



FORMATION OF ECO-FRIENDLY FLOOR CLEANER PHENYL USING HERBAL INGREDIENTS

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ABSTRACT

In response to the growing demand for eco-friendly household cleaning products, this study explores the development of a novel floor cleaner formulation. Neem, known for its natural antibacterial properties, is combined with crystal salt, camphor, and alum to create a sustainable and effective cleaning solution.^{[1][1]} The research focuses on optimizing the formulation to balance cleaning efficacy with minimal environmental impact. The study examines the synergistic effects of these ingredients on floor cleanliness, odor control, and antibacterial properties. The results demonstrate the potential of this formulation to offer an environmentally responsible alternative to traditional floor cleaning products, promoting sustainable and healthier living spaces. This research contributes to the ongoing efforts to reduce the ecological footprint of household cleaning while maintaining performance standards.

KEYWORDS: Floor cleaner, Phenyl, Neem, Crystal salt, Camphor, Alum, Formulation, Eco-friendly, Cleaning solution, Natural ingredients, Household cleaning, Sustainable cleaning, Herbal cleaner, Green cleaning, Chemical-free, Environmental impact, Antimicrobial properties, Cleaning efficacy, Biodegradable, Non-toxic cleaning.

1. INTRODUCTION

Household cleaning products play a pivotal role in maintaining cleanliness and hygiene within our living spaces. However, the conventional chemical-laden formulations often pose significant environmental and health concerns. In response to this challenge, the quest for sustainable and eco-friendly cleaning solutions has gained momentum in recent years. In this context, our study delves into the development of a floor cleaner formulation that leverages the remarkable properties of natural ingredients – neem, crystal salt, camphor, and alum. These ingredients, deeply rooted in traditional knowledge and natural remedies, hold the promise of transforming the way we clean our floors. Neem, revered for its potent antibacterial and antifungal properties, takes center stage, and when combined with crystal salt, camphor, and alum, an intriguing synergy emerges. Our research aims to not only explore the efficacy of this formulation in floor cleaning but also its potential to minimize the environmental footprint of such products. This article unfolds the journey of formulating a neem-based floor cleaner (phenyl) that not only offers robust cleaning power but also aligns with the ever-growing global demand for sustainable and green cleaning solutions. We delve into the science behind these natural ingredients and their unique attributes that make them promising candidates for a cleaner, healthier, and more environmentally conscious future.

2 . MATERIAL AND METHODS

Creating a formulation of floor cleaner (phenyl) using neem leaves, crystal salt, camphor, and alum at the college laboratory level involves careful handling and accurate measurements. Here's a simplified formula and instructions for a laboratory experiment:[2][2]

