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Research Article

Formulation And Evaluation Of Herbal Antimicrobial Cream Containing Fennel, Coriander And Cumin Extract

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ABSTRACT

The Aim Of This Study Was to examine the Antimicrobial Activities of Umbelliferae Family Of Drug. Fennel, Coriander and Cumin fraction has previously demonstrate good Antimicrobial property, to exploit the above property we have conducted a study by formulating and evaluating the cream containing Fennel, coriander and cumin oil extract and to study antimicrobial activity. Cream was formulated using various excipients like borax, bees wax, white soft paraffin band other additives like methly parabean, propyl parabean and distilled water. All the formulation were evaluated for pH, viscosity spread-ability, wash-ability ,homogeneity ,physical evaluation, stability, irritancy ,antimicrobial activity. The prepared cream was evaluated for their physical ,rheological and antimicrobial properties. To performed phytochemical screening of terpenoid test and microbial assay. The stability study was also done. The results indicated promising Antimicrobial activity, suggested the potential use of the herbal cream has natural alternative combating microbial infection. Antimicrobial susceptibility testing relieved the creams effectiveness against a spectrum of microbial infection. During research period we found F2 formulation was good and there was no phase separation and it was showing antimicrobial activity so choose F2 as good formulation.

INTRODUCTION

Microbes refer to any the microorganisms especially those causing disease or infection. The includes bacteria, Archea, virus, fungi, protozoa, and Alage, collectively known as Microbe. Antimicrobial are Drug that destroy microbes, prevent their multiplication or growth or prevent their pathogenic action. Antimicrobial Activity of Umbelliferae family of Drug are fennel, coriander, cumin. Nature Has been a valuable source of medicine and has helped human in the maintaining of his health since time immemorial. Medicinal

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and Aromatic plants have attracted the Attention of research world wide a major source of raw materials used in pharmaceutical, cosmetics, flavor, and perfumery industry. Spices and herbs have been long used for thousands of centuries by many culture to enhance the flavor and aroma of foods. There has been an increased interst in the use of natural substance such as spices, herbs and their extract which caused no health problems to the handled and consumer due to their availability, fewer side effects, fewer toxicity. Coriander (Coriandrum Sativum L) is an Annal Possessing spices, Aromatic nutrition as well as medicinal properties. Coriander Also used as antiemetic, Anti-inflammatory, Antiseptic, Emmenagoug, Antidiabetic, Antihypertensive. Natural products and their derivative have historically been valuable as source of therapeutic agent. Most of the drug today are obtained from natural source or semisynthetic derivatives of natural products and are used traditional system of medicine. Nature is full of Numerous Supernatural Fragrances which have their magical and are Pleasant to our Senses.Fennel oil is Essential Oil that has Several Application in various industries. Fennel is used as Spices and also as Important Ingredient in various Folklore medicine throughout the world.This plant has been Investigated extensively for several medicinal and therapeutic activities and has been reported for possessing Carminative, Flavouring, Antioxidant, Antibacterial, Antifungal and Mosquito Repellent Properties. Cumin is strong Aromatic dried ripe fruit seed of Cuminum Cyminum L.Cumin seeds are ancient spices with strong aromatic smell and warm,bitterish taste.It is widely used as condiment,it has great medicinal value.It is traditional medicine to treat Flatulence,digestive disorder disorder,and diarrhea and in the treatment of wounds. The seeds are used to flavour foods and liquor and the oil is utilized as a perfume and cosmetics. It Possesses Emmanagogue and Carminative Activity and Stimulates the production of Material milk. The Seeds is rich in linalool, which is used in the food industry for the manufacture of liquors and candies and in the Pharmaceutical industry to correct the Disagreeable flavor and aroma of some medicines The Aim of the present work was evaluate the antimicrobial Activity of the essential oils of the seeds of the above plants. The main objective activity of extracts from different spices especially from umbelliferae family containing aromatic and flowering plants such as Coriandum sativum L,Cuminum Cyminum l, and Pimpinella Anisum L. Foeniculum vulgare mill Cream are homogenous, semi-solid or viscous preparation that possess a relatively fluid consistency and are intended for external application to the skin or certain mucous membranes for protective, therapeutic or Prophylactic purposes especially where an occlusive effect is not Necessarily. Creams contain suitable antimicrobial preservative unless the active ingredient or the base themselves have sufficient bactericidal and fungicidal activity. They may contain other suitable auxiliary substance such as antioxidant, stabilised, thickness and emulisifer. In recent years, there has been a growing interest in exploring natural remedies for combating microbial infections, driven by concerns over antibiotic resistance and adverse effects associated with conventional antimicrobial agents. Herbal preparations, long utilized in traditional medicine systems worldwide, are gaining attention for their potential antimicrobial properties. Herbal creams, formulated with plant-derived ingredients, present a promising avenue for topical antimicrobial therapy, offering a safer and potentially more sustainable alternative to synthetic pharmaceuticals. Herbs have historically been revered for their diverse pharmacological properties, including antimicrobial activity against a wide range of pathogens such as bacteria, fungi, and viruses. Compounds found in plants, such as

