



## PHARMACOLOGICAL AND THERAPEUTIC USE OF COLEUS AROMATICUS - A REVIEW

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## ABSTRACT

*Coleus aromaticus* Benth., (Fam. *Lamiaceae*), syn. *Coleus amboinicus* Lour. Spreng or *Plectranthus amboinicus* Lour, is commonly known as Indian/ country borage and 'Pathorchur' in Hindi and Bengali. It is listed as one of the sources of *Pashanabheda* in the Indian medical system. It is a big, fragrant, succulent perennial herb that is tomentose and shrubby below. It can be found in the Moluccas, Ceylon, and India. The plant's bitter, caustic leaves have been utilised for various purposes for a long time. The plant has been thoroughly studied, with many chemical compounds extracted and various biological properties demonstrated. The wide range of plants' antibacterial, anticancer, antioxidant, and natural antibiotic properties is effective. The plant is grown in gardens and is found all over India. Malaria, hepatopathy, renal and vesical calculi, cough, chronic asthma, hiccough, bronchitis, helminthiasis, colic, convulsions, and epilepsy are treated with this traditional medicinal herb. This review aims to gather all available data regarding its nutritional value, pharmacology and medicinal applications.

**Keywords:** Pathorchur, *Coleus aromaticus*, nutritional value, therapeutic uses.

## INTRODUCTION

Coleus is a name which derives from an earlier classification under the genus Coleus, species of which are currently included in either Solenostemon or another genus, Plectranthus. The word Coleus comes from the Greek “koleus”, meaning sheath. It is believed that there are 150 species of Coleus.<sup>1</sup> One This genus of perennial plants is indigenous to the Philippines, the Malay Archipelago, the East Indies, Australia, and tropical Africa. Numerous growers of the Coleus species from Southeast Asia have been chosen for their vibrant, variegated leaves, which typically exhibit a striking contrast between shades of green, pink, yellow, maroon, and red.<sup>2</sup> Coleus aromaticus Benth. (Fam. Lamiaceae), syn. Coleus amboinicus Lour. Spreng, or Plectranthus ambonicus Lour, is commonly known as Indian/ country borage and ‘Pathorchur’ in Hindi and Bengali (Kumar et al., 2007). It is recorded in the Indian system of medicine as one of the sources of Pashanabheda (Chopra et al., 1956). The leaves of the green type of country borage are often eaten raw with bread and butter. The chopped leaves are also used as substitute for sage (Salvia officinalis L) in stuffing. A decoction of the leaves of Coleus aromaticus is used to treat asthma and chronic cough, and it is also used to season meat meals and culinary goods.<sup>3</sup> It treats headaches, fevers, epilepsy, and dyspepsia and is thought to be an anti-spasmodic, stimulant, and stomachic. Indigestion, diarrhoea, rheumatism, insect bites, earaches, toothaches, bronchitis, and whooping cough are among the ailments it is used to cure. Additionally, the herb is highly significant in contemporary medicine.<sup>4</sup> The leaves of Coleus aromaticus have been shown to have antiurolithiatic properties, meaning they may help reduce the formation of calcium oxalated stones in the urinary tract and kidneys. In one study, rats were fed a water extract of Coleus aromaticus leaves for 30 days, and the extract was found to reduce the deposition of calcium oxalate.<sup>5</sup>

## REVIEW OF LITRETURE

### CLASSIFICATION

- Kingdom: Plantae
- Unranked: Angiosperms

- Unranked: Eudicots
- Unranked: Asterides
- Order: Lamiales
- Family: Lamiaceae
- Genus: Plectranthus
- Species: P. amboinicus
- Binomial name: Plectranthus amboinicus (Lour.) Spreng

### VERNACULAR NAMES<sup>6</sup>

- Synonyms: Coleus amboinicus Lour. Coleus aromaticus Benth.
- Sanskrit: Parnayavani
- Bengal: Paatharchur, Paterchur
- English: Country borage, Indian Borage.
- Gujarati: Ovvapaan
- Hindi: Pattaajvaayana
- Kanada: Karpurahalli, Penova
- Malayalam: Kannikurkka, panikkurukka, navarayilla Oriya: Hemakedar, Amarpoi
- Punjabi: Patharachur
- Tamil: Karpuravalli

### NUTRITIONAL CONTENT

Coleus aromaticus is an edible, nutritive plant, which contains proteins (0.6%), vitamins (0.003% ascorbic acid, 0.00008% thiamine), minerals (0.158% calcium, 0.016% phosphorus, 0.138% potassium, 0.0047% sodium, 0.088% magnesium), trace metals (0.262% iron, 0.0003% zinc, 0.00012% copper, 0.000022% chromium), soluble dietary Fibers (0.31%) , insoluble dietary Fibers (1.56%), phytic acid (0.00092%), soluble oxalate (0.02%). Thus, Coleus aromaticus is a good source of nutritious compounds and can be used as a food supplement. This plant has chlorophyll a 0.44 ± 0.13 and chlorophyll b 0.29 ± 0.10. It also contains total xanthophylls (0.356mg/g of plant dry weight); neoxanthin, violaxanthin, leutin, zeaxanthin, α- carotene (0.157mg/g of dry weight) and β- carotene (0.0035mg/g of dry weight).<sup>8</sup>

