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RESEARCH ON: FORMULATION AND EVALUATION OF POLYHERBAL FACE PACK FOR GLOWING SKIN

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1.INTRODUCTION

Everybody wants to get fair and charming skin. Now a day, acne, black head, pimples, dark circle are common among youngsters and person who suffers from it. According to Ayurveda, Skin problems are normally due to impurities in blood. Accumulated toxins in the blood during improper food and lifestyle are causing skin related diseases. Various herbs, medicines are described in Ayurveda for blood purification. Herbs like Manjistha, Lodhra, Chandana, Haridra etc. are good example of blood purifier. The herbal paste which is applied on face to treat acne, pimple, scars, marks and pigments are known as “mukha leap” in Ayurveda. The process of smearing this herbal mix on face is known as “mukha lepana”. This beauty therapy is popular as facial. The smooth powder which is used for facial application is “face pack”. A good herbal face pack must supply necessary nutrients to skin. It should penetrate the subcutaneous tissues in order to deliver the required nutrients. Different types of skin need different types of herbal face packs. Face pack is the smooth powder which is used for facial application. These preparations are applied on the face in the form of liquid or pastes and allowed to dry and set to form film giving tightening, strengthening and cleansing effect to the skin. They are usually left on the skin for ten to twenty

five minutes to allow all the water to evaporate, the resulting film thus contracts and hardens and can easily be removed. Face packs are basically additives delivering some additional benefits. Herbal face packs are helps to reduce wrinkles, pimples, acne and dark circles. Also increase the fairness and smoothness of skin. The face packs which are mentioned in Ayurveda help women to get rid of wrinkles, dark circles, pimples and acne. Herbal face packs increase the fairness and smoothness of skin. We can derive the maximum benefits of herbal face packs by using them according to our skin type. These face packs increase skin glow and are best Ayurveda treatment to increase fairness (1). Face packs are one of the oldest and beautiful methods of cleansing skin. There are various kinds of face packs described in Ayurveda which have nourishing, healing, cleaning, astringent and antiseptic properties. To promote the herbal face pack having enough potential phytoconstituents that give efficient glowing effect on skin. Face packs are used to moisturise, cleanse, tone and rejuvenate your skin. Also face masks are designed for each skin and age type. Another reason of applying a face mask is to help relax. And what better way to pamper and treat your skin to goodness than applying a rejuvenating face pack.(2) Face masks (or other face coverings that cover your mouth and nose) are one of the most effective measures that help reduce spreading of the virus. The face covering helps to avoid spreading of the virus by stopping the respiratory droplets which contain viral particles.Antimicrobial activity can define as a collective term for all active principles [agent] that inhibit growth of bacteria prevent the microbial colonies and may destroy microorganisms. Since the ancient era, people are aware of the use of plants for the essential needs of a healthy and beautiful skin. Skin problems are normally due to impurities in blood. Thus may cause skin disease by improper food. The beauty of skin basically depends on individual health, diet, climatic condition and maintains. It causes wrinkles, sunburns, and freckle. Turmeric, the herbal paste which is applied on face to treat acne, pimple scars, marks and pigments are known as "mukha lepa" in Ayurveda. The process of smearing this herbal mix on face is known as "mukha

lepa". Thus beauty therapy is popular as facial. The smooth powder which is used for facial application.(3)

RATIONALE OF WORK:

To promote the herbal face pack having enough potential phytoconstituents that give efficient glowing effect on skin

AIM & OBJECTIVES

Aim:

To formulate and evaluate Polyherbal face pack.

Objectives:

1. To procure & identify the selected ingredients

2. To carry out pharmacognostic studies & Preliminary screening : Macroscopy study Microscopy study Microchemical tests

3. To prepare & evaluate trial batches of Polyherbal face pack

4. To characterize and evaluate the optimized batch

2.LITERATURE SURVEY

1. MADAN A. ABHISHEK A. ND VERMA et al; A pilot study to evaluate safety and efficacy of the papenglow (herbal face pack) on “oilyskin” application to achieve instant glow on skin in healthy human subject.

2. RANI S.R & HITEMANTH COSMECTICS & HERBAL DRUG TCHNOLOGY et al; Various face packin ayurvedic have nourishing ,healing, cleaning, astringent and antiseptic properties.The herbal face pack the cheaper and have no side effects for getting fair skin naturally.

