

A GENERAL REVIEW ON CELASTRUS PANICULATUS AND ITS PHYTOCHEMICAL STUDY**Ranjana Bohra***

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ABSTRACT

Celastrus paniculatus Willd (Celastraceae) is a rare and endangered species in medicinal plant having a remarkable reputation such as the treatment of cognitive dysfunction, analgesic, anti-inflammatory, epilepsy, insomnia, abortifaciant, appetizer, gout, learning and memory, abdominal disorders and many more. The species is vulnerable in western ghat of south India. Different parts of celastrus paniculatus like seed, bark, stem, flower, capsule, leaf have their own pharmacological activity. The phytochemical screening analysis of leaf extracts of Celastrus paniculatus shows that all the four extracts i.e aqueous, chloroform, petroleum ether, and ethanolic extracts showed the presence of tannins, alkaloids and fixed oils. Carbohydrates, flavonoids, Phenolic compounds, and saponins are present in only aqueous extract while Sterols and triterpenoids are present in ethanolic, aqueous extracts. Phytochemical studied has been shown that Celastrus paniculatus seed extract contains alkaloids, sterols, and bright coloring substance, celapanine, celapanigine, celapagine, celastrine, and paniculatine are some of the important alkaloids are rich in oleic acid, which is the main fatty acid in the oil, together with linoleic acid, palmitic acid and stearic acid.

KEYWORDS: *Celastrus paniculatus, phytochemical, pharmacological activity***INTRODUCTION**

Celastrus paniculatus from centuries known as the "Elixir of life" and common to all over the hilly areas of india. Celastrus paniculatus is a medicinal plant having a remarkable reputation for treatment of cognitive dysfunction, epilepsy, insomnia, rheumatism, nootropic, gout, dyspepsia^[1,2], analgesic, inflammation^[3] and antianxiety activity.^[4]

It improves learning and remembering capability possibly by decreasing biogenic amines turnover or antioxidant effect. It has been reported that Celastrus paniculatus oil exert a number of pharmacological actions such as antiatherosclerotic and hypolipidemic activities as well as anti-spermatogenic action.^[5]

The medicinal power of herbal plants lie in phytochemical constituents that cause actual pharmacological action on human body. The most effective bioactive phytoconstituents are steroids, terpenes, alkaloids, tannins, flavanoid, carbohydrate, amino acid, glycosides, phenoles compounds etc.

Since Celastrus paniculatus seeds are available in large quantity. The seeds extracted with petroleum ether yield dark brown oil. Observation on the seed oil using paper chromatography and gas chromatography techniques stated that oil mainly contains palmitic, stearic, oleic,

linoleic and linolenic acids^[6] Its highly contain neutral lipids in the oil, followed by glycolipids and phospholipids.^[7] As known, the double bonds in the chemical structures of these unsaturated fatty acids or other lipids can be oxidized and give the rapid onset of oil rancidity.

The seed oil has intellect properties and it has been reported that C. paniculatus oil has a beneficial activity on the learning and memory process in mentally retarded children & used for treating epilepsy, seeds yield as much as 52% oil by weight which is also useful in abdominal disorders, joint pain, headache, leucoderma, ulcer, paralysis.

Phytochemical Study

The medicinal power of herbal plants lie in phytochemical constituents that cause actual pharmacological action on human body.^[8] The most power full and commonly found bioactive phytoconstituents are glycoside terpenes, carbohydrate steroids, flavanoids, alkaloids, tannins, amino acid, phenoles compounds.^[9]

It has been studied that the antioxidant potential of petroleum ether extract of Celastrus paniculatus can be determined conveniently, precisely and quickly by the 2,2-diphenyl 1-picrylhydrazyl radical (DPPH) assay, at

different concentration, ranging from 50 to 1000 µg/ml.

The DPPH antioxidant assay is based on the capability of DPPH a stable free radical, to decolorize in the presence of antioxidants. The percentage of inhibition was found to be the IC₅₀ value 343.65 µg/ml. DPPH is a stable free radical system which is applies an essential model by in vitro antioxidant evaluation.

One more study has been done which show that Phytochemical screening of different chemical constituents were identified by the characteristic color changes using standard procedures. Freshly prepared crude extracts of *C. paniculatus* were qualitatively tested for the presence of chemical constituents using the following reagents and chemicals: flavonoids with the use of Mg and HCl; Alkaloids with Dragendorff's reagent; tannins with ferric chloride and potassium dichromate solutions and saponins after shaking produce stable form and steroids with Libermann Burchard reagent, reducing sugars with Benedict's reagent and observed color change in respective cases.^[10]

CONCLUSION

It has been concluded that the *Celastrus paniculatus* Willd. (Celastraceae) showed the presence of tannins, alkaloids and fixed oil in all the extracts and also Phytochemical screening reveal that petroleum ether extracts contain alkaloids, terpenoids, steroids, flavanoids, tannins, carbohydrate amino acid, glycosides, phenoles compounds etc. which have been reported to be responsible for potential bioactive constituents.

REFERENCES

- Godkar PB, Gordon RK, Ravindran A, Doctor BP, *Celastrus paniculatus* seed water soluble extracts protect against glutamate toxicity in neuronal cultures from rat forebrain. *Journal of Ethnopharmacology*, 2004; 93: 213-219.
- Russo A, Izzo AA, Cardile V, Borrelli F, Vanella A, Indian medicinal plants as antiradicals and DNA cleavage protectors. *Phytomedicine*, 2001; 8: 125-132.
- Ahmad F, Khan RA, Rasheed S, Preliminary screening of methanolic extracts of *Celastrus paniculatus* and *Tecomella undulata* for analgesic and anti-inflammatory activities. *Journal of Ethnopharmacology*, 1994; 42: 193-198.
- Jadhav RB, Patwardhan B, Anti-anxiety activity of *Celastrus paniculatus* seeds. *Indian J. Nat. Prod*, 2003; 19: 16-19.
- Wangoo D, Bidwai PP, Antispermatogenic effects of *Celastrus paniculatus* seed extract on the testes of albino rats. *Fitoterapia*, 1988; 59: 377-382.
- Sengupta A, Bhargava HN, Chemical investigation of the seed fat of *Celastrus paniculatus*. *Journal of the Science of Food and Agriculture*, 1970; 21: 628-631.
- Ramadan MF, Kinni SG, Rajanna LN, Seetharam YN, Seshagiri M, Mörsel J-T, Fatty acids, bioactive lipids and radical scavenging activity of *Celastrus paniculatus* Willd. seed oil. *Scientia Horticulturae*, 2009; 123: 104-109.
- Chopra RN, Chopra, K. Glossary of Indian medicinal plants. Council of Scientific and Industrial Research, New Delhi India, 1986.
- Krisnaiah DR, Bono A. Phytochemical antioxidants for health and medicine A move toward nature. *Biotechnol. Mol. Biol. Rev*, 2007; 1(4): 097-104.
- Ghani, A. (2003) *Medicinal Plants of Bangladesh*, The Asiatic Society of Bangladesh, 2nd Revised Edn., Dhaka, Bangladesh, ISBN: 9845123481: 2003; 603