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(54) **WEATHER RESISTANT GRANULAR SLUG, SNAIL AND INSECT BAIT**

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(57) **ABSTRACT**

The present invention is directed to a physical and chemical formulation designed to be attractive to, and eaten by, terrestrial mollusks, specifically slugs and snails. Optionally, the formulation is also attractive to and toxic to insects. Upon being eaten and after a set delay, the invention is designed to kill such pests and in so doing remove them from the premises or environment treated.

FIGURE 1

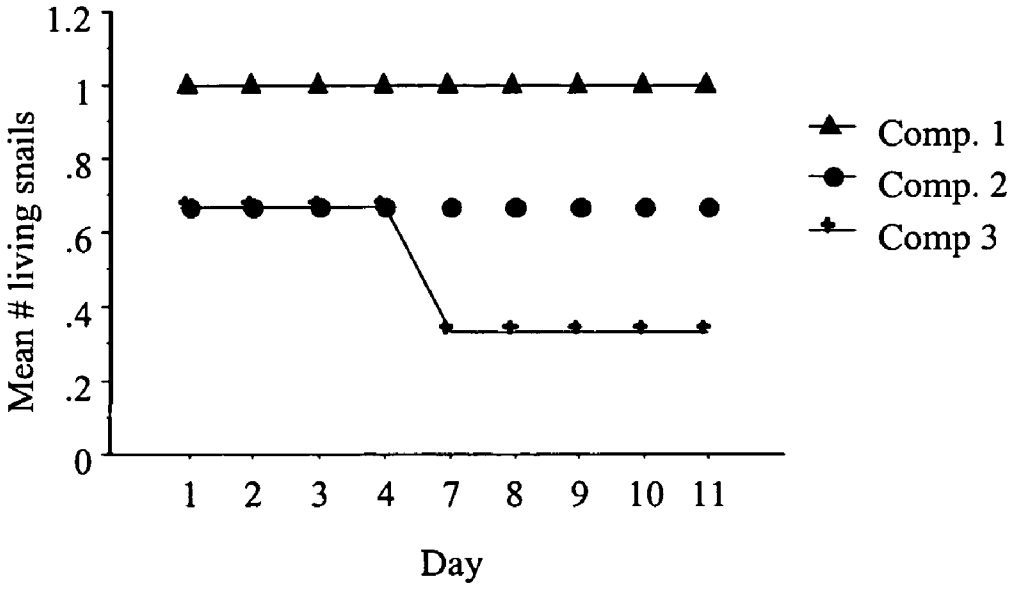

1.2
1
.8
.6
.4
.2
0
Mean # living snails
1
2
3
4
7
8
9
10
11
Day
Comp. 1
Comp. 2
Comp 3