polyphenols, flavonoids, terpenoids, and alkaloids, have demonstrated inhibitory effects against microbial growth through various mechanisms, including disruption of cell membranes, interference with microbial enzymes, and modulation of immune responses.

The formulation of herbal antimicrobial creams incorporating these potent botanical extracts presents an opportunity to harness their therapeutic benefits for topical application. Such creams can offer a natural alternative to synthetic antimicrobial agents, potentially reducing the risk of microbial resistance and adverse effects associated with prolonged use. This study aims to formulate a herbal antimicrobial cream utilizing fennel, coriander, and cumin extracts and evaluate its efficacy and safety. The formulation process involves selecting appropriate extraction methods, determining optimal concentrations of herbal extracts, and incorporating them into a suitable cream base. Evaluation of the cream will include physical characteristics, pH measurement, viscosity, Spread-ability, stability testing, antimicrobial activity assessment, skin irritation testing, and microbiological quality analysis. By elucidating the formulation and evaluating the efficacy of this herbal antimicrobial cream, we aim to contribute to the development of safe and effective natural remedies for microbial infections, potentially enhancing public health and promoting sustainable health care practice.

Fig No. 1 Antimicrobial Infection

LITERATURE SURVEY

1. **J.L.Rios et al, 2005**

In the present paper analyze the past, present and future of medicinal plants both as potential antimicrobial Crude drugs as well as source for natural compounds that act as new anti-infectious agents.

2. **Daljit singh Arora et al, 2008**

The aim of the present study was expand the antibacterial spectrum from natural resources and to validate traditional uses of three Medicine plants.namely Anethum graveolens,Foeniculum vulgare and trachyspermum ammi.

3. **Naser A Al-Wabel et al, 2012.**

Spices and herbs have been long used for thousands of centuries by many culture to enhance the flavor and aroma of foods. The Antimicrobial Activity of many spices and herbs varies widely, depending on the type of spices or herbs, test of medium, and microorganism

4. **Vikas Shrivastav, Uma Bhardwaj et al, 2012.**

The main of this study is to strengthen the multiple potential values of Asafoetida.Indian herbs and spices are known for their preservatives, flavoring and Medicinal values.

5. **Bhawana pandey. Et al, 2014**

In the present study,the antimicrobial activity of spices has investigate as an alternative to Antidotes in order to tackle these dangerous. In search of bioactive compounds, methanol and acetone extract of 5 indian spices were screened for antibacterial property.

6. **Nabila Helmy Shafik, et al, 2015**

Antimicrobial Study of Daucuscarota Canopy Extract Against bacteria and fungi showed that the ethanolic extract was most active. It was finally concluded Antimicrobial Activities of three extract chloroform, ethyl Acetate, ethanol which were tested .

