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MEDICINAL PLANT DIVERSITY UTILISED IN THE TREATMENT OF GASTROINTESTINAL DISORDERS BY THE GUJJAR-BAKERWAL TRIBE OF DISTRICT RAJOURI OF JAMMU AND KASHMIR STATE

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ABSTARCT

Extensive ethnobotanical survey was carried out in District Rajour, a biodiversity rich region dominated by the Gujjar-Bakerwal tribe. District Rajouri is the part of Pir Panjal Himalayan region of Jammu And Kashmir State and the Gujjar-Bakerwal tribe is the most vibrant cultural tribe of north India still practicing in nomadic life style. Gujjar-Bakerwal tribe constitute 22 % of the state population and 40% population of district Rajouri. Gastrointestinal disorders are one of the most common ailments encountered by these tribal people and over the years they have developed their own indigenous system for dealing with these ailments. A total of 28 plant species belonging to 24 families were recorded from the study area being used by the Gujjar-Bakerwal tribal people and other local inhabitants. Diarrhoea, dysentery, indigestion, dyspepsia, stomach pains and vomiting were recorded as the most commonly encountered gastrointestinal disorders. Botanical identity, local name, part used and a brief preparation of the reported plant species is presented in the presnt work with a background and discussion.

KEY WORDS: Medicinal Plants, ethnobotany, Gujjar-Bakerwal, Rajouri, gastrointestinal

The herbal medicines occupy distinct position right from primitive period to the present-daytime. The utilization of biologically diverse plant resources for various ailments is the lifelong struggle of human race. In spite of their availability and utilization by large proportion by the middle hills dweller, no concerted effort has been made for sustainable development of this renewable natural resource (Samin et al., 2008) and the study area, a neglected mountainous region is no exception to this. Medicinal plants have been unique sources of medicines and constituted the most common human use of biodiversity (Hamilton, 2004). Among the different diseases reported among the Gujjar-Bakerwal tribe in the study area the gastrointestinal disorders are the common ones. People are dependent on herbal remedies to treat gastrointestinal disorders and other ailments. Abdominal pain, diarrhoea, dysentery, indigestion, dyspepsia and worms are the common ailments reported.

Gujjars-Bakerwal is the nomadic tribe of Jammu and Kashmir State. They keep on moving from place to place, with their livestock in search of fodder and forage. In summer they migrate from the plains of Jammu, Rajoui and Poonch to the Pir-Panjal ranges of North-Western Himalayas. With the onset of winter, they come back to the plains of Jammu region, mainly in districts, Rajouri, Poonch, Udhampur and Kathua (Rashid et al., 2007). Interviews conducted with Gujjar-Bakerwal tribe in the study area (district Rajouri) revealed that quite a good number of plants are used locally in the treatment of a wide variety of gastrointestinal ailments and other purposes.

Gorter et al., (1995); Kirnjot et al. ,(2007); Mohmmed et al. ,(2010) and Olajuyigbe and Afolayan, (2012) are some of the studies highlighting the role and importance of herbal remedies used in gastrointestinal cure by various ethnic communities and the potential of these herbal remedies in the identification and evolution of drugs for future. Also these studies pleades for the sustainable utilisation, benefit sharing and conservational aspects of the reported plant species. Somehow no worker in the past tried to document the plant resource utilisation for curing gastrointestinal disorders by the Gujjar-Bakerwal tribe of Jammu and Kashmir state. The vast store of ethnobotanical information of theses tribal people has not been comprehensively documented. As there is no earlier work done on this aspect, the present study was carried to cover the existing knowledge gaps and to generate a data base of ethnobotanical knowledge of the specific plants used and preparations. The present study attempted to motivate the stake holders for sustainable utilisation, cultivation and preservation of traditional herbs.

MATERIALS AND METHODS

Rajouri is one of the hilly districts of Jammu and Kashmir State bounded by district Poonch in North, district

