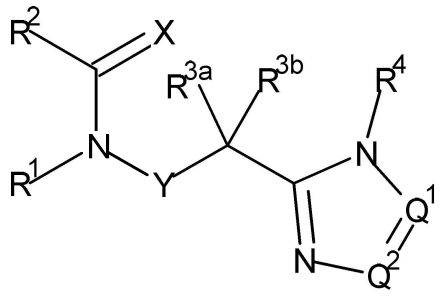
Claims:

1. Compound of the formula (I)



(I),

in which

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or optionally substituted CH_2;

R^1 is hydrogen; C_1-C_6alkyl optionally substituted with one substituent selected from -CN, -$CONH_2$, -COOH, -NO_2 and -$Si(CH_3)_3$; C_1-C_6haloalkyl; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH_2- or benzyl optionally substituted with halogen or C_1-C_3haloalkyl;

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with one to five substituents, provided at least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of

halogen, hydroxy, -NH_2, -CN, -SF_5, -COOH, -$CONH_2$, -NO_2,

and in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_6haloalkylthio, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_6haloalkylsulfinyl, C_1-C_6haloalkylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, -NH(C_1-C_6alkyl), -N(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -NHCO-phenyl, -CO_2C_1-C_6alkyl, -CONH(C_1-C_6alkyl), -CON(C_1-C_6alkyl)$_2$, -CONH(C_3-C_6cycloalkyl), -

$CON(C_1\text{-}C_6alkyl)(C_3\text{-}C_6cycloalkyl)$, $-C(=NOC_1\text{-}C_6alkyl)H$, $-C(=NOC_1\text{-}C_6alkyl)\text{-}C_1\text{-}C_6alkyl$;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted $C_1\text{-}C_6alkyl$, $C_1\text{-}C_6haloalkyl$ and $C_1\text{-}C_6alkoxy$;

and an optionally substituted 4- to 6-membered saturated or partially unsaturated heterocyclic ring;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; halogen; -CN; $C_1\text{-}C_6alkyl$ optionally substituted by one to three substituents independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, in each case optionally substituted $C_1\text{-}C_6alkyl$, $C_3\text{-}C_6cycloalkyl$, $C_1\text{-}C_6alkoxy$, $C_1\text{-}C_6alkylthio$, $C_1\text{-}C_6alkylsulfinyl$, $C_1\text{-}C_6alkylsulfonyl$, $-NH(C_1\text{-}C_6alkyl)$, $-N(C_1\text{-}C_6alkyl)_2$, $-NHCO\text{-}C_1\text{-}C_6alkyl$, $-N(C_1\text{-}C_6alkyl)CO\text{-}C_1\text{-}C_6alkyl$, $-CO_2C_1\text{-}C_6alkyl$, $-CONH(C_1\text{-}C_6alkyl)$, and $-CON(C_1\text{-}C_6alkyl)_2$; optionally substituted $C_3\text{-}C_6cycloalkyl$; optionally substituted $C_1\text{-}C_6haloalkyl$; optionally substituted $C_2\text{-}C_6alkenyl$; optionally substituted $C_2\text{-}C_6haloalkenyl$; optionally substituted $C_2\text{-}C_6alkynyl$; benzyl wherein the phenyl substituent is optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, $-SF_5$, in each case optionally substituted $C_1\text{-}C_6alkyl$, $C_1\text{-}C_6alkoxy$, $C_1\text{-}C_6alkylthio$, $C_1\text{-}C_6alkylsulfinyl$, and $C_1\text{-}C_6alkylsulfonyl$; heterocyclyl-$C_1\text{-}C_6alkyl$ wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, in each case optionally substituted $C_1\text{-}C_6alkyl$, and $C_1\text{-}C_6alkoxy$; phenyl optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, $-SF_5$, in each case optionally substituted $C_1\text{-}C_6alkyl$, $C_1\text{-}C_6alkoxy$, $C_1\text{-}C_6alkylthio$, $C_1\text{-}C_6alkylsulfinyl$, and $C_1\text{-}C_6alkylsulfonyl$; or heterocyclyl wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, $-CONH_2$, $-NO_2$, $-NH_2$, in each case optionally substituted $C_1\text{-}C_6alkyl$, and $C_1\text{-}C_6alkoxy$;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a C_3-C_6-carbocyclic or 3- to 6-membered heterocyclic ring system, optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, in each case optionally substituted C_1-C_6alkyl, C_1-C_6alkoxy and C_1-C_6haloalkoxy;