7. **Sandra Ebele Ejimba et al, 2015**

The study Showed comparable physical properties. The study showed that the creams containing equal concentrations of the two

ethanolic extracts have high potentials as topical antimicrobial agents especially against skin infections.

8. Hamid Reza Gheisari et al, 2016

The present study was designed to evaluate the antimicrobial activity of three extract of medicinal plants,cichorium intybus,dorema aucheri an prangos ferulacea against some food born pathogens.

9. Malgorzata Kikowska. et al, 2016

The Antimicrobial activity methanolic extract was evaluated against selected bacteria, yeast and mould and compared in tasted eryngium spices and their organ.

10. Hamare Kavitas et al, 2017

The present research work concludes that the The cream with Termenilia bellerica extract is showing the good anti-bacterial activityand it can be used in treating Cellulitis disease. As after the screening of plants extracts one of it is selected and it is loaded in cream formulation. Characterization of drug and individual excipients confirmed their purity

11. Raid AI Akeel et al, 2018

In this study cucumis sativus L. Is a therapeutic plant with various pharmacological benefits, broadly utilized as a part of complementary medicine. Our results suggest the cucumis sativus seeds extract have significant potential as new antimicrobial agent.

12. Sinodukoo Eziuo okafo. et al, 2022

This study was carried out to evaluate the antimicrobial activity of ethanolic extract, aqueous extract and topical creams from Moringa oleifera seeds against some bacteria and fungi. M. oleifera seeds. Were dried, powdered and macerated for 24 and 48 h in water and ethanol respectively. Antimicrobial sensitivity tests were conducted on the aqueous and ethanolic extracts using standard agar diffusion method.

13. Nikhil Nitin Navindgikar et al, 2020

In these study all three herbal ingredients are showed Significant different activity. Based on the result, We can suggest that all three formulation are F1H, F2H, F3H were can be stable and safety use for skin.F2 cream are good for the safety use for skin.

14. Fatma A. Ahmed et al, 2021

This study describe the HPLC-Identification of phenolic compounds in four plants belonging to family umbelliferae. Umbelliferae is one of the most important families containing a large variety of plants.

15. Anita R. Desai et al, 2021

In this study the Hibiscus abelmoschus fraction has previously demonstrate good antimicrobial and fungal property, to exploit the above property we have conducted a study by formulating and evaluating the cream containing hibiscus abelmoschus oil extract and to study the antimicrobial activity.

16. Blessy Jacob et al, 2022

This study is focused on the “Formulation and evaluation of anti-microbial cream from Cucurbita pepo seed oil. The fresh seed oil was extracted from Cucurbita pepo (Pumpkin) which belongs to the Cucurbitaceae family. Pure Cucurbita pepo essential oil was collected in the store.

17. Okafo SE et al, 2022

This research was conducted to evaluate creams formulated using ethanolic extract of Carica papayl leaves. The leaves were collected; dried, and extracted by maceration method using ethanol. The antimicrobial activity of extract was determined using the pour plate method for viable counts and the minimum inhibitory concentration (MIC) by agar diffusion method.

18. Jenitha k et al, 2023

In this study the plant named centella asitatica belongs to the family Apiaceae showed Antimicrobial Activity against various bacteria and fungi.Centella asiatica can be used in

moisturizing cosmetic formulations and also to complement the treatment od dry and sensitive skin.

19. Malgorzata ziarno et al, 2023

The aim of this work Was study to the effects of addition of the selected herbal Extract on selected Parameters of fermented flavored cream and result of the flavoring butter Proceeds by the study of the herbal activity of the extract.

