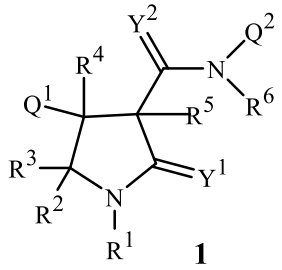
CLAIMS

What is claimed is:

1. A compound selected from Formula **1**, *N*-oxides and salts thereof:



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wherein

Q^1 is a phenyl ring or a naphthalenyl ring system, each ring or ring system optionally substituted with up to 5 substituents independently selected from R^7; or a 5- to 6-membered heterocyclic ring or an 8- to 10-membered heteroaromatic bicyclic ring system, each ring or ring system containing ring members selected from carbon atoms and 1 to 4 heteroatoms independently selected from up to 2 O, up to 2 S and up to 4 N atoms, wherein up to 3 carbon ring members are independently selected from C(=O) and C(=S), and the sulfur atom ring members are independently selected from $S(=O)_u(=NR^8)_v$, each ring or ring system optionally substituted with up to 5 substituents independently selected from R^7 on carbon atom ring members and selected from R^9 on nitrogen atom ring members;

Q^2 is a phenyl ring or a naphthalenyl ring system, each ring or ring system optionally substituted with up to 5 substituents independently selected from R^{10}; or a 5- to 6-membered fully unsaturated heterocyclic ring or an 8- to 10-membered heteroaromatic bicyclic ring system, each ring or ring system containing ring members selected from carbon atoms and 1 to 4 heteroatoms independently selected from up to 2 O, up to 2 S and up to 4 N atoms, wherein up to 3 carbon ring members are independently selected from C(=O) and C(=S), and the sulfur atom ring members are independently selected from $S(=O)_u(=NR^8)_v$, each ring or ring system optionally substituted with up to 5 substituents independently selected from R^{10} on carbon atom ring members and selected from R^{11} on nitrogen atom ring members;

Y^1 and Y^2 are each independently O, S or NR^{12};

R^1 is H, hydroxy, amino, C_1–C_6 alkyl, C_1–C_6 haloalkyl, C_2–C_6 alkenyl, C_3–C_6 alkynyl, C_4–C_8 cycloalkylalkyl, C_2–C_8 alkoxyalkyl, C_2–C_8 haloalkoxyalkyl, C_2–C_8 alkylthioalkyl, C_2–C_8 alkylsulfinylalkyl, C_2–C_8 alkylsulfonylalkyl, C_2–C_8 alkylcarbonyl, C_2–C_8 haloalkylcarbonyl, C_4–C_{10} cycloalkylcarbonyl, C_2–C_8

alkoxycarbonyl, C_2–C_8 haloalkoxycarbonyl, C_4–C_{10} cycloalkoxycarbonyl, C_2–C_8 alkylaminocarbonyl, C_3–C_{10} dialkylaminocarbonyl, C_4–C_{10} cycloalkylaminocarbonyl, C_1–C_6 alkoxy, C_1–C_6 alkylthio, C_1–C_6 haloalkylthio, C_3–C_8 cycloalkylthio, C_1–C_6 alkylsulfinyl, C_1–C_6 haloalkylsulfinyl, C_3–C_8 cycloalkylsulfinyl, C_1–C_6 alkylsulfonyl, C_1–C_6 haloalkylsulfonyl, C_3–C_8 cycloalkylsulfonyl, C_1–C_6 alkylaminosulfonyl, C_2–C_8 dialkylaminosulfonyl, C_3–C_{10} trialkylsilyl or G^1;

R^2 and R^3 are each independently H, halogen or C_1–C_4 alkyl; or

R^2 and R^3 are taken together with the carbon atom to which they are bonded to form a C_3–C_7 cycloalkyl ring;

R^4 and R^5 are each independently H, halogen or C_1–C_4 alkyl;

