



PHYTOCHEMICAL SCREENING OF *Curcuma neilgherrensis* WT. AN ENDEMIC MEDICINAL PLANT FROM SESHACHALAM HILLS (A.P) INDIA.

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ABSTRACT

Rare and Endemic medicinal plant *Curcuma neilgherrensis* (Zingiberaceae) is reported from Araku valley and from Tirumala hills of Seshachalam Hill Ranges of Easternghats, Andhra Pradesh. It is distributed all along the landscapes of mountain regions commonly called 'Adavi pasupu 'or 'Konda Pasupu'. It is stated as endemic in Red listed medicinal plants of Talakona MPCA of Eastern Ghats. Herb is used as traditional medicine by the tribals and also ornamental. This species is used against cold, cough, boils, cuts, wounds, bone fractures, skin diseases and also as antimicrobial, anthelmintic, antioxidant, antiinflammatory, antiasthamatic, antitumor, stomach ache and carminative. In the present investigation Preliminary phytochemical screening of leaf, scape, flower and rhizomes revealed the presence of various secondary metabolites such as alkaloids, flavonoids, phenols, terpenoids, steroids, anthocyanidins, saponins, tannins, lignins, indoles, glycosides, carbohydrates, proteins and amino acids may supports the herbal medicinal usages.

KEYWORDS:Endemic,Seshachalam Hill Ranges,Traditional Medicine,Phytochemical Screening,*Curcuma neilgherrensis*.



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INTRODUCTION

Zinger family consists of a vital group of rhizomatous medicinal and aromatic plants. It consists of about 50 genera found throughout the warm regions of the hemisphere. The important genera are *Curcuma*, *Kaempferia*, *Hedychium*, *Amomum*, *Zingiber*, *Alpinia*, *Elettaria* and *Costus* Species. Out of 10 *Curcuma* species *C. amada* and *C. zedoaria* are distributed throughout India in the wild and cultivated states, where as *C. aeruginosa*, *C. brog*, *C. caesia* and *C. sylvatica* distributed only in wild conditions along North Eastern parts of India. *C. malabarica* and *C. aromatica* in South India. *C. rakhakantha* and *C. haritha* in Kerala [1]. *C. neilgherrensis* is reported from Araku valley and also from of Tirumala and Talakona Seshachalam Hill Ranges along the Eastern Ghats [2-4]. *C. neilgherrensis* is comm -only called as “*Manjakoova*” “Katterkalvazhai” [5-6]. The plant has lot of medicinal properties as anti inflammatory, Cholagogue, hepatoprotective, blood purifier, antioxidant, taoxifier, anti-asthmatic, antitumour, stomach -ic, carminative and regenerator of liver tissue [7]. It is also used for chronic hepatitis, antiarth -ritis, antiseptic and menstrual disorders [8]. According to the traditional data from the herbalists, and from Yanadi tribes of Sessa-chalam hill ranges the rhizomes of *C. neilghe-rrensis* were used to treat cuts, boils, wounds, skin diseases, pimples, bone fractures, comm- on cold and ulcers. It is used in their common diet to control the cholesterol levels of the body. To prove the herbal uses phyto-chemical analysis was undertaken.

MATERIALS AND METHODS

Plant Material Collection

Plant material *C. neilgherrensis* was collected from Tirumala and Talakona along the Seshachalam hill ranges during the months of June-September, 2011 as per the standard method [9]. The plant material was authen-ticated by Prof. N.Yasodamma and the vouc-her specimens No DC 921, DC 920 were deposited in the herbarium, Department of Botany, S.V.University, Tirupati. Plant parts like Leaf, scape, flowers and rhizomes were collected and thoroughly washed and further dried under shade at $28 \pm 2^\circ \text{C}$ for about 10 days. The dried parts were ground well into a fine powder in a mixer grinder and sieved to particle size of 50 -150mm. The powders were stored in a polythene bags at room temp-eratures.

Preparation of the extract

20g of leaf, scape, rhizome and flower powders were dissolved in 200ml of each solvent like cold water, hot water, alcohol, methanol, chloroform, ethyl acetate; hexane and benzene are kept in dark for one day. These extracts were concentrated under red-uced pressure to one third volume and used for testing of 15 components namely alkalo -ids, flavonoids, phenols, terpenoids, steroids, carbohydrates, proteins, reducing sugars, aminoacids, anthocyanidins, saponins, tann-ins, lignins, indoles, and glycosides.

Preliminary Phytochemical Screening

Phytochemical screening of the *C. neilgh-errensis* was done by the standard procedures prescribed in the book of Harborne and Kokate; Gibbs and Frans worth methods [10-13].

RESULTS AND DISCUSSION

Preliminary Phytochemical Screening: (Table: 1)

Phytochemical constituents of leaf, scape, flower and rhizome reveals the presence of alkaloids, flavonoids, phenols, terpenoids, steroids, anthocyanidins, saponins, tannins, lignins, glycosides, carbohydrates, proteins, indoles and aminoacids. Rhizome yielded a good number of compounds in water, alcohol and methanol extracts except terpenoids. In leaf and flower alkaloids, indoles, lignins are absent, whereas scape exhibits very poor number of components as alkaloids, flavon-oids, phenols, steroids, saponins and tannins only in hot water, alcohol and methanol extracts. In flower carbohydrates, proteins, amino acids, indoles, alkaloids and lignins are absent and only anthocyanidins are present. *C. neilgherrensis* rhizome consists nearly 13 secondary metabolites, whereas *C. caesia* 8, *C. amada* 5, *C. longa* represents 4 compounds [14]. *C. neilgherrensis* is also used traditi-onally as that of other *Curcuma* species such as anti-inflammatory cholagogue, hepato-protective, blood purifier, antioxidant, anti-diabetic, taox- ifier, antiasthamatic, anti-tumour, stomachic, carminative, regenerator of liver tissue [7]. Curcumanol from hydro alcoholic extract of *C. zedoaria* is proved to use as analgesic [15]. In recent studies oil extraction from the *C. longa* leaves yielded terpenoids compound which also used as biofuels an alternative to that of petrol [16].

CONCLUSION

The herbal uses of *C.neilgherrensis* against cuts, boils, wounds, skin diseases, pimples, bone fractures, common cold and ulcers supported by the presence of various phyto-constituents like alkaloids, flavonoids, phenols, tannins, terpenoids and glycosides in high amounts compared with other *curcuma* species. Leaf extracts of the species also reveals in higher amounts of terpenoids may also leads for the extraction of fossil fuel like compounds to that of *C.longa*. *In-situ* and *in-vivo* conse-rvation

of the species is essential in future studies due to its rare distribution.

ACKNOWLEDGEMENTS

The authors are grateful to the University Grants Commission (UGC) New Delhi for Financial assistance. We are also indebted to the Department of Botany, S.V.U College of Sciences, Sri Venkateswara University, Tirup-ati, Andhra Pradesh, India for providing the space and facilities to complete the above Research work. The authors are grateful in this regard.

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