AIM AND OBJECTIVE:-

AIM:

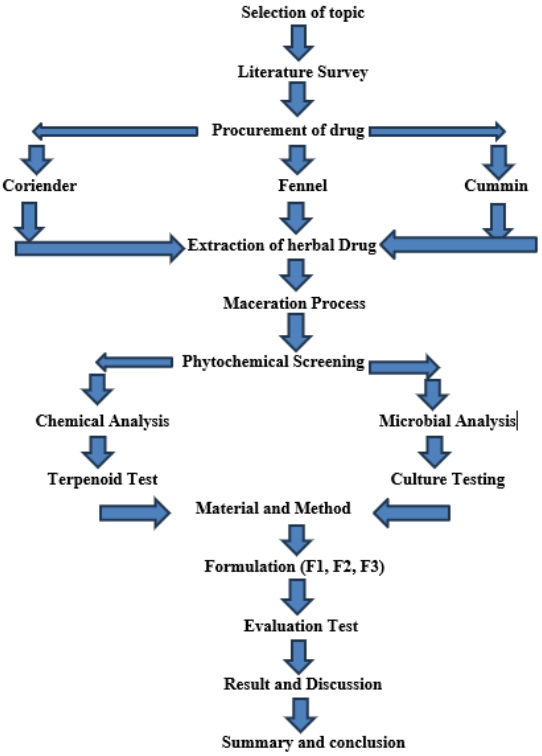
Formulation And Evaluation of herbal antimicrobial cream containing fennel, coriander and cumin Extract.

Objective of the study:-

- To Study the Formulation of herbal cream
- To Study herbal drug fennel, coriander and cumin extract.
- To Study the effects of antimicrobial activity of herbal drugs.
- To Study the Assess efficacy against pathogenic microorganism.
- To Study the stability assessment of herbal cream.
- To study the statistical analysis.

PLAN OF WORK:-

The present proposed research work is planned as follows:



DRUG PROFILE:-

1. **Fennel**

Fig No. 2 Fennel

Synonyms:-

Fennel fruits, fructus Foeniculum

Scientific name:-

Foeniculum vulgare

Biological source :-

Fennel consist of dried ripe fruits of the plant known as Foeniculum vulgare muller obtained by cultivation It should contain not less than 0.6 per cent of anethole calculated on dried basis.

Family:-

Umbelliferae

Geographical Source:-

It is indigenous to mediterranean countries and largely cultivated in Romania Russia Germany France, India and Japan. In India, it is cultivated in Gujarat, Punjab Maharashtra Rajasthan, Uttar pradesh and West Bengal.

Macroscopic characteristics:-

Colour :-

Green to yellow-brown

Odour :-

Sweat aromatic

Taste:-

Strongly aromatic

Size:-

5-10 x 24mm

Shape:-

Straight or slightly curved

Chemical constituent:-

Fennel consists of 3 to 7 per cent of volatile oil, about 20 per cent each of protein and fixed oils. The chief active constituents of the oil is a ketone, fenchone (about 20 per cent) and a phenolic ether anthole (about 50 per cent). The other constituents are phellandrene. Limonene, methyl chavicol, anisic aldehyde.

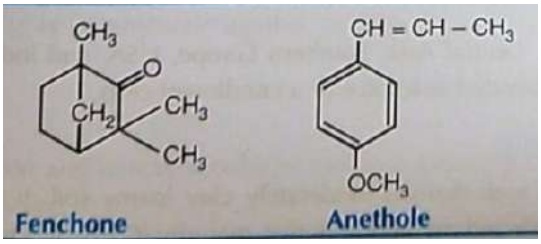


Fig No 3. Structure Fenchone and Anethole

Uses:-

Carminative, aromatic, stimulant flavouring agents, relieving menstrual cramps, digestive issues, promoting lactation in breastfeeding mothers, Endocrine, respirator

2. Coriander

Fig No. 4 Coriander

Synonyms:-

coriander fruits Cilauthto leaves, Dhaniya

Scientific name:-

Coriandrum sativum

Biological source:-

These are the fully dried ripe fruits of the plant known as Coriandrum sativum Linn the fruit should contain not less than 0.3 per cent of the volatile oil

