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RESEARCH ARTICLE

MEDICINAL PLANTS OF AKOT TAHSIL USED FOR THE TREATMENT OF KIDNEY DISORDERS

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ABSTRACT

The floristic studies on the flora of Akot tahsil of Akola districts, Maharashtra were conducted to assess the potentiality of the plant resources. The study reveals that about 31 plants belonging to 27 families are used in the treatment of kidney stone in local remedies. The information on the medicinal uses of plants is based on the extensive interviews from local healers and herbalists practicing traditional system of medicine. The details of the plant parts used, doses, mode of administration have been reported. *Pedilanthes tithymoides* and *Bryophyllum pinnatum, Tribullus terrestris, and Boerhaavia diffulsa* are most effective and commonly used in the treatment of urinary tract diseases and kidney stones. Such plants may prove precious potential source of biologically active compounds for therapeutic use for the treatment of kidney ailments.

Key Words: Medicinal plants, Kidney disorders, Traditional uses, Maharashtra.

INTRODUCTION

Akot is a small town in Akola district in the Indian state of Maharashtra, India. Akot is located at 21.1°N 77.06°E. It has an average elevation of 345 metres (1131 feet). The area comprises Khatkali Forest, Ambabarwa core area, Dhargad Mahadev Temple. Narnala Fort is a historically famous Indian fort deep within the densely forested hills of the Melghat tiger reserve in the Satpura region. The Narnala fort & nearby area is rich in flora & fauna. The place has historic importance & attracts many people every year visiting for religious reasons, tourism & adventure sports. The forest area is also a part of Melghat Tiger Reserve. There is significant rainfall throughout the year in the area. Even the driest month still has a lot of rainfall. The average annual temperature is 27.2 °C and the average annual rainfall is 2330 mm.

In these modern times, most of people are affected by urinary tract infections and kidney stones due to unhealthy food habits. Indigenous systems like Ayurveda have lot of literature and prescriptions related to the stone problem (Mishra and Kumar, 2000). Many Unani remedies were also evaluated by the scientists for their efficacy. Large populations of India are currently facing with the problem of urolithiasis because of change in lifestyle and dietary habits.

A kidney stone is a hard mass of various substances that are naturally found in the urine become highly concentrated. Generally substances like calcium, oxalate and phosphorus when accumulated in high concentrations promote the formation of stones in the kidney, urinary tract or in bladder. Certain food materials may promote stone formation in people. There are four major types of kidney stone formations normally found in the body.

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Calcium stones are the most common type found in two different forms which are calcium oxalate and calcium phosphate. Thus formed stones may remain in the kidney or pass down the urinary tract without even knowing. In majority of cases small stones may pass out on its own without causing pain but large stones get stuck along the urinary tract and can block the flow of urine, causing severe pain and colic. Several modern drugs and methods are available in the present system of medicine, but traditional medicine is also having good hold in curing the problems. People living in remote areas have excellent knowledge about medicinal plants and their utilization (Chauhan, *et al*., 2009). To preserve this valuable information before it is lost forever, proper documentation is required.

MATERIALS AND METHODS

A survey was conducted as per prescribed standard methodology adopted for ethno botanical studies (Jain, 1991). Regular field trips were conducted in different seasons of the year. The plants were collected with the help of tribal and native people, traditional healers and other knowledgeable old persons. The information about plants used in treating kidney stones was documented along with vernacular names, plant parts used.

RESULTS

During the survey thirty one (31) plant species belonging to twenty three (27) families were documented as potential remedies in treatment, cure and prevention of kidney stones. Whole information is enumerated alphabetically with their botanical, vernacular name, family and plant parts used in Table 1.

Table 1.

