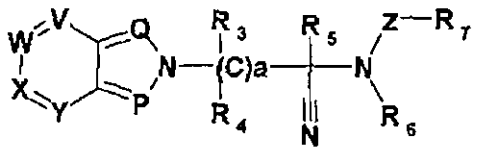
## Claims

1. An aryloazol-2-yl-cyanoethylamine compound of the formula (I):



(I)

P is C-$R_1$ or N;

Q is C-$R_2$ or N;

V is C-$R_8$ or N;

W is C-$R_9$ or N;

X is C-$R_{10}$ or N;

Y is C-$R_{11}$ or N;

$R_1$, $R_2$ $R_8$, $R_9$, $R_{10}$ and $R_{11}$ either, independently of one another, is hydrogen, amino, amido, cyano, nitro, halogen, alkyl, alkenyl, alkynyl, cycloalkyl, hydroxyalkyl, haloalkyl, alkylthio, haloalkylthio, arylthio, alkoxy, phenoxy, alkoxyalkoxy, cycloalkyloxy, haloalkoxy, alkylcarbonyl, haloalkylcarbonyl, alkylsulfinyl, haloalkylsulfinyl, alkylsulfonyl, alkylamino, di(alkyl)amino, alkylcarbonylamino, alkylaminoalkoxy, dialkylaminoalkoxy, alkylaminoalkyl, dialkylaminoalkyl, aminoalkyl, formyl, $HO_2C$-, alkyl-$O_2C$-, unsubstituted or substituted aryl or unsubstituted or substituted phenoxy, whereby the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, alkyl, haloalkyl, alkylthio, haloalkylthio, arylthio, alkoxy, haloalkoxy, alkylcarbonyl, haloalkylcarbonyl, alkylsulfinyl, haloalkylsulfinyl, alkylsulfonyl, haloalkylsulfonyl;

$R_3$, $R_4$ and $R_5$ either, independently of one another, is hydrogen, halogen, alkyl, hydroxyalkyl, alkylthioalkyl, haloalkyl, alkyloxyalkyl, alkylsulfinylalkyl, alkylsulfonylalkyl, alkylsulfonyloxyalkyl; unsubstituted or substituted cycloalkyl, wherein the substituents may each be independent of one another and are selected from the group consisting of halogen and alkyl; unsubstituted or substituted phenyl, whereby the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, alkyl, haloalkyl, alkylthio, haloalkylthio, arylthio, alkoxy, haloalkoxy, alkylcarbonyl, haloalkylcarbonyl, alkylsulfinyl, haloalkylsulfinyl, alkylsulfonyl, haloalkylsulfonyl, alkylamino, di(alkyl)amino; or

$R_4$ and $R_5$ together with the carbon to which they are attached form a cycloalkyl ring;

$R_6$ is hydrogen, alkyl, alkoxyalkyl, alkylcarbonyl, alkylthiocarbonyl or unsubstituted or substituted benzyl, whereby the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, alkyl, haloalkyl, alkylthio, haloalkylthio, arylthio, alkoxy, haloalkoxy, alkylcarbonyl, haloalkylcarbonyl, alkylsulfinyl, haloalkylsulfinyl, alkylsulfonyl, haloalkylsulfonyl, alkylamino, di(alkyl)amino;

$R_7$ is hydrogen, alkyl, alkoxyalkyl, alkylcarbonyl, alkylthiocarbonyl or unsubstituted or substituted phenyl wherein the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, alkyl, haloalkyl, phenyl, phenoxy, alkylthio, haloalkylthio, arylthio, alkoxy, haloalkoxy, alkylcarbonyl, haloalkylcarbonyl, alkylsulfinyl, haloalkylsulfinyl, alkylsulfonyl, haloalkylsulfonyl alkylamino, di(alkyl)amino; unsubstituted or substituted hetaryl, wherein the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, alkyl, haloalkyl, alkylthio, haloalkylthio, arylthio, alkoxy, haloalkoxy, alkylcarbonyl, haloalkylcarbonyl, alkylsulfinyl, haloalkylsulfinyl, alkylsulfonyl, alkylamino, di(alkyl)amino;

or

unsubstituted or substituted naphthyl or quinolyl, wherein the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, alkyl, haloalkyl, alkylthio, haloalkylthio, arylthio, alkoxy, haloalkoxy, alkylcarbonyl, haloalkylcarbonyl, alkylsulfinyl, haloalkylsulfinyl, alkylsulfonyl, alkylamino, di(alkyl)amino;

Z is a direct bond, C(O), C(S) or $S(O)_p$;

a is 1, 2 or 3;

p is 0, 1 or 2; and

salts thereof.

2. The aryloazol-2-yl-cyanoethylamine of claim 1, wherein

P is C-$R_1$ or N;

Q is C-$R_2$ or N;

V is C-$R_8$ or N;

W is C-$R_9$ or N;

X is C-$R_{10}$ or N;

Y is C-$R_{11}$ or N;

$R_1$, $R_2$ $R_8$, $R_9$, $R_{10}$ and $R_{11}$ either, independently of one another, is hydrogen, amino, amido, cyano, nitro, halogen, $C_1$-$C_6$-alkyl, $C_2$-$C_6$-alkenyl, $C_2$-$C_6$-akynyl, $C_3$-$C_7$-cycloalkyl, hydroxy-$C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio arylthio, $C_1$-$C_6$-alkoxy, phenoxy, $C_1$-$C_6$-alkoxy-$C_1$-$C_6$-alkoxy, $C_3$-$C_7$-cycloalkyloxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino, $C_1$-$C_6$-alkylcarboxylamino, $C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkoxy, di-$C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkyl, di-$C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkyl, amino-$C_1$-$C_6$-alkyl, formyl, $HO_2C$-, $C_1$-$C_6$-alkyl-$O_2C$-, unsubstituted or substituted aryl or unsubstituted or substituted phenoxy, whereby the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-

$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, halo-$C_1$-$C_6$-alkylsulfonyl;

$R_3$, $R_4$ and $R_5$ either, independently of one another, is hydrogen, halogen, $C_1$-$C_6$-alkyl, hydroxy-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio-$C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkoxy-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylsulfinyl-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylsulfonyl-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylsulfonyloxy-$C_1$-$C_6$-alkyl; unsubstituted or substituted $C_3$-$C_7$-cycloalkyl, wherein the substituents may each be independent of one another and are selected from the group consisting of halogen and $C_1$-$C_6$-alkyl; unsubstituted or substituted phenyl, whereby the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, halo-$C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino; or

$R_4$ and $R_5$ together with the carbon to which they are attached form a cycloalkyl ring;

$R_6$ is hydrogen, $C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkoxy-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylthiocarbonyl or unsubstituted or substituted benzyl, whereby the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, halo-$C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino;

$R_7$ is hydrogen, $C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkoxy-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylthiocarbonyl or unsubstituted or substituted phenyl wherein the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, phenyl, phenoxy, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, halo-$C_1$-$C_6$-alkylsulfonyl $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino; unsubstituted or substituted hetaryl, wherein the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino;

or

unsubstituted or substituted naphthyl or quinolyl, wherein the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino;

Z is a direct bond, C(O), C(S) or $S(O)_p$;

a is 1, 2 or 3;

p is 0, 1 or 2; and

salts thereof.

