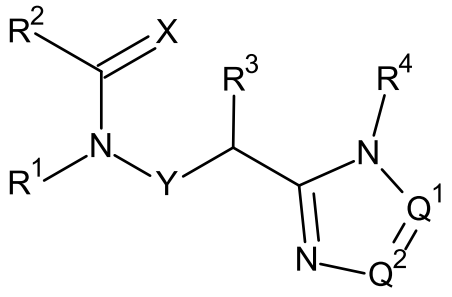
Claims:

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 CH_2 ;

R^1 is hydrogen; C_1-C_6 alkyl optionally substituted with one substituent selected from -CN, -$CONH_2$, -COOH, -NO_2 and -$Si(CH_3)_3$; C_1 -C_6 haloalkyl; C_2 -C_6 alkenyl; C_2 -C_6 haloalkenyl; C_2 -C_6 alkynyl; C_2 -C_6 haloalkynyl; C_3 -C_4 cycloalkyl-C_1-C_2 alkyl- wherein the C_3 -C_4 cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH_2 - or benzyl optionally substituted with halogen atoms or C_1-C_3 haloalkyl;

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is optionally substituted with one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X-group, each independently selected from the group consisting of C_1-C_3 alkyl, C_1-C_3 haloalkyl, C_1-C_3 haloalkylthio, C_1-C_3 alkoxy, C_1-C_3 haloalkoxy, halogen, -NO_2 , -SF_5 , -CN, -$CONH_2$, -COOH and -$C(S)NH_2$;

R^3 is C_1-C_3 alkyl or C_1-C_3 haloalkyl;

R^4 is a 5-membered heteroaryl optionally substituted with one to three substituents independently selected from the group consisting of

halogen, hydroxy, -CN, -COOH, -$CONH_2$, -$CSNH_2$, -SO_2NH_2 , -NO_2,-SF_5 , -NH_2 ;

