



## EXPLORING THE SYNERGISTIC EFFECTS OF CATHARANTHUS TRICOPHYLLUS AND COCONUT OIL ON HUMAN HEALTH: A REVIEW OF THE EVIDENCE

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### Abstract:

Catharanthus roseus is a beautiful flowering perennial herb which is always in bloom as ornamental plant. It is known as Madagascar periwinkle. This plant characterized as terpenoids indole alkaloid producing plant cultivated in warm region. Besides alkaloid it is rich in phenolic compounds, organic acids and amino acid of pharmacological significance in its different parts. Traditionally, this herbal plant is boon to provide protective action for many deadly health problems being faced by humans by their direct or indirect usage in skin disease, high blood pressure, rheumatism, menstrual disorders, indigestion etc. But nowadays, transition to modern and formulated treatment has been increased.

**Keywords:** Anti cancer, Sadabahar, Baramasi,

### Introduction :

C. roseus is a native to the Indian Ocean Island of Madagascar. This plant is cultivated in tropical, subtropical and temperate biogeographic range around the world, including Mauritius, Philippines, Bahamas, Cuba and the southern United States whereas Malaysia, Jamaica, Australia, Africa, India, and Southern Europe to serve commercial demand in pharmaceutical industry as well as indigenous systems of medicine [2]. Poor, well-drained soil at pH 5.5–6.5 and salt up to 2000 ppm can withstand.<sup>[7]</sup>

Besides its usefulness, vinblastine and vincristine is also prone to toxicity as they are susceptible to poisoning and various deadly side effects in form of their finished product. For centuries, Indian medical systems including Ayurveda, Unani, Siddha, and traditional Chinese medicine have utilized the numerous plant parts of C. roseus. Internally, it provokes defense system which acts as, anti-hypertension, antimicrobial, anti-diabetic and anticancer.<sup>[10]</sup> This review aims to accurately emphasize the clinical and folksier influence of this plant against many diseases. It includes phytoconstituents, clinical pharmacology, ethnopharmacological activities, and economic importance in order to aid scientists and learners in appreciating the plant's essential values.<sup>[37]</sup>

### 1. Catharanthus tricophyllus:

Kingdom: *Plantae*

Subkingdom: *Tracheobionta*

Class: *Magnoliopsida*

Subclass: *Asteridae*

Family: *Apocynacea*

Genus: *Catharanthus G.Don*

Species: *Catharanthus Roseus*



### **Botanical Information:**

*Catharanthus roseus* plant is usually erect, 30-100 cm high, with a woody base, sometimes sprawling. When tiny, stems have pubescence and are tubular (terete), striated or somewhat winged, green or dark crimson in hue. Elliptical in shape, long and wide about 2.6–9.4 centimeters, 1–2.5 centimeter respectively, hairless, bright green in colour with yellowish midrib also has short, opposite-paired about 1–1.8 centimeter.<sup>[10]</sup> On the leaf axils, flowers are produced or couples form, and their stalks are quite short. Sepals are thin, shaggy, and usually 5 to 6 mm in length. The corolla tube is long, green, and often at least 2.2 cm long in contrast to the short calyx tube.<sup>[22]</sup>

It is pubescent within the neck, with thick hair rings below the stamen. It features 5 corolla lobes that range in length from 1.0 to 2.8 cm and are pink to white or pinkish purple in color, as well as the corolla tube's tip is connected to five anthers on the interior and the ovary is long with pentagonal stigma. Fruits feature two follicles that are 2.0-4.7 cm long and contain multiple little black seeds.<sup>[24]</sup>

### **Chemical composition:**

*Catharanthus roseus* accommodate various phytochemicals of pharmacological significance. Alkaloids are found in abundant beside these, glycosides, tannins, proteins, coumarin, saponin, carbohydrates, quinine, triterpenoids, volatile, and phenolic chemicals are prominent in *Catharanthus roseus*.<sup>[18]</sup>

Other secondary metabolites from *C. roseus* have also been identified, such as steroid (catasteron, brassinolides), flavonoids, anthocyanins, and monoterpenoid glucosides (loganin, secologanin, sweroside, deoxyloganin).<sup>[16]</sup>

