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Research Article

**FORMULATION AND EVALUATION OF HERBAL FLOOR  
CLEANER****Madhavi Porwal, Mansi, Rishabhyadav, Varshasingh, Dr. Shaileshkumar Ghatuary\***  
Shri RLT Institute of Pharmaceutical Science and Technology**Abstract:**

The majority of business floor cleaners on the market today include poisons and pollutants that are dangerous to human health. These products' warning labels explicitly declare that the contents are harmful or dangerous since they are made of chemicals. Even when safely maintained, hazardous floor cleaners can seep out of bottles or be inhaled while being used, which is especially risky in homes with kids. These dangerous substances contaminate water sources when they penetrate into the ecosystem. These disinfectant-containing cleaning products can indeed instantly kill bacteria, but they may also build up their long-term resistance. both vinegar and baking soda vinegar, baking soda, water, borax, and essential oils Floor cleaners can be made using water and castile soap. However, natural compounds from sources like neem, cow urine, citronella, aloe vera, eucalyptus oil, etc. may produce enhanced antibacterial and insect repellent qualities. The listed ingredients are natural, non-toxic, non-synthetic derivatives.

**Keywords-**Disinfectant, Corrosive, Non-toxic, septic, ecofriendly.

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**INTRODUCTION:**

Even clean and dry floors can harbour bacteria. Floor Cleaner is a concentrated biodegradable floor cleaning solution that kills germs, dissolves difficult stains effectively, and leaves a pleasant smell. India is home to numerous manufacturers, exporters, and suppliers of floor cleaners. To assist stop the transmission of germs, it is advised to practise good hygiene practises that centre on surface cleaning.

The cleaning products on the market are made of dangerous chemicals that affect both our environment and human health. Using no harsh chemicals, herbal cleaner, disinfectant, and insect repellent is a revolutionary product. Natural oils and plant extracts are present in herbal products. This natural disinfectant is a multipurpose cleaning solution. It does more than just remove stains; it also kills bacteria and serves as an insect repellent.

It is free of dangerous substances. It uses organic components like lemongrass and pine oils, which have long been employed in traditional medicine. This medication kills germs thanks to their antifungal qualities. Your eyes, nose, or throat won't become irritated by this natural disinfectant.

A beautifully built home requires regular maintenance to maintain a clean, healthy, and comfortable environment. The goal of cleanliness is to eliminate unpleasant odours, filth, and pollutants, as well as to create a pristine appearance.

In a technical sense, cleaning your home involves which covers things like ceramic surfaces, marble, granite, and other stones. Among all of these, ceramic and marble tiles are frequently used for floors, walls, and bathrooms. Regular floor cleaning is necessary because, without it, lime scale builds up on tiles and

taps, mould develops in moist spots, toilets smell, and cobwebs form in homes. This is especially true of kitchen and bathroom floors. The buildup of filth and dust causes several health problems, particularly for young children and the elderly. There are a lot of synthetic materials available today.

**MATERIALS AND METHODS:**

Samples of *Azadirachta indica* and *Aloe barbadensis*, were collected from the Shri RLT institute of Pharmaceutical Science and technology, Ekdil (Etawah). Pine oil, OP, Alphox, EDTA etc.

