What is claimed:

1. A herbicide granule composition comprising:

a) from about 5 grams active ingredient per kilogram (gai/kg) to about 50 gai/kg, with respect to the composition, of an aryloxyphenoxypropionic acid herbicide;

b) from about 20 g/kg to about 200 g/kg, with respect to the composition, of a non-petroleum derived built-in adjuvant;

c) from about 700 g/kg to about 950 g/kg, with respect to the composition, a water soluble solid carrier; and

d) from about 1 g/kg to about 50 g/kg, with respect to the composition, a surfactant;

wherein the weight ratio of the herbicide to the non-petroleum derived built-in adjuvant is from about 1:3 to about 1:40.

2. The composition of claim 1, wherein the aryloxyphenoxypropionic acid herbicide is cyhalofop-butyl, fenoxaprop-ethyl, fluazifop-P-butyl, haloxyfop-methyl, haloxyfop-R-methyl, metamifop, propaquizafop, quizalofop-P-ethyl, or quizalofop-P-tefuryl.

3. The composition of claim 1, wherien the aryloxyphenoxypropionic acid herbicide is cyhalofop-butyl.

4. The composition of claim 1, wherein the composition comprises from about 10 g/kg to about 30 g/kg of the aryloxyphenoxypropionic acid.

5. The composition of claim 1, wherein the non-petroleum derived built-in adjuvant is a water-immiscible organic liquid or solid.

6. The composition of claim 5, wherein the water-immiscible organic liquid or solid is at least one of a plant, algae or animal derived oil or a C_1-C_{10} ester of a plant, algae or animal derived oil.

7. The composition of claim 6 in which the C_1-C_{10} ester of a plant, algae or animal derived oil is methyl soyate.

8. The composition of claim 1, wherein the composition comprises from about 50 g/kg to about 150 g/kg of the non-petroleum derived built-in adjuvant.

9. The composition of claim 1, wherein the weight ratio of the herbicide to the non-petroleum derived built-in adjuvant is from about 1:4 to about 1:40.

10. The composition of claim 1, wherein the water soluble solid carrier is at least one of an inorganic compound, a lignosulfonate, a carbohydrate, a fertilizer, a, a natural gum and a synthetic polymer.

11. The composition of claim 1, wherein the water soluble solid carrier is potassium chloride, potassium sulfate, ammonium sulfate, sodium sulfate, calcium carbonate, urea, calcium lignosulfonate or sodium lignosulfonate.

12. The composition of claim 1, wherein the composition comprises from about 700 g/kg to about 950 g/kg of the water soluble solid carrier.

13. The composition of claim 1, wherein the surfactant is an alkyl sulfate salt, alkylarylsulfonate salt, alkylphenol-alkylene oxide addition product, soap, alkylnapthalene-sulfonate salt, salt of a dialkyl ester of a sulfosuccinate, sorbitol ester, quaternary amine, polyethylene glycol ester of a fatty acid, block copolymer of ethylene oxide and propylene oxide, salt of a mono or dialkyl phosphate ester, or mixture thereof.

14. The composition of claim 1, wherein:

(a) the aryloxyphenoxypropionic acid herbicide is cyhalofop-butyl, fenoxaprop-ethyl, fluazifop-P-butyl, haloxyfop-methyl, haloxyfop-R-methyl, metamifop, propaquizafop, quizalofop-P-ethyl, or quizalofop-P-tefuryl;

(b) the non-petroleum derived built-in adjuvant is a water-immiscible organic liquid or solid;

(c) the water soluble solid carrier is at least one of an inorganic compound, a lignosulfonate, a carbohydrate, a fertilizer, a, a natural gum and a synthetic polymer; and

(d) the surfactant is an alkyl sulfate salt, alkylarylsulfonate salt, alkylphenol-alkylene oxide addition product, soap, alkylnapthalene-sulfonate salt, salt of a dialkyl ester of a sulfosuccinate, sorbitol ester, quaternary amine, polyethylene glycol ester of a fatty acid, block copolymer of ethylene oxide and propylene oxide, salt of a mono or dialkyl phosphate ester, or mixture thereof.

15. The composition of claim 1, wherein the aryloxyphenoxypropionic acid herbicide is cyhalofop-butyl; the non-petroleum derived built-in adjuvant is methyl soyate, the water soluble solid carrier is potassium chloride, and the surfactant is sodium dioctyl sulfosuccinate.

16. The composition of claim 1, wherein the composition further comprises one or more additional pesticides.

17. The composition of claim 1, wherein the composition further comprises one or more herbicide safeners.

18. A method of controlling undesirable vegetation in an aquatic environment which comprises broadcasting or adding the herbicide granule composition of claim 1 into the aquatic environment before emergence or after emergence of the undesirable vegetation.

