions according to the invention, are described inter alia in "Mc Cutcheon's Detergents and Emulsifiers Annual" MC Publishing Corp., Ridgewood New Jersey, 1981, Stache, H., "Tensid-Taschenbuch" [Pocketbook of Surfactants], Carl Hanser Verlag, Munich/Vienna, 1981 and M. and J. Ash, "Encyclopedia of Surfactants", Vol I-III, Chemical Publishing Co., New York, 1980-81.

The agrochemical formulations generally contain from 0.1 to 99 per cent by weight, in particular from 0.1 to 95 % by weight, of safener or safener/herbicide active-substance mixture, from 1 to 99.9 % by weight, in particular from 5 to 99.8 % by weight, of a solid or liquid formulation auxiliary, and from 0 to 25 % by weight, in particular from 0.1 to 25 % by weight, of a surfactant.

While the preferred commercial product usually comprises concentrated compositions, the end user generally employs dilute compositions.

The compositions can also comprise further additives, such as stabilizers, defoamers, viscosity regulators, binders, adhesives and fertilizers or other active substances.

For the use of safeners of the formulae IIa to IIg or of compositions comprising them for protecting crop plants against the damaging effects of herbicides of the formula I, a variety of methods and techniques are suitable, examples being the following:

i) Seed dressing

a) The seeds are dressed by shaking them, in a vessel, together with an active substance of the formulae IIa to IIg formulated as a wettable powder, until the active ingredient is distributed uniformly on the seed surface (dry seed dressing). In this case from about 1 to 500 g of active substance of the formulae IIa to IIg (4 g to 2 kg of wettable powder) are used per 100 kg of seed.

b) The seeds are dressed with an emulsion concentrate of the active substance of the formulae IIa to IIg in accordance with method a) (wet seed dressing).

c) The seeds are dressed by immersing them into a liquor containing 100-1000 ppm of active substance of the formulae IIa to IIg for from 1 to 72 hours and then, if desired, by drying the seeds (seed soaking).

The dressing of the seed and the treatment of the seedling which has begun to germinate

are of course the preferred methods of application, since the treatment with the active substance is directed entirely towards the target crop. As a rule, from 1 to 1000 g of antidote, preferably from 5 to 150 g of antidote, are used per 100 kg of seed, it being possible to deviate from these limit concentrations up or down (repeat dressing), depending on the method, which also makes possible the addition of other active substances or micronutrients.

ii) Application as a tank mix

A liquid preparation of a mixture of antidote and herbicide (mutual quantitative ratio between 10:1 and 1:100) is used, the application rate of herbicide being from 0.005 to 5.0 kg per hectare. Such tank mixes are applied before or after sowing.

iii) Application in the seed drill

The safener is introduced into the open seed drill, containing seed, as an emulsion concentrate, wettable powder or in the form of granules. After the seed drill has been covered over, the herbicide is applied preemergence in a customary manner.

iv) Controlled release of active substance

The active substance of the formulae IIa to IIg is applied in solution to mineral granule carriers or polymerized granules (urea/formaldehyde), which are then dried. If desired, a coating can be applied (coated granules), which enables the release of the active substance in regulated amounts over a defined period.

The examples which follow illustrate the invention in more detail without limiting it.

Formulation examples for mixtures of herbicides of the formula I and safeners of the formulae IIa to IIg (% = per cent by weight)

<u>F1. Emulsion concentrates</u>	a)	b)	c)	d)
Active substance mixture	5 %	10 %	25 %	50 %
Calcium dodecylbenzenesulfonate	6 %	8 %	6 %	8 %
Castor oil polyglycol ether (36 mol EO)	4 %	-	4 %	4 %
Octylphenol polyglycol ether (7-8 mol EO)	-	4 %	-	2 %
Cyclohexanone	-	-	10 %	20 %

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Aromatic hydrocarbon mixture C <sub>9</sub> -C <sub>12</sub>	85 %	78 %	55 %	16 %
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From such concentrates, by dilution with water, it is possible to produce emulsions of any desired concentration.

<u>F2. Solutions</u>	a)	b)	c)	d)
Active substance mixture	5 %	10 %	50 %	90 %
1-Methoxy-3-(3-methoxypropoxy)- propane	-	20 %	20 %	-
Polyethylene glycol MW 400	20 %	10 %	-	-
N-Methyl-2-pyrrolidone	-	-	30 %	10 %
Aromatic hydrocarbon mixture C <sub>9</sub> -C <sub>12</sub>	75 %	60 %	-	-

The solutions are suitable for use in the form of very fine drops.

<u>F3. Wettable powders</u>	a)	b)	c)	d)
Active substance mixture	5 %	25 %	50 %	80 %
Sodium ligninsulfonate	4 %	-	3 %	-
Sodium lauryl sulfate	2 %	3 %	-	4 %
Sodium diisobutyl-naphthalene- sulfonate	-	6 %	5 %	6 %
Octylphenol polyglycol ether (7-8 mol EO)	-	1 %	2 %	-
Highly disperse silica	1 %	3 %	5 %	10 %
Kaolin	88 %	62 %	35 %	-

The active substance is mixed thoroughly with the additives and the mixture is ground thoroughly in a suitable mill. Wettable powders are obtained which can be diluted with water to give suspensions of any desired concentration.

<u>F4. Coated granules</u>	a)	b)	c)
Active substance mixture	0.1 %	5 %	15 %

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Highly disperse silica	0.9 %	2 %	2 %
Inorganic carrier material ( ) 0.1 - 1 mm) such as, for example, CaCO <sub>3</sub> or SiO <sub>2</sub>	99.0 %	93 %	83 %

The active substance is dissolved in methylene chloride, the solution is sprayed onto the carrier, and the solvent is subsequently evaporated off in vacuo.

<u>F5. Coated granules</u>	a)	b)	c)
Active substance mixture	0.1 %	5 %	15 %
Polyethylene glycol MW 200	1.0 %	2 %	3 %
Highly disperse silica	0.9 %	1 %	2 %
Inorganic carrier material ( ) 0.1 - 1 mm) such as, for example, CaCO <sub>3</sub> or SiO <sub>2</sub>	98.0 %	92 %	80 %

The finely ground active substance is applied uniformly in a mixer to the carrier material which has been wetted with polyethylene glycol. Dust-free coated granules are obtained in this way.

<u>F6. Extruded granules</u>	a)	b)	c)	d)
Active substance mixture	0.1 %	3 %	5 %	15 %
Sodium ligninsulfonate	1.5 %	2 %	3 %	4 %
Carboxymethylcellulose	1.4 %	2 %	2 %	2 %
Kaolin	97.0 %	93 %	90 %	79 %

The active substance is mixed with the additives, and the mixture is ground and wetted with water. This mixture is extruded and subsequently dried in a stream of air.

<u>F7. Dusts</u>	a)	b)	c)
Active substance mixture	0.1 %	1 %	5 %
Talc	39.9 %	49 %	35 %
Kaolin	60.0 %	50 %	60 %

Ready-to-use dusts are obtained by mixing the active substance with the carriers and grinding the mixture in a suitable mill.