3. The aryloazol-2-yl-cyanoethylamine of claim 2, wherein

P and Q is N;

V is C-$R_8$;

W is C-$R_9$;

X is C-$R_{10}$;

Y is C-$R_{11}$;

$R_8$, $R_9$, $R_{10}$ and $R_{11}$ either, independently of one another, is hydrogen, amino, amido, cyano, nitro, halogen, $C_1$-$C_6$-alkyl, $C_2$-$C_6$-alkenyl, $C_2$-$C_6$-akynyl, $C_3$-$C_7$-cycloalkyl, hydroxy-$C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio arylthio, $C_1$-$C_6$-alkoxy, phenoxy, $C_1$-$C_6$-alkoxy-$C_1$-$C_6$-alkoxy, $C_3$-$C_7$-cycloalkyloxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino, $C_1$-$C_6$-alkylcarboxylamino, $C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkoxy, di-$C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkyl, di-$C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkyl, amino-$C_1$-$C_6$-alkyl, formyl, $HO_2C$-, $C_1$-$C_6$-alkyl-$O_2C$-, unsubstituted or substituted aryl or unsubstituted or substituted phenoxy, whereby the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, halo-$C_1$-$C_6$-alkylsulfonyl;

$R_3$, $R_4$ and $R_5$ are H;

$R_5$ is methyl

$R_7$ is unsubstituted or substituted phenyl wherein the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino; unsubstituted or substituted hetaryl, wherein the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino;

Z is C(O); and

a is 1; and

salts thereof.

4. The aryloazol-2-yl-cyanoethylamine of claim 1, wherein

P and Q is N;

V is C-$R_8$;

W is C-$R_9$;

X is C-$R_{10}$;

Y is C-$R_{11}$;

$R_3$, $R_4$ and $R_6$ are hydrogen;

$R_5$ is hydrogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, hydroxy-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkyloxy-$C_1$-$C_6$-alkyl, or $C_1$-$C_6$-alkylsulfonyloxy-$C_1$-$C_6$-alkyl;

$R_7$ is unsubstituted phenyl or phenyl substituted by one or more substituents selected from the group consisting of $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, phenyl, phenyloxy, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylsulfinyl and halo-$C_1$-$C_6$-alkylsulfonyl;

$R_8$, $R_9$, $R_{10}$ and $R_{11}$ either, independently of one another, is hydrogen, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, cyano, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_2$-$C_6$-alkenyl, $C_1$-$C_6$-alkylamino, hydroxy-$C_1$-$C_6$-alkyl, formyl, $C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkyl, $HO_2C$-, $C_1$-$C_6$-alkyl-$O_2C$- or unsubstituted or substituted phenyl wherein the substituents are $C_1$-$C_6$-alkyl or halo-$C_1$-$C_6$-alkyl;

Z is C(O);

a is 1; and

salts thereof.

5. The aryloazol-2-yl-cyanoethylamine of claim 1, wherein

P and Q is N;

V is C-$R_8$;

W is C-$R_9$;

X is C-$R_{10}$;

Y is C-$R_{11}$;

$R_3$, $R_4$ and $R_6$ are hydrogen;

$R_5$ is methyl, ethyl, butyl, $CH_2OH$, $CH_2OCH_3$, $CH_2SCH_3$, $CH_2OSO_2CH_3$;

$R_7$ is a phenyl substituted with butyl, $CF_3$, phenyl, phenoxy, $OCF_3$, $SCF_3$, $SOCF_3$, $SO_2CF_3$;

$R_8$, $R_9$, $R_{10}$ and $R_{11}$ either, independently of one another, is hydrogen, methyl, $CH_2NH_2$, $CH_2N(CH_3)_2$, vinyl, $CH_2OH$, $CH(OH)CH_2OH$, $CO_2H$, $CO_2CH_3$, Ph-$CF_3$, F, Cl, Br, $CF_3$, $OCF_3$ or CN;

Z is C(O);

a is 1; and

salts thereof.

6. The aryloazol-2-yl-cyanoethylamine of claim 1, wherein

P is N;

Q is C-$R_2$;

V is C-$R_8$;

W is C-$R_9$;

X is C-$R_{10}$;

Y is C-$R_{11}$;

$R_2$ is hydrogen, Cl, methyl, methoxy, ethoxy, propoxy, butoxy, $O(CH_2)_2OCH_3$, or $O(CH_2)_2N(CH_3)_2$;

$R_3$, $R_4$ and $R_6$ are hydrogen;

$R_5$ is methyl;

$R_7$ is phenyl substituted by $OCF_3$, phenoxy, or $SCF_3$;

$R_8$, $R_9$, $R_{10}$ and $R_{11}$ either, independently of one another, is hydrogen, Cl, Br, $C_1$-$C_6$-alkyl, $CF_3$, nitro, amino, amido, $CO_2CH_3$, or $NHCOCH_3$;

Z is C(O);

a is 1; and

salts thereof.