R^4 is pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl, wherein the pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl is optionally substituted with one to three substituents selected from the group consisting of halogen, hydroxy, -CN, -COOH, -CO_2-C_1-C_6alkyl, -SO_2NH_2, -$CONH_2$, -$CSNH_2$, -NO_2, -NH_2, in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_6haloalkylthio, C_1-C_6haloalkylsulfinyl, C_1-C_6haloalkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_2-C_4alkenylsulfanyl, C_2-C_4alkenylsulfinyl, C_2-C_4alkenylsulfonyl, C_2-C_4alkinylsulfanyl, C_2-C_4alkinylsulfinyl, C_2-C_4alkinylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, S-C_1-C_6alkylsulfinimidoyl, S-C_3-C_6cycloalkylsulfinimidoyl, S-C_2-C_6alkenylsulfinimidoyl, S-C_2-C_6alkinylsulfinimidoyl, S-phenylsulfinimidoyl, S-C_1-C_6alkylsulfonimidoyl, S-C_3-C_6cycloalkylsulfonimidoyl, S-C_2-C_6alkenylsulfonimidoyl, S-C_2-C_6alkinylsulfonimidoyl, S-phenylsulfonimidoyl, -NH(C_1-C_6alkyl), -N(C_1-C_6alkyl)$_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -N(C_3-C_6cycloalkyl)CO-C_1-C_6alkyl, -NHCO-C_3-C_6cycloalkyl, -N(C_1-C_6alkyl)CO-(C_3-C_6cycloalkyl), -N(C_3-C_6cycloalkyl)CO-(C_3-C_6cycloalkyl), -N(C_1-C_6alkyl)CO-phenyl, -N(C_3-C_6cycloalkyl)CO-phenyl, -NHCO-phenyl, -N(CO-C_1-C_6alkyl)$_2$, -N(CO-C_3-C_6cycloalkyl)$_2$, -N(CO-phenyl)$_2$, -N(CO-C_3-C_6cycloalkyl)(CO-C_1-C_6alkyl), -N(CO-C_3-C_6cycloalkyl)(CO-phenyl), -N(CO-C_1-C_6alkyl)(CO-phenyl), -CONH(C_1-C_6alkyl), -CON(C_1-C_6alkyl)$_2$, -CONH(C_3-C_6cycloalkyl), -CON(C_1-C_6alkyl)(C_3-C_6cycloalkyl), -CON(C_3-C_6cycloalkyl)$_2$, -CONH-SO_2-C_1-C_6alkyl, -CONH-SO_2-phenyl, -CONH-SO_2-(C_3-C_6cycloalkyl), -CON(C_1-C_6alkyl)-SO_2-C_1-C_6alkyl, -CON(C_1-C_6alkyl)-SO_2-phenyl, -CON(C_1-C_6alkyl)-SO_2-(C_3-C_6cycloalkyl), -CONH-phenyl, -CON(C_1-C_6alkyl)phenyl, -CON(C_3-C_6cycloalkyl)phenyl, -N(SO_2C_1-C_6alkyl)$_2$, -N(SO_2C_1-C_6haloalkyl)$_2$, -N(SO_2C_3-C_6cycloalkyl)$_2$, -N(SO_2C_1-C_6alkyl)SO_2-phenyl, -N(SO_2C_3-C_6cycloalkyl)SO_2-phenyl, -NHSO_2-C_1-C_6alkyl, -NHSO_2-C_1-C_6haloalkyl, -N(C_1-C_6alkyl)SO_2-C_1-C_6alkyl, -N(C_3-C_6cycloalkyl)SO_2-C_1-C_6alkyl, -NHSO_2-phenyl, -N(C_1-C_6alkyl)SO_2-phenyl, -N(C_3-C_6cycloalkyl)SO_2-phenyl, -NHSO_2-C_3-C_6cycloalkyl, -N(C_1-C_6alkyl)SO_2-(C_3-C_6cycloalkyl), -N(C_3-C_6cycloalkyl)SO_2-(C_3-C_6cycloalkyl), -SO_2NH(C_1-C_6alkyl), -SO_2N(C_1-C_6alkyl)$_2$, -SO_2N(C_1-C_6alkyl)(C_3-C_6cycloalkyl), -SO_2NH(C_3-C_6cycloalkyl), -SO_2N(C_3-C_6cycloalkyl)$_2$, -SO_2NH(phenyl), -SO_2N(C_1-C_6alkyl)(phenyl), -