and in each case optionally substituted -CO_2-C_1-C_6 alkyl, C_1-C_6 alkyl, C_3-C_6 cycloalkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxy, C_1-C_6 alkylthio, C_1-C_6 alkylsulfinyl, C_1-C_6 alkylsulfonyl, C_3-C_6 cycloalkylsulfanyl, C_3-C_6 cycloalkylsulfinyl, C_3-C_6 cycloalkylsulfonyl, C_1-C_6 haloalkylthio, C_1-C_6 haloalkylsulfinyl, C_1-C_6 haloalkylsulfonyl, C_2-C_4 alkenylsulfanyl, C_2-C_4 alkenylsulfinyl, C_2-C_4 alkenylsulfonyl, C_2-C_4 alkinylsulfanyl, C_2-C_4 alkinylsulfinyl, C_2-C_4 alkinylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, S-C_1-C_6 alkylsulfinimidoyl, S-C_3-C_6 cycloalkylsulfinimidoyl, S-C_2 -C_6 alkenylsulfinimidoyl, S-C_2 -C_6 alkinylsulfinimidoyl, S-phenylsulfinimidoyl, S- C_1-C_6 alkylsulfonimidoyl, S-C_3-C_6 cycloalkylsulfonimidoyl, S-C_2 -C_6 alkenylsulfonimidoyl, S-C_2-C_6 alkinylsulfonimidoyl, S-phenylsulfonimidoyl, -NH(C_1-C_6 alkyl),-N(C_1-C_6 alkyl) 2 , -NHCO- C_1-C_6 alkyl, -N(C_1-C_6 alkyl)CO- C_1-C_6 alkyl,-N(C_3-C_6 cycloalkyl)CO- C_1-C_6 alkyl, -NHCO-C_3-C_6 cycloalkyl, -N(C_1-C_6 alkyl)CO-(C_3-C_6 cycloalkyl), -N(C_3-C_6 cycloalkyl)CO-(C_3-C_6 cycloalkyl), -N(C_1-C_6 alkyl)CO-phenyl, -N(C_3-C_6 cycloalkyl)CO-phenyl, -NHCO-phenyl, -N(CO- C_1-C_6 alkyl) 2, -N(CO-C_3-C_6 cycloalkyl) 2, -N(CO-phenyl) 2, -N(CO-C_3-C_6 cycloalkyl)(CO-C_1-C_6 alkyl), -N(CO-C_3-C_6 cycloalkyl)(CO-phenyl), -N(CO-C_1-C_6 alkyl)(CO-phenyl),-CONH(C_1-C_6 alkyl), -CON(C_1-C_6 alkyl) 2, -CONH(C_3-C_6 cycloalkyl),-CON(C_1-C_6 alkyl)(C_3-C_6 cycloalkyl), -CON(C_3-C_6 cycloalkyl)$_2$, -CONH-SO_2 - C_1-C_6 alkyl, -CONH-SO_2 -phenyl, -CONH-SO_2 -(C_3-C_6 cycloalkyl),-CON(C_1-C_6 alkyl)-SO_2 -C_1-C_6 alkyl, -CON(C_1-C_6 alkyl)-SO_2 -phenyl,-CON(C_1-C_6 alkyl)-SO_2 -(C_3-C_6 cycloalkyl), -CONH-phenyl, -CON(C_1-C_6 alkyl)phenyl, -CON(C_3-C_6 cycloalkyl)phenyl, -N(SO_2 C_1-C_6 alkyl)$_2$,-N(SO_2 C_1-C_6 haloalkyl)$_2$, -N(SO_2 C_3-C_6 cycloalkyl)$_2$, -N(SO_2 C_1-C_6 alkyl)SO_2-phenyl, -N(SO_2 C_3-C_6 cycloalkyl)SO_2 -phenyl, -NHSO_2-C_1-C_6 alkyl, -NHSO_2-C_1-C_6 haloalkyl, -N(C_1-C_6 alkyl)SO_2-C_1-C_6 alkyl, -N(C_3-C_6 cycloalkyl)SO_2-C_1-C_6 alkyl, -NHSO_2-phenyl, -N(C_1-C_6 alkyl)SO_2-phenyl, -N(C_3-C_6 cycloalkyl)SO_2-phenyl, -NHSO_2-C_3-C_6 cycloalkyl,-N(C_1-C_6 alkyl)SO_2-(C_3-C_6 cycloalkyl), -N(C_3-C_6 cycloalkyl)SO_2-(C_3-C_6 cycloalkyl), -SO_2NH(C_1-C_6 alkyl), -SO_2N(C_1-C_6 alkyl)$_2$, -SO_2N(C_1-C_6 alkyl)(C_3-C_6 cycloalkyl), -SO_2NH(C_3-C_6 cycloalkyl), -SO_2N(C_3-C_6 cycloalkyl)$_2$, -SO_2NH(phenyl), -SO_2N(C_1-C_6 alkyl)(phenyl),-SO_2N(C_1-C_4 cycloalkyl)(phenyl), -NHCS-C_1-C_6 alkyl, -N(C_1-C_6 alkyl)CS- C_1-C_6 alkyl, -N(C_3-C_6 cycloalkyl)CS- C_1-C_6 alkyl, -NHCS- C_3-C_6 cycloalkyl, -N(C_1-C_6 alkyl)CS-(C_3-C_6 cycloalkyl), -N(C_3-C_6 cycloalkyl)CS-(C_3-C_6 cycloalkyl), -N(C_1-C_6 alkyl)CS-phenyl, -N(C_3-C_6 cycloalkyl)CS-phenyl, -NHCS-phenyl, -CSNH(C_1-C_6 alkyl), -CSN(C_1-C_6 alkyl)$_2$, -CSNH(C_3-C_6 cycloalkyl), -CSN(C_1-C_6 alkyl)(C_3-C_6 cycloalkyl), -CSN(C_3-C_6 cycloalkyl)$_2$, -CSNH-phenyl, -CSN(C_1-C_6 alkyl)phenyl, -CSN(C_3-C_6 cycloalkyl)phenyl, -C(=NO C_1-C_6 alkyl)H,-C(=NO C_1-C_6 alkyl)- C_1-C_6 alkyl, phenyl and 5- to 6-membered heteroaryl;

or

R^4 is a heterocyclic ring which is selected from the group consisting of 4- to 10-membered saturated or partially unsaturated heterocyclyl, 9-membered heteroaryl and 10-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, $-SO_2NH_2$, $-CONH_2$, $-CSNH_2$, $-NO_2$, $-SF_5$, $-NH_2$;

