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Exploring Ethnobotanical Wisdom: Beauty Enhancer Plants in Gondia Taluka of Vidarbha region of Maharashtra, India.

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Abstract

People have used various plants for enhancing beauty since times immemorial being readily available, inexpensive, and without side effects. After ethnobotanical research with the local population and field surveys in the Gondia Taluka in the Gondia region, the present paper attempts to create an inventory of beauty enhancer plants. 29 Plants of 20 families used for Skin and 28 plants of 21 families used for hair care have been enlisted separately. Plants of families Fabaceae are widely used for face care by the residents of this area. Usage of Plants of different families for face care by the people of this area has been found to be in the following Order: Fabaceae > Rutaceae > Apiaceae, Lamiaceae, Rosaceae > Liliaceae = Cruciferae, Anacardiaceae, Canabinaceae, Zingiberaceae, Moraceae, Juglandaceae, Papilionaceae, Myrtaceae, Piperaceae, Rosaceae, Euphorbiaceae, Solanaceae, Santalaceae . Plants of family Papilionaceae, Rutaceae, and Euphorbiaceae have been found to be widely used for hair care by the people of this area. Other plants used with them are from families - Pedaliaceae, Liliaceae, Annonaceae, Chenopodiaceae, Myrtaceae, Asclepiadaceae, Apiaceae, Cyperaceae, Cucurbitaceae, Asteraceae, Moraceae, Malvaceae, Fabaceae, Periplocaceae, Lythraceae, Papaveraceae, Sapindaceae . The recipes noted are juice, oil, paste, powder, extract, etc. The method of preparation and period of application varies with the kind of purpose.
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. ***Keywords: Beauty enhancers, Ethanobotany, Inventory, Sustainable- management.***

Introduction

The global cosmetic industry has witnessed significant advancements in the field of synthetic cosmetics. Despite these developments, a noteworthy trend persists, with 80% of the global population expressing a preference for herbal cosmetics derived from plants and plant products. The rationale behind this inclination

lies in the perceived lower adverse effects associated with herbal cosmetics compared to those formulated with synthetic chemicals (Jain et al., 2022). Notably, India, with its rich history and diverse biosphere, stands as a testament to the enduring popularity of herbal cosmetics.
The botanical wealth of India, comprising approximately 45,000 species of wild plants, holds particular significance from an ethanobotanical standpoint. Among these, 9,500 species have been identified as crucial for traditional uses, with human reliance on these plants dating back thousands of years, marked by a historical process of "trial and error" (Camejo-Rodrigues et al., 2003). This profound traditional knowledge is deeply ingrained in Indian culture, which places a high value on the use of plants for cosmetic purposes.

Local or indigenous knowledge is as old as human civilization (Aleem Qureshi et al., 2009). Unfortunately, knowledge regarding the use of traditional plants is lost from one generation to another (Ennabili et al., 2000; Tabuti, 2002).Traditional knowledge is being rapidly lost due to factors including migration, acculturation, alteration of the physical and biological surroundings, the rural exodus, new media, expertise loss due to elder death, etc., making such investigations essential. (González- Tejero et al., 2008). This work is a contribution to the inventory of knowledge related to beauty enhancement and the identification of plants used by people residing in the area of Gondia Taluka of Gondia District (M.S) in traditional cosmetic practise. This report conveys the observations made in the region, notably the herbal hair and face care routines adopted by both men and women in this region.

Methodology
To identify the various botanicals by individuals in the Gondia Taluka of the Gondia District (M.S.) utilised to enhance their complexion and hair, a survey of the local population was conducted for a year. To capture the indigenous knowledge of locals regarding the creation and application of herbal cosmetics, questionnaires were created. A semistructured questionnaire was used to gather data into two primary components. The purpose of the first segment was to collect data on name, age, experience, education, address, etc. The second portion of the questionnaire covered various plants and plant components that are utilised for skin and hair care. The component used, the plant's local name, and the method of application have all been carefully noted. Several of them were hesitant to discuss the formulation of some of the herbal cosmetics they use because they were convinced that doing so would reduce the effectiveness of herbal therapy. The information presented has been compared to classical literature (Jain, 1991), and the research was finished by consulting a number of floras (Pandey B.P, 2011).

