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Focus on herbal home remedies for hair regrowth and loss

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Abstract

Hairs are the structures from the skin's follicles, which are described as "improved epithelial structure formed as a result of keratinization of germinative cells." Keratin, which includes the chemical elements Carbon, Nitrogen, Sulphur, and Oxygen, makes up hair. Hair grows 15 to 30 mm on average every month. Alopecia areata is a condition that causes erratic hair loss. Herbal Home remedies for hair loss and premature greying both promote hair growth/r regeneration when applied topically and orally. There are numerous different Allopathic medicine types for treating hair loss, but they all have undesirable side effects. About 80% of the population rely on herbal treatments because they had less adverse effects compare to allopathic. Therefore, with the aid of this discussion we reach to the conclusion that many herbal home remedies are effective for treating Alopecia and other hair diseases without causing adverse reactions.

Keywords: Hair loss, Hair regrowth, Herbal home remedies, Alopecia

Introduction

A crucial part of the human body is hair. It is crucial to take good care of the hairs because they are one of the vital components that complete a person's appearance. According to the definition of hair, it is "improved epithelial structure formed as a result of keratinization of germ native cells." The follicles that are found on the skin produce hair as their out growth [1]. On the scalp, skin, face, and other places, there is hair. Human hair is regarded as one of the symbols of human beauty, and the scalp plays a crucial role in hair growth. The skin that covers the cranium and the region of the head where hair grows is made up of soft tissue layers. Sebaceous glands and many hair follicles make up the scalp. The PH of the hair shaft is 3.67 while that of the scalp is 5.5. It is more prone to mitotic diseases such as profuse dandruff, tinea capitis, and scalp infections because of the presence of Sebaceous Glands and the cyclical changes in the environment. Scalp follicles from psoriasis, head lice, and even baldness [2].

Reason of hair fall

Alopecia, often known as hair loss, is a disorder where hair in some areas of the scalp is gone or no longer grows. There are Numerous Causes of Hair loss, Including Alopecia areata (AA) and Androgenetic Alopecia (AGA). Hair loss is brought on by both genetic and environmental factors, with work stress emotional changes, and hormone secretion disturbance being particularly prevalent in contemporary life. Young people are more likely to experience it, and it can lead to disrupted self-perception and psychological turmoil. It is now an issue affecting people of all ages on a global scale [3].

Hormonal Changes [4]

Alopecia, or hair loss, is a condition where some parts of the scalp have no hair or have stopped growing. There are many reasons why people lose their hair, including Alopecia areata and androgenetic alopecia. Both hereditary and environmental causes can cause hair loss, with occupational stress, emotional changes, and disturbances in hormone secretion being particularly common in modern life. Young people are more likely to experience it, and it can cause psychological distress and a disruption in one's sense of self. It is now a global problem that affects people of all ages.

Stress

Age stress is a major concern for many health issues, including hair fall. When you're stressed your body produces excess cortisol and disrupts your usual hair cycle, resulting in excessive hair fall. Lack of sleep also triggers the same hormone.

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Excessive Exercise

If you've just started working out vigorously and are experiencing a sudden bout of hair fall, your workout is to be blamed. Physical stress is equally responsible for hair loss, as Psychological Stress.

Deficiencies

Your hair requires a whole lot of nutrients to keep it healthy and maintain that volume. When your body isn't getting enough Nutrients, it tends to slow it thought your lovely lacks. the most common deficiencies linked to hair loss are zinc and iron, however deficiencies in Vitamins A, B12 an effect on hair quality.

Hair Physiology

These are formed by a down growth of epidermal cells into the dermis or subcutaneous Tissues, Caused hair follicles. At the base of the follicle is a cluster of cells called the bulb. The hair is formed by multiplication of cells of the bulb and as

they are pushed upwards away from their source of nutrition, the cells die and become keratinized. The part of the hair above the skin is the shaft and the remainder the root. The color of the hair is genetically determined and depends on the amount of melanin present White hair is the result of the replacement of melanin by tiny Air Bubbles [6].

The Arrector Pili

These are little bundles of smooth muscles fibers attached to the hair follicles. The muscles are stimulated by sympathetic nerve fibers in response to fear and cold erect hairs trap air, which act as an insulting layer this is an efficient warming mechanism especially when accompanied by shivering i.e., involuntary contraction of skeletal muscles [6].

The Sebaceous Glands

These consist of secretory epithelial cells derived from the same tissue as the hair follicles.

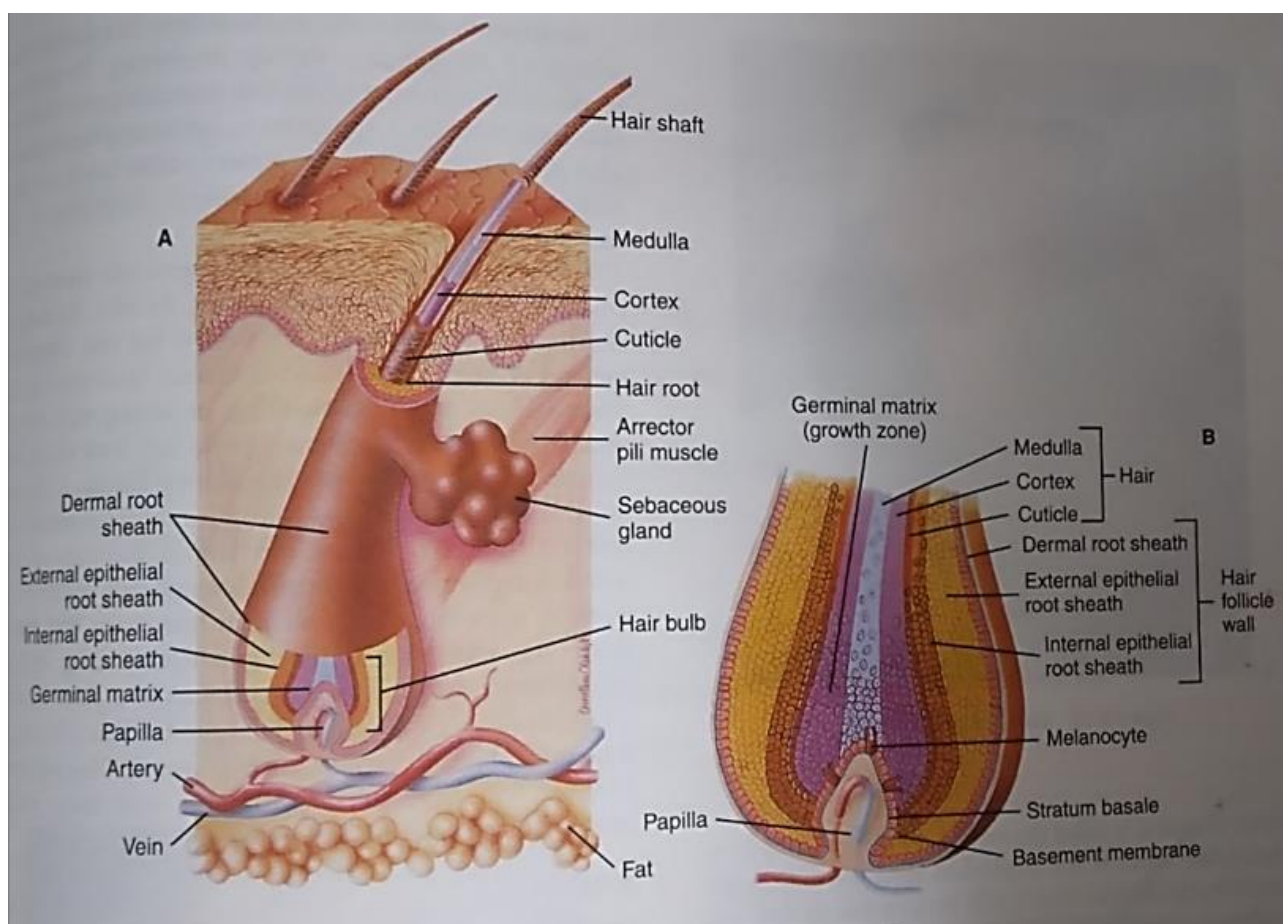


Fig 1: Hair structure [6]

