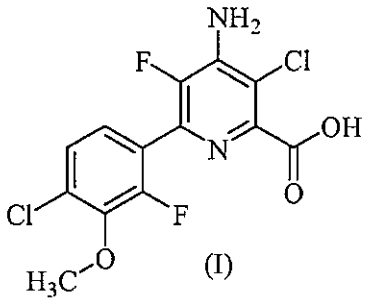
WHAT IS CLAIMED IS:

1. A synergistic herbicidal composition comprising a herbicidally effective amount of (a) a compound of the formula (I)



(I)

or an agriculturally acceptable salt or ester thereof and (b) an imidazolinone.

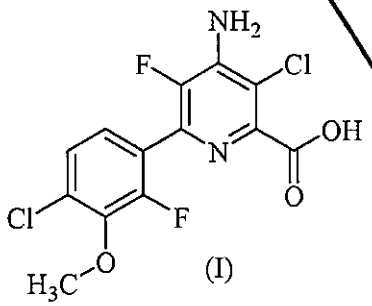
2. The composition of claim 1, wherein (a) is the compound of formula (I), a $C_{1-4}$ alkyl ester of the compound of formula (I), or a benzyl ester of the compound of formula (I).

3. The composition of claim 1, wherein (b) is at least one compound, or an agriculturally acceptable salt, carboxylic acid, carboxylate salt, or ester thereof, selected from the group consisting of imazethapyr, imazethapyr ammonium, imazamox, imazamox ammonium, imazapic, imazapic ammonium, imazapyr, imazapyr isopropylamine salt, imazamethabenz, imazamethabenz-methyl, imazaquin, and imazaquin isopropylamine salt.

4. The composition of any of claims 1-3, further comprising an agriculturally acceptable adjuvant or carrier.

5. The composition of any of claims 1-4, further comprising a herbicide safener.

6. A method of controlling undesirable vegetation which comprises contacting the vegetation or the locus thereof with or applying to the soil or water to prevent the emergence or growth of vegetation a herbicidally effective amount of (a) a compound of the formula (I)



(I)

or an agriculturally acceptable salt or ester thereof and (b) an imidazolinone.

7. The method of claim 6, wherein (a) is the compound of formula (I), a $C_{1-4}$ alkyl ester of the compound of formula (I), or a benzyl ester of the compound of formula (I).

8. The method of claim 6, wherein (b) is at least one compound, or an agriculturally acceptable salt, carboxylic acid, carboxylate salt, or ester thereof, selected from the group consisting of is imazethapyr, imazethapyr ammonium, imazamox, imazamox ammonium, imazapic, imazapic ammonium, imazapyr, imazapyr isopropylamine salt, imazamethabenz, imazamethabenz-methyl, imazaquin, and imazaquin isopropylamine salt.

9. The method of any of claims 6-8, wherein the undesirable vegetation is controlled in direct-seeded, water-seeded and transplanted rice, cereals, wheat, barley, oats, rye, sorghum, corn/maize, sugarcane, sunflower, oilseed rape, canola, sugar beet, soybean, cotton, pineapple, pastures, grasslands, rangelands, fallowland, turf, tree and vine orchards, aquatics, industrial vegetation management (IVM) or rights of way (ROW).

10. The method of any of claims 6-9, wherein the (a) and (b) are applied pre-emergently to the weed or the crop.

11. The method of any of claims 6-10, wherein the undesirable vegetation is controlled in glyphosate-, 5-enolpyruvylshikimate-3-phosphate (EPSP) synthase inhibitor-, glufosinate-, glutamine synthetase inhibitor-, dicamba-, phenoxy auxin-, pyridyloxy auxin-, synthetic auxin-, auxin transport inhibitor-, aryloxyphenoxypropionate-, cyclohexanedione-, phenylpyrazoline-, acetyl CoA carboxylase (ACCase) inhibitor-, imidazolinone-, sulfonylurea-, pyrimidinylthiobenzoate-, triazolopyrimidine-, sulfonylaminocarbonyltriazolinone-, acetolactate synthase (ALS) or acetohydroxy acid synthase (AHAS) inhibitors-, 4-hydroxyphenyl-pyruvate dioxygenase (HPPD) inhibitor-, phytoene desaturase inhibitor-, carotenoid biosynthesis inhibitor-, protoporphyrinogen oxidase (PPO) inhibitor-, cellulose biosynthesis inhibitor-, mitosis inhibitor-, microtubule inhibitor-, very long chain fatty acid inhibitor-, fatty acid and lipid biosynthesis inhibitor-, photosystem I inhibitor-, photosystem II inhibitor-, triazine-, or bromoxynil- tolerant crops.