Results and Discussion
The modern definition of wellness includes aspects of appearance, fitness, health, and anti-aging (Datta and Paramesh, 2010). A variety of skin-lightening procedures, including dermabrasion, ultrasound, and laser therapy, have been developed in response to the socio-medical desire for beauty, particularly skin fairness (Reszko et al., 2009).

Social issues are exacerbated by unhealthy skin, but happiness, confidence, and self-esteem are all increased by healthy skin. A interesting source of knowledge for the study and creation of cutting-edge skin-care cosmetics is traditional herbal remedies. To encourage the absorption of active ingredients into the skin, penetration enhancers or the right vehicles must be utilised because the stratum corneum of the skin acts as an effective barrier to external application. The capacity of phospholipids to increase skin permeability has been the subject of much research. When phospholipids are solubilized, they are employed to increase penetration (Yokomizo and Sagitani, 1996; Raghavan, 2007).
When compared to other penetration enhancers, phospholipids' key benefit is that they are less likely to irritate the skin (Sasaki et al., 1990; Ghosh et al., 1997). Instead of just cleansing, protecting, and moisturising the skin, the key advancement in cosmeceutical products nowadays is the inclusion of antioxidants. The preservation of youth and vitality is of greater interest to consumers. Cosmetics and topical creams are a wonderful example of how the notion of free radical damage has highlighted the importance of antioxidants and nutritional supplementation in maintaining health.

There have been reports of 400–600 medicinal plants from 250–300 species being utilised more regularly in herbal remedies in India. Many species that are widespread in some regions and are well-known to be utilised there in customary preparations ought to be properly studied. This report describes how residents of Gondia taluka (Gondia region) employ plants for personal adornment. For this goal, 48 plants from 38 different angiosperm families have been identified.

Their traditional way of life includes several customs, which they have carried on from earlier times. In particular, the female candidates are very educated about their applications. Some of the plant species can also be found in their immediate environs or are grown in kitchen gardens. The recipes used are prepared using a variety of plant parts including roots, stems, leaves, flowers, fruits, and seeds. In the area, prevalent issues include sun-induced skin tanning, lice, hair loss, dandruff, greying hair, and hair fall.

Mostly Medicinal plants are used in beauty treatments for various reasons. The close analysis of the survey revealed the medicinal plant usage in 16 skin-related issues, 9 hair-related issues, and 2 major oral-related issues. The majority of medicinal plants used in skin care treatments were used to improve skin complexion. It was reported as 25 medicinal plants. Treatment for pimples was the second largest treatment segment under the skin care which reported 23 medicinal plants in usage. Other than these main two treatments, herbal preparations were used to treat for freckles (13 plants), skin discoloration (9 plants), healing (8 plants), aging (7 plants) and acne, skin dryness, exfoliating and soften the skin (4 plants per each), malodour of the body, cleansing, skin health, and whitening (2 plants per each).
The recipes noted are juice, oil, paste, powder, extract, etc. The method of preparation and period of application vary with the kind of purpose. 29 Plants of 20 families used for Skin and 28 plants of 21 families used for hair care has been enlisted separately.