and in each case optionally substituted $-CO_2-C_1-C_6$ alkyl, C_1-C_6 alkyl, C_3-C_6 cycloalkyl, C_3-C_6 cycloalkyl- C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxy, C_1-C_6 alkylthio, C_1-C_6 alkylsulfinyl, C_1-C_6 alkylsulfonyl, C_3-C_6 cycloalkylsulfanyl, C_3-C_6 cycloalkylsulfinyl, C_3-C_6 cycloalkylsulfonyl, C_1-C_6 haloalkylthio, C_1-C_6 haloalkylsulfinyl, C_1-C_6 haloalkylsulfonyl, C_2-C_4 alkenylsulfanyl, C_2-C_4 alkenylsulfinyl, C_2-C_4 alkenylsulfonyl, C_2-C_4 alkinylsulfanyl, C_2-C_4 alkinylsulfinyl, C_2-C_4 alkinylsulfonyl, phenylsulfanyl, phenylsulfinyl, phenylsulfonyl, S-C_1-C_6 alkylsulfinimidoyl, S-C_3-C_6 cycloalkylsulfinimidoyl, S-C_2-C_6 alkenylsulfinimidoyl, S-C_2-C_6 alkinylsulfinimidoyl, S-phenylsulfinimidoyl, S-C_1-C_6 alkylsulfonimidoyl, S-C_3-C_6 cycloalkylsulfonimidoyl, S-C_2-C_6 alkenylsulfonimidoyl, S-C_2-C_6 alkinylsulfonimidoyl, S-phenylsulfonimidoyl, -NH(C_1-C_6 alkyl),-N(C_1-C_6 alkyl)2 , -NHCO-C_1-C_6 alkyl, -N(C_1-C_6 alkyl)CO- C_1-C_6 alkyl,-N(C_3-C_6 cycloalkyl)CO- C_1-C_6 alkyl, -NHCO- C_3-C_6 cycloalkyl, -N(C_1-C_6 alkyl)CO-(C_3-C_6 cycloalkyl), -N(C_3-C_6 cycloalkyl)CO-(C_3-C_6 cycloalkyl), -N(C_1-C_6 alkyl)CO-phenyl, -N(C_3-C_6 cycloalkyl)CO-phenyl, -NHCO-phenyl, -N(CO-C_1-C_6 alkyl) 2, -N(CO-C_3-C_6 cycloalkyl)2 , -N(CO-phenyl) 2 , -N(CO-C_3-C_6 cycloalkyl)(CO-C_1-C_6 alkyl), -N(CO-C_3-C_6 cycloalkyl)(CO-phenyl), -N(CO- C_1-C_6 alkyl)(CO-phenyl),-CONH(C_1-C_6 alkyl), -CON(C_1-C_6 alkyl)$_2$, -CONH(C_3-C_6 cycloalkyl),-CON(C_1-C_6 alkyl)(C_3-C_6 cycloalkyl), -CON(C_3-C_6 cycloalkyl)$_2$, -CONH-$SO_2-C_1-C_6$ alkyl, -CONH-SO_2-phenyl, -CONH-SO_2-(C_3-C_6 cycloalkyl),-CON(C_1-C_6 alkyl)-$SO_2-C_1-C_6$ alkyl, -CON(C_1-C_6 alkyl)-SO_2-phenyl,-CON(C_1-C_6 alkyl)-SO_2-(C_3-C_6 cycloalkyl), -CONH-phenyl, -CON(C_1-C_6 alkyl)phenyl, -CON(C_3-C_6 cycloalkyl)phenyl, -N($SO_2C_1-C_6$ alkyl)$_2$,-N($SO_2C_1-C_6$ haloalkyl)$_2$, -N($SO_2C_3-C_6$ cycloalkyl)$_2$, -N($SO_2C_1-C_6$ alkyl)SO_2-phenyl, -N($SO_2C_3-C_6$ cycloalkyl)SO_2-phenyl, -NHSO_2- C_1-C_6 alkyl, -NHSO_2- C_1-C_6 haloalkyl, -N(C_1-C_6 alkyl)SO_2- C_1-C_6 alkyl, -N(C_3-C_6 cycloalkyl)SO_2- C_1-C_6 alkyl, -NHSO_2-phenyl, -N(C_1-C_6 alkyl)SO_2-phenyl, -N(C_3-C_6 cycloalkyl)SO_2-phenyl, -NHSO_2- C_3-C_6 cycloalkyl,-N(C_1-C_6 alkyl)SO_2-(C_3-C_6 cycloalkyl), -N(C_3-C_6 cycloalkyl)SO_2-(C_3-C_6 cycloalkyl), -