<u>F8. Suspension concentrates</u>	a)	b)	c)	d)
Active substance mixture	3 %	10 %	25 %	50 %
Ethylene glycol	5 %	5 %	5 %	5 %
Nonylphenol polyglycol ether (15 mol EO)	-	1 %	2 %	-
Sodium ligninsulfonate	3 %	3 %	4 %	5 %
Carboxymethylcellulose	1 %	1 %	1 %	1 %
37% aqueous formaldehyde solution	0.2 %	0.2 %	0.2 %	0.2 %
Silicone oil emulsion	0.8 %	0.8 %	0.8 %	0.8 %
Water	87 %	79 %	62 %	38 %

The finely ground active substance is intimately mixed with the additives. In this way a suspension concentrate is obtained from which, by dilution with water, suspensions of any desired concentration can be produced.

The ability of the safeners of the formulae IIa to IIg to protect crop plants against the phytotoxic effect of herbicides of the formula I is illustrated in the following examples.

#### Biological examples

Example B1: Postemergence applications of mixtures of a herbicide of the formula I with a safener of the formulae IIa to IIg to cereals

Under greenhouse conditions, wheat is grown in plastic pots to the 2.5 leaf stage. At this stage, both the herbicides of the formula I alone and also the mixture of the herbicides with a safener of the formulae IIa to IIg are applied to the test plants. Application takes place in the form of an aqueous suspension of the test substances (Formulation Example F7) with 500 l of water/ha. The application rates for herbicide and safener can be seen in Tables B1, B2, B3 and B4. 28 days after application, the test is evaluated using a percentage scale. 100 % denotes that the test plant has died, while 0 % denotes no phytotoxic effect. The results obtained (cf. Table B1 below) show that, with the safeners of the formulae IIa to IIg, the damage caused to wheat by the herbicide of the formula I

can be substantially reduced.

Table B1: Herbicidal action of the compounds of the formula I without safener:

Herbicide	125 g/ha	60 g/ha	30 g/ha	15 g/ha	8 g/ha	4 g/ha
No. 1.01	90%	75%	65%			
	90%	75%	65%			
	90%	75%	65%			
	90%	75%	65%			
	90%	75%	65%			
	90%	75%	65%			
	90%	75%	65%			
No.1.21		55%	30%	20%	10%	5%

Table B2: Herbicidal action of the compounds of the formula I with safener:

Herbicide	125 g/ha	60 g/ha	30 g/ha
No. 1.01			
Safener	125 g/ha	60 g/ha	30 g/ha
No.			
4.04	35%	30%	10%
5.01	50%	35%	25%
4.01	40%	30%	20%
5.08	45%	15%	15%
5.05	70%	40%	30%
4.02	40%	20%	10%
6.02	55%	35%	15%

Table B3: Herbicidal action of the compounds of the formula I with safener:

Herbicide					
No. 1.21	60 g/ha	30 g/ha	15 g/ha	8 g/ha	4 g/ha
Safener	30 g/ha	30 g/ha	30 g/ha	30 g/ha	30 g/ha
No.					
4.01	20%	10%	5%	0%	0%

Table B4: Herbicidal action of the compounds of the formula I with safener:

Herbicide					
No. 1.01	60 g/ha	30 g/ha	15 g/ha	8 g/ha	4 g/ha
Safener	30 g/ha	30 g/ha	30 g/ha	30 g/ha	30 g/ha
No.					
4.01	35%	30%	10%	5%	0%

Example B2: Postemergence applications of mixtures of a herbicide of the formula I with a safener of the formulae IIa to IIg to maize

Under greenhouse conditions, maize is grown in plastic pots to the 2.5 leaf stage. At this stage, both the herbicides of the formula I alone and also the mixture of the herbicides with a safener of the formulae IIa to IIg are applied to the test plants. Application takes place in the form of an aqueous suspension of the test substances (Formulation Example F7) with 500 l of water/ha. The application rates for herbicide and safener can be seen from Table B5. 19 days after application, the test is evaluated using a percentage scale. 100 % denotes that the test plant has died, while 0 % denotes no phytotoxic effect. The results obtained show that, with the safeners of the formulae IIa to IIg, the damage caused to maize by the herbicide of the formula I can be substantially reduced.

Table B5: Herbicidal action of the compounds of the formula I and a mixture thereof with the safeners of the formula II in maize

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Herbicide		
No. 1.01	8 g/ha	4 g/ha
Safener	125 g/ha	125 g/ha
No.		
<hr/>		
no safener	70%	45%
8.007	45%	25%
7.003	60%	30%
8.005	60%	20%
7.004	50%	35%

Example B3: Postemergence applications of mixtures of a herbicide of the formula I with a safener of the formulae IIa to IIg to rice

Under greenhouse conditions, the test plants are sown or planted in plastic troughs in standard soil. Water is then introduced up to the surface of the soil. After 3 days, the water level is elevated by 2 cm and the herbicide is applied as an aqueous suspension (Example F7) on its own and in a tank mix with the safeners. The application rates for the herbicide can be seen from Table B6. The application rate for the safener is 125 g/ha. Cultivation of the test plants is then continued in the greenhouse under optimum conditions. 13 days after application, the test is evaluated using a percentage scale. 100 % denotes that the test plant has died, while 0 % denotes no phytotoxic effect. The results obtained show that, with the safeners of the formulae IIa to IIg, the damage caused to rice by the herbicide of the formula I can be substantially reduced.

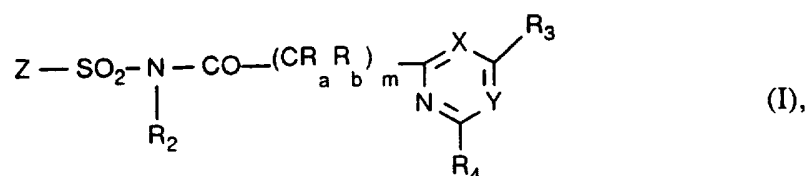
Table B6: Herbicidal action of the compounds of the formula I and a mixture thereof with the safeners of the formula II in rice

	"Yamabiko" rice		"S-201" rice, water-type	
Herbicide				
No. 1.01	8 g/ha	4 g/ha	8 g/ha	4 g/ha
Safener				
No.				
<hr/>				
no safener	75%	65%	70	60
7.001	35%	30%	20	0