FIGURE 2

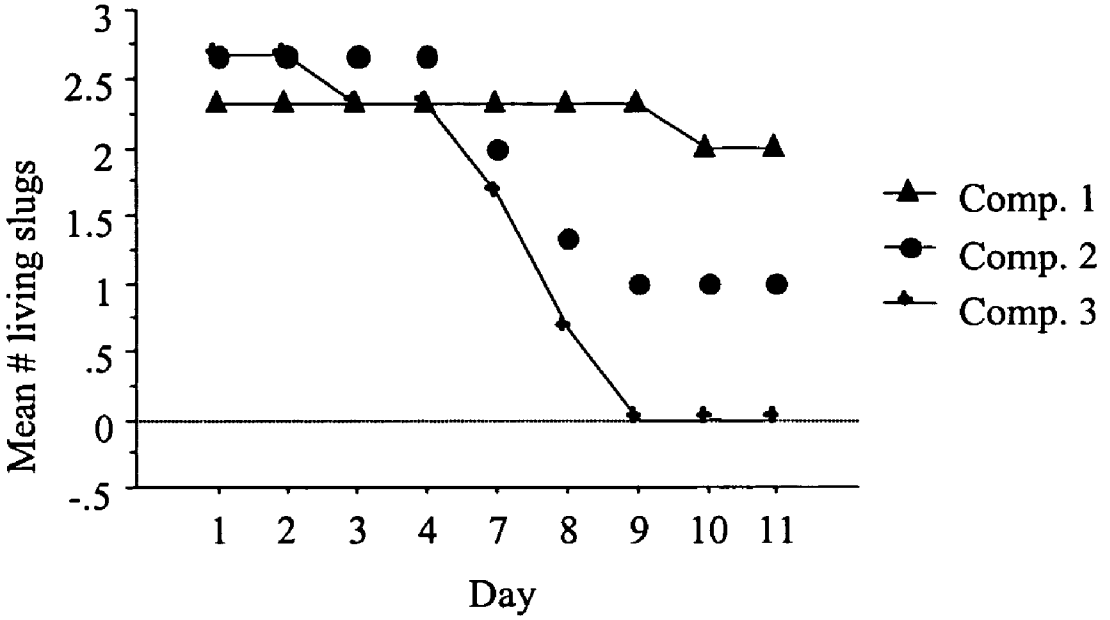

3
2.5
2
1.5
1
.5
0
-.5
Mean # living slugs
1 2 3 4 7 8 9 10 11
Day
Comp. 1
Comp. 2
Comp. 3

FIGURE 3

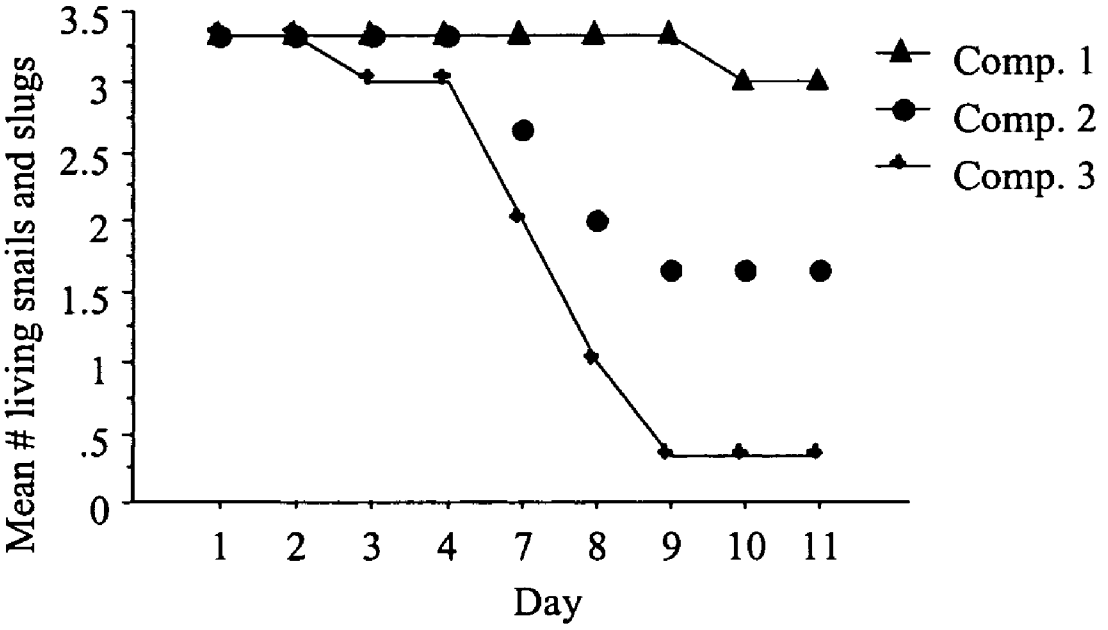

Mean # living snails and slugs
3.5
3
2.5
2
1.5
1
.5
0
1
2
3
4
7
8
9
10
11
Day
Comp. 1
Comp. 2
Comp. 3