7. The aryloazol-2-yl-cyanoethylamine of claim 1, wherein

P is N;

Q is C-$R_2$ or N;

V is N;

W is C-$R_9$;

X is C-$R_{10}$;

Y is C-$R_{11}$;

$R_2$ is hydrogen, Cl, Br, methoxy;

$R_3$, $R_4$ and $R_6$ are hydrogen;

$R_5$ is methyl;

$R_7$ is phenyl substituted by $OCF_3$ or $SCF_3$;

$R_9$, $R_{10}$ and $R_{11}$ either, independently of one another, is hydrogen, Cl, Br or methyl;

Z is C(O); and

a is 1; and

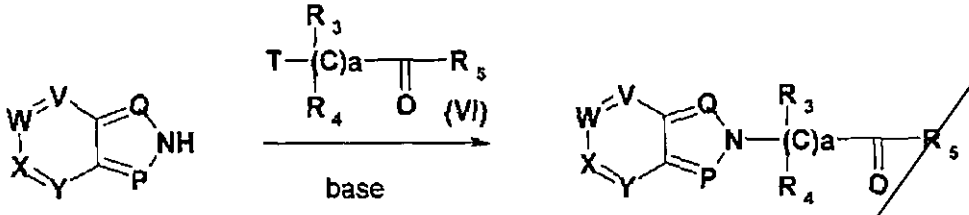
salts thereof.

8. A pesticidal composition comprising a compound of claim 1 and a pesticidally acceptable carrier.

9. The pesticidal composition of claim 8 which further comprises an additional pesticidal compound.

10. A method of making the compounds of formula (I) of claim 1 which comprises of:

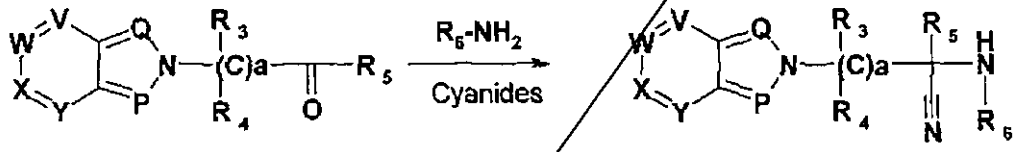
(i) obtaining the carbonyl compounds of formula (IV) by treatment of a NH-aryl-azole of general formula (V) with compound of general formula (VI)




(V) (IV)

wherein, $R_3$, $R_4$, $R_5$, P, Q, V, W, X, Y, *and a are* as defined above for the compounds of formula (I) and T is a leaving group;

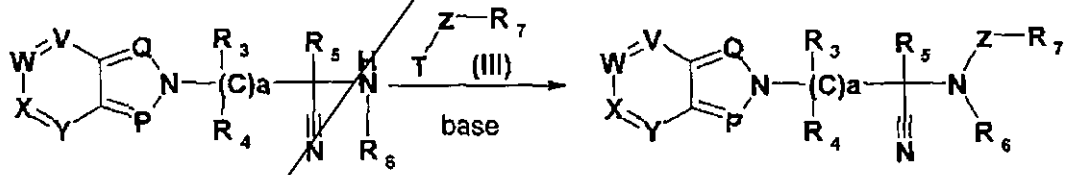
(ii) obtaining the α-amino nitrile derivatives of formula (II) by treatment of carbonyl compounds of general formula (IV) with a cyanide source with amines of general formula $R_6$-$NH_2$ in presence of ammonium salt:




(IV) (II)

wherein, $R_3$, $R_4$, $R_5$, $R_6$, P, Q, V, W, X, Y, and a are as defined above for the compounds of formula (I); and

*(iii) reacting compound* (II) with compound (III) in the presence of a base in a solvent:




(II) (I)

wherein $R_3$, $R_4$, $R_5$, $R_6$, $R_7$, P, Q, V, W, X, Y, Z, and a are as defined above for the compounds of formula (I) and T is a leaving group.

11. A method of treating endoparasiticidal infection in a mammal in need thereof which comprising administering an effective amount of the compound of claim 1.

12. The method of claim 11, wherein the endoparasiticidal infection is a helminth selected from the group consisting of *Anaplocephala (Anoplocephala), Ancylostoma, Anecator, Ascaris, Brugia, Bunostomum, Capillaria, Chabertia, Cooperia, Cyathostomum, Cylicocyclus, Cylicodontophorus, Cylicostephanus, Craterostomum, Dictyocaulus, Dipetalonema, Dipylidium, Dirofilaria, Dracunculus, Echinococcus, Enterobius, Fasciola, Filaroides, Habronema, Haemonchus, Metastrongylus, Moniezia, Necator,Nematodirus,*

*Nippostrongylus, Oesophagostumum, Onchocerca, Ostertagia, Oxyuris, Paracaris, Schistosoma, Strongylus, Taenia, Toxocara, Strongyloides, Toxascaris, Trichinella, Trichuris, Trichostrongylus, Triodontophorous, Uncinaria, Wuchereria,* and combinations thereof

13. The method of claim 12, wherein the helminth is *Haemonchus contortus, Ostertagia circumcincta, Trichostrongylus axei, Trichostrongylus colubriformis, Cooperia curticei, Nematodirus battus and combinations thereof.*

14. The method of claim 13, wherein the helminth is *Haemonchus contortus* and the compound is a compound of formula (I) wherein:

P is N;
Q is C-$R_2$ or N;
V is C-$R_8$ or N;
W is C-$R_9$;
X is C-$R_{10}$;
Y is C-$R_{11}$;
$R_2$ is hydrogen, Cl, Br, methyl or methoxy;
$R_3$, $R_4$ and $R_6$ is H;
$R_5$ is methyl;
$R_7$ is phenyl substituted with $OCF_3$, $SCF_3$ or $CHFCF_3$;
$R_8$ is H, Cl, Br, F or CN;
$R_9$ is H, Cl or Br;
$R_{10}$ is H, Cl, Br or $CF_3$;
$R_{11}$ is H, Cl, Br or methyl;
Z is C(O); and
*a* is 1.

15. The method of claim 13, wherein the helminth is *Haemonchus contortus* and the compound is a compound of formula (I) wherein:

P is N;
Q is C-$R_2$ or N;
V is N;
W is C-$R_9$;
X is C-$R_{10}$;
Y is C-$R_{11}$;
$R_2$ is hydrogen, Cl, Br or methoxy;
$R_3$, $R_4$ and $R_6$ is H;
$R_5$ is methyl;
$R_7$ is phenyl substituted with $OCF_3$ or $SCF_3$;

$R_9$ is H;

$R_{10}$ is Cl or Br;

$R_{11}$ is H;

Z is C(O); and

a is 1.

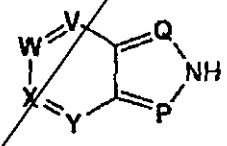
16. A method of treating ectoparasiticidal infection in a mammal in need thereof which comprises administering an effective amount of the compound of claim 1.

17. The method of claim 16, wherein the ectoparasiticidal infection is selected from the group consisting of fleas, ticks, mites, mosquitoes, flies, lice, blowfly and combinations thereof.