Sebum keeps the hair soft and pliable and gives it a Shiny appearance on the skin it provides some water proofing and acts as a bactericidal and fungicidal agent, preventing infection it also prevents drying and cracking of skin, especially on Exposer to heat and sunshine. The activity of these glands increases at puberty and is less at the extremes of age rendering infants and older adults prone to the effects of excessive moisture. The visible component of a hair is known as the medulla, the more superficial area around it is known as the cortex, and the covering layer is known as the cuticle. A portion of the hair, specifically, the root, is concealed in the follicle. On average, hair on the head grows less than 12 mm every month, or about 11 cm per year, alternating between

growth and resting periods. Body hair develops more gradually. According to reports, head hairs have a lifespan of two to six years, after which they naturally fall out and are replaced by new hair, but baldness can still occur [5].

Inheritance of the baldness genes and the presence of the male sex hormone testosterone are the only two conditions that cause the common type of baldness to develop. When These Two Conditions are satisfied, common baldness or male pattern baldness invariably develops. The medicine Rogaine is a therapy option that may really delay or stop the progression of male Pattern baldness. The treatment is pricey, must be taken for life if new hair growth is to be retained, and may not always have the expected dramatic results [6].



Fig 2: Baldness [6]

Drugs used in hair- fall treatment

Bhringaraja

Biological Source: Commonly known as false daisy, karisalankanni and Bhringaraja, is a species of plant *Eclipta prostrata*. It is widespread across much of the world [7].

Family: Asteraceae [7]

Phytoconstituents: A wide range of active phytoconstituents, which includes coumestan derivatives, steroidal alkaloids, flavonoids, phenolic acids [8].

Use: The plant is useful for treatment of all type of skin diseases. It is good for blanking and strengthening of the hair, for stopping hemorrhages and fluxes and for strengthening the gums [10].

Other use

- Carminative
- Diuretic
- Anti- inflammatory
- Vitiated condition of vata [10].



Fig 3: Bhringaraja [9]

Onion

Biological Source: - *Allium Cepa* is the botanical name for onions. It is a vegetable that goes by the names bulb onion and common onion. It belongs to the *Allium Genus* and is a commonly cultivated plant [11].

Family: - Liliaceae [12]

Phytoconstituents: Volatile oil with sulphurous constituents, Sulphur containing compounds such as Allicin and Allin, flavonoids and sterols [12].

Ascorbic acid, Tuteolin, Kaempferol [13]

Uses: Onion has a long standing reputation as an aphrodisiac, and it is also used cosmetically to stimulate hair growth [12].

Other Use

- Antibiotic
- Expectorant
- Flu and Coughs
- Diuretic [15].



Fig 4: Onion [14]

Neem

Biological Source: Neem consist of almost all the part which are used as drug of *Azadirachta indica*. [16].

Family: Meliaceae [16].

Phytoconstituents: - Neem contains meliacins, triterpenoid bitters, tannins and flavonoids [16].

Leaf: - Quercetin, nimbosterol, nimbin [15].

Bark: - Nimbin, nimbdin, nimbosterol [15].

Use: - Neem oil expressed from the seeds, is commonly used as a hair dressing and hair fall treatment [16].

Other Use: - Treats acne(anti-inflammatory), treats fungal infection, increase immunity [18].

Vrana, Daha, rakta, pitta [19].



Fig 5: Neem ^[17]

Aloe

Biological Source: The botanical name of Aloe is *Aloe barbadensis* miller the biological source of aloe is dried latex of leaves of it ^[21].

Family: Liliaceae ^[20].

Phytoconstituents: Rasins, tannins, polysaccharides, aloectin B ^[20].

Use: *Aloe vera* contains vitamins A, C, and E all vitamins contribute to cell turnover, promoting healthy cell growth and shiny hair ^[21].



Fig 6: Aloe ^[22]

Brahmi

Biological Source: Brahmi consist of the fresh and dried leaves and stem of *Centella asiatica urban* ^[23].

Biological name: *Bacopa Monnieri* ^[23]

Family: Umbelliferae ^[23]

Phytoconstituents: Saponin glycosides, Triterpene acids, Steroidal saponins' Brahmi resembles Strychine, Alkloid, Herpestine ^[23].

Use: Treatment of hair fall and skin disease ^[23].

Other use: - Purgative, diuretic, laxative ^[25].



Fig 7: Brahmi ^[24]

Coconut

Biological Source: *Cocos Nucifera* (L) known as coconut coco, coco-da-bahia or coconut of the beach ^[26, 27].

Family: Arecaceae ^[26]

The plant is originally from southeast Asia and the islands between the India and pacific oceans ^[26].

Phytoconstituents: Phenols, Tannins, Flavonoids, Steroids, and alkaloids ^[28]

Use: Coconut prepare oil is used to prevent hair loss treatment ^[28].

Other Use: Treat diarrhea, renal inflammation, asthma treatment ^[28]. Diabetes, urinary discharges, diseases of the blood ^[27].



Fig 8: Coconut ^[29]

Orange

Biological sources: The orange peel is the fresh or dried outer part of the pericarp of *Citrus aurantium* Linn. ^[30].

Family: Rutaceae ^[37]

Phytoconstituents: Flavonoids, coumarins 61-67%, carbohydrates, volatile compounds, peptides, fatty acids [32, 33, 35].

Use: Oranges have vitamin C in abundances, it makes them great for managing scalp PH, infections and other hair condition [36].

Other Use: Ulcer, Cancer, Diabetes, Arthritis [31].



Fig 9: Orange [34]

Rose

Biological Source: *Rosa indica* most rose species are native to Asia, with smaller numbers being native to north America and a few to Europe and northwest Africa [39].

Family: Rosaceae [38].

Phytoconstituents: Flavonoids, triterpenoids, tannins, methyl gallate, salicylic acid [40, 41, 43].

Use: A Healthy scalp environment is key to preventing hair growth and loss issues. "the anti-inflammatory properties of rose water can help promote a healthy scalp environment and reduce hair loss." [44].

Other Use: Decoration, expressing feelings, cosmetic and perfumes [45].



