



Turmeric is Medicinal and Cosmetic in Nature, the Production of Obeturmeric Powder and Cream

Uchejeso Mark Obeta^{1*}, Patience Leo Jaryum¹, Obiora Reginald Ejinaka²,
Emmanuel Utibe²

¹Department of Medical Laboratory Management, Federal College of Medical Laboratory Science & Technology, Jos, Nigeria.

²Department of Medical Parasitology & Entomology, Federal College of Medical Laboratory Science & Technology, Jos, Nigeria.

ABSTRACT

The medicinal use of turmeric, its importance as a beauty ingredient, and how to make turmeric powder. Turmeric otherwise called Curcumin is an ancient herb which many have used in curry powder, and has been shown to have helped in treating cystic fibrosis, colon cancer, haemorrhoids, gastric ulcer, breast cancer, atherosclerosis, liver diseases, traumatic brain injury, dementia, and arthritis. There are a few studies about Curcumin (turmeric) in terms of cosmetics, prevention and treatment of skin infections. The aim is to create powders and creams that can treat and bring beauty to subjects. The study collected turmeric, beetroot and honey produced in Jos Nigeria and processed them for use as facial powder, powder mixture and cream. From the study, the pictures showed that turmeric can make a good facial powder on its own or as a combination with beetroot powder. Turmeric powder in combination with honey can also treat facial pimple marks as seen from the study. This study, therefore, proposes Obeturmeric powder, Obeturmeric powder mixture and Obeturmeric cream for human faces. Turmeric should not be neglected by skin care and cosmetic industries as Obeturmeric powder, Obeturmeric powder mixture and Obeturmeric cream have shown a leading example from this study.

Key Words: *Turmeric, Obeturmeric, Cosmetics, Medicinal powder, Medicinal cream*

eIJPPR 2023; 13(2):18-24

HOW TO CITE THIS ARTICLE: Obeta UM, Jaryum PL, Ejinaka OR, Utibe E. Turmeric is Medicinal and Cosmetic in Nature, the Production of Obeturmeric Powder and Cream. Int J Pharm Phytopharmacol Res. 2023;13(2):18-24. <https://doi.org/10.51847/IrnOzra23V>

INTRODUCTION

Medicinal plants and other natural products are as old as creation and have been the major source of the most potent modern drugs in the management of several diseases including COVID-19 [1, 2]. Turmeric also called Curcuma longa L. as its scientific name is widely used for ages as a condiment, medical supplement, cosmetic material and colouring agent to mention but a few. India leads in the aspect of production, consumption and exportation of turmeric since 2014. [3], while Nigeria is coming up at a fast rate in that regard.

Ravindran (2007) reported that turmeric is one of the longest products used in herbal medicine and religious practices in their various states and textures [4-6]. The turmeric rhizome is composed of food components, Curcuminoids and Essential Oils as summarized in **Table 1**. The Curcuminoids provide yellow colour but the

essential oils give an aromatic smell and taste [7, 8]. Interestingly, Oils find their way into perfumes and aromatherapy. Some studies on essential oils reveal antioxidant, anti-nociceptive and anti-inflammatory properties. Curcuma longa contains the highest concentration of Curcumin though curcumin can be found in other plant species like Curcuma phaeocaulis and Curcuma aromatica [9].

Curcumin as “yellow colouring matter” was first isolated from Curcuma Longa in the history presented by Vogel and Pelletier as far back as 1815 [10]. Lampe and Milobedeska in 1910 showed the structure of curcumin to be a diferuloylmethane existing as keto-enol tautomers. The Keto form is predominantly neutral and acidic in their conditions, but the enol form is more in alkaline conditions. curcumin is insoluble in water, with acidic and neutral pH; and soluble in acetone, ethanol, methanol, and dimethyl

Corresponding author: Uchejeso Mark Obeta

Address: Department of Medical Laboratory Management, Federal College of Medical Laboratory Science & Technology, Jos, Nigeria.