$SO_2NH(C_1\text{-}C_6$ alkyl), $-SO_2N(C_1\text{-}C_6$ alkyl)$_2$, $-SO_2N(C_1\text{-}C_6$ alkyl)$(C_3\text{-}C_6$ cycloalkyl), $-SO_2NH(C_3\text{-}C_6$ cycloalkyl), $-SO_2N(C_3\text{-}C_6$ cycloalkyl)$_2$, $-SO_2NH$(phenyl), $-SO_2N(C_1\text{-}C_6$ alkyl)(phenyl),$-SO_2N(C_1\text{-}C_4$ cycloalkyl)(phenyl), $-NHCS\text{-}C_1\text{-}C_6$ alkyl, $-N(C_1\text{-}C_6$ alkyl)CS- $C_1\text{-}C_6$ alkyl, $-N(C_3\text{-}C_6$ cycloalkyl)CS- $C_1\text{-}C_6$ alkyl, $-NHCS\text{-}C_3\text{-}C_6$ cycloalkyl, $-N(C_1\text{-}C_6$ alkyl)CS-$(C_3\text{-}C_6$ cycloalkyl), $-N(C_3\text{-}C_6$ cycloalkyl)CS-$(C_3\text{-}C_6$ cycloalkyl), $-N(C_1\text{-}C_6$ alkyl)CS-phenyl, $-N(C_3\text{-}C_6$ cycloalkyl)CS-phenyl, -NHCS-phenyl, $-CSNH(C_1\text{-}C_6$ alkyl),$-CSN(C_1\text{-}C_6$ alkyl)$_2$, $-CSNH(C_3\text{-}C_6$ cycloalkyl), $-CSN(C_1\text{-}C_6$ alkyl)$(C_3\text{-}C_6$ cycloalkyl), $-CSN(C_3\text{-}C_6$ cycloalkyl)$_2$, -CSNH-phenyl, $-CSN(C_1\text{-}C_6$ alkyl)phenyl, $-CSN(C_3\text{-}C_6$ cycloalkyl)phenyl, $-C(=NO\ C_1\text{-}C_6$ alkyl)H,$-C(=NO\ C_1\text{-}C_6$ alkyl)- $C_1\text{-}C_6$ alkyl, phenyl and 5- to 6-membered heteroaryl;

R^5 is hydrogen, halogen, -CN, or in each case optionally substituted $C_1\text{-}C_6$ alkyl, $C_3\text{-}C_6$ cycloalkyl, $C_1\text{-}C_6$ alkoxy, $-C(O)\ C_1\text{-}C_6$ alkoxy, $-CH(C_1\text{-}C_6$ alkoxy$)_2$,$-CO_2C_1\text{-}C_6$ alkyl, $-CONH(C_1\text{-}C_6$ alkyl), $-CON(C_1\text{-}C_6$ alkyl$)_2$, $-NHCO\text{-}C_1\text{-}C_6$ alkyl, $-N(C_1\text{-}C_6$ alkyl)$CO\text{-}C_1\text{-}C_6$ alkyl, $-C(=NOC_1\text{-}C_6$ alkyl)H, or $-C(=NOC_1\text{-}C_6$ alkyl)$\text{-}C_1\text{-}C_6$ alkyl.