Ingredients

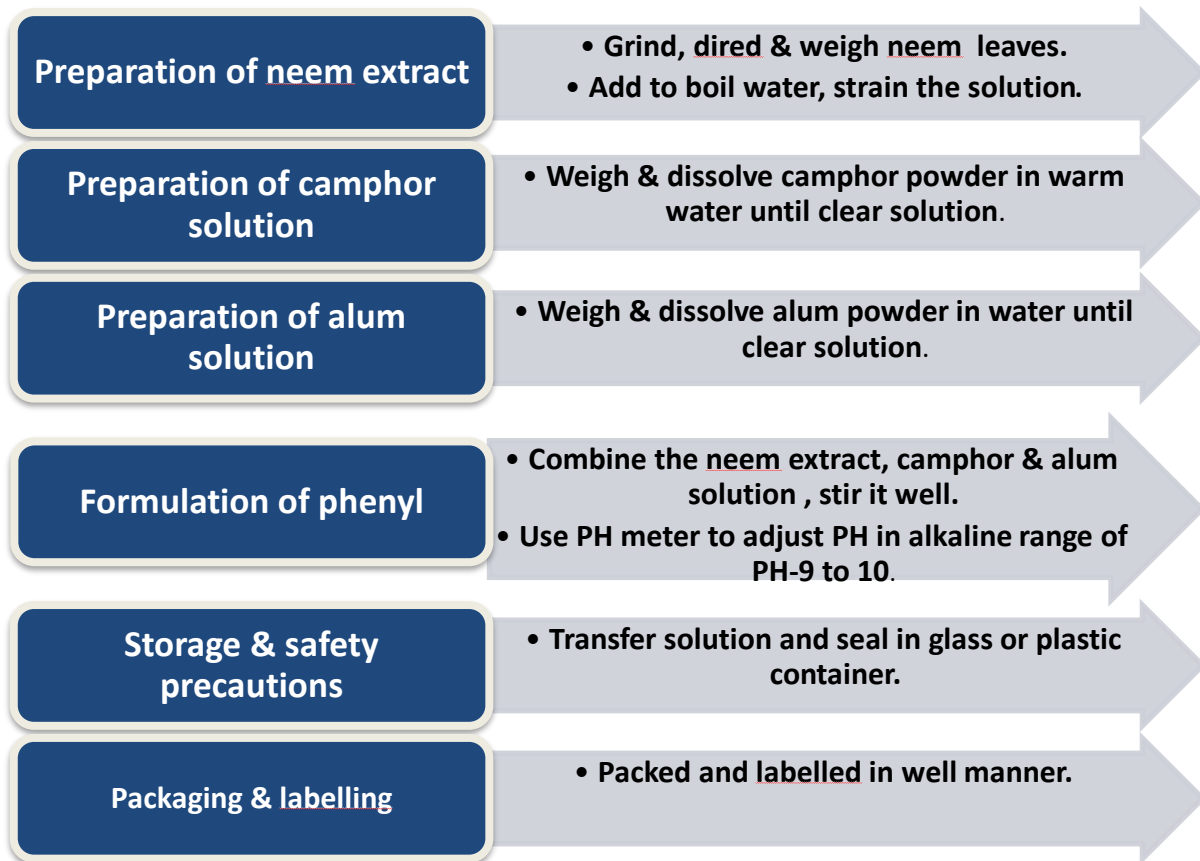
- Neem leaves (dried and powdered)
- Crystal salt (powdered)
- Camphor (powdered)
- Alum (powdered)
- Distilled water



Equipment:

- Glass beakers
- Graduated cylinders
- Stirring rods
- pH meter
- Filter paper and funnel
- Glass bottles for storing the phenyl
- Safety goggles and lab coat

Procedure & Steps :



- Creating a small-scale laboratory formulation of a floor cleaner (phenyl) using neem leaves, crystal salt, camphor, and alum requires careful proportioning. Here's a simplified recipe suitable for a college-level laboratory:^[3]

Formula

SR.NO.	INGREDIENTS	QUANTITY TAKEN	CATEGORY
1	Neem leaves	10 gm	Disinfectant
2	Crystal Salt Powder	5 gm	Antifungal
3	Camphor Powder	2 gm	Deodorizing effect
4	Alum Powder	3 gm	Astringent
5	Distilled Water	500 ml	Solubilizer

This recipe is designed for small-scale laboratory experimentation and is not suitable for large-scale production. For commercial production, you would need to conduct further research, testing, and optimization to ensure that the formulation meets quality and safety standards. Always follow your laboratory's safety protocols and consult with your instructor or lab supervisor for specific guidelines and safety measures.



- **Certainly, here's detailed information about neem when used in the formulation of a floor cleaner (phenyl) with neem leaves, crystal salt, camphor, and alum:**

- ✓ **Taxonomical Information**

- Neem, scientifically known as *Azadirachta indica*.
- Family: Meliaceae.
- Genus: *Azadirachta*.
- Species: *Azadirachta indica*.

Fig:1.Neem leaves



- ✓ **Physiological Information**

- Neem is an evergreen tree native to the Indian subcontinent.
- It's known for its distinct compound leaves, which are pinnate with multiple leaflets.
- The neem tree can grow up to 15-20 meters in height and has a dense, rounded crown.
- Neem leaves are rich in various bioactive compounds, which give them their pharmacological properties.

- ✓ **Pharmacological Properties**

1. **Antibacterial and Antifungal Activity:**Neem leaves contain compounds like azadirachtin, nimbin, and nimbidin, which exhibit strong antibacterial and antifungal properties. This makes them effective in inhibiting the growth of harmful microorganisms on surfaces.
2. **Anti-Inflammatory Effects:**Neem has anti-inflammatory properties due to compounds like quercetin and catechin, which can help in reducing inflammation.^[14]
3. **Antioxidant Properties:**Neem is rich in antioxidants such as flavonoids and tannins, which can help protect surfaces from oxidative damage.^[15]
4. **Immunomodulatory Effects:**Neem may modulate the immune system, potentially contributing to a healthier living environment.^[4]
5. **Insecticidal Properties:**Neem is known for its natural insect-repelling properties, which can be valuable in deterring pests from indoor spaces.^{[5][16]}