E-mail: ✉ uchejesoobeta@gmail.com

Received: 01 February 2023; **Revised:** 06 April 2023; **Accepted:** 14 April 2023

This is an **open access** journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.



sulphoxide [3]. Curcumin has acid-base indicator properties [11].

In South-East Asia, China and Africa, some Turmeric species that have been used in Ayurveda, Siddha, African, Unani, veterinary, Chinese, and folk medicine includes *C. aromatica*, *C. caesia*, *C. comosa*, *C. longa*, *C. kwangsiensis*, *C. phaeocaulis* and *C. zedoaria*. Turmeric as a home remedy has assisted in treating many ailments like abdominal pain, anorexia, cough, COVID-19, dysentery, respiratory ailments, rheumatism, and dental disorders. Gastrointestinal disorders including acidity, dyspepsia, indigestion, liver disease, ulcers, and flatulence have been treated. Other treatments using turmeric or turmeric mixture exist for example hot poultice of turmeric slaked with lime relieves muscle pain and inflammation due to injury. Fresh turmeric aids wound healing after birth when applied to perineal laceration. Also, turmeric serves as an antiseptic to the severed umbilical cord of newborns in India. Notably, Women can drink warm milk with turmeric, ginger and honey after childbirth and everyone can drink the same during COVID-19 or other respiratory infections. Turmeric paste aids in skin diseases, eye infections, burns, and bites. Turmeric and neem are good for the treatment of chickenpox and smallpox [2, 3].

Because of its aroma and colour, Turmeric is very good for cooking. Consumption is very high in South East Asian communities. The global interest in turmeric has increased recently due to flavour, colour and preservative properties in display following several reports. Curry powder has up to 30% turmeric as the component to add flavour to the meat and fish diet. Turmeric oleoresins obtained from solvent extraction in the form of powder from rhizomes give a boom to food industries for their colour, pungent, and bitter taste [12].

Turmeric is one of the first known cosmetics traditionally discovered by women as they smear it on their skin. There is the belief that it reduces facial hair growth, and acne and improve the complexion of the skin. The yellow colour seen when turmeric is rubbed on the skin has formed the basis of turmeric use in skin care products. There is also an off-white hydrogenated form of curcumin called Tetrahydrocurcumin that is in use on the skin as a cutaneous antioxidant [13].

Curcuminoids are a potential natural product in cosmeceuticals. It can act as an antioxidant, skin-lightening and anti-inflammatory agent. Koo, (2016) went further to posit that in-vitro curcuminoids can inhibit collagenase, hyaluronidase and elastase [14]. Curcumin gel has been reported by Heng, (2010) to improve the appearance of photodamaged skin as seen in actinic keratosis, actinic poikiloderma, pigmentary changes, solar elastoses, and solar lentigines when applied for a long time like 6 months [15]. There is a report of turmeric (curcumin) evaluated as an environmentally friendly hair colouring

agent while its essential oils have the potential in the cosmetic, perfume, and soap industries [16].



Figure 1. Traditional application of Turmeric as a cosmetic (facial powder) in India.

Curcumin aids in skin inflammatory and neoplastic disorders. Though, diarrhoea is the most common adverse effect of turmeric Chainani-Wu *et al.*, (2012) reported that high-dose of curcuminoids up to 6 g per day improved the signs and symptoms of oral lichen planus as seen in their randomized double-blind placebo-controlled trial using 20 patients [17]. The report emphasized that curcumin is well tolerated.

Curcumin inhibited crucial psoriasis pathways like NF- κ B and downstream inflammation such as Th1 cytokines in animal and in-vitro studies but showed low efficacy of oral curcumin in human subjects who had moderate to severe psoriasis which may be due to its reduced oral availability [18]. 1% curcumin topical gel preparation inhibited phosphorylase kinase but improved the lesions in some cases of chronic plaque psoriasis. this shows that curcumin can also promote healing and prevent scarring in acute injuries like burns, by inhibiting phosphorylase kinase and subsequent NF- κ B/TGF- β signalling pathway [15].

