

MEDICO-BOTANICAL AND PHYTOCHEMICAL STUDIES ON MEDICINAL PLANTS OF DHULE AND NANDURBAR DISTRICTS OF MAHARASHTRA STATE

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Medicinal uses and phytochemical studies on 20 plants of Dhule and Nandurbar districts are given in the present paper.

Keywords : Medico-Botanical; Phytochemical studies.

Introduction

The Satpuda region of Maharashtra state is the life line of the tribals. It not only provides food but thousands of traditional medicines are collected from this region. Literature on traditional medicines are very meagre^{1,2}. To fill up the lacuna in the existing knowledge on medicinal plants and to add little more, phytochemical studies have been undertaken.

Material and Methods

The present study is based on the 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 been recorded from tribals of the area. The juice, paste, decoction and infusion of plants are used in medical treatment. The juice of plant organs is obtained by crushing them in water. The crushed plants are put in

a thin loin cloth and then squeezed to get the juice. The juice which is now filtered is diluted as required or given as such. The paste is made by cutting leaf, stem or root in small pieces and making them into a soft moist mass crushing into a small quantity of water. The decoction or the extract of the plant and plant organ is obtained by boiling the piece in water. At times the whole plant or plant parts are cleaned, dried and kept in water for 2-3 days. Afterword, they are removed. This is known as infusion. Generally 2-3 teaspoonfull diluted juice, decoction or the infusion is given 2-3 times a day.

Information about the field work has been recorded following the methods suggested by Jain and Rao³. Phytochemical studies have been carried out in the laboratory and methods followed are Gibbs⁴, Harborne⁵, Robinson⁶ and Wagner and Wolff⁷.

Medicobotany

Acacia chundra (Rottl.) Willd. KHAIR/KHADIR

Mimosaceae

6-13 m tall tree, armed with light black rough bark. Flowers creamy white in axillary spikes. Pods 6-10 x 1.8-2.3 cm pale dark brown. Seeds brown.

Throughout in deciduous forests also common in scrub forests.

The decoction of the bark about 50 ml is taken orally in the morning and evening for 3 days for the treatment of stomachache. It is also taken for teeth problems and in chronic diarrhoea.

Leaves of 'Khair' and Apta (*Bauhinia racemosa*) are taken in equal proportion and crushed to extract the juice. Two teaspoonfull of this juice is given in the morning. After 2 hrs. of this one tablet of an Ayurvedic medicine 'Isopgol' is given with a glass of water. This is prescribed for 7 days which is an excellent medicine for fractured knees (APR 1143).

* *Bacopa monnieri* (L.) Wettstein BAM

Scrophulariaceae

Creeping fleshy herbs. Flowers blue to purple, solitary axillary. Capsule small

glabrous. Seeds small brown.

Throughout in moist places. Leaves are used in diabetes. Leaf juice is extracted and 1-2 teaspoons of the juice is given twice daily for 7 days in empty stomach. It is very good medicine for diabetes (APR 1045).

Balanites aegyptiaca (Linn.) Del HINGOLI

Balanitaceae

Armed small tree. Leaves bifoliate. Flowers greenish yellow. Drupes 4-5 cm x 2.35 cm ovoid, yellowish green when ripe.

Common in scrub forests.

3 to 4 leaves of *Balanites*, 5-6 small pieces of *Tribulus* roots and a pinch of salt chewed with betel leaf and juice is swallowed. This is the treatment of weakness and urinary troubles. The dosage are taken daily twice for atleast 3 days. (APR 784).

Blumea malcolmii (Cl.) Hk. f. BHOPLI

Asteraceae

30-45 cm tall woody herbs. Heads 1-1.2 cm across, terminal, achenes angled shining, hairy. Not common in forests.

Roots dried and powdered. Mixed with water and taken orally three times daily for a week in case of stomachache. It is good medicine for indigestion problems. (APR 1174).

Calotropis procera (Ait.) R. Br. RUIMADAR

Asclepiadaceae

3-4 m tall shrub, milky latex bark ash coloured. Leaves opposite decussate covered with wax. Flowers creamy white. Follicles in pairs. Seeds flat cottony.

Throughout common

The juice of ripe leaves mixed with latex and pure 'ghee'. This mixture is semi viscous and 1-2 drops are added into left nasal cavity to cure headache of rightside. If the headache is on left side (migrane) then drops are added into right nasal cavity. This practice is done for 2-3 times daily till the cure (APR 986).

Cassia occidentalis Linn. KASODA

Caesalpiniaceae

An erect undershrub. Leaves 10-15 cm long. Flowers bright reddish yellow. Pods 7-12 x 0.5-0.8 cm long compressed. Seeds greenish brown.

Common throughout.

Leaves are used in tonsils. The juice is extracted by crushing them and squeezing. Filterate is taken and equal amount of honey is mixed. 1-2 teaspoonfull of this mixture is given daily twice for 7 to 14 days. It avoids surgery of tonsils (APR 938).

