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FORM 2
THE PATENTS ACT 1970
39 OF 1970
&
THE PATENT RULES 2003
COMPLETE SPECIFICATION
(SEE SECTIONS 10 & RULE 13)

1. TITLE OF THE INVENTION

A HERBAL MOSQUITO REPELLENT DIFFUSING COMPOSITION

2. APPLICANTS (S)

NAME	NATIONALITY	ADDRESS

3. PREAMBLE TO THE DESCRIPTION

COMPLETE SPECIFICATION

The following specification particularly describes the invention and the manner in which it is to be performed


Registrar
University of Science & Technology,
Meghalaya

A HERBAL MOSQUITO REPELLENT DIFFUSING COMPOSITION

TECHNICAL FIELD

The present disclosure relates to mosquito repellents. More particularly, the present disclosure relates to an herbal mosquito repellent diffusing composition.

BACKGROUND OF THE INVENTION

Background description includes information that may be useful in understanding the present invention. It is not an admission that any of the information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

Malaria is a life-threatening communicable disease which is caused and spread by parasites. This disease can be transmitted through the bites of infected *Anopheles* mosquitoes. Once a normal *Anopheles* bites a malaria infected person, and further bites a normal healthy person, the normal person gets infected with Malaria. The Malaria can be deadly if not treated properly or immunity of the patient is weaker. One of the prominent reasons for origin of such mosquito is standing water. There have been many social efforts to make people aware of cleanliness especially during monsoon. Despite decades of malaria control efforts, malaria continues to be a major worldwide public health issue with 3.3 billion persons at risk in 106 countries and territories in the tropical and subtropical areas. It is one of the significant reasons for maternal and childhood morbidity and mortality, including low birth weight, stillbirths, and early infant death in sub-Saharan Africa.

One of the preventive measures for such a disease is to spray the area of standing water or mosquitoes with insecticides or pesticides which provides a temporary solution. Such insecticides cannot be sprayed or fogged inside houses at regular intervals as they may be harmful upon inhalation. Another conventional method is to plug in diffusers which can diffuse such formulations in a controlled amount for 24 hours. However, such formulations are very harmful if inhaled continuously all the time and can have various side effects such as nausea, headache, vomiting,

indigestion, and so on. Most of the migraine or asthma patients can't just tolerate such formulations. Such formulations may also be very harmful to children. Such conventional mosquito repellents have the chemicals DEET or picaridin as active ingredients. Some conventional arts also involve applying chemical repellents on skin, which are again very harmful and can cause skin allergies. Therefore, there exists a need for preparing herbal mosquito repellent diffusing formulations with no side effects.

The various prior art is found related to this invention are mentioned below. Efforts have been made in the related prior art to provide different solutions for a formulation composition of anti-mosquito diffusing herbal formulation.

CN102579288B, 2012, The invention relates to a mosquito repelling preparation, in particular to a natural plant essential oil composition capable of directly serving as a mosquito repellent. The problems of short persistence time, a poor mosquito repelling effect, side effects on human bodies and the like of the traditional mosquito repellent are solved. The natural plant essential oil composition is prepared from the following components in percentage by weight: 5 to 10 percent of lavender oil, 2 to 8 percent of lemongrass oil, 2 to 5 percent of basil oil, 2 to 10 percent of chamomile oil, 1.5 to 5 percent of peppermint oil, 1 to 10 percent of eucalyptus oil, 2 to 10 percent of tea tree oil, 1 to 4 percent of citronella oil, 1 to 2 percent of thyme oil, 1 to 10 percent of glycerol, 1 to 20 percent of ethanol and the balance of diluent, namely deionized water. The natural plant essential oil composition naturally diffuses fragrance, has a mosquito repelling effect, is safe and nontoxic, is long in storage time, has swelling dispelling, itching relieving and sterilizing effects, does not have any side effect on the human bodies and is convenient to use. Tests show that the mosquito repelling effect can be over 90 percent averagely.

El Asbahani et al., 2015, Essential oils are natural products which have many interesting applications. Extraction of essential oils from plants is performed by

classical and innovative methods. Numerous encapsulation processes have been developed and reported in the literature.

Further, efforts have been made in the related prior art to provide solutions for preparation of anti-mosquito diffusing herbal formulation **Sakulku et al., 2009**, Encapsulated citronella oil nanoemulsion prepared by high pressure homogenization at varying amounts of surfactant and glycerol, was studied in terms of the droplet size, stability, release characteristics and in vivo mosquito protection. Transparent nanoemulsion.