Family :-

Umbelliferae

Geographical source:-

Plant is cultivated throughout European countries principally in Russia Hungary and holland it is also cultivated in India Egypt and Morocco in India it

is widely cultivated in Andhra Pradesh Maharashtra, west bengal, uttar Pradesh

Microscopic characters:-

Color:-

yellowish brown to brown

Odor:-

Aromatic

Taste:-

Spicy and characteristic

Size:-

fruits are2-4 mm in diameter and 4-30mm in length

Shape:-

Coriander is a sub-globular stemocarnous fruit. about 10 primary ridges and 8 secondary ridges are present

Chemical constituents:-

coriander yields from 0.3-1 per cent of volatile oil.volatile oil of the drug contains 90 per cent of D-linalool (coriandrol) and Coriandryl acetate, and small quantities of L-borneol geraniol and pinene.

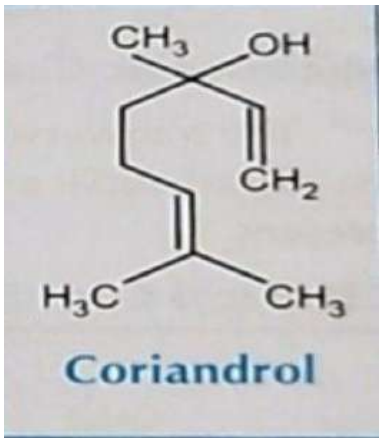


Fig No. 5 Structure of Coriandrol

Uses:-

Aromatic Carminative, stimulant, flavouring agents, anti-inflammatory agent, digestive issues lowering cholesterol level. Antioxidant Anticancer. Antidiabetic

3.Cumin

Fig No. 6 Cumin

Synonyms:-

Jira

Scientific Name:-

Cuminum cyminum L

Biological source:-

It consists of dried ripe fruits of Cuminum cyminum Linn.

Family:-

Umbelliferae

Geographical source:-

It is indigenous to nile territory It is cultivated In Morocco sicily, india, Syria and china In India except assam and west Bengal, it is cultivated in all states about 90 per cent of the world production is from India and most of it comes rajasthan and Gujarat.

Macroscopic characters:-

Color:-

Brown coloured ridges are light in colour

Odor:-

characteristics and aromatic

Taste:-

characteristics and aromatic

Size:-

4-6mm in length and 2 mm thick

Shape:-

elongated and tapering at both ends cremocarps generally separate each mericarp has fine longitudinal ridges.

Chemical constituents:-

Cummin fruits contain 2.5-4 per cent volatile oil, 10 per cent fixed oil and proteins volatile oilmainly consist of 30-50 per cent cuminaldehyde small quantities of phellandrene cuminic alcohol, hydrated cuminaldehyde and hydro-cumimine.

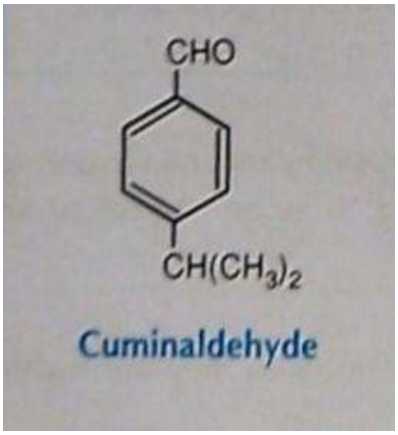


Fig No. 7 Structure of Cuminaldehyde

Uses:-

Stimulant carminative, Diarrhoea dyspepsia, blood sugar regulation

MATERIAL AND METHODS :

Material:

Material are Use for Formulation Fennel, coriander and cumin in powder form were purchase from herbal and Ayurvedic shop of dhanvantari in chh.sambhaji Nagar. Borax, Methyl paraben, Propyl Paraben, White bees wax, Orange oil use in the Formulation of Herbal Antimicrobial cream Were analytical garde.