Botanicals for Skin Care

Plants used for Skincare of the people of this region are enlisted as follows:

Sr. No	Botanical Name	Vernacular Name	Family	Plant Part Used
1.	*Aegle marmelos*	Bael	Rutaceae	Fruit
2.	*Aloe vera* L.	*Korphad*	Liliaceae	Leaves
3.	*Arachis hypogea* Linn.	*Moong phalli*	Fabaceae	Seeds
4.	*Azadirachta indica* A. Juss.	*Karu-neem*	Meliaceae	Fruits and leaves
5.	*Brassica campestris* L.	*Sarsoon*	Cruciferae/ Brassicaceae	Seeds
6.	*Brassica rapa* L.	*Shaljum*	Cruciferae/ Brassicaceae	Seeds
7.	*Buchanania lanzan* Spreng.	Charoli	Anacardiaceae	Seeds
8.	*Canabius sativa* L.	*Bhang*	Canabinaceae	Seeds and roots
9.	*Cicer arietinum* L.	*Channa*	Fabaceae	Seeds
10.	*Citrus aurantifolia* Roxb.	*Lemon*	Rutaceae	Fruit
11.	*Citrus reticulata* Blanco	Santra	Rutaceae	Fruit
12.	*Cucumis sativa* L.	*Khira*	Cucurbitaceae	Fruit
13.	*Coriandrum sativum* Linn.	Dhaniya	Apiaceae	Leaves
14.	*Curcuma longa* Burm.	*Haldi*	Zingiberaceae	Rhizome
15.	*Ficus bengalensis* L.	*Bad*	Moraceae	Roots
16.	*Foeniculum vulgare* L.	*Saunf*	Apiaceae	Fruits
17.	*Juglans regia* L.	*Akhrote*	Juglandiacea	Fruit
18.	*Lens culinaris*	Masur dal	Papilionaceae	Seed
19.	*Mentha longifolia* L.	*Pudina*	Lamiaceae	Leaves
20.	*Myristica fragrans*	*Jaiphal*	Myristica	Fruit
21.	*Ocimum sanctum*	Tulsi	Lamiaceae	Leaves
22.	*Papaya carica* L.	*Papaiya*	Piperaceae	Fruit
23.	*Pisum sativum* L.	*Batana*	Fabaceae	*Seed*
24.	*Prunus amygdalus*	*Badaam*	Rosaceae	*Seed*
25.	*Pyrus malus*	*Safarjan*	Rosaceae	Fruit
26.	*Ricinus communis* L.	*Arandi*	Euphorbiaceae	*Seed*
27.	*Solanum tuberosum*	Alu	Solanaceae	Fruit
28.	*Santalum album* Linn.	Chandan	Santalaceae	Bark
29.	*Trigonella frenulum-graecum* L.	*Methi*	Fabaceae	Leaves

***1. Aegle marmelos* (Bael) Rutaceae**
When the rind of the Bel fruit (*Aegle marmelos* Corr.) is levigated—that is, powdered and combined—into cow's milk and the resulting paste is applied to cracked lips, the cracking stops and the cracks begin to heal within 10 days.

2. *Aloe vera* L. (*Korphad)* Liliaceae.
Especially at night, the fresh leaf gel is applied to the face. It works as a cleaner and as well as a treatment for freckles.

3. ***Arachis hypogea* Linn. (*Moong phalli)* Fabaceae**
In order to combat dry skin, seed oil and olive oil are applied to the hands and feet.

4. *Azadirachta indica* A. Juss. (*Karu-neem)* Meliaceae
Head louse infestations can be cured by applying fruit powder, leaves, and oil at the hair roots.
Freckles can be reduced by adding a few drops of rose extract to leaf paste.Neem leaves, *Curcuma longa*, multani mati, and a few drops of lemon juice are combined to make a mask that enhances beauty.

5. ***Brassica campestris* L. (*Sarsoon)*Cruciferae/ Brassicaceae**
Paste *(ubton)* prepared from mustard seed powder, gram powder, barley and mustard oil is applied on face and whole body; rubbed and rinsed twice a week for cleansing. *Kajal* prepared from the smoke collected after litting the cotton rope of the earthen vessel(diya) with the mustard oil mixed with honey wax is applied on eye lids.

6. ***Brassica rapa* L. *(Shaljum)* Cruciferae/ Brassicaceae**
Freckles can be treated with a paste made from seed powder, gramme powder, and honey.Fruit decoction effectively treats foot cracks and eliminates all skin blemishes.