FIGURE 4

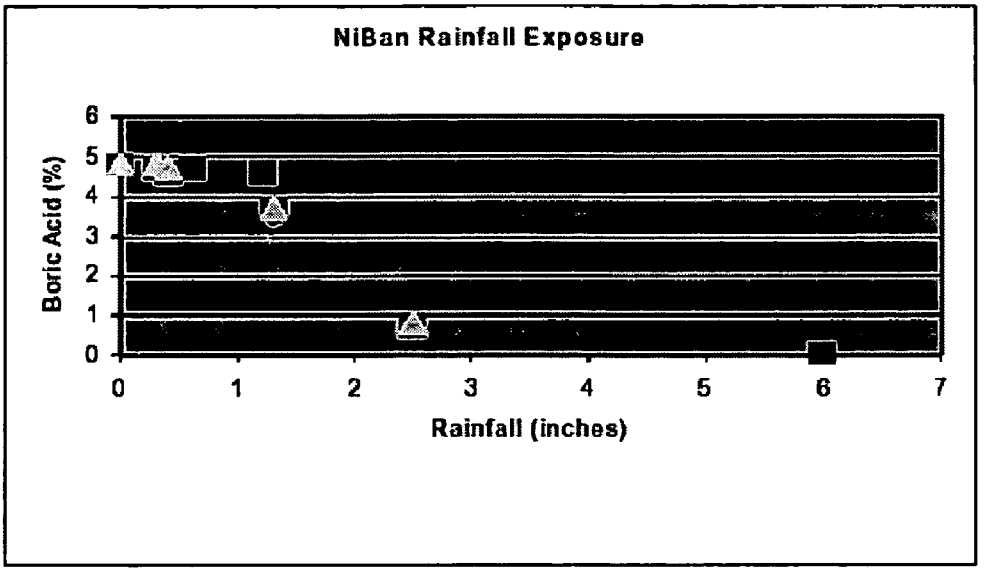
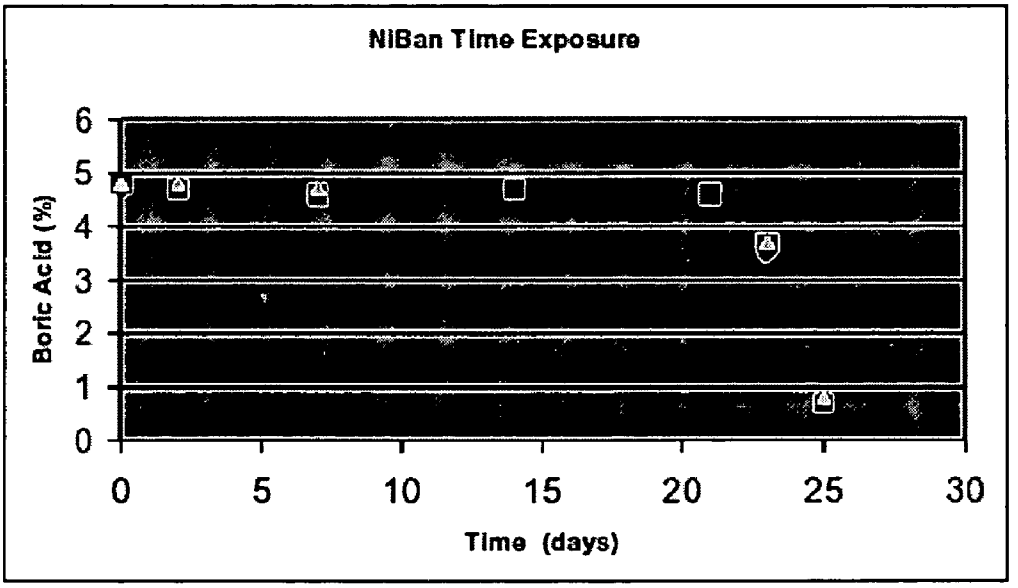


FIGURE 5



WEATHER RESISTANT GRANULAR SLUG, SNAIL AND INSECT BAIT

BACKGROUND OF THE INVENTION

[0001] Terrestrial mollusks, such as slugs and snails, are herbivores capable of extensively damaging plants, including flowers, vegetables, and some trees and shrubs. Not only can terrestrial mollusks be quite damaging, existing baits designed to exterminate them often have significant limitations. For example, the baits do not always perform well in the natural environments of mollusks, which is often permanently moist or frequently wet. Existing baits also sometimes lose their physical integrity under such circumstances or lose their efficacy upon prolonged exposure to moisture, sunlight, or both.

[0002] In addition, many slugs and snails live in environments where damaging insects are also present. Although control of these insects is desirable, it is often preferable to exterminate the insects without use of a contact pesticide that will indiscriminately kill non-targeted insects, or that will function only for a short period of time after application. Desirably, a method of controlling slugs and snails could also be used to control insect pest populations.

[0003] A further challenge is that some slug and snail baits presently in use are not properly formulated for consumption by mollusks, either because they do not have a proper attractant in appropriate concentration, or because they are not physically formed in a manner that promotes consumption by mollusks, and especially not consumption by both mollusks and insects.

[0004] Therefore, a need exists for an improved formulation for control of terrestrial mollusks, especially one that can also be used to control targeted insect pest populations. Any such formulation should desirably also be well suited toward use in moist environments without excessive loss of physical integrity or efficacy as a pest control material. Finally, the composition should be formulated such that it is highly attractive to both mollusks and insects.

SUMMARY OF THE INVENTION

[0005] The present invention is directed to a physical and chemical formulation designed to be attractive to, and eaten by, terrestrial mollusks, specifically slugs and snails. Optionally it is also attractive to and consumed by insect pests. Upon being eaten, and after a set delay, the invention is designed to kill such pests.