$SO_2N(C_1$-C_4cycloalkyl)(phenyl), -C(=NOC_1-C_6alkyl)H and -C(=NOC_1-C_6alkyl)-C_1-C_6alkyl;

R^5 is hydrogen, halogen, -CN, or in each case optionally substituted C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_6alkoxy, C_1-C_6alkoxyC(O)-, $(C_1$-C_6alkoxy$)_2$CH-, -CO_2C_1-C_6alkyl, -CONH(C_1-C_6alkyl), -CON(C_1-C_6alkyl$)_2$, -NHCO-C_1-C_6alkyl, -N(C_1-C_6alkyl)CO-C_1-C_6alkyl, -C(=NOC_1-C_6alkyl)H, or -C(=NOC_1-C_6alkyl)-C_1-C_6alkyl.

2. Compound according to Claim 1, in which

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or CH_2;

R^1 is hydrogen; C_1-C_6alkyl optionally substituted with one substituent selected from -CN, -$CONH_2$, -COOH, -NO_2 and -Si$(CH_3)_3$; C_1-C_6haloalkyl; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH_2-; or benzyl optionally substituted with halogen or C_1-C_3haloalkyl;

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with one to five substituents, provided at least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of

halogen, hydroxy, -NH_2, -CN, -SF_5, -COOH, -$CONH_2$, -NO_2, C_1-C_6alkyl,

optionally substituted C_3-C_6cycloalkyl;

C_3-C_6cycloalkyl-C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_3-C_6cycloalkylsulfanyl, C_3-C_6cycloalkylsulfinyl, C_3-C_6cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, wherein in each case the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-NH(C_1-C_4alkyl), -N(C_1-C_4alkyl$)_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl;

-NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl;

-CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), -CON(C_1-C_4alkyl)$_2$, -CONH(C_3-C_6cycloalkyl), -CON(C_1-C_4alkyl)(C_3-C_6cycloalkyl), -C(=NOC_1-C_4alkyl)H, -C(=NOC_1-C_4alkyl)-C_1-C_4alkyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; halogen; -CN; C_1-C_6alkyl optionally substituted by one to three substituents independently selected from the group consisting of hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, -NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl, -CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), and -CON(C_1-C_4alkyl)$_2$; C_3-C_6cycloalkyl optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, -COOH, -$CONH_2$, C_1-C_6alkyl, C_1-C_6haloalkyl, C_3-C_6cycloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, -CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), and -CON(C_1-C_4alkyl)$_2$; C_1-C_6haloalkyl optionally substituted with one to two substituents selected from the group consisting of hydroxy, -CN, C_3-C_6cycloalkyl, C_1-C_6alkoxy, C_1-C_6haloalkoxy, -CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), and -CON(C_1-C_4alkyl)$_2$; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; benzyl wherein the phenyl substituent is optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, -SF_5, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_4haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, and C_1-C_3haloalkylsulfonyl; heterocyclyl-C_1-C_6alkyl wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy; phenyl optionally substituted with one to five substituents, each independently selected from the group consisting of halogen, hydroxy, -

CN, -COOH, -$CONH_2$, -NO_2, -NH_2, -SF_5, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_4haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, and C_1-C_3haloalkylsulfonyl; and heterocyclyl wherein the heterocyclyl substituent is selected from the group consisting of 4- to 10-membered saturated and partially unsaturated heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, =O (oxo), hydroxy, -CN, -COOH, -$CONH_2$, -NO_2, -NH_2, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a C_3-C_6-carbocyclic or 3- to 6-membered heterocyclic ring system, optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy and C_1-C_3haloalkoxy;

