




---



---

**PHARMACEUTICAL, ANALYTICAL AND CLINICAL STUDY OF  
AYURVEDA BODY POLISHING KIT**

**GUPTA K<sup>\*1</sup>, RAJA RAJESHWARI NM<sup>2</sup>, HUSSAIN G<sup>3</sup>, MAHALAKSHMI MS<sup>4</sup>,  
BASHYAS S<sup>5</sup> AND LAKSHITHA R<sup>6</sup>**

<sup>1,5,6</sup> III Year BAMS, III Year BAMS, IV Year BAMS students, <sup>2</sup> Professor, Department of Samhita Siddhanta and Itihasa, <sup>3</sup> Associate Professor, Department of Rasashastra and Bhaishajya Kalpana, SDM College of Ayurveda and Hospital, Hassan, B M Road, Thanniruhalla, Hassan, Karnataka

<sup>4</sup> Assistant Professor, Department of Samhita & Siddhanta, SDMCA, Udupi

**\*Corresponding Author: Dr. Kavya Gupta: E Mail: [guptakavya57@gmail.com](mailto:guptakavya57@gmail.com)**

Received 24<sup>th</sup> Dec. 2022; Revised 25<sup>th</sup> Jan. 2023; Accepted 8<sup>th</sup> May 2023; Available online 1<sup>st</sup> Feb. 2024

<https://doi.org/10.31032/IJBPAS/2024/13.2.7670>

**ABSTRACT**

**Background:** The cosmetic industry is one of the ever-growing industries having a huge influence on world economy. Skin care is one area of cosmetology aiming at a healthy and glowing skin. Body Polishing Kits are skin care products intended to be applied over the body for getting glowing and polished skin. These contain various harmful chemicals like Nano-particles, Hydroquinone, Fragrance, Parabens, Polyacrylamide, colours, lead and other heavy metals that harm the skin in the long run [1]. Hence, there has been a demand for herbal products which are safe and effective. Ayurveda offers various such skin care applications which can be developed as cosmetic products. With this background, this Pharmaceutical, Analytical and clinical study to see the efficacy of an Ayurveda Body Polishing Kit was taken up.

**Method:** Pharmaceutical preparation of raw drugs - Sita, Lata, Vetasa, Padmaka, Yashtyahva, Aindri, Kamala, Durva, Moola of Yavasa, Kusha, Kasa, Jala and Eraka were powdered then mixed with Cocoa Butter. The same preparation was subjected to Analytical Study. Clinical study was carried out by dispensing it to 20 volunteers and noting the difference in parameters before and after application.

**Results:** The Ayurvedic Body Polishing kit is affective in significantly improving skin texture, by reducing dryness, unevenness of skin tone and roughness of skin, increasing softness, freshness, smoothness and brightness of skin. Physio-chemical analysis such pH, Moisture Content, Water Soluble

Ash, Alcohol soluble ash, Ash value showed the following values with Cocoa Butter 5.07, 70.05, 73.93, 74.09 and 34.72 respectively. Physio chemical analysis such pH, Moisture Content, Water Soluble Ash, Alcohol soluble ash, Ash value showed the following values without Cocoa Butter 5.05, 69.18, 61.12, 61.04 and 37.11 respectively. This can be taken as preliminary standard of the preparation.

**Conclusion:** The above analytical study parameters can be taken as preliminary standards for the formulation. Ayurvedic Body Polishing kit showed a positive effect in improving the texture of the skin.

**Keywords:** Ayurvedic Body Polishing Kit, analytical study, Skin care, Ayurveda

## INTRODUCTION

Cosmetics are a sector that is always in constant demand for new products. Currently this market is filled with chemically loaded cosmetic products that provide instant results but long-term damage [2]. Hence, there is a demand for herbal and natural products which are effective without the harmful effect. One such product that has come up is the Body Polishing kit, it is a kit that chemically polishes and provides glowing skin. There is extensive literature for topical applications in Ayurveda therapeutics in the form of Abhyanga, Udvartana, Snana, Lepa, Pradeha, Pralepa, etc, in order to maintain the glow and beauty of the skin. Abhyanga helps in anti-ageing, overcomes fatigue, reduces Vata related skin problems such as dryness, cracking, roughness, dullness and uneven pigmentation. It improves vision, gives nourishment to the skin as lipid molecules can penetrate through the skin to nourish it. It helps to improve sleep, good skin tone (tone, complexion, elasticity) and help in shaping and toning the body. Udvartana is