Fig 10: Rose [42]

Hibiscus

Biological Source: - An evergreen shrub growing 1-3 meters, the *Hibiscus rosa-sinensis* flowers frequently in hot and humid condition [46].

Family: Malvaceae [47].

Phytoconstituents: Tannins, flavonoids, steroids, alkaloids, saponins, phenol [49].

Use: Hibiscus extract have been used for again in Ayurveda to cure many ailments. They are used to cure ailments such as hair loss and hair graying [50].

Other Use: Cancer treatment, blood sugar, skin disease [51].



Fig 11: Hibiscus [48]

Olive

Biological Source: Olive is a fixed oil obtained by expression from pericarp of the ripe fruits of *Olea Europea* [52].

Family: Oleaceae [55].

Phytoconstituents: Glycerides of oleic acid, palmitic acid, stearic acid, linoleic acid and arachidic acid [52].

Use: Olive is rich in antioxidants these antioxidants help maintain scalp and hair health and protect them from free radical damage [54].

- Emollient and laxative
- It is also used in the preparation of lubricants, plasters, textiles, soaps [52].



Fig 12: Olive [53]

Almond

Biological Source: Almond is a fruit of *Prunus dulcis*.^[56]

Family: Rosaceae^[58]

Phytoconstituents: Flavonols, proteins, vitamins, magnesium, zinc, calcium, glycoside^[56].

Use: Seeds of almonds have been traditionally claimed to process hair growth promoting activity. These seeds are excellent source of proteins and vitamins^[58].

Other Use: Antidiabetic activity, immune stimulatory activity, antioxidant activity^[59].



Fig 13: Almond^[57]

Amla

Biological Source: *Phyllanthus emblica l* is an ephemeral tree belonging to the euphorbiaceae family. Amla fruits are edible and are mainly found in regions of India, Asia, china, and Pakistan^[60].

Phytoconstituents: Fixed oil, essential oil, tannin, gum, alkaloids, albumin^[62].

Use: - They are rich in vitamin c the antioxidant properties of vitamin c help to reduce oxidant stress which causes hair problems such as premature ageing, greying of hair, hair fall and damage^[63].

Other Use: Hypertension, Diabetes, Digestion, Weight loss, Skin Health^[64].



Fig 13: Amla^[61]

Aranda

Biological Source: - *Ricinus communis* the castor bean or castor oil plant, is a species of perennial flowering plant^[65].

Family: - Euphorbiaceae^[66].

Phytoconstituents: - flavonoids, miscellaneous, vitamins, steroids^[67, 69].

Uses: - castor oil used prevent damage of shaft from sunlight bleaching rather than for hair growth^[70, 71].



Fig 15: Aranda^[68]

Aritha

Biological Source: *Sapindus mukorossi*, commonly known as Indian soapberry, or ritha^[72].

Family: Sapindaceae^[72].

Phytoconstituents: Saponins (10% - 11.5%), sugars (10%) and mucilage, fatty acids, protein, carbohydrate and starch^[73, 75].

Use: Reetha is used as the main ingredient in soaps and shampoos for washing hair, as it is considered good for the health of hair^[76].

Other Use: Asthma, Cough, Migrane, Epilepsy^[77].



Fig 16: Aritha^[74]

Methi

Biological Source: - Methi consists of dried ripe seeds of *Trigonella foenum- Graecum*.^[78]

Family: - Leguminaceae^[78].

Phytoconstitute: - Fiber, protein, fat, aromatic compounds, vitamins and minerals^[80].

Use: Fenugreek contains lecithin, vitamins, which acts as a natural emollient that condition and moisturizes your scalp and hair deeply. Fenugreek has rich anti-inflammatory properties that reduce inflammation and pain in your hair roots^[81].

Other Use: Cancer Treatment, Gastric ulcers, Brain disorder, Asthma, Diabetes^[82].



Fig 17: Methi^[79]

Zinger

Biological Source: Ginger consists of the rhizomes of *Zingiber officinale*, rosscose and dried in the sun^[83].

Family: Zingiberaceae^[83].

Phytoconstitute: Carbohydrates (50-70%), lipids (3-8%), phenolic compounds, vitamin, protein, amino acids^[84, 86].

Use: Applying ginger to the scalp can improve blood circulation to the area, while also stimulating each individual hair follicle. Ginger has several vitamins, minerals and fatty acids which help in strengthening and improving hair quality, in turn promoting longer, strong hair^[87].

Other Use: Lower blood sugar and improve heart disease, cancer treatment, Alzheimer's disease^[88].



Fig 18: Zinger^[85]

Papaya

Biological Source: The papaya, papaw, or pawpaw is the plant species *Caria papaya*, one of the 21 accepted species in the genus *carica*^[89].

Family: Caricaceae^[90].

Phytoconstitute: Renin, Proteolytic Enzyme, coagulating agent, hydrolyzing agent, clotting agent^[92].

Use: The presence of folic acid and antioxidants in this fruit enhances the circulation of blood, oxygen, nutrients and growth factors to the hair follicles, promoting the growth of healthy hair^[93].

Other Use: Antioxidant, Anticancer, Heart health, improve digestion^[94].



Fig 19: Papaya^[91]

Jujube

Biological Source: Jujube is usually called red date or Chinese date, which is the fruit of *Zizipjus jujube* Mill. Jujube is native to china^[95].

Family: Rhamnaceae^[95].

Phytoconstitute: Flavonoids, polysaccharides, terpenoids, saponins, nucleotides^[96].

Use: Rich in vitamins and minerals, jojoba oil can be a natural dandruff remedy. This is primarily due to its potential to revive the natural pH balance of your scalp^[98].

Other Use: As a cleanser, acne treatment, natural moisturizer, mouth ulcer^[99].



Fig 20: Jujube^[97]

Garlic

Biological Source: -Garlic is the ripe bulb of *Allium sativum* Linn ^[100].

Family: Liliaceae ^[100].

Phytoconstitute: Volatile oil, fatty oils, alcohol, essential oils, vitamins, proteins ^[101, 102].

Use: Garlic is high in vitamins and minerals, such as vitamins B₆ and c, is promote healthy hair ^[104].

Other Use: Carminative, Expectorant, Cough, Fever, Asthma, Tuberculosis ^[105].



Fig 21: Garlic ^[103]

Sikakai

Biological Source: - It consists the fruits of the plant *Acacia concinna* linn. ^[106].

Family: Leguminocae ^[106].

Phytoconstitute: Lupeol, lactone, oxalic and citric acid, spinasterol ^[108].

Use: Sikakai is also rich in vitamins like C, E, A and K and other micronutrients that nourish your scalp and boost hair growth ^[109].



Fig 22: Sikakai ^[107]

Apple**Cider vinegar**

Biological Source: Apple trees, *Malus Pumila* are cultivated worldwide and are the most widely grown species in the Genus *Malus* ^[110].

Family: Rosaceae ^[110]

Phytoconstitute: Flavonoids, antioxidant compounds, glycosides ^[112].

Use: It's antibacterial and antifungal properties help fight fungi and bacteria that cause dandruff, loss of pigment, dryness, itchiness and scalp infection ^[113].

Other Use: Cancer treatment, Cardiovascular disease, Asthma ^[114].