Curcumin causes upregulation of p53 and apoptosis of human basal cell carcinoma cells. It also inhibits NF- κ B and induces apoptosis in mouse and human melanoma cells [19].

In Zhang, (2010) study, it stated that "a combination of low dose with red united blue light irradiation caused oxidative stress-mediated cell death, inhibited proliferation and enhanced apoptosis of human melanoma cells [20]. It also suppresses the growth and proliferation of squamous cell carcinoma by inhibition of NF- κ B. Topical application may have an inhibitory effect on the chemical carcinogenesis of the skin. It has an inhibitory effect on cutaneous T cell lymphoma as it induces selective apoptosis in cutaneous T cell lymphoma cell lines by down-regulating STAT-3 and NF- κ B pathways" There is a need for strategies to improve the absorption and distribution of curcumin both in skin use (cosmetics), foods and how curcumin can best be used to improve human health generally and in cosmetics in line

with Hewlings and Kalman, (2017) and no wonder this study in cosmetics and Medicare [21].

This study aims to produce a human face powder and cream from Turmeric with the following specific objectives:

- I. To identify turmeric as a good product for face powder
- II. To use turmeric to produce Obeturmeric powder and Obeturmeric powder mixture and Obeturmeric cream
- III. To use turmeric to produce face rashes corrective cream



Figure 2. Turmeric Plants- a cosmetic and medicinal herb



Figure 3. Rhizomes of Turmeric

Table 1. Composition of turmeric rhizome

SN	Component	Composition
1	Turmeric	Carbohydrates, Fats, Fibre, Proteins, minerals, curcuminoids, volatile and non-volatile oils, moisture and
2	Curcuminoids	Curcumin (Curcumin I), demethoxycurcumin (Curcumin 11), bis- demethoxycurcumin (Curcumin 111), cyclocurcumin (Curcumin IV)
3	Essential Oils	Sesquiterpene ketones and alcohol mixtures, d-sabinene, borneol, zingiberene, cincole, á-phellandrene

MATERIALS AND METHODS

Study subject

The subject for this study was a student volunteer of the Federal School of Medical Laboratory Science, Jos, Nigeria. She consented to participate and approved that the pictures from the study be published where necessary for the progress of the research and towards giving Turmeric the necessary information it deserves for use in the cosmetics industry.

Source of turmeric

For this study, turmeric powder was bought from a Spice vendor in Terminus market of Jos, Jos North Local Government of Plateau State, Nigeria

Materials needed

- Turmeric rhizomes powder
- Beetroot powder
- Chiffon Sieve material
- Honey
- Teaspoon
- Face brush
- Kiss Touch Foundation (by Velvet Skin Beautifier)

NB: The materials were purchased in the Terminus market in Jos-Nigeria

Making and application of obeturmeric powder

The subject face was washed in the morning and a picture of the face of that morning was taken

With the aid of a clean teaspoon, turmeric powder was fetched into a chiffon sieve and sieved into a clean container

Considering that Turmeric can stain skin, Kiss Touch Foundation was applied on the face of the volunteer subject With the aid of a face brush, Turmeric powder was applied to the face by an invited make-up artist

And the face was snapped for comparison with the first picture

Making and application of obeturmeric powder mixture

The subject face was washed on a different morning and a picture of the face as it was taken

With the aid of a clean teaspoon, ½ teaspoon of turmeric powder was fetched into a clean container

With the aid of a clean teaspoon, ¼ teaspoon of Beetroot powder was fetched into the same clean container

The Turmeric and Beetroot were uniformly mixed

Using a chiffon sieve, the powder mixture was sieved into another clean container

Kiss Touch Foundation was applied on the face of the volunteer subject

With the aid of a face brush, Turmeric and Beetroot powder mixture was applied on the face by a makeup artist
And the face was snapped for comparison with the first picture