the upward massage of powdered drugs that helps to disintegrate Kapha, dissolve the fat by virtue of movement and provides firmness to the body parts. It also clarifies the skin (helps in reducing build-up of dead skin cells, build-up of pollution and dirt, rough patches, acne etc. Snana (bathing) as practiced by everyone helps improve Agni (digestive fire), healthy skin, anti-ageing effects, enhances sexual drive, rejuvenates the skin. It also tackles Kandu (itchiness), Mala (dirt), Srama (fatigue), Svada (sweat), Tandra (Lethargy), Trsna (thirst), Daha (burning sensation), Papma (ill- feeling). These can be easily practiced in today's times to obtain healthy and glowing skin without harmful effects of chemicals. Apart from this the various measures like – Alepa, Pradeha, Lepa, etc. are topical applications which are designed to solve specific health problems due to absorption of active constituents of drugs through romakupa (hair follicles), sweda vahini (sweat glands) and Siramukha (blood capillaries). The present study was planned as combination of

Udvardana and Abhyanga was achieved by mixing Sneha Dravya with raw powdered drugs mentioned specifically as a Nirvapana Yoga [3]. Nirvapana is a therapeutic effect which reduces excessive sweating and thereby brings freshness to the skin [4]. The purpose of the study was to develop a

product which would work as body polishing kit and assess its efficacy on healthy subjects.

## MATERIALS AND METHODS

### Pharmaceutical Study

Requirements for study procedure were collected from various Raw drug vendors.

Table 1: Place of collection of Ingredients

Place of collection	Ingredients
Local Vendor in Mumbai, Maharashtra	1. Aindri ( <i>Citrullus colocynthis</i> Lethrad.) 2. Kusha ( <i>Desmostachya bipinnata</i> Staff.) 3. Moola of Yavasa ( <i>Alhagi psudalhagi</i> Desv.)
Local Vendor in Ernakulam, Kerala	1. Lata ( <i>Rabia cordifolia</i> Linn.) 2. Vetasa ( <i>Salix caprea</i> Linn.) 3. Padmaka ( <i>Prunus cerasoides</i> D. Don.) 4. Yashtyahva ( <i>Glycyrrhiza glabra</i> Linn.) 5. Kamala ( <i>Nelumbo nucifera</i> Gaertn.) 6. Durva ( <i>Cynodon dactylon</i> Pers.) 7. Kasa ( <i>Saccharum spontaneum</i> ) 8. Jala ( <i>Pavonia odorata</i> ) 9. Eraka ( <i>Typha angustifolia</i> )
Online Vendor	Cocoa Butter Sita

### Authentication of Ingredients:

The ingredients were authenticated from Department of Dravya Guna, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka. Authentication was done based on macroscopic and microscopic characters, organoleptic features as well as morphological appearance.

**Place of study** Teaching pharmacy, Dept. of Rasashastra and Bhaishajya Kalpana, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka. The churna was prepared in a single batch in following method.

**Materials** Apparatus: Khalva yantra (Mortar-pestle), Patra (Vessel), Darvi

(Spoon), Tula yantra (Weighing machine), Sieve, Tray, and Mixer.

### Ingredients:

Sita (Crystalized rock sugar)	– 1 Part
Lata (root)	– 1 Part
Vetasa (root)	– 1 Part
Padmaka (bark)	– 1 Part
Yashtyahva (root)	– 1 Part
Aindri (root)	– 1 Part
Kamala (Whole plant)	– 1 Part
Durva (Whole plant)	– 1 Part
Moola of Yavasa (root)	– 1 Part
Kusha (Whole plant)	– 1 Part
Kasa (Whole plant)	– 1 Part
Jala (root)	– 1 Part
Eraka(Root)	– 1 Part
Cocoa (Butter)	– 1 Part