Fig 23: Apple ^[111]

Flax Seeds

Biological Source: Flax, also known as common flax or linseed, is a flowering plant, *Linum usitatissimum*, ^[115].

Family: Linaceae ^[115].

Phytoconstitute: Lipids, polysaccharides, protein/peptides phenolic compounds ^[116, 118].

Use: Flaxseed contains a power house of vitamins, nutrients and healthy all of which may help to: treat the scalp, prevent hair loss, promote hair growth. ^[119]



Fig 24: Flax seed ^[117]

Carry Leaves

Biological Source: *Murraya koenigii*, its common name curry leaf tree is a small strong-smelling perennial shrub commonly found in forests as undergrowth ^[120].

Family: Rutaceae ^[121].

Phytoconstitute: Essential oil, protein, minerals, vitamin ^[123].

Use: Curry leaves are a rich source of protein, beta-carotene and antioxidants that help in strengthening the hair fibers, encourage fast hair growth and prevent hair loss amino acids present in the curry leaves help retain hair strength and hair shine ^[124].



Fig 25: Carry leaves ^[122].

Sweet Potato

Biological Source: The sweet potato, *Ipomoea batatas* is a dicotyledonous plant that belongs to the bindweed or morning glory ^[125]. It's large, starchy, sweet-tasting tuberous roots are used as a root vegetable ^[125].

Family: Convolvulaceae ^[126].

Phytoconstitute: Flavonoids, Phenolic Acids, Phytosterols, Carotenoids ^[127].

Use: Sweet Potatoes contains iron, copper, magnesium makes them great for high blood pressure patients. Mainly beta-carotene aids cell growth, prevent hair, thinning and can even reduce dullness in hair ^[128].



Fig 26: Sweet potato ^[129]

Beet Root

Biological Source: Beet, *Beta Vulgaris*, also called beetroot, common beet or garden beet, one of the four cultivated forms of the plant beta vulgaris of the amaranth family ^[130].

Phytoconstitute: Protein, lipids, fibers, sugar, glucose, carbohydrates ^[131].

Use: Beet roots contains several nutrients that are essential for hair health and hair growth. Proteins, vitamins, calcium and minerals stimulate your hair follicles to produce strong and healthy strands while also accelerating their growth rates ^[132]. The high vitamin c content of beets is used by the body to make a structural protein called collagen is a key component of the hair structure ^[134]



Fig 27: Beet root ^[133]

Conclusion

This article reviews emerging evidence that has advanced our understanding of hair growth in both of these areas to provide a context for outlining current and emerging Herbal Plants. People looking for a treatment to help hair fall and regrowth of hair have several potential options. The effectiveness of each herbs will vary from person to person and may depend on the availability of them. All discussed home remedies in this article will provide positive results for hair fall rescue and regrowth of the hair. It has been seen almost all parts of the plants, contains many different active and non-active chemical compounds that possess a wide range of activity which have been used widely for centuries as traditional or folk medicine.

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References

1. Pundkar AS, Murkute PM, Wani S, Tathe M. A review: herbal therapy used in hair loss. Pharm Reason. 2020;3(1).

2. Gayatri Penkar M, Maithilee Salkar R, Prachi Chavan S, Maitrey Ambade S, Sanchit Parab A, Manasvi Sawant M, *et al.* Formulation and Evaluation of Herbal Hair Serum in Treatment of Various Hair- Related Problems. *Research Journal of Pharmacognosy and Phytochemistry*. 2023;15(2):105-110. Doi:10.52711/09754385.2023.00016
3. Available from: <https://www.sciencedirect.com>
4. Available from: <https://www.Cosmix.in>
5. Waugh A, Ross AG. *wilson Anatomy and physiology in health and illness*. 10th ed pg no 359-360.
6. Thibodeau Ga, Kevin T. Patton anthony's textbook of anatomy & physiology. 7th ed Pg no 176-178.
7. Available from: https://en.wikipedia.org/wiki/eclipta_prostrata
8. Timalsina D, Devkota D HP *Eclipta prostrata* L. ethnomedicinal uses, chemical constituents, and biological activities. *Biomolecules* 2021 nov 22;11(11):1738.
9. Available from: <https://www.google.com/url?sa=i&url=https%3A%2F%2Fbbodywise.com%2Fblog%2Fmultiple-bhringraj-benefits-and-how-to-use-it%2F&psig=AOvVaw1unKg07xWXUHU7-wkIKLsY&ust=1691776091441000&source=images&cd=vfe&opi=89978449&ved=0CBEQjRxqFwoTCLCQjZrT0oADfQAAAAAdAAAAABAE>
10. Arya Vaidya Sala, Kottakkal R. *Vasudevan Nair Indian Medicinal plants volume :-2* pg no 350.
11. Available from: <https://byjus.com/neet/onion-family/>
12. Sambamurty AVSS. CBS publishers & distributors dictionary of medicinal plants 1st edition 2006, pg no 15.
13. Available from: <https://onlinelibrary.wiley.com/doi/full/10.1002>
14. Available from: https://www.google.com/url?sa=i&url=https%3A%2F%2Ffjainsusa.com%2Fblog%2F5-tips-to-grow-great-onions%2F&psig=AOvVaw2Xb_EE_8Ffy_W7JRjdbzuz&ust=1691776550322000&source=images&cd=vfe&opi=89978449&ved=0CBEQjRxqFwoTCNjC6_TU0oADfQAAAAAdAAAAABAE
15. Seebaluck R, *et al.* *J Ethnopharmacol. A review of their ethnopharmacology and Phytochemistry*; c2015.
16. Available from: <https://gpatindia.com/neem-oil-biological-sources-morphological-features-chemical-constituents>
17. Available from: https://www.google.com/imgres?imgurl=https%3A%2F%2Ffonszaden.com%2F%2Ffiles%2F10%2F221000%2F221010%2FProductPhotos%2F620%2F1763410857.jpg&tbnid=6vHeDQR5vVGM1M&vet=12ahUKEwjlu46v1dKAAxUWz6ACHTK6D14QMygBegUIARD5AQ.i&imgrefurl=https%3A%2F%2Ffonszaden.com%2Fazadirachta_indica&docid=2pEQiqvJgRXhxM&w=466&h=465&q=neem&ved=2ahUKEwjlu46v1dKAAxUWz6ACHTK6D14QMygBegUIARD5AQ
18. Available from: <https://www.dabur.com/ayurveda/ayurvedic-medicinal-plants/neem>
19. Nimba: The Ayurvedic pharmacopeia of India, 1993, part 1: vol 2 first edition, 124-7: the controller of publications. Civil lines delhi- 110054.
20. Sambamurty AVSS. CBS publishers & distributors dictionary of medicinal plants 1st edition 2006, pg no 16.
21. Available from: <https://www.healthline.com/health/aloevera-for-hair>
22. Available from: <https://www.google.com/imgres?imgurl=http%3A%2F%2F5.imimg.com%2Fdata5%2FEW%2FST%2FMY-31738953%2Faloe-vera-baby-plant.jpg&tbnid=kDx7hMTB3DbyTM&vet=12ahUKEwjKovr21dKAAxXm5zGHTeWAlOQMygAegUIARDxAQ..i&imgrefurl=https%3A%2F%2Fwww.indiamart.com%2Fproddetail%2Faloe-vera-baby-plant-19055915355.html&docid=pZLgcsGocST9yM&w=1100&h=734&q=aloe&ved=2ahUKEwjKovr21dKAAxXm5zGHTeWAlOQMygAegUIARDxAQ>
23. Available from: <https://www.yourarticlelibrary.com/biology/plantssources-macroscopical-charactersanduses>
24. Available from: <https://www.google.com/imgres?imgurl=https%3A%2F%2Fgachwala.in%2Fwp-content%2Fuploads%2F2022%2F06%2F61iVLkY90SL.jpg&tbnid=eRo3DEI9QtdEvM&vet=12ahUKEwjN5uWQ1tKAAxXyz6ACHQsLBOsQMygBegUIARD2AQ..i&imgrefurl=https%3A%2F%2Fgachwala.in%2Fproducts%2Fgreenwise-neer-brahmi-herbal-medicinal-plant-live-bacopa-monniery-ayurvedic-plant-with-pot-non-aromatic-herb%2F&docid=sb84tWhJTbSt9M&w=1177&h=1200&q=brahmi&ved=2ahUKEwjN5uWQ1tKAAxXyz6ACHQsLBOsQMygBegUIARD2AQ>
25. Sambamurty AVSS. CBS Publishers & Distributors dictionary of medicinal plants 1st edition 2006, pg no 42.
26. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/pmc>
27. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/pmc>
28. Kirtikar KR, Basu BD. *International book Distributors book sellers & publisher Indian medicinal plants volume -4*.
29. Available from: <https://www.google.com/imgres?imgurl=https%3A%2F%2Fi.unu.edu%2Fmedia%2Fourworld.unu.edu-en%2Farticle%2F4538%2Fvideobriefs-19.jpg&tbnid=Eynh9BdhavyOQM&vet=12ahUKEwjrgIus1tKAAxWsz6ACHZHOBcEQMygeegUIARC5Ag..i&imgrefurl=https%3A%2F%2Fourworld.unu.edu%2Fen%2Fdiscovering-the-wonders-of-the-coconut&docid=sxY2IOWWvdnceM&w=940&h=529&q=coconut&ved=2ahUKEwjrgIus1tKAAxWsz6ACHZHOBcEQMygeegUIARC5Ag>
30. Available from: <https://www.pharmacy180.com/article/bitter-orange-peel-230/>
31. Angew on functional foods trends in food science and technology, 2nd. Welford publications. 2007;30:19–21.
32. Arsinqrin PS. *Cirtus sinesis* information, in Bennie and Simpson (eds) *fruits*, 1999, 258–61.
33. Gattuso G, Barreca D, Gargiulli C, Leuzzi U. Caristi c. flavonoid composition of citrus juice molecules. 2007;12:1641–73.
34. Matsubara Yusa T, Sawabe A, Lizuka U, Takekuma S, Uoshida U. Structures of new Cyclic peptides in young unshiu, orange and amanatsu peelings. *Agriculturists, boil. Chem.* 1991;55:2923-9.
35. Available from: <https://www.google.com/imgres?imgurl=https%3A%2F%2Fcdn.britannica.com%2F94%2F131094-050>