Making and application of obeturmeric cream

The subject face was washed on a different day and a picture of the face as it was taken
With the aid of a clean teaspoon, ½ teaspoon of turmeric sieved powder was fetched into a clean container
With the aid of a clean teaspoon, 1teaspoon Honey was fetched into the same clean container with turmeric powder
The Turmeric and honey were uniformly mixed
The mixture was applied on the face at 8 pm and allowed till 8 am (12 hrs) before washing. The face after washing was snapped
The procedure of application was repeated for 6 more days
And results were recorded.

RESULTS AND DISCUSSION

Pictorial result of obeturmeric powder

Just before the application of foundation and after the turmeric powder is applied is shown in **Figure 4**.

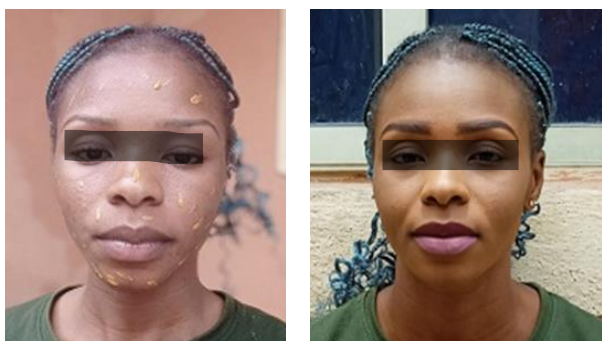


Figure 4. Before and after turmeric powder

Pictorial result of obeturmeric mixture powder

The picture of the before and after application of the turmeric and beetroot powder mixture is shown in **Figure 5**.



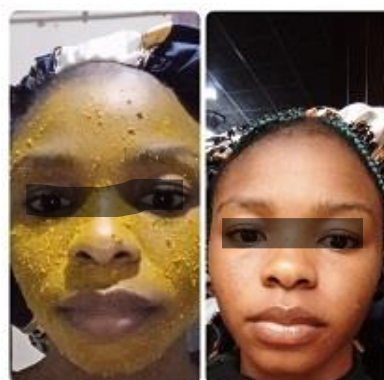
Figure 5. Before and after Turmeric & Beetroot powder mixture

Pictorial result of obeturmeric powder & honey cream

The pictures before the application of Obeturmeric cream, pictures within the 7 days of Obeturmeric cream Application and Picture after the cream application is here presented in **Figure 7**.



Figure 6. Before Cream Application



Day 1



Day 2



Day 3



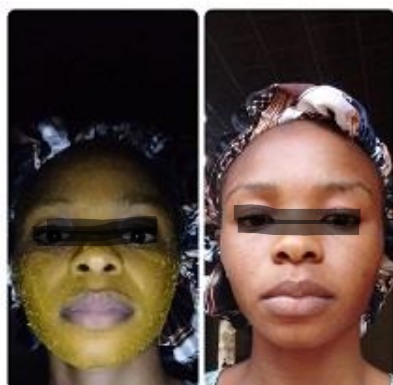
Day 4



Day 5



Day 6



Day 7

Figure 7. Pictures of Obeturmeric Cream application and after washing off from Day 1 to Day 7



Figure 8. Picture after 7 Days of Cream Application

The use and application of turmeric as medicine has been mentioned across the globe [22, 23]. Turmeric has gained popularity in herbal medicine. This study examines turmeric in the aspect of cosmetics and skin care.

From **Figure 4** in this study, the face after Obeturmeric powder gave additional beauty to the face of the subject. This study suggests the beautifying nature of turmeric in cosmetology. This tends to agree with Roy (2016) who opined that Turmeric beautified skin in India [24].

Figure 5 showed a unique beauty when compared with the face before the makeup with an Obeturmeric powder mixture. This shows that a combination of Turmeric and Beetroot has an additional unique beauty on a subject. No wonder Vaughn *et al.*, (2016) agreed that curcumin mixture with other synthetic and natural products adds beauty to skin health [25].