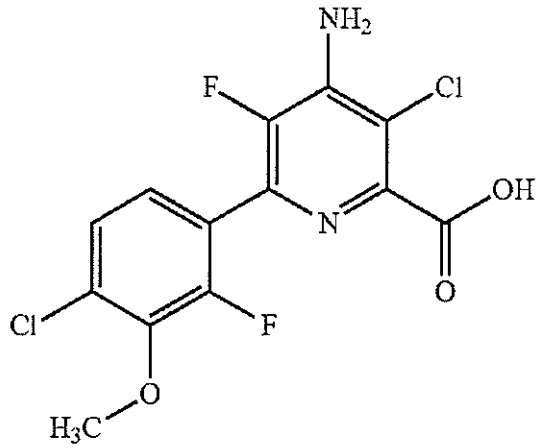
12. The method of claim 11, wherein the tolerant crop possesses multiple or stacked traits conferring tolerance to multiple herbicides or multiple modes of action.

13. The method of any of claims 6-12, wherein the undesirable vegetation comprises a herbicide resistant or tolerant weed.

CLAIMS

1. A herbicidal composition comprising a herbicidally effective amount of (a) a compound of the formula (I):

(I)




or a $C_{1-4}$ alkyl ester, or a benzyl ester, or an agriculturally acceptable salt of formula (I); and (b) an imidazolinone herbicide, wherein (a) and (b) are present in the composition in a ratio such that the composition exhibits synergy.

2. The composition of claim 1, wherein (a) is a benzyl ester of the compound of formula (I).

3. The composition of claim 1, wherein (a) is the carboxylic acid of formula (I).

4. The composition of claim 1, wherein (b) is at least one compound or an agriculturally acceptable salt, carboxylic acid, carboxylate salt, or ester thereof, selected from the group consisting of imazethapyr, imazethapyr ammonium, imazamox, imazamox ammonium, imazapic, imazapic ammonium, imazapyr, imazapyr isopropylamine salt, imazamethabenz, imazamethabenz-methyl, imazaquin, and imazaquin isopropylamine salt.

5. The composition of claim 1, further comprising a herbicide safener, adjuvant and/or carrier.

6. The composition of claim 4, wherein the weight ratio of compound of formula (I) or agriculturally acceptable salt or ester thereof to imazethapyr or agriculturally acceptable salt or ester thereof is from about 4:1 to about 1:8.

7. The composition of claim 4, wherein the weight ratio of the compound of formula (I) or agriculturally acceptable salt or ester thereof to imazamox or agriculturally acceptable salt or ester thereof is from about 6:1 to about 1:1.

8. The composition of claim 4, wherein the weight ratio of the compound of formula (I) or agriculturally acceptable salt or ester thereof to imazapic of agriculturally acceptable salt or ester thereof is from about 1:4 to about 4:1.

9. The composition of claim 4 wherein the weight ratio of the compound of formula (I) or agriculturally acceptable salt or ester thereof to imazapyr or agriculturally acceptable salt or ester thereof is from about 1:1 to about 8:1.

10. The composition claim 4 wherein the weight ratio of the compound of formula (I) or agriculturally acceptable salt or ester thereof to imazamethabenz-methyl or agriculturally acceptable salt or ester thereof is from about 1:350 to about 1:1.