[0006] The physical and chemical formulation of the pest control composition of the invention includes a bait with broad spectrum performance against insect pests, many general arthropod pests, and also snails and slugs. The formulation provides excellent weathering capabilities and lasting protection with repeated applications. The chemical and physical formulation of the invention shows, in certain implementations, resistance to ultraviolet light, resistance to water, and resistance to oxidation and hydrolysis, while being highly effective against slugs and snails.

[0007] In a first aspect, the invention is directed to a pest control composition active against arthropods (including insects) and terrestrial mollusks, the composition comprising a borate-containing agent toxic to both insects and mollusks, but substantially non-repellant to both insects and mollusks. The composition also typically includes a carrier matrix. The carrier matrix serves to bind the borate-containing agent together, with other materials included in the composition, such as carbohydrates (including sugars), proteins, or fats (or whole food materials containing these components—e.g. cereals, dried vegetables or fruits or nuts) used as attractants.

[0008] The borate active ingredient comprises, for example, boric acid. The boric acid optionally comprises from 0.1 to 10 percent of the pest control composition based upon total dry weight of the composition. The amount of boric acid can be less than 20 percent in some embodiments, and less than 10 percent in certain embodiments, based upon total dry weight of the pest control composition. In general the borate active ingredient, such as boric acid, comprises at least 1 percent of the pest control composition, based upon total dry weight of the pest control composition.

[0009] The active ingredient of the pest control formulation is typically blended with a carrier matrix containing an organic material, such as corncobs or nut husks or vegetable derived meal. In some embodiments the carrier matrix comprises an organic material having food value to terrestrial mollusks. Suitable organic material having food value to terrestrial mollusks includes oils, sugars, fruit extracts, vegetable extracts, proteins and combinations thereof. Whole food materials containing these components—e.g. cereals, dried vegetables or fruits or nuts—can also be used as attractants.

[0010] A specific acceptable example formulation contains at least about 50 percent of an organic carrier and more desirably at least about 60 to 90 percent organic carrier; at least about 5 percent oil and more desirably from about 10 to 20 percent oil; at least about 5 percent carbohydrate, such as a sugar, often about 5 to 20 percent sugar; and at least about 2 percent but desirably less than about 15 percent of a borate-containing composition. The borate-containing composition is preferably boric acid or borax.

[0011] A specific example of a formulation that can be used within the scope of the invention contains approximately 70 percent corncob matter; approximately 15 percent corn oil; approximately 10 percent sugar; and approximately 5 percent boric acid, wherein all percentages are based upon dry weight of the pest control composition.

[0012] The unique formulation made in accordance with the invention is generally durable under environmental conditions in which terrestrial mollusks thrive, including moist environments. Thus, the pest control composition desirably retains its physical integrity after being exposed to the weather (precipitation, UV light, heat, air oxidation and hydrolysis and leaching) for 1 week or more. Similarly, the pest control composition substantially retains its efficacy after being exposed to the weather (precipitation, UV light, air oxidation and hydrolysis and leaching) for an extended period of time, such as one month under many circumstances. Typically the pest control composition remains effective under normal outdoor weather conditions in temperate climates for a period of one month or more. Such climates include, for example, one in which approximately four inches of accumulated rain fall during that period and the temperature remains between about 40 and 100 degrees Fahrenheit.

FIGURES

[0013] The invention is also described in accordance with the following figures:

[0014] **FIG. 1** is a chart showing the efficacy of compositions made in accordance with the invention at exterminating terrestrial mollusks.

[0015] **FIG. 2** is a second chart showing the efficacy of compositions made in accordance with the invention at exterminating terrestrial mollusks.

[0016] **FIG. 3** is a third chart showing the efficacy of compositions made in accordance with the invention at exterminating terrestrial mollusks.

[0017] **FIG. 4** is a chart showing the weather resistance of compositions made in accordance with the invention.

[0018] **FIG. 5** is a second chart showing the weather resistance of compositions made in accordance with the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0019] The present invention is directed to a physical and chemical formulation designed to be attractive to, and eaten by, terrestrial mollusks, specifically slugs and snails. Optionally, the formulation is also attractive to and toxic to insects. Upon being eaten and after a set delay, the invention is designed to kill such pests and in doing so remove them from the premises or environment treated. The pest control formulation of the present invention typically includes a granular bait with broad spectrum performance against snails and slugs, as well as general insect pests. The formulation also provides excellent weathering capabilities, making it well suited to use in moist environments and locations where it will be exposed to the environment. Such weathering properties are very desirable, if not essential, because the habitat in which snails and slugs are most commonly located are relatively wet and have high humidity.