- ✓ **Scientific Research on Neem in Floor Cleaner Formulation**

- Scientific research investigates the optimal concentration of neem leaves in the formulation to maximize its antibacterial, antifungal, and insecticidal effects while ensuring safety for household use.^[17]
- Researchers study the synergistic effects of neem leaves, crystal salt, camphor, and alum when combined in a floor cleaner formulation. This research aims to understand how these ingredients work together to enhance the cleaning efficacy.
- The formulation stability over time is examined to ensure that the neem-based floor cleaner remains effective and doesn't degrade.
- The study also evaluates the safety and environmental impact of the neem-based floor cleaner, aligning with the broader goal of creating eco-friendly and sustainable cleaning solutions.^[6]

In summary, neem leaves in a floor cleaner formulation provide a natural and sustainable approach to cleaning with various pharmacological properties. Scientific research contributes to optimizing this formulation for effective, eco-friendly, and safe household cleaning, promoting a healthier and more environmentally conscious living space.

- **Certainly, here's detailed information about crystal salt (rock salt) when used in the formulation of a floor cleaner (phenyl) with neem leaves, camphor, and alum**

- ✓ **Taxonomical Information**

- Common Name: Crystal salt, Rock salt, Halite.
- Chemical Composition: Sodium chloride (NaCl).
- Halide mineral group.



- Crystal System: Isometric.

Fig:2.Crystal Salt



✓ **Physiological Information**

- Crystal salt is a naturally occurring mineral that is typically found in salt mines and salt flats.
- It is commonly available in the form of white or colorless translucent crystals.
- Its natural formation involves the evaporation of ancient seas and water bodies.

✓ **Pharmacological Properties**

1. Antibacterial and Antifungal Properties: Crystal salt has natural antibacterial and antifungal properties, making it effective in inhibiting the growth of microorganisms on surfaces.^[18]
2. Deodorizing Effect: Crystal salt can help neutralize odors, providing a fresh and clean scent in the area being cleaned.
3. Abrasive Properties: The abrasive texture of crystal salt makes it effective for scrubbing away dirt, stains, and grime from various surfaces.
4. Solubility: Crystal salt can dissolve in water, allowing it to be incorporated into cleaning formulations and efficiently utilized during cleaning.

✓ **Scientific Research on Crystal Salt in Floor Cleaner Formulation:**

- Scientific research often focuses on optimizing the concentration of crystal salt in the floor cleaner formulation. This ensures that it provides effective cleaning without causing damage to the surfaces.^[19]
- Researchers study the interaction and synergy of crystal salt with neem leaves, camphor, and alum. This research aims to understand how these ingredients work together to enhance the cleaning efficacy and overall performance of the floor cleaner.^[20]
- Studies examine the solubility of crystal salt in the cleaning solution to ensure it dissolves effectively, allowing for even distribution during cleaning.
- The abrasive nature of crystal salt is also evaluated to determine its effectiveness in removing stains and grime from various types of flooring materials.

In summary, crystal salt in a floor cleaner formulation contributes antibacterial, deodorizing, and abrasive properties, enhancing the cleaning process. Scientific research is instrumental in fine-tuning the inclusion of crystal salt to optimize cleaning performance while ensuring safety and efficacy in household cleaning products, especially when used in combination with neem leaves, camphor, and alum.

• **Certainly, here's detailed information about camphor when used in the formulation of a floor cleaner (phenyl) with neem leaves, crystal salt, and alum:**

✓ **Taxonomical Information**

- Camphor, scientifically known as *Cinnamomum camphora*.
- Family: Lauraceae.
- Genus: *Cinnamomum*.
- Species: *Cinnamomum camphora*.

✓ **Physiological Information**

- Camphor is a white crystalline substance with a strong, distinctive aroma.
- It is typically obtained from the wood of camphor trees or synthesized from turpentine oil.
- Camphor has a long history of use in traditional medicine and various industrial applications.



