

## Antibacterial Activity of some ethnomedicinal plants: A preliminary survey

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The present investigation is to reveal the antibacterial activity of some ethnomedicinal plants of Hadoti region, which was under taken in view of the importance of ethnomedicinal plants in treatment of various diseases. For the exploration of plants which have potential value as a source of antibacterial agent, a survey was made, and about 12 medicinal plants were found which may have potential value as a source of antibacterial agents according to previous literature.

**Keywords:** Antibacterial, ethnomedicinal, plants, Hadoti region.

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Man's Existence on this earth has been made possible only because of the vital role played by the plant kingdom in sustaining his life. Without the variety of living organisms, which makes up the world of plants, animals life would not survive and our planet would have been a barren and lifeless world of deserts. The nature has provided a complete store house of remedies to cure all ailments of man kind. Since the dawn of civilization in addition to food crops, man cultivated herbs for his medicinal needs. The knowledge of drugs has accumulated over thousands of years as a result of man's inquisitive nature, so that today we possess many effective means of ensuring health care. The wealth of India is stored in the enormous amount of natural flora, which has been gifted to her. Endowed with a wide diversity of agro-climatic conditions. India is virtually a herbarium of the world. India possesses all types of climatic conditions, thus providing favorable conditions for the growth of varieties of medicinal and aromatic plants.

The research and development in the field of medicinal and aromatic plants are acquired a considerable degree of importance in

India. Government organizations such as Council for Scientific and Industrial Research and Indian Council of Agricultural Research Institute have already made significant progress in the field of medicinal and aromatic plants. Although antibiotics occupy the prominent position in today's world of drugs, it is considered that they were known to human beings since pretty old days. The present study was under taken in view of the importance of ethnomedicinal plants in treatment of various diseases in Hadoti region.

Monographic account on antibacterial potential of alcoholic extract of plants has been given by Kaushik (2003) and Kaushik & Dhiman (2006), Pal *et al.* (1995) reported that leaves of *M. olifera* showed antibacterial activity against *E. coli* and *S. aureus* Nandkumar *et al.*, (2006) tested some traditional medicinal plants on dental pathogen. Antimicrobial activity of leaf extract of *Moriga concansis* was tested by Rafi (2005). Saxena and Roy (2007) evaluated indigenous medicinal plants to cure respiratory and bronchial diseases. A survey was done by Sharma *et al.* (2007) to search the medicinal plants having anticancerous activity. Singh *et al.*, (2007) made

a survey to investigate ethnomedicinal plants of Agra district. Ranjan (1996) reported that *Solanum surattense* fruit decoction used for garginal for bacterial diseases of gum and tooth. Saxena *et al.*, (1999) studied antibacterial activity of *Toddalia asiatica*.

**Table 1.** List of some medicinal plants of hadoti region as a source of antibacterial agent.

Botanical Name	Local Name	Family Name	Medicinal applicaions (Uses)	Plant description	Biological Source
<i>Achyranthus aspera</i>	Lat jeera	Amaranthaceae	Toothache, Dysentery, cough	An annual erect herb with square stem.	Whole, plant, leaves, roots, seed
<i>Acalypha hispida</i>	Kuppi	Euphorbiaceae	Toothache, Earache, Diarrhea, cough, Gastrointestinal problems	A small monoecious herb with coppered/green variegated leaves	Whloe plant, leaves flower
<i>Adhatoda zeylanica</i>	Arusa	Acanthaceae	Cough, anti-tuberculosis, gonorrhoea.	A much branched evergreen shrub, elliptic opposite simple	Dried and fresh leaves leaves of plant is used
<i>Nerium indicum</i>	Kaner	Apocyanacea	Ulcer, anti-cancerous, renal infections	A woody evergreen shrub with latex	Root, Bark and leaves
<i>Mucuna pruniens</i>	Kevanch	Fabaceae	Ulcer, Tuberculosis, intestinal infections	A extensive annual twining herb, trifoliolate, leaflets, thombiod	Seeds, Root out growth on pericarp
<i>Gloriosa superba</i>	Kalihari	Liliaceae	Gohorrhoea, Syphilis, Ulcers, colic and swellings	A large annual glabrous herbaceous climber, root stock tuberous cylindrical bifurcated.	Rhizomes and Roots
<i>Euphorbia hirta</i>	Milk weed	Euphorbiaceae	Colic swellings cough	A small annual prostrate verb with ascending and tetragonal branches with yellow hairs	Whole plant
<i>Andrographis paniculata</i>	Kalmegh	Acanthaceae	Fever, liver diseases, skin diseases	An erect branched annual verb with square stem, Opposite leaves.	Whole plant, leaves and Roots