Centella asiatica (L.) urb. BRAHMI

Umbelliferae

A creeping herb. Leaves reniform. Flowers pinkish red. Fruits ovoid wrinkled, and ridged. Common in moist places.

Leaves are sun dried and powdered. 5 gm of this powder with 2-3 black pepper (*Piper nigrum* given in a single dose in bone fracture. It is used as a nerve tonic. It is also recommended in bronchitis and rheumatism (APR 782).

Crotalaria burhia Buch. - Ham. BHUISAN

Fabaceae

Bushy hairy tall herb. Leaves silky pubescent. Flowers yellow. Pods villous. Seeds dark brown.

Common in open wastelands, whole plant is sundried and powdered. 50 gm powder is taken with butter milk in the morning and evening - for whole day. No other food is taken. This is a good treatment to dissolve urinary stones is bladder. For kidney stones the treatment is followed for one month.

Eranthemum roseum (Vahl) R. Br. HALLI KARVA Acanthaceae

70-100 cm tall herbs. Flowers blue when fresh turns rosy afterwards.

Common in shaded places.

In case of stomach trouble roots are crushed in water and 2-3 teaspoons are given twice a day for 3-4 days. It is also good medicine for pregnant women since it does not have any side effect (APR 736).

Mirabilis jalapa Linn. GULBAKHSI KAND Nyctaginaceae

Perennial herbs, tuberous roots. Flowers red, yellow or white.
cultivated in houses.

Roots dried, powdered and a paste is prepared in cow's urine. This paste is applied on tumors and also leaves warmed gently and tied over the tumorous parts of the body. It is good treatment for swollen and painful parts. In case of stomachache root powder is taken twice a day with water for 3-4 days (APR 1148).

Prosopis julifera (Sw.) Dc. VEDABABUL Mimosaceae

Armed straggling shrub. Flowers greenish yellow. Pods 11-15 x 1-1.4 cm long.
Common in wastelands.

Leaves are crushed and juice is extracted. Filtered juice is given empty stomach for 7 days in the morning for the pains in joints. During the treatment oily, spicy foods are avoided (APR 918).

Pupalia lappacea (L.) Juss. LEPTI Amaranthaceae

Tall herbs. Leaves hairy, flowers greenish yellow with pinkish tinge. utricles membranous.

Throughout common in openfields. If thorns of various palnt species are pierced into body, the shoots of this plant are chewed with 'betel' leaf to get dissolved the thorns. This treatment is for 7 days (APR 766).

Securinega virosa (Willd.) Baillon KALKAMINI Euphorbiaceae

Bushy straggling shrub. Leaves 3-partite, Fruits 3-lobed, creamy yellow, seeds brown.
A common roadside weed.

Leaf juice is given internally along with refined large sized crystalline sugar every day in the morning for 7 days in Leucorrhoea in women (APR 843).

Sida cordifolia Linn. HARIN FUTANE Malvaceae

A tall tomentose herb. Flowers axillary solitary yellow. Fruits subglobose tomentose, ripe carpels 10.

Common in plains.

Seeds are used as general tonic for improving sexual strength. Decoction of roots is given in fevers. Leaf juice is given orally 1-2 teaspoons twice daily for 7 days in empty stomach for urinary infections (APR 649).

Tephrosia purpurea (Linn.) Pers. Sharfunkha/UNAHLI Fabaceae

Tall herb with bright rosy purple flowers. Pods flat slightly curved. Seeds blackish brown.
Common everywhere.

Root pieces of 2-3 cm long chewed with betel leaf daily for one month in bad smell in mouth and teeth (APR 589).

Teramnus labialis (L.f.) Spr. NAJARE/NAJARI Fabaceae

Trailing or twining herbs. Flowers violet purple. Pods straight, curved, beaked.
Seeds 2-9 reddish-brown rounded at ends.

Table 1. Various chemical constituents of medicinal value in plant species. Names in capitals are varnacular names of the species, + mark indicates presence and - mark indicates absence of the active principle.

