



“FORMULATION AND EVALUATION OF POLYHERBAL FACE PACK FOR HEALTHY SKIN”

Renuka Sahu¹, Nisha Dewangan¹

Rungta Institute of Pharmaceutical Sciences and Research, Kohka, Bhilai¹ 490024 CG. India

ABSTRACT

Various skin problems such as wrinkles, pimples, acne, and dark circles can all be reduced with the use of herbal face packs. Additionally, they are helpful in improving the fairness and smoothness of the skin. The face packs from natural origin do contain some important ingredients such as vitamins, which are beneficial for skin's health. They act on skin by increasing blood circulation within the veins of the face. The objective of this work is to formulate and evaluate a polyherbal face pack for cosmetic purpose containing herbal ingredients such as, hibiscus, sandalwood, multani mitti, orange peel powder, turmeric and neem. All the ingredients were procured from the local market and were dried, powdered, and formulation was prepared and evaluated.

Polyherbal formulation has been used all around the earth due to its medicinal and therapeutic application. It has also recognized as polyherbal therapy or herb-herb combination. The active Phytochemical constituents of individual plants are inadequate to attain the desirable therapeutic effects.

Keyword :- Poly Herbal face pack, Multani mitti powder, Sandalwood powder, Rose petals powder

INTRODUCTION-

Cosmetics are defined as products that are used to cleanse, adorn, or enhance one's appearance. Encourage or switch up your appearance. Herbs have been used to clean, beautify, and treat them since ancient times. "Mukhalepa," or herbal pastes, are a popular in India. They were used as facial therapy in Ayurveda. [1,2]

This herbal paste smeared on the face is used to treat acne, pimples, rash, stains, and pigments. A face pack is a smooth powder that is applied to the face. Herbal face packs are less expensive and have no side effects when it comes to achieving naturally fair skin. The current study lo. Cosmetics are items that are applied to the skin to cleanse, beautify, enhance attractiveness, or change the appearance.[3,4]

Different herbs have been utilised for managing, cleansing, and adorning them since ancient times. The largest area of the body that reveals one's health is the skin on the face. The herbal paste known as "mukha lepa" is utilised as a face therapeutic in ayurveda. This herbal paste is used to the face to cure pigmentation, scars, markings, and acne.[5,6]

The smooth powder that is applied to the face is called a face pack. These treatments are applied to the face as pastes or liquids, let to dry, and then set to produce a film that provides tightness. skin-strengthening and purifying effects. To enable all the water to drain, they are often kept on the skin for fifteen to thirty minutes.[7] After this time, the resultant film compresses, hardens, and may be readily removed. The tightness and warming sensation brought on by application the colloidal and adsorption clays utilised in these preparations remove the grease and debris from the skin of the face, producing the invigorating sensation of a renewed face. [8,9]

Skin impurities and accumulated dirt are also eliminated when the applied face pack is ultimately removed. Herbal face masks improve skin's radiance and suppleness. By applying herbal face packs in accordance with the needs of our skin, we may maximise their advantages.[10] These face packs improve skin radiance and are the greatest ayurvedic remedy for boosting fairness. At how to make a herbal face pack for glowing skin at home with natural ingredients like Multani mitti, turmeric, aloe vera, sandalwood, orange peel powder and gramme flour. Herbal face packs are required for various skin types. Smooth, healthy, and silky skin can be achieved the homemade natural face packs and masks. [11]

The herbal paste used to treat acne, pimples, wounds, stains, and pigments is known as "mukhalepa" in Ayurveda. Mukhalepana is the application of a herbal mixture to the face. This treatment is now known as facial therapy. [12] A face pack is a smooth powder that is applied to the face.[13]

]