- 8687A599%2Fblossom-fruit-orange.jpg&tbnid=plgsmzAekksplM&vet=12ahUKEwjkoNDK1tKAAxVxpGMGHdN_AssQMygTegUIARCYAg..i&imgrefurl=https%3A%2F%2Fwww.britannica.com%2Fplant%2Forange-fruit&docid=U86k1P7L5gTu1M&w=1600&h=1074&q=orange&ved=2ahUKEwjkoNDK1tKAAxVxpGMGHdN_AssQMygTegUIARCYAg
36. Mirhosseini H, Tan CP, Yusoft S, Hamid NS. Soiled-Phase microextraction for determining twelve orange flavor compounds in a modal beverage emulsion. *Pytochen Anat.* 2008;19:429-37.
 37. Available from: <https://www.onlymyhealth.com/how-to-use-orange-for-hair-1648749578>
 38. James A. Duke handbook of medicinal herbs edition 2nd; 2006.
 39. Vidyaratna PS. varier's Arya vaidya sala kottakkal Indian medicinal plants volume: -8 to 10,
 40. Available from: <https://www.newworldencyclopedia.org/entry/R>
 41. Batool R, Kalsoon A, Akbar I, Arshad N, Jamin N. Antilisteiral effect of *Rosa damascena* and numphase able in *mus musculus*. *Biomed Research Int.* 2018;1- 9.
 42. Ayati. Amiri MS, Ramezani M, Delshaad E, Sahebkar A, Emami SA. Pytochemistry, Traditional use and pharmacologian profile of raise Hip: A reviews Current pharmaceutical design.2018;24(35);4101– 4124:2.
 43. Available from: <https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.gardeningknowhow.com%2Fornamental%2Fflowers%2Froses%2Fred-roses-for-the-garden.htm&psig=AOvVaw1LgjiVb9MEUpaKPHOKrFAQ&ust=1691777052490000&source=images&cd=vfe&opi=89978449&ved=0CBEQJRxqFwoTCPjOm-TW0oADFQAAAAAdAAAAABAE>
 44. Xu Z, Yuan GF. Researches process on chemistry components of *rosa L.* plant Human guiding journal of ICM. 2003;9(s):62-63.
 45. Available from: <https://www.byrdie.com/rose-water-for-hair-508539>
 46. Robert Bentley and Trimen a book of medicinal plants volume 4, edi 2004.
 47. Available from: <https://en.wikipedia.org/wiki/hibiscus>
 48. Sambamurty AVSS. A book: Dictionary of medical plants first edi 2006.
 49. Available from: (1) https://www.google.com/imgres?imgurl=https%3A%2F%2Fflazyflora.com%2Fcdn%2Fshop%2Farticles%2Fimage1_2_1024x1024.png%3Fv%3D1530718999&tbnid=ve6m1A3auHWvIM&vet=12ahUKEwj8LWb19KAAxWFpekKHdiRCYsQMygPegUIARCdAg..i&imgrefurl=https%3A%2F%2Fflazyflora.com%2Fblogs%2Fnews%2Fhibiscus-care-instructions&docid=Y2BtkbmEx8FxtM&w=1024&h=1023&q=hibiscus&ved=2ahUKEwj8LWb19KAAxWFpekKHdiRCYsQMygPegUIARCdAg
(2)https://www.google.com/imgres?imgurl=https%3A%2F%2Fm.timesofindia.com%2Fphoto%2F84302969%2F84302969.jpg&tbnid=8-Wbzhj-IP_IKM&vet=12ahUKEwj8LWb19KAAxWFpekKHdiRCYsQMygdegUIARDBAg..i&imgrefurl=https%3A%2F%2Ftimesofindia.indiatimes.com%2Flife-style%2Fbeauty%2Fweb-stories%2Fhave-you-tried-hibiscus-beauty-tea%2Fphotostory%2F84302846.cms&docid=yTbuDbgk
 50. Suqumanran M, Poornima M, Sethuvani S. Phytochemical and trace element analysis of hibiscus linn flower; *NPAU.* 2012;8(9):314-345.
 51. Subhashini Shandilya, Pathak VA. Review: chemical congtituents & pharmacological effects of hibiscus *Rosa sinensis* (China Rose).
 52. Available from: <https://pharmeasy.in/blog/ayurveda-uses-benefits-side-effects-of-hibiscus/>
 53. Available from: <https://www.yourarticlelibrary.com/blology/lipidsoil-sources-preparation-and-uses149569>
 54. Available from: <https://www.google.com/imgres?imgurl=https%3A%2F%2Fgardenerspath.com%2Fwp-content%2Fuploads%2F2018%2F07%2FOlives-Are-Easy-to-Grow-in-the-Right-Location.jpg&tbnid=pxvQImzfXg7FDM&vet=12ahUKEwjo2tfl19KAAxWzkGMGHfSiDY4QMygbegUIARC5Ag..i&imgrefurl=https%3A%2F%2Fgardenerspath.com%2Fplants%2Ffruit-trees%2Fgrow-olive-trees%2F&docid=3ozDccNj5JQCM&w=1200&h=630&q=olive&ved=2ahUKEwjo2tfl19KAAxWzkGMGHfSiDY4QMygbegUIARC5Ag>
 55. Potential health benefits of olive oi/and plant polyphenols, Available from <https://www.ncbi.nlm.nih.gov/pmc/articles/pmc5877547/>
 56. Sambamurty A. A book dictionary of medicinal plants first edi; c2006.
 57. Millind Parle. Menu Bharia are almond: - A health diamond by annals of pharmacy and pharmaceutical science. October 2010;1(2):147–151
 58. Available from: <https://www.google.com/imgres?imgurl=https%3A%2F%2Fbustlingnest.com%2Fwp-content%2Fuploads%2Fcare-guide-1.jpg&tbnid=oj7wfmC4Co6ZdM&vet=12ahUKEwjdjMLt19KAAxXh6DgGHYVxBsoQMygIegUIARCDAG..i&imgrefurl=https%3A%2F%2Fbustlingnest.com%2Fhow-to-grow-almond-trees%2F&docid=Q7QORKUbyoWlBm&w=1000&h=667&q=almond&ved=2ahUKEwjdjMLt19KAAxXh6DgGHYVxBsoQMygIegUIARCDAG>
 59. Anbu GJ, Jeba Sunilson, Anandarajagopal K, Promajichit P, Suraj R, Rejitha Biomed. *in vivo* hair growth activity of prunus dulis seeds in rats. 2009;1(4):34-8.
 60. Oliver Chen CY, Blumberg Jeffry B. *in vitro* activity of almond skin popuphenal for scuenging free radials and including quiname reductase. I aqric food chem. 2008;56(12):4427-4434.
 61. Available from: <https://www.slideshare.net/sridebshgharull1/arll5466793>
 62. Available from: https://www.google.com/imgres?imgurl=https%3A%2F%2Fkadiyamnursery.com%2Fcdn%2Fshop%2Fproducts%2Fkrishna-amlagooseberryphyllanthus-emblica-herbal-fruit-plant-kadiyam-nursery-1_grande.jpg%3Fv%3D1662733371&tbnid=aA-DgiJwP-D3HM&vet=12ahUKEwj2jN2S2NKAAXWpm2MGHeyVAcYQMygKegUIARCPAg..i&imgrefurl=https%3A%2F%2Fkadiyamnursery.com%2Fproducts%2Fkrishna-amlaplant&docid=EhE-wDyCm-