18. The method of claim 17, wherein the ectoparasiticidal infection is fleas.

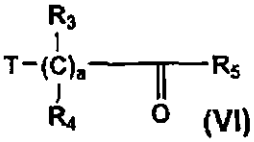
19. A process of making the aryloazol-2-yl-cyanoethylamine compound of claim 1 which comprises:

(a)(i) reacting a compound of formula (V):



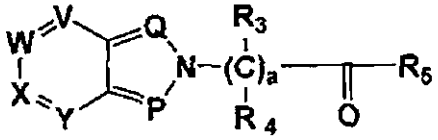
(V)

with a compound of formula (VI):



(VI)

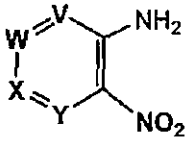
to form the compound of formula (IV):



(IV)

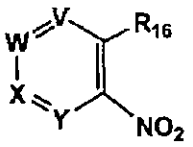
; or

(a)(ii) reacting a compound of formula (XVI):



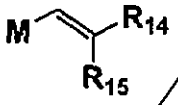
(XVI)

with $NaNO_2$/acid; t-butylnitrile or isoamylnitrile to form the compound of formula (XIV):



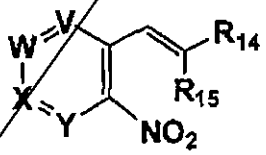
(XIV)

reacting the compound of formula (XIV) with a compound of formula (XV):



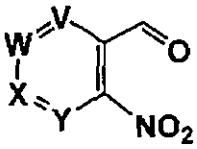
(XV)

to form the compound of formula (XIII)



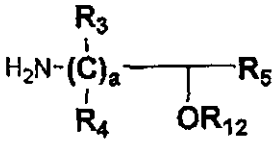
(XIII)

subjecting the compound of formula (XIII) to oxidative cleavage to form the compound of formula (X):



(X)

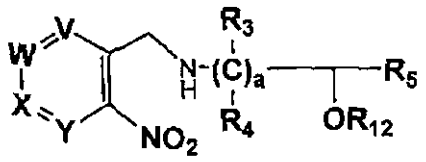
reacting the compound of formula (X) with a compound of formula (XI):



(XI)

wherein $R_{12}$ is a hydroxy protection group:

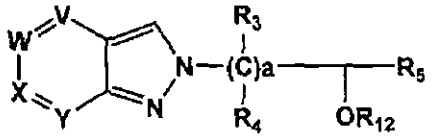
to form the compound of formula (IXa):



(IX)

;

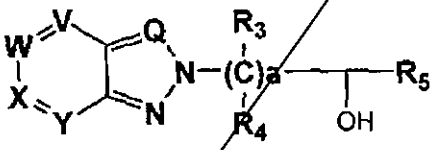
subjecting the compound of formula (IXa) to a heterocyclization step to form the compound of formula (VIIIb):



(VIII)

;

subjecting the compound of formula (VIII) to deprotection of the hydroxyl protection group to form the compound of formula (VII):

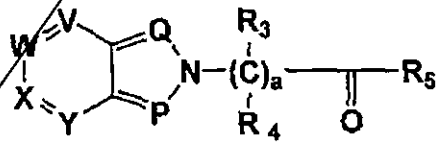


(VII)

; and

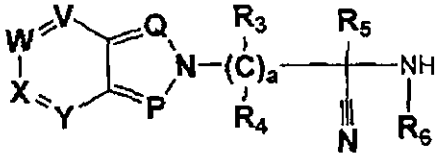
oxidizing the compound of formula (VII) to form the compound of formula (IV);

(b) reacting the compound of formula (IV)



(IV)

with $R_6$-$NH_2$ to form the compound of formula (II): and



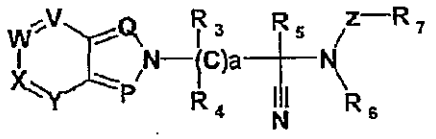
(II)

(c) reacting a compound of formula (II) with T-Z-$R_7$ in the presence of a base, to form to compound of claim 1,

wherein P, Q, V, W, X, Y, $R_3$, $R_4$, $R_5$, $R_6$, $R_7$, Z, and a are as defined in claim 1.

## Claims

1. An aryloazol-2-yl-cyanoethylamine compound of the formula (I):



(I)

P is C-$R_1$ or N;
Q is C-$R_2$ or N;
V is C-$R_8$ or N;
W is C-$R_9$ or N;
X is C-$R_{10}$ or N;
Y is C-$R_{11}$ or N;
$R_1$, $R_2$, $R_8$, $R_9$, $R_{10}$ and $R_{11}$ either, independently of one another, is hydrogen, amino, amido, cyano, nitro, halogen, alkyl, alkenyl, alkynyl, cycloalkyl, hydroxyalkyl, haloalkyl, alkylthio, haloalkylthio, arylthio, alkoxy, phenoxy, alkoxyalkoxy, cycloalkyloxy, haloalkoxy, alkylcarbonyl, haloalkylcarbonyl, alkylsulfinyl, haloalkylsulfinyl, alkylsulfonyl, alkylamino, di(alkyl)amino, alkylcarbonylamino, alkylaminoalkoxy, dialkylaminoalkoxy, alkylaminoalkyl, dialkylaminoalkyl, aminoalkyl, formyl, $HO_2C$-, alkyl-$O_2C$-, unsubstituted or substituted aryl or unsubstituted or substituted phenoxy, whereby the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, alkyl, haloalkyl, alkylthio, haloalkylthio, arylthio, alkoxy, haloalkoxy, alkylcarbonyl, haloalkylcarbonyl, alkylsulfinyl, haloalkylsulfinyl, alkylsulfonyl, haloalkylsulfonyl;
$R_3$, $R_4$ and $R_5$ either, independently of one another, is hydrogen, halogen, alkyl, hydroxyalkyl, alkylthioalkyl, haloalkyl, alkyloxyalkyl, alkylsulfinylalkyl, alkylsulfonylalkyl, alkylsulfonyloxyalkyl; unsubstituted or substituted cycloalkyl, wherein the substituents may each be independent of one another and are selected from the group consisting of halogen and alkyl; unsubstituted or substituted phenyl, whereby the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, alkyl, haloalkyl, alkylthio, haloalkylthio, arylthio, alkoxy, haloalkoxy, alkylcarbonyl, haloalkylcarbonyl, alkylsulfinyl, haloalkylsulfinyl, alkylsulfonyl, haloalkylsulfonyl, alkylamino, di(alkyl)amino; or
$R_4$ and $R_5$ together with the carbon to which they are attached form a cycloalkyl ring;
$R_6$ is hydrogen, alkyl, alkoxyalkyl, alkylcarbonyl, alkylthiocarbonyl or unsubstituted or substituted benzyl, whereby the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, alkyl, haloalkyl, alkylthio, haloalkylthio, arylthio, alkoxy, haloalkoxy, alkylcarbonyl, haloalkylcarbonyl, alkylsulfinyl, haloalkylsulfinyl, alkylsulfonyl, haloalkylsulfonyl, alkylamino, di(alkyl)amino;
$R_7$ is hydrogen, alkyl, alkoxyalkyl, alkylcarbonyl, alkylthiocarbonyl or unsubstituted or substituted phenyl wherein the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, alkyl, haloalkyl, phenyl, phenoxy, alkylthio, haloalkylthio, arylthio, alkoxy, haloalkoxy, alkylcarbonyl, haloalkylcarbonyl, alkylsulfinyl, haloalkylsulfinyl, alkylsulfonyl, haloalkylsulfonyl alkylamino, di(alkyl)amino; unsubstituted or substituted hetaryl, wherein the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, alkyl, haloalkyl, alkylthio, haloalkylthio, arylthio, alkoxy, haloalkoxy, alkylcarbonyl, haloalkylcarbonyl, alkylsulfinyl, haloalkylsulfinyl, alkylsulfonyl, alkylamino, di(alkyl)amino;