Table 2: Name of the ingredients of Ayurvedic Body Polishing Kit

Sl. No.	Drug (Part Used)	Latin name	Quantity
1.	Sita (Crystalized rock sugar)	<i>Saccharum officinarum</i>	2Kg
2.	Lata (root)	<i>Rabia cordifolia</i> Linn.	2Kg
3.	Vetasa (root)	<i>Salix caprea</i> Linn.	2Kg
4.	Padmaka (bark)	<i>Prunus cerasoides</i> D. Don.	2Kg
5.	Yashtyahva (root)	<i>Glycyrrhiza glabra</i> Linn.	2Kg
6.	Aindri (root)	<i>Citrullus colocynthis</i> Lethrad.	2Kg
7.	Kamala (Whole plant)	<i>Nelumbo nucifera</i> Gaertn.	2Kg
8.	Durva (Whole plant)	<i>Cynodon dactylon</i> Pers.	2Kg
9.	Moola of Yavasa (root)	<i>Alhagi psudalhagi</i> Desv.	2Kg
10.	Kusha (Whole plant)	<i>Desmostachya bipinnata</i> Staff.	2Kg
11.	Kasa (Whole plant)	<i>Saccharum spontaneum</i>	2Kg
12.	Jala (root)	<i>Pavonia odorata</i>	2Kg
13.	Eraka(Root)	<i>Typha angustifolia</i>	2Kg
14.	Cocoa (Butter)	<i>Theobrama cacao</i>	2Kg

### Method of preparation of churna

Each ingredient was taken in equal quantity. The Sita was pounded in a Khalwa Yantra to obtain churna form. Lata, Vetasa, Padmaka, Yashtyahva, Aindri, Kamala, Durva, Moola of Yavasa, Kusha, Kasa, Jala and Eraka were all pulverized separately, once through a coarse pulverizer and then again through a fine pulverizer, to make yavakuta churna of mesh size 80. Then these churna were mixed to form a homogenous mixture.

### Mixing of Cocoa butter and Yavakuta Churna

The Cocoa Butter was taken in a double boiler and melted till it turned completely liquid. Then Churna was mixed with a ratio of 1:1.3 parts (cocoa butter to Churna), i.e., for 2kg of coca butter approx was mixed with 2.6 Kg of Churna containing all raw drugs. 20 Zip lock were taken and filled with 180gms of Ayurvedic body Polishing kit.

**Precautions:** The ingredients were dried well to avoid moisture content. The spilling of drug was avoided while mixing.

### Analytical Study

The churna was analysed by following parameters as per the references available in protocol for testing of ASU drugs published by CCRAS.

Organoleptic characters, Physio-chemical evaluation namely pH, Moisture content, Water Soluble Ash, Alcohol Soluble Ash, Ash value

### Determination of pH

**Material:** pH meter, Distilled water, Churna

**Method:** Preparation of buffer solutions:

Standard buffer solution: Dissolved 1g of churna of pH 4, 7 and 9.2 in 100 ml of distilled water.

1 ml of sample was taken and made up to 10 ml with distilled water, stirred well and filtered. The filtrate was used for the experiment. Instrument was switched on. 30 minutes time was given for warming pH meter. The pH 4 solution was first introduced and the pH adjusted by using the knob to 4.02 for room temperature 30°C.

The pH 7 solution was introduced and the pH meter adjusted to 7 by using the knob. The pH was introduced in 9.2 solution and checked the pH reading without adjusting the knob. Then the sample solution was introduced and reading was noted. The test was repeated four times and the average reading were taken as result.

(CCRAS. Laboratory Guide for the Analysis of Ayurveda and Siddha Formulation. 1<sup>st</sup> ed. New Delhi. Dept. of Ayush Ministry of Health and Family Welfare Govt. of India; 2010.p.42.)

#### **Total Ash**

**Materials:** Silica dish, Crucible, Muffle furnace, Weighing balance, Ashless Filter paper, *Churna*

**Method:** 2 g of sample was incinerated in a tarred platinum crucible at temperature not exceeding 450°C until carbon free ash was obtained. Percentage of ash was calculated with reference to weight of the sample [5].

#### **Acid insoluble Ash**

**Materials:** Beaker, Crucible, Ashless filter paper, Hot plate, Muffle furnace, Desiccators, dil. HCl, *Churna*

**Method:** To the crucible containing total ash, 25ml of dilute HCl was added. The insoluble matter was collected on ash less filter paper (Whatman 41) and washed with hot water until the filtrate was neutral. The filter paper containing the insoluble matter was transferred to the original crucible, dried on a hot plate and ignited to constant

weight. The residue was allowed to cool in suitable desiccators for 30 min and weighed without out in a pre-weighed 100 ml beaker. It was evaporated to dryness on a water bath. Later, it was kept in an air oven at 105°C for 6 hours, cooled in desiccators for 30 minutes and weighed. The percentage of Alcohol extractable matter of the sample was calculated. The experiment was repeated twice, and the average value was taken [6].