***7. Buchanania lanzan* Spreng. (Charoli) Anacardiaceae**
A paste made from seeds soaked in milk and rose water provides skin a fresh appearance.

8. *Canabius sativa* L. (*Bhang)* Canabinaceae
An olive oil and adventitious root paste is used to tighten the breasts.

9. *Cicer arietinum* L. (*Channa)* Fabaceae
A face-cleansing paste made from ground seeds, *Curcuma longa*, powdered sandalwood, and a few drops of rose extract has a purifying effect.

10. *Citrus aurantifolia* Roxb. (*Lemon)* Rutaceae
Applying a paste made from seed powder, yoghurt, and lemon juice on the face and arms makes the skin glow.

11. *Citrus reticulata* Blanco (Santra) Rutaceae
A paste made from powdered dried peels works well as a scrubber.

12. ***Cucumis sativa* L. (*Khira)* Cucurbitaceae**
Paste prepared from mashed fruit and drops of honey gives smoothness to the skin.

13. *Coriandrum sativum* Linn. (Dhaniya) Apiaceae
Paste of green leaves soothes the skin against sun burns.

14. *Curcuma longa* Burm. (*Haldi)* Zingiberaceae
The smoothness of the skin is provided by a paste made from flour husk, *Curcuma longa* powder, lemon juice, and cow's milk. A nice facial scrub is made from a paste made of milk, triticum aestivum, and curcuma long.

15. ***Ficus bengalensis*** **L.** ***(Bad)*** **Moraceae**

. For female breast care, milk produced from aerial parts, particularly leaves, is given topically. To treat foot cracks, bark extract is applied.

16. ***Foeniculum vulgare*** **L.** ***(Saunf)*** **Apiaceae**

Cooled seed decoction is poured in eyes for effective eye sight.

17. ***Juglans regia*** **L.** ***(Akhrote)*** **Juglandiaceae**

. Paste prepared from dried fruit powder and rose extract applied on face is effective against acne marks.

18. ***Lens culinaris*** **(Masur dal) Papilionaceae**

Masura dal pounded with Madhu after being soaked in milk (Honey). The most efficient face pack that gives the face the magnificence of the white lotus flower petals is the paste that has been prepared in this manner and massaged for seven nights.

19. ***Mentha longifolia*** **L. (*Pudina)* Lamiaceae**

Powder of leaves have been found to be useful to cure pimples and scars.

20. ***Myristica fragrans (Jaiphal)*****Myristicacae**

Thin Paste of Jaiphal made with raw milk is applied on face for frickles and spotting.

21. ***Ocimum sanctum*** **(Tulsi) Lamiaceae**

Paste of leaves have been found to be useful to cure pimples.

22. ***Papaya carica*** **L. (*Papaiya)* Piperaceae**

Paste prepared from fruit, Rose extract and egg white is applied externally as an effective skin tonic.

23. ***Pisum sativum*** **L. (*Batana)* Fabaceae**

For fairness, a paste made from powdered shade-dried seeds and lemon juice is applied to the face.

24. ***Prunus amygdalus (Badaam)*** **Rosaceae**

Facial mask prepared from seed powder, gram powder, few drops of rose extract and honey is effective against skin freckles.

25. ***Pyrus malus (Safarjan)*** **Rosaceae**

Paste prepared from fruit mixed with honey and rose extract applied on face gives fairness to skin.

26. ***Ricinus communis*** **L. (*Arandi)* Euphorbiaceae**

Oil applied on eye lashes enlarges the eye lashes.

27. ***Solanum tuberosum*** **(Alu) Solanaceae**

Juice of peels is applied to get relief from sun burn.