or
unsubstituted or substituted naphthyl or quinolyl, wherein the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, alkyl, haloalkyl, alkylthio, haloalkylthio, arylthio, alkoxy, haloalkoxy, alkylcarbonyl, haloalkylcarbonyl, alkylsulfinyl, haloalkylsulfinyl, alkylsulfonyl, alkylamino, di(alkyl)amino;
Z is a direct bond, C(O), C(S) or $S(O)_p$;
a is 1, 2 or 3;
p is 0, 1 or 2; and

salts thereof.

2. The aryloazol-2-yl-cyanoethylamine of claim 1, wherein

P is C-$R_1$ or N;
Q is C-$R_2$ or N;
V is C-$R_8$ or N;
W is C-$R_9$ or N;
X is C-$R_{10}$ or N;
Y is C-$R_{11}$ or N;
$R_1$, $R_2$, $R_8$, $R_9$, $R_{10}$ and $R_{11}$ either, independently of one another, is hydrogen, amino, amido, cyano, nitro, halogen, $C_1$-$C_6$-alkyl, $C_2$-$C_6$-alkenyl, $C_2$-$C_6$-akynyl, $C_3$-$C_7$-cycloalkyl, hydroxy-$C_1$-$C_6$-alkyl, halo-$C_1$- $C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio arylthio, $C_1$-$C_8$-alkoxy, phenoxy, $C_1$-$C_6$-alkoxy-$C_1$- $C_6$-alkoxy, $C_3$-$C_7$-cycloalkyloxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, -$C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$- $C_6$- alkyl)amino, $C_1$-$C_6$-alkylcarboxylamino, $C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkoxy, di-$C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkyl, di-$C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkyl, amino-$C_1$-$C_6$-alkyl, formyl, $HO_2C$-, $C_1$-$C_6$-alkyl-$O_2C$-, unsubstituted or substituted aryl or unsubstituted or substituted phenoxy, whereby the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl,- halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$- alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfnyl, halo-$C_1$-$C_6$- alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, halo- $C_1$-$C_6$-alkylsulfonyl;
$R_3$, $R_4$ and $R_5$ either, independently of one another, is hydrogen, halogen, $C_1$-$C_6$-alkyl, hydroxy-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio-$C_1$-$C_6$-alkyl, halo-$C_1$-$C_e$-alkyl, $C_1$-$C_6$-alkoxy-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylsulfinyl- $C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylsulfonyl-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylsulfonyloxy-$C_1$-$C_6$-alkyl; unsubstituted or substituted $C_3$-$C_7$-cycloalkyl, wherein the substituents may each be independent of one another and are selected from the group consisting of halogen and $C_1$-$C_6$-alkyl; unsubstituted or substituted phenyl, whereby the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$- $C_6$-alkyl, $C_1$-$C_6$- alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, halo-$C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino; or
$R_4$ and $R_5$ together with the carbon to which they are attached form a cycloalkyl ring;
$R_8$ is hydrogen, $C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkoxy- $C_1$-$C_6$-ralkyl, $C_1$-$C_6$-alkyloarbonyl, $C_1$-$C_6$-alkylthiocarbonyl or unsubstituted or substituted benzyl, whereby the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$- alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, halo-$C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino;
$R_7$ is hydrogen, $C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkoxy- $C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylthiocarbonyl or unsubstituted or substituted phenyl wherein the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$- $C_6$-alkyl, phenyl, phenoxy, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$- alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, halo-$C_1$-$C_6$-alkylsulfonyl $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino; unsubstituted or substituted hetaryl, wherein the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$- $C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino;
or
unsubstituted or substituted naphthyl or quinolyl, wherein the substituents may each be independent of one

another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$- alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino;
Z is a direct bond, C(O), C(S) or $S(O)_p$;
a is 1, 2 or 3;
p is 0, 1 or 2; and

salts thereof.

