

Phytochemical Analysis of Eight Medicinal Plants from Amravati District (MS) India

P. G. Dhawale

Department of Botany, Shri Shivaji College, Akola (MS) India- 444 001

Abstract- The preliminary phytochemical analysis of eight medicinal plants from Amravati District (MS) was done. The plants were *Abutilon indicum* L. (Swart), *Euphorbia hirta* L., *Ficus hispida* L. f., *Melia azedarach* L., *Phyllanthus reticulatus* Poir., *Psidium guajava* L., *Vitex negundo* L., *Vitex pinnata* L. Qualitative phytochemical analysis of these plants confirms the presence of various phytochemicals like alkaloids, flavonoids, steroids and terpenoid. The presence of these phytochemicals can be correlated with medicinal potential of these plants.

Index Terms- Medicinal plants, Phytochemical analysis, alkaloids, flavonoids, steroids and terpenoid

I. INTRODUCTION

World plant biodiversity is the largest source of herbal medicine and still about 60 – 80 % world population rely on plant based medicines which are being used since the ancient ages as traditional health care system. It is now clear that, the medicinal value of these plants lies in the bioactive phytochemical constituents that produce definite physiological effects on human body. These natural compounds formed the base of modern drugs as we use today Edeoga et al., (2005), Akinmo-laudn et al., (2001), Rout et al., (2009).

Phytoconstituents are the natural bioactive compounds found in plants. These phytoconstituents work with nutrients and fibers to form an integrated part of defence system against various diseases and stress conditions. Phytochemicals are basically divided into two groups, i.e. primary and secondary constituents; according to their functions in plant metabolism. Primary constituents comprises common sugars, amino acid, proteins and chlorophyll while secondary constituents consists of alkaloids, terpenoids, steroids and flavonoids, so on. The present study revealed the qualitative phytochemistry of seven medicinal plants used by the peoples of Amravati district (MS) India, to cure various ailments.

II. MATERIAL AND METHODS

1. Material collection and sample processing :

The plant material was collected from the local area and identified taxonomically in the Department of Botany, Shri Shivaji College, Akola (MS). The voucher specimens were deposited in the Departmental herbarium.

A small scale extraction was carried out view of preliminary analysis. The dried plants materials (1-5g) was extracted with methanol at room temperature the methanol was decanted after 24 hours and extraction repeated three times. The pooled extracts were filtered and then concentrated under vacuum using rotary evaporator at 40 °C .

2. Qualitative Analysis of Phytoconstituents :

Preliminary phytochemical tests of methanol extracts/ powdered sample of each plant was carried out as described by Harborne (1973) , Edeoga et al., (2005) and Krishnaiah et al ., (2009) .

III. RESULTS AND DISCUSSION

The present investigation was carried out on eight plants to study the presence of medicinally active phytochemicals in the medicinal plants from Amravati District (MS) India (Table-1). The results are summarized in table 2 . Alkaloids are found in *A.indicum* L. (Sweet), *F. hispida* L.f., *M. Azedarach* L ., flavonoid are present in *E. hirta* L., *M. azedarach* L., *P. guajava* L . The steroids their presence in *A. indicum* L. (Sweet), *E. hirta* L., *M. azedarach* L., *P. reticulatus* Poir., *P.guajava* L., *V.negundo* L., *V.pinnata* L. and Terpenoid are present in *A. indicum* L. (Sweet), *F. hispida* L. f., *M. azedarach* L., *P. Reticulates* Poir., *V. negundo* L., *V. pinnata* L. (Table-2).

The above results indicate that, the plants investigated are rich in alkaloids, flavonoids, steroids, terpenoids. They are known to show medicinal potential and physiological activities (Sofowara.1993). Our results are also in analogy with previous reports . Edeoga et al.,(2005),Jigna et al ., (2005) , Okwu et al ., (2001) ., Kawale et al ., (2009) ,Koche et al ., (2010) . Thus the plants under investigation showed their medicinal potential and can be a source of useful drugs.

Table 1
Medicinal uses of plants under investigation

| Botanical Name | Family | Uses to cure |
|--------------------------------|---------------|--------------------------------------------------------------------------------------|
| <i>Abutilon indicum</i> | malvaceae | Leprosy , ulcer , headache, bladder infection , incrses semen in men, act as tonic . |
| <i>Euphorbia hirta</i> | Euphorbiaceae | Asthma,antipruritic, carminative. |
| <i>Ficus hispida</i> | Verbinaceae | Diabetes . |
| <i>Melia azedarch</i> | Meliaceae | Stomach irritation , vomiting ,diarrhoea . |
| <i>Phyllanthus reticulatus</i> | Euphorbiaceae | Anaemia , burn, leaf use as diuretic . |
| <i>Psidium guajava</i> | Myrtaceae | Diarrhoea, dysentery , stomach upset andregular menstrual periods . |
| <i>Vitex negundo</i> | Verbinaceae | Cough , bronchitis,asthma ,act as tonic . |
| <i>Vitex pinnata</i> | Verbinaceae | Stomch ache ,fever . |

Table 2
Preliminary Photochemistry of seven selected medicinal plants

| Plant Extacts | Part | Alkaloid | Flavonoid | Steroid | Terpenoid |
|-----------------------|------|----------|-----------|---------|-----------|
| <i>A. indicum</i> | Rt | + | - | + | + |
| <i>E. hirta</i> | Lf | - | + | + | - |
| <i>F. hispida</i> | Ft | + | - | - | + |
| <i>M.azedarch</i> | Lf | + | + | + | + |
| <i>P. reticulatus</i> | Lf | - | - | + | + |
| <i>P. guajava</i> | Lf | - | + | + | - |
| <i>V. negundo</i> | Lf | - | - | + | + |
| <i>V. pinnata</i> | Lf | - | + | + | + |

Ft: fruit , Lf : leaf , Rt : root .

(+) Indicate presence of phytochemicals and (-) Indicate absence of phytochemicals.

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AUTHORS

First Author – P. G. Dhawale, Department of Botany, Shri Shivaji College, Akola (MS) India- 444 001, Email: purudhawale@gmail.com