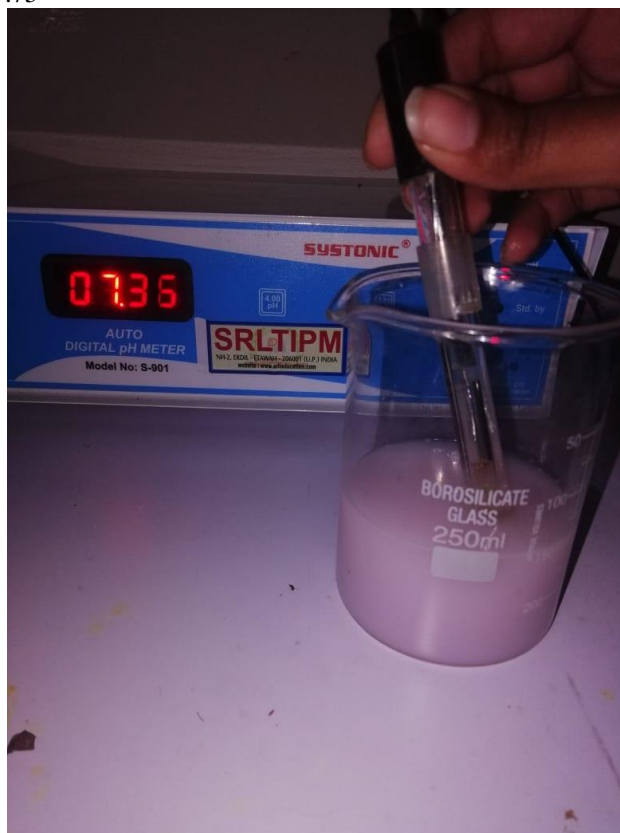
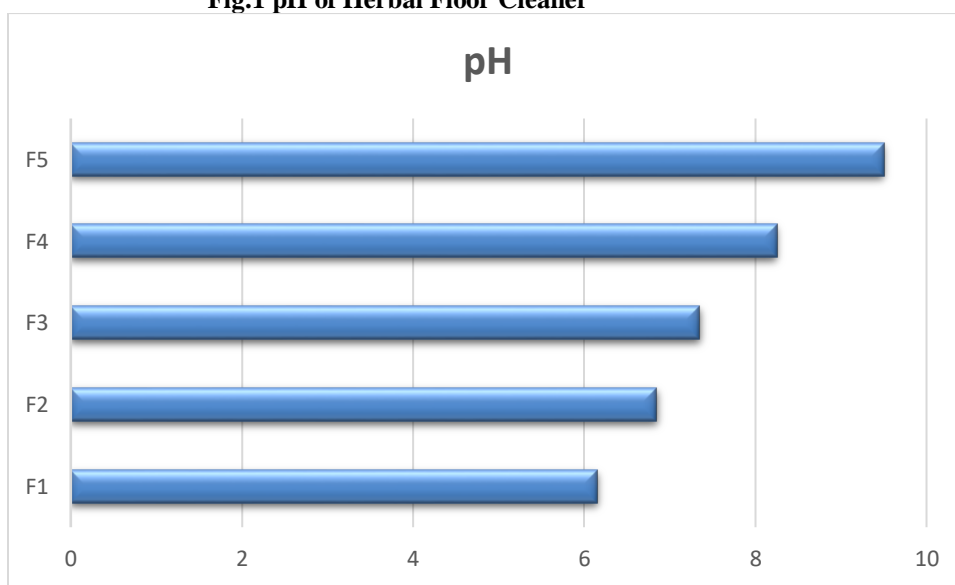
1. Preparation of neem extract-  
Fresh neem leaves are collected and dried for few days. Dried leaves were then powdered using mortar and pestle. The powdered neem leaves are weighed and extracted by the Soxhlet apparatus using 70 ml of ethanol and 30 ml of ethanol upto 72 cycles. Then the extract was collected.
2. Preparation of aloe vera extract-  
Fresh aloe vera was collected and was kept in water for 30 minutes. Then it was scraped off by the help of knife. Then the gel was collected and filtered.
3. Formulation of herbal Floor cleaner-  
Pine oil, OP, Alphox mixed with the mechanical stirrer continuously for 10-15 min. Then add ionized water was added for volume makeup and required consistency. Then aloe extract and neem extract and Lemon extract were added and mixed thoroughly. Desired quantity of, flavorant, colorant was added to the above formulation. The formulated floor cleaner was filled in suitable containers and stored at cool and dry place.