28. ***Santalum album*** **Linn. (Chandan) Santalaceae**

Svetlana Chandana (Santalum album) It is frequently used in skin care since it is regarded as a symbol of vitality. It is suitable for all skin types. To revive and freshen up drab skin, sandalwood is utilised in cosmetic goods. In addition to having the ability to repair skin issues, it also gives the skin an unparalleled radiance that is unsurpassed by any other product. To eliminate dead skin cells, promote the formation of new cells, and give skin a youthful appearance, sandalwood is often used in face packs and washes (Utkarsha et al., 2017). Due to its high sesquiterpenoid alcohol content (80–90%), sandalwood oil is widely utilised in skin lightening cosmetics and has demonstrated low acute oral and dermal toxicity in laboratory animals. Recent research has shown that the main component of sandalwood oil, sandalalol, is a powerful tyrosinase inhibitor (IC50 = 171 g/mL) in comparison to kojic acid and arbutin (IC50-149 g/mL), demonstrating considerable potential for application in skin care (Mishra, 2011). In our research, we discovered that rose water was mixed with sandal wood powder before being applied to acne-prone skin by 99% people.

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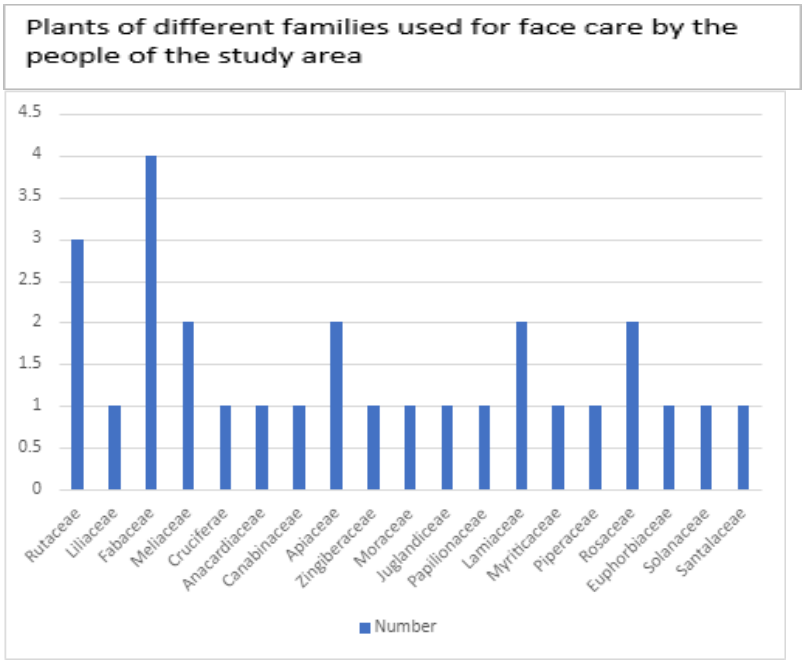
29. *Trigonella foenum-graecum* L. (*Methi)* Fabaceae

Freckles on the face can be removed with a paste made from dried leaves and rose essence.



Botanicals for Hair Care

Plants used for hair care of the people of this region are enlisted as follows:

Sr. No	Botanical Name	Vernacular Name	Family	Plant parts used
1	*Abrus precatorius* L.	Gunj	Papilionaceae	Seed
2	*Aloe vera* L.	Korphad	Liliaceae	Leaves
3	*Annona squamosa* L.	Seetaphal	Annonaceae	Seed
4	*Beta vulgaris*	Beet	Chenopodiaceae.	Beet
5	*Careya arborea* Roxb.	Kumbhi	Myrtaceae	Fruit
6	*Calatropis gigantea* (L.) R.Br	Safed Rui	Asclepiadaceae.	Fruit
7	*Centella asiatica* (L.) Urb.	Brahmi	Apiaceae	Leaves
8	*Citrus aruntifolia* (Chistn) J.W.	Nimbu	Rutacea	Fruits
9	*Cyperus rotundus* Linn.	Lavali	Cyperaceae.	Rhizome
10	*Cuscuta chinensis* Lam.	Amarvel	Cuscutaceae	Stem
11	*Eclipta prostrat* (L.)	Kala-maka	Asteraceae	Leaves
12	*Emblica officinalis* Gaertn.	Awala	Euphorbiaceae.	Leaves
13	*Ficus benghalensis* L	Bad	Moraceae.	Roots
14	*Hibiscus rosasinensis* L.	Jaswand	Malvaceae.	Flower
15	*Jatropha curcas* L.	Safed Arand	Euphorbiaceae.	Seeds
16	*Hemidesmus indicus* L.	Anantmul	Periplocaceae.	Root
17	Indigofera tinctoria	Indigo	Fabaceae	Leaves
18	*Lawsonia inermis* L.	Mehandi	Lythraceae.	Leaves
19	*Murraya koenigii* (L.) Spreng	Curry patta	Rutaceae	Leaves
20	*Papaver somniferum* Linn.	Khas-khas	Papaveraceae	Seeds
21	*Sapindus laurifolius* Vahl.	Ritha	Sapindaceae	Fruits
22	*Sesamum indicum* L.	*Til*	Pedaliaceae	Seeds
23	*Trigonella foenum-gracum* L.()	Methi	Papilionaceae	Seeds