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; $C_1\text{-}C_6$ alkyl optionally substituted with one substituent selected from -CN, $-CONH_2$, -COOH, $-NO_2$ and $-Si(CH_3)_3$; $C_1\text{-}C_6$ haloalkyl; $C_2\text{-}C_6$ alkenyl; $C_2\text{-}C_6$ haloalkenyl; $C_2\text{-}C_6$ alkynyl; $C_2\text{-}C_6$ haloalkynyl; $C_3\text{-}C_4$ cycloalkyl- $C_1\text{-}C_2$ alkyl- wherein the $C_3\text{-}C_4$ cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH_2 - or benzyl optionally substituted with halogen atoms or $C_1\text{-}C_3$ haloalkyl;

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is optionally substituted with one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X-group, each independently selected from the group consisting of $C_1\text{-}C_3$ alkyl, $C_1\text{-}C_3$ haloalkyl, $C_1\text{-}C_3$ haloalkylthio, $C_1\text{-}C_3$ alkoxy, $C_1\text{-}C_3$ haloalkoxy, halogen, $-NO_2$, $-SF_5$, -CN, $-CONH_2$, -COOH and $-C(S)NH_2$;

R^3 is $C_1\text{-}C_3$ alkyl or $C_1\text{-}C_3$ haloalkyl;

R^4 is a 5-membered heteroaryl optionally substituted with one to three substituents independently selected from the group consisting of

halogen, hydroxy, -CN, -COOH, $-CONH_2$, $-CSNH_2$, $-NO_2$, $-NH_2$, C_1-C_6 alkyl, C_3-C_6 cycloalkyl, C_1-C_3 haloalkyl, C_1-C_4 alkoxy, C_1-C_3 haloalkoxy, C_1-C_6 alkylthio, C_1-C_6 alkylsulfinyl, C_1-C_6 alkylsulfonyl, C_3-C_6 cycloalkylsulfanyl, C_3-C_6 cycloalkylsulfinyl, C_3-C_6 cycloalkylsulfonyl, C_1-C_3 haloalkylthio, C_1-C_3 haloalkylsulfinyl, C_1-C_3 haloalkylsulfonyl, -NH(C_1-C_4 alkyl), -N(C_1-C_4 alkyl)$_2$, -NHCO- C_1-C_4 alkyl, -N(C_1-C_4 alkyl)CO-C_1-C_4 alkyl, $-CO_2C_1$-C_4 alkyl, -CONH(C_1-C_4 alkyl), -CON(C_1-C_4 alkyl)$_2$, -C(=NO C_1-C_4 alkyl)H, -C(=NO C_1-C_4 alkyl)- C_1-C_4 alkyl;

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_6 alkyl, C_1-C_3 haloalkyl and C_1-C_4 alkoxy;

or

R^4 is a heterocyclic ring which is selected from the group consisting of 4- to 10-membered saturated or partially unsaturated heterocyclyl, 9-membered heteroaryl and 10-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, $-CONH_2$, $-CSNH_2$, $-NO_2$,$-SF_5$, $-NH_2$, C_1-C_6 alkyl, C_3-C_6 cycloalkyl, C_3-C_6 cycloalkyl- C_1-C_6 alkyl, C_1-C_3 haloalkyl, C_1-C_4 alkoxy, C_1-C_3 haloalkoxy, C_1-C_6 alkylthio, C_1-C_6 alkylsulfinyl, C_1-C_6 alkylsulfonyl, C_3-C_6 cycloalkylsulfanyl, C_3-C_6 cycloalkylsulfinyl, C_3-C_6 cycloalkylsulfonyl, C_1-C_3 haloalkylthio, C_1-C_3 haloalkylsulfinyl, C_1-C_3 haloalkylsulfonyl, -NH(C_1-C_4 alkyl), -N(C_1-C_4 alkyl)$_2$, -NHCO-C_1-C_4 alkyl, -N(C_1-C_4 alkyl)CO-C_1-C_4 alkyl, $-CO_2C_1$-C_4 alkyl, -CONH(C_1-C_4 alkyl), -CON(C_1-C_4 alkyl)$_2$, -C(=NOC_1-C_4 alkyl)H, -C(=NOC_1-C_4 alkyl)-C_1-C_4 alkyl;

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_6 alkyl, C_1-C_3 haloalkyl and C_1-C_4 alkoxy;