Table 1: Formulation of herbal hand floor cleaner (for 900 ml)

s.no.	Ingredients	F1	F2	F3	F4	F5
1.	Pine oil	60ml	60ml	55ml	50ml	60ml
2.	OP	16ml	15ml	15.5ml	15ml	16.5ml
3.	Alphox	2ml	1.5ml	1ml	1.5ml	1.5ml
4.	Neem extract	7.5ml	8.5ml	7ml	7.5ml	8ml
5.	EDTA	0.25gm	0.20gm	0.15gm	0.25gm	0.20gm
6.	Ionized Water	Q. S.	Q. S.	Q. S.	Q. S.	Q. S.

**EVALUATION-**

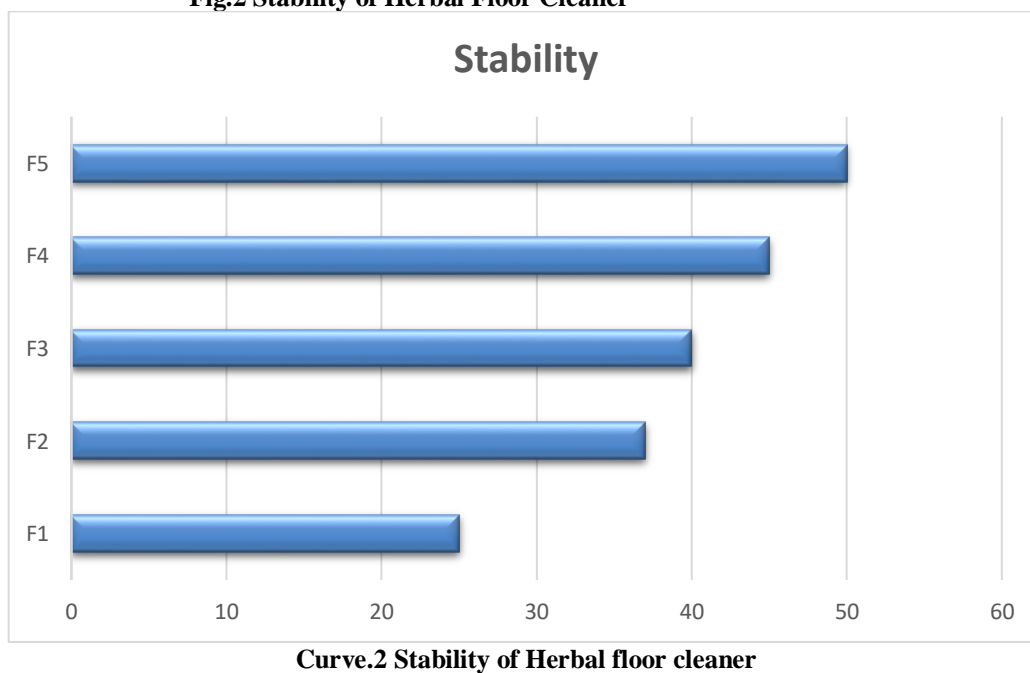
- physical evaluation: -
  - i) Appearance: - It was determined visually.
  - ii)  $p^H$  :- The  $p^H$  was determined using digital ph meter and the  $p^H$  of herbal floor cleaner was found to be 7.35 – 9.75

**Fig.1 pH of Herbal Floor Cleaner****Curve.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 measured amount at different temperature i.e. 25°C, 37°C, 40°C for one month. During stability studies no change in colour and no phase separation were observed in the formulated floor cleaner.