FACE PACK

This herbal pack/paste smeared on face to treat acne, pimple, scars, marks, and pigments the main advantage of using herbal cosmetic is that it is. Pure and does not have any side effects on the human body.^[14] A poly herbal face pack is a skincare product formulated using a combination of multiple herbal ingredients. These ingredients are typically derived from plants and natural sources, chosen for their various beneficial properties for the skin. Poly herbal face packs are designed to provide multiple skincare benefits such as cleansing, exfoliating, nourishing, and rejuvenating the skin.^[15,16] They are often used to improve skin texture, tone, and overall complexion, while also addressing specific skin concerns like acne, dryness, or aging signs.^[17] The combination of different herbs in such face packs is believed to enhance their effectiveness by synergistically targeting multiple aspects of skin health and beauty.^[18] 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. Natural facial packs are simple to use. A good herbal face pack must supply necessary nutrients to the skin, available in the form of free-flowing powder applied facially for the external purpose.^[19,20]

SKIN

The skin, also known as the cutaneous membrane, is the outermost layer that covers and protects the body's surface from the external environment. It is the most complex and largest organ in terms of both surface area and weight, and it joins with the mucosal lining of the respiratory, digestive, and urogenital tracts to form a capsule that separates internal body structure from the external environment. It plays an important role in allocating numerous useful physiological functions. Adult skin spans around 2 sq. meters and weight 4.5-5 kg, accounting for over 16% of body weight. The skin's texture is typically smooth, but can become rough owing to environmental and age-related variables. The skin's pH ranges from 4 to 5.6 The sebum aids in sweat secretion, and fatty acids alter the pH of the skin's surface. The acidic pH range also prevent or limits the growth of infections and other organisms

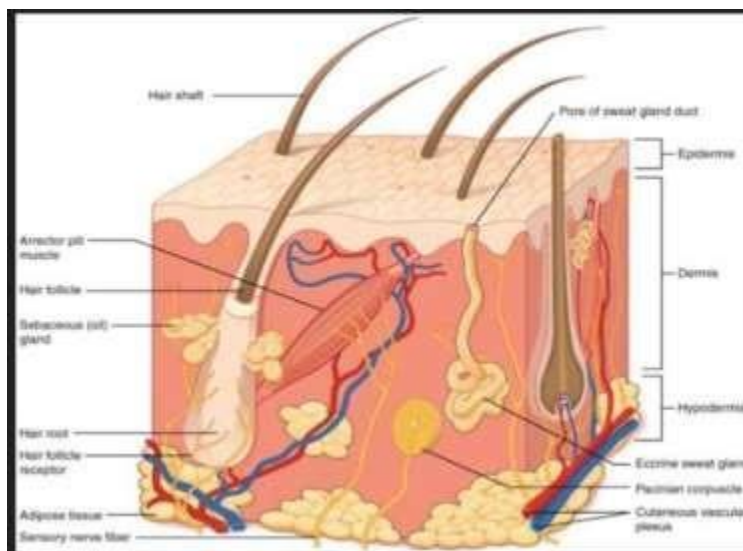


Fig –Structure of skin

1. PHYTOCONSTITENTS MULTANI MITTI, NEEM & LEMON ZEST -

- Source of Multani Mitti –



Biological Name – Fuller’s earth

- Source of Neem –



Family Name- Mahogany

Biological Name – Azadirachta Indica

- **Source of Lemon Zest**



Biological Name – Citrus Lemon

1.2 PROPERTIES OF HERBS

Multani Mitti –

It may show anti-acne property.

It may have anti-inflammatory property. It may demonstrate astringent property. It may have absorbent property.

It may show skin brightening property.

Neem –

Neem powder have been demonstrated to exhibit antiseptic, anti-inflammatory, anti-bacterial, antifungal, anti-aging, anti-viral, anti-oxidant properties.

Lemon Zest-

Reduce the appearance of fine lines and wrinkles.

May fight acne.

Helps improve hyperpigmentation.

Fights off free radicals that damage the skin.

Boosts natural radiance with Vitamin-C.

