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Screening of Active Principles from a Few Medicinal Plants

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Medicinal plants are gaining importance because of their commercial and therapeutic values. The demand for medicinal plants is very high as they are considered as a warehouse of many secondary metabolites. Among secondary metabolites various groups play key roles; these need much concentration and detailed study. In the present study 20 medicinal plants used extensively by tribals of Satpuda have been screened qualitatively to find out their active principles.

Key Words: Screening, Principles, Medicinal, Plants,

INTRODUCTION

The Satpudas are the lifeline of the tribals of this region. Thousands of traditional medicines are collected from this region. Literature on traditional medicines is very meagre[1, 2]. To fill up the gap in the existing knowledge on medicinal plants, a phytochemical study has been undertaken. In the present study medicinal plants used in various systems of medicine to cure different ailments by tribals of Satpuda ranges of Dhule and Nandurbar Districts were screened qualitatively by using various chemical and chromatographic methods.

EXPERIMENTAL

The study is based on field work and chemical analysis in the laboratory. Valuable data based on the local identification, parts of plants used, uses and availability of the plants have been recorded from the tribals of the area.

The juice, paste, decoction or infusion of plant parts are used in the treatment of ailments. The juice of plant organs is obtained by crushing them in water. The crushed plants are then put in a thin loin cloth and squeezed to get the juice. It is then diluted or given as such. The paste is made by cutting leaves, stems or roots into small pieces and softening into a moist mass by crushing with small amount of water. The decoction or the extract is made by boiling the plant parts in water. The information about the field work has been recorded following the methods suggested by Jain and Rao[3]. Phytochemical studies have been carried out by using the methods described by Gibbs[4], Harborne[5], Robinson[6] and Wagner and Wolff[7].

RESULTS AND DISCUSSION

The greater importance of medicinal plants is due to their commercial and therapeutic values. As compared to the olden days, the scientific and commercial interest of medicinal plants is increasing actively[8]. They are of great importance in pharmaceutical industries[9]. Keeping all these aspects in mind, the 20 medicinal plants used extensively by tribals of Satpuda have been screened qualitatively to find out the active principles (Table-1).

TABLE-1
PLANTS AND THEIR PARTS USED

Sr.No.	Name of taxa	Vernacular name	Parts used
1.	*Acacia chundra* (Rottl.)	Wild Khair	Bark and leaves
2.	*Bacepa monnieri* (L.) Wt.	Bam	Leaves
3.	*Balanites aegyptiaca* (L.) Del	Hingoli	Leaves
4.	*Blumea malcolmii* (Cl.) Hk.f	Bhopali	Roots
5.	*Calotropis procera* (Ait) R.Br.	Ruimadar	Leaves
6.	*Cassia occidentalis* Linn.	Kasoda	Leaves
7.	*Centella asiatica* (L.) Urb	Brahmi	Leaves
8.	*Crotalaria burhia* Buch.-Ham.	Bhuisan	All parts
9.	*Eranthemum roseum* (Vahl.) R.Br.	Hallikarva	Roots
10.	*Mirabilis jalapa* Linn.	Gulbakshikand	Roots and leaves
11.	*Prosopis julifera* (Sw.) Dc.	Vedababul	Leaves
12.	*Pupalia lappacea* (L.) Juss.	Lepadi	Shoots
13.	*Securinega virosa* (Willd.) Baillon	Kalkamini	Leaves
14.	*Sida cordifolia* L.	Harinfutane	Seeds, leaves and roots
15.	*Tephrosia purpurea* (Linn.) Pers.	Sharfunkha/Unahli	Roots
16.	*Teramnus labialis* (L.f.) Spr.	Najari	Roots
17.	*Tribulus terrestris* Linn.	Gokharu	Leaves, roots and fruits
18.	*Vigna unguiculata* (L.) Wasp. Subsp. *Unguiculata* Shah	Rankulith	Leaves
19.	*Withania somniferum* (L.) Dunal	Ashvagandha	Bark
20.	*Xeromphis spinosa* (Thunb.) Keay	Gelphal/Madanfal	Fruits and seeds

Qualitative tests are conducted for the presence of glycosides, juglones, catechols, tannins, leucoanthocyanins, saponins, anthraquinones and aucubins. Sterols are tested by Salkowiski reaction as well as by Idebermann-Burchard Test. Presence of carbohydrates is tested by Benedict's test and Molisch's test. The results are tabulated in Table-2.

TABLE-2
SHOWING VARIOUS ACTIVE PRINCIPLES IN PLANT SPECIES

Sr. No.	Gynosides	Leucontho-cyanins	Saponin	Tannins	Anthra-quinones	Carbo-hydrates	Sterols
1.	–	+	–	+	–	+	+
2.	–	+	–	–	–	+	++
3.	+++	–	++	–	–	++	++
4.	–	–	+	–	+	++	+
5.	+	–	+	–	–	–	–
6.	–	–	–	+	+	–	++
7.	++	–	–	–	+	–	++
8.	–	–	–	–	–	++	++
9.	–	–	+	–	–	+	–
10.	–	–	–	–	–	+	+
11.	–	++	–	–	–	++	++
12.	–	–	–	–	–	–	+
13.	+++	–	–	–	–	–	+
14.	–	–	–	–	–	+	–
15.	–	–	–	–	–	+	–
16.	+	–	–	–	–	+	–
17.	–	–	–	–	–	–	–
18.	–	–	–	–	–	–	–
19.	–	–	–	–	–	++	–
20.	–	–	+	+	–	+	–

Note: + sign indicates the presence of active principle.,
– sign indicates the absence of active principle.

1. Juglone test was found positive only in Sr.No. 4.
2. Catecholes were found absent in all the test plants.
3. Aucubins were found only in Sr. No. 14.

Conclusion

Plants havng Sr. Nos. 2, 3, 4, 6, 11 and 20 were found to contain many active principles. Further investigation is required for their separation and identification.

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