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Formulation And Evaluation Of Anti-Wrinkle, Antimicrobial & Vitamin C Containing Face Serum Using Cadamba Fruit Extract.

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Abstract-

Beauty products play an important role in skin care. Herbal products have good activity and no side effects so they attract people very quickly. Skin is the largest and most noticeable part that could be impacted by environmental factors. Also due to changing Lifestyle the skin gets damaged. To combat all these problems our serum contains benefits of anthrcephalus Kadamba. Since Ancient times this fruit used in various traditional Medicines. We used this fruit extract in a cosmetics to treat skin problems such as acne, wrinkle, ageing, dehydration, pigmentation. Extract of Kadamba fruit contains tannic acid, Vitamin C, phenolic compound such as ferulic acid, Gallic acid, alkaloids, flavonoids which has anti-wrinkled, antioxidant, anti-microbial properties. The face serum was evaluated for its physical evaluation PH, viscosity, stability. This result shows that there was no change in appearance, color and consistency. The face serum has a property of quickly penetrate into the deeper layer of skin. This formulation will act as a boon to your skin.

KEYWORDS: Face serum, Cadamba Extract, Anti- Wrinkle , Anti- Microbial , vitamin C , Phenolic Compounds.

Introduction-

Cosmetic has become a very integral part of life. cosmetic has various purposes. Those designed for personal care and skin care can be used to cleanse or protect the body or skin. The skin is a window to your body that reveals your personality. When skin is healthy, its layers work hard to protect Today's Serum are Routinely a Complex of Effective and are Light weight .Some are Formulated to used once a day in your Beauty Rituals, When Your skin Require to develop new cells It Brings a Radiance on the Face. A Face serum is a Filmsy Skincare product By using the cadamba fruit extract we formulated a face serum which fights with various skin problems. Face Serums Are Formulated With Vital skin Benefits And they Are Frequently seen as one of the More enriching Steps in Our Beauty regimen.[7]

Anthrachephalus cadamba has abundantly used in medicine for the treatment of anemia, fever, blood diseases & skin disease. The cadamba fruit extract also has a role in cosmetics which helps to make the skin productive and glamorous. The fruits of cadamba are circular pome 5-7 cm in diameter, lavish with four hollow or solid structure in their upper portion.[10] Cadamba Extract Contains Beneficial Phenolic Compounds Like Gallic Acid, Ferullic Acid.[3] Also contain Alkaloids And Flavonoids. Phenolic Compounds Shows Various Effects Like, Gallic Acid Act as a Powerful Anti-Oxidant. Ferullic Acid Plays a role in Age related skin issues Including Wrinkles.[1] Alkaloids Helps to Reduce Inflammation.[9] Flavonoids has a soothing Action which make skin Healthier. Cadamba Fruit Extract Possess Phenolic Compounds Which are responsible for Anti-microbial , Anti – Wrinkle Properties. The fruit contains superior chemical constituent such as caffeic acid, Tannic acid, Vitamin C. Also affluent source of magnesium, zinc, calcium and iron which can work as a boon for your damaged skin. The main activity of this acids that it possess anti-oxidant, anti- wrinkle, anti-inflammatory effects. Therefore, The present Study Was aimed to Formulate Serum From Cadamba Extract that shows Effective Results on Skin.[1]



Fig no:-01.



Fig no:-02.



Fig no:-03

Preparation of fruit extract-

Fresh fruits of Neolamarckia Cadamba was cutting into small Pieces and dried it under the sun for the four days and They are subjected to into a steel masher(mortal and pestle) then this turned into a coarse powder. This is Extracted via using the maceration method. In a iodine flask 100 gm of fruit powder of Anthrachephalus cadamba was soaked in 250 ml Ethanol and Plugged it with the cork [stopper] for the Three days with the constant stirring. Through the filter paper it is filtered and Collected in a separate Beaker. The filtered was Kept in Petridish And vapourise it at the room temperature to obtain a Extract.[12]



Fig no:- 04.

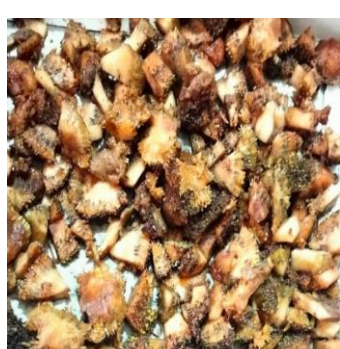


Fig no:-05.



Fig no:-06.