Fig:3.Camphor



✓ **Pharmacological Properties**

1. **Antibacterial and Antifungal Activity:** Camphor exhibits mild antibacterial and antifungal properties, which can complement the cleaning and disinfecting effects of the floor cleaner.^[21]
2. **Aromatic and Deodorizing Effect:** Camphor's strong aroma provides a pleasant and refreshing scent to the area being cleaned, effectively masking odors.
3. **Solubility:** Camphor is readily soluble in various solvents, making it easy to incorporate into cleaning formulations.^[22]
4. **Mild Anesthetic Effect:** Topically, camphor can produce a cooling and mild anesthetic effect, which can provide a soothing sensation.

✓ **Scientific Research on Camphor in Floor Cleaner Formulation**

- Scientific research investigates the optimal concentration of camphor in the floor cleaner formulation to maximize its antimicrobial and deodorizing properties without overwhelming the senses.^{[7][23]}
- Researchers examine the interaction of camphor with neem leaves, crystal salt, and alum to understand how these ingredients collectively enhance the cleaning efficacy and aroma.
- Studies also focus on the solubility of camphor in the cleaning solution, ensuring that it disperses evenly and retains its aromatic and antibacterial properties.^[24]
- The research may also explore the safety and environmental impact of camphor in the formulation to align with the goal of creating eco-friendly and effective household cleaning products.

In summary, camphor, when used in a floor cleaner formulation, provides antimicrobial, deodorizing, and mild anesthetic properties. Scientific research is essential to fine-tune the inclusion of camphor to optimize cleaning performance while ensuring safety and efficacy in household cleaning products when used in combination with neem leaves, crystal salt, and alum.

Fig:4.Alum



- **Certainly, here's detailed information about alum when used in the formulation of a floor cleaner (phenyl) with neem leaves, crystal salt, and camphor:**

✓ **Taxonomical Information**

- Alum, scientifically known as Potassium aluminum sulfate dodecahydrate ($KAl(SO_4)_2 \cdot 12H_2O$) or Ammonium aluminum sulfate dodecahydrate ($(NH_4)Al(SO_4)_2 \cdot 12H_2O$).
- Alum belongs to the family of double salts, and it comes in various forms, with the two most common being potassium alum and ammonium alum.

**✓ Physiological Information**

- Alum is a colorless, odorless crystalline substance that is soluble in water.
- It is widely used in various industrial applications, including water purification, pickling, and as an astringent in personal care products.

✓ Pharmacological Properties:

1. Antibacterial and Astringent Properties: Alum has natural antibacterial properties and astringent effects, making it valuable in cleaning products for its ability to inhibit bacterial growth and its ability to cause tissues to contract, which may be useful in cleaning surfaces.^[25]
2. Coagulant: Alum can act as a coagulant in water, which helps remove impurities by causing fine particles to bind together and settle out.

✓ Scientific Research on Alum in Floor Cleaner Formulation:

- Scientific research examines the optimal concentration of alum in the floor cleaner formulation to maximize its antibacterial and astringent properties without causing any adverse effects on surfaces.
- Researchers may study the interaction of alum with other ingredients such as neem leaves, crystal salt, and camphor to understand how these components work together to enhance the cleaning efficacy and antibacterial properties.
- Studies may also investigate the solubility of alum in the cleaning solution to ensure it disperses evenly and effectively targets impurities and bacteria.
- The safety and environmental impact of alum in the formulation may be explored to ensure it aligns with eco-friendly and effective household cleaning product standards.

In summary, alum, when used in a floor cleaner formulation with neem leaves, crystal salt, and camphor, contributes to antibacterial and astringent properties. Scientific research is instrumental in optimizing the inclusion of alum to enhance cleaning performance while maintaining safety and environmental considerations in household cleaning products.

• Formulating a floor cleaner (phenyl) using neem leaves, crystal salt, camphor, and alum has several merits :**✓ Merits**

1. Natural and Eco-Friendly: One of the primary advantages is that this formulation relies on natural ingredients, reducing the dependence on harsh synthetic chemicals. It aligns with the growing demand for eco-friendly and sustainable cleaning products.^[26]
2. Antibacterial and Antifungal Properties: Neem leaves, crystal salt, and alum offer natural antibacterial and antifungal properties, making the floor cleaner effective in disinfection and cleanliness.^[27]
3. Deodorizing Effect: Camphor provides a pleasant aroma, effectively masking odors and leaving the area smelling fresh and clean.
4. Abrasive Cleaning: Crystal salt's abrasive properties help in removing dirt and stains from surfaces, enhancing the cleaner's effectiveness.
5. Safety: The use of natural ingredients reduces the risk of exposure to harmful chemicals, making the cleaner safer for both users and the environment.
6. Immune and Insect Repellent Properties: Neem's potential immune-boosting effects and insect-repelling properties contribute to a healthier living space.