Nuchuchua et al., 2009, The Nanoemulsions composed of citronella oil, hairy basil oil, and vetiver oil with mean droplet sizes ranging from 150 to 220 nm were prepared and investigated both in vitro and in vivo. Larger emulsion droplets (195–220 nm) shifted toward a smaller size.

Therefore, the present disclosure overcomes the above-mentioned problem associated with the traditionally available methods or systems, any of the above-mentioned inventions can be used with the presented disclosed technique with or without modification.

All research publications herein are incorporated by reference to the same extent as if each individual publication or patent application were specifically and individually indicated to be incorporated by reference. Where a definition or use of a term in an incorporated reference is inconsistent or contrary to the definition of that term provided herein, the definition of that term provided herein applies. Accordingly, in some embodiments, the numerical parameters set forth in the written description and attached claims are approximations that can vary depending upon the desired properties sought to be obtained by a particular embodiment.



Registrar
University of Science & Technology,
Meghalaya

The Literature survey indicates that their previous study studies has been ongoing on In-vitro characterization and mosquito (*Aedes aegypti*) repellent activity of essential-oils-loaded Nano emulsions. Characterization and mosquito repellent activity of citronella oil Nano emulsion. Natural plant essential oil composition capable of directly serving as mosquito repellent.

The present invention relates to a mosquito repelling unique preparation, in particular to a natural plant essential oils composition capable of directly serving as a mosquito repellent. The problems of short persistence time, a poor mosquito repelling effect, side effects on human bodies and the like of the traditional mosquito repellent are solved. This natural plant essential oil composition naturally diffuses fragrance, has a mosquito repelling effect, is safe and nontoxic, is long in storage time.

The recitation of ranges of values herein is merely intended to serve as a shorthand method of referring individually to each separate value falling within the range. Unless otherwise indicated herein, each individual value is incorporated into the specification as if it were individually recited herein. All methods described herein can be performed in any suitable order unless otherwise indicated herein or otherwise clearly contradicted by context. The use of any and all examples, or exemplary language (e.g., "such as") provided with respect to certain embodiments herein is intended merely to better illuminate the invention and does not pose a limitation on the scope of the invention otherwise claimed. No language in the specification should be construed as indicating any non-claimed element essential to the practice of the invention.

OBJECT OF THE INVENTION

It is an object of the present disclosure that relates to a mosquito repellent. More particularly, the present disclosure relates to an herbal mosquito repellent diffusing composition

SUMMARY OF THE INVENTION

The present disclosure discloses a formulation composition of anti-mosquito diffusing herbal formulation.

In one aspect of the present disclosure, an herbal formulation including an anti-mosquito diffusing herbal formulation. The formulation includes each of citronella and neem oils in the range of 25 to 35 wt%; and each of tulsi and lavender essential oil in the range of 15-20 wt%. The citronella is present in citronells, citral, or combinations thereof. The neem oil is present in nimbin, nimbidin, bimbiol, or combinations thereof. The tulsi oil is present as eugenol. The formulation further includes remaining as deionized water, and polymers. The formulation may be infused with a melted camphorated base.

DETAILED DESCRIPTION OF THE INVENTION

The following description includes the preferred best mode of one embodiment of the present invention. It will be clear from this description of the invention that the invention is not limited to these illustrated embodiments but that the invention also includes a variety of modifications and embodiments thereto. Therefore, the present description should be seen as illustrative and not limiting. While the invention is susceptible to various modifications and alternative constructions, it should be understood, that there is no intention to limit the invention to the specific form disclosed, but, on the contrary, the invention is to cover all modifications, alternative constructions, and equivalents falling within the spirit and scope of the invention as defined in the claim.

In an aspect, the present disclosure discloses a formulation composition of anti-mosquito diffusing herbal formulation.

The present invention discloses an herbal formulation for repelling mosquitoes which involves blending of essential extracts of lemongrass and citrus essential oils. Such formulations have tendency to fill the surroundings with their fragrance and aroma. In the embodiment, such formulations act as anti-mosquito agent as well as

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aromatic diffuser. They can repel insects like mosquitoes, flies, even acts as anti-microbial, due to presence of essential oils with anti-microbial activity. Such formulations have a long persistence time, and a stronger mosquito repelling effect, zero side effects on human bodies etc. In addition, such formulations are safe and nontoxic, and can be stored for a longer period of time.