Figure 7 presented improvement as the daily use of Obeturmeric cream goes when compared with **Figure 6**. **Figure 8** showed a very great improvement from **Figure 6** as it is evident that the pimple marks in the form of acne and eczema reduced drastically. This proves the systemic review position of Vaughn *et al.*, (2016) that showed some studies on some creams that contained turmeric where acne was treated and eczema skin improved [25].

This study, therefore, shows turmeric is medicinal and cosmetic and this has supported Sasikumar, (2005) and Koo *et al.*, (2016) in cosmetology [14, 16].

CONCLUSION

Turmeric has gained popularity in the medicinal and cosmetic industries. This study has once again shown that turmeric powder is very good for the production of medicinal powder and creams as demonstrated and evident in the pictures. This study then unveils Obeturmeric powder and Obeturmeric cream.

The cosmetics industry should therefore look into the massive production of powders and creams with naturally available products, especially with the use of highly medicinal turmeric.

This study, therefore, recommends that more research should be carried out on better ways to produce turmeric powders, turmeric powder mixtures and turmeric medicinal creams. The pharmacy industries should look into the production of products with turmeric in Nigeria

Acknowledgments: The authors acknowledge Patience Leo Jaryum, a Medical Laboratory Technician who accepted to be the subject in this study and equally gave approval for her pictures and data to be published. The Authors also acknowledge Dr. N.S. Etukudoh for his effort to improve our training and research institution.

Conflict of interest: None

Financial support: None

Ethics statement: The Approval to carry out the study was approved by the Academic Board of Federal College of Medical Laboratory Science and Technology, Jos-Nigeria. The subject also consented for participation and publication of her data.