## WHAT IS CLAIMED IS:

1. A selective-herbicidal composition, which comprises, in addition to customary inert formulation auxiliaries, an active substance comprising a mixture of

a) a herbicidally effective quantity of a herbicide of the formula I



in which

Z is C<sub>1</sub>-C<sub>10</sub>alkyl, C<sub>1</sub>-C<sub>10</sub>alkyl substituted by halogen, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, R<sub>7</sub>R<sub>8</sub>N-, R<sub>8</sub>CO-, R<sub>9</sub>ON=CR<sub>8</sub>-, (CH<sub>3</sub>)<sub>3</sub>Si-, -CN or oxiranyl, C<sub>2</sub>-C<sub>8</sub>alkenyl, C<sub>2</sub>-C<sub>8</sub>alkenyl substituted by halogen, phenyl, phenyl substituted by halogen, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>haloalkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>haloalkoxy or C<sub>1</sub>-C<sub>6</sub>alkoxycarbonyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, R<sub>7</sub>R<sub>8</sub>N-, (CH<sub>3</sub>)<sub>3</sub>Si-, -CN, R<sub>8</sub>CO- or R<sub>9</sub>ON=CR<sub>8</sub>-, C<sub>2</sub>-C<sub>8</sub>alkynyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl substituted by halogen, C<sub>1</sub>-C<sub>10</sub>alkyl, phenyl, phenyl substituted by halogen, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>haloalkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>haloalkoxy or C<sub>1</sub>-C<sub>6</sub>alkoxycarbonyl, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, R<sub>7</sub>R<sub>8</sub>N-, (CH<sub>3</sub>)<sub>3</sub>Si-, -CN, oxo, =NOR<sub>7</sub>, R<sub>8</sub>CO- or R<sub>9</sub>ON=CR<sub>8</sub>-, C<sub>3</sub>-C<sub>8</sub>cycloalkenyl, C<sub>3</sub>-C<sub>8</sub>cycloalkenyl substituted by halogen, C<sub>1</sub>-C<sub>10</sub>alkyl, phenyl, phenyl substituted by halogen, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>haloalkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>haloalkoxy or C<sub>1</sub>-C<sub>6</sub>alkoxycarbonyl, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, R<sub>7</sub>R<sub>8</sub>N-, (CH<sub>3</sub>)<sub>3</sub>Si-, -CN, oxo, =NOR<sub>7</sub>, R<sub>8</sub>CO- or R<sub>9</sub>ON=CR<sub>8</sub>-, -NR<sub>5</sub>R<sub>6</sub>, R<sub>10</sub>CON(R<sub>6</sub>)- or R<sub>10</sub>SO<sub>2</sub>N(R<sub>6</sub>)-, where

R<sub>7</sub> is hydrogen, C<sub>1</sub>-C<sub>10</sub>alkyl, C<sub>2</sub>-C<sub>8</sub>alkenyl, C<sub>2</sub>-C<sub>8</sub>alkynyl, phenyl or phenyl substituted by halogen, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>haloalkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>haloalkoxy or C<sub>1</sub>-C<sub>6</sub>alkoxycarbonyl,

n is 0, 1 or 2,

R<sub>8</sub> is as defined for R<sub>7</sub> or is C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>3</sub>-C<sub>8</sub>alkenyloxy or C<sub>3</sub>-C<sub>8</sub>alkynyloxy,

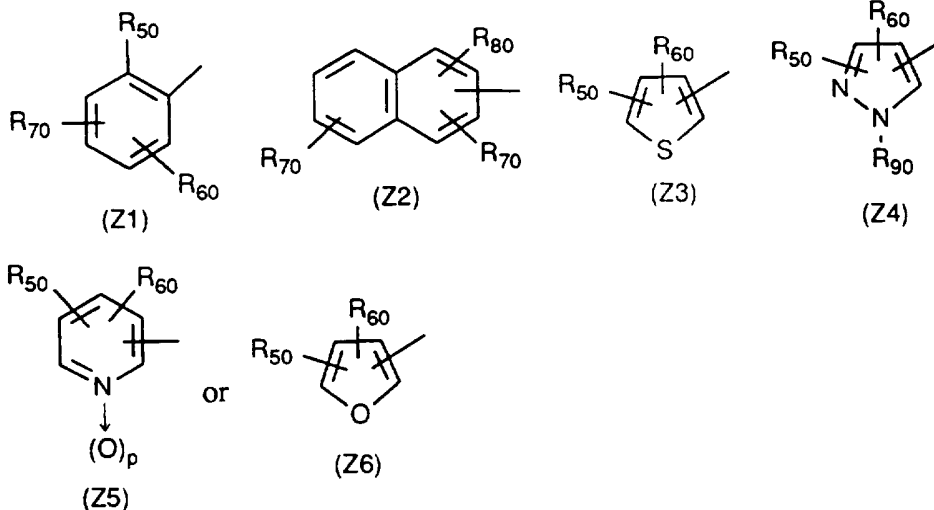
R<sub>9</sub> is C<sub>1</sub>-C<sub>10</sub>alkyl, C<sub>2</sub>-C<sub>8</sub>alkenyl or C<sub>2</sub>-C<sub>8</sub>alkynyl,

R<sub>10</sub> is C<sub>1</sub>-C<sub>10</sub>alkyl, C<sub>1</sub>-C<sub>10</sub>alkyl substituted by halogen, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, -NR<sub>7</sub>R<sub>8</sub> or -CN, C<sub>2</sub>-C<sub>8</sub>alkenyl, C<sub>2</sub>-C<sub>8</sub>alkenyl substituted by halogen, R<sub>7</sub>O-, R<sub>7</sub>S(O)<sub>n</sub>-, -NR<sub>7</sub>R<sub>8</sub> or -CN, phenyl or phenyl substituted by halogen, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>haloalkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>haloalkoxy or C<sub>1</sub>-C<sub>6</sub>alkoxycarbonyl, in which R<sub>7</sub>, n and R<sub>8</sub> are as defined,

$R_5$  is  $C_1$ - $C_{10}$ alkyl,  $C_1$ - $C_{10}$ alkyl substituted by halogen,  $C_3$ - $C_8$ cycloalkyl,  $R_7O$ -,  $R_7S(O)_n$ -,  $R_7R_8N$ -,  $R_8CO$ -,  $R_9ON=CR_8$ -,  $(CH_3)_3Si$ -,  $-CN$  or oxiranyl,  $C_2$ - $C_8$ alkenyl,  $C_2$ - $C_8$ alkenyl substituted by halogen, phenyl, phenyl substituted by halogen,  $C_1$ - $C_6$ alkyl,  $C_1$ - $C_6$ haloalkyl,  $C_1$ - $C_6$ alkoxy,  $C_1$ - $C_6$ haloalkoxy or  $C_1$ - $C_6$ alkoxycarbonyl,  $C_3$ - $C_8$ cycloalkyl,  $R_7O$ -,  $R_7S(O)_n$ -,  $R_7R_8N$ -,  $(CH_3)_3Si$ -,  $-CN$ ,  $R_8CO$ - or  $R_9ON=CR_8$ -,  $C_2$ - $C_8$ alkynyl,  $C_3$ - $C_8$ cycloalkyl,  $C_3$ - $C_8$ cycloalkyl substituted by halogen,  $C_1$ - $C_{10}$ alkyl, phenyl, phenyl substituted by halogen,  $C_1$ - $C_6$ alkyl,  $C_1$ - $C_6$ haloalkyl,  $C_1$ - $C_6$ alkoxy,  $C_1$ - $C_6$ haloalkoxy or  $C_1$ - $C_6$ alkoxycarbonyl,  $R_7O$ -,  $R_7S(O)_n$ -,  $R_7R_8N$ -,  $(CH_3)_3Si$ -,  $-CN$ , oxo,  $=NOR_7$ ,  $R_8CO$ - or  $R_9ON=CR_8$ -,  $C_3$ - $C_8$ cycloalkenyl,  $C_3$ - $C_8$ cycloalkenyl substituted by halogen,  $C_1$ - $C_{10}$ alkyl, phenyl, phenyl substituted by halogen,  $C_1$ - $C_6$ alkyl,  $C_1$ - $C_6$ haloalkyl,  $C_1$ - $C_6$ alkoxy,  $C_1$ - $C_6$ haloalkoxy or  $C_1$ - $C_6$ alkoxycarbonyl,  $R_7O$ -,  $R_7S(O)_n$ -,  $R_7R_8N$ -,  $(CH_3)_3Si$ -,  $-CN$ , oxo,  $=NOR_7$ ,  $R_8CO$ - or  $R_9ON=CR_8$ -, or is  $R_7O$ - in which  $R_7$  is as defined, and