R^5 is hydrogen, halogen, -CN, C_1-C_3 alkyl, C_1-C_3 haloalkyl, C_3-C_4 cycloalkyl, C_1-C_3 alkoxy, C_1-C_3 haloalkoxy, -C(O)C_1-C_3 alkoxyC, -CH(C_1-C_3 alkoxy)$_2$, -$CO_2$$C_1$-$C_4$ alkyl, -CONH(C_1-C_4 alkyl), -CON(C_1-C_4 alkyl)$_2$, -NHCO-C_1-C_4 alkyl, -N(C_1-C_4 alkyl)CO-C_1-C_4 alkyl, -C(=NOC_1-C_4 alkyl)H, or -C(=NOC_1-C_4 alkyl)-C_1-C_4 alkyl.

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_3 alkyl optionally substituted with one substituent selected from -CN, -$CONH_2$, -COOH, -NO_2 and -Si(CH_3)$_3$; C_1-C_3 haloalkyl; C_2-C_4 alkenyl; C_2-C_4 haloalkenyl; C_2-C_4 alkynyl; C_2-C_4 haloalkynyl; C_3-C_4 cycloalkyl-C_1-C_2 alkyl- wherein the C_3-C_4 cycloalkyl is optionally substituted with one or two halogen atoms; oxetan-3-yl-CH_2-; or benzyl optionally substituted with halogen atoms or C_1-C_3 haloalkyl;

R^2 is phenyl, pyridine, pyrimidine, pyrazine or pyridazine, wherein the phenyl, pyridine, pyrimidine, pyrazine or pyridazine is optionally substituted with one to three substituents, provided the substituent(s) are not on either carbon adjacent to the carbon bonded to the C=X-group, each independently selected from the group consisting of C_1-C_3 alkyl, C_1-C_3 haloalkyl, C_1-C_3 haloalkylthio, C_1-C_3 alkoxy, C_1-C_3 haloalkoxy, halogen, -NO_2, -SF_5, -CN, -$CONH_2$, -COOH and -C(S)NH_2;

R^3 is C_1-C_3 alkyl or C_1-C_3 haloalkyl;

R^4 is a 5-membered heteroaryl optionally substituted with one to three substituents independently selected from the group consisting of

halogen, -CN, C_1-C_6 alkyl, C_3-C_6 cycloalkyl, C_1-C_3 haloalkyl, C_1-C_4 alkoxy, C_1-C_3 haloalkoxy, C_1-C_3 alkylthio, C_1-C_3 alkylsulfinyl, C_1-C_3 alkylsulfonyl, C_1-C_3 haloalkylthio, C_1-C_3 haloalkylsulfinyl, C_1-C_3 haloalkylsulfonyl, -NHCO-C_1-C_4 alkyl, -CONH(C_1-C_4 alkyl),-CON(C_1-C_4 alkyl)$_2$, -C(=NOC_1-C_4 alkyl)H, -C(=NOC_1-C_4 alkyl)-C_1-C_4 alkyl;

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_6 alkyl and C_1-C_3 haloalkyl

or

R^4 is a heterocyclic ring which is selected from the group consisting of 4- to 10-membered saturated or partially unsaturated heterocyclyl, 9-membered heteroaryl and 10-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of

halogen, =O (oxo), -CN, C_1-C_6 alkyl, C_3-C_6 cycloalkyl, C_1-C_3 haloalkyl, C_1-C_3 alkoxy, C_1-C_3 haloalkoxy, C_1-C_3 alkylthio, C_1-C_3 alkylsulfinyl, C_1-C_3 alkylsulfonyl, C_3-C_4 cycloalkylsulfanyl, C_3-C_4 cycloalkylsulfinyl, C_3-C_4 cycloalkylsulfonyl, C_1-C_3 haloalkylthio, C_1-C_3 haloalkylsulfinyl, C_1-C_3 haloalkylsulfonyl, -NHCO- C_1-C_4 alkyl, -N(C_1-C_4 alkyl)CO- C_1-C_4 alkyl, -CONH(C_1-C_4 alkyl), -CON(C_1-C_4 alkyl)$_2$, -C(=NO C_1-C_4 alkyl)H,-C(=NO C_1-C_4 alkyl)- C_1-C_4 alkyl;

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_6 alkyl and C_1-C_3 haloalkyl;

R^5 is hydrogen, halogen, -CN, C_1-C_3 alkyl, C_1-C_3 haloalkyl, C_3-C_4 cycloalkyl, or C_1-C_3 alkoxy.