[0020] In a first aspect, the invention is directed to a pest control composition comprising a borate-containing agent toxic to both insects and mollusks, but substantially non-repellant to both insects and mollusks. The composition also includes a carrier matrix. The carrier matrix serves to bind the borate-containing agent together, with other materials included in the composition, such as carbohydrates, proteins, or fats, used as attractants.

[0021] The unique formulation made in accordance with the invention is generally durable under environmental conditions in which terrestrial mollusks thrive, including moist environments. Thus, the pest control composition desirably retains its physical integrity after being exposed to the weather (precipitation, UV light, heat, air oxidation, hydrolysis and leaching) for at least 1 week. Similarly, the pest control composition substantially retains its efficacy after being exposed to the weather (precipitation, UV light, air oxidation, hydrolysis and leaching) for 1 month under many circumstances. Although the composition can be administered in various forms, it is advantageous to be administered to pests in a granular form of varying particle sizes to allow easy ingestion by a range of slug and snail and insect sizes and species.

[0022] Additional aspects of the invention will now be described in greater detail below:

Active Ingredient

[0023] The pest control formulation of the present invention typically includes a borate-containing active ingredient. This borate-containing active ingredient comprises, for example, boric acid and/or borax. In general the borate active ingredient, such as boric acid, comprises at least 1 percent of the pest control composition, based upon total dry weight of the pest control composition. In some implementations, the boric acid optionally comprises from 0.1 to 10 percent of the pest control composition based upon total dry weight of the pest control composition. The amount of boric acid can be less than 20 percent in some embodiments, and less than 10 percent in certain embodiments, based upon total dry weight of the pest control composition.

Matrix Material

[0024] The borate-containing active ingredient of the pest control formulation is typically blended with a carrier matrix containing an organic material, such as corncobs, or plant derived materials such as shells, hulls, husks or meal. Other organics, both inert and of food value, such as cereals, rice, dried fruit or vegetables or nuts or extracts, can be used. In some embodiments, the carrier matrix comprises an organic material having food value to terrestrial mollusks. Suitable organic material, having food value to terrestrial mollusks, includes oils, sugars, fruit extracts, vegetable extracts, proteins and combinations thereof (or whole food materials containing these components—e.g. cereals, dried vegetables or fruits or nuts or processed waste food materials).

EXAMPLE FORMULATIONS

[0025] Various formulations may be made in accordance with the invention. A specific acceptable formulation contains at least about 50 percent of an organic carrier and more specifically at least about 60 to 90 percent carrier; at least about 5 percent oil and more desirably from about 10 to 20 percent oil; at least about 5 percent carbohydrate, such as a sugar, often about 5 to 20 percent sugar; and at least about 2 percent but desirably less than about 15 percent of a borate-containing composition. The borate-containing composition is preferably boric acid or borax.

[0026] A specific example of a material that can be used for the invention contains approximately 70 percent corncob matter; approximately 15 percent corn oil; approximately 10 percent sugar; and approximately 5 percent boric acid, wherein all percentages are based upon dry weight of the pest control composition.

[0027] During production the components are blended together in an essentially dry process that intimately combines the components and produces specific sized granules that are able to perform for extended time periods and rainfall in exterior situations. In a specific implementation of the invention, powdered sugar is mixed with boric acid and ground corncob. Corn oil is then added and mixing continues for approximately 20 to 25 minutes to produce a granular composition well suited to slug and snail control. In the alternative, a wet process with binder (e.g. agar, gelatin, wheat flour, corn meal etc. with water) can be used to produce molded solid forms that break off into granules.

[0028] In some embodiments, two attractants or food sources are used with the bait to give it a broader appeal to various target pests. The use of two attractants (such as corn oil and confectioner's sugar) gives a synergistic performance. Tested separately these components are known to not be good attractants for all target pests. In addition to these two attractants in the invention, the further addition of a protein source (e.g. yeast extract, soy, albumin etc.) and an additional carbohydrate source (e.g. wheat, corn, oat, rice or potato flour, or malt extract, dried fruit, nut or vegetable etc.) is not excluded from the invention.

[0029] A preferred granular size is within the ranges of #14 Mesh to #100 Mesh. The particle sizes being distributed in this range have been found to provide ample foraging opportunities for many different pest species and size ranges such as cockroaches, silverfish, crickets, snails, slugs and numerous ant species including fire, argentine, odorous house, carpenter, and pavement ants). If only the molluscicide part of the formulation (not insecticide part) is to be used, a larger pellet rather than a granule is preferred (e.g. 1-5 mm×3-10 mm) for improved longevity.