REFERENCES

- [1] Uchejeso OM, Chinaza IR, Goodluck OA, Rinpan JI. Some Igbo Indigenous Plants with Anti-COVID-19 Properties. London, UK: IntechOpen; 2020. doi:10.5772/intechopen.94244
- [2] Obeta UM, Ohanube GA, Ekpere-Ezeugwu MO, Mantu EC, Etukudoh NS, Akram M, et al. Using decoction of some vitamin C enriched plants for the management of COVID-19 in Jos, Nigeria: A case report. *J Curr Biomed Rep.* 2021;2(2):85-9. Available from: www.jcbior.com
- [3] Trujillo J, Chirino YI, Molina-Jijón E, Andérica-Romero AC, Tapia E, Pedraza-Chaverri J. Renoprotective effect of the antioxidant curcumin: Recent findings. *Redox Biol.* 2013;1(1):448-56.
- [4] Ravindran PN, Nirmal Babu K, Sivaraman K. Turmeric: The golden spice of life. Turmeric: The Genus Curcuma. CRC Press, Boca Raton, FL, USA. 2007:1-4.
- [5] Mohamad TA, Islahudin F, Jasamai M, Jamal JA. Traditional Practitioner's Knowledge of Malay Post-Partum Herbal Remedies in Malaysia. *Arch Pharm Pract.* 2022;13(2):11-6.
- [6] Shahid I, Khan KM, Khan TM, Imran MS, Shahid N, Alnafoosi FN, et al. Clinical Efficacy of LivPro® Herbal Medicine among Hepatitis C Patients Pakistan: Longitudinal Interventional Study. *Arch Pharm Pract.* 2021;12(4):54-7.
- [7] Prasad S, Gupta SC, Tyagi AK, Aggarwal BB. Curcumin, a component of golden spice: From bedside to bench and back. *Biotechnol Adv.* 2014;32(6):1053-64.
- [8] Pozdnyakova O, Belavina G, Tokhiriyon B, Lapina V, Reznichenko I, Poznyakovsky V. The Study of the Herbal Product Quality and Effectiveness. *Int J Pharm Res Allied Sci.* 2021;10(2):84-9.
- [9] Hatcher H, Planalp R, Cho J, Torti FM, Torti SV. Curcumin: From ancient medicine to current clinical trials. *Cell Mol Life Sci.* 2008;65:1631-52.
- [10] Bandyopadhyay D. Farmer to pharmacist: Curcumin as an anti-invasive and antimetastatic agent for the treatment of cancer. *Front Chem.* 2014;2:113.
- [11] Esatbeyoglu T, Huebbe P, Ernst IM, Chin D, Wagner AE, Rimbach G. Curcumin—from molecule to biological function. *Angew Chem Int Ed.* 2012;51(22):5308-32.
- [12] Liju VB, Jeena K, Kuttan R. An evaluation of antioxidant, anti-inflammatory, and antinociceptive activities of essential oil from *Curcuma longa*. *L. Indian J Pharmacol.* 2011;43(5):526-31.
- [13] Draelos ZD. Nutrition and enhancing youthful-appearing skin. *Clin Dermatol.* 2010;28(4):400-8.
- [14] Koo E, Kimbal AB, Wanner M. Cosmeceuticals. In: Griffiths C, Barker J, Bleiker T, Chalmers R, Creamer D, editors. *Rook's Textbook of Dermatology.* 9th ed. Oxford, UK: John Wiley & Sons; 2016. p. 156.
- [15] Heng MC. Curcumin targeted signaling pathways: basis for anti-photoaging and anti-carcinogenic therapy. *Int J Dermatol.* 2010;49(6):608-22.
- [16] Sasikumar B. Genetic resources of Curcuma: diversity, characterization and utilization. *Plant Genetic Resour.* 2005;3(2):230-51.
- [17] Chainani-Wu N, Madden E, Lozada-Nur F, Silverman Jr S. High-dose curcuminoids are efficacious in the reduction in symptoms and signs of oral lichen planus. *J Am Acad Dermatol.* 2012;66(5):752-60.
- [18] Kurd SK, Smith N, VanVoorhees A, Troxel AB, Badmaev V, Seykora JT, et al. Oral curcumin in the treatment of moderate to severe psoriasis vulgaris: A prospective clinical trial. *J Am Acad Dermatol.* 2008;58(4):625-31.
- [19] Marín YE, Wall BA, Wang S, Namkoong J, Martino JJ, Suh J, et al. Curcumin downregulates the constitutive activity of NF-κB and induces apoptosis in novel mouse melanoma cells. *Melanoma Res.* 2007;17(5):274-83.
- [20] Zhang C, Li B, Zhang X, Hazarika P, Aggarwal BB, Duvic M. Curcumin selectively induces apoptosis in cutaneous T-cell lymphoma cell lines and patients' PBMCs: potential role for STAT-3 and NF-κB signaling. *J Invest Dermatol.* 2010;130(8):2110-9.

- [21] Hewlings SJ, Kalman DS. Curcumin: A review of its effects on human health. *Foods*. 2017;6(10):92. doi:10.3390/foods6100092
- [22] FAO. 2016. Turmeric Accessed on 19th July 2022 from:
http://www.fao.org/fileadmin/user_upload/inpho/docs/Post_Harvest_Compndium_Turmeric.pdf.
- [23] WHO. WHO Monographs on Selected Medicinal Plants-Volume 1: *Rhizoma Curcumae Longae*. 2016. Accessed on 19th July 2022 from:
<http://www.apps.who.int/medicinedocs/en/d/Js2200e/14.html>.
- [24] Roy S. In India Turmeric is Used for Beautiful Skin. *Res Gate*. 2016. doi:10.13140/RG.2.1.2651.0166
- [25] Vaughn AR, Branum A, Sivamani RK. Effects of turmeric (*Curcuma longa*) on skin health: a systematic review of the clinical evidence. *Phytother Res*. 2016;30(8):1243-64. doi:10.1002/ptr.5640