R^6 is H, hydroxy, amino, C_1–C_6 alkyl, C_1–C_6 haloalkyl, C_2–C_6 alkenyl, C_3–C_6 alkynyl, C_2–C_8 alkoxyalkyl, C_2–C_8 haloalkoxyalkyl, C_2–C_8 alkylthioalkyl, C_2–C_8 alkylsulfinylalkyl, C_2–C_8 alkylsulfonylalkyl, C_2–C_8 alkylcarbonyl, C_2–C_8 haloalkylcarbonyl, C_4–C_{10} cycloalkylcarbonyl, C_2–C_8 alkoxycarbonyl, C_2–C_8 haloalkoxycarbonyl, C_4–C_{10} cycloalkoxycarbonyl, C_2–C_8 alkylaminocarbonyl, C_3–C_{10} dialkylaminocarbonyl, C_4–C_{10} cycloalkylaminocarbonyl, C_1–C_6 alkoxy, C_1–C_6 alkylthio, C_1–C_6 haloalkylthio, C_3–C_8 cycloalkylthio, C_1–C_6 alkylsulfinyl, C_1–C_6 haloalkylsulfinyl, C_3–C_8 cycloalkylsulfinyl, C_1–C_6 alkylsulfonyl, C_1–C_6 haloalkylsulfonyl, C_3–C_8 cycloalkylsulfonyl, C_1–C_6 alkylaminosulfonyl, C_2–C_8 dialkylaminosulfonyl, C_3–C_{10} trialkylsilyl or G^1;

each R^7 and R^{10} is independently halogen, cyano, nitro, C_1–C_8 alkyl, C_1–C_8 haloalkyl, C_1–C_8 nitroalkyl, C_2–C_8 alkenyl, C_2–C_8 haloalkenyl, C_2–C_8 nitroalkenyl, C_2–C_8 alkynyl, C_2–C_8 haloalkynyl, C_4–C_{10} cycloalkylalkyl, C_4–C_{10} halocycloalkylalkyl, C_5–C_{12} alkylcycloalkylalkyl, C_5–C_{12} cycloalkylalkenyl, C_5–C_{12} cycloalkylalkynyl, C_3–C_8 cycloalkyl, C_3–C_8 halocycloalkyl, C_4–C_{10} alkylcycloalkyl, C_6–C_{12} cycloalkylcycloalkyl, C_3–C_8 cycloalkenyl, C_3–C_8 halocycloalkenyl, C_2–C_8 alkoxyalkyl, C_2–C_8 haloalkoxyalkyl, C_3–C_8 haloalkoxyalkoxy, C_3–C_8 alkoxyalkoxy, C_4–C_{10} cycloalkoxyalkyl, C_3–C_{10} alkoxyalkoxyalkyl, C_2–C_8 alkylthioalkyl, C_2–C_8 alkylsulfinylalkyl, C_2–C_8 alkylsulfonylalkyl, C_2–C_8 alkylaminoalkyl, C_2–C_8 haloalkylaminoalkyl, C_4–C_{10} cycloalkylaminoalkyl, C_3–C_{10} dialkylaminoalkyl, -CHO, C_2–C_8 alkylcarbonyl, C_2–C_8 haloalkylcarbonyl, C_4–C_{10} cycloalkylcarbonyl, -C(=O)OH, C_2–C_8 alkoxycarbonyl, C_2–C_8 haloalkoxycarbonyl, C_4–C_{10} cycloalkoxycarbonyl, C_5–C_{12} cycloalkylalkoxycarbonyl, -C(=O)NH_2, C_2–C_8 alkylaminocarbonyl, C_4–C_{10} cycloalkylaminocarbonyl, C_3–C_{10} dialkylaminocarbonyl, C_1–C_8 alkoxy, C_1–C_8 haloalkoxy, C_2–C_8 alkoxyalkoxy, C_2–C_8 alkenyloxy, C_2–C_8 haloalkenyloxy, C_3–C_8 alkynyloxy, C_3–C_8 haloalkynyloxy, C_3–C_8 cycloalkoxy, C_3–C_8

