



## **FORMULATION MOSQUITO REPELLENT SPRAY FORM CINNAMON OIL**

**MR. MAGAR PRATIK BHAUSAHEB<sup>1</sup>, MR. GAIKWAD T.A.<sup>2</sup>**

<sup>1</sup> FINAL YEAR B.PHARAMCY STUDENT, L.N.B.C. INSTITUTE OF PHARMACY, SATARA

<sup>2</sup> ASST.PROF. L.N.B.C. INSTITUTE OF PHARMACY, SATARA

### **ABSTRACT:**

Since ancient times, people have used plant-based repellents as a form of personal defense against various Anopheles species. An important resource for the creation of novel natural products that replace chemical repellents is knowledge about traditional repellent plants. Numerous research have documented the antimalarial properties of plant extracts or essential oils against malaria vectors across the globe. The objective of this systematic study was to evaluate the efficacy of plant-based repellents with cinnamon oil against Anopheles mosquitoes. The current study presents research on the creation of herbal mosquito repellent formulations that are safe and effective. These formulations are made by combining essential oils from cinnamon leaves with cinnamon oil extract from cinnamon bark. Are you going to use netu spray bottles, essential oils, carter oils, or base oils to create insect repellent sprays? One might get them online or obtain them from aromatherapy or cosmetic establishments. Instead of using the larger bottles used for household cleaning supplies, you can use the spray bottles that come with toner products by thoroughly cleaning them or by purchasing them from Snops or Onone. Wet utilize the small spray bottles that come with beauty products like rose water or toner.

### **INTRODUCTION:**

An agent used to repel mosquitoes is something that keeps them away so they can't bite people and feed on human blood. Usually, it has an active component that keeps mosquitoes away and secondary chemicals that, among other things, help release the active ingredient when needed and dilute it to the appropriate concentration.

Mosquito repellent powder made of cinnamon oil is both inexpensive and free of negative effects. There are several formulations available on the market for Mosauloto repellent, but the most of them are unable to eradicate the excess Mosauloto, but cinnamon oil can eradicate the excess Mosaultos studied in Taiwan. It is unable to cause any adverse effects on human skin. The spray's reusable container prevents chemical components from reacting with it, primarily repelling Aedes aegypti, Anophels, Mansonia, and Culex mosquitoes, among other mosquito species. Comparing our product's price to other commercially available products, it is repels harmful mosquitoes that lurk in the crevices of your home and spread diseases like dengue, chikungunya, malaria, etc. help safeguard you and your loved ones. Using repellent will help you get rid of mosquitoes and protect you from the diseases they carry.

### **COLLECTION OF MAIN INGREDIENTS**



Cinnamon oil is collected from the cinnamon bark .

Scientific name: Cinnamomum zeylanicum ,Cinnamon cassia.

Family: Lauraceae.

The method used for extraction of cinnamon oil from cinnamon bark HYDRO DISTILLATION METHOD .By grinding the bark into fine powder ,weighing and then extract the essential oil by Soxhlet apparatus while by ultrasonic extraction ,the sample will soak in mixture of ethanol in water in ultrasonic bath then will collected.

The extracted oil is antifungal ,antiviral,bacteriocidal and larvicidal.The smell repell the mosquito.It suppress the growth of many organisms including E-coil ,S.aureus and C.

It is the only herbal oil which helps to kill mosquito eggs so it also stop the reproduction of mosquitoes it easily to handle its non toxic oil and it's totally natural