19. The method of claim 18 in which the aquatic environment is a flooded rice paddy or field.

2012272944 04 Feb 2016

What is claimed:

1. A herbicide granule composition comprising:

a) from about 5 grams active ingredient per kilogram (gai/kg) to about 50 gai/kg, with respect to the composition, of an aryloxyphenoxypropionic acid herbicide;

b) from about 20 g/kg to about 200 g/kg, with respect to the composition, of a non-petroleum derived built-in adjuvant;

c) from about 700 g/kg to about 950 g/kg, with respect to the composition, a water soluble solid carrier; and

d) from about 1 g/kg to about 50 g/kg, with respect to the composition, a surfactant;

wherein the weight ratio of the herbicide to the non-petroleum derived built-in adjuvant is from about 1:3 to about 1:40.

2. The composition of claim 1, wherein the aryloxyphenoxypropionic acid herbicide is cyhalofop-butyl, fenoxaprop-ethyl, fluazifop-P-butyl, haloxyfop-methyl, haloxyfop-R-methyl, metamifop, propaquizafop, quizalofop-P-ethyl, or quizalofop-P-tefuryl.

3. The composition of claim 1, wherein the aryloxyphenoxypropionic acid herbicide is cyhalofop-butyl.

4. The composition of any one of claims 1 to 3, wherein the composition comprises from about 10 g/kg to about 30 g/kg of the aryloxyphenoxypropionic acid.

5. The composition of any one of claims 1 to 4, wherein the non-petroleum derived built-in adjuvant is a water-immiscible organic liquid or solid.

6. The composition of claim 5, wherein the water-immiscible organic liquid or solid is at least one of a plant, algae or animal derived oil or a C_1-C_{10} ester of a plant, algae or animal derived oil.

2012272944 04 Feb 2016

7. The composition of claim 6 in which the C_1-C_{10} ester of a plant, algae or animal derived oil is methyl soyate.

8. The composition of any one of the preceding claims, wherein the composition comprises from about 50 g/kg to about 150 g/kg of the non-petroleum derived built-in adjuvant.

9. The composition of any one of the preceding claims, wherein the weight ratio of the herbicide to the non-petroleum derived built-in adjuvant is from about 1:4 to about 1:40.

10. The composition of any one of the preceding claims, wherein the water soluble solid carrier is at least one of an inorganic compound, a lignosulfonate, a carbohydrate, a fertilizer, a natural gum and a synthetic polymer.

11. The composition of any one of claims 1 to 9, wherein the water soluble solid carrier is potassium chloride, potassium sulfate, ammonium sulfate, sodium sulfate, calcium carbonate, urea, calcium lignosulfonate or sodium lignosulfonate.

12. The composition of any one of the preceding claims, wherein the composition comprises about 860g/kg of the water soluble solid carrier.

13. The composition of any one of the preceding claims, wherein the surfactant is an alkyl sulfate salt, alkylarylsulfonate salt, alkylphenol-alkylene oxide addition product, soap, alkylnapthalene-sulfonate salt, salt of a dialkyl ester of a sulfosuccinate, sorbitol ester, quaternary amine, polyethylene glycol ester of a fatty acid, block copolymer of ethylene oxide and propylene oxide, salt of a mono or dialkyl phosphate ester, or mixture thereof.

14. The composition of claim 1, wherein:

(a) the aryloxyphenoxypropionic acid herbicide is cyhalofop-butyl, fenoxaprop-ethyl, fluazifop-P-butyl, haloxyfop-methyl, haloxyfop-R-methyl, metamifop, propaquizafop, quizalofop-P-ethyl, or quizalofop-P-tefuryl;

(b) the non-petroleum derived built-in adjuvant is a water-immiscible organic liquid or solid;

(c) the water soluble solid carrier is at least one of an inorganic compound, a lignosulfonate, a carbohydrate, a fertilizer, a, a natural gum and a synthetic polymer; and

04 Feb 2016 2012272944

(d) the surfactant is an alkyl sulfate salt, alkylarylsulfonate salt, alkylphenol-alkylene oxide addition product, soap, alkylnapthalene-sulfonate salt, salt of a dialkyl ester of a sulfosuccinate, sorbitol ester, quaternary amine, polyethylene glycol ester of a fatty acid, block copolymer of ethylene oxide and propylene oxide, salt of a mono or dialkyl phosphate ester, or mixture thereof.

15. The composition of claim 1, wherein the aryloxyphenoxypropionic acid herbicide is cyhalofop-butyl; the non-petroleum derived built-in adjuvant is methyl soyate, the water soluble solid carrier is potassium chloride, and the surfactant is sodium dioctyl sulfosuccinate.

16. The composition of any one of the preceding claims, wherein the composition further comprises one or more additional pesticides.

17. The composition of any one of the preceding claims, wherein the composition further comprises one or more herbicide safeners.

18. A method of controlling undesirable vegetation in an aquatic environment which comprises broadcasting or adding the herbicide granule composition of any one of the preceding claims into the aquatic environment before emergence or after emergence of the undesirable vegetation.

19. The method of claim 18 in which the aquatic environment is a flooded rice paddy or field.