halocycloalkoxy, C_4–C_{10} cycloalkylalkoxy, C_3–C_{10} alkylcarbonylalkoxy, C_2–C_8 alkylcarbonyloxy, C_2–C_8 haloalkylcarbonyloxy, C_4–C_{10} cycloalkylcarbonyloxy, C_1–C_8 alkylsulfonyloxy, C_1–C_8 haloalkylsulfonyloxy, C_1–C_8 alkylthio, C_1–C_8 haloalkylthio, C_3–C_8 cycloalkylthio, C_1–C_8 alkylsulfinyl, C_1–C_8 haloalkylsulfinyl, C_1–C_8 alkylsulfonyl, C_1–C_8 haloalkylsulfonyl, C_3–C_8 cycloalkylsulfonyl, formylamino, C_2–C_8 alkylcarbonylamino, C_2–C_8 haloalkylcarbonylamino, C_2–C_8 alkoxycarbonylamino, C_1–C_6 alkylsulfonylamino, C_1–C_6 haloalkylsulfonylamino, $-SF_5$, -SCN, SO_2NH_2, C_3–C_{12} trialkylsilyl, C_4–C_{12} trialkylsilylalkyl, C_4–C_{12} trialkylsilylalkoxy or G^2;

each R^8 is independently H, cyano, C_2–C_3 alkylcarbonyl or C_2–C_3 haloalkylcarbonyl;

each R^9 and R^{11} is independently cyano, C_1–C_3 alkyl, C_2–C_3 alkenyl, C_2–C_3 alkynyl, C_3–C_6 cycloalkyl, C_2–C_3 alkoxyalkyl, C_1–C_3 alkoxy, C_2–C_3 alkylcarbonyl, C_2–C_3 alkoxycarbonyl, C_2–C_3 alkylaminoalkyl or C_3–C_4 dialkylaminoalkyl;

each R^{12} is independently H, cyano, C_1–C_4 alkyl, C_1–C_4 haloalkyl, $-(C{=}O)CH_3$ or $-(C{=}O)CF_3$;

each G^1 is independently phenyl, phenylmethyl, pyridinylmethyl, phenylcarbonyl, phenoxy, phenylethynyl, phenylsulfonyl or a 5- or 6-membered heteroaromatic ring, each optionally substituted on ring members with up to 5 substituents independently selected from R^{13} ;

each G^2 is independently phenyl, phenylmethyl, pyridinylmethyl, phenylcarbonyl, phenoxy, phenylethynyl, phenylsulfonyl or a 5- or 6-membered heteroaromatic ring, each optionally substituted on ring members with up to 5 substituents independently selected from R^{14} ;

each R^{13} and R^{14} is independently halogen, cyano, hydroxy, amino, nitro, -CHO, $-C(=O)OH$, $-C(=O)NH_2$, $-SO_2NH_2$, C_1–C_6 alkyl, C_1–C_6 haloalkyl, C_2–C_6 alkenyl, C_2–C_6 alkynyl, C_2–C_8 alkylcarbonyl, C_2–C_8 haloalkylcarbonyl, C_2–C_8 alkoxycarbonyl, C_4–C_{10} cycloalkoxycarbonyl, C_5–C_{12} cycloalkylalkoxycarbonyl, C_2–C_8 alkylaminocarbonyl, C_3–C_{10} dialkylaminocarbonyl, C_1–C_6 alkoxy, C_1–C_6 haloalkoxy, C_2–C_8 alkylcarbonyloxy, C_1–C_6 alkylthio, C_1–C_6 haloalkylthio, C_1–C_6 alkylsulfinyl, C_1–C_6 haloalkylsulfinyl, C_1–C_6 alkylsulfonyl, C_1–C_6 haloalkylsulfonyl, C_1–C_6 alkylaminosulfonyl, C_2–C_8 dialkylaminosulfonyl, C_3–C_{10} trialkylsilyl, C_1–C_6 alkylamino, C_2–C_8 dialkylamino, C_2–C_8 alkylcarbonylamino, C_1–C_6 alkylsulfonylamino, phenyl, pyridinyl or thienyl; and

each u and v are independently 0, 1 or 2 in each instance of $S(=O)_u(=NR^8)_v$, provided that the sum of u and v is 0, 1 or 2;

provided that

(a) the compound of Formula **1** is other than *N*-1*H*-benzotriazol-1-yl-2-oxo-4-phenyl-3-pyrrolidinecarboxamide;

(b) when Q^1 comprises a 3-furanyl or 3-pyridinyl ring directly bonded to the remainder of Formula **1**, then said ring is substituted with at least one substituent selected from R^7;

(c) when Q^1 is an unsubstituted phenyl ring, and Q^2 comprises a phenyl ring directly bonded to the remainder of Formula **1**, then said Q^2 ring is substituted with R^{10} other than optionally substituted phenoxy or F at a 2-position, cyano or $–CF_3$ at the 4-positionand R^5 is H or halogen;

