

A Review on Onion Hair Oil

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Abstract

Herbal formulations usually have received great interest because of their good activity and comparatively reduced or zero negative effects with synthetic medications. The current study aims to prepare a herbal oil using onion, nutgrass, and coconut oil and assess its potential to stimulate hair growth. Hair oils are hair care products that are intended to cure and prevent hair aggregation and baldness, among other conditions. They also encourage the luxuriant development of hairs. Herbal medications in the form of hair oil are utilized as hair tonics. One of the most well-known hair treatments is herbal hair oil. Herbal hair oil treats dry scalp and hair conditions in addition to hydrating the scalp

Keywords: Nutgrass rhizomes, Onion, Coconut oil, Antibacterial, Anti inflammatory, Antidandruff

Introduction:

Onion (*Allium cepa* L.) is a famous spice commodity grown all over the world. The distinctive flavor of alliums have established the plant as an essential part of international cuisine, and it is also used widely in food processing. Onion has been used in traditional medicinal practice to treat and prevent several diseases and disorders (Rabinowitch and Currah, 2002). The bioactive properties and characteristic flavor of onion have been attributed to its sulfur compounds, which are present in the volatile fraction (onion oil). One method of production of onion oil is steam distillation of crushed onion bulbs, which consist of a complex mixture mostly formed by mono-, di-, tri-, and tetra-sulfides with different alkyl groups (Hosoda et al., 2003). Alk(en)yl sulfides are perceived as odorants like sulfur, fried onion, garlic, and/or cooked cabbage (Blank, 2002). Thus, in the food industry, onion oil is traditionally and extensively used to impart flavors to processed food (soups, meat, table sauces, salad dressings, and savories) without the difficulties of handling a large bulk of fresh bulbs (Lawless, 2012). In addition to its flavoring properties, it has been demonstrated that onion oil has antioxidant, antibrowning, and antimicrobial properties that could enhance the quality and safety of the treated food, while being a natural additive that consumers prefer (and hence, the food industry has to provide). The mode of action of its constituents is diverse: sulfur compounds can act as electron donors and react with free radicals, stopping oxidative reactions in food products (Ye et al., 2013); the antibrowning and antimicrobial mechanisms are attributed to physicochemical interaction among sulfur compounds and sulfur residues in key enzymes of the browning process and microbial metabolism, respectively (Vazquez-Armenta et al., 2014). This chapter discusses the applications of onion oil in the food industry as a flavor enhancer, antioxidant, antibrown

- Hair oil is a versatile product that can nourish, protect, and enhance the health of your hair. Typically made from natural oils like coconut, argan, jojoba, or olive oil, it offers a range of benefits. These oils can moisturize the scalp, reduce frizz, and add shine while helping to prevent damage from heat and environmental factors.

- Using hair oil can be part of a hair care routine, whether applied as a pre leave-in conditioner, or a styling product. Different oils cater to different hair types and concerns— such as dryness, brittleness, or lack of shine—making it essential to choose one that fits your needs fits your needs.
- In addition to promoting healthier hair, many hair oils are infused with essential oils that can enhance your overall well-being through aromatherapy. With regular use, hair oil can contribute to stronger, smoother, and more manageable hair.

Literature survey:

A literature review of hair oil involves examining various studies and sources to explore the properties, benefits, and effectiveness of hair oils. Hair oils have been used for centuries across different cultures as a remedy for various scalp and hair issues, including dryness, dandruff, hair loss, and as a means to enhance hair growth and shine. Here's a structured literature review based on available research.

1. Historical and Cultural Perspectives on Hair Oil Use:

Ayurvedic Practices: In India, hair oils have been an integral part of traditional Ayurvedic practices. Oils like coconut, almond, sesame, and neem have been used in formulations designed to strengthen the scalp, promote hair growth, and improve hair texture. Ayurvedic texts describe how massaging the scalp with oils improves blood circulation, delivering essential nutrients to hair follicles.

African and Caribbean Traditions: Shea butter, coconut oil, and castor oil are popular in African and Caribbean communities for maintaining moisture, especially for textured hair types prone to dryness. These oils are often used for protective styling and to reduce breakage.

2. Common Types of Hair Oils and Their Benefits:

Coconut Oil: Several studies highlight the benefits of coconut oil in reducing protein loss in both undamaged and damaged hair when used pre- and post-wash. Coconut oil has a low molecular weight, allowing it to penetrate the hair shaft and reduce water absorption, which helps prevent damage. A study published in the *Journal of Cosmetic Science* shows that coconut oil is highly effective in preventing hair damage caused by grooming practices such as combing .