$R_6$  is as defined for  $R_5$  or is hydrogen or together with  $R_5$  forms a  $C_4$ - $C_7$ alkylene radical, or

$Z$  is a radical of the formula



in which

$R_{50}$  is hydrogen, halogen,  $-NO_2$ ,  $-CN$ ,  $C_1$ - $C_4$ alkyl,  $C_1$ - $C_4$ alkyl substituted by halogen,  $-CN$ ,  $-OCH_3$  or  $-SCH_3$ ,  $C_2$ - $C_4$ alkenyl,  $C_2$ - $C_4$ alkenyl substituted by halogen or  $OCH_3$ ,  $C_2$ - $C_4$ alkynyl,  $C_2$ - $C_4$ alkynyl substituted by halogen,  $-OCH_3$  or  $-Si(CH_3)_3$ ,  $C_3$ - $C_6$ cycloalkyl,  $C_3$ - $C_6$ cycloalkyl substituted by  $-F$ ,  $-Cl$  or  $-CH_3$ ,  $-C(O)R_{100}$ ,  $-OCH_2CH_2OR_{100}$ ,  $-OH$ ,  $-C(R_{100})(OR_{110})(OR_{120})$ ,  $-CO_2R_{130}$ ,  $-C(O)NR_{140}R_{150}$ ,  $-N_3$ ,  $-SO_2NR_{140}R_{150}$ ,  $-SO_3R_{160}$ ,  $-OSO_2R_{170}$ , phenyl, phenyl substituted by halogen,  $-CH_3$  or  $-OCH_3$ ,  $-O-R_{180}$ ,  $-S(O)_bR_{180}$  or  $-(CH_2)_sG$ , in which  $b$  and  $s$  independently of one another are 0 or 1,

R<sub>60</sub> is hydrogen, halogen, -CN, -NO<sub>2</sub>, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkyl substituted by halogen, -CO<sub>2</sub>R<sub>130</sub>, -SO<sub>2</sub>NR<sub>140</sub>R<sub>150</sub>, -NR<sub>140</sub>R<sub>150</sub>, C<sub>1</sub>- or C<sub>2</sub>alkoxy, -OR<sub>190</sub>, -S(O)<sub>b</sub>R<sub>190</sub>, C<sub>1</sub>- or C<sub>2</sub>haloalkoxy, C<sub>1</sub>- or C<sub>2</sub>alkylthio, C<sub>1</sub>- or C<sub>2</sub>haloalkylthio, -CN, -OH or -SH, -CO<sub>2</sub>R<sub>130</sub>, -SO<sub>2</sub>NR<sub>140</sub>R<sub>150</sub>, -NR<sub>140</sub>R<sub>150</sub>, -S(O)<sub>b</sub>R<sub>190</sub> or -OR<sub>190</sub>.

R<sub>70</sub> independently at each occurrence is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl, C<sub>2</sub>-C<sub>4</sub>alkenyl, phenyl, phenyl substituted by halogen, -S(O)<sub>b</sub>R<sub>190</sub> or -OR<sub>190</sub>, -S(O)<sub>b</sub>R<sub>190</sub>, -OR<sub>190</sub> or halogen,

R<sub>80</sub> is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl, halogen, -CO<sub>2</sub>R<sub>130</sub>, -SO<sub>2</sub>NR<sub>140</sub>R<sub>150</sub>, -OSO<sub>2</sub>R<sub>170</sub>, -S(O)<sub>b</sub>R<sub>180</sub>, -CN or -NO<sub>2</sub>, and

R<sub>90</sub> is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkyl substituted by halogen or phenyl, C<sub>2</sub>-C<sub>4</sub>alkenyl, phenyl or phenyl substituted by halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, -NO<sub>2</sub>, -CN or C<sub>1</sub>-C<sub>4</sub>alkoxy, where R<sub>100</sub> is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkyl substituted by halogen or -OCH<sub>3</sub>, C<sub>3</sub>-C<sub>6</sub>cycloalkyl, C<sub>3</sub>-C<sub>6</sub>cycloalkyl substituted by halogen or -CH<sub>3</sub>, C<sub>2</sub>-C<sub>4</sub>alkenyl or C<sub>2</sub>-C<sub>4</sub>alkynyl,

R<sub>110</sub> and R<sub>120</sub> independently of one another are C<sub>1</sub>-C<sub>4</sub>alkyl or R<sub>110</sub> and R<sub>120</sub> together are -CH<sub>2</sub>CH<sub>2</sub>-, -CH<sub>2</sub>OCH<sub>2</sub>- or -CH<sub>2</sub>C(CH<sub>3</sub>)<sub>2</sub>CH<sub>2</sub>-,

R<sub>130</sub> is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkyl substituted by halogen, -CN, -CO<sub>2</sub>R<sub>100</sub>, -NR<sub>140</sub>R<sub>150</sub>, -OR<sub>100</sub> or -Si(CH<sub>3</sub>)<sub>3</sub>, C<sub>3</sub>-C<sub>4</sub>alkynyl, C<sub>3</sub>-C<sub>4</sub>alkynyl substituted by -CH<sub>3</sub> or -Si(CH<sub>3</sub>)<sub>3</sub>, C<sub>3</sub>-C<sub>6</sub>cycloalkyl, C<sub>3</sub>-C<sub>6</sub>cycloalkyl-C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy or -Si(CH<sub>3</sub>)<sub>3</sub>, R<sub>140</sub> is hydrogen or C<sub>1</sub>-C<sub>4</sub>alkyl,

R<sub>150</sub> is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy or C<sub>2</sub>-C<sub>4</sub>alkenyl, or R<sub>140</sub> and R<sub>150</sub> together are -(CH<sub>2</sub>)<sub>2</sub>(CH<sub>2</sub>)<sub>a</sub>-(CH<sub>2</sub>)<sub>2</sub>- or -(CH<sub>2</sub>)<sub>2</sub>O(CH<sub>2</sub>)<sub>2</sub>-, in which a is 0 or 1,

R<sub>160</sub> is C<sub>1</sub>-C<sub>4</sub>alkyl or C<sub>1</sub>-C<sub>4</sub>haloalkyl,

