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(54) Title: NOVEL COMPOSITIONS FOR CONTROL OF MALICIOUS MARINE ANEMONES

(57) Abstract: The present invention relates to improved compositions for controlling marine pest anemones, to methods of application of same, and to kits for the convenient dispensing of such compositions.



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## NOVEL COMPOSITIONS FOR CONTROL OF MALICIOUS MARINE ANEMONES

### FIELD OF THE INVENTION

The present invention relates to improved compositions for controlling  
5 marine pest anemones, to methods of application of same, and to kits for the  
convenient dispensing of such compositions.

### BACKGROUND OF THE INVENTION

Certain anemone species, such as *Aiptasia pallida*, *A. pulchella*, *A. insignis*,  
*Anemonia majano* and *Bolocerooides mcmurrici* are nuisance pests in reef  
10 aquariums. *Aiptasia* species are the most common anemones and generally referred  
to as glass anemones. These species are very widespread and thrive in shallow,  
nutrient rich sea water, in tropical and subtropical regions. They are easily and  
inadvertently introduced into reef aquariums with "live rocks" and corals.

*Aiptasia* anemones are typically light brown in color, have one leg, usually  
15 less than 2 inches tall, an oral disc of about ½ inch diameter with a central mouth,  
and long tapered tentacles. In favorable conditions these anemones may grow to 4  
inches tall or more. Although *Aiptasia* are photosynthetic species, in absence of  
light or in shaded areas they consume organic detritus such as plankton and  
suspended organic particles in order to reach their energetic demands.

20 *Aiptasia* anemones are members of the phylum *Cnidaria*, and, like other  
Cnidarians, have cells called *cnodocytes*, otherwise known as *canidae* cells or  
*nematocysts* which contain a stinging mechanism. These *cnodocytes* release a toxin  
that is harmful to many of both the invertebrates and corals kept in reef aquariums.  
Consequently, corals coming into contact with *Aiptasia* generally recede and show  
25 signs of distress, and may die.

*Aiptasia* anemones are notoriously difficult to eliminate. They attach  
themselves to a hard substrate, usually in a crevice thereof, which allows them to  
quickly withdraw when danger approaches. They have remarkable powers of

regeneration so cutting, grinding or smashing these anemones may propagate rather than eliminate them. In addition, they rapidly reproduce asexually through the process known as pedal laceration, which occurs when residual tissue lobes are left behind as the anemone wanders around. These residual lobes quickly develop into new anemones. Furthermore, under adequate conditions, Aiptasia anemones can reproduce sexually by releasing thousands of fertilized oocysts to the water. Because Aiptasia anemones reproduce quickly, and have extreme regenerating abilities, it is important to eliminate them before they overrun an aquarium in a short period of time.

Majano anemones (*Anemonia majano*) are the prettier of the pest anemones found in reef aquariums. Majano anemone specimens may be green, red, and even a striking yellow. They are not nearly as prolific as Aiptasia, and are somewhat attractive, and therefore are generally less of a nuisance to the reef aquarium hobbyist. They can easily be distinguished from Aiptasia because they have bulbous tips on the ends of their tentacles. However, like Aiptasia, they have a potent sting and may be harmful to other sessile invertebrates in the aquarium.

*Boloceroides mcmurrici*, or the Swimming anemone, is another pest anemone similar to Aiptasia species. This tan anemone has a short leg and long robust tentacles that may be banded. The oral disk thereof is small and the mouth is white. The swimming anemones reproduce by the same asexual mechanism as Aiptasia and by regeneration of detached tentacles. They are photosynthetic creatures, harboring zooxanthellae algae, but can thrive in shaded nutrient rich areas.

There are two basic approaches that are currently used for controlling the pest anemone population in aquaria. One is by natural predation and the other is a chemical approach.