#### **Water soluble extractive**

**Material:** Conical flask, crucible, hot air oven, distilled water, *Churna*

**Method:** 4 g of the *churna* was weighed accurately in a glass stoppered flask. 100 ml of distilled water was added, shaken occasionally for 6 hours. It was allowed to stand for 18 hours. Later, it was filtered rapidly taking care not to lose any solvent. 25ml of the filtrate was pipetted out in a pre-weighed 100 ml beaker and evaporate to dryness on a water bath. It was kept in a Hot air oven at 105°C for 6 hours, cooled in a desiccator and weighed. The experiment was repeated twice. The average value was taken [7].

#### **Clinical Study**

To evaluate the efficacy of Ayurvedic body polishing kit was assessed in 20 subjects

**Source of Data:** Campus based healthy subjects willing to participate in the study were taken for the study.

#### **Inclusion Criteria**

1. Both gender

2. Age between 18 to 50
3. Willing to sign the consent.

#### **Exclusion Criteria**

1. Subjects with sensitive skin

#### **Intervention:**

All the subjects who fit in inclusion criteria will be advised to apply the Product.

Method of Intervention:

- Duration of the treatment – 14 days
- Frequency of application – once a week for two weeks
- Time application – Morning
- Method of application: after taking bath with warm water the product would be applied followed by a gentle massage and scrubbing in the opposite direction of hair growth for 5 – 10 minutes and wash afterwards.
- Assessment would be done on Day 1 and Day 15.

**Dispensed:** The formulation was dispensed in air tight zip pouches

**Quantity:** 180g in each zip pouch

**Method of application (Instructions to the subjects)**

- In a bowl the formulated powder would be added
- Water would be added to the powder to emulsify the cocoa butter to paste form.

- It would be mixed well to obtain a paste of thick consistency
- The paste would be applied and scrubbed all over the body in the opposite direction of hair growth.
- It should be scrubbed and massaged for 5-10 minutes
- Later it should be rinsed off.

#### **Method of Collection of Data**

- Healthy 20 Volunteers were selected and the status of the parameters were assessed through a five-point scale through a form titled “Assessment Before application of Ayurvedic Body Polishing kit”
- After 2 applications of the product on Day 15 the parameters were re- assessed through the five-point scale in the form titled “Assessment After application of Ayurvedic Body Polishing kit”

#### **OBSERVATION AND RESULT**

##### **Pharmaceutical Study**

The powder of Sita, Lata, Vetasa, Padmaka, Yashtyahva, Aindri, Kamala, Durva, Moola of Yavasa, Kusha, Kasa, Jala and Eraka when mixed had the characteristic odour of Yashtyahva and Lata. When mixed with cocoa butter, the entire mixture obtained the odour of cocoa butter.

Table 3: Ingredients and obtained quantity of churna

Sl. No.	Ingredients	Quantity Taken	Quantity obtained after 1 <sup>st</sup> Pulverization	Quantity obtained after 2 <sup>nd</sup> Pulverization
1.	Sita (Crystalized rock sugar)	2Kg	-	1.985Kg
2.	Lata (stem or root)	2Kg	1.850 Kg	1.650Kg
3.	Vetasa (root)	2Kg	1.910 Kg	1.712Kg
4.	Padmaka (bark)	2Kg	1.850 Kg	1.653Kg
5.	Yashtyahva (root)	2Kg	1.784 Kg	1.580 Kg
6.	Aindri (root)	2Kg	1.723 Kg	1.453 Kg
7.	Kamala (Whole plant)	2Kg	1.688 Kg	1.483 Kg
8.	Durva (Whole plant)	2Kg	1.774 Kg	1.524 Kg
9.	Moola of Yavasa (root)	2Kg	1.620 Kg	1.540 Kg
10.	Kusha (Whole plant)	2Kg	1.786 Kg	1.580 Kg
11.	Kasa (Whole plant)	2Kg	1.688 Kg	1.478 Kg
12.	Jala (root)	2Kg	1.823 Kg	1.613 Kg
13.	Eraka(Root)	2Kg	1.986 Kg	1.648 Kg
14.	Cocoa (Butter)	2Kg	-	2.0Kg
	<b>Total</b>	<b>28Kg</b>	<b>-</b>	<b>20.88Kg</b>