3. NARESH G. SWETHA P,SHILPA G. FORMULATION & EVALUATION OF HERBAL FACE PACK et al, The main objective to formulate and evaluate a herbal face pack for glowing skin by using natural ingredients.

4. FARHEEN B. MOHAMMAD et al; They has been design and developed the unani facepack for skincare.To evaluate the vaise count the presence of gram negative pathogens such as E.Coli, selmoneela & pseudomonas.

5. INDIAN STANDARD ,FACE PACK SPECIFICATION et al; This standand prescribes the requirements and methods of sampling and est for face pack.the standard oforganisation,burean of indian standards {BIS}.

3. PLAN OF WORK

1. Procurement & identification of selected ingredients

2. Pharmacognostic studies 2.1.Macroscopy study 2.2. Microscopy study 2.3. Microchemical tests

3. Formulation, evaluation & optimization of polyherbal face pack 3.1. Formulation 3.2. Evaluation

4. Physical character & physicochemical evaluation Irritancy edema

5. In-vitro antimicrobial activity 6. Stability study of optimized batch

4. **MATERIALS AND METHODS**

Materials

:- 1. Fenugreek powder

2. Starch powder

3. Aloe powder

4. Coffee powder

5. Turmeric

6. Hibiscus powder

7. Rose powder

8. Red gram

9. Multani soil

1. Methi powder

Synonym –Fenugreek powder

Biological source-(Trigonella foenum-graecum) is an annual plant in the family Fabaceae, with leaves consisting of three small obovate to oblong leaflets. It is cultivated worldwide as a semiarid crop. Its seeds and leaves are

common ingredients in dishes from the Indian subcontinent, and have been used as a culinary ingredient since ancient times.

Chemical constituents-fenugreek seeds include flavonoids, alkaloids, coumarins, vitamins, and saponins; the most prevalent alkaloid is trigonelline and coumarins include cinnamic acid and scopoletin.

Uses-Its use as a food ingredient in small quantities is safe. Research into whether fenugreek reduces biomarkers in people with diabetes and with pre-diabetic conditions is of limited quality (4)

Fig no .1:Fnugreek

2. Starch powder

Synonym- Amylum

Biological source-Starch consist of polysaccharide granules obtained from the grains of maize zea mays L.or of wheat Family-Graminae

Chemical constituent- Amylopectin,Amylose

Starch or amylum is a polymeric carbohydrate consisting of numerous glucose units joined by glycosidic bonds. This polysaccharide is produced by most green plants for energy storage. Worldwide, it is the most common carbohydrate in human diets, and is contained in large amounts in staple foods such as wheat, potatoes, maize (corn), rice, and cassava (manioc).Pure starch is a white, tasteless and odourless powder that is insoluble in cold water or alcohol. It consists of two types of molecules: the linear and helical amylose and the branched amylopectin. Depending on the plant, starch generally contains 20 to 25% amylose and 75 to 80% amylopectin by weight. Glycogen, the energy reserve of animals, is a more highly branched version of amylopectin.

Uses-Starch powder helps to brighten the skin, kills bacteria and germs,open the pores & reduce

Fig no 2.: Starch Powder

3. Aloe powder

Synonym-Aloes

Biological source-Aloe is dried latex of leaves of curacao aloe

Chemical constituent-Anthracene glycoside (11-40%), Isobarboline, Barboloin or Aloin

Aloe Vera is a succulent plant species of the genus Aloe. Having some 500 species, Aloe is widely distributed, and is considered an invasive species in many world regions. An evergreen perennial, it originates from the Arabian Peninsula, but grows wild in tropical, semi-tropical, and arid climates around the world. It is cultivated for commercial products, mainly as a topical treatment used over centuries. The species is attractive for decorative purposes, and succeeds indoors as a potted plant.(4)

Uses-It is used in many consumer products, including beverages, skin lotion, cosmetics, and ointments or in the form of gel for minor burns and sunburns. There is little clinical evidence for the effectiveness or safety of Aloe Vera extract as a cosmetic or topical drug. The name derives from Latin as aloe and Vera ("true")(6)

Fig no 3: Aloe powder

4. Coffee powder

Synonym-Coffee ground

Biological source- Dried ripe seeds of coffee Arabica Linn.

