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Phytochemical Analysis of Methanolic Extracts of Leaves of Some Medicinal Plants

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ABSTRACT: Phytochemical are the dependable sources for the treatment of different health problem. The present investigation deals with the phytochemical studies of leaves of different medicinal plants like *Alstonia scholaris, Catharanthus roseus, Nerium oleander, Tabernaemontana divaricata, Thevetia neriifolia, Withania somnifera , Adhatoda vasica , Cannabis sativa , Solanum nigrum, Plumeria alba and Achranthus aspera etc*. Methanolic (90%) extracts of leaf powders have been screened for qualitative determination of different secondary metabolites like, cardiac glycoside. alkaloids, flavonoids, tannins, glycoside, reducing sugar, saponin and terpenoids etc. All plant materials were collected during the period 2012 from Haridwar District.

Key words: Medicinal plants, Methanolic extracts, Phytochemical study, Secondary metabolites

INTRODUCTION

Plants which have one or more of its organ containing substances that can be used for the therapeutic purpose, are called medicinal plants. Sofowara (1993). Several phytochemical surveys have been published, including the random sampling approach which involved some plant accessions collected from all parts world. The major chemical substances of interest in these surveys have been the alkaloids and steroidal sapogenins (saponins) however, other diverse groups of naturally occurring phytochemicals such as flavonoids, tannins, unsaturated sterols, triterpenoids, essential oils etc. also have been reported Farnsworth (1966). Phytochemical are very important in medicine and constitute most of the valuable drugs. Alkaloids are rich in medicine and constitute most of the valuable drugs. They have physiological effect on animals. Edeoga *et,al*. (2001).

Laily *et,al.* (2002) worked out a preliminary phytochemical survey of plants in crocker range , Sabbah Malaysia.Choudhary *et,a.l* (2009) observed the studies on leaf epidermal micromorphology, wood element character and phytochemical screening of three medicinally important taxa of the family Convolvulaceae . Farhat Ali Khan *et.al,* (2011) observed the phytochemical screening of some Pakistanian Medicinal Plants. Sudipa *et, al.* (2013) observed the Phytochemical analysis of methanolic extracts of leaves some medicinal plants and Chandrashekar *et. al.* (2012) observed the phytochemical analysis of ethanolic extracts of leaves of *Clerodendrum viscosum.*

MATERIAL AND METHODS

The selected plant species were carefully identified with the help of available floras Hooker (1872-1897); Duthie (1903-1929), Maheshwari (1962). The leaf samples of selected plant species were carefully separated, cleaned, shade dried, mechanically grinded and coarsely powdered. Finally, the leaf powders were extracted (Soxhlet extraction) with 90% methanol and those extracts were used for different chemical color reaction tests for identification of different phytochemical groups. Phytochemical screening was carried out to assess the qualitative chemical composition of crude extracts using commonly employed precipitation and coloration reaction to identify the major natural chemical groups such as alkaloids, flavonoids, tannins, reducing sugars, saponins, flavonoid and terpenoides. The presence of alkaloids was determined using the method (Driver, 1960). For steroids or triterpenes and flavonoids test was used (Peach & Tracey, 1955), for glycosides test was used (Paris, 1963) and test for tannins, saponins (Johansen, 1940).

RESULTS

The preliminary phytochemical screening carried out on methanolic extracts of *Alstonia scholaris*, *Catharanthus roseus*, *Nerium oleander*, *Tabernaemontana divaricata* ,*Thevetia neriifolia*, *Withania somnifera, Adhatoda vasica, Cannabis sativa*, *Solanum nigrum*, *Plumeria alba and Achranthus aspera* etc leaves revealed the presence of phytoconstituents such as alkaloids, flavonoids, tannins, reducing sugars, saponins, flavonoid and terpenoides (Table 1).

All phytochemicals *i.e* alkaloids, flavonoids, tannins, reducing sugars, saponins, flavonoid and terpenoides were present in all selected plant species. Tannin were absent in *Adhatoda vasica* and *Cannabis satvia*.