Total Loss = 28-20.88 = 7.12Kg

## Analytical Study

Table 4: Organoleptic characteristics

Sl. No.	Organoleptic characters	Observation
1	Colour	Brown
2	Appearance	Powder
3	Touch	Rough and unctuous
4	Odour	Aromatic fragrance

Table 5: Physico-chemical parameters of Churna

Parameters	Churna
pH	5.07
Moisture Content	70.05
Water Soluble Ash	73.93
Alcohol soluble ash	74.09
Ash value	34.72

## Clinical Study

Table 6: Age wise distribution of subjects

Age Group (years)	15- 25	26- 35	36- 45	46- 55
No. of subjects	19	-	1	-

Total - 20

Table 7: Gender wise distribution of subjects where N = 20

Age Group (years)	No. of subjects
Male	3
Female	17
Total	20

Table 8: Observations of effect of Ayurveda Body Polishing Kit

Features	Male	Female	Total
Reduction of Dryness	3	10	13
Reduction of Uneven Skin tone	3	8	11
Increase in Radiance of Skin	1	7	8
Reduction in Dullness	2	7	9
Increase in Oiliness of skin	3	4	7
Reduction in roughness	3	11	14
Increase in Softness of skin	0	7	7
Increase in Freshness of skin	2	9	11
Increase in Smoothing of Skin	2	11	13
Increase in Brightness of skin	2	8	10

## DISCUSSION

All the raw dravyas were dried well and then powdered to avoid moisture in the powder. All the raw dried drugs were weighed initially separately in order to calculate loss at the final product. The final product was a coarse powder and it was brown in colour with fragrant odour.

The pH of the churna is 5.07 which is weakly acidic. pH as a measure of the hydrogen-ion activity is important from the standpoint of stability or physiological suitability. The optimal pH of face and body lies between 4.7 to 5.75. Hence the churna will not have irritant effect and can be used for external application. The ash value is 34.72. The residue remaining after incineration is the ash content of the drug. It indicates the purity and identity of raw drugs.

These total ash, alcohol insoluble ash and water-soluble ash indicate the purity and identity of raw drugs.

A typical polishing effect of skin requires both mechanical and chemical action. The mechanical action is of exfoliation leading to removal of dead skin cells from the stratum corneum. It stimulates circulation and regeneration of new skin cells, helps in reduction in many skin conditions causing uneven skin texture. This action is achieved in the ayurvedic body polishing kit by making the ingredients into churna of mesh size 80. This mesh size provides a course

powder that gives a scrubbing effect without damaging the skin. It also helps in enhancing the chemical action of drugs by allowing them to penetrate deeper into the skin layers [8]. After exfoliation moisturisation is an important step to provide hydration to the skin. It helps heal and repair the skin, promotes healthy skin by maintaining the skin barrier [9]. This effect is achieved by adding cocoa butter to the kit. It has high anti-oxidant activity and helps in promotion of healthy skin [10].

In ayurveda healthy skin is an important indicator of good health and longevity. The signs of healthy skin have been explained in various Samhitas under numerous references. One common reference that is followed is Twak Saara Purusha laskshana (signs of good skin health) by Charaka acharya. Here, the Saara (good nourishment) of Rasa Dhatu is seen through the signs shown on twak (skin) of the person. The signs of good nourishment and healthy twak are: Snigdha (Unctuous), Slakshana (Smooth), Mrudu (Soft), Prassana (clean / charming), Sukumara loma (silky hairs), Saprabha (lustrous), Gambhira Kesha (Deep rooted hairs). Sushruta Acharya, a pioneer in ancient cosmetology through various medicinal and surgical management of skin ailments has described good skin as pleasant, soft and glossy with glossy hair. Kashyapa, a pioneer in ancient pediatrics describes good skin for children and

adolescents as Twak roga Rahita (free from skin diseases), Prassana vyanjana chavi (has lean and sharp features), Sadhya kshata prarohatva (Wounds heal with no scars).

The topical application of this kit aims to improve the Chaya of skin by imparting the specific mahabhuta to it. These abnormal presentations need care and attention to reach a healthy status. Ayurveda prescribes a daily regimen and routine to maintain the skin. Shodhana, Shaman and internal line of medicine for severe skin ailments. Apart from this many topical applications such as the Nirvapana Lepa as explained by Charaka Acharya can be used in our routine to overcome the toxicity and unhealthy lifestyle of today's times.