Chemical constituents-Caffeine, tannin, fixed oil, carbohydrates &proteins. Coffee is a brewed drink prepared from roasted coffee beans, the seeds of berries from certain flowering plants in the Coffea genus. From the coffee fruit, the seeds are separated to produce a stable, raw product: unroasted green coffee. The seeds are then roasted, a process which transforms them into a consumable product: roasted coffee, which is ground into fine particles that are typically steeped in hot water before being filtered out, producing a cup of coffee. Coffee is darkly colored, bitter, slightly acidic and has a stimulating effect in humans, primarily due to its caffeine content. It is one of the most popular drinks in the world and can be prepared and presented in a variety of ways (e.g., espresso, French press, cafe latte, or already-brewed canned coffee). It is usually served hot, although chilled or iced coffee is common. Sugar, sugar substitutes, milk or cream are often used to lessen the bitter taste or enhance the flavour. It may be served with coffee cake or another sweet dessert, like doughnuts. A commercial establishment that sells prepared coffee beverages is known as a coffeehouse or coffee shop. The two most commonly grown coffee bean types are C. arabica and C. robusta. Coffee plants are cultivated in over 70 countries, primarily in the equatorial regions of the Americas, Southeast Asia, the Indian subcontinent, and Africa. As of 2018, Brazil was the leading grower of coffee beans, producing 35% of the world total. Coffee is a major export commodity as the leading legal agricultural export for numerous countries. It is one of the most valuable commodities exported by developing countries. Green, unroasted coffee is the most traded agricultural commodity and one of the most

traded commodities overall, second only to petroleum. Despite the sales of coffee reaching billions of dollars, those actually producing the beans are disproportionately living in poverty. Critics also point to the coffee industry's negative impact on the environment and the clearing of land for coffee-growing and water use. The environmental costs and wage disparity of farmers are causing the market for fair trade and organic coffee to expand.

Uses- Coffee powder used as scrubbing, to smoothen the skin (7)

Fig no .4:Coffee powder

5. Turmeric

Synonym-Curcuma longa

Biological source-Turmeric is a flowering plant, Curcuma longa, of the ginger

family, Zingiberaceae.

Chemical constituents- Curcumenoids, curcumin, demethoxycurcumin The rhizomes of which are used in cooking. The plant is a perennial, rhizomatous, herbaceous plant native to the Indian subcontinent and Southeast Asia that requires temperatures between 20 and 30 °C (68 and 86 °F) and a considerable amount of annual rainfall to thrive. Plants are gathered each year for their rhizomes, some for propagation in the following season and some for consumption. The rhizomes are used fresh or boiled in water and dried, after which they are ground into a deep orange-yellow powder commonly used as a coloring and flavoring agent in many Asian cuisines, especially for curries, as well as for dyeing, characteristics imparted by the principal turmeric constituent, curcumin. Turmeric powder has a warm, bitter, black pepper-like flavor and earthy, mustard-like aroma. Curcumin, a bright yellow chemical produced by the turmeric plant, is approved as a food additive by the World Health Organization, European Parliament, and United States Food and Drug Administration. Although long used in Ayurvedic medicine, where it is also known as haridra, there is no high-quality clinical evidence that consuming turmeric or curcumin is effective for treating any disease.(8)

Fig no .5: Turmeric powder

6. Hibiscus powder

Synonym-Rose mallow

Biological source-Hibiscus is a genus of flowering plants in the mallow family, Malvaceae.

Chemical constituents-Citric acid, Hibiscic acid, L-ascorbic acid, beta carotene. The genus is quite large, comprising several hundred species that are native to warm temperate, subtropical and tropical regions throughout the world. Member species are renowned for their large, showy flowers and those species are commonly known simply as "hibiscus", or less widely known as rose mallow. Other names include hardy hibiscus, rose of sharon, and tropical hibiscus. The genus includes both annual and perennial herbaceous plants, as well as woody shrubs and small trees. The generic name is derived from the Greek name ἰβίσκος (ibískos) which Pedanius Dioscorides gave to Althaea officinalis (c. 40–90 AD) Several species are widely cultivated as ornamental plants, notably Hibiscus syriacus and Hibiscus rosa-sinensis. A tea made from hibiscus flowers is known by many names around the world and is served both hot and cold. The beverage is known for its red colour, tart flavour, and vitamin C content.(9)

Use:Photoprotective

Fig no 6: Hibiscus

7. Rose powder

Synonym-Rosettes

Biological source-A rose is a woody perennial flowering plant of the genus Rosa, in the family Rosaceae, or the flower it bears.