A newly found predator and perhaps the one with the best potential for controlling Aiptasia is *Berghia verrucicornis*. This nudibranch was identified in a scientific article by Carrol & Kempf (1). *Berghia verrucicornis* along with most nudibranchs are diet specific. Starter cultures have been exchanged and several aquaculture facilities in the US produce and provide these commercially. However,

there are only a limited number of such cultures available and the specimens that can be found are generally too small to be put in to a large system and expected to live. Indeed, amongst other dangers, they might fall prey to their very quarry (2). In addition, Aiptasia-eating Nudibranch are expensive and difficult to acquire; and they will eat nothing else other than Aiptasia so that once there are no Aiptasia left in an ecosystem, or so few the nudibranch has trouble finding them, it will starve to death (3-8). Furthermore, a lengthy period may be required to completely eradicate Aiptasia by employing the nudibranch (7). Other natural predators of Aiptasia species and *Boloceroideus mcmurrici* are the Copperband butterfly fish (*Chelmon rostratus*) and the Peppermint shrimp (*Lysmata wurdemanni*) but there is an inherent danger of these predators eating other, desired tank residents instead of or in addition to the pest anemones.

Chemical approaches to eliminating Aiptasia are more widely used. Generally these involve taking a chemical solution of minerals and placing a large dose over the oral disk. One popular method employs an aqueous suspension of calcium hydroxide (lime, kalkwasser) which may be dispensed via a syringe onto or near the Aiptasia. The popularity of the approach is partly due to the fact that many reef aquarium hobbyists already have calcium hydroxide on hand for use to maintain/supplement calcium and alkalinity. Additionally, excess calcium hydroxide merely contributes to the calcium concentration in the aquarium, whereas other targeted poisons may be harmful to desired organisms in the aquarium and cannot be left to drift in the water.

Mixed success has been reported with the chemical approach however (4-5, 9), depending upon the chemical used and the method of employing the chemical.

U.S. Patent No. 7,179,478 and U.S. Patent Application Publication No. 2007/0119788, both to Gatto, which are incorporated by reference for all purposes as if fully set forth herein, disclose a method of killing Aiptasia and Majano anemones in aquariums, by filling a dispenser with an anemone killing mixture comprising purified water and effective amounts of calcium hydroxide and a non-iodized salt, placing a tip of the filled dispenser near the oral disk of an anemone and dispensing a

small amount of the mixture. The calcium hydroxide reacts with the anemone tissues to destroy the anemone. Such a killing mixture, is available commercially under the name *Joe's Juice* (10). The effectiveness of the mixture is questionable, since, when threatened, the Aiptasia often shut or disappear into crevices and getting them to stay open and ingest such mixtures is difficult. It is particularly difficult to inject such mixtures near the mouth of the anemone and to visibly follow where the mixture went to. Consequently, applying the mixture may be quite tedious if many anemones need to be eradicated. In addition, the mixture is highly caustic and some care should be given to handling it for the user's safety and for fear of collateral damage to sensitive cohabitants of aquariums, and large doses may affect the pH of the water.

There is thus a need for an improved composition and method of treatment for controlling anemone pests.

#### SUMMARY OF THE INVENTION

It is an object of the present invention to provide compositions suitable for controlling the population of pest anemones in reef aquaria and the like.

In one aspect, the present invention relates to compositions for destroying a marine pest anemone comprising: bait that is readily ingestible by the marine pest anemone, an anemonescide for killing the marine pest anemones, and a binder.

In one embodiment of the invention, both bait and binder in the composition comprise agar, and said anemonescide is selected from the group comprising calcium hydroxide and calcium sulphate. Preferably, the anemonescide is calcium hydroxide, which may be provided by mixing a soluble calcium salt, water and an alkali. Typically, said alkali is selected from the group comprising sodium hydroxide and potassium hydroxide. In one embodiment the anemonescide is calcium hydroxide formed by reacting calcium chloride, sodium hydroxide and water.

Preferably, the composition for destroying a marine pest anemone further comprises an anemone desensitizer. Optionally the anemone desensitizer is selected from the list comprising magnesium sulphate, chloral hydrate and menthol.