The analysis of data collected after application of product shows improvement in skin health. 65% of the volunteers showed reduction in dryness after application of product, 55% of the volunteers showing reduction in unevenness of skin tone after application of product, 70% of the volunteers showing reduction in roughness after application of product, 55% of the volunteers showing increase in freshness after application of product, 65% of the volunteers showing increase in smoothness after application of product, 50% of the volunteers showing increase in brightness of skin after application of product.

The Reduction in dryness of skin can be attributed to the humectant nature of Sugar

(a hygroscopic substance used to keep things moist) many artificial humectants are used in cosmetics to counter the drying effect of the added surfactants. Artificial humectants include Glycerin, Propylene Glycol, Polyethylene glycol, etc. Jala with fatty acid, palmitic acid can act as an emollient. When applied to the skin by lotions, creams or bath oils, emollients can soften the skin and help it retain moisture by forming an oily, water blocking layer that slows the loss of water through the skin. Cocoa Butter is also an emollient that moistens skin.

Rukshata or dryness is a sign of unhealthy skin as mentioned above in various ways. It is a guna of Vata dosha. To combat dryness directly snigdha dravya – cocoa butter is used. Vatahara dravya Vetasa, Yashtyahva and Kasha are present. Vetasa due to its Madhura vipaka, snigdha guna. Yashtyahva due to Madhura rasa, guru and snigdha guna. Kasha due to its Madhura rasa.

Uneven skin tone is seen due to predominance of Vata as mentioned above in Chaya and vata prakriti individuals. Lata has active components that make the complexion even and lighten dark spots [11]. Ayurvedic texts enumerate its qualities to be: Varnya, rakta prasādaka, rakta śodhaka (blood purifier). Methanolic extract of this herb has been reported to show 14.80% mean inhibition of tyrosinase activity, thereby acting as a skin whitening agent [12].

Sita or sugar contains glycolic acid that is the smallest AHA (Alpha- Hydroxy Acid) chemical exfoliant compound which loosens skin cells and promotes cell growth. Lightening scars and spots by continuous usage. Better than artificial glycolic treatments [13]. Padmaka is mentioned in the Varnya Gana by charaka. It is known to have complexion enhancing activity by inhibiting the production of melanin [14]. Yastyahva contains Kojic acid and Glycyrrhizetic acid which controls the secretion of melanin in skin and it has the effect of reducing dark pigmentation and making the complexion fairer. Nalina also inhibits tyranose activity helping in reduction of uneven pigmentation [15].

Roughness or Khara guna of skin can be attributed to Vata. It can also be attributed to various skin conditions like acne, pimples, boils, keloids, scar tissue, etc. Chemical and physical exfoliation is necessary in order to remove khara guna from the skin. Physical exfoliation is provided by the particle size of the churna. Sita contains glycolic acid which is a chemical exfoliant. Vetasa provides mild exfoliating action and reduces visible signs of aging [16]. Aindri in ayurvedic texts is prescribed to treat acne and pimples that cause rough texture of skin [17]. Ayurveda acharyas have grouped durva grass under skin friendly herbs. It helps to heal the

wound fast and restores the color of skin. Use of Durva grass is recommended in Psoriasis, Herpes, unhealed wounds, allergic rashes and haemorrhoids. It heals the patches of psoriasis and restores the normal colour of skin. This herb reduces itching, heals the scaly skin and imparts normal colour to skin [18, 19]. AHA and glycolic acid present in Kasa helps to increase cell turnover and help in thinning down the accumulation of dead cells, thus smoothing the skin by chemical exfoliation [20]. These also contribute to increase in smoothness of skin after application of product.

Freshness of skin is a quality that makes the skin feel cool, clear and clean. This is achieved by kapha dosha in the body and shita guna of the dravya present in the kit. A good odour also helps achieve freshness of skin, Musk aromatic odour present in Jala [21]. Pittahara property of all dravya in the kit reduce bad odour and provide coolness to the body, resulting in fresh feeling after application. Sita, Kasa and Jala are especially useful in reducing burning sensation in the body.

Brightness of skin is achieved by rejuvenation of skin and promotion of healthy skin cell growth that reflects light abundantly. In Ayurveda, brightness of skin can be attributed to good nourishment of Rasa Dhatu. Brightness or lustre can be attributed to Teja Mahabhuta. The dravya

used in the kit promote rejuvenation of cells and increase in teja mahabhuta of twak. Anti-oxidant activity helps in promotion of new skin cell growth and better reflection of light. The following dravya in the kit show anti-oxidant activity: Eraka [22], Jala [23], Yavasa [24], Durva [25], Nalina [26], Yastyahva, Lata [27] and Sita.