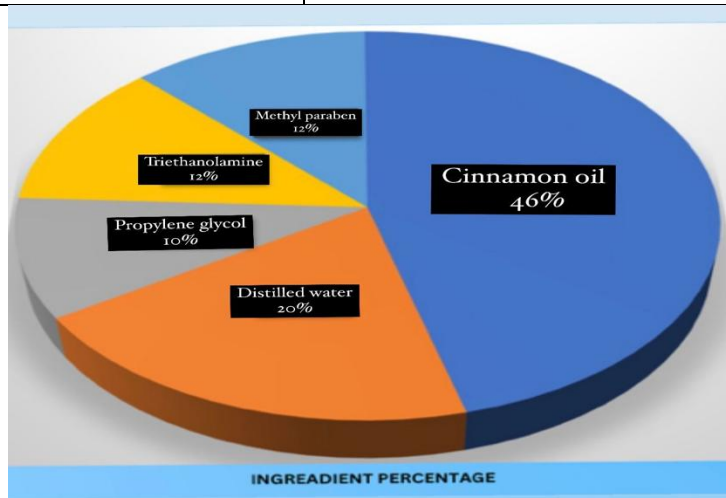
**Table 1**

Physicochemical properties of cinnamon

Parameter	Leaf oil	Bark oil
Specific gravity (20°C)	1.030–1.050	1.010–1.030
Optical rotation (°) (20°C)	1°96'–0°40'	Slightly laevorotatory
Refractive index (20°C)	1.529–1.537	1.573–1.591
Aldehyde content	4%	65–76%
Eugenol content	77.3–90.5%	4–10%
Solubility characteristics	Soluble in 1.5 volumes of 70% alcohol	Soluble in 2.0–3.0 volumes of 70% alcohol

#### INGREDIENTS:

Sr.no.	INGREDIENTS	USES
1.	Cinnamon oil	Mosquito repellent
2.	Propylene Glycol	Solublizer
3.	Methyl paraben	Preservative
4.	Triethanolamine	PH adjustment
5.	Distilled Water	Better Spray



#### PREPARATION METHOD:

To make mosquito repellent spray you need spray bottle,essential oils, carrier,solubilizer, preventative, ph adjustment.

You can use spray bottle which comes with other products after cleaning the bottles or you can buy them from shop or online as well.

add cinnamon oil (40%) as a mosquito repellent , methyl paraben (12%) as a preservative, (triethanolamine) as a ph adjustment, propylene glycol (10%) as a solubilizer, distilled water (20%) as a carrier. add this combination in spray container we take 23 ml of cinnamon oil as a mosquito repellent then we take methyl paraben 6 gm as a solubilizer and triethanolamine 6 ml as a ph adjustment, propylene glycol 5 ml as a preservative and distilled water 10 ml as a good carrier.

**EVALUATION TEST:**

pH test : the ph of repellent (product) is near 7 to 7.8 which is a good ph for human use which not cause any allergy on human skin it safe to use

VISCOSITY Test: it is Liquid spray so the repellent is not viscous it helps in better spray add good distillation of droplets

PERMEABILITY Test: the repellent ( product) is not cross the stratum corneum layer it is outer layer of skin so this liquid not enter in skin so it not cause any harmful reaction on human body

SKIN IRRITATION Test: because of natural and essential oil in adult skin irritation not occur. But in children and sensitive skin type its vary rarer.

**Safety Measures to be taken with insect repellent while using in children and pregnant women**

Due in part to possible increased exposure, children may be more susceptible to negative reactions to repellents. Repellents should not be within a child's reach.

Keep kids from dousing themselves in repellents.

When applying repellent to kids, use meager doses.

Little children's hands should not be treated with repellents as this could lead to ingestion or unintentional eye contact.

Whenever feasible, clothing kids in long sleeves and long pants tucked into boots or socks to help cut down on the amount of repellent used on them.

Put playpens, etc. to use. Pregnant women should be careful to prevent repellent exposures wherever possible, as the fetus may be sensitive, much like with chemical exposures in general.

**ADVANTAGES OF PRODUCT:**

Mosquito protection: mosquito repellent is use to protect against the mosquito borne disease

Save money: money spend on good mosquito repellent means save on medical treatment

Quality Family Time: with good mosquito repellent at home, your family falls less sick and you will able to spend quality time with them

1. No or Less Chemical Release: Another major benefit of using a natural mosquito repellent is that it hardly releases any chemicals. Even if it does use some chemicals, the emission is very less and not as harmful to the body.
2. Not Harmful for the Skin: A good quality mosquito repellent will be skin-friendly. It won't cause any harmful allergies to your skin. They are made of 100% organic ingredients that safely repel mosquitoes.
3. Safe for Children and Pets: A mosquito repellent machine that uses less quantity of

DEET chemicals is considered safe for your children and pets. So, another mosquito repellent benefits are that it is manufactured keeping in mind the safety of children and pets and for this, it has less harmful chemicals or no chemicals at all.

**RESULT :**

It is advised that further research be done to comprehend the fundamental ideas behind the formation and process of the repellent's rate of release from the device's systems. More research is also needed, with an emphasis on the fundamental entomological impact as well as the physical and chemical components. Lastly, more thorough and exacting epidemiological and entomological testing

Youngsters can be more vulnerable, therefore it's important to start them on more sophisticated product-based repellents before they go mainstream. It is made from herbal cinnamon oil, is quite inexpensive, and does not have any negative effects.

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