Fig no:-08

Identification tests-

A) Vitamin C-

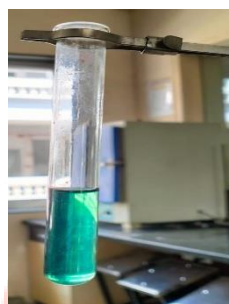
Test /Procedure	Observation	Inference
A) 1 ml of aqueous extract + 5 ml of water + 1 ml of sodium nitroprusside + 2 ml of Diluted NaOH solution + add 0.6 ml HCl dropwise	Yellow colour turns blue	Positive
B) 2 ml of extract + 0.1 g sodium bicarbonate + 20 mg of ferrous sulphate, Shake and allow to stand, a deep violet colour produced. Add 5 ml of 1 M H ₂ SO ₄ colour disappear	Colour disappear	Positive

[2]



Test-A.

Fig no-09.



Test-B

Fig no-10

Test for carbohydrates:-

Test	Procedure	Results
A) Molisch's test.	extract + molisch reagent + conc H ₂ SO ₄ .	Purple colour ring.
B) Fehling's test .	2 ml of extract + 2 ml of fehling A and B solution + heat.	Red ppt.

[2]



Test-A.

Fig no:-11.



Test-B

Fig no:-12

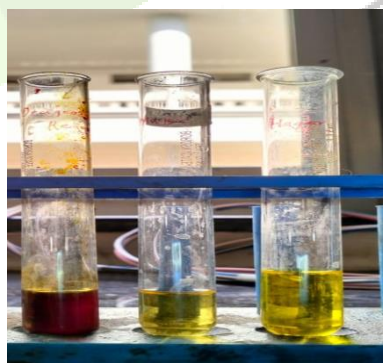
Test for Flavonoids:-

Test	Procedure	Results
A) Shinoda test	day powder or extract + 5 ml 95% ethanol +few drops of conc. Hcl 0.5 g magnesium turning	Appear orange colour

**Test-A.****Fig no:-13****Test for alkaloids:-**

Test	Observation	Results
A) Dragendorff's test	2ml extract + 1ml reagent.	Orange red ppt
B) Mayer's test	1 ml of extract + few drops of reagent.	Yellow white ppt
C) Hager's test	2 ml of extract + few drops of reagent.	White ppt

A. B. C.

**Fig no-14**

Test for phenolic compounds and tannins

Tannic acid, Caffeic acid, ferulic acid, Gallic acid.

Test	Procedure	Results
A) 5% $FeCl_3$ solution	2-3 ml of aqueous extract add few drops of 5% $FeCl_3$ solution	Deep blue black colour
B) Lead acetate	2-3 ml of aqueous extract add few drops of lead acetate	White ppt
C) Dilute HNO_3	2-3 ml of aqueous extract add few drops of dilute HNO_3 .	Reddish to yellow colour
D) Dilute iodine solution	2-3 ml of aqueous extract add few drops of Dilute iodine solution	Transient red colour

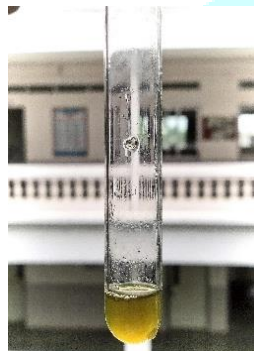


Fig no:-15 A.

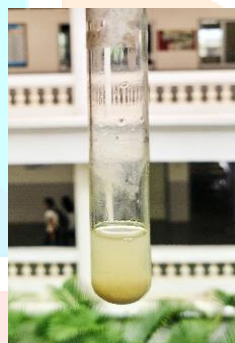


Fig no:-16 B.



Fig no:-17 C.

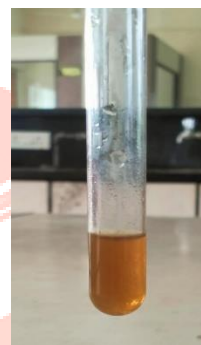


Fig no:-18 D.

Test for antimicrobial activity:-

A) Agar diffusion method

- 1) A sterile cotton Swab is Immersed into the Inoculum.
- 2) Rotate the plate and swab the surface Area of Plate Entirely.
- 3) Place the plates to dry For 5 min so the Inoculum is Absorb by Medium.
- 4) Sterilize the Forceps By applying Alcohol and Gently Touch the disc with Forceps To Avoid Misplay.
- 5) Incubate the plate for 24 hours at room temperature.[6]



Fig no:-19

Chemical composition of kadamba fruit-

The data on mineral content of fruits showed that 100 g of The edible portion of the ripe fruit contains :-

Zinc(Zn)	11.05 mg
Magnesium(Mg)	71.04 mg
Potassium(K)	36.07 mg
Sodium(Na)	10.07 mg
Manganese(Mn)	13.07 mg
Copper(Cu)	4.19 mg
Calcium (Ca)	123.7 mg

[14]