Phytochemical constituents such as tannins, flavonoids, alkaloids and several other aromatic compounds or secondary metabolites of plants serve as defense mechanism against predation by many microorganism, insects and herbivores. The curative properties of medicinal plants are perhaps due to the presence of various secondary metabolites such as alkaloids, flavonoids, glycosides, phenols, saponins, steroids etc (Sofowara, 1993).

It may be concluded that these medicinal plants are very useful. These plants may be used to cure some common and other various diseases.

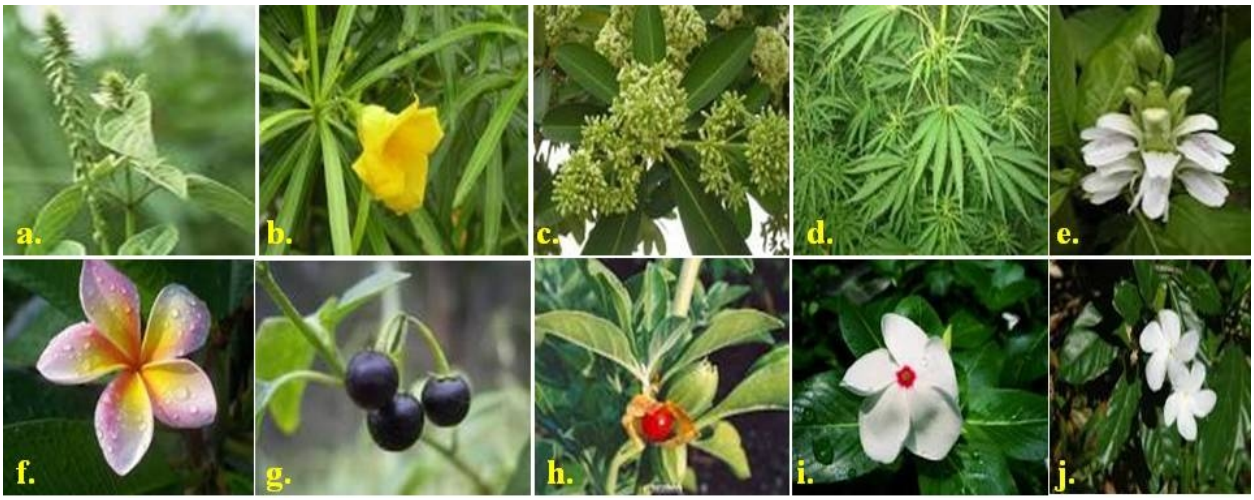

Figure 1. Plates of selected different plant species
(a). ***Achranthus aspera,*** **(b).** ***Nerium oleander, (c). Thevetia neriifolia , (d). Cannabis sativa,*** **(e).** ***Adhatoda vasica,*** **(f).** ***Plumeria alba, (g). Solanum nigrum , (h) Withania somnifera.,(i). Catharanthus roseus , (j) .Tabernaemontana divaricata,***

Table 1:Preliminary phytochemical screening of methanolic extract of different extract of different of plants species.

Name of the Plant	Alkaloid	Cardic glycoside	Reducing sugar	Saponin	Flavonoid	Tannin	Terpenoid
Nerium indicum	+	+	+	+	+	+	+
Cathranthus roseus	+	+	+	+	+	+	+
Tabernaemontana divaricata	+	+	+	+	+	+	+
Thevetia neriifolia	+	+	+	+	+	+	+
Alstonia scholaris	+	+	+	+	+	+	+
Plumeria alba	+	+	+	+	+	+	+
Withania somminfera	+	+	+	+	+	+	+
Adhatoda vasica	+	+	+	+	+	-	+
Cannabis stativa	+	+	+	+	+	-	+
Solanum nigrum	+	+	+	+	+	+	+
Achyranthus aspera	+	+	+	+	+	+	+

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