All plant's parts, including the leaf, shoot, root, petals and seeds have abundant bioactive substances. Flowers and leaves were analyzed in six different solvents for their phytochemical constituents, including carbohydrates, steroids, alkaloids, tannins, phenols, flavonoids, quinones, glycosides, saponins.<sup>[21]</sup>

### **Catharanthus tricophyllus use in hair growth:**

Sadabahar Hair Mask. Sadabahar Flower, which is found in the courtyard of every house. The hair mask made from it keeps your hair thick and long. Root contains a variety of secondary metabolites which produce alkaloids. High rooting can be induced by genetic transformation using *Agrobacterium rhizogenes*.<sup>[27]</sup>

Induced roots grew with a faster rate in hormone-free medium with high accumulation of secondary metabolites in *Catharanthus*. Other groups used various types of bioreactors/fermenters to improve the growth of hairy roots and then for better production of secondary metabolites. Plant is used in cancer and diabetes; root paste is used in septic wounds; root decoction is used in fever; leaves are used in menorrhagia; leaf juice is used in blood dysentery.<sup>[8]</sup>

### **2. Coconut oil:**

Kingdom: *plant*

Class: *Palm tree*

Family: *Areaceae*

Species: *Coconut palm*

Genus: *Cocosnucifera*

### **Introduction:**

Coconut oil is an edible oil that comes from the white meat, or “copra,” of the coconut palm’s fruit. It’s high in saturated fatty acids, often up to 85%, and has emollient properties. Coconut oil is solid and white below 77°F (25°C).<sup>[52]</sup>

Coconut oil can be extracted using a variety of methods, including: Mechanical pressing, Solvent extraction, Sun-drying, and Alcohol extraction. The oil is often dried before extraction, sometimes using hot gases that contain polycyclic aromatic hydrocarbons (PAHs).<sup>[25]</sup>

Coconut oil is available in refined and unrefined forms. Virgin coconut oil retains more biologically active components, such as vitamin E and phenolic compounds.<sup>[47]</sup> It’s used in soaps, hair conditioners, skin moisturizers, lipsticks, and hair pomade. Coconut oil has many uses, both in food and non-food products. It’s also used in aromatherapy, dry coatings, and biolubricants.<sup>[28]</sup>



### **Chemical composition :**

Coconut oil is made up of about 90% saturated fats and 9% unsaturated fats. However, the saturated fats in it differ from saturated fats in animal fats. Over 50% of the fats in coconut oil are medium chain fatty acids, such as lauric acid (12:0). Coconut oil is the highest natural source of lauric acid.<sup>[50]</sup>

### **Coconut oil use in hair growth:**

Coconut oil may help moisturize and repair damaged hair. It has also been shown to benefit dandruff and other scalp conditions.<sup>[26]</sup>

You can use it as a prewash treatment, conditioner, hair mask, or styling aid. Use a small amount at first to see how your skin reacts. Nourishes and conditions hair, promoting shine and manageability.<sup>[18]</sup>

Coconut is considered the perfect fruit in ancient Indian medical science called Ayurveda. This hair oil contains saturated fats, potassium, vitamins, and dietary fiber.<sup>[38]</sup> It is thus used as premier hair oil in Indian households for dietary and skin care purposes. Using coconut oil and scalp also offers similar benefits.<sup>[22]</sup>

It also helps reduce the loss of proteins from the hair cells.<sup>[45]</sup> This oil is rich in vitamin E and fatty acids – specifically lauric acid- easily absorbed into the hair shaft. It is good to use coconut oil as a conditioner or an overnight treatment, or one may also use it to protect the hair during swimming.<sup>[32]</sup>

### **Conclusion:**

The passage highlights the versatile uses and benefits of both Catharanthus tricophyllus and coconut oil, two members of the Apocynacea and Areceacea family in various industry. Catharanthus tricophyllus is use as supressent, anticancer, hair growth etc. Similary Coconut oil use in hair growth, beauty products etc. Both ingredients offer significant potential in various fields.<sup>[51]</sup>

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