- CKsM&w=500&h=500&q=amla&ved=2ahUKEwj2jn2S2NKAAXWPM2MGHeyVAcYQMygKegUIARCPAg
63. Chodhury M, Grover K. Amala oil. Fruit oils. chemistry and function and functionality, seringer, cham. 2019;(2007):775-81.
 64. Available from: <https://www.purple.com/mugazine/artical/amlapowder-for-hair-benifits-and- uses>.
 65. Richi Parmar. A review: - Amla: uses, Benefits & side effects by Pharmacy.
 66. USD A. Nros. Ricinus communication. the plants database. "Greensboro, north carolin: Natural Plant Data Team. Retrireaed 1 February 2016."
 67. Euphobiaceae genomics institute for genome sciences. University of Maryland medical school. Retrieved 9 March 200.
 68. Dinan L. Phytoecdysteroids: biology aspects Phytochemistry. 2001;57:325-339.
 69. Available from: https://www.google.com/imgres?imgurl=https%3A%2F%2Fwww.planetaryurveda.com%2Fpa-wp-images%2Fricinus-communis.jpg&tbnid=TUNdQldDvqL44M&vet=12ahUKEwisntqy2NKAAXXimmMGHVtYB1MQMygBegUIARDPAQ.i&imgrefurl=https%3A%2F%2Fwww.planetaryurveda.com%2Flibrary%2Feranda-ricinus-communis%2F&docid=IH_fGuTmrqO0IM&w=347&h=260&q=aranda%20plant&ved=2ahUKEwisntqy2NKAAXXimmMGHVtYB1MQMygBegUIARDPAQ
 70. Suksumaran A, Sommechai C. ecdusteroids form vitex pinnata. Phytochemistry. 1993;32:303-306
 71. Anisha S, Sukhojt K, Sunil GK, Sandeep P. Bird's nest view form a dermatological eye. Int I trichology. 2016;8:1-4
 72. Bogaty H, Dunlap FE, Matting of hair arch dermatol. 1970;101:348-351.
 73. USD A, NRCS ND. *Sapindus mukorossi* The PLANTS database green boro, north Carolina: national plants data tem [retrieved Nov 5; c2015.
 74. Naidu CV, Reddy Bup and raa ps annals of forestry. 2000;8(2):262-265.
 75. Available from: <https://www.google.com/imgres?imgurl=https%3A%2F%2Fwww.liveayurved.com%2Fimages%2Fmedicinal-plants%2Faristaka.jpg&tbnid=Sn1zy3uRyWqKTM&vet=12ahUKEwi0luTR2NKAAXU-5TgGHaJrAEUQMygRegUIARDxAQ.i&imgrefurl=http%3A%2F%2Fwww.liveayurved.com%2Fmedicinal-plant-aristaka.shtml&docid=NrxulxoIasEp4M&w=519&h=328&q=aritha%20plant&ved=2ahUKEwi0luTR2NKAAXU-5TgGHaJrAEUQMygRegUIARDxAQ>
 76. Kokate CK, Vallabh Prakashan. New Delhi; 1991, 107-111.
 77. Sindhu, *et al.* *Sapindus mukorossi* (areethal): an overview, international journal of pharma ceutical science and research. 2011;2(8).
 78. Devi VNM, Rajakohila ML, Arul Mary Syndia, Nagendra Prashad P, Ariharan VN. A Review: multifactious used of sapnut tree by research journal of pharmaceutical, biological and chemical.
 79. Available from: <https://www.slideshare.net./unnatigarg77/methi-pharmacognosy>.
 80. Available from: [https://www.google.com/imgres?imgurl=https%3A%2F%2Fwww.alkarty.com%2Fimages%2Fproduct%2Fresize-d%2F500-500%2F09-05-2019Fenugreek_\(Methi\)_seeds.jpg&tbnid=dGk_8aa2RR-pMM&vet=12ahUKEwjs-Y-m2dKAAxWYmWMGHQqLDqEQMygEgUIARD5AQ..i&imgrefurl=https%3A%2F%2Fwww.alkarty.com%2Ffenugreek-seeds&docid=TQA0-VkdupCbdM&w=500&h=500&q=methi%20plant&ved=2ahUKEwjs-Y-m2dKAAxWYmWMGHQqLDqEQMygEgUIARD5AQ](https://www.google.com/imgres?imgurl=https%3A%2F%2Fwww.alkarty.com%2Fimages%2Fproduct%2Fresize-d%2F500-500%2F09-05-2019Fenugreek_(Methi)_seeds.jpg&tbnid=dGk_8aa2RR-pMM&vet=12ahUKEwjs-Y-m2dKAAxWYmWMGHQqLDqEQMygEgUIARD5AQ..i&imgrefurl=https%3A%2F%2Fwww.alkarty.com%2Ffenugreek-seeds&docid=TQA0-VkdupCbdM&w=500&h=500&q=methi%20plant&ved=2ahUKEwjs-Y-m2dKAAxWYmWMGHQqLDqEQMygEgUIARD5AQ)
 81. Ahmad A, Salem S, Mahmood K, Afzal M. A Review: fenugreek a multipurpose crop: potentialities and improvements by National Library of Medicine.
 82. Kirtikar KR, Basu BD. New Delhi (India): Bishen Singh Mahendra pal singh;1980. Indian Med Plants pg no 700.
 83. Available from: <https://pharmaesy.in/blog/ayurveda-uses-benefits-side-effects-of-methi-fenugreek/>
 84. Available from: <https://www.yourarticlelibrary.com/biology/resins/ginger-sources-cultivation-and-uses/49779>
 85. Grzanna R, Landmark L, Frondoza CG. "Ginger-an herbal medicinal product with broad anti-inflammatory actions." Journal of medicinal food. 2005;8(2):125-132.
 86. Available from: <https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.lovethegarden.com%2Fuk-en%2Farticle%2Fcommon-ginger-root-ginger-zingiber-officinale&psig=AOvVaw2iyjc6wEhPk76JWvkLZ2X0&ust=1691777852047000&source=images&cd=vfe&opi=89978449&ved=0CBEQjRxxqFwoTCLjNyOHZ0oADFQA AAAAdAAAAABAa>
 87. Shukla Y, Singh M. "cancer preventive properties of ginger a brief review: food and chemical toxicology. 2007;45(5):683.
 88. Akanksha Agnihotri. A review: - ginger for healthy hair: exploring its amazing benefits for hair growth and ways to incorporate it into your routine.
 89. Available From: <https://www.healthline.com/nutrition/11-proven-benefits-of-ginger>
 90. Carica L. World flora online. World flora consortium. 2022, retrieved 17 november 2022.
 91. In North America, papaw or papaw usually means the plant belonging to the annonaceae family or its fruit. Ref: Merriam- Webster's collegiate dictionary (2009), published in united states.
 92. Available from: <https://www.google.com/url?sa=i&url=https%3A%2F%2Forganicbazar.net%2Fproduct%2Fpapaya-seeds-hybrid%2F&psig=AOvVaw176HvPpiGQPp6JPh8mUJR&ust=1691778388702000&source=images&cd=vfe&opi=89978449&ved=0CBEQjRxxqFwoTCJDsvuHb0oADFQAAAAAdAAAAABAJ>
 93. Available from: <https://thepharmacognosy.com/papain/>
 94. Available from: <https://www.bebeautiful.in/beautypedia/many-benefits-papaya-skin-and-hair>
 95. Dr. Krishna Marg KS. The Ayurvedic pharmacopoeia of India part 1 volume 4 first edition.
 96. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/pmc6943635/>