Preferably, the composition for destroying a marine pest anemone further comprises a feeding inducer of anemones. Optionally the feeding inducer of anemones comprises at least one of the group comprising alanine, glycine, histidine, proline, cysteine, asparagine and reduced glutathione (GSH).

5 In another embodiment of the invention, bait comprises an anemone foodstuff, the anemonescide is selected from a group comprising calcium hydroxide and calcium sulphate, and said binder is selected from the group comprising: agar, carrageenans, alginates, zein, paraffin, glycerol, glycerin and gelatin. Preferably, the composition further comprises a desensitizer of anemones. Most preferably, the  
10 desensitizer comprises magnesium sulphate.

In a second aspect, the present invention is directed to providing a kit comprising a dispenser and any of the compositions described above. Preferably, the dispenser comprises a long-needled syringe. More preferably, the kit further comprises a sealable container for containing said composition.

15 In a third aspect, the present invention relates to a method for preparation of a composition for destroying a marine pest anemone comprising:

- (a) dissolving a binder in water to form a binder solution; and
- (b) mixing said binder solution with an anemonescide.

Optionally said binder comprises agar.

20 Alternatively, said composition further comprises a bait and said method comprises mixing in said bait.

In embodiments comprising agar, said agar serves as both a binder and bait, and the method typically comprises dissolving agar in water at a temperature in the range of between 95°C and 100°C, typically with continuous agitation.

25 The anemonescide may be formed by:

- (i) making up separate aqueous solutions of a soluble calcium salt and an alkali
- (ii) mixing said calcium salt solution with excess alkali solution.

The step (b) of mixing said agar solution and said anemonescide typically comprises stirring for one hour, ensuring sufficient agar in said composition to bind said calcium hydroxide.

5 In a second embodiment, the method for preparing the composition comprises the step (a) of dissolving agar in water at between 95°C and 100°C with continuous agitation; however the anemonescide is formed by dispersing calcium sulphate in water. Step (b) of mixing the anemonescide and the binder comprises stirring the agar solution and the anemonescide for one hour, with sufficient agar in the composition to fully bind all the calcium sulphate.

10 Preferably, both methods comprise the additional step of dissolving a desensitizer in water and mixing the solution formed thereof with the binder – anemonescide compositions.

The methods may further comprise the additional step of dissolving a feeding inducer in water and mixing the solution formed thereof with said composition.

15 In a fourth aspect, the present invention relates to a method for killing a marine anemone, comprising the steps of:

(a) shaking a sealable container containing a composition comprising bait that is readily ingested by said pest marine anemone and an anemonescide that kills marine anemones, until an essentially homogeneous suspension of the composition  
20 is formed;

(b) transferring a portion of the suspension to a tip-equipped dispenser to, wherein said portion is an amount sufficient for killing one or more of the anemones;

(c) placing said tip of the loaded dispenser near the mouth of the anemone; and

25 (d) feeding the anemone a fatal dose of the composition..

Typically, at least one of the following limitations is true:

- (i) the anemone comprises Aiptasia;
- (ii) the bait comprises agar;
- (iii) the anemonescide is selected from a group comprising calcium hydroxide and  
30 calcium sulphate;

- (iv) the dispenser is a long-needled syringe;
- (v) the fatal dosage is between 0.5 and 1 ml;
- (vi) the composition further comprises an anemone desensitizer selected from the group comprising magnesium sulphate, chloral hydrate and menthol; and
- 5 (vii) the composition may further comprise a feeding inducer selected from the group comprising: alanine, glycine, histidine, proline, cysteine, asparagine and reduced glutathione (GSH).

## DETAILED DESCRIPTION OF THE INVENTION

An object of the present invention is to provide an anemone controlling  
10 composition and method for use in reef aquariums, which is fast working and has no significant adverse affects on corals and other aquarium inhabitants.