(d) when Q^1 is unsubstituted phenyl, and Q^2 comprises a pyridinyl ring directly bonded to the remainder of Formula **1**, then said pyridinyl ring is substituted with at least one substituent selected from R^{10};

(e) when Q^1 is a phenyl ring substituted with 4-phenyl or 4-phenoxy, said Q^1 ring is further substituted with and R^7 ~~susbtituent~~substituent;

(f) when Q^1 comprises a phenyl ring directly bonded to the remainder of Formula **1** and said ring is substituted with R^7 at both ortho positions (relative to the bond to the remainder of Formula **1**), then said ring is also independently substituted with R^7 on at least one additional position;

(g) when Q^1 is ~~other than~~ unsubstituted 1-naphthalenyl, then Q^2 is other than 2,3-di-fluorophenyl or 2-CF_3-phenyl;

(h) Q^2 is other than optionally substituted 1*H*-pyrazol-5-yl;~~and~~

(i) when Q^2 comprises a 1*H*-pyrazol-3-yl ring directly bonded to the remainder of Formula **1**, said ring is substituted at the 1-position with ~~R^9~~R^{11}~~.~~; and

(j) provided the compound of Formula 1 is other than (3R,4S)-4-[4-cyclopropyl-5-(4,4-dimethylpentyl)-4H-1,2,4-triazol-3-yl]-N-(2,4-dimethylphenyl)-1-methyl-2-oxo-3-pyrrolidinecarboxamide; and (3R,4S)-4-[4-cyclopropyl-5-(4,4-dimethylpentyl)-4H-1,2,4-triazol-3-yl]-N-(2,4-dimethylphenyl)-1-methyl-2-oxo-3-pyrrolidinecarboxamide, hydrochloride (1:1).

2. The compound of Claim 1 wherein

each R^7 and R^{10} is independently halogen, cyano, nitro, C_1–C_4 alkyl, C_1–C_4 haloalkyl, C_2–C_4 alkenyl, C_2–C_4 haloalkenyl C_2–C_4 alkynyl, C_2–C_4 haloalkynyl, C_1–C_4 nitroalkyl, C_2–C_4 nitroalkenyl, C_2–C_4 alkoxyalkyl, C_2–C_4 haloalkoxyalkyl, C_3–C_4 cycloalkyl, C_3–C_4 halocycloalkyl, cyclopropylmethyl, methylcyclopropyl, C_1–C_4 alkoxy, C_1–C_4 haloalkoxy, C_2–C_4 alkenyloxy, C_2–C_4 haloalkenyloxy, C_3–C_4 alkynyloxy, C_3–C_4 haloalkynyloxy, C_3–C_4 cycloalkoxy, C_1–C_4 alkylthio, C_1–C_4 haloalkylthio, C_1–C_4 alkylsulfinyl, C_1–C_4 haloalkylsulfinyl, C_1–C_4 alkylsulfonyl, C_1–C_4 haloalkylsulfonyl, ~~hydroxy,~~ formyl, C_2–C_4 alkylcarbonyl, C_2–C_4

alkylcarbonyloxy, C_1–C_4 alkylsulfonyloxy, C_1–C_4 haloalkylsulfonyloxy, ~~amino, C_1–C_4 alkylamino, C_2–C_4 dialkylamino,~~ formylamino, C_2–C_4 alkylcarbonylamino, -SF_5, -SCN, C_3–C_4 trialkylsilyl, trimethylsilylmethyl or trimethylsilylmethoxy; and

each R^9 and R^{11} is independently ~~H or~~ C_1–C_2 alkyl.

3. The compound of Claim 2 wherein

Y^1 and Y^2 are each O;

~~R^1,~~ R^2, R^3, R^4, R^5 and R^6 are each H; and

R^1 is H, C_1–C_6 alkyl, C_1–C_6 haloalkyl or C_4–C_8 cycloalkylalkyl.

4. The compound of Claim 3 wherein

Q^1 is a phenyl ring substituted with 1 to 3 substituents independently selected from R^7;

Q^2 is a phenyl ring substituted with 1 to 3 substituents independently selected from R^{10}; and

R^1 is H, C_1–C_6 alkyl or C_1–C_6 haloalkyl.