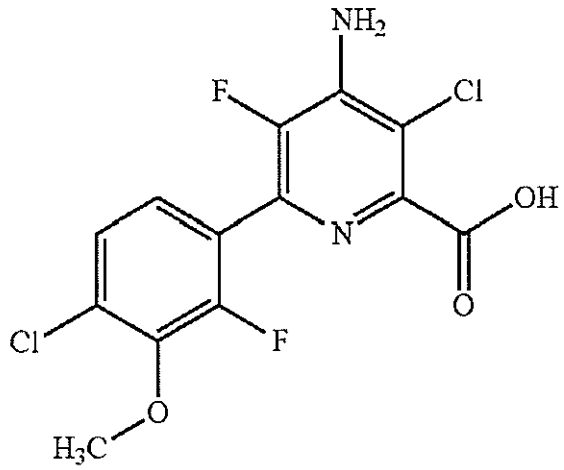
11. The composition of claim 4 wherein the weight ratio of the compound of formula (I) or agriculturally acceptable salt or ester thereof to imazaquin or agriculturally acceptable salt or ester thereof is from about 1:1 to about 1:8.

12. The composition of claim 1 further comprising an agriculturally acceptable adjuvant or carrier.

13. A method of controlling undesirable vegetation, comprising the steps of:

contacting a plant, wherein the plant is undesirable vegetation or the locus thereof, soil or water, wherein the soil or the water allows for the growth of the undesirable vegetation, with a herbicidally effective amount of a combination comprising (a) a compound of the formula (I):

(I)




or a $C_{1-4}$ alkyl ester, or a benzyl ester, or an agriculturally acceptable salt of formula (I); and

(b) an imidazolinone herbicide, wherein (a) and (b) are present in the combination in a ratio such that the combination exhibits synergy for the control of undesirable vegetation, and wherein the undesirable vegetation is controlled in direct seeded, water seeded, or transplanted plants selected from the group of plants consisting of: cereals, wheat, barley, oats, rye, sorghum, and corn/maize.

14. The method of claim 13, wherein the water is part of a flooded rice paddy.

15. The method of claim 13, wherein the (a) and (b) are applied pre-emergently and/or post-emergently to a crop or growing area.

16. The method of claim 13, wherein the undesirable vegetation is controlled in glyphosate-, 5-enolpyruvylshikimate-3-phosphate synthase inhibitor-, glufosinate-, glutamine synthetase inhibitor-, dicamba-, phenoxy auxin-, pyridyloxy auxin-, synthetic auxin-, auxin transport inhibitor-, aryloxyphenoxypropionate-, cyclohexanedione-, phenylpyrazoline-, acetyl CoA carboxylase inhibitor-, imidazolinone-, sulfonylurea-, pyrimidinylthiobenzoate-, triazolopyrimidine-, sulfonylaminocarbonyltriazolinone-, acetolactate synthase or acetohydroxy acid synthase inhibitors-, 4-hydroxyphenyl-pyruvate dioxygenase inhibitor-, phytoene desaturase inhibitor-, carotenoid biosynthesis inhibitor-, protoporphyrinogen oxidase inhibitor-, cellulose biosynthesis inhibitor-, mitosis inhibitor-, microtubule inhibitor-, very long chain fatty acid inhibitor-, fatty acid and lipid biosynthesis inhibitor-, photosystem I inhibitor-, photosystem II inhibitor-, triazine-, or bromoxynil-tolerant crops.

17. The method of claim 13, wherein the undesirable vegetation comprises a herbicide resistant or tolerant plant.

18. The method of claim 17, wherein the resistant or tolerant plant is resistant or tolerant to multiple herbicides.

19. The method of claim 17, wherein the resistant or tolerant plant is resistant or tolerant to acetolactate synthase inhibitors or acetohydroxy acid synthase, photosystem II inhibitors, acetyl CoA carboxylase inhibitors, synthetic auxins, auxin transport inhibitors, photosystem I inhibitors, 5-enolpyruvylshikimate-3-phosphate synthase inhibitors, microtubule assembly inhibitors, fatty acid and lipid biosynthesis inhibitors, protoporphyrinogen oxidase inhibitors, carotenoid biosynthesis inhibitors, long chain fatty acid inhibitors, phytoene desaturase inhibitors, glutamine synthetase inhibitors, 4-hydroxyphenyl-pyruvate-dioxygenase inhibitors, mitosis inhibitors, cellulose biosynthesis inhibitors, herbicides with multiple modes-of-action, quinclorac, arylaminopropionic acids, difenzoquat, endothall, or organoarsenicals.