2. SELECTION OF HERBAL DRUGS & CRUDE DRUG PROFILE-

S.No.	Name of Ingredients	Category
1	Multani mitti	Softer skin
2	Sandalwood	Skin whitening, glowing skin,ten removal
3	Lemon zest	Reduce acne, scars and pimple
4	Rose petal	Help maintain skin tone
5	Pomegranate	Treat skin infection
6	Turmeric	Anti-septic
7	Neem	Anti-biotic, remove the pimple
8	Beetroot	Reduce wrinkles and dark spots
9	Aloe vera	Anti-inflammatory
10	Rose water	Detoxifying skin
11	Honey	Moisturizer
12	Propyl paraben sodium salt	Preservatives



Multani mitti



Sandalwood



Neem



Beetroot



Rose petal



Pomegranate



Lemon zest



Turmeric



Final Product

MATERIAL & METHODOLOGY

Sandalwood Powder

Sandalwood is time-tested in Ayurveda for its pitta-reducing quality, cooling the skin in cases of tanning and sunburn and soothing the skin with its anti-inflammatory properties — especially in cases of acne, rashes, and insect bites.

Beetroot Powder

The list of potential benefits offered by beetroot powder also includes: Fighting inflammation. Beets and beetroot powder contain betalains, an antioxidant and natural pigment with anti-inflammatory properties. Inflammation is linked to diseases such as heart disease .

Rose petal Powder

Regular use can help improve skin elasticity, promote a youthful appearance, and reduce the signs of aging. Toning and Brightening: Rose petal powder acts as a gentle astringent, toning the skin and minimizing the appearance of pores. It also aids in brightening the complexion, providing a natural radiance to the skin.

Pomegranate Powder

Pomegranate Powder for Glowing Skin It aids in skin brightening and its anti-aging properties reverse the aging of your skin. Your skin remains bright and youthful for a long period.

Pomegranate powder fades acne scars and blemishes from your face to give you a spotless complexion.

Turmeric

Turmeric contains antioxidants and anti-inflammatory components. These characteristics may provide glow and luster to the skin. Turmeric may also revive your skin by bringing out its natural glow. You may want to try a turmeric face mask at home to see if the spice has any positive effects on your skin.

Aloe vera –

Aloe stimulates fibroblast which produces the collagen and elastin fibers making the skin more elastic and less wrinkled. It also has cohesive effects on the superficial flaking epidermal cells by sticking them together, which softens the skin.