Table No .1 Role of Ingredients

Sr. No	Ingredients	Role
1	Fennel extract	Antimicrobial activity
2	Coriander extract	Antimicrobial activity
3	Cumin extract	Antimicrobial activity
4	Bees wax	Stabilizer and given thickness of skin
5	White soft paraffin	Moisturizer
6	Borax	Emulsifying agent
7	Methyl paraben	Preservative
8	Propyl paraben	Preservative
9	Orange oil	Fragrance

Method:

Extraction process by maceration method:

1.Extraction of Fennel:

In this process, the fennel seeds powder (18g) is placed with whole of the solvent (75ml) in closed vessel for 2 days.During this period shaking is done occasionally. After 2 days the liquid is strained and marc is pressed.

2.Extraction of Coriander:

In this process, the coriander seeds powder (21g) is placed with whole of the solvent (90 ml) in closed vessel for 2 days. During this period shaking in done occasionally. After 2 days the liquid is strained and marc is pressed.

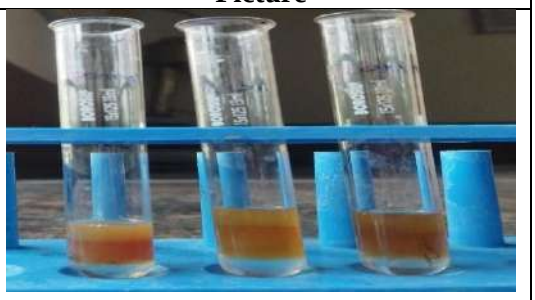
3.Extraction of Cumin:

In this Process, the cumin seeds powder (10g) is placed with whole of the solvent (55ml) in closed vessel for 4hr .During this period shaking in done occasionally. After 4hrs the liquid strained and marc is pressed.

Fig No. 8 Maceration Method

Fig No 9. Filtered The Drug

Table No.3 Test for Terpeniods

Test	Observation	Inference	Picture
1.Extract [5ml] was Mixed with chloroform [2ml] and concentration Sulphuric acid 3ml was carefully added to form layer	Coloration Junction 2 layer	Presence of terpenoid	 **Fig no.10 Test of extract**

PHYTOCHEMICALS SCREENING :-

Antimicrobial Activity :

Antimicrobial activity of formulated cream was performed by modified agar well diffusion method. Agar plates were prepared by Muller Hilton agar medium poured in pertidish and microorganisms were Inoculate with test microorganisms culture and agar plates were at 37°C for 24 hrs ;after 24h wells of 5mm diameter was made with sterile cork borer and wells were loaded with the formulation F1 to F3. After 24h of incubation, formulation efficacy was determined in terms of zone of inhibition. The antimicrobial activity was evaluate by measuring the diameter of the resulting zone of inhibition against the tested microorganisms in millimeter.

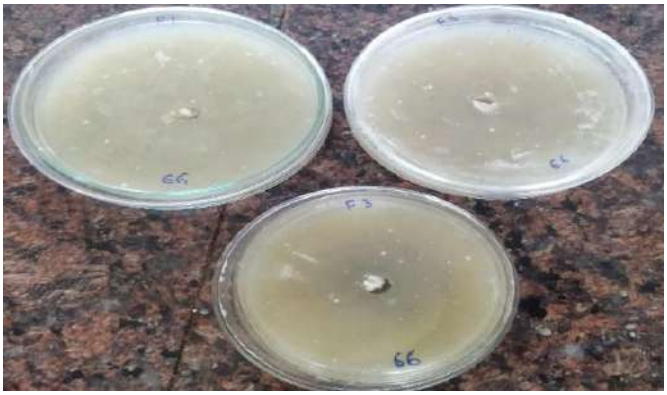


Fig no.11 Microbial assay

FORMULATION OF CREAM:-

Fennel, Coriander and Cumin Extract Cream Were prepared by W/O Emulsion Method. The cream were formulated by using three Different concentration of oil such as 1 to 8 % . Borax was used as emulsifying agent. Bees wax was used to create a Barrier which helps to seal Moisture into the skin. White soft paraffin is used as a moisturizer. Methyl paraben and Propyl paraben was used as preservative in cream. Orange Oil Added as a Fragrance of the cream. The formulation was prepared by adding two phrases which are mentioned as follows :-Beeswax and