Argan Oil: Known for its high vitamin E and fatty acid content, argan oil is primarily used to moisturize and add shine to hair. According to research, argan oil has anti-inflammatory properties and antioxidants that help protect the scalp from oxidative stress, thereby reducing hair loss related to scalp conditions. Its protective effect on hair fibers from UV rays has also been documented .

Castor Oil: Often used as a remedy for hair loss, castor oil has high ricinoleic acid content, which has been reported to have anti-inflammatory and antimicrobial properties. While direct clinical evidence of its ability to promote hair growth is limited, anecdotal evidence supports its use for scalp health .

Jojoba Oil: This oil closely resembles the natural sebum produced by the scalp, making it an ideal moisturizer for balancing oil production. Studies suggest that jojoba oil helps in reducing dandruff and promoting a healthy scalp environment conducive to hair growth.

3. Mechanism of Action:

Moisture Retention: Hair oils primarily act as occlusive agents, forming a protective layer around the hair strand, preventing moisture loss. Oils with smaller molecular structures, such as coconut and olive oils, can

penetrate the hair shaft, providing deep hydration. Larger molecules, like those found in castor oil, primarily coat the hair, protecting the cuticle from external damage.

Scalp Health and Hair Growth: Many oils have anti-inflammatory and antimicrobial properties, which contribute to a healthy scalp environment, crucial for hair growth. Research into essential oils such as rosemary and peppermint indicates they may stimulate hair follicles and improve blood circulation to the scalp, leading to increased hair growth .

4. Research on Hair Oils for Hair Loss:

Clinical Studies on Hair Growth: A randomized controlled trial published in the Journal of dermatology demonstrated that rosemary oil was as effective as minoxidil (a popular hair loss treatment) in promoting hair growth in patients with androgenetic alopecia after six months of use . This suggests that some plant-based oils may have therapeutic benefits for hair loss.

Peppermint Oil: Another study in Toxicological Research showed that peppermint oil had significant hair growth-promoting effects, which were attributed to its vasodilatory properties, increasing blood flow to hair follicles .

5. Hair Oil Application Techniques and Practices:

Scalp Massage: Scalp massage with oils has been shown to improve blood circulation and deliver nutrients directly to hair follicles. Research suggests that regular oil massaging improves scalp health and may promote hair growth, though the frequency and duration of massage can influence effectiveness .
Pre- and Post-Wash Treatments: Oils can be used both before and after washing the hair. Pre-wash oil treatments, especially with coconut oil, protect the hair from absorbing excessive water, reducing swelling and cuticle damage. Post-wash treatments, on the other hand, seal in moisture and add shine to hair .

6. Challenges and Limitations in Research:

Lack of Standardization: The lack of standardization in formulations and application methods in many studies makes it challenging to compare results across different types of hair oils. Differences in hair types, the condition of hair, and the frequency of use also influence outcomes.

Need for More Clinical Trials: While there is significant anecdotal evidence and traditional knowledge supporting the benefits of hair oils, more controlled clinical trials are necessary to validate these claims scientifically.

1) *Cyperus Rotundus* Linn.:



FigNo: 01 *Cyperus Rotundus* Linn

- **Taxonomical classification of cyperus rotundus :-**

Rank	Scientific name and common name
Kingdom	Plantae
Family	Cyperaceae
Genus	Cyperus
Species	Rotundus
Order	Poales
Synonym(s)	Cyperusolivariso, Targ, Tozz, Pycreu srotundus(L), Hayek
Common name	Nutgrass

Herbal medicine is a major components in all traditional medicine systems¹. And a common element in sidhha, Ayurvedic ,Homeopathic ,Naturopathic Traditional Chinese medicine and Native American medicine⁴. Plant material are used throughout developed and developing countries as home remedies, over-the – counter drug products and raw materials for the pharmaceutical industry.

Medicinal Uses: -

In line with Ayurveda Astringent, diaphoretic, direutic, analgesic, antispasmodic, aromatic, camminative, antitussive, emmenagogue, litholytic, sedative, stimulant, and stomachic are some of the properties associated with the rhizomes of C. rotundus. Tonic, vermifuge, and antimicrobial⁴. Dyspepsia, menstrual problems, fever, malaria, cough, bronchitis, renal and vesicle calculi, urinary tenesmus, skin diseases, wounds, amenorrhea, loss of memory, indigestion, and menstruation disorders are among the conditions for which they are used.⁵.