Chemical constituents- The petal of Rosa rugosa, Anthrocyanin

There are over three hundred species and tens of thousands of cultivars.

They form a group of plants that can be erect shrubs, climbing, or trailing, with stems that are often armed with sharp prickles. Their flowers vary in size and shape and are usually large and showy, in colours ranging from white through yellows and reds. Most species are native to Asia, with smaller numbers native to Europe, North America, and north-western Africa Species, cultivars and hybrids are all widely grown for their beauty and often are fragrant. Roses have acquired cultural significance in many societies. Rose plants range in size from compact, miniature roses, to climbers that can reach seven meters in height. Different species hybridize easily, and this has been used in the development of the wide range of garden roses (10).

Fig.no.7:Rose

8. Red Gram

Synonym-Pigeon pea

Biological source-The pigeon pea (Cajanus cajan) is a perennial legume from the family Fabaceae native to the Old World.

Chemical constituent-Carbohydrate, protein, pigeon The pigeon pea is widely cultivated in tropical and semitropical regions around the world, being commonly consumed in South Asia, South East Asia, Africa, and Latin America.The scientific name for the genus Cajanus and the species cajan derive from the Malay word katjang meaning legume in reference to the bean of the plant.The scientific name for the genus Cajanus and the species cajan derive from the Malay word katjang meaning legume in reference to the bean of the plant.(11)

Use-Anti-ageing

Fig no.8:Red gram

9. Multani mitti

Synonym-Bentonite

Fuller's earth is any clay material that has the capability to decolorize oil or other liquids without the use of harsh chemical treatment. Fuller's earth typically consists of palygorskite (attapulgite) or bentonite.

Chemical constituents- Montomorillonite, Kaolinite & attapulgite

Use-Modern uses of fuller's earth include as absorbents for oil, grease, and animal waste (cat litter) and as a carrier for pesticides and fertilizers (12).

Minor uses include filtering, clarifying, and decolorizing; active and inactive ingredient in beauty products; and as a filter in paint, plaster, adhesives, and pharmaceuticals. It also has a number of uses in the film industry and on stage

Fig no.9: Multani mitti

Method

• The polyherbal face pack was formulated using simple mixing process

• Herbal face pack was formulated by adding required amount of herbal ingredient Methi powder, Multani soil, starch powder, aloe powder, coffee powder, turmeric,

• Hibiscus powder, Rose powder, Red gram

• This ingredients were procured from local market then passed through sieve mesh no 120 mixed geometrically & packed in air tight container for further evaluation

5. EXPERMITAL WORK

Table 7: Ingredients selected for herbal facepack

Ingredients	**Partused**	**Category**
Fenugreek Powder	Seed	pigmentation
Starch Powder	-	Bleaching agent and antiageing
Aloe Powder.	leaves	moisturizer
Coffee Powder	Seed	smoothning
Turmeric Powder	rhizome	Antiageing Whitening
Hibiscus Powder	petals	photoprotective
Rose Powder	petals	cooling flavour
Red gram Powder	seed	skin whitening
Red gram Powder	seed	skin whitening

