

COMPOSITION, CHARACTERIZATION, AND ANTIMICROBIAL ACTIVITY OF POLYHERBAL PHIZ CREAM FOR WRINKLE AND ACNE TREATMENT CONTRAST NATURAL AND SYNTHETIC ELEMENTS BESIDE THE LEVIGATION TECHNIQUE

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Abstract

The study was designed with the aim to find out the antimicrobial activity of Palmitic acid for the treatment of acne. Palmitic acid is long chain fatty acid with a 16-carbon backbone more over it has antibacterial activity towards gram positive and gram-negative bacteria followed by characterization of polyherbal phiz cream was studied with various parameters such as color, odor thermal stability, homogeneity, spread ability. The Phiz cream was prepared by using combination of natural and synthetic elements by aid of Levigation technology. The best formulation was optimized among nine different formulations with different concentrations of ingredients and the results was describe as formulation code-B2. It was considered as it has shown Spreadibility of 13.3mm and pH 7.5, Viscosity-18.40cps, Dilution of 50% sparingly soluble with acid value of 2.46 and saponification value of 2.52 all this results are not far from the standard value hence the formulation B2 is considered as best formulation at last it was concluded as by using Ylang Ylang powder, geranium oil, Haworthia, Gasteria Succulent, in different ratio to get polyherbal multipurpose effect as whitening, anti-wrinkle, anti aging, and sunscreen effect on

skin. These studies has concluded that the composition used here are safer and stable hence it may produce synergistic action.

Key Words: Haworthia, Gasteria, Levigation technology, anti-wrinkle, Ylang Ylang powder

Introduction:

The antimicrobial activity has been discovered in several metals like silver, titanium, copper, zinc, plus manganese. This is observed when it is in nanospheres form Silver, in especially, has been largely studied for its benefits for antimicrobial help. It has already shown that palmitic acid will accelerate mentioned drop for various before swallow cytokines, sharing to said extra keratinization of known pilosebaceous cavity addition to inflammation within pimples. Levigation technique is the method of milling an insoluble material to single finally divided powder, while mixed with aqueous. The material was allowed to the container together with hydro, in which the powdered material available as float, accompanied by flows from the mill as one muddy liquid or papery pulp, according to the rate about pool waged.

Material and method:

Preparation of herbal creams by Levigation technique:

All the required ingredients of polyherbal creams were weighed and keep

separately. Palmitic acid and Wool wax was taken in a beaker and melted at 50⁰C in another beaker transfer weighed quantity of Ethylene glycol Di ethylene glycol, Sodium laureth sulfate, Sodium Benzoate and water was added and heated at 50⁰C followed by slow addition of herbal ingredients Haworthia, Dryland Bromeliads, Gasteria Succulent, Edible pepper leaves Powder, Tangerine powder, Ylang Ylang powder into aqueous phase with stirring. The oil phase was added into aqueous phase slowly and with continuous stirring to produce a polyherbal cream. Finally add sufficient quantity of preservative and perfumes and packed in a wide mouth container.

Evaluation studies for Polyherbal Cream:

1. Acid value
2. Antimicrobial activity
3. Dilution and dye test
4. Determination of pH
5. Homogeneity
6. Rheological studies
7. Spreadability
8. Saponification value
9. Thermal stability
10. Viscosity

Procedures for evaluation studies: Acid Value:

20gm of cream was taken and dissolved in 60ml mixture of equal volume of alcohol and solvent ether, then the flask was connected to reflux condenser and until the content was dissolved completely then add 1ml of Phenolphthalein indicator and it is titrated with 0.1N Sodium Hydroxide until light pink color appears after shaking the flask for 30 seconds.

Anti-microbial activity:

The identification of antimicrobial activity by Agar plugs diffusion method. This method is commonly used to study the antagonism between microorganism. The first bacterial strain is inoculated into agar plate in thick streaks. The bacteria will secrete molecule that diffuse in the agar medium. This medium is cut and placed

on another agar plate inoculated with another microorganism. A Sterile 10ml of nutrient agar media was prepared and transferred into a Petri plate. Six of 6 cm width ditch were made in the agar plate and the ditch was filled with tested cosmetic cream acne vulgaris microbial suspension was separated on the plate and incubated at 37⁰c for 48h the diameter of zone of inhibition was recorded.

Dilution and dye test:

In this test the emulsion was diluted with water to assess the type of emulsion in the dilution test a water soluble medium dye solution was mixed with prepared cream and view under microscope.

Determination of pH:

A one percentage of solution was prepared for cosmetic product and evaluated for pH range using pH meter.

Homogeneity:

The homogeneity formulation was assessed by visualization and by touch.

Rheological studies:

Take a fixed quantity 10g of Poly herbal cream in a 10ml beaker and keep it for 1 hour. The beaker was inclined to one side and see weather the cream is liquified or not. Beaker was shaken to and from for continuous 5min and assessed for the consistency. The beaker was again tilted and checked for pourability of the cream.

Spreadability test:

100g of cosmetic cream products were applied between 2 glass slides and was compressed to uniform thickness. This was place on a balance weight was added to the pan the time required to separate the two slides was recorded.

Saponification value:

Introduce about 2g of substance refluxed with 25ml of 0.5N Alcoholic KOH for 30min to this add 1ml of Phenolphthalein indicator and titrated immediately with 0.5N HCL.

Thermal stability:

The thermal stability of as prepared formulation was conducted at room temperature studied for 7 days.

They were formulation B2 at 40°C for 20 days. The formulations were kept both at room temperature and elevated temperature and observed at 0th, 5th, 10th, 15th, 20th Day.