In summary, the formulation of a floor cleaner using neem leaves, crystal salt, camphor, and alum offers numerous advantages in terms of eco-friendliness, antibacterial properties, and safety. However, it may face challenges related to consistency, strong aroma, residue, and the need for further scientific research to validate its effectiveness. Users should carefully consider their preferences and priorities when choosing such a cleaner.^[8]

• The formulation of a floor cleaner (phenyl) using neem leaves, crystal salt, camphor, and alum aligns with several future trends and considerations in the cleaning product industry:

1. Green and Sustainable Cleaning: The use of natural ingredients, such as neem leaves, crystal salt, camphor, and alum, reflects the growing demand for green and sustainable cleaning products. As environmental awareness continues to rise, consumers are seeking cleaning solutions that minimize their ecological footprint.
2. Health and Wellness: There's an increasing emphasis on creating living spaces that promote health and wellness. Neem's potential immune-boosting and antibacterial properties align with the trend toward healthier indoor environments.
3. Natural Disinfectants: The ongoing focus on hygiene and cleanliness, especially in the wake of global health concerns, encourages the development of natural disinfectants. The antibacterial and antifungal properties of neem and alum in this formulation cater to this demand.



4. Aromatherapy and Sensory Experience: Consumers are looking for products that provide a pleasant sensory experience. The use of camphor for its deodorizing effect contributes to the growing trend of aromatherapy in cleaning products.
5. DIY and Customization: There's a rising interest in DIY cleaning products, where individuals have the option to customize formulations according to their preferences. This trend might encourage the use of ingredients like neem leaves, crystal salt, camphor, and alum in personalized cleaning solutions.
6. Local Sourcing: The sourcing of local and indigenous ingredients, like neem leaves, is becoming more popular. It promotes regional economies and reduces the carbon footprint associated with ingredient transportation.
7. Clean Label and Transparency: Consumers are seeking products with clear and transparent labeling, which provides information about the ingredients and their sources. The formulation's simplicity and natural components align with this trend.
8. Scientific Validation: While the use of natural ingredients is promising, future trends may involve more scientific research to validate the efficacy of specific combinations. Consumers may look for evidence of effectiveness, safety, and environmental impact.
9. Biodegradability and Minimal Packaging: Sustainable packaging and biodegradability are crucial considerations. Future trends might emphasize the reduction of plastic waste and environmentally friendly packaging for cleaning products.^[28]
10. Regulatory Compliance: As the industry evolves, adherence to regulations and standards related to environmental impact and safety will be crucial. Companies formulating such products will need to ensure compliance with changing regulations.

In conclusion, the formulation of a floor cleaner using neem leaves, crystal salt, camphor, and alum resonates with future trends centered on sustainability, health, wellness, and consumer preferences for green and effective cleaning solutions. Scientific research and innovation will likely play a significant role in shaping the future of these products.

- **The formulation of floor cleaner phenyl using neem leaves, crystal salt, camphor, and alum incorporates elements of traditional knowledge from various cultures where these natural ingredients have been used for cleaning and purification. Here's a glimpse of their traditional uses:**

1. **Neem Leaves:** Neem (*Azadirachta indica*) is an integral part of traditional Indian medicine and is known for its antibacterial, antifungal, and insect-repelling properties. Neem leaves have been used in India for centuries for various purposes, including cleaning and purifying living spaces. The leaves were burned to fumigate homes and repel pests. The idea of using neem in a floor cleaner aligns with the traditional knowledge of its cleansing and antibacterial attributes.
2. **Crystal Salt:** Salt has a long history of use in various cultures for cleaning and purifying. In ancient times, salt was often spread on surfaces to absorb moisture and prevent mold and bacteria growth. The use of salt in cleaning products is reminiscent of traditional practices aimed at keeping environments clean and free of harmful microorganisms.
3. **Camphor:** Camphor has been used in several traditional practices around the world, including India and China. It is known for its aromatic and deodorizing properties. Camphor was used to freshen the air and dispel unpleasant odors. Incorporating camphor into cleaning products aligns with traditional practices of using its scent to create a pleasant and clean atmosphere.
4. **Alum:** Alum has a history of use in traditional medicine and various applications. It has been used for its astringent and antibacterial properties. In some traditional practices, alum was used for purification and as a disinfectant. The inclusion of alum in a floor cleaner formulation reflects its traditional roles in maintaining cleanliness.