R^4 is pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl, wherein the pyridine, pyrimidine, pyrazine, pyridazine or 5-membered heteroaryl is optionally substituted with one to three substituents selected from the group consisting of halogen, hydroxy, -CN, -COOH, -CO_2-C_1-C_6alkyl, -$CONH_2$, -$CSNH_2$, -NO_2, -NH_2, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_6alkylthio, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, -NH(C_1-C_4alkyl), -N(C_1-C_4alkyl)$_2$, -NHCO-C_1-C_4alkyl, wherein the alkyl is optionally substituted with -CN, C_1-C_6alkyl and C_1-C_4alkoxy; -NHCO-C_1-C_4haloalkyl, -NHCO-C_3-C_6cycloalkyl, wherein the cycloalkyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_6alkyl or C_1-C_4alkoxy; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_6alkyl and C_1-C_3haloalkyl; -N(C_1-C_4alkyl)CO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_3-C_6cycloalkyl; -N(C_1-C_4alkyl)CO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, CN, C_1-C_6alkyl and C_1-C_3haloalkyl; -N(SO_2C_1-C_3alkyl)$_2$, -NH(SO_2C_1-C_3alkyl), -N(C_1-C_4alkyl)(SO_2C_1-C_3alkyl), -N(SO_2C_1-C_3haloalkyl)$_2$, -NH(SO_2C_1-C_3haloalkyl), -CONH(C_1-C_4alkyl), -CON(C_1-C_4alkyl)$_2$, -CONH-SO_2-C_1-C_3alkyl, -CON(C_1-C_4alkyl)(C_3-C_6cycloalkyl), -CONH(C_1-C_4haloalkyl), -CONH(C_3-C_6cycloalkyl), -CONH(C_3-C_6cyanocycloalkyl), -C(=NOC_1-C_4alkyl)H and -C(=NOC_1-C_4alkyl)-C_1-C_4alkyl; and -CONH-phenyl, wherein the phenyl is optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

R^5 is hydrogen, halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl, C_3-C_4cycloalkyl, C_1-C_3alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkoxyC(O)-, $(C_1$-C_3alkoxy$)_2$CH-, -CO_2C_1-C_4alkyl, -CONH(C_1-C_4alkyl), -CON(C_1-C_4alkyl$)_2$, -NHCO-C_1-C_4alkyl, -N(C_1-C_4alkyl)CO-C_1-C_4alkyl, -C(=NOC_1-C_4alkyl)H, or -C(=NOC_1-C_4alkyl)-C_1-C_4alkyl.

3. Compound according to Claim 1 or 2, in which

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or CH_2;

R^1 is hydrogen; C_1-C_3alkyl optionally substituted with one substituent selected from -CN, -$CONH_2$, -COOH, -NO_2 and -$Si(CH_3)_3$; C_1-C_3haloalkyl; C_2-C_4alkenyl; C_2-C_4haloalkenyl; C_2-C_4alkynyl; C_2-C_4haloalkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH_2-; or benzyl optionally substituted with halogen or C_1-C_3haloalkyl;

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is substituted with one to five substituents, provided at least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of

halogen, -CN, -NO_2, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_3-C_4cycloalkylsulfanyl, C_3-C_4cycloalkylsulfinyl, C_3-C_4cycloalkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl;

and phenyl and 5- to 6-membered heteroaryl, wherein the phenyl or 5- to 6-membered heteroaryl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl and C_1-C_3haloalkyl;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; C_1-C_6alkyl optionally substituted by one to three substituents independently selected from the group consisting of C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, and C_1-C_3haloalkylsulfonyl; C_3-C_6cycloalkyl; C_1-C_6haloalkyl; C_2-C_6alkenyl; C_2-C_6haloalkenyl; C_2-C_6alkynyl; C_2-C_6haloalkynyl; benzyl wherein the phenyl substituent is optionally substituted with one to three substituents independently selected

from the group consisting of halogen, -CN, -NO_2, C_1-C_6alkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, and C_1-C_4haloalkoxy; or heterocyclyl-C_1-C_6alkyl wherein the heterocyclyl substituent is selected from the group consisting of 4 - to 10-membered heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of halogen, -CN, -NO_2, C_1-C_6alkyl, C_1-C_3haloalkyl, and C_1-C_4alkoxy; or phenyl optionally substituted with one substituent selected from the group consisting of halogen, -CN, -NO_2, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a cyclopropane, cyclobutane, oxetane or tetrahydropyrane ring optionally substituted with one to two substituents, each independently selected from the group consisting of halogen, -CN, C_1-C_6alkyl, C_1-C_3haloalkyl and C_1-C_4alkoxy;

