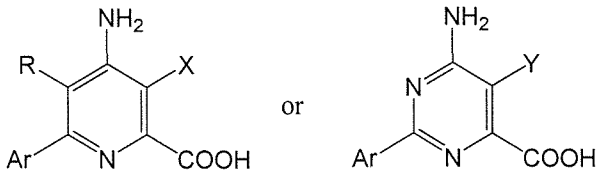
Claims

1. A solid herbicidal composition comprising:

a) at least one herbicide selected from the class of ACCase and ALS enzyme inhibitors and compounds of the Formula



,

wherein

Ar represents a phenyl group substituted with one to four substituents independently selected from halogen, C_1-C_6 alkyl, C_1-C_6 alkoxy, C_2-C_4 alkoxyalkyl, C_2-C_6 alkylcarbonyl, C_1-C_6 alkylthio, C_1-C_6 haloalkyl, C_1-C_6 haloalkoxy, C_2-C_4 haloalkoxyalkyl, C_2-C_6 haloalkylcarbonyl, C_1-C_6 haloalkylthio, $-OCH_2CH_2-$, $-OCH_2CH_2CH_2-$, $-OCH_2O-$, or $-OCH_2CH_2O-$;

R represents H or F;

X represents Cl or vinyl; and

Y represents Cl, vinyl or methoxy;

and their salts and esters;

wherein the herbicide(s) is present in the composition in an amount of from about 1 gram per kilogram (g/kg) to about 200 g/kg relative to the total weight of the composition;

b) one or more built-in adjuvant, in which the built-in adjuvant is one or more of a petroleum derived paraffinic hydrocarbon, a petroleum derived aromatic

hydrocarbon, a plant derived oil, or a C_1-C_6 ester of a plant derived oil,wherein the built-in adjuvant(s) is present in the composition in an amount of from about 50 g/kg to about 750 g/kg relative to the total weight of the composition; and

c) one or more solid, water soluble polymer or oligomer, wherein the solid, water soluble polymer(s) or oligomer(s) comprises a lignosulfonate and is present in the composition in an amount of from about 200 g/kg to about 700 g/kg relative to the total weight of the composition;

wherein the composition does not comprise solid carbohydrate.

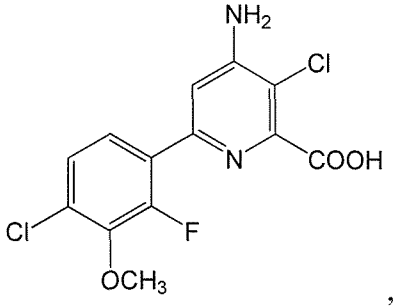
2. The composition of Claim 1, wherein the solid herbicidal composition is a powder.

3. The composition of Claim 1, wherein the solid herbicidal composition is a granule.

4. The composition of any one of Claims 1 to 3, further comprising one or more additional inert ingredients.

5. The composition of any one of Claims 1 to 4, further comprising one or more additional agriculturally active ingredients.

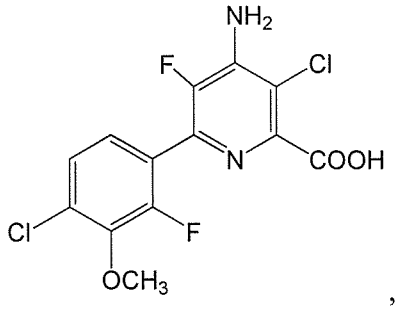
6. The composition of any one of Claims 1 to 5, in which the herbicide is at least one of cyhalofop-butyl; penoxsulam; bensulfuron-methyl; azimsulfuron; imazosulfuron; fenoxaprop-P-ethyl; the compound of Formula



,

or a C_1-C_6 alkyl ester or salt thereof; or

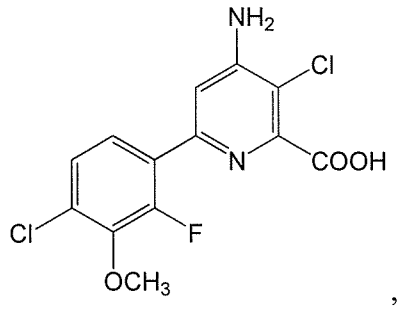
the compound of Formula



,

or a C_1-C_{12} alkyl or C_7-C_{12} arylalkyl ester or salt thereof.

