[00011] The compositions of the prior art have failed to produce an environmentally safe adulticide that is effective on pyrethroid resistant and pyrethroid susceptible arthropods.

SUMMARY OF THE INVENTION

[00012] In one aspect, the invention is directed to a pesticidal mixture comprising an effective amount of octanoic, nonanoic and decanoic (C8, 9, 10) fatty acids and an effective amount of a pyrethroid, wherein the octanoic, nonanoic and decanoic (C8, 9, 10) fatty acids and the pyrethroid are in a ratio from about 10:1 to 1:10 by weight.

[00013] In another aspect, the invention is directed to a method of insect control comprising administering to an environment in need of insect control an effective amount of a mixture of the present invention. Another aspect relates to a method of insect control comprising applying an effective amount of the mixture disclosed herein to a fabric.

BRIEF DESCRIPTION OF THE DRAWINGS

[00014] FIG. 1, *Time/Mortality Response of Susceptible and Resistant* Aedes aegypti *to Permethrin in Bottle Bioassay*, is a graph of the results from Bottle Bioassay Example #1. This bioassay confirmed that the *Aedes aegypti* strain was resistant to pyrethroids.

[00015] FIG. 2, *Time/Mortality Response of Susceptible and Resistant* Aedes aegypti *to C8910 in Bottle Bioassay,* is a graph of the results from Bottle Bioassay Example #2. This bioassay demonstrated that pyrethroid resistant and pyrethroid susceptible *Aedes aegypti* had equivalent response to a C8, 9, 10 mixture of fatty acids.

[00016] FIG. 3, *Time/Mortality Response of Susceptible and Resistant* Aedes aegypti *to a 1:0.01 ratio of C8910 with Permethrin in Bottle Bioassay*, is a graph of the results from Bottle Bioassay Example #3. This bioassay demonstrated that pyrethroid resistant *Aedes aegypti* had a more rapid response than did pyrethroid susceptible *Aedes aegypti* to a mixture of C8, 9, 10 fatty acids with a pyrethroid, such as permethrin.

DETAILED DESCRIPTION OF THE INVENTION

[00017] Applicants discovered that a mixture of octanoic, nonanoic and decanoic acids (C8, 9, 10) with a pyrethroid produces insecticidal compounds that are highly

CLAIMS

1. A pesticidal mixture comprising an effective amount of a mixture of octanoic, nonanoic and decanoic (C8, 9, 10) fatty acids and an effective amount of a pyrethroid, wherein the octanoic, nonanoic and decanoic (C8, 9, 10) fatty acids and the pyrethroid are in a ratio from about 10:1 to 1:10 by weight.

2. The pesticidal mixture of claim 1 wherein the mixture of octanoic, nonanoic and decanoic (C8, 9, 10) fatty acids comprises about 33 % of octanoic, about 33 % of nonanoic, and about 33 % of decanoic fatty acids.

3. The pesticidal mixture of claim 1 wherein the pyrethroid is permethrin.

4. A method of insect control comprising administering to an environment in need of insect control an effective amount of the mixture of claim 1.

5. The method of claim 4 wherein the environment is an outdoor area in need of insecticidal treatments.

6. The method of claim 4 wherein the environment is an agricultural crop.

7. The method of claim 4 wherein the environment is a residential or commercial building or structure.

8. The method of claim 4 wherein the mixture is applied by spraying or brushing the mixture onto a surface.

9. The method of claim 4 wherein arthropods are controlled.

10. The method of claim 9 wherein the arthropods are mosquitoes.

11. The method of claim 4 wherein the mixture provides residual insect control.

12. The method of claim 4 wherein the mixture provides immediate kill of flying insects when applied as a space spray.

13. A method of insect control comprising applying an effective amount of the mixture of claim 1 to a fabric.

14. The method of claim 13 wherein the fabric is a bed net, a tent or an item of clothing.

15. The method of claim 13 wherein the insects controlled are mosquitoes.

16. The method of claim 15 wherein the mosquitoes are *Aedes aegypti* species.

17. The method of claim 15 wherein the mosquitoes are pyrethroid-resistant.