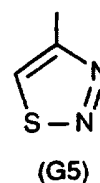
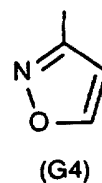
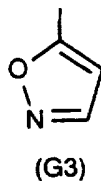
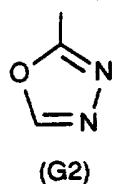
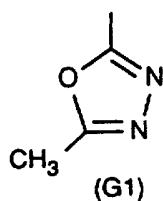
R<sub>170</sub> is C<sub>1</sub>-C<sub>4</sub>alkyl or -NR<sub>140</sub>R<sub>150</sub>, in which R<sub>140</sub> and R<sub>150</sub> are as defined,

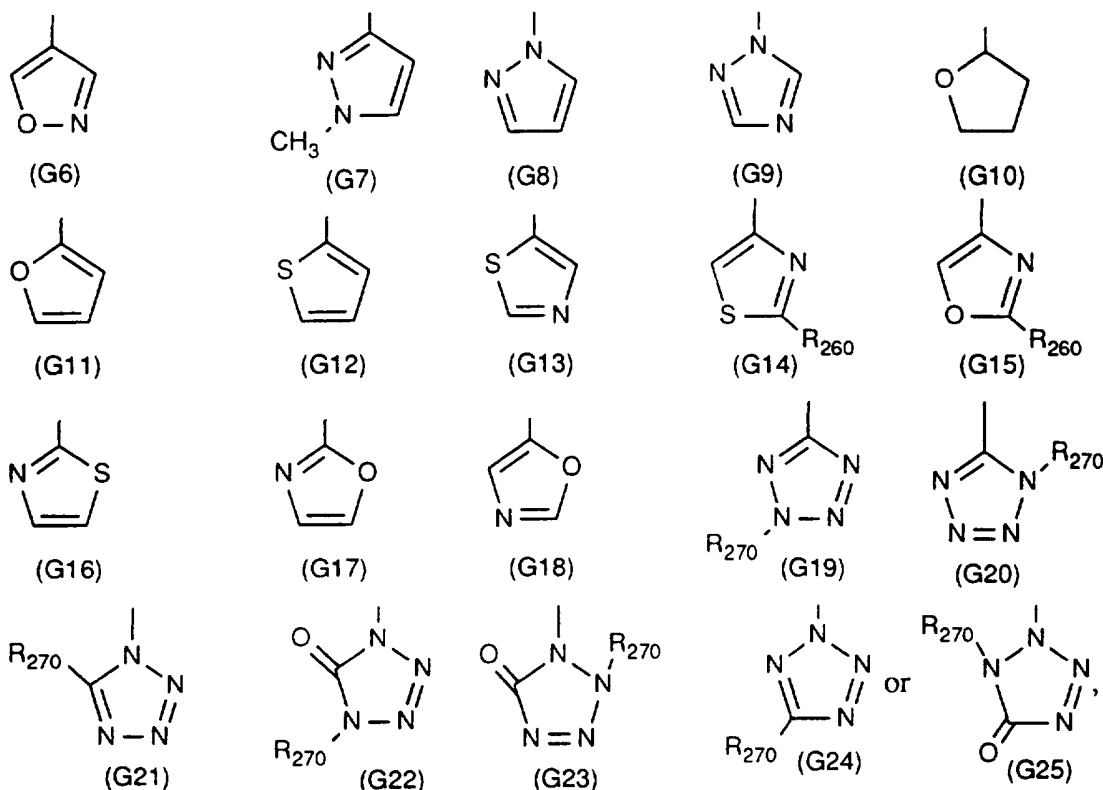
R<sub>180</sub> is C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl, C<sub>2</sub>-C<sub>4</sub>alkoxyalkyl, C<sub>2</sub>-C<sub>4</sub>alkenyl, C<sub>3</sub>-C<sub>4</sub>alkynyl, phenyl or phenyl substituted by halogen, C<sub>1</sub>-C<sub>3</sub>alkyl, C<sub>1</sub>-C<sub>3</sub>alkoxy or C<sub>1</sub>-C<sub>3</sub>haloalkyl,

R<sub>190</sub> is C<sub>1</sub>-C<sub>4</sub>alkyl or C<sub>1</sub>-C<sub>4</sub>alkyl substituted by -F, -Cl or -OR<sub>160</sub>,

q is 0 or 1,

G is a radical of the formula





in which  $R_{260}$  is hydrogen or  $C_1$ - $C_3$ alkyl and

$R_{270}$  is hydrogen,  $C_1$ - $C_3$ alkyl or  $C_2$ - $C_4$ alkenyl,

$R_2$  is hydrogen,  $C_1$ - $C_{10}$ alkyl,  $C_1$ - $C_{10}$ alkyl substituted by  $C_1$ - $C_6$ alkoxy or  $C_1$ - $C_6$ alkoxycarbonyl,  $C_3$ - $C_8$ alkenyl or benzyl,

X and Y independently of one another are =N-, =CH- or =CR-, where either X or Y must be =N-, and in which R is halogen,  $C_1$ - $C_6$ alkyl,  $C_1$ - $C_6$ alkyl substituted by halogen,

$C_1$ - $C_6$ alkoxy or  $C_1$ - $C_6$ haloalkoxy,  $C_1$ - $C_6$ alkoxy or  $C_1$ - $C_6$ haloalkoxy,

$R_3$  and  $R_4$  independently of one another are hydrogen, halogen,  $C_1$ - $C_{10}$ alkyl,  $R_7O$ -,

$R_7S(O)_n$ -,  $R_7R_8N$ -,  $C_1$ - $C_{10}$ haloalkyl,  $C_1$ - $C_{10}$ haloalkoxy,  $C_1$ - $C_6$ alkoxy- $C_1$ - $C_6$ alkyl or phenylthio, where  $R_7$ , n and  $R_8$  are as defined, or

$R_3$  or  $R_4$ , together with R, form a radical  $-OCH_2CH_2(CH_2)_m$ - or  $-(CH_2)_mCH_2CH_2O$ -, in which m is 0 or 1,

$R_a$  is hydrogen,  $C_1$ - $C_8$ alkyl,  $C_1$ - $C_8$ alkyl substituted by hydroxy,  $C_1$ - $C_8$ alkoxy, phenoxy,  $C_1$ - $C_8$ alkylthio, phenylthio,  $(CH_3)_3Si$ -,  $C_3$ - $C_8$ cycloalkyl, phenyl or di- $C_1$ - $C_8$ alkylamino,  $C_2$ - $C_6$ alkenyl,  $C_2$ - $C_6$ alkenyl substituted by halogen, or  $R_a$  is  $C_2$ - $C_6$ alkynyl,

$C_3$ - $C_8$ cycloalkyl,  $C_3$ - $C_8$ cycloalkyl substituted by  $C_1$ - $C_3$ alkyl, or  $R_a$  is  $C_3$ - $C_6$ cycloalkenyl, phenyl, phenyl substituted by  $C_1$ - $C_8$ alkyl, halogen, nitro, -CN,  $C_1$ - $C_6$ alkoxy,