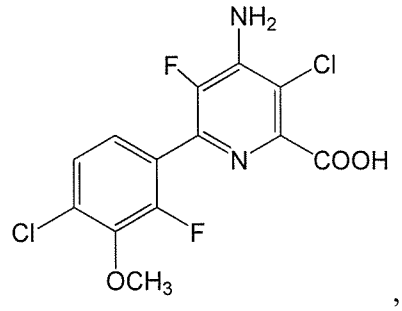
7. The composition of any one of Claims 1 to 5, in which the herbicide is at least one of cyhalofop-butyl; penoxsulam; bensulfuron-methyl; the compound of Formula



,

or a C_1-C_6 alkyl ester or salt thereof; or

the compound of Formula



,

or a C_1-C_{12} alkyl or C_7-C_{12} arylalkyl ester or salt thereof.

8. The composition of any one of Claims 1 to 7, in which the built-in adjuvant is one or more of water-immiscible organic liquid.

9. The composition of any one of Claims 1 to 7, in which the build-in adjuvant is one or more of a seed oil, or a C_1-C_6 esters of plant derived oil.

10. The composition of any one of Claims 1 to 7, in which the build-in adjuvant is methyl soyate.

11. The composition of any one of Claims 1 to 10, wherein the build-in adjuvant is in an amount of from about 200 g/kg to about 600 g/kg relative to the total weight of the composition.

12. The composition of any one of Claims 1 to 10, wherein the build-in adjuvant is in an amount of from about 300 g/kg to about 600 g/kg relative to the total weight of the composition.

13. The composition of any one of Claims 1 to 12, wherein the solid, water soluble polymer or oligomer is in an amount of from about 300 g/kg to about 600 g/kg relative to the total weight of the composition.

14. The composition of any one of Claims 1 to 13, which comprises no polyvinyl alcohol, or which comprises polyvinyl alcohol in an amount of less than 10% w/w relative to the total weight of the composition.

15 The composition of any one of Claims 1 to 14, which comprises no polyvinyl alcohol, or which comprises polyvinyl alcohol wherein the polyvinyl alcohol has a degree of hydrolysis from about 87 to about 99 percent.

16. The composition of any one of Claims 1 to 15, which comprises no mineral powder, or which comprises mineral powder in an amount of less than about 60% w/w relative to the total weight of the composition.

17. A method of controlling undesirable vegetation in an aquatic environment, which comprises broadcasting, spraying or adding an herbicidally effective amount of the

composition of any one of Claims 1 to 16, to the aquatic environment either before emergence or after emergence of the undesirable vegetation.

18. A method of controlling undesirable vegetation in a flooded rice paddy, which comprises broadcasting, spraying or adding an herbicidally effective amount of the composition of any one of Claims 1 to 16, to the flooded rice paddy either before emergence or after emergence of the undesirable vegetation.

19. A method of preparing the solid herbicidal composition of any one of Claims 1 to 16, in the form of a granule or a powder which comprises:

a) mixing all solid, water soluble polymers or oligomers in water to form an aqueous phase;

b) mixing the built-in adjuvant and oil soluble or oil dispersible active ingredients to form an oil phase;

c) adding the oil phase prepared in step b) to the aqueous phase prepared in step a) under high shear homogenization to provide a mixture;

d) drying the mixture prepared in c) to provide an herbicidal powder or an herbicidal granule; and

e) optionally, agglomerating the herbicidal powder prepared in d) by a low shear granulation process to prepare an herbicidal granule.