



PHYTOCHEMICAL ANALYSIS OF MORUS ALBA AND PASSIFLORA EDULIS FRUIT EXTRACTS IN ASSAM

J. G. Neog* T. J. Bora**

*Assistant Professor, Department of Botany, L.T.K. College, Azad, North Lakhimpur Assam.

**Research Fellow, Institutional Biotech Hub, L.T.K. College, Azad, North Lakhimpur, Assam.

Abstract

Medicinal herbs are used in the remedy of several human ailments in Assam. Medicinal plants are natural gift to human beings to promote healthy life. In the current study the aqueous extract of *Morus alba* and *Passiflora edulis* were prepared to analyze the presence or absence of different phytochemicals in the herbs used traditionally to cure various diseases in Assam. *Morus alba* and *Passiflora edulis* show the presence of phytochemicals.

Keywords: *Phytochemicals, Aqueous Extract, Morus Alba, Passiflora Edulis.*

Introduction

The investigation of biologically active compounds from natural resources has been always of great interest to the scientist looking for new drug development in biomedical research [1]. Now a days, the modern pharmaceutical industry is highly dependent on herbal medicines and most of the drug substances are derived from natural resources [6]. Plants are known to produce phytochemicals which possess anticarcinogenic, anticancer, antimicrobial and antioxidant activities [7,8] *Morus alba* Linnaeus, is commonly known as white mulberry, belonging to Moraceae family. It is a short-lived, fast growing mulberry tree, which grows to 10-20 m tall [2]. The plant is widely distributed in the subtropical regions of Asia, Africa, Europe and America. The fruit and the leaf of *Morus alba* are sold in various forms as nutritional supplements [1]. Recent studies have shown *Morus alba* has antioxidant, antibacterial, antiviral and anti-inflammatory properties [3].

Passiflora edulis Sims. is a woody climber, belonging to Passifloraceae family, which is cultivated in all parts of the world, mainly for its edible fruits and for its ornamental flowers[4]. The plant is commonly known as yellow passion fruit, which is an agronomically important crop and commercially it is used in the fruit industries [6]. *Passiflora edulis* is used as sedative, antiasthmatic and emetic in traditional system of medicine [9]. It is also reported that *Passiflora edulis* possess anti-inflammatory, antihypertensive, anti- anxiety, antioxidant, and antitumor, antifungal properties [5].

Materials and Methods

Preparation of Extracts

Fruits of *Morus alba* and *Passiflora edulis* 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 *Morus alba* and *Passiflora edulis* 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 present study carried out on the two plants *Morus alba* and *Passiflora edulis* revealed the presence of bioactive constituents of medicinal values. The phytochemical analysis of *Morus Alba* and *Passiflora*



edulis showed the presence of all major bioactive compounds such as carbohydrates, protein, phenol, anthocyanine and oil.

The phytochemical analysis of *Morus alba* and *Passiflora edulis* also 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 Morus Alba And Passiflora Edulis

Sl No.	Phytochemical Test	Morus alba (Fruit extract)	Passiflora edulis (Fruit extract)
1	Carbohydrates	+	+
2	Protein	+	+
3	Oil	+	+
4	Phenol	+	+
5	Anthocyanin	+	+



Fig-1: Phytochemical Tests of Morus Alba and Passiflora edulis

Conclusion

In Assam many plants have been used from the immemorial for the treatment of various diseases and infections in traditional medicinal systems. The phytochemicals found in the fruit extracts of *Morus alba* indicates its potential as an important source of herbal medicine which is used to improve the health of the people of Assam. In recent years, researchers have shown increasing interest in the passion fruit plant due to its ethno botanical uses and phototherapeutic properties.

The phytochemicals exhibit 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.

Acknowledgement

The authors are thankful to the Principal, L.T.K. College and Institutional Biotech Hub for providing necessary research facilities and technical support.

References

1. M.O. Omidiran, R. A. Baiyewu, I.T. Ademola, O. C. Fakorede, E. O. Toyinbo, O. J. Adewumi, E. A. Adekunle, Phytochemical Analysis, Nutritional Composition and Antimicrobial Activities of White Mulberry (*Morus alba*). *Pakistan Journal of Nutrition* 11(5):456-460, ISSN 1680-5194, 2012.
2. S. Anis, T. Bhargava, H. Upadhyay, A Review on Phytotherapy by *Morus alba*. *International Journal of Pharmaceutical and Chemical Sciences*. ISSN: 2277-5005, Vol.1(4), 2012.
3. S. Mushtaq, S. B. Sanghi, Phytochemical Analysis of The Leaves of *Morus alba* L. *International Journal of Recent Scientific Research* . Vol.7, Issue,12, pp.14538-14540. ISSN: 0976-3031, 2016.
4. M. Sunitha , K. Devaki, Antioxidant Activity of *Passiflora edulis* Sims Leaves. *Indian Journal of Pharmaceutical Sciences*. May-June; 71(3):310-311. 2009.
5. S. S. Patel, Morphology and Pharmacology of *Passiflora edulis*: A Review. *Journal of Herbal Medicine and Toxicology* 3(1) 1-6. ISSN: 0973-4643, 2009.
6. S. D. Ramaiya, J. S. Bujang, M. H. Zakaria, Assessment of Total Phenolic, Antioxidant and Antimicrobial Activities of *Passifloras* Species. *The Scientific World Journal*. Article ID 167309, 10 pages, 2014.
7. S. Tavassoli and Z. E. Djomeh, "Total phenols, antioxidant potential and antimicrobial activity of methanol extract of rosemary (*Rosmarinus officinalis* L.)," *Global Veterinaria*, vol. 7, no.4, pp. 337–341, 2011.
8. J. Bruneton, *Pharmacognosy, Phytochemistry, Medicinal Plants*, Lavoisier, Paris, France, 1995.
9. *The Wealth of India*. A dictionary of Raw materials and Industrial products. Vol. 7. New Delhi: Council of Scientific and Industrial Research; 2003. p. 273.