97. Chi YF, Zhang Z. Antimelan cholic medicine prepared from jujube (amp materials Canada); c2009. A2707192A1
98. Available from: <https://www.google.com/imgres?imgurl=https%3A%2F%2Fc8.alamy.com%2Fzooms%2F9%2Fa31c58ff232e4b168ffe7944ed6fec69%2F2h4daa0.jpg&tbnid=VKxasAMbmUqVTM&vet=12ahUKEwjM4Nam49KAAxWDoekKHWiCAPQQMygGegQIARBJ.i&imgrefurl=https%3A%2F%2Fwww.alamy.com%2Fziziphus-jujuba-commonly-called-jujube-red-date-plant-organic-garden-image450221688.html&docid=qeOImMAJXIuR-M&w=640&h=447&q=jojoba&ved=2ahUKEwjM4Nam49KAAxWDoekKHWiCAPQQMygGegQIARBJ>
99. Prajakata Dongare N, Ravidra Bakal L, Manisha More P. A review: - an overview on herbal cosmetics and cosmeceuticals published on 2021.
100. Available from: <https://www.forbes.com/health/body/jojoba-oil/>
101. Available from: <https://www.pharmacy180.com/article/garlic-256/>
102. Filyushin MA, *et al.* plants (basel). 2023 DREB1 and DREB2 Genes in Garlic (*ALLIUM SATIVUM* L) Genome-wide identification, characterization, and stress response.
103. Majewski M. A review: - *ALLIUM SATIVUM*: facts and myths regarding human health.
104. Available from: https://www.google.com/imgres?imgurl=https%3A%2F%2Fogden_images.s3.amazonaws.com%2Fwww.iamcountrieside.com%2Fimages%2Fsites%2F1%2F2021%2F09%2F19114817%2FAdobeStock_364056397-scaled-e1662410682321.jpeg&tbnid=R4g0v9JGCaqp2M&vet=12ahUKEwjZ_XV49KAAxX6z6ACHcb6CpkQMygtegUIARDvAg.i&imgrefurl=https%3A%2F%2Fwww.iamcountrieside.com%2Fgrowing%2Fbeginners-guide-growing-garlic%2F&docid=GyF35syo-nmIM&w=1800&h=1200&q=garlic&ved=2ahUKEwjZ_XV49KAAxX6z6ACHcb6CpkQMygtegUIARDvAg
105. Available from: <https://www.healthline.com/health/garlic-for-hair>
106. Srinivasan K. Antioxidant potential of species and their active constituents *crit.rev.food.sci.nutr.*2018;54:352-372
107. Available from: <https://www.indianherbalvalley.com/post/health-benefits-of-shikakai powder>
108. Available from: https://www.google.com/imgres?imgurl=https%3A%2F%2Fi.etsy.com%2F21104947%2F%2F516ae9%2F3772984054%2F570xN.3772984054_iuuk.jpg&tbnid=25npUIWBTXwrNM&vet=12ahUKEwiWh-2K5NKAAXVUzaACHUCVBJ8QMygIegUIARCOAg.i&imgrefurl=https%3A%2F%2Fwww.etsy.com%2Ffin-en%2Flisting%2F1205942463%2Ffacacia-concinna-shikakai-soap-pod-250&docid=UBEx6Mmi5mPMM&w=570&h=405&q=sikakai&ved=2ahUKEwiWh-2K5NKAAXVUzaACHUCVBJ8QMygIegUIARCOAg
109. Available from: <https://www.easyayurveda.com/2019/06/04/shilacacia-concinna/>
110. Swati Iyer. A review: - reasons why Sikakai is good for your hair 2017.
111. Available from: <https://en.wikipedia.org/wiki/apple>
112. Available from: <https://www.google.com/imgres?imgurl=https%3A%2F%2Fblog-images1.pharomeasy.in%2Fblog%2Fproduction%2Fwpcontent%2Fuploads%2F2022%2F05%2F03114105%2F7-5.jpg&tbnid=Z79711o7E8FU0M&vet=12ahUKEwiR-a-x5NKAAXVZ7DgGHezAG8QMygRegUIARCWAg.i&imgrefurl=https%3A%2F%2Fparomeasy.in%2Fblog%2Fayurveda-uses-benefits-side-effects-of-apple%2F&docid=gluTBL3brJgBHM&w=760&h=452&q=apple&ved=2ahUKEwiR-a-x5NKAAXVZ7DgGHezAG8QMygRegUIARCWAg>
113. Lee K, Kim Y, Kim D, Lee H, Lee C. major phenolics in apple and their contribution to the total antioxidant capacity. *I agric food chem.* 2003;51:6516-6520.
114. Available from: <https://www.purple.cpm/magazine/article/how-apple-cider-vinegar-can-take-care-of-hair>
115. Jeanelle Bayer, Rui Hai Liu. A review: - apple phytochemicals and their health benefits, published 2004.
116. Available from: <https://en.wikipedia.org/wiki/flax>
117. Liu J, Shim YY, Timothy JT, Wang Y, Reaney MI. Flaxseed gum a versatile natural hydrocolloid for food and non-food applications. *Trends food sci-tech.* 2018;75:146-157.
118. Available from: https://www.google.com/imgres?imgurl=https%3A%2F%2Fwww.researchgate.net%2Fprofile%2FTawheed-Amin-2%2Fpublication%2F340816174%2Ffigure%2Ffig1%2FAS%3A882780493860872%401587482679923%2FA-Flax-plant-B-Flaxseeds_Q320.jpg&tbnid=Gtn8olGne2zNsM&vet=12ahUKEwi07P3c5NKAAXUG6DgGHUXMDY0QMygPegUIARCCAg.i&imgrefurl=https%3A%2F%2Fwww.researchgate.net%2Ffigure%2FA-Flax-plant-B-Flaxseeds_fig1_340816174&docid=gNu_8UaNRbM9FM&w=276&h=276&q=flax%20seed%20plant&ved=2ahUKEwi07P3c5NKAAXUG6DgGHUXMDY0QMygPegUIARCCAg
119. Bekhit AEDA, Shavandi A, Jodjaja T, Birch J, The S, Ahmed IAM, *et al.* Flaxseed: Composition, detoxification utilization and opportunities, *Biocatal. Agric biotechnol.* 2018;13:129-152.
120. Cynthia Cobb. A review of can flaxseed gel tame your frizz and smooth your curls? By Ashley Hubbard on Nov 23, 2021.
121. Kumar VS, Sharma A, Tiwari R, Kumar S, Muraya Koenigii Carry leaf: a review *I med arom plant sci.* 1992;21:1139-1141.
122. Available from <https://en.wikipedia.org/wiki/curry-tree>
123. Available from: https://www.google.com/imgres?imgurl=https%3A%2F%2Fbalconygardenweb.b-cdn.net%2Fwp-content%2Fuploads%2F2021%2F05%2FCurry-Leaves-Plant-2.jpg&tbnid=nSW92-gOnalUWM&vet=12ahUKEwi63_iH5dKAAxWkz6ACHTPLBIgQMygWegUIARCCAg.i&imgrefurl=https%3A%2F%2Fbalconygardenweb.com%2Fcurry-leaves-plant-complete-growing-guide%2F&docid=UPeuGY2eWLCqxM&w=500&h=500&q=carry%20leaves&ved=2ahUKEwi63_iH5dKAAxWkz6ACHTPLBIgQMygWegUIARCCAg