Another object is to provide a method for controlling anemones in marine aquariums.

In brief, preferred compositions of the invention have been developed for  
15 destroying Aiptasia and other pest anemones that are generally undesired in reef aquariums. Bringing preferred embodiments into contact with such anemones generally kills them in a fast and efficient manner. It is a particular feature of preferred compositions of the invention that they are easily applied to the anemone to be destroyed, and, generally do not injure other marine life commonly found in  
20 marine aquariums.

While some live rocks may be removed from the aquarium and carefully cleansed from Aiptasia, the removal procedure is very tedious and upsets other inhabitants of the aquarium and its delicate balance, and sometimes the rocks cannot be removed, perhaps because they are integral to the aquarium structure, or because  
25 they contain precious sedentary inhabitants. Furthermore, physical attempts to remove the anemone can result in tissue residuals being left behind which may eventually develop into new anemones.

It is noted that Aiptasia anemones often grow on live rocks in aquariums, and quickly vanish into crevices when approached by foreign objects such as syringes.  
30 Getting Aiptasia to stay open and ingest an anemonescide may be difficult.



Embodiments of the present invention have been developed to overcome this problem by enticing the pest anemones by providing them with compositions containing materials identified by the anemones as food, together with the anemonescide.

5 It is noted that materials having nutritional value to anemones, henceforth referred to as foodstuffs, may, if not wholly recovered and removed from the aquarium following treatment of the anemones, counterproductively encourage growth and proliferation of the pest anemones. However, other materials, devoid of nutritional value to the anemones, may, nevertheless, be identified by the anemone  
10 as being a foodstuff, and thus serve as bait. Such materials, referred to herein as fake foodstuffs, do not promote anemone growth and proliferation.

It has surprisingly been found that anemones readily devour agar, apparently identifying the material as food. Agar is a seaweed derivative that is viscous and sticky. In seawater, agar droplets tend to form into globules, and it has been found  
15 suitable for binding anemonescides.

Thus, compositions in accordance with one aspect of the invention comprise an effective amount of an anemonescide and a binder such as agar which also serves as bait. The bait tempts the anemone to ingest same, rather than to retract into crevices, thereby immensely simplifying the killing thereof.

20 Due to the very effective uptake of such compositions, the effective concentration of the anemonescide therein can be low, which renders the composition relatively safe for use and of minimal effect on the water chemistry of the aquarium.

In another embodiment, the composition comprises agar, at least one soluble  
25 calcium salt in excess such as calcium chloride, and a strong alkali such as sodium hydroxide or potassium hydroxide, wherein the calcium salts and the alkali react to form calcium hydroxide, which is weakly soluble and therefore disperses at a slow rate. It has been found that such compositions are readily ingested by the anemone and kill same on ingestion.

In yet another embodiment, the composition comprises agar and a weakly soluble calcium salt such as calcium sulphate.

It has been discovered that compositions comprising agar, calcium chloride, sodium hydroxide and water, form a viscous, milky suspension that has low miscibility in sea water. When small quantities of such compositions are injected into marine aquariums, they form easily visible globules. Thus, such compositions possess the convenient properties of: (a) being easily dispensed to exactly where required via needle syringes and the like, (b) being readily ingested by anemones (c) being lethal to such anemones, even in relatively small amounts, (c) being relatively harmless to other reef inhabitants, (d) eventually dispersing in the aquarium fluid.

In yet other embodiments, compositions of the invention comprise: (i) a foodstuff that is a real anemone nutrient, such as silversides of appropriate size, various kinds of shrimps, defrosted/frozen or dry-frozen cube-foods, fish pastes or planktonic organisms, (ii) a binder such as agar, carrageenans, alginates, zein, gelatin, paraffin, glycerin or glycerol, (iii) an anemonescide, such as calcium hydroxide or calcium sulphate.