1. *Abrus precatorius* L.(Gunj, Charmtadi seed) Papilionaceae

In order to encourage hair development on bald heads, a homogenised paste made from abrasive seeds and Hibiscus rosasinensis L. flowers is regularly applied to the scalp at night.

2. *Aloe vera* L.(Korphad) Liliaceae

Leaf juice is used to wash hair.

3. *Annona squamosa* L.(Seetaphal Seed) Annonaceae
Cow urine is used to crush seeds, which are then applied to the scalp to stop hair loss.Often applying seed powder to the scalp will kill lice.

4. *Beta vulgaris* (Beet) Chenopodiaceae.
Root juice is mixed with heena to intensify its colour.

5. *Careya arborea* Roxb.(Kumbhi Fruit) Myrtaceae.
Fruit pulp is applied to scalp at night for a week for hair growth.

6. *Calatropis gigantea* (L.) R.Br.(Safed Rui) Asclepiadaceae.
Emblica officinalis fruit powder combined with latex is periodically applied to the scalp.

7. *Centella asiatica* (L.) Urb.(Brahmi) Apiaceae
Leaf paste is applied on scalp regularlyfor hair growth.

8. *Citrus aruntifolia* (Chistn) J.W. (Nimbu) Rutaceae.
Fruit juice is applied on head at night for 4 to 5 days to remove dandruff.

9. *Cyperus rotundus* Linn. (Lavali Rhizome) Cyperaceae.
For washing hair & hair growth, rhizome powder is used to wash hair.

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10. *Cuscuta chinensis* Lam. (Amarvel) Cuscutaceae.
To remove dandruff Stem paste is applied on scalp at night regularly.

11. *Eclipta prostrat* (L.) L. (Kala-maka)Asteraceae.
Leaf extract is added in coconut oil (*Cocos nucifera* L.)and used as a hair oil for hair growth.

12. *Emblica officinalis* Gaertn.(Awala).Euphorbiaceae.
Awala powder and 500 g of brahmi leaves are combined, then cooked in a gallon of coconut oil. To treat dandruff, promote hair growth in bald areas, and stop hair loss, this oil is applied to the scalp.

13. *Ficus benghalensis* L.(Bad) Moraceae.
Hair growth Paste of aerial roots is applied on scalp at night regularly.

14. *Hibiscus rosasinensis* L.(Jaswand Flower) Malvaceae.
Flower extract is added in coconut oil (*Cocos nucifera* L.) and used as hair oil for hair growth.

15. *Jatropha curcas* L.(Safed Arand) Euphorbiaceae.
For washing hair seeds are crushed and applied to wash hair.

16. *Hemidesmus indicus* L.(Anantmul) Periplocaceae.
Paste of root is applied on scalp at night for hair growth.

17. Indigofera tinctoria (Indigo)(Fabaceae)
Aloe pulp and warm water are used to create a fine paste from indigo powder. After applying henna, this paste should be left on for 45 minutes to 2 hours to achieve a dark black colour.