Benefits Of Kadamba Face Serum :-

•Anti-Wrinkle:

Wrinkles are Lines, Creases And Folds on the Skin occurs As the Age get Older And Exposure To UV Light Radiation. Maturing Of Facial Wrinkles is a kind of Cystic of the skin. By Utilizing the serum on skin it reduces the wrinkles and Skin sagging, Protect From The UV Rays.[8]

•Anti-Microbial:-

Acne and pimples are occurs On skin Due to Environmental Factors , Allergic Reactions And Infections Due to changes It also causes The Skin Inflammation So The Serum has a Anti microbial Properties That reduce the Acne , Pimples Inflammation From the face And has a Healing Effects. It Has Quick Effect Against The Microbes Present on skin.[13]

•Vitamin C:-

Exposure To UV Light Rays More It makes the skin Dark and causes the pigmentation , Dull skin. The Serum contain Vitamin C is a Antioxidant that Brightens the skin, Prevent Sun Damage And Improve the Appearance of Face , Makes the skin Glowing And Boost the collagen Level.[4]

Formulation table-

Sr.no	Ingredients	Quantity of 100%	Uses of ingredients
1	AQUA (H2O)	93.09	Solvent
2	DISODIUM EDTA	0.1	Chelating agent
3	GLYCERINE	1.5	Humacant
4	CARBOMER	0.6	Thickening agent
5	TRIETHANOLAMINE (C6H15NO3)	0.15	Neutralizer
6	SODIUM HYLAURONTE	0.1	Skin hydration
7	SORBITOL	1	Humacant
8	KADAMBA FRUIT EXTRACT	2	Active
9	ALOE VERA gel	0.2	Moisturizing
10	Phenoxy ethanol	0.2	Preservative

Procedure-

1. All the glasswares should be clean and dry properly.
2. Weight all the ingredients accurately.
3. The ingredients (Disodium EDTA, Glycerine, Water, Sodium hylauronte, Sorbitol, alovera extract) combined in one beaker.
4. The process of mixing is done by using a magnetic stirrer.
5. Gradually, add the carbopol 940 in a mixture.
6. Stirr mixture on magnetic stirrer for 1.5 hours.
7. Add the cadamba extract & In the end add Triethanolamine according to consistency.

8. Prepared product, fill it in well labelled container.[5]



Fig no:- 20 (Preparation of serum)

Evaluation Parameters:-

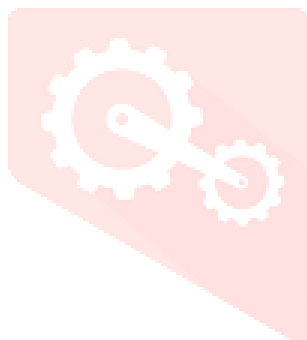


Fig no:-20 final product

• Physical evaluation

1) Color	Yellowish
2) Odour	Pleasant
3) Consistency	Semi- solid
4) PH	4.1 to 6.7

- 1) PH:- The PH Meter was used to calculate PH of Face Serum. By Dissolving 1ML of Serum in 50ML Distilled Water, PH was Calculated. The skin PH range in between 4.1 – 6.7 while the PH of the Serum Was Found to be 4 – 6 , this range of Formulation Appropriate For the skin.
- 2) Determination Of Spreadability :- The Spreadability of serum has Efficiency to cover an area of skin quickly And have Ability to spread throughout the skin. Spreadability Of Serum is Complise.
- 3) Viscosity: Viscosity is the measure of Thickness and Density of a liquid or semi-fluid substance Viscosity is a demanding Parameter For modern Formulation. The Viscosity Of Face Serum was found to be 1200 – 2200 CC.
- 4) Stability: The Given Formulation was stable at Room temperature and in sunlight for 3 months .Also stable in refrigerator for 3 months at [-10°c] [- +2°c] .
- 5) Microbial Examination Of Product: The Formulation Was Liberated From Microbes Zone of Inhibition was Absent, When they Diffused in Agar.[11]

Conclusion:-

The purpose to formulate the serum to make the skin hydrated, glowing, reduce wrinkles, lessens the acne, pimples from the face. The Kadamba extract is rich in beneficial components like Vitamin C, phenolic compound, tannic acid which used in cosmetic. It has anti wrinkles, anti microbial, antioxidant properties to maintain the skin healthier, fresh looking and improve the skin texture, prevent wrinkles.

This face serum is appropriate for all skin types without any adverse effects. It is safe to apply on face for improvement of skin texture if it is combined with appropriate sunscreen and moisturizer. specific ingredients plays important role in skin conditions and shows miraculous benefits. Demand of face serum increasing day by day, it's addition is crucial in skin care groove.

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