The composition according to the invention may usefully comprise further ingredients to facilitate ingestion of the anemonescide. Such ingredients may usefully include desensitizers for desensitizing the anemone to the harmful anemonescide. Examples of such desensitizers include magnesium sulphate, menthol and chloral hydrate, wherein the magnesium ions paralyze the sense organs of the anemone (13). Other useful ingredients may enhance induced feeding. For example, the carnivorous feeding behavior of the sea anemone *Anthopleura midorii* was found (14) to be a sequence of successive feeding motions, which consisted of several separate actions: (a) tentaculation on any solid matter; (b) retention of prey by tentacles; (c) mouth opening; (d) ingestion of food; (e) digestion of food and (f) extrusion of indigestible waste material. Several amino acids were found to induce feeding: alanine, glycine, histidine or asparagine stimulated the retention of artificial food by tentacles, and proline evoked mouth opening. Cysteine or reduced

glutathione (GSH) induced food ingestion. Unnatural food stuff such as potato starch was ingestible, if an appropriate amount of a chemical substance was added.

Preferred compositions of the present invention are reef safe. Unlike approaches suggested in the prior art, compositions of the invention do not require injection into the anemone, which is very difficult to achieve. Rather, they are simply applied to pest anemones by being fed to them. It is noted that the composition can be applied with aquarium and/or ambient lights on, and the pest anemones do not retract while being fed. The compositions cause the anemone to shrivel and die, and leaves very little visible residue, so that there is no need to siphon the dead anemone out of tank after application of the composition. The composition has no substantial effect on the water chemistry of the aquarium.

In another aspect, the invention provides a kit comprising a dispenser such as a long-needled syringe and an anemone controlling composition comprising a material identified by the anemone as food and an anemonescide.

In one embodiment, the invention provides a sealable container such as a bottle with a cap that contains the anemone controlling composition, and further provides a dispenser for delivering the composition to the anemones.

Thus the present invention provides improved compositions for killing marine anemones and kits comprising same.

The dispenser used to feed the composition to the undesirable anemones preferably has a plastic flow control tip, and may be provided with an angled tip to provide greater flexibility when feeding. The composition may be administered from the center of the mouth (oral disk) of the Aiptasia outward across the mouth until it reaches the base of the tentacles. It is further noted that compositions of the invention do not generally cause breakage of the pest anemone or cause reproduction thereof. Furthermore, in some cases, the user may find additional smaller Aiptasia hiding, under or near the larger anemones. These will generally be eliminated by further feeding of all visible Aiptasia with the mixture.

## EXAMPLES

### Example 1 Preparation of bait-anemonescide-desensitizer composition

Table 1 lists the typical amounts used to prepare a composition including bait, a binder, an anemonescide and a desensitizer, wherein the anemonescide is calcium sulphate or calcium hydroxide formed from calcium chloride and sodium hydroxide, agar serves as both bait and binder, and the desensitizer is magnesium sulphate.

**Table 1 Ingredients in an agar-anemonescide-desensitizer preparation**

Ingredient	Typical Concentration, g/l	Empirically Determined Effective Concentration range (Min- Max) g/l	
CaCl <sub>2</sub> · 2H <sub>2</sub> O	104	10 – 500	
MgSO <sub>4</sub>	2	0.5 – 10	
CaSO <sub>4</sub>	30	5 – 150	
NaOH	24	5 – 120	
Agar	3	0.5 – 10	

Table 1 also lists the empirically determined effective concentration ranges of the various ingredients. While it is believed that less than the minimal effective concentrations might impair the effectiveness of that ingredient, and more than effective concentration will not further improve the effectiveness, it is to be understood that the table is provided by way of enablement and is not to be construed as limiting the invention to the preferred ranges.