In the embodiment, the present invention includes natural oils such as including but are not limited to Citronella oil as Citronellal or citral; Neem oil as nimbin, nimbidin, bimbol etc.

The present application also discloses a method for preparing the aforementioned formulation. The method includes smashing the raw material. Various steps include identifying and authenticating the collected plant material. Further, an extract is prepared from the plant using maceration process. The plant extract is standardized, and undergoes phytochemical screening, rheologic study, and spectral analysis. Thereafter, the method involves extraction of active ingredients with petroleum ether for the first time. The method further includes obtaining the extraction. Finally, a melted camphorated base is infused with the essentials of constituents of the formulation. Certain polymers may also be incorporated for mechanical strength of the product.

In an aspect of the present disclosure, a composition of anti-mosquito diffusing herbal formulation comprising of; citronella and neem oils concentration in the range of 25 to 35 wt % and tulsi and lavender essential oil in the range of 15-20%; Including lavender essential oil of monoterpenoids and sesquiterpenoids, as linalool and linalyl acetate, lavandulyl acetate, terpinen-4-ol and lavandulol; extracting smashed raw material with petroleum ether; infusing melted camphorated base with the essentials of Citronella, tulsi, neem, lavender and polymers are incorporated for mechanical strength of the product.

In an aspect wherein the citronella is present in citronells, citral, or combinations thereof.

In an aspect wherein the neem oil is present in nimbin, nimbidin, bimbiol, or combinations thereof.

In an aspect wherein the tulsi oil is present as eugenol.

In an aspect wherein the wherein the formulation comprising of deionized water.

ADVANTAGES OF THE INVENTION

1. Formulation has swelling dispelling, itching relieving and sterilizing effects, does not have any side effect on the human bodies and is convenient to use.
2. Tests show that the mosquito repelling effect can be over 90 percent averagely.
3. The formulation does not contain chemical insecticide, the formulation is environmental protection, and safety non-toxic has good mosquito repellent function.
4. Formulation does not generate any fumes and has been recommended for people allergic to fumes.
5. It can be used well in enclosed areas and generates no suffocating odor. Such formulations can be used in the form of diffuser bottles, spray or fog cylinders or bottles, ointment or as a patch.
6. Formulation is eco-friendly.
7. Synthetic repellents with chemical origin for mosquito control has disturbed natural ecosystems and resulted in the development of resistance to insecticides, resurgence in mosquito populations, and adverse impact on non-target organisms.

Although the present invention has been particularly described with reference to implementations discussed above, various changes, modifications and Substitutes can be made. Accordingly, it will be appreciated that in numerous instances some features of the invention can be employed without a corresponding use of other features. Further, variations can be made in the number and arrangement of components illustrated in the figures discussed above.

In an aspect wherein the neem oil is present in nimbin, nimbidin, bimbidiol, or combinations thereof.

In an aspect wherein the tulsi oil is present as eugenol.

In an aspect wherein the wherein the formulation comprising of deionized water.

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Claim:

1. A composition of anti-mosquito diffusing herbal formulation comprising of:
 - citronella and neem oils concentration in the range of 25-35% by weight;
 - and
 - tulsi and lavender essential oil in the range of 15-20% by weight;
2. The formulation composition of anti-mosquito diffusing herbal formulation as claimed in claim 1, wherein the citronella is present in citronells, citral, or combinations thereof.
3. The formulation composition of anti-mosquito diffusing herbal formulation as claimed in claim 1, wherein the neem oil is present in nimbin, nimbidin, bimbiol, or combinations thereof.
4. The formulation composition of anti-mosquito diffusing herbal formulation as claimed in claim 1, wherein the tulsi oil is present as eugenol.
5. The formulation composition of anti-mosquito diffusing herbal formulation as claimed in claim 1, wherein the formulation comprising of deionized water.



Registrar
University of Science & Technology,
Meghalaya

ABSTRACT

A FORMULATION OF ANTI-MOSQUITO DIFFUSING HERBAL MOSQUITO REPELLANT

The present disclosure discloses, A formulation composition of anti-mosquito diffusing herbal formulation comprising of citronella and neem oils concentration in the range of 25 to 35 wt % and tulsi and lavender essential oil in the range of 15-20%; including lavender essential oil of monoterpenoids and sesquiterpenoids, as linalool and linalyl acetate, lavandulyl acetate, terpinen-4-ol and lavandulol; extracting smashed raw material with petroleum ether; infusing melted camphorated base with the essentials of Citronella, tulsi, neem, lavender and polymers are incorporated for mechanical strength of the product.



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