5. The compound of Claim 4 wherein

each R^7 is independently halogen, cyano, C_1–C_2 alkyl, C_1–C_3 haloalkyl or C_1–C_3 alkylsulfonyl;

each R^{10} is independently halogen, cyano, nitro, C_1–C_2 alkyl, C_1–C_3 haloalkyl or C_1–C_3 alkylsulfonyl; and

R^1 is H, Me, Et or CHF_2.

6. The compound of Claim 5 wherein

Q^1 is a phenyl ring substituted with 1 substituent selected from R^7 at the para position or substituted with 2 substituents independently selected from R^7 wherein one substituent is at the para position and the other substituent is at a meta position;

Q^2 is a phenyl ring substituted with 1 substituent selected from R^{10} at an ortho position or substituted with 2 substituents independently selected from R^{10} wherein one substituent is at an ortho position and the other substituent is at the adjacent meta position; and

R^1 is H, Me or Et.

7. The compound of Claim 6 wherein

each R^7 is independently F or CF_3;

each R^{10} is F; and

R^1 is H or CH_3.

8. The compound of Claim 1 selected from the group consisting of

N-(2,3-difluorophenyl)-4-(3,4-difluorophenyl)-2-oxo-3-pyrrolidinecarboxamide;

N-(2-fluorophenyl)-2-oxo-4-[4-(trifluoromethyl)phenyl]-3-pyrrolidinecarboxamide;

N-(2,3-difluorophenyl)-2-oxo-4-[4-(trifluoromethyl)phenyl]-3-pyrrolidinecarboxamide;

N-(3,4-difluorophenyl)-*N*-(2-fluorophenyl)-2-oxo-3-pyrrolidinecarboxamide; and

(3*R*,4*S*)-N-(2-fluorophenyl)-2-oxo-4-[3-(trifluoromethyl)phenyl]-3-pyrrolidinecarboxamide.

9. A herbicidal composition comprising a compound of any one of Claims 1 through 8 and at least one component selected from the group consisting of surfactants, solid diluents and liquid diluents.

10. The herbicidal composition of Claim 9 further comprising at least one additional active ingredient selected from the group consisting of other herbicides and herbicide safeners.

11. A herbicidal mixture comprising (a) a compound of any one of Claims 1 through 8, and (b) at least one additional active ingredient selected from (b1) photosystem II inhibitors, (b2) acetohydroxy acid synthase (AHAS) inhibitors, (b3) acetyl-CoA carboxylase (ACCase) inhibitors, (b4) auxin mimics, (b5) 5-enol-pyruvylshikimate-3-phosphate (EPSP) synthase inhibitors, (b6) photosystem I electron diverters, (b7) protoporphyrinogen oxidase (PPO) inhibitors, (b8) glutamine synthetase (GS) inhibitors, (b9) very long chain fatty acid (VLCFA) elongase inhibitors, (b10) auxin transport inhibitors, (b11) phytoene desaturase (PDS) inhibitors, (b12) 4-hydroxyphenyl-pyruvate dioxygenase (HPPD) inhibitors, (b13) homogentisate solenesyltranserase (HST) inhibitors, (b14) cellulose biosynthesis inhibitors, (b15) other herbicides including mitotic disruptors, organic arsenicals, asulam, bromobutide, cinmethylin, cumyluron, dazomet, difenzoquat, dymron, etobenzanid, flurenol, fosamine, fosamine-ammonium, metam, methyldymron, oleic acid, oxaziclomefone, pelargonic acid and pyributicarb, and (b16) herbicide safeners; and salts of compounds of (b1) through (b16) and salts of compounds of (b1) through (b16).

12. A herbicidal mixture comprising (a) a compound of any one of Claims 1 through 8, and (b) at least one additional active ingredient selected from (b2) acetohydroxy acid synthase (AHAS) inhibitors, (b9) very long chain fatty acid (VLCFA) elongase inhibitors, and (b12) 4-hydroxyphenyl-pyruvate dioxygenase (HPPD) inhibitors; and salts of compounds of (b2), (b9) and (b12).

13. A method for controlling the growth of undesired vegetation comprising contacting the vegetation or its environment with a herbicidally effective amount of a compound of any one of Claims 1 through 8.