[0030] Furthermore, the major advantages of using borates as pesticides (broad spectrum, low relative cost, low acute mammalian toxicity and low environmental impact), are retained. This therefore, represents a major advantage to existing technology in the control of general insect, arthropod and land mollusk pests. This discovery can provide immediate benefit to homeowners and pest management professionals who want an effective long term, broad spectrum, flexible control strategy that incorporates the benefits of a borate molluscicide and insecticide.

Efficacy

[0031] The following test was conducted to confirm the efficacy of formulations made in accordance with the invention on exterminating snails and slugs. Snails and slugs were collected from outdoors in Knox County, Tenn. Snails, slugs and water soaked cotton pads were placed in a disposable plastic container at the start of the study. A total of three or four snails and slugs, consisting of zero to one snail and two to three slugs, were placed in each of nine 739 ml disposable plastic containers. An 8 cm disposable petri dish, which held wet cotton and 1.6 gm granular bait treatment, was also placed in each container. Granular bait treatments consisted of a carrier material and attractant without aa molluscicide, a carrier material and attractant with boric acid active ingredient, plus a carrier material, attractant, and iron phosphate (an industry standard molluscicide). When the composition was formulated with iron phosphate or without any pesticide, the percentage of inert ingredients was increased accordingly.

[0032] The results of this study are shown below in **FIGS. 1, 2**, and **3**. **FIG. 1** shows the mean number of living snails observed after eleven days of exposure to 1.6 grams of granular bait treatments. The first composition contained a control with only food attractants, while the second composition contained 1 percent $FePO_4$, and the third composition contained five percent H_3BO_3. **FIG. 2** shows the mean number of living slugs observed after eleven days of exposure to 1.6 grams of granular bait treatments. The first composition contained a control with only food attractants, while the second composition contained 1 percent $FePO_4$, and the third composition contained five percent H_3BO_3.

FIG. 3 shows the mean number of living snails and slugs observed after eleven days of exposure to 1.6 grams of granular bait treatments. The first formulation contained a control with only food attractants, while the second composition contained 1 percent $FePO_4$, and the third composition contained five percent H_3BO_3.

[0033] The results show that boric acid was more effective than iron phosphate and the control at killing snails and slugs. On day 11, the mean number of living slugs and snails were 0 and 0.3, respectively. By day 7, the control bait and the iron phosphate bait had gone moldy while the boric acid bait had not. Published studies have also indicated that snail and slug baits go moldy in a short period of time (Hata, T. Y., A. H. Hara, and B. K. S. Hu. 1997, Molluscicides and mechanical barriers against slugs, *Vaginula plebeian* Fischer and *Veronicella cubensis* (Pfeiffer) (Stylommatophora: Veronicellidae). Crop-prot.16 (6): 501-506). It was also discovered that the borate prevented the bait from going moldy throughout the duration of this study and this is seen as an additional benefit of the invention. This evaluation determined that boric acid has molluscicidal properties and that the proposed composition is an effective attractant to snails and slugs. A snail and slug bait containing boric acid is also likely to be more effective and last longer than other snail and slug baits available due to its fungicidal properties.

Weather Testing Study

[0034] Weatherized granular bait made in accordance with the invention was tested in exposed exterior situations for a period of one month to determine its ability to withstand weathering conditions typical of the environment of snails and slugs. The active ingredient concentration in the bait was determined and plotted against the recorded amount of rainfall over the exposed period as well as exposure over time.

[0035] The granular bait used in this weathering test contained about 5% boric acid as the active ingredient and a combination of both lipid and carbohydrate attractants. The objective of this study was to determine the effectiveness of this process and the longevity of product performance by determining the rate of active ingredient loss due to exterior exposure. Three open stations, each containing 100-grams of the granular bait product and a perforated base were placed outside in 3 different open locations. A sample was taken from each station at regular intervals and the total rainfall was recorded using a rain gauge. This continued for about 1 month and until a total of >6 inches of rain had passed though the granular bait.