Cocoa butter is a Snigdha Dravya that is naturally heavy and Vatahara property reduces dryness. It also acts as an inert material for base of formulation [28] enriched with 200ppm of vitamin E [29] that has wound healing, depigmentation and treatment of various skin conditions [30].

#### CONCLUSION

Ayurvedic Body polishing kit is a simple preparation that can be easily prepared. The Churna was prepared by general method of preparation of Churna. The prepared churna was subjected to organoleptic and analytical study. Analytical studies conducted on the drug have helped to develop preliminary standards.

The clinical study of the kit showed significant changes in reduction of dryness, unevenness and roughness, increase in softness, freshness, smoothness and brightness. Long term application of the product will help in further evaluating the effect of the dravya used in the kit.

#### ACKNOWLEDGEMENT

The authors are thankful to Rajiv Gandhi University of Health Sciences, Karnataka,

Bengaluru for funding the UG Research Project. A note of gratitude to SDM Educational Society, Ujire, Dr. Prasanna Narasimha Rao, Principal of SDMCAH, Hassan, Faculty & PG Scholars of Dept. of Rasashastra & Bhaishajya Kalpana and Department of Samhita Siddhanta and Itihasa, SDMCAH, Hassan for their support and guidance.

#### REFERENCES

- [1] Kaličanin, B., Velimirović, D. A Study of the Possible Harmful Effects of Cosmetic Beauty Products on Human Health. *Biol Trace Elem Res* **170**, 476–484 (2016).
- [2] Barrett, Julia R. “The ugly side of beauty products.” *Environmental health perspectives* vol. 113,1 (2005): A24. doi:10.1289/ehp.113-a24
- [3] R.K. Sharma and Bhagwan Dash, Charaka Samhita Text with English Translation and critical exposition based on Chakrapani Datta’s Ayurveda Dipika, Varanasi, Chowkambha Sanskrit Series Office 2019, Page.81
- [4] Ambika et, al. Preliminary pharmaceutico-analytical study of Mukhadooshikaharalepa Churna International Journal of Ayurvedic Medicine, Vol 12 (3), 538-543

- [5] CCRAS. Laboratory Guide for the Analysis of Ayurveda and Siddha Formulation. 1<sup>st</sup> ed. New Delhi. Dept. of AYUSH, Ministry of Health and Family Welfare, Govt. of India; 2010.p.28.
- [6] CCRAS. Laboratory Guide for the Analysis of Ayurveda and Siddha Formulation. 1<sup>st</sup> ed. New Delhi. Dept. of AYUSH, Ministry of Health and Family Welfare, Govt. of India; 2010.p.28
- [7] CCRAS. Laboratory Guide for the Analysis of Ayurveda and Siddha Formulation. 1<sup>st</sup> ed. New Delhi. Dept. of Ayush Ministry of Health and Family Welfare Govt. of India; 2010.p.29.)
- [8] Packianathan, Nilani & Kandasamy, Ruckmani. (2011). Skin Care with Herbal Exfoliants. Functional Plant Science and Biotechnology. Volume 5. 94-97.
- [9] Bowe WP, Kircik LH. The importance of photoprotection and moisturization in treating acne vulgaris. Journal of Drugs in Dermatology: JDD. 2014 Aug;13(8): s89-94. PMID: 25116982.
- [10] Katz DL, Doughty K, Ali A. Cocoa and chocolate in human health and disease. Antioxid Redox Signal. 2011 Nov 15;15(10):2779-811. doi: 10.1089/ars.2010.3697. Epub 2011 Jun 13. PMID: 21470061; PMCID: PMC4696435.
- [11] Prabhajit K, Bikram S, Subodh K, Satwinderjeet K. *In vitro* evaluation on free radical scavenging activity of *Rubia cordifolia*. *J Chin Clin Med*. 2008;3:5.
- [12] Medicinal plants for skin and hair care Laxmikant Sharma, Gaurav Agarwal and Ashwani Kumar SMS Medical College Jaipur Biotechnology lab, Department of botany, University of Rajasthan, Jaipur 302 004, India Published in Indian Journal of Traditional Knowledge Vol 2(1), January 2003, pgno.62-68
- [13] Dual Effects of Alpha-Hydroxy Acids on the Skin, Sheau-Chung Tang, Jen-Hung Yang, *Molecules*. 2018 Apr; 23(4): 863. Published online 2018 Apr10. doi: 10.3390/molecules23040863, PMCID: PMC6017965
- [14] Jangwan, J. & Bahuguna, Rahul. (2008). Puddumin-B, a New Flavanone Glycoside from *Prunus cerasoides*. *Pharmaceutical Biology*. 27. 223-226. 10.3109/13880208909116906.
- [15] Vaibhav S, Lakshaman K. Tyrosinase enzyme inhibitory