**Fig.2 Stability of Herbal Floor Cleaner**

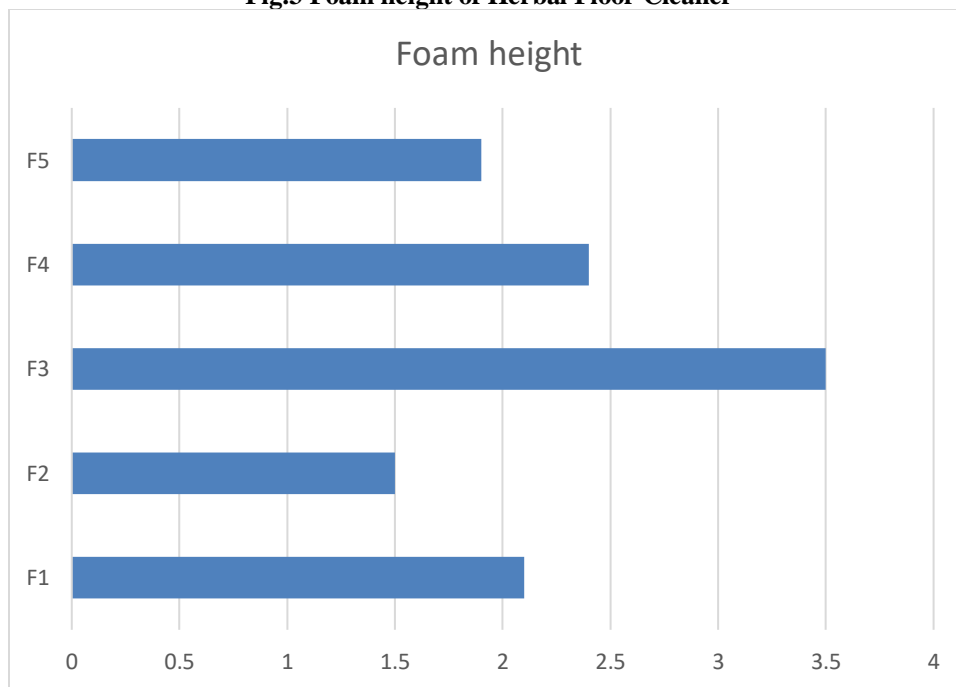


Foam height:-

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



**Fig.3 Foam height of Herbal Floor Cleaner**



**Curve.3 Foam height of Herbal Floor Cleaner**

Foam Retention:- 50ml of herbal floor cleaner was taken into a 250ml graduated cylinder and shaken ten times. The volume of foam at 1 minute interval for minute was recorded foam Retention should be stable at least 5

Antimicrobial study:-

By Gram Positive Bacteria-

1ml of sample of hand wash was dissolved in ujala solution. Then it was found that after stirring for 1 min. sample cleared the solution and killed the bacteria.

#### i) Antibacterial test by using pour plate method-

The pour plate method, carried out under laminar flow, was used to conduct the antibacterial assay. The heterogeneous carpet culture of floor bacteria was sampled from the control and test portions of the floor using a sterile cotton swab, and the inoculums were made. The inoculums' 1ml volume was transported to culture plates, then mechanically spread out across the agar surface. The plate was left alone. Additionally, three copies were created to reduce sampling error. After that, culture plates were incubated in an incubator for 24 hours at 37°C. The culture plates were examined to count the number of colonies formed for each treatment after 24 hours of incubation. For subsequent analysis and conclusions, the average number of colonies was taken into account.

### RESULT AND DISCUSSION:

The findings demonstrated the significant activity of the floor cleaner made with aloe and neem extracts. Bacterial growth in the culture plate was significantly inhibited by the herbal floor cleaner formulation.

The results showed that the floor cleaner prepared with neem extract and aloe vera extract had significant activity.

**Table 2 : Physical evaluation of Formulation**

S.no.	Parameters	F1	F2	F3	F4	F5
1	Appearance	Clear	Clear	Clear	Clear	Clear
2	pH	6.15	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 majority of business floor cleaners on the market today include poisons and pollutants that are dangerous to human health. These products' warning labels explicitly declare that the contents are harmful or dangerous since they are made of chemicals. Even when safely maintained, hazardous floor cleaners can seep out of bottles or be inhaled while being used, which is especially risky in homes with kids. These dangerous substances contaminate water sources when they penetrate into the ecosystem. These disinfectant-containing cleaning products can indeed instantly kill bacteria, but they may also build up their long-term resistance.

Neem, aloe vera, pine oil, and other naturally occurring substances may have enhanced antibacterial and insect repellent qualities. The listed ingredients are natural, non-toxic, non-synthetic derivatives.

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