The combination of these traditional elements creates a holistic approach to cleaning that considers not only cleanliness but also the creation of a pleasant and sanitized living environment. It also respects the wisdom passed down through generations regarding the use of these natural substances for purification and wellness.

- **Modern scientific research into the formulation of a floor cleaner (phenyl) using neem leaves, crystal salt, camphor, and alum focuses on several key aspects:**

1. **Efficacy and Cleaning Performance:** Researchers assess how well the formulation cleans various types of surfaces, from removing dirt and stains to disinfecting and inhibiting bacterial and fungal growth. Scientific studies aim to validate the cleaning performance of this natural formulation compared to traditional chemical-based cleaners.
2. **Synergistic Effects:** The interactions between the individual components, such as neem, crystal salt, camphor, and alum, are examined to understand if their combined use enhances cleaning efficacy. Researchers seek to identify any synergistic effects that make the formulation more effective than individual components used separately.^[29]
3. **Safety and Toxicity:** Safety is a paramount concern. Scientific research evaluates the safety of the formulation for users, considering factors like skin and eye irritation, inhalation risks, and any potential allergic reactions. Toxicity studies aim to ensure the product's safe use in household environments.^[30]
4. **Environmental Impact:** Researchers investigate the environmental impact of the formulation, considering factors such as biodegradability, eco-friendliness, and potential harm to aquatic life or ecosystems. The goal is to create cleaning products that have minimal environmental impact.^[31]



5. **Stability and Shelf Life:** The stability and shelf life of the product are studied to ensure that it remains effective and safe for an extended period. This includes examining whether ingredients degrade over time or if there are any unintended chemical reactions.^[9]
6. **Consumer Acceptance:** Research may include surveys, consumer testing, and focus groups to gauge user acceptance. Understanding consumer preferences and feedback helps refine the formulation and enhance market adoption.^[32]
7. **Aromatherapy and Sensory Experience:** Studies may assess the impact of the formulation's aroma, specifically camphor's scent, on user experience and mood. The sensory aspect of the product is becoming increasingly important.^[33]
8. **Regulatory Compliance:** Compliance with local and international regulations and standards is a key focus. Researchers ensure that the formulation meets safety, labeling, and packaging requirements, reflecting an evolving regulatory landscape.
9. **Microbiological Assessment:** Researchers examine the formulation's effectiveness in controlling and inhibiting the growth of microorganisms. This includes testing against common bacteria, fungi, and other pathogens found in indoor environments.^[34]
10. **Comparative Studies:** To validate its effectiveness, the formulation is often compared with conventional chemical-based floor cleaners. These studies provide valuable data on the formulation's performance in real-world settings.

In summary, modern scientific research into the formulation of a floor cleaner phenyl using neem leaves, crystal salt, camphor, and alum encompasses a wide range of considerations, including efficacy, safety, environmental impact, and sensory experience. This research aims to create effective, eco-friendly, and user-friendly cleaning solutions that align with current consumer preferences and evolving regulatory standards.

- **The historical background of formulating a floor cleaner (phenyl) using neem leaves, crystal salt, camphor, and alum is rooted in the traditional knowledge and practices of various cultures. While there may not be a specific historical record of this exact formulation, each ingredient has a long history of use in cleaning, disinfection, and overall wellness:**
 1. **Neem Leaves:** Neem (*Azadirachta indica*) is native to the Indian subcontinent and has been used in traditional Indian medicine (Ayurveda) for over 2,000 years. It has been recognized for its antibacterial, antifungal, and insect-repelling properties. Neem has been used for various cleaning and purification purposes, including fumigation to disinfect living spaces.
 2. **Crystal Salt:** Salt has a history of being used for preserving and purifying food. Its antimicrobial properties were harnessed to prevent spoilage. Salt has also been used in traditional practices for cleaning and purifying surfaces, particularly in humid environments where moisture can lead to mold and bacterial growth.
 3. **Camphor:** Camphor has been used in traditional practices in countries like India and China for centuries. It was employed as a fumigant to purify living spaces, dispel unpleasant odors, and create a clean and refreshing atmosphere. Camphor's aromatic properties made it a valuable addition to purification rituals.
 4. **Alum:** Alum (potassium aluminum sulfate) has been used historically as an astringent and antiseptic. Its antibacterial properties were utilized in various cultures for disinfecting and purifying water, as well as for personal hygiene and wound care. Alum's use in purification rituals is well-documented in different regions.

