RESEARCH ARTICLE

Phytochemical analysis of some plant latex

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ABSTRACT

Phytochemical analysis of plant latex was carried out from ten plant species from Nanded region for presence of secondary metabolites such as alkaloids, flavonoids, phenols, tannin, saponin, terpenoids, steroids and glycosides. Alkaloids were found in all plant latex except *F. benghalensis* & *C. papaya,* while flavonoids and phenols revealed the presence in all latex samples except *Nerium oleander* & C*arica papaya*. *Calotropis procera, Jatropa curcas, J. gossypifolia, N. oleander*, *C. papaya* showed presence of Saponin but absence of tannins. Terpenoids are absent in *Euphorbia tirucalli*, *Ficus benghalensis, F. religiosa*. Steroids are present in *E. tirucalli*, *C. procera, F. benghalensis,* while glycosides were absent in *E. tirucalli*, *N .oleander* and *F. religiosa.*

Key word: Latex, Phytochemical analysis, Secondary metabolities.

INTRODUCTION

About 10% of flowering plants produce latex and are found in over 40 families including Euphorbiaceae, Apocynaceae, Caricaceae, Moraceae, Asclepidaceae. (Agrawal and Konno, 2009) Latex is milky fluid secreted by ducts of laticirerous tissue (Hagal *et. al.,* 2008) and flow inside laticifers including leaves, stems, fruits & roots of some flowering plants. (Pickare, 2008) Latex is a complex mixture of secondary metabolites (Santos *et al.,* 2011) contains various biologically active compounds and antimicrobial activities. (Siritaperawee *et al.,* 2012, Kanokwiroon *et al.,* 2008) In recent years, secondary plant metabolites (phytochemicals) have been extensively investigated as a source of medicinal agents (Balandrin *et al.,* 1985). Known constituents of latex are proteins, alkaloids, tannins, terpens, starch, sugars, oils, resins, gums and enzymes. (Pandey, 2001) Plant latex has wider ethno pharmacological application as it is used by tribal communities. *E. hirta* latex is traditionally used as ear drops and in the treatment of boils, sore and wound healing. (Igoli *et. al.,* 2005) Jatropha latex has some ehnomedicinal use like wound healing, coagulant activities of blood. (Om *et al.,* 2008) Hence the present study is aimed to find out phytochemical constituents of latex.

MATERIALS AND METHODS

Plant Species:

Euphorbia hirta L., *Euphorbia tirucalli* L. *Jatropha curcas* L, *Jatropha gossypifolia* L. (Euphorbiaceae), *Plumeria rubra* L. *Nerium oleander* L., (Apocynaceae), *Calotropis procera* (Ait) R.Br (Asclepidaceae)., *Ficus benghalensis* L., *Ficus religiosa* Linn, (Moraceae) *Carica Papaya* L. (Caricaceae). Their identification was confirmed using the 'Flora of Marathwada' (Naik, 1998).

Collection of Latex:

Latex samples were collected early in the morning from each plant species by nipping the leaves or by incisions of the branches of the plant, allowing to drain in the sterile glass tube separately.The samples were brought to the laboratory, kept in refrigerator at 4˚C until use. Latex was homogenized in a homogenizer and filtered through four folds of muslin cloth and used for photochemical analysis.

Phytochemical Screening of the Latex:

Latex samples from each plant used in this study were screened for identification of their phytochemical contents using standard procedures. (Kokate, 1999; Harborne, 1998).

RESULTS AND DISCUSSION

This study was focused on investigating phytochemical properties of latex. Pytochemical analysis of latex is represented in Table: 1. Alkaloid, flavonoid, phenols, tannin, saponin, terpenoids, steroids, glycosides were widely distributed in most of the plant latex. The crude latex of *E. hirta* L. & *P. rubra* L. revealed the presence of all phytochemicals except saponins and steroids. The present investigation agrees with work of Mallesha (2012). *E. tirucalli* latex showed the presence of alkaloid, flavonoid, phenols, tannin & steroids. Anti-inflammatory and analgesic activities and phytochemical constituents of *E. tirucalli* latex have been reported by Prabha *et al.,* (2008).

Table 1 : Phytochemical analysis of some plant latex

Sr. No	Plant sp.	Pytochemicals							
		Alkaloids	Flavonoids	Phenols	Tannins	Saponins	Terpenoids	Steroids	Glycosides
1.	*Euphorbia hirta* L.	+	+	+	+	-	+	-	+
2.	*Plumeria rubra* L.	+	+	+	+	-	+	-	+
3.	*Euphorbia tirucalli* L.	+	+	+	+	-	-	+	-
4.	*Calotropis procera* (Ait) R.Br.	+	+	+	-	+	+	+	+
5.	*Jatropha curcas* L.	+	+	+	-	+	+	-	+
6.	*Jatropha gossypifolia* L.	+	+	+	-	+	+	-	+
7.	*Ficus benghalensis* L.	-	+	+	+	-	-	+	+
8.	*Nerium oleander* L.	+	-	-	-	+	+	-	-
9.	*Ficus religiosa* L.	+	+	+	+	-	-	-	-
10.	*Carica papaya* L.	-	-	-	-	+	+	-	+

Screening of C*. procera* latex revealed presence of all phytochemical constituents except tannin. Goyal and Mathur (2011) reported the antimicrobial potential and pytochemical analysis of *C. procera* latex. Latex of *J. curcas* & *J. gossypifolia* revealed the presence of all phytochemicals except tannins & steroids. These results support the findings of Patil & Borase (2012). *F. benghalensis* showed the presence of flavonoid, phenols, tannin, steroids, and glycosides. *N. oleander* revealed the presence of Alkaloid, saponin, terpenoid, while *F. religiosa* showed the presence of Alkaloid, flavonoid, phenols, tannin, and *C. Papaya* showed presence of saponin, terpenoid, glycosides, Sibi *et al.,* (2013) have reported the phytochemical analysis & antimicrobial activity of various solvent latex extracts.

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