Cyperous Rotundus hair oil fortifies hair while adding volume and gloss. Six

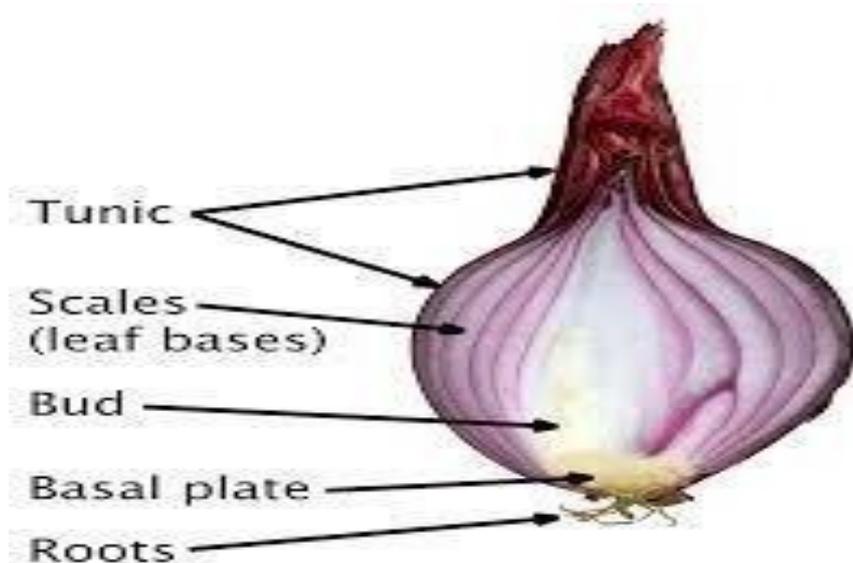
The following conditions are prevented by it:

Baldness-related hair regrowth hair fall; lice dandruff; aloopatia areita gray hair; an white hair. It guarantees the growth of thick, black hair.

Chemical constituents:-

Different phytochemical studies on C. rotundus revealed the Presence of alkaloids, flavonoids, tannis, starch, glycosides, furo chromosomes, monoterpenes, sequiterpenes ,sitosterol,fatty oil containing a neutral waxy substance, glycerol ,linolenic, myristic and strearic acids⁴.The major compounds isolated from essential oil and the extract of C. Rotundus rhizomes are Alpha-cyperone, Alpha-rotunol, Beta-cyperone, Beta- pinene, Beta-rotunol, Beta- selinene, calcium, camphene, copaene, cyperene, cypererone, cyperol, cyperolone cyperotundone D-glucose, D-copadiene, D-epoxyguaiene , D-fructose, Flavonoids, Gamma-cymene, Isocyperol, Isokobusone, Kobusone, Limonene, Linoleic- acid, Magnesium, Magnese, C – rotunduskone, Myristic-acid, Oleanolic-acid, Oleanic – acid-3- o-neohesperidoside, oleic-acid, P-cymol, Patchoulenone, Pectin.

2) ONION:



FigNo:02 Onion

- Taxonomical classification of onion :

Rank	Scientific name
Kingdom	Plantae
Family	Amrylidaceae
Subfamily	Allioideae
Genus	Allium
Clade	Angiosperms
Species	A.cepa
Biological name	Allium cepa
Synonym (S)	Allium anglolense baker Alliumaobanum arakali Allium ascalonicum var Condensum Millan
Common name	Onion

Medicinal use:

Optimises the hair growth cycle :-In Onion certain enzymes optimise the for a capable of activating on your scalp, which helps hair growth cycle This results faster hair growth & inhibiting hair fall - heat healthier-looking more⁹.

Prevents breakage & thinning :-Rich in sulfur, onion oil can do wonder to prevent breakage, split ends and thinning of hair. This happens because the sulfur is able to forms bonds in your hair that are required for strengthening the strand .

Delays premature greying :-Certain enzymes in onion oil can prevent free radical damage in your hair, which helps in delaying premature greying maintains pH levels of the scalp.

Chemical constituent :-

Onions are important source of an several phytonutrients as flavonoids, fructooling- osacchrides(FOS), and thiosulfinates and other sulfur compounds, recognized as important element of the Mediterranean diet¹⁰ .