**Study Area**

Kota division (Hadoti region) is situated at the edge of Malwa plateau at 23°45' to 25°53' North latitudes and 75°9' to 77°26' East longitudes in south eastern corner of Rajasthan state. Its total area is 24156.6 sq km. and from administrative points of view, it is known as Kota Division. Hadoti region is quite unique due to its historical and cultural heritage as well as geographical location and physiography. The word Hadoti takes its origin from word Hadd which is a seat of gallant Chauhan Rajput warriors. Therefore, basically the name Hadoti is given on the names of Hadas. Who were the rulers of erstwhile princely states of Kota and Bundi (Sharma 1997). Climate of Hadoti region is sub humid and this area, is included in semiarid, sub humid regions. Although according to longitudinal situation it is placed under subtropical region. The vegetation of this area is mostly composed of mixed deciduous type forests. A large number of plant antibiotic agents were used to control different types of bacterial diseases. The use of different parts of medicinal plants to cure specific human ailments has been in vogue from ancient times. In India, the knowledge of medicinal plants has mostly been inherited traditionally.

**MATERIAL AND METHODS**

For the exploration of plants which have potential value as a source of antibacterial agent, a survey was made and about 12 medicinal plants were found, which may have potential value as a source antibacterial agents according to previous literature.

**RESULTS**

Present study highlights the detailed information of plants, regarding occurrence and medicinal applications with botanical name followed by local name, family name and biological source (Table 1).

**REFERENCES**

1. A.K. Singh, Gunjan Agarwal and Nitin Mittal., Investigation of ethnomedicinal plants of Agra Districts (Series 1.) *In. J. Med. 2007; 24(1-2)*.
2. Kaushik, P., Harida (Turmeric), Antibacterial potential. Chowhamba Sanskrit series office, 37-99, Varanasi. 2003; 1-24.
3. Kaushik, P., and Dhiman, A.K., Medicinal plants and raw drugs of India. Bishan Singh Mahendra Pal Singh, Dehradun 2006.
4. Nandkumar K., N.Thangaraj, G.Permual, M. Sivashamugam and S.Sargunavalli., Antibacterial activity of traditional medicinal plants on dental pathogen. *Indian J. Environ. and Ecoplan. 2006; 12(2): 437-441*.
5. Saxana, R., K.S.Ashok, A. and Koul, B.L. Arapid regeneration system for *Hyosyamus muticus*. L. from leaf segment callus culture. *J. Indian Bot. Soc.*, 1999; **76** : 301-302.
6. Saxena. Kapil and Shikha Roy. Indignous medicinal plants to cure respiratory and bronchial diseases, *Int. J. Med. 2007; 24(1-2): 67-68*.
7. Sharma, Mukesh, Vinod K, Narnolia and Meenakshi Sharma., Search for medicinal plants having anticancerous activity. *Int. J. Med. 2007; 24(1-2). 43-44*.
8. Vinay, R., Some ethnomedicinal plants of Lalitpur District, Uttarpradesh, India. Ethnobiology in human welfare. Ed. S.K.Jain. Deep Publications, New Delhi. 1996; Pp 149-150.