Multani soil Powder		Remove black heads & whiteheads

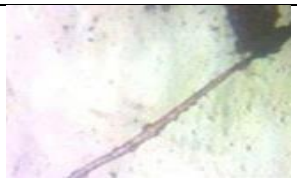
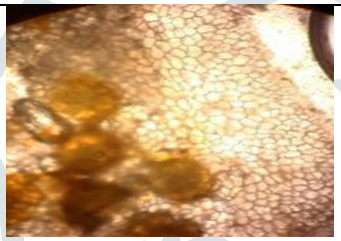
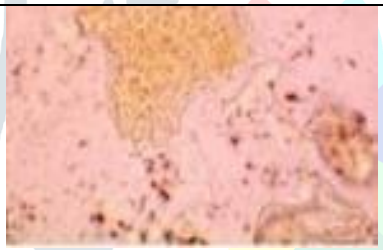
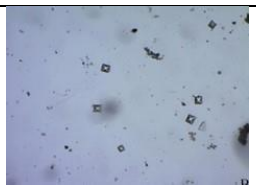
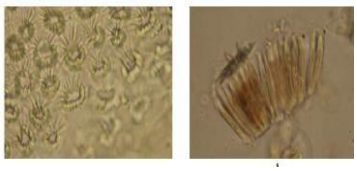
Rosepowder		pollen grains,phloem fibers,calcium oxalate crystals,oil globules,fibers
Hibiscuspowder		calcium crystals,parenchymatous cells, pollen grains
Redgram		aleuronegrain

Table8:Powder analysis of ingredients selected for formulation

MultaniSoil		calciumoxalatecrystals
Methi powder		aleuronegrain,fibersCell,parenchymatous Cell

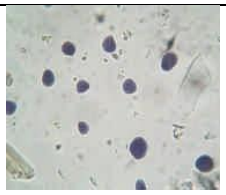
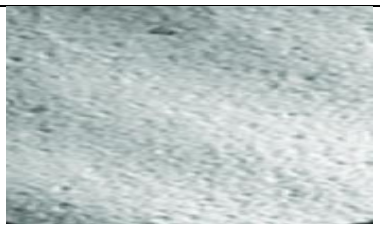
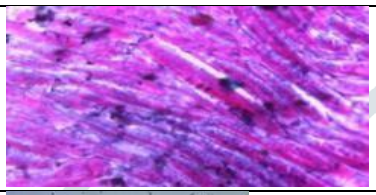
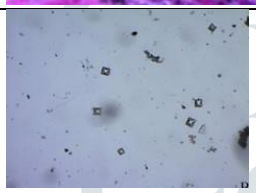
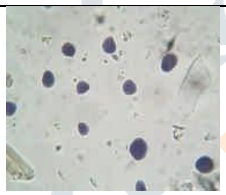
Starchpowder		starchgrains,lignifiedCells Multani
Aloepowder		starch,tannins,calciumoxalate,lignin, mucilage
Coffee powder		starchgranules,calciumoxalte,oleoresins fibers
MultaniSoil		calciumoxalatecrystals
Starchpowder		starchgrains,lignifiedCells Multani
Aloepowder		starch,tannins,calciumoxalate,lignin, mucilage

Table9:Formulation

Fourformulationpreparedlabeledasformulation-F1,F2,F3,F4ofpolyherbal facepack. In 4 formulation we used same ingredients only differ in quantity

Ingredients	F1(g)	F2(g)	F3(g)	F4(g)	Category	Images
Fenugreek powder	5	5	5	5	pigmentation	

Starch powder	5	5	5	5	bleachingagent	
Aloepowder	5	4	5	5	mosituriser	
Coffee powder	1.5	1.5	1.5	2.5	smoothning	
Turmeric powder	6	7	6	5	anti-ageing,whitening	
Hibiscus powder	10	7.5	2.5	5	photoprotective	
Rosepowder	2.5	5	7.5	15	cooling,flavouring	
Red gram powder	10	2.5	7.5	5	skin whitening	

Multani soil powder	05	12.5	10	2.5	remove blackheads &whiteheads	
Total	50	50	50	50		