S. No.	Name of Medicinal Plants	1	2	3	4	5	6	7	8	9	10
		Glyco-sides	Juglones	Leuco-antho-yanin	Saponin	Catechol	Tannin	Anthra-quinones	Carbohy-drates	Acubins	Sterols
1.	<i>Acacia chundra</i> (Rottl.) Willd. KHAIR	-	-	+	-	-	+	-	+	-	+
2.	<i>Bacepa monnieri</i> (L.) wt.	-	-	+	-	-	-	-	+	-	++
3.	<i>Balanites aegyptiaca</i> (L.) Del HINGOLI	+++	-	-	++	-	-	-	++	-	++
4.	<i>Blumea malcolmi</i> (Cl.) Hk. f. BHOPLI	-	+	-	+	-	-	+	++	-	+
5.	<i>Calotropis procera</i> (Ait.) R. Br. RUIMADAR	+	-	-	+	-	+	-	-	-	-
6.	<i>Cassia occidentalis</i> Linn. KASODA	-	-	-	-	-	-	+	-	-	++
7.	<i>Centella asiatica</i> (L.) Urb. BRAHMI	++	-	-	-	-	-	+	-	-	++
8.	<i>Crotalaria burhia</i> Buch.-Ham. BHUSHAN	-	-	-	-	-	-	-	++	-	++
9.	<i>Eranthemum roseum</i> (vahl) R.Br. HALLI	-	-	-	+	-	-	-	+	-	++
10.	<i>Mirabilis jalapa</i> Linn. GULBAKSHI	-	-	-	-	-	-	-	+	-	+
11.	<i>Prosopis julifera</i> (Sw.) Dc. VEDABABUL	-	-	++	-	-	-	-	++	-	++
12.	<i>Pupalia lappacea</i> (L.) Juss. LEPDI	-	-	-	-	-	-	-	-	-	+
13.	<i>Securinea virosa</i> (Willd.) Baillon KALKAMINI	+++	-	-	-	-	-	-	-	-	+
14.	<i>Sida cordifolia</i> L. HARIN FUTANE	-	-	-	-	-	-	-	+	+	-
15.	<i>Tephrosia purpurea</i> (Linn.) Pers. UNAHLLI	-	-	-	-	-	-	-	+	-	-
16.	<i>Teramnus labialis</i> (L.f.) Spr. NAJARE NAJARI	+	-	-	-	-	-	-	+	-	-
17.	<i>Tribulus terrestris</i> Linn. GOKHRU	-	-	-	-	-	-	-	-	-	-
18.	<i>Vigna unguiculata</i> (L.) Wasp. Subsp. unguiculata Shah RAN KULITH	-	-	-	-	-	-	-	-	-	-
19.	<i>Withania somniferum</i> (L.) Dunal ASHVAGANDHA	-	-	-	-	-	-	-	++	-	-
20.	<i>Xeromphis spinosa</i> (Thunb.) Keay GELPHAL	-	-	-	+	-	+	-	+	-	-

Throughout on hedges and along roadsides.

Incase of children the root powder 50 gm is given three times a day for 2-3 days in stomachache (APR 534).

Tribulus terrestris Linn. GOKHARU

Zygophyllaceae

Prostrate or spreading small herbs. Leaflets 5-7 paired. Flowers yellow, solitary axillary. Fruit spiny of 5 cocci. Seeds minute.

Throughout in plains.

Decoction of leaves used as gargle in mouth and teeth problems especially in gums inflammation and bad smell in breathings. Leaf juice is good for gonorrhoea and in excessive menstrual flow. Fruits are powdered and used in sweets for the treatment of sexually impotence and good in urinary complaints. Root decoction is good in stomachache, diuretic, carminative and also a good appetiser.

3-4 leaves of *Balanites* 5-6 small pieces of roots of *Tribulus* and a pinch of salt is chewed with betel leaf and juice is swallowed. This treatment is given for 3 days. It helps in the treatment of urinary troubles and weakness (APR 433).

Vigna unguiculata (L.) Walp. Subsp. unguiculata shah RANKULITH

Fabaceae

Twining herbs. Flowers yellow 1-2 axillary. Pods flat, hairy, falcate. Seeds dark red or reddish brown, elliptic or reniform.

An escape found along waysides.

Leaf juice 1-2 teaspoonfull given three times a day in diarrhoea and amoebic dysentery (APR 698).

Withania somniferum (L.) Dunal ASHVAGANDHA

Solanaceae

Small tomentose shrubs. Leaves long appressed hairy. Flowers greenish yellow. Berries red when ripe. Seeds flat or spherical smooth.

Common along waysides and open fields.

Bark decoction 1-2 teaspoons thrice a day is given for rheumatic pains, in general weakness and sexual incompetency. It is aphrodisiacs, tonic and diuretic.

Root paste is applied locally on inflamed parts (APR 843).

Xeromphis spinosa (Thunb.) Keay GELPHAL, MADANPHAL

Rubiaceae

Armed shrubs with dark blackish brown barks. Leaves crowded at ends of branches. Flowers fragrant pale yellow. Fruits round, woody. Seeds angular smooth.

Throughout in forests.

Fruits and seeds are emetic. Powder is given in the morning and evening in case of vomiting. It is also laxative. It is also good medicine for tonsillitis. Paste of fruits prepared with lemon juice is applied externally on tonsils for 7-14 days or till cured. It avoids operations of tonsils (APR 419).

Phytochemistry

Traditional medicines did have pharmacological principles, though without systematic experimental or analytical basis. Undoubtedly the plant kingdom still holds many species of plants containing substances of medicinal value which have yet to be discovered. A large number of plants are constantly being screened for their possible pharmacological

value. In the present paper 20 medicinal plants used extensively by tribals of Satpuda have been screened qualitatively to find out the active principles (Table 1).

Various tests conducted for this purpose are : HCN/Methanol test for Glycosides; Juglones test for Juglones; Leucoanthocyanin test for Leucoanthocyanins, Saponins, Tannins,

Anthraquinones; Molish test for carbohydrates; Ehrlich test for Carbohydrates and Sterol test for sterols. Results are presented in Table 1.

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