$C_1$ - $C_6$ haloalkoxy, phenoxy,  $-NR_7R_8$  or  $R_8CO$ -, in which  $R_7$  and  $R_8$  are as defined, or  $R_a$  is hydroxyl, halogen, tetrahydrothienyl, tetrahydrofuryl, furyl, pyridyl or thienyl,

$R_b$  is hydrogen,  $C_1$ - $C_8$ alkyl or phenyl, or

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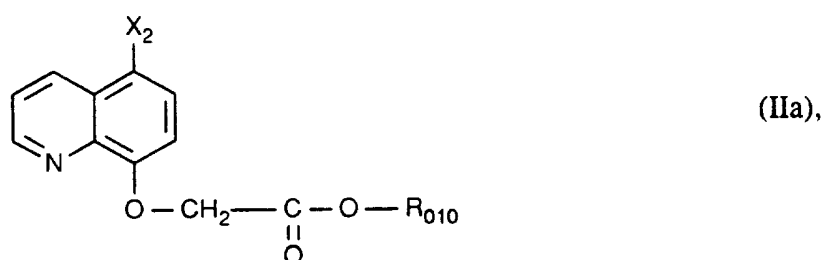
$R_a$  and  $R_b$ , together with the carbon atom to which they are attached, form a radical of the formula  $-CO-$ , and

$m$  is 0 or 1;

and also salts and stereoisomers of the compounds of the formula I

and

b) a herbicide-antagonistically effective quantity of a compound of the formula IIa

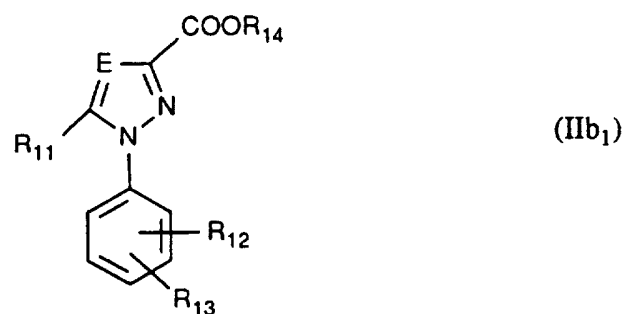


in which

$R_{010}$  is hydrogen,  $C_1$ - $C_8$ alkyl or  $C_1$ - $C_8$ alkyl which is substituted by  $C_1$ - $C_6$ alkoxy or  $C_3$ - $C_6$ alkenyloxy, and

$X_2$  is hydrogen or chlorine,

of a compound of the formula IIb<sub>1</sub>



in which

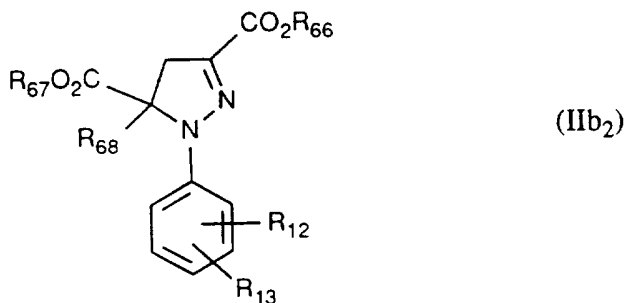
$E$  is nitrogen or methine,

$R_{11}$  is  $-CCl_3$  or unsubstituted or halogen-substituted phenyl,

$R_{12}$  and  $R_{13}$  independently of one another are hydrogen or halogen, and

$R_{14}$  is  $C_1$ - $C_4$ alkyl,

of a compound of the formula IIb<sub>2</sub>

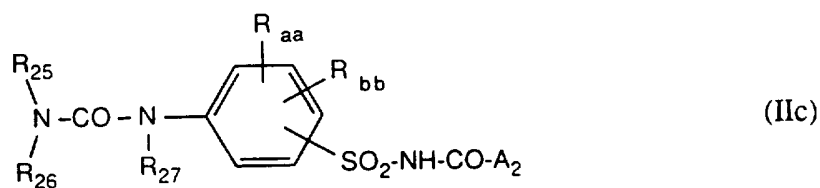


in which

R<sub>12</sub> and R<sub>13</sub> are as defined above, and

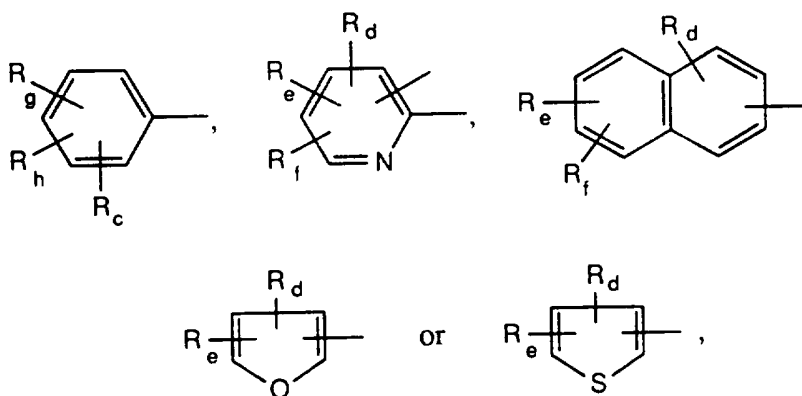
R<sub>66</sub>, R<sub>67</sub> and R<sub>68</sub> independently of one another are C<sub>1</sub>-C<sub>4</sub>alkyl,

of a compound of the formula IIc



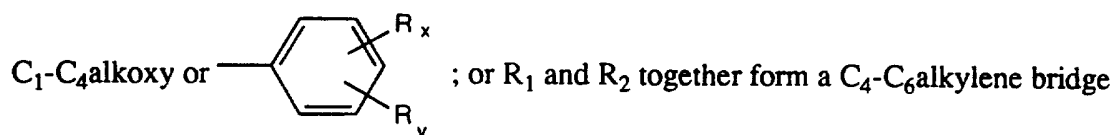
in which

A<sub>2</sub> is a group



R<sub>25</sub> and R<sub>26</sub> independently of one another are hydrogen, C<sub>1</sub>-C<sub>8</sub>alkyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl,

C<sub>3</sub>-C<sub>6</sub>alkenyl, C<sub>3</sub>-C<sub>6</sub>alkynyl, , or C<sub>1</sub>-C<sub>4</sub>alkyl which is substituted by



which can be interrupted by oxygen, sulfur, SO, SO<sub>2</sub>, NH or -N(C<sub>1</sub>-C<sub>4</sub>alkyl)-,

R<sub>27</sub> is hydrogen or C<sub>1</sub>-C<sub>4</sub>alkyl;

R<sub>aa</sub> is hydrogen, halogen, cyano, trifluoromethyl, nitro, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, C<sub>1</sub>-C<sub>4</sub>alkylsulfinyl, C<sub>1</sub>-C<sub>4</sub>alkylsulfonyl, -COOR<sub>j</sub>, -CONR<sub>k</sub>R<sub>m</sub>, -COR<sub>n</sub>, -SO<sub>2</sub>NR<sub>k</sub>R<sub>m</sub> or -OSO<sub>2</sub>-C<sub>1</sub>-C<sub>4</sub>alkyl;