- activity of selected Indian herbs. Int J Res Pharm Biomed Sci 2012; 3:977-82
- [16] Remona Gopaul I, Helen E Knaggs, Janet F Lephart, Kara C Holley, Erica M Gibson, Affiliations expand, PMID: 20883292, DOI: 10.1111/j.1473-2165.2010.00512.x
- [17] The Bhavaprakasha Nighantu with Hindi commentary by Padmashree Prof. KC Chunekar, edited by G.S Pandey, edition of 1998, shloka 203/206, pg no. 403
- [18] Rajakumar N., Shivanna MB., Ethno-medicinal application of plants in the eastern region of Shimoga district, Karnataka, India. Journal of Ethnopharmacology 2009; 126: 64–73.
- [19] Aikia AP., Ryakala VK., Sharma P., Goswami P., Bora U., Ethno botany of medicinal plants used by Assamese people for various skin ailments and cosmetics. Journal of Ethnopharmacology 2006; 106: 149– 157.
- [20] Sheau-Chung Tang, Jen-Hung Yang, Molecules. 2018 Apr; 23(4): 863. Published online 2018 Apr 10. doi: 10.3390/molecules23040863, PMID: PMC6017965
- [21] Sethi, Poonam. (2021). Micromorphological Studies On Pavonia Odorata Willd.
- [22] Peidong Chen, Yudan Cao, Beihua Bao, Li Zhang & Anwei Ding (2017) Antioxidant capacity of *Typha angustifolia* extracts and two active flavonoids, Pharmaceutical Biology, 55:1, 1283-1288, DOI: [10.1080/13880209.2017.1300818](https://doi.org/10.1080/13880209.2017.1300818)
- [23] Vani, Mamillapalli & Tondepu, Haripriya & Khantamneni, Padmalatha. (2021). Pavonia odorata- An Overview of Traditional, Phytochemical and Pharmacological Studies. International Journal of Pharmaceutical Sciences Review and Research. 69. 10.47583/ijpsrr.2021.v69i02.029.
- [24] Srivastava, Bhavana & Sharma, Himanshu & Dey, Yadu & Wanjari, Manish & Jadhav, Ankush. (2014). Alhagi pseudalhagi: a review of its phytochemistry, pharmacology, folklore claims and Ayurvedic studies. International Journal of Herbal Medicine. 2. 47-51.
- [25] Biswas TK, Pandit S, Chakrabarti S, Banerjee S, Poyra N, Seal T. Evaluation of Cynodon dactylon

- for wound healing activity. J Ethnopharmacol. 2017 Feb 2;197:128-137. doi: 10.1016/j.jep.2016.07.065. Epub 2016 Jul 22. PMID: 27457694.
- [26] Rai S, Wahile A, Mukherjee K, Saha BP, Mukherjee PK. Antioxidant activity of *Nelumbo nucifera* (sacred lotus) seeds. J Ethnopharmacol 2006;104:3227
- [27] Gorle, A. M. & Patil S. S. 2010. Der Pharmacia Sinica, 1 (3): 59-63. Rupali Patil, Rajendra Gadakh, Hanmant Gound, Sanjay Kasture, Antioxidant and Anticholinergic Activity of *Rubia Cordifolia*, *Pharmacologyonline* 2: 272-278 (2011)
- [28] Karim, Azila. (2012). Stability study of cocoa butter body scrub formulated with ground cocoa pod husk.
- [29] Karim, Azila & Abdullah, Nur. (2020). Natural look mascara and eyeliner from cocoa.
- [30] Keen MA, Hassan I. Vitamin E in dermatology. Indian Dermatol Online J. 2016 Jul-Aug;7(4):311-5. doi: 10.4103/2229-5178.185494. PMID: 27559512; PMCID: PMC4976416.