Rose water --

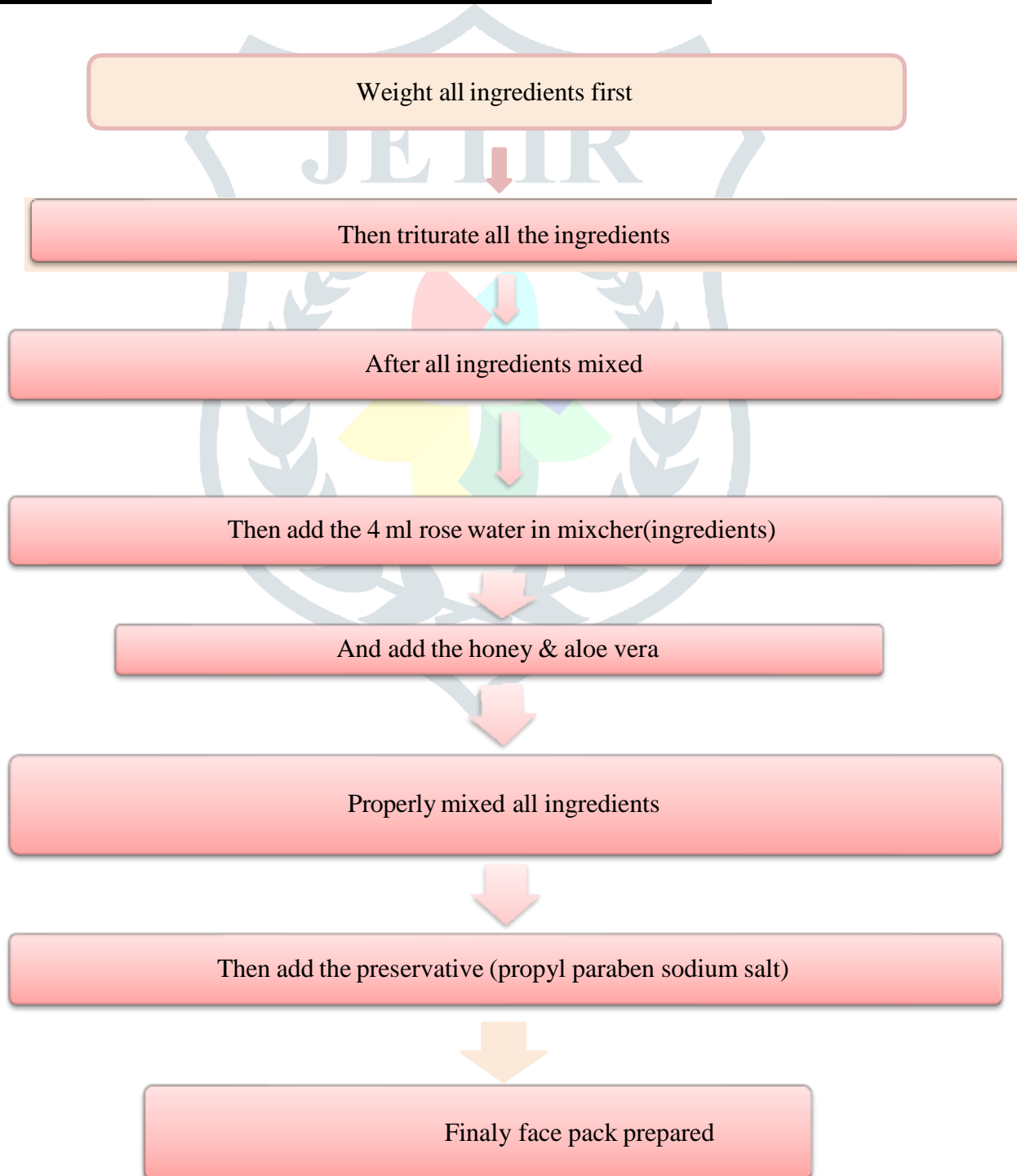
Rose water is an antibacterial. This means that it fights off bacteria that could lead to infections. Using rose water for face and body care can prevent wounds such as burns and cuts becoming infected and it can also be used to reduce the appearance of scars when used in high concentrations.

Honey --

Honey draws moisture from the air and binds it to the skin. This added hydration gives the skin a fresh, youthful glow and suppleness, making fine lines and wrinkles less noticeable. Honey also contains natural antioxidants that fight free radicals, one of the leading causes of premature aging.

Propyl paraben sodium salt --

Propyl paraben is the benzoate ester that is the propyl ester of 4-hydroxybenzoic acid. Preservative typically found in many water-based cosmetics, such as creams, lotions, shampoos and bath products. Also used as a food additive. It has a role as an antifungal agent and an antimicrobial agent.

3. PREPARATION OF HERBS LOADED FORMULATION –

EVALUATION OF POLY HERBAL FACE PACK

Organoleptic evaluation -

Its nature, colour, odour, feel, and consistency are organoleptic factors that were personally assessed for their Physical characteristics.^[21]

Physical evaluation

The microscope approach was used to measure the particle size. The Angle of Repose via funnel method was used to assess the flow characteristics of the dry powder in mixed form. method, tap density by tapping method, and bulk density. ^[22]

]

Physicochemical evaluation

Ash content was measured using an incinerator, pH was determined using a pH metre, and drying loss was also measured.^[23]