The formulation of a floor cleaner that combines these traditional elements represents a contemporary effort to leverage the historical use and knowledge of these natural substances for modern cleaning needs. The emphasis on eco-friendliness and safety aligns with current consumer preferences and the growing awareness of the environmental impact of cleaning products. While there may not be a specific historical precedent for this exact formulation, it draws on the wisdom of traditional practices for maintaining clean and healthful living spaces.

RESULT

Evaluation

- **Physical Evaluation:** –
 - i. **Appearance:** - It was determined visually
 - ii. **PH :-** The PH was determined using digital PH meter & the PH of herbal floor cleaner was found to be 7.35-9.75



Fig.5.PH of herbal floor cleaner.

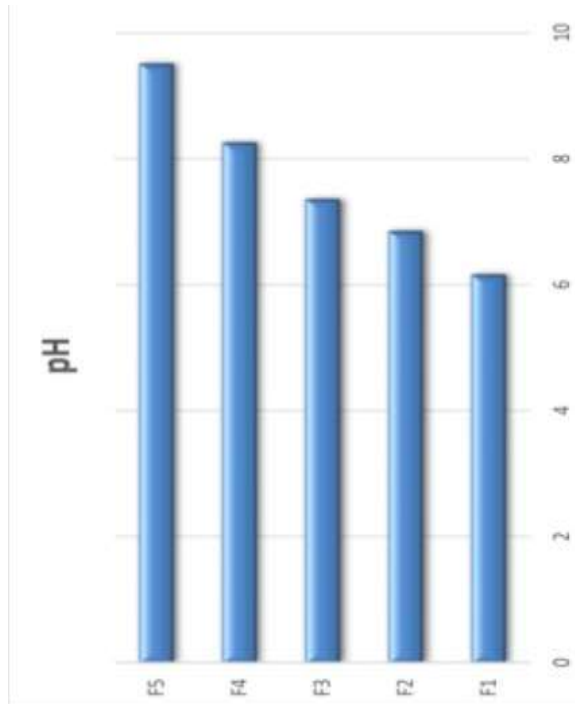


Fig.5.1. PH of herbal floor cleaner

- iii. Colour:- It was determined visually.
- iv. Odour:- It was determined manually.
- v. Stability Studies:- The stability of herbal floor cleaner was carried out by storing measure amount at different temperatures. i.e.25°c , 37°c , 40°c for one month. During stability Studies no change in colour & no phase separation where observed in the formulated floor cleaner.



Fig.6. Stability of herbal floor cleaner.

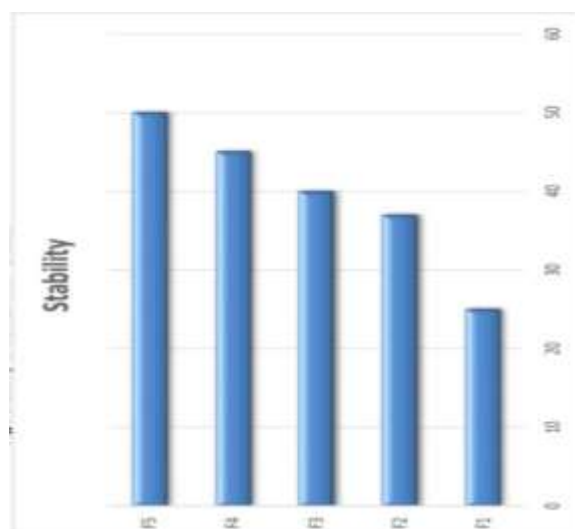


Fig. 6.1. Graph Stability of herbal floor cleaner.

Foam Height

- 1) 10 ml of sample of herbal floor cleaner taken and dispersed in 100 ml distilled Water.
- 2) Then transferred it into 500 ml stoppers measuring cylinder, volume make up to 100 ml with water.
- 3) 25 stroke was given and stand till aqueous volume measured upto 100 ml and measured the foam height



Fig.7. Foam height of herbal cleaner.