Viscosity:

The viscosity determination were carried out using a Brookfield viscometer using spindle number S-64 at room temperature-25°C.

Results and discussion

All the results are tabulated in the table no 2 and 3 Haworthia, Gasteria, Succulent Ylang Ylang, powder geranium oil. Known medicinal property in the Indian market. Hence these herbals are incorporated into the poly herbal Phiz cream for the treatment of acne and wrinkles with additional moisturizing. Physical evaluation was done by testing the color, odor, and appearance of the cream. The cream was found to have Faint odour, cream having colour White.

Appearance:

The formulation was kept both at room and elevated temperature and observed on 5th, 10th, 15, and 20th day for the all valuation parameters. The stability results showed that the formulation was good in appearance

PH of Phiz cream:

The pH of cream was found to be 7.5 in the range is good for skin. All the formulations of poly herbal creams shown the pH nearer to skin required.

Homogeneity

All formulations produce uniform distribution of phiz cream. This was confirmed by visual observation and tough.

Viscosity:

The viscosity of the poly herbal cream was in the range of 18.40 which indicates that the cream is easily pourable and having small amount of shear. But B2 shown good spreadable property than other formulations the formulated cream was found to be non-Newtonian flow and moreover consistency of the cream doesn't get changed

Dyes and dilution test:

The results of disc diffusion for assessing the antimicrobial method

showed that the polyherbal cream moisturizer prepared from the combined plant material has significant antimicrobial property.

Acid value and Saponification value:

The results of acid value of all formulated poly herbal creams showed satisfactory value ranged from 2.46 for acid value and 2.52 for Saponification value.

Table-1 Formulation of Polyherbal Phiz cream

Particulars	B1	B2	B3	B4	B5	B6	B7	B8	B9
Palmitic acid	20	20	20	20	20	20	20	20	20
Wool wax	03	03	03	03	03	03	03	03	03
Ethylene glycol	04	04	04	04	04	04	04	04	04
Di ethylene glycol	1	1	1	1	1	1	1	1	1
Sodium Benzoate	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Sodium laureth sulfate	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Haworthia	-	1	-	1	-	1	-	1	-
Dryland Bromeliads	1	-	1	-	1	-	1	-	1
Gasteria Succulent	-	1	1	-	1	-	1	-	1
Edible pepper Powder	1	-	1	-	1	-	1	-	1
Tangerine powder	2	-	2	-	2	-	2	-	2
Ylang Ylang powder	-	2	-	2	-	2	-	2	-
geranium oil	1	1	1	-	-	-	1	-	1
Narcissus oil	-	-	-	1	1	1	-	1	-
Spearmint	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S
Bromoeosine	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S
Distilled water	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S

Table-2 Physical characterization

Test	B1	B2	B3	B4	B5	B6	B7	B8	B9
Color	Yellow	White	Petcbrown	brobrown	Cedarbrown	White	Petcbrown	Brobrown	yellow
Odor	Pungent	Faint	Pleasant	lem on	Pungent	Pleasant	Pungent	Odorless	lem on

Thermal stability	Nea	Stable	Nea	Nea	Nea	Nea	Nea	Nea	Nea
Homogeneity	Smoot	Smooth	Smoot	Smoot	Smoot	Smoot	Smoot	Smoot	Smoot
Spreading	14.6	13.3	15.7	13.8	14.6	14.4	19.8	17.6	16.4
pH	6.9	7.5	7.8	7.6	7.1	7.0	7.8	6.9	7.3

Table-3 Experimentation Results for evaluation of herbal cosmetic cream

Test	B1	B2	B3	B4	B5	B6	B7	B8	B9
Viscosity	18.14	18.40	18.62	19.0	19.624	20.76	16.76	17.19	19.24
Dilution	59	50	58	65	58	61	78	64	51
Dye Test	O/w type	O/w type	O/w type	O/w type	O/w type	O/w type	O/w type	O/w type	O/w type
Acid Value	3.19	2.46	2.19	2.66	3.318	4.11	4.91	3.17	3.58
Saponification value	2.99	2.52	2.17	2.78	3.14	4.25	4.87	3.77	3.98

Table-4 Outcome for Anti-Microbial activity of herbal cosmetic cream

Test life form	Formulation batches at 2.5%	Zone of Inhibition in (mm)
Propionibacterium acnes	B1	3.2
Propionibacterium acnes	B2	4.4
Propionibacterium acnes	B3	3.6
Propionibacterium acnes	B4	2.8
Propionibacterium acnes	B5	4.0
Propionibacterium acnes	B6	3.9
Propionibacterium acnes	B7	3.7
Propionibacterium acnes	B8	2.1
Propionibacterium acnes	B9	3.1

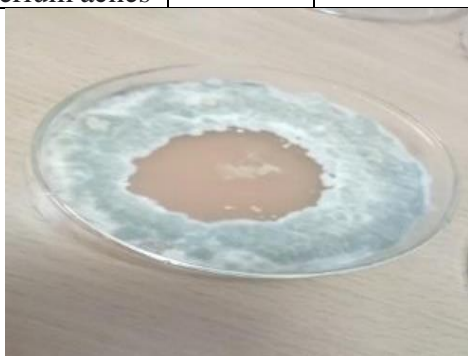


Figure-1 Antimicrobial susceptibility testing

Conclusion:

From the above discussion it was concluded that on the extract of Haworthia, Gasteria, Succulent Ylang Ylang, powder geranium oil in different ratio to get multipurpose effect such as whitening, anti-wrinkle, Anti-aging and

sunscreen effect on skin. These studies suggest composition of the extract and base of cream of B2 formulation batch is stable and safer it may produce synergistic action.

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