

**PHYTOCHEMICAL OBSERVATION ON LEAF OF LAGERSTROMIA
PARVIFLORA (ROXB)**

AVIJIT MAZUMBER¹, S.P.BASU², B.P.SAHA³ AND R.MAZUMDER¹

1. Department of Pharmaceutical Sciences, Birla institute of Technology, Mesra-835 215,
2. Seemanta Institute of Pharmaceutical sciences, Jharpokaria, Mayurbhanj – 757 087, (Orissa)
3. Department of Pharmaceutical Technology, Jadavpur University, Kolkata-700 032 (W.B)

Received: 20 .9.2002

Accepted: 16.10.2002

ABSTRACT: *Phytochemical studies of leaf of the plant Lagerstroemia Parviflora Roxb (Lythraceae) reveals the presence of phytosterols, tannins, alkaloids, glycosides and absence of saponin, flavanoid and triterpenoids have been reported in this plant for the first time.*

INTRODUCTION:

Lagerstroemia parviflora (Family-Lythraceae) is known for its various medicinal properties. They are considered to be used by the tribals for sores, strangulation of intestine, syphilis, carbuncles and cough (1-5). The juice of the leaves is also used in the treatment of asthma and bronchitis (6). The leaf extracts of *Lagerstroemia parviflora* have been found to have significant antimicrobial action (7).

The present investigation was undertaken to study the phytochemicals present in the leaf extracts.

MATERIALS AND METHODS:

Plant Material:

Fresh leaves of the plant were collected and identified by Botanical Survey of India, Kolkata and further confirmed by experts of our department. The leaves were sun dried after washing and then grinded to a coarse powder in a grinder. The coarse powder of the leaves was subjected to soxhlet extraction with various solvents for continuous hot extraction. The extracts so obtained were subjected to solvent evaporation by vacuum distillation and dried in desiccators. The dried material were tested for different phytoconstituents like glycosides, alkaloids, tannins, saponins, phytosterol, flavonoids by standard methods [8-10].

REAGENTS:

All reagents were of analytical grade and obtained form S.D. Fine Chemicals Ltd, Mumbai.

METHODS:

50 ml of the filtered acidic solution of the plant powders formed the test solution.

Phytosterols:

Testing solution is treated with a mixture containing minimum quantity of chloroform, 3 drops of acetic anhydride and 2 drops of concentrated sulfuric acid.

The appearance of purple colour and its change to blue (or green) indicates presence of phytosterols.

Alkaloids:

The testing solution was treated with 2 N hydrochloric acid. The aqueous layer so formed was decanted. To this layer 1-2 drops of freshly prepared Mayer's reagent or Dragendorff's reagent was added. The appearance of whitish or brick red precipitate indicated the presence of alkaloid.

Glycoside:

The test solutions were hydrolysed and then treated with chloroform, Equal quantity of dilute ammonia was added to the separated chloroformic layer. Appearance of pink colour indicates presence of glycoside.

Tannin:

The presence of white precipitate in the test solution when treated with lead acetate solution indicates presence of tannins.

Saponins:

The test solution was vigorously shaken with distilled water. Appearance of stable foam indicates the presence of saponin.

Triterpenoids:

The test solution of the leaf extracts were shaken with few drops of antimony trichloride. Appearance of blue precipitate denotes the presence of triterpenoids.

Flavonoids:

The plant extract solutions were treated with 1 gm of magnesium powder and 1ml of concentrated hydrochloric acid the development of orange colour indicates presence of flavonoids.

RESULTS AND DISCUSSIONS:

The detailed result of the phytochemical tests carried out on leaves of *Lagerstroemia parviflora* are presented in Table 1. In this present investigation, the phytochemical tests reveal the presence of phytosterols in all the extracts except the aqueous extract. Glycosides are present in the benzene and methanolic extract of the leaves. Alkaloids are present in both methanolic and chloroformic extract. Tannin was found to be present in the methanolic extract. Flavonoid, triterpenoids and saponins are absent in all the five tested extracts.

ACKNOWLEDGEMENT:

The authors are thankful to UGC for providing the financial help to carry out the research work.

Table -1

Phytochemical Screening of various extracts of *Lagerstroemia parviflora*

Name of Extract	Glycoside	Alkaloid	Tannin	Saponin	Phytosterol	Flavonoid	Triterpenoids
Petroleum Ether (60-80o)	-	-	-	-	+	-	-
Benzene	+	-	-	-	+	-	-
Methanol	+	-	-	-	+	-	-
Chloroform	-	+	-	-	+	-	-
Water	-	-	-	-	-	-	-

‘+’ = Present; (-) = Abscent

REFERENCE

1. Bhakuni, D.S., Dhar, M.L., Dhar M.M., Dhawan, B.N., and Methrotra, B.N., “Screening of Indian Plants for biological activity, Part II”, Ind Exp 7, 250, (1969).
2. Dhar, M.L., Dhar, M.M., Dhawan, B.N., and Methrotra, B.N., “Screening of Indian Plants for biological activity, Part III”, Ind Exp. Biol 11, 43, (1973).
3. Jain, S.K. and Tarafdar, C.R., “Medicinal Plant –Iore of the Santals”, Econ Bot. 24, 241, (1970).
4. Vohra, S.B. and Khan, M.S.Y., “Pharmacological studies on Lagerstromia parviflora”, J.Res. Ayur Siddha 3, 23, (1982).
5. Singh, R. and Singh, R., “Screening of some of some plant extracts for antiviral properties”, Technology, Sindri, 9,415 (1982).
6. Atal, C.K. and Srivastave, J.B. and Wali, B.K., “Screening of Indian Plant for biological activity-Part VIII”, J. Exp. Biol. 16,390, (1978).
7. Mazumder, A., Singh, S.K., Mazumder, R., Basu, S.P. and Saha, B.P., “Antimicrobial action of leaf extract of Lagerstroemia parviflora Roxb”, Anc. Sc. of Life, Vol. No. XXI (3), Jan (2002).
8. Johansen, D.A., “Plant microtechnique”, New York, 182, (1940).
9. Harborne, J.B., “Phytochemical methods”, London, (1973).
10. Trease, G.E. and Evens, W.C., “Pharmacognosy”, 9th Edn., ELBS Publication, (1985).