R<sub>g</sub> is hydrogen, halogen, cyano, nitro, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl, C<sub>1</sub>-C<sub>4</sub>alkylthio, C<sub>1</sub>-C<sub>4</sub>alkylsulfinyl, C<sub>1</sub>-C<sub>4</sub>alkylsulfonyl, -COOR<sub>j</sub>, -CONR<sub>k</sub>R<sub>m</sub>, -COR<sub>n</sub>, -SO<sub>2</sub>NR<sub>k</sub>R<sub>m</sub>, -OSO<sub>2</sub>-C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, or C<sub>1</sub>-C<sub>6</sub>alkoxy substituted by C<sub>1</sub>-C<sub>4</sub>alkoxy or halogen, C<sub>3</sub>-C<sub>6</sub>alkenyloxy, or C<sub>3</sub>-C<sub>6</sub>alkenyloxy substituted by halogen, or C<sub>3</sub>-C<sub>6</sub>alkynyloxy, or R<sub>a</sub> and R<sub>b</sub> together form a C<sub>3</sub>-C<sub>4</sub>alkylene bridge which can be substituted by halogen or C<sub>1</sub>-C<sub>4</sub>alkyl, or form a C<sub>3</sub>-C<sub>4</sub>alkenylene bridge which can be substituted by halogen or C<sub>1</sub>-C<sub>4</sub>alkyl, or form a C<sub>4</sub>alkadienylene bridge which can be substituted by halogen or C<sub>1</sub>-C<sub>4</sub>alkyl;

R<sub>bb</sub> and R<sub>h</sub> independently of one another are hydrogen, halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>alkylthio or -COOR<sub>j</sub>;

R<sub>c</sub> is hydrogen, halogen, nitro, C<sub>1</sub>-C<sub>4</sub>alkyl or methoxy; R<sub>d</sub> is hydrogen, halogen, nitro, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, C<sub>1</sub>-C<sub>4</sub>alkylsulfinyl, C<sub>1</sub>-C<sub>4</sub>alkylsulfonyl, -COOR<sub>j</sub> or CONR<sub>k</sub>R<sub>m</sub>;

R<sub>e</sub> is hydrogen, halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, -COOR<sub>j</sub>, trifluoromethyl or methoxy, or R<sub>d</sub> and R<sub>e</sub> together form a C<sub>3</sub>-C<sub>4</sub>alkylene bridge;

R<sub>f</sub> is hydrogen, halogen or C<sub>1</sub>-C<sub>4</sub>alkyl;

R<sub>x</sub> and R<sub>y</sub> independently of one another are hydrogen, halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, -COOR<sub>28</sub>, trifluoromethyl, nitro or cyano;

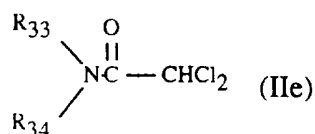
R<sub>j</sub>, R<sub>k</sub> and R<sub>m</sub> independently of one another are hydrogen or C<sub>1</sub>-C<sub>4</sub>alkyl; or

R<sub>k</sub> and R<sub>m</sub> together form a C<sub>4</sub>-C<sub>6</sub>alkylene bridge, which can be interrupted by oxygen, NH or -N(C<sub>1</sub>-C<sub>4</sub>alkyl)-;

R<sub>n</sub> is C<sub>1</sub>-C<sub>4</sub>alkyl, phenyl, or phenyl which is substituted by halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, methoxy, nitro or trifluoromethyl;

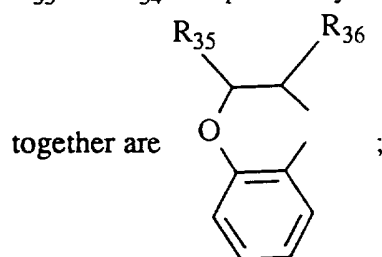
R<sub>28</sub> is hydrogen, C<sub>1</sub>-C<sub>10</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy-C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkylthio-C<sub>1</sub>-C<sub>4</sub>alkyl, di-C<sub>1</sub>-C<sub>4</sub>alkylamino-C<sub>1</sub>-C<sub>4</sub>alkyl, halogen-C<sub>1</sub>-C<sub>8</sub>alkyl, C<sub>2</sub>-C<sub>8</sub>alkenyl, halo-C<sub>2</sub>-C<sub>8</sub>alkenyl, C<sub>3</sub>-C<sub>8</sub>alkynyl, C<sub>3</sub>-C<sub>7</sub>cycloalkyl, halo-C<sub>3</sub>-C<sub>7</sub>cycloalkyl, C<sub>1</sub>-C<sub>8</sub>alkylcarbonyl, allylcarbonyl, C<sub>3</sub>-C<sub>7</sub>cycloalkylcarbonyl, benzoyl which is unsubstituted or is substituted on the phenyl ring by up to three identical or different substituents consisting of halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, halo-C<sub>1</sub>-C<sub>4</sub>alkyl, halo-C<sub>1</sub>-C<sub>4</sub>alkoxy or C<sub>1</sub>-C<sub>4</sub>alkoxy; or furoyl, thienyl; or C<sub>1</sub>-C<sub>4</sub>alkyl

substituted by phenyl, halophenyl, C<sub>1</sub>-C<sub>4</sub>alkylphenyl, C<sub>1</sub>-C<sub>4</sub>alkoxyphenyl, halo-C<sub>1</sub>-C<sub>4</sub>alkylphenyl, halo-C<sub>1</sub>-C<sub>4</sub>alkoxyphenyl, C<sub>1</sub>-C<sub>6</sub>alkoxycarbonyl, C<sub>1</sub>-C<sub>4</sub>alkoxy-C<sub>1</sub>-C<sub>8</sub>alkoxycarbonyl, C<sub>3</sub>-C<sub>8</sub>alkenyloxycarbonyl, C<sub>3</sub>-C<sub>8</sub>alkynyloxycarbonyl, C<sub>1</sub>-C<sub>8</sub>alkylthiocarbonyl, C<sub>3</sub>-C<sub>8</sub>alkenylthiocarbonyl, C<sub>3</sub>-C<sub>8</sub>alkynylthiocarbonyl, carbamoyl, mono-C<sub>1</sub>-C<sub>4</sub>alkylaminocarbonyl, di-C<sub>1</sub>-C<sub>4</sub>alkylaminocarbonyl; or phenylaminocarbonyl which is unsubstituted or is substituted on the phenyl by up to three identical or different substituents consisting of halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, halo-C<sub>1</sub>-C<sub>4</sub>alkyl, halo-C<sub>1</sub>-C<sub>4</sub>alkoxy or C<sub>1</sub>-C<sub>4</sub>alkoxy or by a single cyano or nitro substituent, or dioxolan-2-yl which is unsubstituted or is substituted by one or two C<sub>1</sub>-C<sub>4</sub>alkyl radicals, or dioxan-2-yl which is unsubstituted or is substituted by one or two C<sub>1</sub>-C<sub>4</sub>alkyl radicals, or C<sub>1</sub>-C<sub>4</sub>alkyl which is substituted by cyano, nitro, carboxyl or C<sub>1</sub>-C<sub>8</sub>alkylthio-C<sub>1</sub>-C<sub>8</sub>alkoxycarbonyl, of a compound of the formula IIe