[0036] Following exposure, samples were oven dried at 35 degrees Celsius overnight. 5 grams of each sample was then taken and placed into 245 grams of water in a round bottom flask. This gave a dilution factor of 50. The flask was connected to a condenser and refluxed for 30 minutes to solubilize all available borate. The heat source was then removed and the flask allowed to cool with an inverted small beaker on the top of the condenser. Once cooled, the contents of the flasks were filtered using a Whatman 541 paper and the filtrate was analyzed for boric acid content using a standard mannitol titration. A suitable aliquot of the extract was taken and weighed (W). Dilute hydrochloric acid was added to lower the pH to 3 or 4, then 0.05M sodium hydroxide was added until a pH of 5.8 was reached, and burette reading noted. Excess mannitol (15 grams) was then

added to the flask, and this was titrated back to 5.8 with 0.05M sodium hydroxide, again noting the burette reading. The concentration of borate as % boric acid equivalent (BAE) was then determined using the following calculation.

$$\left(\%\ BAE = \frac{\text{Titre}}{W} \times N \times 6.1823\right) \times 50\ (\text{dilution factor}).$$

where Titre (total volume of NaOH used)=R1−R2

[0037] The analytical results have been shown against rainfall in Table 1 and **FIG. 4**, and against time in Table 2 and **FIG. 5**.

TABLE 1

Active Ingredient Content Compared to Rainfall

Sample	Rainfall (inches)	% BAE
1	0	4.7, 4.8, 4.8
2	0.3	4.8, 4.7, 4.8
3	0.4	4.7, 4.6, 4.7
4	0.6	4.7, 4.7
5	1.2	4.6, 4.6
6	1.3	3.5, 3.7, 3.7
7	2.5	0.8, 0.7, 0.8
8	6	0.04, 0.04

[0038]

TABLE 2

Active Ingredient Content compared to Time

Time (days)	% BAE
0	4.7, 4.8, 4.8
2	4.8, 4.7, 4.8
7	4.7, 4.6, 4.7
14	4.7, 4.7
21	4.6, 4.6
23	3.5, 3.7, 3.7
25	0.8, 0.7, 0.8
27	0.04, 0.04

[0039] From these results it can be observed that the boric acid in the granular bait is slowly lost with increasing amounts of rainfall. From referring to various efficacy studies with a variety of insects, boric acid is known to be effective below 0.5% retention. Light rainfall that does not soak right through the sample did not appear to significantly affect the boric acid content of the bait, and this is probably the case as the sample simply gets wet and then dries out again. However, a heavy downpour of at least 2 inches significantly reduces the boric acid content. This probably occurs as free running water passes through the bait, both solubilizing and removing the boric acid.

[0040] From the graph of the same retention data plotted against time rather than rainfall (**FIG. 5**), it can be seen that simple exposure to air and sunlight did not correlate with borate loss.

[0041] This study found that the active ingredient was slowly lost with increasing rainfall, and that most loss occurred with a heavy downpour in a short period of time. From the results gained it was concluded that the granular bait of the invention will retain efficacy and performance for an exposed period equating to up to 4 inches of rainfall. However, it is recommended that re-application of granular bait be carried out after any period of continuous 2 inches of rainfall, 4 inches of total rainfall, or 3 months, whichever occurred first.

[0042] It can be concluded from this work that performance of the granular bait would be maintained for an extended period of time in the absence of rainfall and for up to 4 inches of accumulated rainfall. It is therefore recommended that re-application of the granular bait be carried out after any period of continuous 2 inches of rainfall, 4 inches of total rainfall, or 3 months, whichever occurred first.

We claim:

1. A pest control composition for controlling terrestrial mollusks, the composition comprising a borate-containing agent toxic to mollusks when ingested.

2. The pest control composition of claim 1, wherein the borate-containing active ingredient is selected from the group consisting of boric acid, an alkali metal borate, an alkaline earth metal borate, a mixed alkali/alkaline earth metal borate, a metal borate, a non-metal borate, and combinations thereof.

3. The pest control composition of claim 2, wherein the alkali metal borate is selected from the group consisting of sodium borate, potassium borate, and combinations thereof.

4. The pest control composition of claim 2, wherein the alkaline earth metal borate is selected from the group consisting of calcium borate, magnesium borate, barium borate, and combinations thereof.

5. The pest control composition of claim 2, wherein the alkali/alkaline earth metal borate comprises sodium magnesium borate.

6. The pest control composition of claim 2, wherein the metal borate is selected from the group consisting of zinc borate, copper borate, and combinations thereof.

7. The pest control composition of claim 2, wherein the non-metal borate comprises borosilicate.

8. The pest control composition of claim 3, wherein the sodium borate is selected from the group consisting of borax, sodium pentaborate, sodium octaborate, and combinations thereof.

9. The pest control composition of claim 4, wherein the calcium borate is selected from the group consisting of colmanite, ulexite, and combinations thereof.

10. The pest control composition of claim 2, wherein boric acid comprises from 0.1 to 10 percent of the pest control composition, based upon total dry weight of the pest control composition.