### CHEMICAL CONSTITUENTS

Butylaniside, -caryophyllene, carvacrol, 1-8-cineole, p-cymene, ethylsalicylate, eugenol, limonene, myrce-

ne, and - pinenes, -selenene, -terpinene, terpinen-4-ol, thymol, verbenone (essential oil), apigenin, chrysoeriol, 5,4-dihydroxy- 6,7-dimethoxy-flavone (circimaritin), eriodictyol, 6-methoxygenkawanin, luteolin, quercetin, salvigenin, taxifolin, oxaloacetic acid, crategolic, euscaphic, 2-3-dihydro-olean-12-en-28-oic, pomolic, oleanolic, tormentic, 2,3,19,23-tetrahydroyurs-12-en-28-oic, -sitosterol- -D-glucoside isolated from the leaves. Leaves of *Coleus aromaticus* contain flavones salvigenin, 6-methoxygenkwanin, quercetin, chrysoeriol, luteolin and apigenin, the flavanone eriodictol and the flavanol taxifolin, triterpenic acids; oleanolic acid, euscaphic acid, tormentic acid and 2,3,19,23-tetrahydroyursolic acid. On the other hand, volatile constituent of Mauritius's *Coleus aromaticus* contains camphor (39%) along with carvacrol (41.3%) (Gurib et al., 1996). Other constituents reported are (Z)-1, 3-hexadiene (0.1%), (Z)-3-hexenol (0.6%), (E,Z) farnesene (0.2%), (E,E) farnesene (0.2%), (E,E) farnesene (0.2%) and murolene(0.2%). GC/MS of *Coleus aromaticus* in Pakistan shows the thymol as a significant constituent instead of carvacrol along with p-cymene, terpinen-4-ol, caryophyllene, verbenone, tert-Bu anisole, oxygenated sesquiterpene (Haque et al., 1988), but according to Malik et al. The presence of *patchouli*: 8.7% along with carvacrol: 50.7% and caryophyllene: 13.1% was reported by *Mangathayaru* et al. (2005). Carvacrol has been isolated from oils of *Coleus aromaticus* and identified by its urethan and NO derivatives.<sup>9</sup>

### PHARMACOLOGICAL PROPERTY

Brindha et al. presented the Pharmacognostical, exomorphology, histomorphology and physico-chemical evaluation of the leaf and stem of *Coleus aromaticus*. Kaliappan ND and Viswanathan PK et al. (2008) conducted micro morphological studies on the leaves of *Plectranthus amboinicus*. Nirmala et al. (2008) conducted micro-m morphological studies on the leaves of *Plectranthus amboinicus*, one of the WHO-accepted parameters for identifying medicinal plants.<sup>10</sup>

### THERAPEUTIC USES:

It is used against various disorders in the indigenous system of medicine, such as severe bronchitis, asth-

ma, diarrhoea, epilepsy, renal and vesicle calculi, fever (Warrier et al., 1995), common cold, cough, headache, indigestion, urinary diseases, vaginal discharges, colic, dyspepsia, convulsions stimulate the functions of liver, indicated in kidney and bladder stones, dysentery, cholera, bilious affections, poisonous bites and vitiated conditions of Kapha and Vata. Leaves are antilithic, antispasmodic, carminative, cathartic, stimulant, and stomachic. They are helpful in urinary diseases, vaginal discharge.<sup>11</sup> The leaf juice is carminative when mixed with sugar and given to children in colic. It is beneficial in asthma, calculus, chronic cough, dyspepsia, fever, gonorrhoea, piles, and strangury. It is externally used in conjunctivitis, and bruised leaves are locally applied for headaches. The expressed juice is used in epilepsy and other convulsive disorders, and plant extracts treat gastrointestinal troubles.<sup>12</sup> The diuretic property of ethanolic and aqueous extracts of the CA herb. Gurgel et al. reported that the hydro-alcoholic extract of *P. amboinicus* possesses anti-inflammatory and antitumor activities, supporting the folk use of this medicinal species. Shyama et al. reported the anticlastogenic potency of the ethanolic extract of CA, wherein their study indicated the protective effect against cyclophosphamide and mitomycin-induced cytogenetic damage.<sup>13</sup>

## DISCUSSION

In Asian nations, *Coleus aromaticus* is a common household herb. It can be used in cooking and cultivated in kitchen gardens. Researchers worldwide constantly investigate and validate the antibacterial, antioxidant, and flavouring potentials. Research on its use in the nutraceuticals and functional food industries, which could proliferate shortly, has ample room. Aside from the traditional claims, current research still has to provide sufficient evidence for the herb's palatable and digesting qualities. Very few human investigations have reported therapeutic potentials that require additional development. It has been demonstrated that leaves of *Coleus aromaticus* help lower the buildup of calcium oxalate in the kidneys and urinary tract. This suggests that *Coleus ar-*

romaticus may effectively treat calcium oxalate stone formation.<sup>14</sup>

## CONCLUSION

The extensive material in this review demonstrates its substantial source of physiologically active chemicals and possible therapeutic benefits. Given how readily available *Coleus ambisonics* is in our nation, scientific research still has room to fully utilise its therapeutic qualities to bolster conventional claims and investigate some novel and intriguing leads. Future research will be able to follow this path.

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