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_3 alkyl 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_4 alkenyl; C_2-C_4 alkynyl; or C_3-C_4 cycloalkyl- C_1-C_2 alkyl- wherein the C_3-C_4 cycloalkyl 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 optionally substituted with one to three substituents, provided the substituent(s) are not 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, $-NO_2$,$-SF_5$, methyl, difluoromethyl, trifluoromethyl, heptafluoropropyl, methoxy, trifluoromethoxy, difluoromethoxy, difluoromethylthio, and trifluoromethylthio;

R^3 is C_1-C_3 alkyl;

R^4 is a 5-membered heteroaryl optionally substituted with one to three substituents independently selected from the group consisting of

fluorine, chlorine, bromine, iodine, -CN, methyl, cyclopropyl, difluoromethyl, trifluoromethyl, methoxy, trifluoromethoxy, difluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl and phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl;

or

R^4 is a heterocyclic ring which is selected from the group consisting of 5-membered saturated or partially unsaturated heterocyclyl, 9-membered heteroaryl and 10-membered heteroaryl, each of which is optionally substituted by one to three substituents independently selected from the group consisting of

fluorine, chlorine, bromine, iodine, =O (oxo), -CN, methyl, cyclopropyl, difluoromethyl, trifluoromethyl, methoxy, trifluoromethoxy, difluoromethoxy, methylthio, methylsulfinyl, methylsulfonyl, difluoromethylthio, difluoromethylsulfinyl, difluoromethylsulfonyl, trifluoromethylthio, trifluoromethylsulfinyl, trifluoromethylsulfonyl and phenyl, wherein the phenyl is optionally substituted with one to two substituents selected from the group consisting of fluorine, chlorine, bromine, -CN, difluoromethyl and trifluoromethyl;

R^5 is hydrogen, fluorine, chlorine, bromine, -CN, methyl, ethyl, propyl, 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;

R^1 is hydrogen, ethyl, cyclopropyl-CH_2-, 2-trimethylsilylethyl or 2,2,2-trifluoroethyl;

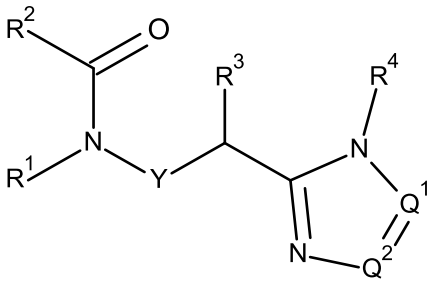
R^2 3-chloro-5-(trifluoromethyl)phenyl, 3-cyano-5-fluorophenyl, 3-fluoro-5-(trifluoromethyl)phenyl, 3,4,5-trifluorophenyl, 4-chloro-3,5-difluorophenyl, 3-methyl-5-(trifluoromethyl)phenyl, 3-chloro-5-(trifluoromethoxy)phenyl, 3-chloro-5-(trifluoromethylthio)phenyl, 3-bromo-5-chlorophenyl, 3,5-dichlorophenyl, 3-chloro-5-(pentafluoro-λ6-sulfanyl)phenyl, 3,5-bis(trifluoromethyl)phenyl, 5-bromopyridin-3-yl, 5-iodopyridin-3-yl, 5-(trifluoromethyl)pyridin-3-yl, 3-chloro-5-methoxyphenyl, 3-bromo-5-(trifluoromethyl)phenyl, 3-methoxy-5-(trifluoromethyl)phenyl, 3-chloro-5-(difluoromethoxy)phenyl, 3-bromo-5-cyanophenyl, 3-cyano-5-(triflurоromethyl), 3-bromo-5-fluorophenyl, 3-fluoro-5-(trifluoromethylthio)phenyl, 3-chloro-5-nitrophenyl, 5,6-bis(trifluoromethyl)pyridin-3-yl, 5-chloropyridin-3-yl, 3-((1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethylphenyl, 6-chloro-4-(trifluoromethyl)pyridin-2-yl, or 3-chlorophenyl;