Irritancy test

: Mark a 1-square-centimeter area on the left dorsal surface. A specific amount of prepared face packs were applied to the designated region, and the application time was recorded. Irritancy, Erythema and edema were monitored for any presence at regular intervals for up to 24 hours and reported.^[24,25]

Stability studies

The developed formulation underwent a one-month period of storage at various temperatures as part of a stability test. The sealed glass vials of the formulations were assessed for physical characteristics such as colour, odour, pH, consistency, and feel while being stored at various temperatures, including room temperature, 35° and 40°C .^[26,27]

Organoleptic Evaluation

Face pack was constructed and assessed for Organoleptic indicators revealed Free-flowing characteristics could be seen in the flow property parameter. The shade formulation had a faint golden tint. As cosmetic compositions, the aroma of the finished products was well-tolerated and appealing.^[28]

Irritancy Evaluation

Results of the irritancy test were displayed. During irritancy testing, the formulation did not cause any irritation, redness, edema, or inflammation. Such a formulation is suitable for skin usage.^[29]

Physicochemical evaluation and physical evaluation

The formulations had particles that ranged in size from 22.5 to 2.25 m. The formulation's pH was quite close to neutral. Ash content and moisture content were within acceptable ranges.^[30]

Irritancy Evaluation

The stability analyses revealed that a formulation held at 40°C experienced a modest change in pH, but that formulations stored at ambient temperature and at 35°C did not experience any alterations. There At the other stability criteria listed that were displayed in Table 4, there was no change in colour or smell.^[31,32]

RESULT AND DISCUSSION

Organoleptic Evaluation

Face pack was constructed and assessed for Organoleptic indicators revealed Free-flowing characteristics could be seen in the flow property parameter. The shade formulation had a faint golden tint. As cosmetic compositions, the aroma of the finished products was well-tolerated and appealing. Smoothness and Texture were acceptable and desirable for cosmetic compositions.

Table1: Organoleptic Properties

S. No.	Parameters	Observation
1	Appearance	Cream
2	Colour	Brown
3	Odour	Slight
4	Texture	Fine

5	Smoothness	Smooth
---	------------	--------

Irritancy evaluation

Results of the irritancy test were displayed. During irritancy testing, the formulation did not cause any irritation, redness, edema, or inflammation. Such a formulation is suitable for skin usage.

Table 2 : Irritancy test

S.N.	Parameters	Observation
1	Irritant	No irritation
2	Erythema	No irritation
3	Edema	No irritation

Physicochemical evaluation and Physical evaluation

The formulations had particles that ranged in size from 22.5 to 2.25 m. The formulation's pH was quite close to neutral. Ash content and moisture content were within acceptable ranges.

Table 3: Physicochemical and Physical evaluation

S.N.	Parameters	Observation
1	Particle size	22.5 ± 4.10
2	Ash value	95 ± 0.412
3	pH	5.04
4	Loss on drying	5.10

Determination of pH :-

8 to 9g of face pack was precisely weighted in a 250ml beaker. 100ml of water was added to distribute the face pack. The pH of the solution is determined with a pH meter. The pH of face pack is 5.04



Digital pH meter

Dissolution test of Face pack :-

To determine the pH of cream we dissolved 2gm of cream in 50ml of distilled water. Stirred it for 3 –5 minutes and calculated the pH of cream.



Stability studies

The stability analyses revealed that a formulation held at 40°C experienced a modest change in pH, but that formulations stored at ambient temperature and at 35°C did not experience any alterations. There At the other stability criteria listed that were displayed in Table 4, there was no change in colour or smell.

Table 4 : Parameter of stability studies

S.N.	Parameters	Room Temperature
1	Colour	No change
2	Odour	No change
3	pH	5.04
4	Texture	Fine
5	Smoothness	Smooth

Test for skin irritation :-

After using the herbal face pack to the specified region, mark a square centimetre on the dorsal surface of the left head. The time was recorded for a whole day and erythema and edema were seen and reported on a regular basis.