3. The aryloazol-2-yl-cyanoethylamine of claim 2, wherein

Pand Q is N;
V is C-$R_8$;
W is C-$R_9$;
X is C-$R_{10}$;
Y is C-$R_{11}$;
$R_8$, $R_9$, $R_{10}$ and $R_{11}$ either, independently of one another, is hydrogen, amino, amido, cyano, nitro, halogen, $C_1$-$C_6$-alkyl, $C_2$-$C_6$-alkenyl, $C_2$-$C_6$-akynyl, $C_3$-$C_7$-cycloalkyl, hydroxy-$C_1$-$C_6$-alkyl, halo-$C_1$- $C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio arylthio, $C_1$-$C_6$-alkoxy, phenoxy, $C_1$-$C_6$-alkoxy-$C_1$- $C_6$-alkoxy, $C_3$-$C_7$-cycloalkyloxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$- $C_6$- alkyl)amino, $C_1$-$C_6$-alkylcarboxylamino, $C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkoxy, di-$C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkyl, di-$C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkyl, amino-$C_1$-$C_8$-alkyl, formyl, $HO_2C$-, $C_1$-$C_6$-alkyl-$O_2C$-, unsubstituted or substituted aryl or unsubstituted or substituted phenoxy, whereby the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$- alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$- alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, halo- $C_1$-$C_6$-alkylsulfonyl:
$R_3$, $R_4$ and $R_6$ are H;
$R_5$ is methyl
$R_7$ is unsubstituted or substituted phenyl wherein the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$- $C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthio, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_e$-alkoxy, $C_1$-$C_6$-alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino; unsubstituted or substituted hetaryl, wherein the substituents may each be independent of one another and are selected from the group consisting of cyano, nitro, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylthlo, arylthio, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$alkylcarbonyl, halo-$C_1$-$C_6$-alkylcarbonyl, $C_1$-$C_6$-alkylsulfinyl, halo-$C_1$-$C_6$-alkylsulfinyl, $C_1$-$C_6$-alkylsulfonyl, $C_1$-$C_6$-alkylamino, di($C_1$-$C_6$-alkyl)amino;
Z is C(O); and
a is 1; and

salts thereof.

4. The aryloazol-2-yl-cyanoethylamine of claim 1, wherein

P and Q is N;
V is C-$R_8$;
W is C-$R_9$;
X is C-$R_{10}$;
Y is C-$R_{11}$;
$R_3$, $R_4$ and $R_6$ are hydrogen;
$R_5$ is hydrogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, hydroxy-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkylthio-$C_1$-$C_6$-alkyl, $C_1$-$C_6$-alkyloxy-$C_1$-$C_6$-alkyl, or $C_1$-$C_6$-alkylsulfonyloxy-$C_1$-$C_6$-alkyl;
$R_7$ is unsubstituted phenyl or phenyl substituted by one or more substituents selected from the group consisting of $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, phenyl, phenyloxy, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkylthlo, halo-$C_1$-$C_6$-alkylthio, halo-$C_1$-$C_6$-alkylsulflnyl and halo-$C_1$-$C_6$-alkylsulfonyl;
$R_8$, $R_9$, $R_{10}$ and $R_{11}$ either, independently of one another, is hydrogen, halogen, $C_1$-$C_6$-alkyl, halo-$C_1$-$C_6$-alkyl, cyano, $C_1$-$C_6$-alkoxy, halo-$C_1$-$C_6$-alkoxy, $C_1$-$C_6$-alkenyl, $C_1$-$C_6$-alkylamino, hydroxy-$C_1$-$C_6$-alkyl, formyl,

$C_1$-$C_6$-alkylamino-$C_1$-$C_6$-alkyl, $HO_2C$-, $C_1$-$C_6$-alkyl-$O_2C$- or unsubstituted or substituted phenyl wherein the substituents are $C_1$-$C_6$-alkyl or halo-$C_1$-$C_6$-alkyl;
Z is C(O);
a is 1; and

salts thereof.

5. The aryloazol-2-yl-cyanoethylamine of claim 1, wherein

P and Q is N;
V is C-$R_8$;
W is C-$R_9$; X is C-$R_{10}$;
Y is C-$R_{11}$;
$R_3$, $R_4$ and $R_6$ are hydrogen;
$R_5$ is methyl, ethyl, butyl, $CH_2OH$, $CH_2OCH_3$, $CH_2SCH_3$, $CH_2OSO_2CH_3$;
$R_7$ is a phenyl substituted with butyl, $CF_3$, phenyl, phenoxy, $OCF_3$, $SCF_3$, $SOCF_3$, $SO_2CF_3$;
$R_8$, $R_9$, $R_{10}$ and $R_{11}$ either, independently of one another, is hydrogen, methyl, $CH_2NH_2$, $CH_2N(CH_3)_2$, vinyl, $CH_2OH$, $CH(OH)CH_2OH$, $CO_2H$, $CO_2CH_3$, Ph-$CF_3$, F, Cl, Br, $CF_3$, $OCF_3$ or CN;
Z is C(O);
a is 1; and

salts thereof.

6. The aryloazol-2-yl-cyanoethylamine of claim 1, wherein

P is N;
Q is C-$R_2$;
V is C-$R_6$;
W is C-$R_9$;
X is C-$R_{10}$;
Y is C-$R_{11}$;
$R_2$ is hydrogen, Cl, methyl, methoxy; ethoxy, propoxy, butoxy, $O(CH_2)_2OCH_3$, or $O(CH_2)_2N(CH_3)_2$ ;
$R_3$, $R_4$ and $R_6$ are hydrogen;
$R_5$ is methyl;
$R_7$ is phenyl substituted by $OCF_3$, phenoxy, or $SCF_3$;
$R_8$, $R_9$, $R_{10}$ and $R_{11}$ either, independentty of one another, is hydrogen, Cl, Br, $C_1$-$C_6$-alkyl; $CF_3$, nitro, amino, amido, $CO_2CH_3$, or $NHCOCH_3$;
Z is C(O);
a is 1; and

salts thereof.

7. The aryloazol-2-yl-cyanoethylamine of claim 1, wherein

P is N;
Q is C-$R_2$ or N;
V is N;
W is C-$R_9$;
X is C-$R_{10}$;
Y is C-$R_{11}$;
$R_2$ is hydrogen, Cl, Br, methoxy;
$R_3$, $R_4$and $R_8$ are hydrogen;
$R_5$ is methyl;
$R_7$ is phenyl substituted by $OCF_3$ or $SCF_3$;
$R_9$, $R_{10}$ and $R_{11}$ either, independently of one another, is hydrogen, Cl, Br or methyl;
Z is C(O); and
a is 1; and

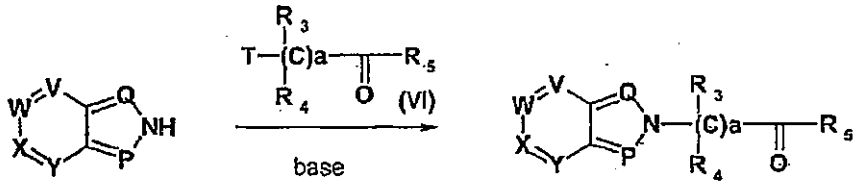
salts thereof.