R^3 is methyl or ethyl;

R^4 is 1,3-thiazol-2-yl, quinoxalin-2-yl, [1,2,4]triazolo[1,5-a]pyridin-2-yl, 1-methyl-1H-pyrazol-3-yl, 5-(trifluoromethyl)-1,3,4-thiadiazol-2-yl, 5-chloro-4-(difluoromethyl)-1,3-thiazol-2-yl, 5-(4-fluorophenyl)-1,3,4-thiadiazol-2-yl, 1,1-dioxothiolan-3-yl, 3-(difluoromethyl)-1-methyl-1H-pyrazol-4-yl, 4-(4-chlorophenyl)-1,3-thiazol-2-yl, 4-(2-fluorophenyl)-1,3-thiazol-2-yl, 1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl, 4-(3-chlorophenyl)-1,3-thiazol-2-yl, 4-(4-fluorophenyl)-1,3-thiazol-2-yl, 1,3-benzoxazol-2-yl, 4,5-dihydrothiazol-2-yl, 5-bromothiazol-2-yl, 4-(trifluoromethyl)thiazol-2-yl, 5-(trifluoromethyl)thiazol-2-yl, 5-chlorothiazol-2-yl, 5-iodothiazol-2-yl, or 4-(2,4-difluorophenyl)thiazol-2-yl;

R^5 is hydrogen, methyl, propyl or trifluoromethyl.

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



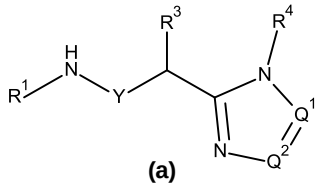
(I'),

in which the structural elements Y, Q^1, Q^2, R^1, R^2, R^3 R^4 and R^5 have the meanings given in Claim 1 or the meanings given in Claim 2 or the meanings given in Claim 3 or the meanings given in Claim 4 or the meanings given in Claim 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^3 R^4 and R^5 have the meanings given in Claim 1 or the meanings given in Claim 2 or the meanings given in Claim 3 or the meanings given in Claim 4 or the meanings given in Claim 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^3 R^4 and R^5 have the meanings given in Claim 1 or the meanings given in Claim 2 or the meanings given in Claim 3 or the meanings given in Claim 4 or the meanings given in Claim 5.

9. Compound of the formula (a)



(a)

in which the structural elements Y, Q^1, Q^2, R^1, R^3 and R^4 have the meanings given in Claim 1 or the meanings given in Claim 2 or the meanings given in Claim 3 or the meanings given in Claim 4 or the meanings given in Claim 5 and wherein the compound of formula (a) is not N-{1-[1-(2,3-dihydro-1,4-benzodioxin-6-yl)-1H-tetrazol-5-yl]propyl }prop-2-yn-1-amine.

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

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

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

13. Method for controlling pests, especially animal pests, characterized in that a compound of the formula (I) according to any of Claims 1 to 8 or a formulation according to any of Claims 10 to 12 is allowed to act on the pests and/or their habitat, wherein methods for treatment of the animal body by surgery or therapy and diagnostic methods practised on the animal body are excluded.

14. Method according to Claim 13, 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, wherein methods for treatment of the animal body by surgery or therapy and diagnostic methods practised on the animal body are excluded.

15. Use of a compound of the formula (I) according to any of Claims 1 to 8 or of a formulation according to any of Claims 10 to 12 for controlling animal pests, wherein methods for treatment of the animal body by surgery or therapy and diagnostic methods practised on the animal body are excluded.

16. Use according to Claim 15, 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, wherein methods for treatment of the animal body by surgery or therapy and diagnostic methods practised on the animal body are excluded.

17. Use according to Claim 15 or 16 in crop protection.

18. Compounds of the formula (I) according to claims 1 to 8 or a formulation according to claims 10 to 12 for therapeutic use in controlling animal pests, preferably wherein 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, in the field of animal health.

19. Method for protecting seed or a germinating plant from pests, especially animal pests, comprising a method step in which the seed is contacted with a compound of the formula (I) according to any of Claims 1 to 8 or with a formulation according to any of Claims 10 to 12.