R^4 is pyridine, pyrimidine, pyrazine, pyridazine or thiazole, wherein (A) the pyridine, pyrimidine, pyrazine or pyridazine is optionally substituted with one to three substituents selected from the group consisting of halogen, -CN, -NH_2, -NO_2, -COOH, -$CONH_2$, -$CSNH_2$, -CO_2-C_1-C_3alkyl, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl, C_1-C_3haloalkylsulfonyl, -NHCO-C_1-C_3alkyl, -NHCO-C_1-C_3haloalkyl, -NHCO-C_1-C_3cyanoalkyl, -NHCO-C_3-C_4cycloalkyl, wherein the cycloalkyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, -CN, C_1-C_6alkyl or C_1-C_4alkoxy; -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl, C_1-C_3alkoxy and C_1-C_3haloalkoxy; -$NHSO_2$-C_1-C_3alkyl, -$NHSO_2$-C_1-C_3haloalkyl, -CONH(C_1-C_3alkyl), -CON(C_1-C_3alkyl)$_2$, -CONH-SO_2-C_1-C_3alkyl, -CON(C_1-C_3alkyl)(C_3-C_6cycloalkyl), -CONH(C_1-C_3haloalkyl), -CONH(C_3-C_6cycloalkyl), -CONH(1-cyano-C_3-C_6cycloalkyl), -CONH-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl, C_1-C_3alkoxy and C_1-C_3haloalkoxy;

and (B) the thiazole is optionally substituted with one to two substituents selected from the group consisting of halogen, -CN, -NO_2, C_1-C_6alkyl, C_3-C_6cycloalkyl, C_1-C_3haloalkyl, C_1-C_4alkoxy, C_1-C_3haloalkoxy, C_1-C_3alkylthio, C_1-C_3alkylsulfinyl, C_1-C_3alkylsulfonyl, C_1-C_3haloalkylthio, C_1-C_3haloalkylsulfinyl and C_1-C_3haloalkylsulfonyl;

R^5 is hydrogen, halogen, -CN, C_1-C_3alkyl, C_1-C_3haloalkyl, C_3-C_4cycloalkyl, or C_1-C_3alkoxy.

4. Compound according to any of Claims 1 to 3, in which

X is O or S;

Q^1 and Q^2 are independently CR^5 or N, provided at least one of Q^1 and Q^2 is N;

Y is a direct bond or CH_2;

R^1 is hydrogen; C_1-C_3alkyl optionally substituted with -CN, -$Si(CH_3)_3$ or one to three substituents selected from the group consisting of fluorine, chlorine or bromine; C_2-C_4alkenyl; C_2-C_4alkynyl; C_3-C_4cycloalkyl-C_1-C_2alkyl- wherein the C_3-C_4cycloalkyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine and bromine;

R^2 is phenyl or pyridine wherein the phenyl or pyridine is substituted with one to three substituents, provided at least one substituent is on either carbon adjacent to the carbon bonded to the C=X group, each independently selected from the group consisting of

fluorine, chlorine, bromine, -CN, -NO_2, methyl, cyclopropyl, difluoromethyl, trifluoromethyl, methoxy, trifluoromethoxy, difluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, ethylthio, ethylsulfinyl, ethylsulfonyl, isopropylthio, isopropylsulfinyl, isopropylsulfonyl, cyclopropylthio, cyclopropylsulfinyl, cyclopropylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl,

and phenyl, wherein the phenyl is optionally substituted with one two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl;

R^{3a}, R^{3b} are independently selected from the group consisting of hydrogen; C_1-C_3alkyl optionally substituted by one to three substituents independently selected from the group consisting of methyl, ethyl, iso-propyl, n-propyl, cyclopropyl, cyclobutyl, difluoromethyl, trifluoromethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, and trifluoromethylsulfonyl; cyclopropyl, difluoromethyl, trifluoromethyl, difluoromethyl, trifluoromethyl, 2,2-difluoroethyl, 2,2,2-trifluoroethyl, ethinyl, 2-propen-1-yl and 2-propin-1-yl; benzyl wherein the phenyl substituent is optionally substituted with one to three substituents independently selected from the group consisting of fluorine, chlorine, bromine, -CN, NO_2, methyl, trifluoromethyl and methoxy; heterocyclyl-methyl wherein

the heterocyclyl substituent is selected from the group consisting of 4 - to 10-membered heterocyclyl, 5-membered heteroaryl and 6-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, trifluoromethyl and methoxy; and phenyl optionally substituted with one substituent selected from the group consisting of fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, trifluoromethyl and methoxy;

or

R^{3a}, R^{3b} form together with the carbon to which they are connected a cyclopropane, cyclobutane, oxetane or tetrahydropyrane ring;