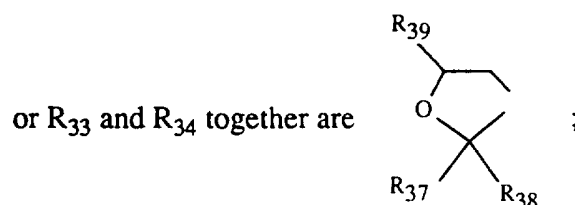


in which

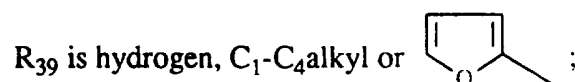
R<sub>33</sub> and R<sub>34</sub> independently of one another are C<sub>1</sub>-C<sub>6</sub>alkyl or C<sub>2</sub>-C<sub>6</sub>alkenyl; or R<sub>33</sub> and R<sub>34</sub>



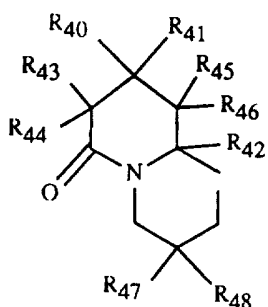
R<sub>35</sub> and R<sub>36</sub> independently of one another are hydrogen or C<sub>1</sub>-C<sub>6</sub>alkyl;



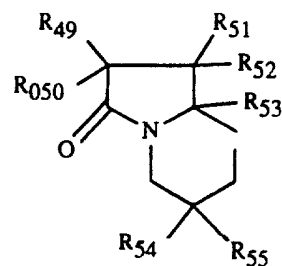
R<sub>37</sub> and R<sub>38</sub> independently of one another are C<sub>1</sub>-C<sub>4</sub>alkyl, or R<sub>37</sub> and R<sub>38</sub> together are -(CH<sub>2</sub>)<sub>5</sub>-;



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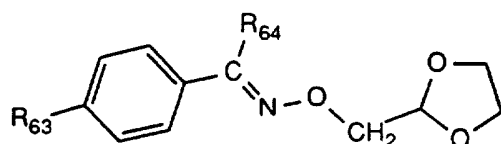
or R<sub>33</sub> and R<sub>34</sub> together are

or



;

R<sub>40</sub>, R<sub>41</sub>, R<sub>42</sub>, R<sub>43</sub>, R<sub>44</sub>, R<sub>45</sub>, R<sub>46</sub>, R<sub>47</sub>, R<sub>48</sub>, R<sub>49</sub>, R<sub>50</sub>, R<sub>51</sub>, R<sub>52</sub>, R<sub>53</sub>, R<sub>54</sub> and R<sub>55</sub> independently of one another are hydrogen or C<sub>1</sub>-C<sub>4</sub>alkyl;  
of a compound of the formula II f

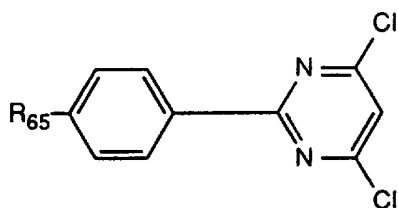


(II f)

in which

R<sub>63</sub> is hydrogen or chlorine andR<sub>64</sub> is cyano or trifluoromethyl,

or of a compound of the formula II g



(II g)

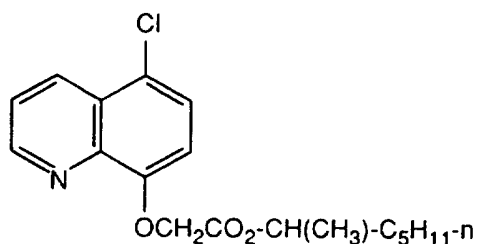
in which

R<sub>65</sub> is hydrogen or methyl.

2. A composition according to claim 1, which comprises as herbicide a compound of the formula I in which R<sub>3</sub> and R<sub>4</sub> are methoxy.

3. A composition according to claim 1, which comprises as herbicide a compound of the formula I in which R<sub>3</sub> and R<sub>4</sub> are methoxy and Z is C<sub>1</sub>-C<sub>10</sub>alkyl, C<sub>2</sub>-C<sub>8</sub>alkenyl or C<sub>2</sub>-C<sub>8</sub>haloalkenyl.

4. A composition according to claim 3, which comprises as herbicide a compound of the formula I in which Z is  $-\text{CH}_2-\text{CH}(\text{CH}_3)_2$ ,  $-\text{CH}_2-\text{C}(\text{CH}_3)=\text{CH}_2$  or  $-\text{CH}_2-\text{CH}=\text{CHCl}$ .
5. A composition according to claim 1, which comprises as herbicide a compound of the formula I in which Z is  $-\text{CH}_2-\text{CH}(\text{CH}_3)_2$ ,  $-\text{CH}_2-\text{C}(\text{CH}_3)=\text{CH}_2$  or  $-\text{CH}_2-\text{CH}=\text{CHCl}$  and m is 0.
6. A composition according to claim 1, which comprises as safener a compound of the formula IIa, IIb<sub>1</sub>, IIb<sub>2</sub> or IIc.
7. A composition according to claim 6, which comprises as safener a compound of the formula IIb<sub>1</sub> or IIb<sub>2</sub>.
8. A composition according to claim 6, which comprises as safener a compound of the formula IIa.
9. A composition according to claim 1, which comprises as herbicide a compound of the formula I in which Z is  $-\text{CH}_2-\text{CH}(\text{CH}_3)_2$ ,  $-\text{CH}_2-\text{C}(\text{CH}_3)=\text{CH}_2$  or  $-\text{CH}_2-\text{CH}=\text{CHCl}$  and m is 0, and as safener a compound of the formula IIa.
10. A composition according to claim 9, which comprises as safener a compound of the formula IIa<sub>1</sub>

(IIa<sub>1</sub>).

11. A process for the selective control of broad-leaved weeds and grasses in crops of useful plants, which comprises treating the useful plants, their seeds or seedlings or their cultivation area, simultaneously or separately, with a herbicidally effective quantity of a herbicide of the formula I and a herbicide-antagonistically effective quantity of a safener of the formulae IIa to IIg.
12. A process according to claim 11, wherein crops of useful plants or cultivation areas for

the crops of useful plants are treated with from 0.001 to 2 kg/ha of a herbicide of the formula I and with a quantity of from 0.001 to 0.5 kg/ha of a safener of the formulae IIa to IIg.

13. A process according to claim 11, wherein the crops of useful plants are those of maize or cereals, especially rye, barley, oats or wheat.

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP 96/00032

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 6 A01N43/54

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 6 A01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO,A,94 00987 (CIBA-GEIGY) 20 January 1994 & EP,A,0 592 680 cited in the application -----	

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

\* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*&\* document member of the same patent family

Date of the actual completion of the international search

10 May 1996

Date of mailing of the international search report

30. 05. 96

Name and mailing address of the ISA

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No <b>PCT/EP 96/00032</b>
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