8. A pesticidal composition comprising a compound of claim 1 and a pesticidally acceptable carrier.

9. The pesticidal composition of claim 8 which further comprises an additional pesticidal compound.

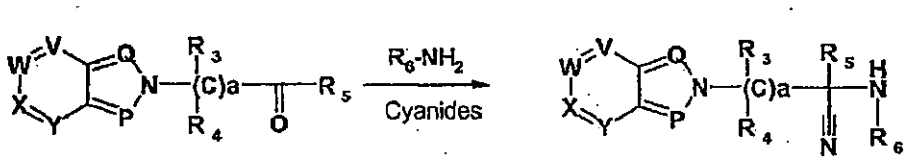
10. A method of making the compounds of formula (I) of claim 1 which comprises of:

(i) obtaining the carbonyl compounds of formula (IV) by treatment of a NH-aryl-azole of general formula (V) with compound of general formula (VI)



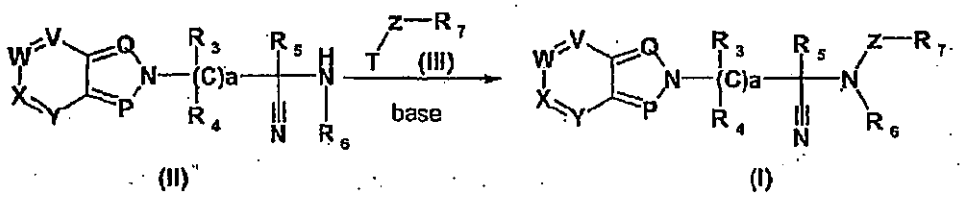

(V) (IV)

wherein, $R_3$, $R_4$, $R_5$, P, Q, V, W, X, Y, and a are as defined above for the compounds of formula (I) and T is a leaving group;
(ii) obtaining the α-amino nitrile derivatives of formula (II) by treatment of carbonyl compounds of general formula (IV) with a cyanide source with an amine of general formula $R_6$-$NH_2$ in the presence of an ammonium salt:




(IV) (II)

wherein, $R_3$, $R_4$, $R_5$, $R_6$, P, Q, V, W, X, Y, and a are as defined above for the compounds of formula (I); and
(iii) reacting compound (II) with compound (III) in the presence of a base in a solvent:




(II) (I)

wherein $R_3$, $R_4$, $R_5$, $R_6$, $R_7$, P, Q, V, W, X, Y, Z, and a are as defined above for the compounds of formula (I) and T is a leaving group.

11. The compound of claim 1 for use in treating endoparasitic infection in a mammal in need thereof.

12. The compound of claim 11, for use wherein the endoparasitic infection is with a helminth selected from the group consisting of *Anaplocephala (Anoplocephala), Ancylostoma, Anecator, Ascaris, Brugia, Bunostomum, Capillaria, Chabertia, Cooperia, Cyathostomum, Cylicocyclus, Cylicodontophorus, Cylicostephanus, Craterostomum, Dictyocaulus, Dipetalonema, Dipylidium, Dirofilaria, Dracunculus, Echinococcus, Enterobius, Fasciola, Filaroides, Habronema, Haemonclius, Metastrongylus, Moniezia, Necator, Nematodirus, Nippostrongylus, Oesophagostumum, Onchocerca, Ostertagia. Oxyuris, Paracaris, Schistosoma, Strongylus, Taenia, Toxocara, Strongyloides, Toxascaris, Trichinella, Trichuris, Trichostrongylus, Triodontophorous, Uncinaria, Wuchereria,* and combinations thereof

13. The compound of claim 12, for use wherein the helminth is *Haemonchus contortus, Ostertagia circumcincta, Trichostrongylus axei, Trichostrongylus colubriformis, Cooperia curticei, Nematodirus battus and combinations thereof.*

14. The compound of claim 13, for use wherein the helminth is *Haemonchus contortus* and the compound is a compound of formula (I) wherein:

P is N;
Q is C-$R_2$ or N;
V is C-$R_8$ or N;
W is C-$R_9$;
X is C-$R_{10}$;
Y is C-$R_{11}$;
$R_2$ is hydrogen, Cl, Br, methyl or methoxy;
$R_3$, $R_4$ and $R_6$ is H;
$R_5$ is methyl;
$R_7$ is phenyl substituted with $OCF_3$, $SCF_3$ or $CHFCF_3$;
$R_8$ is H, Cl, Br, F or CN;
$R_9$ is H, Cl or Br;
$R_{10}$ is H, Cl, Br or $CF_3$;
$R_{11}$ is H, Cl, Br or methyl;
Z is C(O); and
a is 1.

15. The compound of claim 13, for use wherein the helminth is *Haemonchus contortus* and the compound is a compound of formula (I) wherein:

P is N;
Q is C-$R_2$ or N;
V is N;
W is C-$R_9$;
X is C-$R_{10}$;
Y is C-$R_{11}$;
$R_2$ is hydrogen, Cl, Br or methoxy;
$R_3$, $R_4$ and $R_6$ is H;
$R_5$ is methyl;
$R_7$ is phenyl substituted with $OCF_3$ or $SCF_3$;
$R_8$ is H;
$R_{10}$ is Cl or Br;
$R_{11}$ is H;
Z is C(O); and
a is 1.

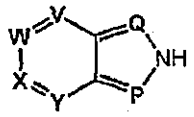
16. The compound of claim 1 for use in treating ectoparasitic infection in a mammal in need thereof.

17. The compound of claim 16, for use wherein the ectoparasitic infection is with an ectoparasite selected from the group consisting of fleas, ticks, mites, mosquitoes, flies, lice, blowfly and combinations thereof.

18. The compound of claim 17, for use wherein the ectoparasitic infection is with fleas.

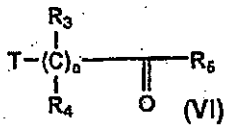
19. A process of making the aryloazol-2-yl-cyanoethylamine compound of claim 1 which comprises:

(a)(i) reacting a compound of formula (V):



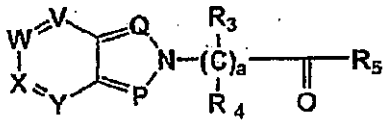
(V)

with a compound of formula (VI) wherein T is a leaving group:



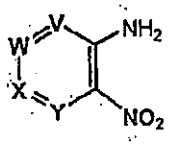
(VI)

to form the compound of formula (IV):



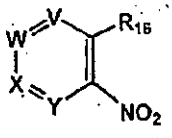
(IV) ;

or
(a)(ii) reacting a compound of formula (XVI):



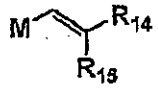
(XVI)

with $NaNO_2$/acid; t-butylnitrile or isoamylnitrile and copper halide to form the compound of formula (XIV); wherein $R_{16}$ is a halogen atom