18. *Lawsonia inermis* L.(Mehandi Leaf) Lythraceae.
Both as a hair conditioner and a hair colour.When dying hair and conditioning hair, a paste made of leaves is applied to the scalp.

19. *Murraya koenigii* (L.) Spereng (Curry patta) Rutaceae
To turn hair black, leaf extract is mixed in coconut oil and used as hair oil.

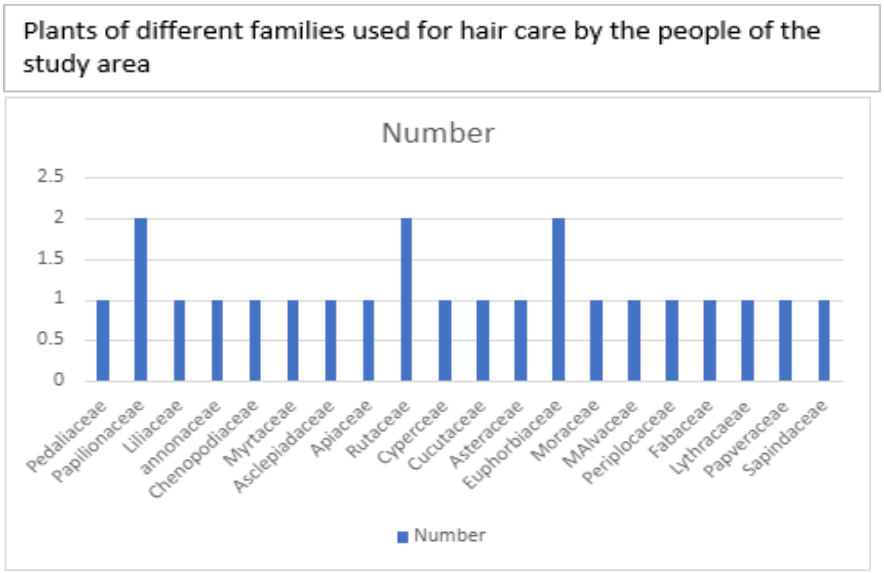
20. *Papaver somniferum* Linn.(Khas-khas) Papaveraceae

To treat dandruff, the scalp is covered in a paste made from Khas-khas seeds and milk.

21. *Sapindus laurifolius* Vahl(Ritha). Sapindaceae
For hair washing Fruit decoction is employed as a hair shampoo.

22. *Sesamum indicum* L. (*Til)* Pedaliaceae
To wash hair, use a decoction made from the fruits of Sesamum indicum, Sapindus orientalis (Retha), and Phyllanthus emblica (Amla). It gives hair a silky, lovely sheen.

23. *Trigonella foenum-gracum* L.(Methi) Papilionaceae
Aloe vera (L.) leaf pulp is used to store seeds overnight.These seeds are used to make a paste that is used to wash hair.



Conclusion

The convergence of traditional herbal knowledge and contemporary scientific advancements in skincare and wellness unveils a dynamic landscape that transcends conventional beauty norms.

The comprehensive study of 48 plants from 38 angiosperm families used for personal adornment in the Gondia region underscores the diversity of applications in addressing prevalent issues like skin tanning, hair loss, and more. Medicinal plants, ranging from 16 skin-related issues to 9 hair-related concerns, highlight the versatility of herbal remedies.

This exploration not only bridges the gap between traditional wisdom and scientific understanding but also emphasises the sustainable use of herbal cosmetics in the pursuit of holistic wellness. The preservation and documentation of traditional knowledge, as exemplified in this study, are crucial for the continued evolution of skincare practices, ensuring the cultural and ecological sustainability of these age-old traditions in the face of contemporary challenges. As we navigate the intricate tapestry of skincare, the synergy between tradition and science becomes an essential paradigm for the future of cosmetic research and development.

Conflict of Interest: There is no conflict of interest.

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