A large quantity of a preferred composition of the invention including agar, calcium chloride, sodium hydroxide and magnesium sulphate was prepared as follows:

Agar was dissolved in hot water, and separate aqueous solutions of calcium chloride (CaCl<sub>2</sub>) magnesium sulphate (MgSO<sub>4</sub>) and sodium hydroxide (NaOH) were made up as follows:

1. Dissolve 150 g Agar in 5 liters of deionized water (DW) at 95 - 100° C with continuous agitation.

2. Mix 5000 g  $\text{CaCl}_2$  in 10 liters of DW.
3. Dissolve 100 g  $\text{MgSO}_4$  in 1 liters of DW and add to  $\text{CaCl}_2$  mixture while continuously mixing
4. Dissolve 1200 g  $\text{NaOH}$  in 5 liters of DW and add to  $\text{CaCl}_2$  solution while continuously mixing, to form a mixture of calcium chloride (fully dissolved), magnesium sulphate (partially dissolved), and calcium hydroxide (partially dissolved).
5. Add hot agar solution to the mixture while stirring and make up to 50 liters with DW.
6. Continue stirring the agar-anemonescide-desensitizer mixture for one hour without heating.

It will be appreciated that smaller quantities maybe made up for treating one or two aquariums rather than an industrial quantity as above. Furthermore, other concentrations may be used. In general, however, it is to be noted that in the preparation of the composition the amount of calcium chloride is always selected to be in excess of the amount of sodium hydroxide, so that as a result of the quantitative reaction that occurs between the sodium hydroxide and the calcium chloride, the sodium hydroxide is completely spent and is absent from the composition, while some excess calcium chloride remains in the composition after the completion of the reaction. The calcium in the excess calcium chloride also acts as an anemonescide.

#### **Example 2 Treatment of pest anemones with the agar-anemonescide composition**

1. Place the composition of Example 1 in a bottle with a screw cap and shake the composition until an essentially homogeneous suspension of the composition is formed. The agar in the shaken composition is in a semi-liquid form and the anemonescide is in suspension.

2. Draw a portion of the suspension of the composition with a syringe with a long needle, wherein the portion is an amount sufficient for killing one or more of the pest anemones.
3. Place the end of the needle of the syringe near the mouth of the anemone.
- 5 4. Feed the pest anemone with the composition in an amount sufficient for killing it, typically between 0.5 and 1 ml of the composition. The Aiptasia anemone ingests the composition and dies.

It is noted that the composition is fluid and it is easily injectable as and where required using the syringe. Within the aquarium fluid, the mixture does not solidify;  
10 however, it thickens, coagulates, and becomes denser, assuming a watery paste or thick liquid glue-like consistency.

When using a composition including only calcium sulphate as an anemonescide to kill pest marine anemones, it may be advantageous to inject the composition not only in the vicinity of the oral disc, but also all over the anemone, to  
15 increase the effectiveness of the composition, and use amounts of over 1 ml to kill the anemone.

The scope of the present invention is defined by the appended claims and includes both combinations and sub combinations of the various features described hereinabove as well as variations and modifications thereof, which would occur to  
20 persons skilled in the art upon reading the foregoing description.

In the claims, the word "comprise", and variations thereof such as "comprises", "comprising" and the like indicate that the components listed are included, but not generally to the exclusion of other components.

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**CLAIMS**

1. A composition for destroying a marine pest anemone comprising bait that is readily ingested by the marine pest anemone, an anemonescide that kills marine pest anemones, and a binder.
- 5 2. The composition according to claim 1 wherein both said bait and said binder are a fake foodstuff comprising agar, and said anemonescide is selected from a group comprising calcium hydroxide and calcium sulphate.
3. The composition of claim 2, wherein said calcium hydroxide is provided from a soluble calcium salt, water and an alkali.
- 10 4. The composition of claim 3, wherein said alkali is selected from the group comprising sodium hydroxide and potassium hydroxide.
5. The composition according to claim 2 wherein said anemonescide comprises calcium chloride, sodium hydroxide and water, whereby the calcium in the soluble calcium salt and the hydroxide in the sodium hydroxide react to form calcium  
15 hydroxide.
6. The composition according to any of claims 1 to 5, further comprising an anemone desensitizer.
7. The composition according to claim 6, wherein the anemone desensitizer is selected from the group comprising magnesium sulphate, chloral hydrate and  
20 menthol.
8. The composition according to claim 6, wherein said desensitizer comprises magnesium sulphate.
9. The composition according to any one of claims 1 to 8, further comprising a feeding inducer of anemones.