R^4 is pyridine, pyrimidine, pyrazine or thiazole, wherein (A) the pyridine, pyrimidine or pyrazine is optionally substituted with one to three substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, $-NH_2$, $-NO_2$, -COOH, $-CONH_2$, $-CSNH_2$, $-CO_2Me$, methyl, ethyl, difluoromethyl, trifluoromethyl, pentafluoroethyl, cyclopropyl, methoxy, difluoromethoxy, trifluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl, -NHCO-methyl, -NHCO-trifluoromethyl, $-NHCO-CH_2CN$, -NHCO-cyclopropyl, -NHCO-1-cyanocyclopropyl, $-NHSO_2$-methyl, $-NHSO_2$-trifluoromethyl, -NHCO-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, methyl, difluoromethyl, trifluoromethyl, methoxy, difluoromethoxy and trifluoromethoxy; -CONH-methyl, $-CONH-SO_2$-methyl, -CON-(N-methyl)-N-cyclopropyl, -CONH-difluoroethyl, -CONH-trifluoroethyl, -CONH-cyclopropyl, -CONH-1-cyanocyclopropyl, -CONH-phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, methyl, difluoromethyl, trifluoromethyl, methoxy, difluoromethoxy and trifluoromethoxy;

and (B) the thiazole is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, $-NO_2$, methyl, ethyl, difluoromethyl, trifluoromethyl, pentafluoroethyl, cyclopropyl, methoxy, difluoromethoxy, trifluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl and trifluoromethylsulfonyl;

R^5 is hydrogen, fluorine, chlorine, bromine, -CN, methyl, ethyl, iso-propyl, difluoromethyl, trifluoromethyl, cyclopropyl, methoxy, or ethoxy.

5. Compound according to any of Claims 1 to 4, in which

X is O or S;

Q^1 is N

Q^2 is CR^5

Y is a direct bond or CH_2;

R^1 is hydrogen, methyl, ethyl, 2-(trimethylsilyl)ethyl, 2,2-difluoroethyl, 2,2,2-trifluoroethyl, 3,3,3-trifluoropropyl, or cyclopropyl-CH_2- ;

R^2 3-chloro-2-fluoro-5-(trifluoromethyl)phenyl, 2,3,5-trichlorophenyl, 2-chlorophenyl, 2,5-dichlorophenyl, 2,3,4-trichlorophenyl, 2,3-dichlorophenyl, 2,4-dichlorophenyl, or 2,6-difluorophenyl;

R^{3a} is hydrogen, methyl or methoxymethyl;

R^{3b} is methyl or methoxymethyl if R^{3a} is hydrogen;

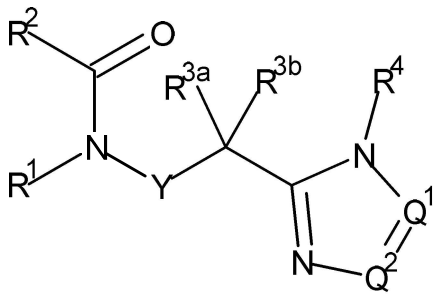
R^{3b} is hydrogen if R^{3a} is methyl or methoxymethyl;

R^{3a} and R^{3b} form together with the carbon to which they are connected a cyclopropane ring;