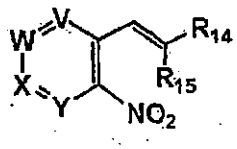
(XIV)

reacting the compound of formula (XIV) with a compound of formula (XV); wherein M is trialkyltin, boronic acid or boroncile ester; $R_{14}$ and $R_{15}$ are independently selected from $C_1$-$C_4$ alkylcarbonyl and $C_1$-$C_4$ alkyl



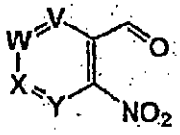
(XV)

to form the compound of formula (XIII)



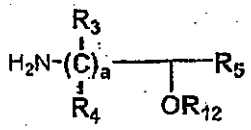
(XIII)

subjecting the compound of formula (XIII) to oxidative cleavage to form the compound of formula (X):



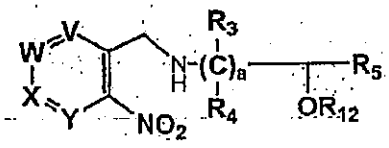
(X)

reacting the compound of formula (X) with a compound of formula (XI):



(XI)

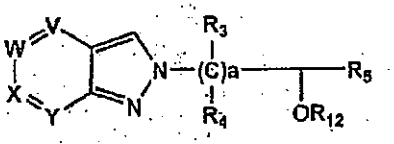
wherein $R_{12}$ is a hydroxy protection group:
to form the compound of formula (IXa):



(IX)

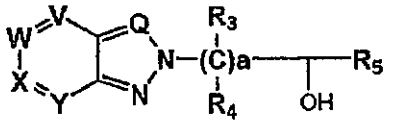
;

subjecting the compound of formula (IXa) to a heterocyclization step to form the compound of formula (VIIIb):

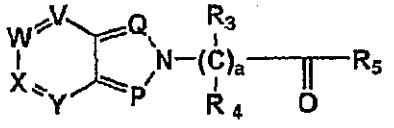


(VIII) ;

subjecting the compound of formula (VIII) to deprotection of the hydroxyl protection group to form the compound of formula (VII):

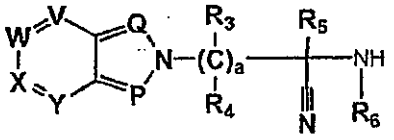


(VII) where Q is CH; and
oxidizing the compound of formula (VII) to form the compound of formula (IV);
reacting the compound of formula (IV)



(IV)

with $R_6$-$NH_2$ to form the compound of formula (II): and



(II)

(c) reacting a compound of formula (II) with T-Z-$R_7$ in the presence of a base, to form to compound of claim 1,

wherein P, Q, V, W, X, Y, $R_3$, $R_4$, $R_5$, $R_6$, $R_7$, Z, and a are as defined in claim 1.

**20.** The aryloazol-2-yl-cyanoethylamine compound of claims 1, 2 and 7 which is selected from

*N*-[2-(6-Chloro-3-methoxy-2*H*-pyrazolo[4,3-*b*]pyridin-2-yl)-1-cyano-1-methylethyl]-4-trifluoromethoxybenzamide (compound No 3.001)
*N*-[2-(6-Chloro-3-methoxy-2*H*-pyrazolo[4,3-*b*]pyridin-2-yl)-1-cyano-1-methylethyl]-4-trifluoromethylthiobenzamide (compound No 3.002)
*N*-[2-(6-Bromo-7-methyl-2*H*-[1,2,3]triazolo[4,5-*b*]pyridin-2-yl)-1-cyano-1-methylethyl]-4-trifluoromethoxybenzamide (compound No 3.003)
*N*-[2-(6-Bromo-7-methyl-2*H*-[1,2,3]triazolo[4,5-*b*]pyridin-2-yl)-1-cyano-1-methylethyl]-4-trifluoromethylthiobenzamide (compound No 3.004)
*N*-[2-(6-Chloro-2*H*-pyrazolo[4,3-*b*]pyridin-2-yl)-1-cyano-1-methylethyl]-4-trifluoromethoxybenzamide (compound No 3.005)
*N*-[2-(6-Chloro-2*H*-pyrazolo[4,3-*b*]pyridin-2-yl)-1-cyano-1-methylethyl]-4-trifluoromethylthiobenzamide (com-

pound No 3.006)
*N*-[2-(6-Bromo-3-methoxy-7-methyl-2*H*-pyrazolo[4,3-*b*]pyridin-2-yl)-1-cyano-1-methylethyl]-4-trifluoromethoxybenzamide (compound No 3.007)
*N*-[2-(6-Chloro-3-methoxy-7-methyl-2*H*-pyrazolo[4,3-*b*]pyridin-2-yl)-1-cyano-1-methylethyl]-4-trifluoromethoxybenzamide (compound No 3.008)
*N*-[2-(6-Bromo-7-methyl-2*H*-pyrazolo[4,3-*b*]-pyridin-2-yl)-1-cyano-1-methylethyl]-4-trifluoromethoxybenzamide (compound No 3.009)
*N*-[2-(6-Chloro-7-methyl-2*H*-pyrazolo[4,3-*b*]pyridin-2-yl)-1-cyano-1-methylethyl]-4-trifluoromethoxybenzamide (compound No 3.010)
*N*-[2-(6-Bromo-2*H*-pyrazolo[4,3-*b*]pyridin-2-yl)-1-cyano-1-methylethyl]-4-trifluoromethoxybenzamide (compound No 3.011)
*N*-[2-(6-Bromo-2*H*-pyrazolo[4,3-*b*]pyridin-2-yl)-1-cyano-1-methylethyl]-4-trifluoromethylthiobenzamide (compound No 3.012).
*N*-[2-(6-Bromo-7-methyl-2*H*-pyrazolo[4,3-*b*]pyridin-2-yl)-1-cyano-1-methylethyl]-4-trifluoromethylthiobenzamide (compound No 3.023)
*N*-[1-Cyano-2-(3,6-dichloro-2*H*-pyrazolo[4,3-*b*]pyridin-2-yl)-1-methylethyl]-4-trifluoromethoxybenzamide (compound No 3.017)
*N*-[2-(3-Bromo-6-chloro-2*H*-pyrazolo[4,3-*b*]pyridin-2-yl)-1-cyano-1-methylethyl]-4-trifluoromethoxybenzamide (compound No 3.019)