In fact, onions contain high level of phenolic compounds, which have antioxidant properties besides beneficial effects against different degenerative pathologies⁹.

Pharmacological activities**Antioxidant activity:-**

Antioxidant activity was measured by 1,1-diphenyl-2-picrylhydrazyl (DPPH) solution onion and in turn onion oil, contains antioxidants which protect the body from radicals ,free radicals contribute to the ageing process¹⁵.

Antibacterial activity:-

Onion have antibacterial properties which helps fight against scalp infection .Nowdays, dandruff is big problem ,so these onions helps to treat them¹⁶.

03) Coconut Oil:

Fig No: 03 Coconut Oil

- **Taxonomical classification of coconut oil:-**

Rank	Scientific name and common name
Kingdom	Plantae
Clade	Tracheophytes
Family	Areaceae
Genus	Cocos L.
Order	Arecales
Species	C. nucifera
Biological name	Cocos nucifera
Synonym (S)	Fossil oil Grease Lubricating oil

Medicinal benefits:-

1. Best natural nutrients
2. Helps in healthy growth of hair
3. Provide shine to hair
4. Nourishing and healing damaged hair.

Chemical constituents:-

Fatty acids –Fats and oils are concentrated forms of energy is obtained from the complete oxidation of fatty acids in food²¹.

Phenolic compounds –According to previous studies, phenolic acids present in CNO are attributed to health benefits such as anti-inflammatory, antihepatosteatotic, antioxidant and chemoprotective activities.

Triacylglycerol-(TGA)- The dominant TGA molecules of coconut oil is popularly known as medium chain TAGs, which contributes to the nutritional significance and functional properties of coconut oil²¹.

Pharmacological activity:-

Antioxidant activity:-

Antioxidants are the compound capable of either delaying or inhibiting the oxidation process by scavenging free radicals²³.

Antimicrobial activity:-

A series of the studies reported in the 1970's that medium chain fatty acids with 6-12 carbon compounds are

responsible for potent activity towards gram –positive bacteria ,lipid –coated viruses as well as fungi and protozoa²³.

4) ROSE WATER:



Fig: 04 Rose water

Rose water is a flavored water made by steeping rose petals in water.^[1] It is the hydrosol portion of the distillate of rose petals, a by-product of the production of rose oil for use in perfume. Rose water is also used to flavour food, as a component in some cosmetic and medical preparations, and for religious purposes throughout Eurasia.

Uses-

Food:

Rose water is sometimes added to lemonade. It is often added to water to mask unpleasant odours and flavours.

Cosmetics:

In medieval Europe, rose water was used to wash hands at a meal table during feasts.^[19] Rose water is a usual component of perfume.^[20] Rose water ointment is occasionally used as an emollient, and rose water is sometimes used in cosmetics such as cold creams, toners and face wash.

Benefits of onion oil:-

- Provides strength to the hair.
- Improves scalp health Optimizes the hair growth cycle.
- Prevents breakage and thinning.
- Delays premature greying .
- Maintains pH levels of the scalps
- Fights against bacterial infections
- Can be used as a natural conditioner
- Improves hair texture

Conclusion

All things considered, the carefully blended herbal oil offers hair several nutritious elements, including vitamins, minerals, and essential oils. The final product stays inside the parameters. In summary, oil helps to shield hair from oxidative stress, pollution-induced hair loss, and dullness while also stimulating new hair development. Furthermore, it provides a different supply free of dangerous substances. Onion is an important constituent in our daily diet and is also useful for hair and health problems. Onions are rich in sulfur, which helps improve blood circulation to the scalp. This increased blood flow nourishes the hair follicles, promoting hair growth and reducing hair thinning. The sulfur also strengthens the hair shaft, making it less prone to breakage. This helps reduce hair fall, minimize hair loss, and increase hair growth. Onions are high in vitamin C, which may help regulate your immune health, collagen production, and iron absorption. It's also a powerful antioxidant that could help protect your cells from unstable, damaging molecules called free radicals. Onions are rich in B vitamins, including folate and vitamin B6. These play key roles in metabolism, red blood cell production, and nerve function. Cardioprotective, hypo-lipidemic, anti-pathogenic, anticancer, anti-depressant, hepatoprotective, and anti-diabetic activity, which is beneficial for health.

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