S.N.	Botanical Name	Vernacular Name	Family	Parts used
1	*Abutilon indicum* (L.) Sweet	M. Mudra, Petari H. Kanghi E. Indian Mallow S. Atibala	Malvaceae	Root Bark
2	*Acacia Arabica* L.f	M. Babul H. Babul E. Indian Gum Arabic Tree S. Ajabaksha	Mimosaceae	Stem bark, Gum, Fruits
3	*Acacia catechu* Willd.	M. Khair H. Kattha E. Cutch Tree S. Khadira	Mimosaceae	Stem Bark, Resinous extract
4	*Adhatoda vasica* Medic.	M. Adulsa H. Adusa E. Vasak S. Vasaka	Acanthaceae	Whole plant
5	*Aegle mormelos* (L.) Corr. ex Roxb.	M. Bel H. Bilvapatra E. Wood Apple S. Bilva	Rutaceae	Roots
6	*Anogeissus latifolia* (Roxb. ex.DC.) Wall. ex Guill & Perr.	M. Dhawada H. Dhawara E. Button Tree S. Dhawa	Combretaceae	Stem bark
7	*Asparagus racemosus* Willd.	M. Shatmuli H. Satavar E. Asparagus S. Shatapadi	Liliaceae	Tender Shoots
8	*Azadirachta indica* A.Juss.	M. Kadu Neem H. Neem E. Margosa tree S. Nimbaka	Meliaceae	Stem bark, Leaves
9	*Bauninia racemosa* Lam.	M. Apta H. Jhinjora E. Downy Mountain Abony S. Ashmantak	Caesalpiniacea e	Stem bark
10	*Basella alba* L.	M. Velbandi H. Vayvidang E. vine spinach S. Upodika	Basellaceae	Whole pant
11	*Biophytum sensativum* (L.) DC.	M. Jharera H. Lajalu E.Sensitive Wood sorrel S. Lajjaluka	Oxalidaceae	Whole Plant
12	*Boerhaavia diffusa* L.	M. Raktavasu H. Punarnava E. Horse Spreading Hog weed S. Punarnava	Nyctaginaceae	Whole plant
13	*Bryophyllum pinnatum* (Lam.) Oken	M. Amti, panphuti H. Pathachata E. Kidneywort	Crassulaceae	Leaves
14	*Butea monosperma* (Lamk.) Taub.	M. Palash H. Palash E. Flame of the Forests S. Palasha	Papilionaceae	Fruits and Seeds
15	*Caesalpinia bonduc* (L.) Taub.	M. Sagargoti H. Kantak Karanj E. Fever Nut S. Kantakini	Caesalpiniacea e	Fruits
16	*Chenopodium album* L.	M. Chandan batava H. Bathua E. White Goosefoot S. Vastukah	Chenopodiace ae	Whole plant
17	*Cordia dichotoma* (L.) Dunal	M. Bhokar H. Lasora E. Indian Cherry S. Slesmatakah	Boraginaceae	Stem Bark, Fruits
18	*Cynodon dactylon* (L.) Pers.	M. Durva H. Hariyali E. Bermuda grass S. Nila Durva	Poaceae	Whole plant

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19	*Dioscorea bulbifera* L.	M. Manakund H. Varahkand E. Potato Yam S. Varahi	Dioscoreaceae	Tubers
20	*Gmelina arborea* Roxb.	M. Shivan H. Gambhari E. White Teak S. Kasamari	Verbenaceae	Roots
21	*Hygrophila auriculata* (Sch.) Heine	M. Talimkhana H. Talamkhana E. Marsh barbel S. Vajrakantaka	Acanthaceae	Roots
22	*Mangifera indica* L.	M. Amba H. Aam E. Mango S. Amra	Anacardiaceae	Flowers
23	*Momordica diocia* Roxb. ex. Willd.	M. Kartoli H. Kikodi E. Spiny gourd S. Karkotaki	Cucurbitaceae	Roots, Fruits
24	*Mucuna pruriens* (L.) DC.	M. Khaj Kuiri H. Kaunch E. Cowhage S. Kauncha	Papilionaceae	Roots, Seeds
25	*Ocimum sanctum* L.	M. Tulas H. Tulasi E. Holy basil S. Manjiri	Lamiaceae	Leaves juice+ Honey
26	*Phyllanthus amarus* Schum. & Thonn.	M. Bhui Awali H. Bhumi Amla E.Country Gooseberry S. Bhudhatri	Euphorbiaceae	Whole plant
27	*Sida cordifolia* L.	M. Chikana H. Bariara E. Country Mallow S. Bala	Malvaceae	Roots
28	*Solanum nigrum* L.	M. Makoi H. Makoi E. Black Night Shade S. Kakamaci	Solanceae	Fruits
29	*Tectona grandis* L.f	M. Sagwan H. Sagaun E. Teak S. Anila	Verbenaceae	Flowers
30	*Terminalia arjuna* (Roxb.) Wt. & Arn.	M. Arjun Sadada H. Arjun E. Arjuna S. Arjuna	Combretaceae	Stem Bark
31	*Tribullus terrestris* L.	M. Gokharu H. Gokharu E. Land Caltrops S. Gokshura	Zygophyllaceae	Roots, Fruits & Seeds

Abbreviation: M- Marathi name, H- Hindi name, E- English name, S- Sanskrit name

Table 2. Total number of species of Dicot and monocot

Class	Family	Genera	Species
Dicot	24	28	28
Monocot	03	03	03
Total	27	31	31

Conclusion

The uses of traditional medicine have an everlasting in treating various complicated ailments. It is always a traditional and popular system of medicine among tribal people all over the world. Plants are an important source of herbal medicine. According to latest information more than 70 % of the world population depends on traditional remedies to cure various diseases. The present study area is previously explored by different ethnobotanists (Mishra and Kumar (2000), Chauhan *et al*. (2009), Lakshmi, (2014), Mustaque Ahmed &. Singh. (2011). Vijigiri *et al*. (2013).), but less information is available about plants used for urolithiasis.

Present studies show a clear vision and knowledge of the natives about medicinal plants and their uses. Many modern medicines and treatments are available in the market for stone diseases but still rural and tribal people depend on plants as their personal remedies to treat themselves. Many of these plants are easily available in their vicinity and are cost effective. Hence many people even today have strong belief in herbal and crude drugs and use them as first option.

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