6.EVALUATION TEST

1.DIL HCL TEST –Calciumoxalate crystals

2.IODINE TEST-Starch grains detection

3.RUTHENIUM RED TEST-Mucilage detection

4.PH –To detect acidity and basicity to maintain skin ph

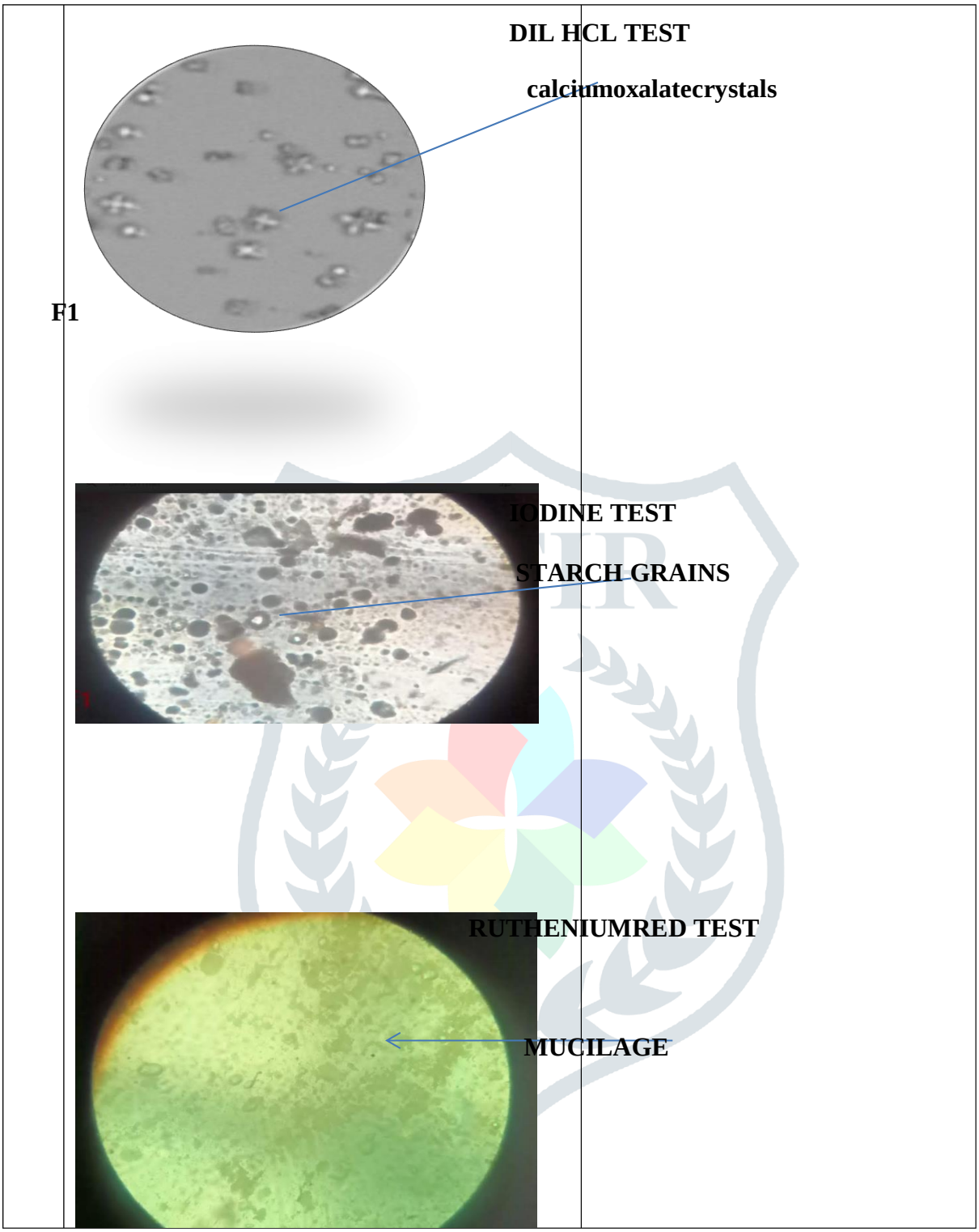


Fig.10: Phytochemical screening of F4 formulation

PH EVOLUTION TEST:

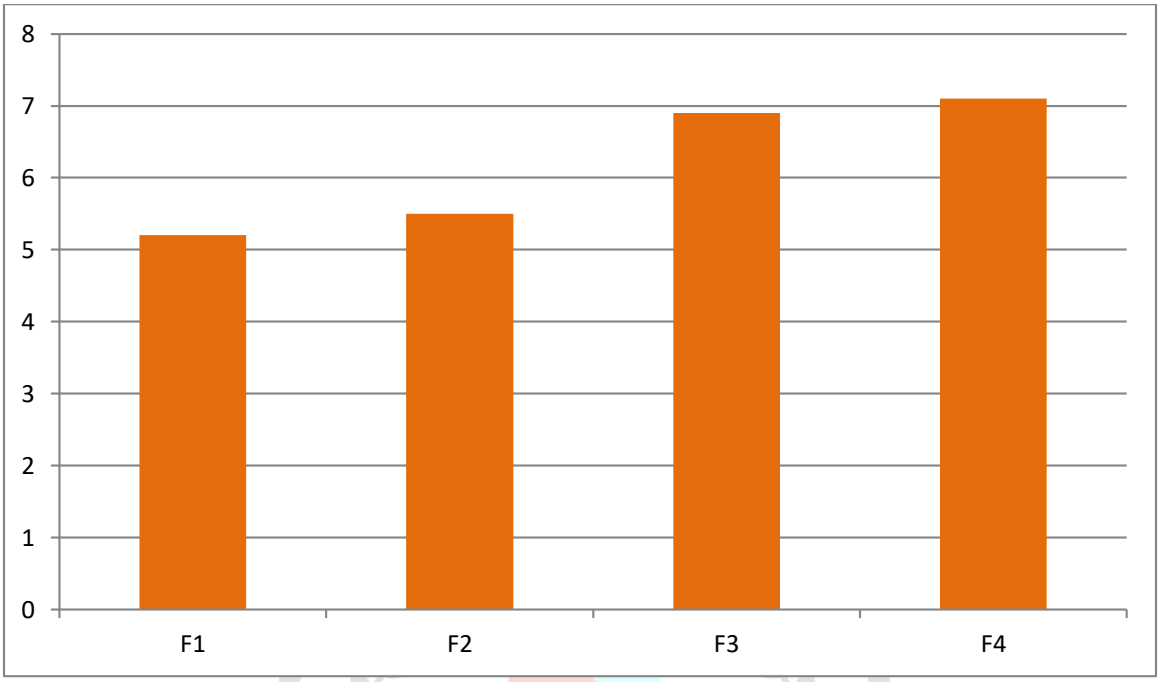


Fig11: PH of Formulation F1to F4

PH Table

PH of Formulation	Range
F1	5.2
F2	5.5
F3	6.9
F4	7.1

Preparation of polyherbal face pack

The powdered ingredients were sieved using #120 mesh, weighed accurately and mixed geometrically for uniform mixing. This was then stored in an air tight container for evaluation.Take prepared face pack powder in a bowl as per the requirement and adds plain water to mix. Mix well and apply over the facial skin. Cover the acne and blemishes spots too. Kept as it is for complete drying for 20 to 25 min and then wash with cold water

7. RESULTS AND DISCUSSION

Organoleptic Properties

Face pack was prepared and evaluated for organoleptic parameters shown. The flow property parameter showed free flowing properties. The colour of formulation was slight yellow. The odor of prepared formulations was good acceptable which is desirable as cosmetic formulations. Texture and Smoothness was good acceptable which is desirable as cosmetic formulations.

Table10:Organolepticpropertiesofformulation(F1,F2,F3,F4)

Sr.No.	Parameters	F1	F2	F3	F4
1	Appearance	powder (Free flowing	powder (Freeflowing)	powder (Freeflowing)	powder (Freeflowing)
2	Colour	Very slightbrown	creamish brown	slight creamish	Slight brown
3	Odour	slight	slight	Slight	slight
4	Texture	fine	fine	Fine	fine
5	Smoothness	smooth	smooth	Smooth	smooth

Table12:Irritancy Test of formulation (F1,F2,F3,F4)

Sr. No.	Evalations	Observations				Irritancy
		F1	F2	F3	F4	
1	Irritant	+	+	+	NIL	No irritation
2	Erythema	NIL	NIL	NIL	NIL	No irritation
3	Edema	NIL	NIL	NIL	NIL	No irritation

Stability studies

Stability testing of prepared formulation was conducted for formulation F4 by storing at different temperature conditions for the period of one month. The packed glass vials of formulation stored at Room temperature were evaluated for physical parameters like Color, Odor, pH, Consistency and feel

Table14:ParametersofStabilitystudiesofFormulationF4

Sr. No.	Parameters	Observations(FormulationsF4)
		Room temperature
1	Colour	Nochange
2	Odour	Nochange
3	pH	7.1
4	Texrure	Fine
5	Smoothness	Smooth