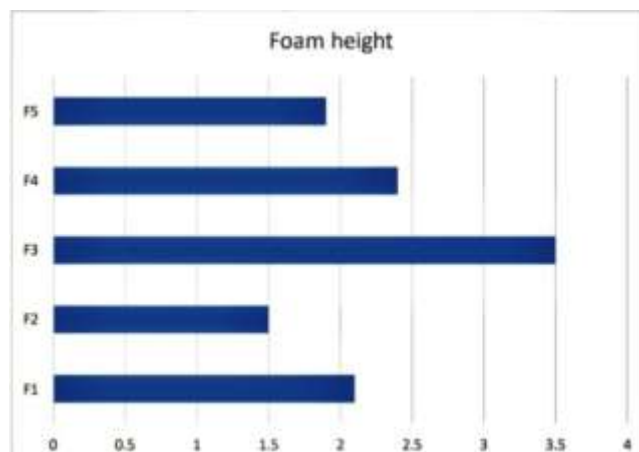


Fig.7.1. Graph of foam height of herbal cleaner.

- The findings demonstrated the significant activity of the floor cleaner made with neem extract, camphor, alum & crystal salt. Bacterial growth in the culture plate was significantly inhibited by the herbal floor cleaner formulation.
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Table: Physical Evaluation of of Formulation

Sr.No.	Parameters	F1	F2	F3	F4	F5
1	Appearance	Clear	Clear	Clear	Clear	Clear
2	PH	6.1	6.85	7.35	8.25	9.1
3	Stability	Stable	Stable	Stable	Unstable	Stable
4	Foam Stability	Stable	Stable	Unstable	Unstable	Stable
5	Foam Height	2.1	1.5	3.5	2.4	1.9

CONCLUSION

The formulation of a floor cleaner (phenyl) using neem leaves, crystal salt, camphor, and alum represents an innovative approach that combines traditional knowledge and contemporary needs for eco-friendly and effective cleaning products. In conclusion, this formulation offers several key points:

1. **Eco-Friendly Cleaning:** The use of natural ingredients, such as neem leaves, crystal salt, camphor, and alum, aligns with the growing demand for eco-friendly and sustainable cleaning products. It provides an alternative to conventional chemical-based cleaners, reducing the environmental impact.
2. **Natural Disinfection:** Neem leaves, crystal salt, and alum contribute antibacterial and antifungal properties, making the floor cleaner effective for disinfection and sanitation. This aligns with the need for maintaining clean and hygienic living spaces.
3. **Deodorizing and Aromatherapy:** Camphor's aromatic properties offer a pleasant sensory experience, creating a clean and refreshing atmosphere. It caters to the demand for products that enhance the sensory environment.
4. **Safety and Wellness:** The formulation prioritizes safety by avoiding harsh chemicals and toxins. It aligns with the trend toward creating healthier living spaces and minimizing exposure to harmful substances.
5. **Traditional Wisdom:** The formulation draws on traditional knowledge and practices where these natural substances have been used for purification, disinfection, and wellness. It respects the wisdom passed down through generations regarding the use of these natural ingredients.
6. **Research and Innovation:** The formulation is subject to scientific research, aiming to validate its efficacy, safety, and environmental impact. Future trends may involve further research and development to optimize the formulation and address consumer preferences.

In summary, the formulation of a floor cleaner phenyl using neem leaves, crystal salt, camphor, and alum reflects the evolving preferences for eco-friendly, safe, and effective cleaning products. It combines traditional wisdom with modern scientific research to meet the demands of a more sustainable and health-conscious consumer base.

**TABLES AND FIGURES****Table 1 . Formula**

SR.NO.	INGREDIENTS	QUANTITY TAKEN	CATEGORY
1	Neem leaves	10 gm	Disinfectant
2	Crystal Salt Powder	5 gm	Antifungal
3	Camphor Powder	2 gm	Deodorizing effect
4	Alum Powder	3 gm	Astringent
5	Distilled Water	500 ml	Solubilizer

Figure 1. Neem Leaves**Figure 2. Crystal Salt****Figure 3. Camphor****Figure 4. Alum****Acknowledgements**

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Author contributions :Concept – V.G.; Design – A.K., T.S., E.T.; Supervision – P.M.,A.B.; Resources – D.K.; Materials – I.O.P.; Data Collection and/or Processing – ONLINE,BOOKS.; Analysis and/or Interpretation – P.L., Y.P., S.P., T.S.; Literature Search – ONLINE.,BOOKS., PHARMACOPEIA.; Writing – A.H.; Critical Reviews – V.G..

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