124. Goutam MP, Purohit RM. Antimicrobial activity of the essential oil of the leaves of *Murraya koenigii*. Indian J Pharm. 1974;36:11.
125. Adrija Chakraborty. A review: benefits of curry leaves for hair and how to use it! 18 Jan 2022.
126. Woolfe Jennifer A. Sweet potato: An untapped food resource. Cambridge, UK: Cambridge University Press (Cambridge) and the International Potato Centre; c1992.
127. Purseglove John Williams. Tropical crops: longman scientific and technical New York: John Wiley and Sons; c1968.
128. Perez M. A Review: sweet potato is not simply an abundant food crop: A comprehensive review of its phytochemical constituents, biological activities, and the effects of processing.
129. Available from: <https://pubmed.ncbi.nlm.nih.gov/33431342/>
130. Available from: <https://www.google.com/imgres?imgurl=https%3A%2F%2Fhousing.com%2Fnews%2Fwp-content%2Fuploads%2F2022%2F11%2Fdug-bush-of-sweet-potato-with-shovel-and-green-leaves-on-black-ground.jpg&tbid=CiG4LOmM07QLnM&vet=12ahUKEwinpuyY5dKAAxW0rmMGHeTbCmYQMygSegUIARDBAg.i&imgrefurl=https%3A%2F%2Fhousing.com%2Fnews%2Fhow-to-grow-and-care-for-sweet-potato-plant%2F&docid=6QCfyMjONJCLIM&w=1200&h=700&q=sweet%20potato&ved=2ahUKEwinpuyY5dKAAxW0rmMGHeTbCmYQMygSegUIARDBAg>
131. Available from: <https://www.britannica.com/plant/beet>
132. DA Silva DV, Silva FD, Perrone D, Pierucci APTR, Conte-junior CA, Alvares TS, *et al*. Physicochemical, nutritional, and sensory analyses of a nitrate enriched beetroot, gel and its effects on plasmatic nitric oxide and blood pressure. Food Nutr. Res. 2016;60:1-9.
133. Sarita Sanke. A review: - Beetroot for hair: 6 benefits and ways to use and consume it for healthy hair, 2022.
134. Available from: https://www.google.com/imgres?imgurl=https%3A%2F%2Fwww.farmersstop.com%2Fcdn%2Fshop%2Fproducts%2Fbeetroot_1024x1024.jpg%3Fv%3D1632299846&tbid=kAhM1fDWqa2EpM&vet=12ahUKEwiKx75dKAAxXpmmMGHXGSAYsQMyghegUIARDRAg.i&imgrefurl=https%3A%2F%2Fwww.farmersstop.com%2Fproducts%2Fbeet-root-f1-hybrid-quality-seeds&docid=TFfLSiamCVSp7M&w=800&h=800&q=beet%20root&ved=2ahUKEwiKx75dKAAxXpmmMGHXGSAYsQMyghegUIARDRAg
135. Shapiro J. Clinical practice hair loss in women. N Engl J Med. 2007;357(16):1620-1630.