Applying the face pack



After removing the face pack



Table 5

S.N	Parameter	Observation
1	Irritant	No irritation
2	Erythema	No irritation
3	Edema	No irritation
4	Smoothness	Smooth

DISCUSSION -

Herbal face pack was evaluated for morphological parameters showed in the colour of formulation was pale yellow. The odour of prepared formulations was pleasant and good acceptable which is desirable to cosmetic formulations. Texture and smoothness was acceptable as per requirement of cosmetic formulations. The results of evaluation are preformulation studies, characterization of formulation was done for its organoleptic and physico-chemical. General powder, microscopical characters and chemical evaluation. The study of nature, color, odor taste, texture, ash values, moisture content and pH of dried powders of combined form under investigation provided the important feature of organoleptic and physico-chemical evaluation.

The detailed physicochemical analysis has confirmed that the face pack maintains a suitable pH range, adequate moisture content, all of which contribute to its gentle ye.

CONCLUSION

The present study was attempted to make poly herbal face pack using suitable base to form a cream. The prepared face pack was compared with various parameters like colour, odour, texture, smoothness, pH-5.04, Ash value- 95 ± 0.412 , particle size -22.5 ± 4.10 , irritability, viscosity, washability found to be satisfied with all required characterization. In this all natural ingredients were used, so that they had no side effects or fewer side effects. The prepared poly herbal face pack was found to be satisfied for the application on the skin to make it healthy and glowing.

The herbal formulations always have attracted considerable attention world wide as due to their belief for safer efficacy with fewer side effects than the harmful synthetic chemicals. The bioactive ingredients from plants include antioxidants, vitamins, essential oils, tannins, alkaloids, dyes, carbohydrates, and terpenoids. Which are used as cosmetics for care of skin, body and its other parts

REFERENCE

1. Avinash O. Maske, Manisha Pandhare, Ashwin D. Wanjani International Journal of Advances in pHarmaceutics 2019.
2. Madan K, Yadav R. Behavioural intention to adopt mobile wallet: a developing country perspective. Journal of Indian Business Research. 2016 Aug 15;8(3):227-44.
3. Sachin Bhagwat Aglawe, Amol Uttamarao Gayke, Suraj Anil MIndhe International Journal of pHarmacy and biological Sceinces 2018.
4. Rieger MM, editor. Harry's Cosmeticology. Chemical Publishing; 2009.
5. Somwanshi SB, Kudale KS, Dolas RT, Kotade KB. Formulation and evaluation of cosmetic herbal face pack for glowing skin. Int. J. Red. Ayurveda pHarm. 2017;8(3):199- 203.
6. Singh M, Sharma S, Khokra SL, Sahu RK, Jangde R. Preparation and evaluation of herbal cosmetic cream. pHarmacologyonline. 2011;2:1258-64.
7. Naresh G, Swetha P, Shilpa G. Formulation and Evaluation of Face Pack Containing Oats and Other Natural Ingredients. Int J Chem pHarm Sci. 2013;1(1):28-34.
8. Singh M, Sharma S, Khokra SL, Sahu RK, Jangde R. Preparation and evaluation of herbal cosmetic cream. pHarmacologyonline. 2011;2:1258-64.