10. The composition according to claim 9, comprising a feeding inducer selected from the group comprising: alanine, glycine, histidine, proline, cysteine, asparagine and reduced glutathione (GSH).
11. The composition according to claim 1 wherein said bait comprises an  
5 anemone foodstuff, said anemonescide is selected from a group comprising calcium hydroxide and calcium sulphate, and said binder is selected from the group comprising: agar, carrageenans, alginates, zein, paraffin, glycerol, glycerin and gelatin.
12. The composition according to claim 11, further comprising a desensitizer of  
10 anemones.
13. The composition according to claim 12, wherein said desensitizer comprises magnesium sulphate.
14. A kit comprising a dispenser and a composition according to any of claims 1 to 13.
15. The kit of claim 14, wherein said dispenser comprises a long-needled syringe.
16. The kit of claim 14, further comprising a sealable container for containing said composition.
17. A method for preparation of a composition for destroying a marine pest anemone comprising:
- 20 (a) dissolving a binder in water to form a binder solution; and  
(b) mixing said binder solution with an anemonescide when said binder is agar; or  
(c) mixing said binder solution with an anemonescide and bait when said binder is not agar.

18. The method according to claim 17 wherein  
step (a) comprises dissolving agar in water at between 95°C and 100°C with  
continuous agitation; said anemonescide being formed by:
- 5 (i) dissolving a soluble calcium salt and an alkali separately in water,  
wherein said calcium salt is in excess of said alkali; and
- (ii) mixing calcium salt and alkali solutions together to form calcium  
hydroxide; and
- step (b) comprises stirring agar solution and said anemonescide for one hour;  
wherein said agar is provided in a sufficient amount to bind said calcium hydroxide.
- 10 19. The method according to claim 17 for preparing said composition wherein  
step (a) comprises dissolving agar in water at between 95°C and 100°C with  
continuous agitation; said anemonescide is formed by dispersing calcium sulphate in  
water; and
- step (b) comprises stirring agar solution and said anemonescide for one hour;  
15 wherein a sufficient amount of said agar is provided to bind said calcium sulphate.
20. The method of claim 17 further comprising dissolving a desensitizer in water  
and mixing the solution formed thereof with said composition.
21. The method of claim 17 further comprising making up an aqueous solution of  
a feeding inducer and mixing the solution with said composition.
- 20 22. A method for killing a pest marine anemone, comprising:
- (a) shaking a sealable container containing a composition comprising bait  
that is readily ingested by said pest marine anemone and an anemonescide that kills  
marine anemones, until an essentially homogeneous suspension of the composition  
is formed;
- 25 (b) transferring a dose of said suspension to a tip-equipped dispenser to fill  
said dispenser with said suspension of said composition, wherein said dose is an  
amount sufficient for killing at least one pest anemone;

(c) placing said tip of said filled dispenser near the mouth of said anemone; and

(d) feeding a fatal dosage of said composition to said pest anemone.

23. The method of claim 22, wherein at least one of the following limitations is true:

(i) said anemone is Aiptasia;

(ii) said bait comprises agar;

(iii) said anemonescide is selected from a group comprising calcium hydroxide and calcium sulphate;

10 (iv) said dispenser is a long-needed syringe;

(v) said dosage is between 0.5 and 1 ml;

(vi) said composition comprises an anemone desensitizer selected from the group comprising magnesium sulphate, chloral hydrate and menthol; and

15 (vii) said composition comprises a feeding inducer selected from the group comprising: alanine, glycine, histidine, proline, cysteine, asparagine and reduced glutathione (GSH).