



PHYTOCHEMICAL ANALYSIS OF EMBLICA OFFICINALIS AND TERMINALIA CHEBULA FRUITS EXTRACTS IN ASSAM

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Abstract

The herbal medications have been used for the treatment of various diseases in Assam. Medicinal plants are natural gift to human beings to promote healthy life. In the current study the aqueous extract of *Embllica officinalis* and *Terminalia chebula* were prepared to analyze the presence or absence of different phytochemicals in the herbs used traditionally to cure various diseases in Assam. *Embllica officinalis* and *Terminalia chebula* shows the presence of phytochemicals.

Keywords: *Phytochemicals, Aqueous Extract, Herbal Medicine, Embllica Officinalis ,Terminalia Chebula.*

Introduction

Natural Medicinal plants and herbal drugs represent a major allocation of all the recognized systems of health in the world. Traditionally medicinal plants have been used for the ailments of different countries for ancient periods [1].

Embllica officinalis Gaertn belongs to Euphorbiaceae family and commonly known as “Amla” or “Amlaki” in Bengali and “Indian gooseberry” in English.[1]. Since Ancient times, *Embllica officinalis* have been used as a “rejuvenating herb” in Ayurveda[3]. From various researches it reveals that “Amla” is known for its medicinal and nutritional properties[2]. *Embllica officinalis* is widely distributed in the tropical and subtropical areas, particularly in central and southern India, Pakistan, Bangladesh, Srilanka, Southern China and Malaysia [1,2]. *Embllica officinalis* contains tannins, flavonoids, phenolic compounds, saponins, terpenoids, ascorbic acid, carbohydrates and many other compounds[9]. It has been reported that *Embllica officinalis* possess anti-inflammatory, antibacterial, antifungal, antioxidant, insecticidal, radioprotective, antidepressant, immunomodulatory, antidiabetic, antiaging, gastroprotective properties. [1,3].

Terminalia chebula is important medicinal plant in traditional medicine and most frequently used herb in Ayurveda [5]. *Terminalia chebula* Retz belongs to Combretaceae family and widely distributed in India, Myanmar, Bangladesh, Iran, Egypt, Turkey, China[4]. This plant is found in the forests of Northern India, Uttar Pradesh, Bengal, Tamil Nadu, Karnataka and Southern Maharashtra[5]. The plant has been extensively used for curing of various diseases such as cardiovascular disease, cancer, paralysis, leprosy, ulcers, gout arthritis etc[6]. It has been reported that *Terminalia chebula* possess antiviral, antibacterial, antifungal, antioxidant, antidiabetic, anticancer, antiulcer, antimutagenic activities[11,12]. *Terminalia chebula* possess high phenolic contents such as hydrolysable tannins, anthraquinone, flavonol, carbohydrates, glucose and sorbitol[10].

Materials and Methods

Preparation of Extracts

Fruits of *Embllica officinalis* and *Terminalia chebula* were washed under running tap water and chopped into fine pieces; seeds were removed and fruits were air dried at room temperature. The dried

fruits were grind to fine powder using a grinder and stored in air tight bottle. 10 g of Emblica officinalis and Terminalia chebula powder were soaked in two sterile container containing 100ml sterile distilled water respectively. Both were centrifuged at 3000 rpm and supernatant was taken and used for phytochemical analysis.

Results and Discussion

The current study demonstrates that the Emblica officinalis aqueous fruit extract exhibit carbohydrates, phenol, anthrocynine and oil, whereas proteins are not found in the fruit extract and the Terminalia chebula aqueous fruit extract contains carbohydrates, phenol, anthrocynine and oil whereas proteins are not found in the fruit extract.

The phytochemical analysis of Emblica officinalis and Terminalia chebula showed that the fruits are rich in primary and secondary metabolites which are liable for their antibiotic activity.(Table:1 & fig:1)

Table -1: Preliminary Phytochemical Screening of Emblica Officinalis and Terminalia Chebula

Sl. No.	Plants	Carbohydrates	Protein	Oil	Phenol	Anthocyanin
1	Emblica officinalis	++	–	++	++	++
2	Terminalia chebula	++	–	++	++	++

Conclusion

Recently, research in Ayurvedic medicinal plants has gained a renewed focus. In Assam many plants have been used from the immemorial for the treatment of various diseases and infections in traditional medicinal systems. Amla or Indian gooseberry has been playing a significant role from ancient times in traditional medicine, Ayurveda and in tribal medicine. Amla is also considered the best of the Ayurvedic rejuvenative herbs. Terminalia chebula is called the “King of Medicine” in Tibet and is always listed at the top of the list in Ayurvedic Materia Medica due to its extraordinary power of healing.

The phytochemicals exhibited different structural characteristics. More importantly, there have been no side effects or toxicity reports on these herbs. It has been reported that the study of phytochemistry, various pharmacognostic and pharmacological properties of a plant provides incentive for proper evaluation of the use of the plant in medicine.

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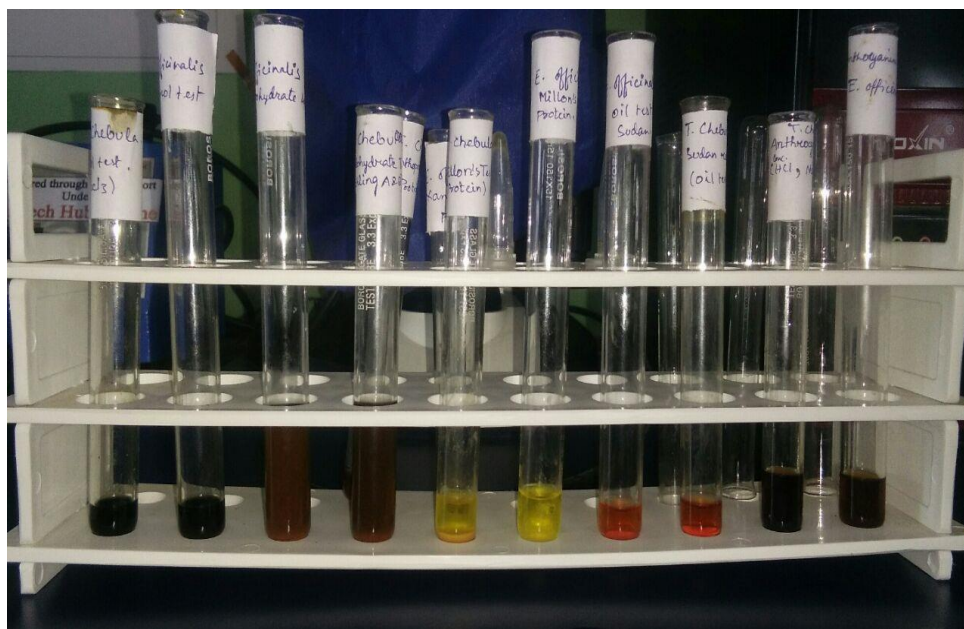


Fig-1: Phytochemical Tests of Emblica Officinalis And Terminalia Chebula