9. Shoba rani R; Hiremanth. Text book of Industrial pHarmacy, Drug delivery systems & Cosmetics & Herbal drug technology: Universities press (India) Ltd; 2nd Edition.
10. Okereke JN, Udebuani AC, Ezeji EU, Obasi KO, Nnoli MC. Possible Health Implications Associated with Cosmetics: A Review, *Sci J Public Health* 2015; 3(5-1): 58-63.
11. Mary P. Lupo. Antioxidants and Vitamins in Cosmetics. *Clin Dermatol* 2001; 19: 467– 473.
12. Millikan, Larry E. Cosmetology, Cosmetics, Cosmaceuticals: Definitions and Regulations. *Clin Dermatol* 2001; 19 (4); 371-374.
13. Rieger MM. Harry's Cosmeticology. In: Chapter 23, Face, Body & Hair Masks & Scrubs. 8th ed. Vol New York: Chemical Publishing Co., Inc.; 2009. p. 471-483.
14. Rani, S. R. and Hiremanth, Text book of Industrial pHarmacy, Drug delivery systems & Cosmetics & Herbal drug technology: Universities press (India) Ltd; 2nd Edition, (2002)
15. Hwang JK, Shim JS, Gwon SH, Kwon YY, Oh HI et al. Novel use of Panduratin derivatives or extract of *Kaempferia pandurata* comprising the same. U.S. Patent 0065272A1, 2012 [cited 2016 Aug 05].
16. Kumar. K., Sasikanth, K., Sabareesh, M. and Dorababu, N. (2011). Formulation and Evaluation of Diacerein Cream. *Asian J pHarm Clin Res* 4(2): 9398.
17. Nemade CT, Baste N. Formulation and evaluation of a herbal facial scrub. *World J pHarm Res* 2014; 3(3): 4367-4371.
18. Rajeswari R, Umadevi M, Rahale CS, Pushpa R, Selvavenkadesh S, Sampath Kumar KP, Bhowmik D. Aloe vera: The Miracle Plant Its Medicinal and Traditional Uses.
19. Rajeswari R, Umadevi M, Rahale CS, Pushpa R, Selvavenkadesh S, Sampath Kumar KP, Bhowmik D. Aloe vera: The Miracle Plant Its Medicinal and Traditional Uses.
20. Schmidt JM, Greenspoon JS. Aloe vera dermal wound gel is associated with a delay in wound healing. *Obstet Gynecol*, 1991.
21. Himaja N, Ashok Kumar A, Bhart Kumar B. Preparation and Evaluation of Poly herbal
22. Fruit Face Mask. *J Res pHarm Sci*, 2015.
23. Ashawat MS., Banchhor M., “Herbal Cosmetics, “Trends in Skin care formulation” *pHarmacognosy Rev*, 2009.
24. Protegente et al., 2003, Gorinstein et al., 2004, Anagnostopoulou et al., 2006, guimarães 17. et al., 2009.
25. Biswas K., Chattopadhyay I., Banerjee R. K., Bandyopadhyay U. Biological activities and medicinal properties of Neem (*Azadirachta indica*) *Current Science*, 2002 Hwang JK, Shim JS, Gwon SH, Kwon YY, Oh HI et al. Novel use of Panduratin derivatives or extract of *Kaempferia pandurata* comprising the same. U.S. Patent 0065272A1, 2012.
26. Mieloch M, Witulska M. Evaluation of Skin Colouring Properties of Curcuma Longa Extract. *Int. J pHarm Sci* 2014; 76(4): 374-8.
27. Bhat KV, Balasundaran M, Balagopalan M, Identification of *Santalum album* and *Osyris lanceolata*

through morphological and biochemical characteristics and molecular markers to check adulteration (Final Report of the project KFRI 509/06).

28. Kokate CK, Purohit AP, Gokhale SB. Textbook of Pharmacognosy 49th ed. 2014.

29. Ashawat MS., Banchhor M., “Herbal Cosmetics, “Trends in skin care formulation” Pharmacognosy Rev., 2009; 3(5): 82-89.

30. Kotta Kranthi Kumar; K Sasikanth; M Sabareesh; N Dorababu. Formulation and Evaluation of Diacerein Cream; Asian J Pharm Clin Res, 2011; 4(2): 9398.

31. Farheen B, Mohammad I. Design and Development of Unani Face Pack for Skincare. European J Pharm Med Res 2016; 3(12): 627-632.

32. Buhse L, Kolinski R, Westenberger B, Wokovish A, Spencer J, Chen CW et al. Topical Drug Classification. Int J Pharm 2005; 295: 101-112.