11. The pest control composition of claim 2, wherein boric acid comprises less than 10 percent of the pest control composition, based upon total dry weight of the pest control composition.

12. The pest control composition of claim 2, wherein boric acid comprises less than 20 percent of the pest control composition, based upon total dry weight of the pest control composition.

13. The pest control composition of claim 2, wherein boric acid comprises at least 0.1 percent of the pest control composition, based upon total dry weight of the pest control composition.

14. The pest control composition of claim 1, wherein the carrier matrix comprises an organic material.

15. The pest control composition of claim 1, wherein the carrier matrix comprises ground corncobs.

16. The pest control composition of claim 1, wherein the carrier matrix comprises an organic material having food value to terrestrial mollusks.

17. The pest control composition of claim 16, wherein the organic material having food value to terrestrial mollusks is selected from the group consisting of oil, carbohydrate, fruit extract, vegetable extract, protein and combinations thereof.

18. A pest control composition for controlling terrestrial mollusks, the pest control composition comprising:

at least 50 percent of an organic carrier;

at least 5 percent oil;

at least 5 percent carbohydrate; and

at least 2 percent of a borate-containing composition.

19. The pest control composition of claim 18, wherein the borate-containing composition comprises boric acid or borax.

20. The pest control composition of claim 18, wherein the pest control composition comprises from 60 to 90 percent organic carrier.

21. The pest control composition of claim 18, wherein the pest control composition comprises from 10 to 20 percent oil.

22. The pest control composition of claim 18, wherein the pest control composition comprises from 5 to 20 percent sugar.

23. The pest control composition of claim 18, wherein the pest control composition comprises up to 15 percent of a borate-containing composition.

24. The pest control composition of claim 18, wherein the pest control composition comprises:

about 70 percent corncob matter;

about 15 percent corn oil;

about 10 percent sugar; and

about 5 percent boric acid,

wherein all percentages are based upon dry weight of the pest control composition.

25. The pest control composition of claim 18, wherein the pest control composition substantially retains its integrity after being exposed to the weather for 1 week

26. The pest control composition of claim 18, wherein the pest control composition substantially retains its efficacy after being exposed to the weather for 1 month

27. The pest control composition of claim 18, wherein the composition is administered to pests in a granular form.

28. The pest control composition of claim 18, wherein the composition is administered to pests in a paste form.

29. The pest control composition of claim 18, wherein the composition is administered to pests in a pellet form.

30. The pest control composition of claim 18, wherein the composition is administered to pests in a solid block form.

31. A method of controlling terrestrial mollusks, the method comprising causing terrestrial mollusks to ingest a pest control composition comprising:

at least about 50 percent of an organic carrier;

at least about 5 percent oil;

at least about 5 percent carbohydrate; and

at least about 2 percent of a borate-containing composition;

wherein all weight percentages are based upon dry weight of the pest control composition.

32. The method of controlling terrestrial mollusks of claim 31, wherein the borate-containing composition comprises boric acid.

33. The method of controlling terrestrial mollusks of claim 31, wherein pest control composition comprises from 3 to 8 percent of a borate-containing composition, based upon total weight of the pest control composition.

34. The method of controlling terrestrial mollusks of claim 31, wherein the pest control composition substantially retains its integrity after being exposed to the weather for 1 week.

35. The method of controlling terrestrial mollusks of claim 31, wherein the pest control composition retains efficacy after being exposed to the weather for 1 month.

36. A weather resistant terrestrial mollusk control product, the terrestrial mollusk control product comprising:

at least 3 percent, by weight, of a borate-containing agent toxic to both insects and mollusks, but substantially non-repellant to both insects and mollusks; and

at least 50 percent by weight of a carrier matrix;

wherein the weather resistant terrestrial mollusk control product substantially retains its integrity after being exposed to the weather for 1 week.

37. The weather resistant terrestrial mollusk control product of claim 36, wherein the weather resistant terrestrial mollusk control product substantially retains its integrity after being exposed to an exterior environment for 1 week.

38. The weather resistant terrestrial mollusk control product of claim 36, wherein the weather resistant terrestrial mollusk control product substantially retains its efficacy after being exposed to up to two inches of rain over a period of four weeks.

39. The weather resistant terrestrial mollusk control product of claim 36, comprising from 3 to 10 percent, by weight, of a borate-containing agent toxic to both insects and mollusks, but substantially non-repellant to both insects and mollusks

40. The weather resistant terrestrial mollusk control product of claim 36, wherein the borate-containing toxic agent comprises boric acid.

* * * * *