R^4 is pyridin-2-yl, pyrimidin-2-yl, pyrimidin-4-yl, 5-fluoropyrimidin-2-yl, 5-chloropyrimidin-2-yl, 5-cyanopyrimidin-2-yl, 5-(trifluoromethyl)pyrimidin-2-yl, 5-methylpyrimidin-2-yl, 5-fluoropyridin-2-yl, 5-chloropyridin-2-yl, 2-chloropyridin-4-yl, 5-cyanopyridin-2-yl, 4-cyano-pyridin-2-yl, 6-cyano-pyridin-2-yl, 5-methoxy-pyridin-2-yl, 5-(trifluoromethyl)-pyridin-2-yl, 5-(difluoromethoxy)pyridin-2-yl, 5-(trifluoromethylthio)pyridin-2-yl, 5-nitropyridin-2-yl, 5-aminopyridin-2-yl, 3,5-difluoropyridin-2-yl, 5-chloro-3-fluoropyridin-2-yl, pyridin-2-yl-5-carboxylic acid, methyl pyridin-2-yl-5-carboxylate, N-methyl-pyridin-2-yl-5-carboxamide, N-cyclopropyl-pyridin-2-yl-5-carboxamide, N-cyclopropyl-N-methyl-pyridin-2-yl-5-carboxamide, N-(1-cyanocyclopropyl)-pyridin-2-yl-5-carboxamide, N-(2,2-difluoroethyl)-pyridin-2-yl-5-carboxamide, N-(2,2,2-trifluoroethyl)-pyridin-2-yl-5-carboxamide, N-methylsulfonyl-pyridin-2-yl-5-carboxamide, N-(4-fluorophenyl)-pyridin-2-yl-5-carboxamide, 5-acetamidopyridin-2-yl, 5-(trifluoroacetamido)-pyridin-2-yl, 5-(2-cyanoacetylamino)-pyridin-2-yl, 5-[(cyclopropylcarbonyl)amino]pyridin-2-yl, 5-[(1-cyanocyclopropylcarbonyl)amino]-pyridin-2-yl, 5-(methanesulfonamido)-pyridin-2-yl, 5-(trifluoromethylsulfonamido)-pyridin-2-yl, 5-[(4-fluorobenzoyl)amino]pyridine-2-yl pyrazin-2-yl, 2-cyano-pyrazin-5-yl, or 1,3-thiazol-2-yl;

R^5 is hydrogen, methyl or trifluoromethyl.

6. Compound according to any of Claims 1 to 5, characterized in that it has a structure according to formula (I')



(I'),

in which the structural elements Y, Q^1, Q^2, R^1, R^2, R^{3a}, R^{3b}, R^4 and R^5 have the meanings given in any of Claims 1 to 5.

7. Compound according to any of Claims 1 to 6, in which Q^1 represents N or CR^5 and Q^2 represents N and all further structural elements Y, R^1, R^2, R^{3a}, R^{3b}, R^4 and R^5 have the meanings given in any of Claims 1 to 5.

8. Compound according to any of Claims 1 to 6, in Q^1 represents N and Q^2 represents CR^5 and all further structural elements Y, R^1, R^2, R^{3a}, R^{3b}, R^4 and R^5 have the meanings given in any of Claims 1 to 5.

9. Formulation, especially agrochemical formulation, comprising at least one compound of the formula (I) according to any of Claims 1 to 8.

10. Formulation according to Claim 9, further comprising at least one extender and/or at least one surface-active substance.

11. Formulation according to Claim 9 or 10, characterized in that the compound of the formula (I) is in a mixture with at least one further active compound.

12. A compound of the formula (I) according to any of Claims 1 to 8 or a formulation according to any of Claims 9 to 11 for use in controlling pests, especially animal pests, wherein the compound or the formulation is allowed to act on the pests and/or their habitat.

13. The compound or the formulation according to Claim 12, characterized in that the pest is an animal pest and comprises an insect, an arachnid or a nematode, or in that the pest is an insect, an arachnid or a nematode.

14. A compound of the formula (I) according to any of Claims 1 to 8 or a formulation according to any of Claims 9 to 11 for use in controlling animal pests.

15. The compound or the formulation according to Claim 14, characterized in that the animal pest comprises an insect, an arachnid or a nematode, or in that the animal pest is an insect, an arachnid or a nematode.

16. A compound of the formula (I) according to any of Claims 1 to 8 or a formulation according to any of Claims 9 to 11 for use in crop protection.

17. A compound of the formula (I) according to any of Claims 1 to 8 or a formulation according to any of Claims 9 to 11 for use in the field of animal health.

18. A compound of the formula (I) according to any of Claims 1 to 8 or a formulation according to any of Claims 9 to 11 for use in protecting seed or a germinating plant from pests, especially animal pests, wherein the seed is to be contacted with the compound or with the formulation.