white soft paraffin were melted together in a Beaker at 70 C. Borax was Dissolved in water and the temperature of the solution was brought at 70 C. The extract and preservative were dissolved in the borax solution. The water phase containing the extract and borax was added to the oil phase with stirring. Orange Oil added and properly stirring. It was then agitated slowly and cooled this procedure was carried out for all the formulation. The cream was filled into jars on cooling, prepared formulation were labeled and stored.

Fig No. 12 Formulation of cream

Table No 4. Formulation of cream

Sr. No	Ingredient	F1	F2	F3
1	Fennel extract	5ml	4ml	7ml
2	Coriander extract	5ml	3ml	2.85ml
3	Cumin extract	5ml	1.3ml	3ml
4	White soft paraffin	27.5gm	27.5gm	27.5gm
5	Bees wax	6.19gm	6.13gm	4.58gm
6	Borax	0.41gm	0.41gm	0.41gm
7	Methyl paraben	0.08gm	0.08gm	0.08gm
8	Propyl paraben	0.08gm	0.08gm	0.08gm
9	Orange oil	0.5ml	0.5ml	0.5ml
10	Distilled water	0.24ml	7ml	4ml

EVALUATION OF PARAMETERS:-

1. PH:-

0.5 g of cream was taken and dissolved in 50 ml water and pH was measured with the help of pH meter (digital).

2. Physical Appearance:-

In this test, the cream was observed for color, odor, texture, state .

3. Irritancy :-

Mark the area (1 cm^2) on the left-hand dorsal surface. Then the cream was applied to that area and the time was noted. Then it is checked for irritancy, erythema, and edema if any for an interval up to 24 h and reported .

4. Washability:-

A small amount of cream was applied on the hand and it is then washed with tap water.

5. Greaisness:-

Here the cream was applied on the skin surface in the form of smear and checked if the smear was oily or grease-like.

6. Spreadability:-

Spreadability of the formulation was done by using two sets of glass slides of standard dimensions. The herbal cream formulation was placed over one of the slides. The other slide was placed on the top of the formulation, such that the cream was sandwiched between the two slides weight was placed upon the upper slides so that the cream between the two slides was pressed uniformly to form a thin layer. The weight was removed and the excess of formulation adhering to the slides was scrapped off. The upper slide allowed slipping off freely by the force of weight

tied to it. The time taken for the upper slide was noted & calculated by using the formula Spreadability = mx1/t.

7. Stability:-

The stability of cream refers to its ability to maintain its properties, such as texture, appearance, and composition, over time and under various conditions. It involves assessing factors like phase separation, viscosity, microbial growth, and oxidation. Stability testing helps determine the shelf life and quality of the cream product.

8. Homogeneity :-

Homogeneity in cream refers to the uniform distribution of its components, such as fat globules and water, throughout the product. Cream should exhibit a consistent texture and appearance without any visible separation or clustering of its constituents. Homogeneity ensures a smooth and consistent product quality, enhancing its sensory attributes and overall appeal.