Fig no.12: Irritancy test indication

DISCUSSION

The results of evaluation are displayed in Table 10, 11, 12, 13a, 13b, 13c, 13d for organoleptic and physicochemical and general powder evaluation. The study of appearance, color, odour, texture, smoothness, ash values, pH and loss on drying of was performed for formulation (F1, F2, F3, and F4). The appearance for all formulation was free flowing, odour was slight, and texture was fine and smooth. The loss on drying value for F1 was found to be 0.33%, for F2 was found to be 0.29%, for F3 was found to be 0.31%, and for F4 was found to be 0.34%. The formulation (F1, F2, F3, and F4) was evaluated for particle size, angle of repose, bulk density and tapped density before being formulated. Values of particle size, angle of repose, bulk density and tapped density obtained for F1, F2, F3, F4 (25- 34mm), (32-36), (0.48 to 0.56 g/cc) and (0.63 to 0.77g/cc) respectively.ies. The powder had passable flow property which is suitable for a facepack. And it's easily washable with water. So we can conclude that F4 formulation is good.

8.CONCLUSION

Natural remedies are more acceptable in the belief that they are safer with fewer side effects than the synthetic ones. Herbal formulations have growing demand in the world market. It is a very good attempt to establish the herbal face pack containing different powder of plants. Thus in the present work, we found good properties for the face packs and further optimization studies are required on this study to find the useful benefits of face packs on human formulation which was prepared lowering nthe concentration of turmeric .i.e formulation F4showed no redness edema inflammation and irritation studies. This formulation is safe to use for skin.use as cosmetic product The result of irritancy test were shown in tabale . The formulation F1 ,F2, F3, showed mild irritation because of presence of turmeric powder . The Formulation F4 shows better zone of inhibition as compare to F1, F2, F3, formulation . So we can conclude that F4 formulation is good.

Fig no.13: FACE PACK FORMULATION

9.FUTURE SCOPE:

The future scope of polyherbal facepacks is quite promising, as there is a growing demand for natural and organic skincare products. Polyherbal facepacks are formulations that combine multiple herbal ingredients known for their beneficial effects on the skin. Here are some aspects that contribute to the future scope of polyherbal facepacks: Increasing preference for natural products: Consumers are becoming more conscious of the ingredients they put on their skin and are leaning towards natural alternatives. Polyherbal facepacks, which typically contain a combination of plant-based ingredients, align with this preference for natural skincare. Customization and personalization: As technology advances, the ability to customize and personalize skincare products is becoming more accessible.Polyherbal facepacks can be tailored to address specific skin concerns, such as acne, aging, hyperpigmentation, or dryness. This customization aspect allows individuals to choose formulations that cater to their unique needs, making polyherbal facepacks a desirable option. Holistic skincare approach: Polyherbal facepacks often incorporate a variety of herbs and botanical extracts that offer multiple benefits to the skin. For example, ingredients like turmeric, neem, aloe vera, rose, and sandalwood are known for their antimicrobial, anti-inflammatory, and antioxidant properties. By combining these ingredients, polyherbal facepacks offer a holistic approach to skincare, targeting various skin issues simultaneously.Wellness and self-care trends: The importance of self-care and wellness has gained significant traction in recent years. Skincare routines, including the use of facepacks, are now viewed as a form of self-care. Polyherbal facepacks can provide a spa-like experience at home, allowing individuals to indulge in a relaxing skincare routine and take a break from their daily stresses. Integration of traditional knowledge and modern science: Polyherbal facepacks draw on traditional herbal knowledge, which has been passed down through generations, along with modern scientific research. This combination ensures that these formulations are backed by both historical use and scientific evidence, further enhancing their credibility and appeal.Sustainability and eco-consciousness: The environmental impact of personal care products has become a concern for many consumers. Polyherbal facepacks have the potential to align with sustainable practices by utilizing natural ingredients, reducing reliance on synthetic chemicals, and promoting environmentally friendly packaging options.It's worth noting that the future scope of polyherbal facepacks will also depend on factors like consumer acceptance, research advancements, regulatory requirements, and market demand. However, given the current trends and consumer preferences, polyherbal facepacks are likely to continue gaining popularity as a natural and effective skincare option in the future.

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