Table No.5 Result of cream

Sr. No.	Result	F1	F2	F3
1	Color	Faint yellow	Faint yellow	Faint yellow
2	Odor	Pleasant	Pleasant	Pleasant
3	Texture	Smooth	Smooth	Smooth
4	State	Semi-solid	Semi-solid	Semi-solid
5	PH	6.3	6.2	6.4
6	Washability	Easily washable	Easily washable	Easily washable
7	Irritancy	Nil	Nil	Nil
8	Phase separation	No phase separation	No phase separation	No phase separation
9	Spread-ability	22.8	15.18	32.3
10	Greasiness	Non greasy	Non greasy	Non greasy
11	Stability	Stable	Stable	Stable
12	Homogeneity	Good	Good	Good
13	Antimicrobial activity	1.5	1.2	1.3

RESULTS AND DISCUSSION:-

The present Investigation attempted to develop the herbal Antimicrobial cream using fennel, coriander and cumin seeds oil. Formulated cream were subjected for Visual Observation for all formulation was found to be homogenous faint yellowish colored semi-solid with characteristics odor of the raw materials, then formulation were subjected for evaluation such as PH, Spread-ability, Stability, irritancy, Washability, Greasiness and Antimicrobial Activity.

1.PH:-

According to the result, the PH of all the three formulation that is F1 -6.3 ,F2-6.2, F3-6.4 were found to be nearer to skin PH so it can be safely used on the skin.

2.Physcial Evaluation:-

In these test color-faint yellow, odor-pleasant, texture-smooth and state-semisolid of three formulation were checked.

3.Irritancy :-

Mark the area (1cm) on the left hand dorsal area surface. The cream was Applied to that area the time was noted. Then it checked for irritancy, Erythema and Edema if any for an interval up to 24hrs and reported. According Result all three formulation that is F1, F2, F3 slowed no sign of Irritancy.

4.Washability:-

Wash ability test was carried out by applying a small amount of cream on the hand them washing it with tap water. All three formulation were easily washable.

5.Greasiness:-

Here the cream was applied on the skin surface in the form of smear and checked if the smear was oily or grease-like. According to the results, we can say that all three formulation were non-greasy.

6.Spreadability:-

The Spreadability of the three formulation that is F1, F2 and F3 was carried out and out of that for F2 the time taken by the 2 slides to separate is less so as said in the description of evaluation test lesser the time taken for separation of the two slides better the Spreadability so according to this statement F2 slowed better Spreadability.

7.Stability :-

The stability test of the cream is assess creams physical, chemical and microbiological stability over time.

8.Antimicrobial activity:-

The Antimicrobial activity of Fennel, Coriander and cumin extract cream was assayed by agar disc diffusion method against the selected microbes. The various Fennel, coriander and cumin extract herbal cream formulation were active against all the pathogenic microbial under study as revealed by their respective zones of growth inhibition. However, the formulation displayed a variable degree of antimicrobial activity against the tested strains. Formulation F2 containing Fennel, coriander and cumin oil was found to be most effective against all the selected microorganisms. Fennel Extract most effective in the 3 formulation. It is show more activity than coriander and cumin extract.

9.Homogeneity :-

The appearance and touch of the cream were found to be good.

SUMMARY AND CONCLUSION :-

The concept of above formulation was to incorporate the extract of fennel, coriander and cumin Seeds in powder form in the cream, as cream as widely accepted and better absorb by skin with is Moisturizing and emollient effect Hence in the present investigation we prepared fennel, coriander and cumin cream by using conveniently Excipients. Results of evaluation demonstrate the pH of the cream we're normal range of the skin with good Viscosity, Spread-ability, wash ability, greasiness, stability, irritancy, antimicrobial activity , phase separation which indicated cream were capable to remain in the site Application for prolonged time. Thus we concluded that fennel, coriander and cumin cream would provide safe and healthy germ free skin. In conclusion, the formulation of the herbal antimicrobial cream demonstrated promising results in inhibiting microbial growth. Through a comprehensive evaluation process involving various tests such as antimicrobial activity, stability, and sensory analysis, the formulated cream exhibited significant efficacy and stability. The incorporation of herbal extracts not only enhanced the antimicrobial properties but also provided potential benefits such as skin hydration and soothing effects.

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