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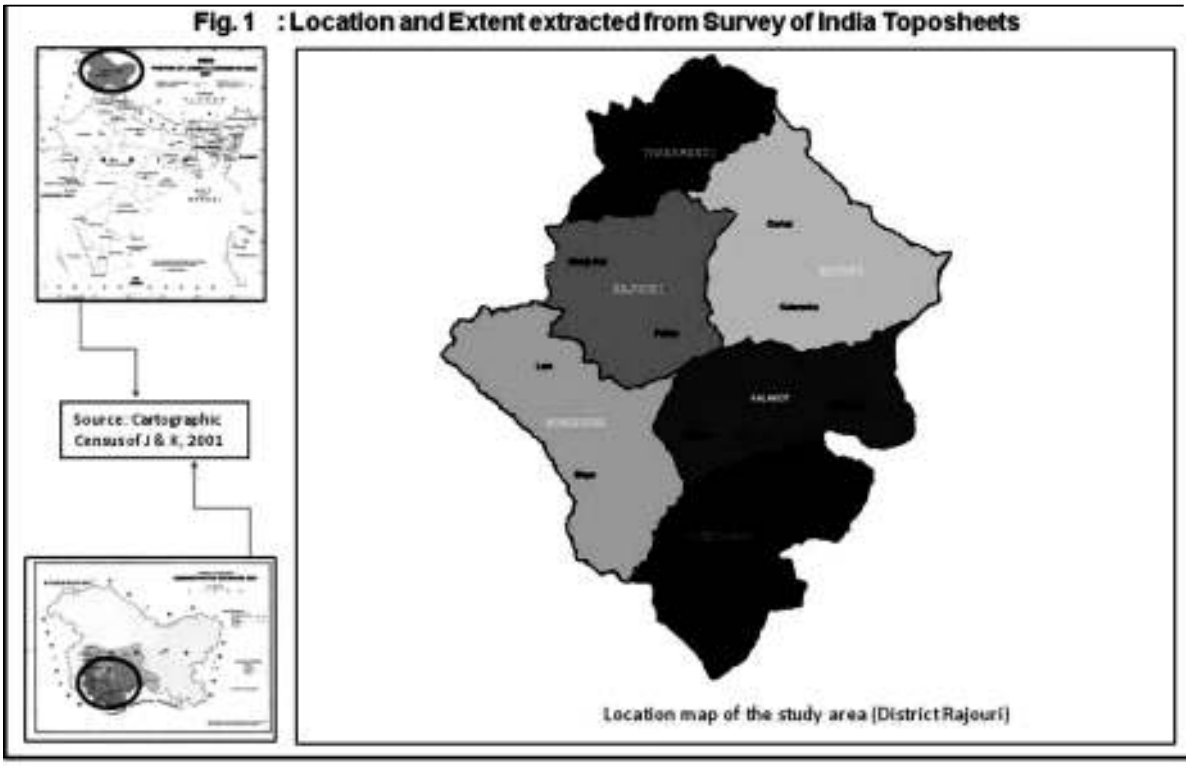
Jammu in South, district Udhampur in East and PoK (Mirpur) in the West. The district lies between 30^0 $50^/$ N to 33^0 $30^/$ N longitude and 74^0 E to 74^0 $10^/$ E latitude, covering an area of 2630 km^2 with an altitudinal variation of 490 meters in Sunderbani to 4700 meters in Pir Panjal ranges. District Rajouri has six tehsils and nine blocks with four small towns, having an urban area of 18 $km.^2$ (Figure,1.).

Periodic field trips for ethnobotanical exploration were undertaken during September, 2009 to April, 2011 in rural and mountainous areas of the study area inhabited by Gujjars and Bakerwals. During the surveys personal interviews were conducted with knowledgeable persons of GujjarsBakerwal tribe to know about the plants and practices used to cure gastrointestinal disorders. To verify and confirm claims, the interview questionnaires were repeated within and among interviewees. Each of the plant material was assigned a field book number and documented as to scientific name, local name, family, part used, method of use, folk claims and mode of administration. The local names of different gastrointestinal disorders, where available were converted into scientific names by taking the help of doctors at District Hospital Rajouri. Plant parts that were identified as having use for curing gastrointestinal disorders were collected, compressed, dried, the Herbarium Specimen were made and submitted to the Jammu University Herbarium. Plant specimens were identified using the work of Hooker ,(1972-1897), Stewart ,(1973) and Swami and Gupta ,(1998) as standard references. Wherever necessary, comparisons were made with Herbarium Specimens available at Herbarium of University of Jammu.

Fig. 1 : Location and Extent extracted from Survey of India Toposheets



RESULTS AND DISCUSSION

Information on the names of plants, used parts and methods of preparation was obtained from traditional old men, women and shepherds of the Gujjar-Bakerwal tribe and rural dwellers, using semi-structured questionnaire. 28 plant species representing 24 families were found to be commonly used in the treatment of a variety of gastrointestinal disorders during the survey. The scientific name of the reported plant species along with their family, local name, part used and a brief preparation and disorder treated is given in Table No.1. Caesalpiniaceae was represented by three species followed by Amaranhtaceae and Fabaceae 2 species each and all the remaining 21 families has one species each in use for curing various gastrointestinal disorders in the region. A variety of plant parts were used in the treatment of gastrointestinal disorders by the locals. The

leaves and roots of 7 plant species each were the most commonly used parts, followed by bark of 4 plant species, fruits of 3 plant species, seeds of 2 plants species and flowers of two plat species. Also gums, galls, rhizome, buds and latex of some plant species was found in use in a few preparations. Decoctions and infusions are the most frequent methods of preparation. Diarrhoea, dysentery, indigestion, dyspepsia, stomach pains and vomiting were recorded as the most commonly encountered gastrointestinal disorders.

Ethnobotany has evolved into a specific discipline that looks at the peopleplant relationship in a multidisciplinary manner such as ecology, economic botany, pharmacology and public health (Balick, 1996). With extensive uses of medicinal plants, numerous drugs have been introduced in the international markets as a result of exploring ethnopharmacology and traditional medicines (Bussmann, 2002) which have expressed different pharmacological actions (Gregory, 2004). Hence, the traditional use of low profile and less known medicinal plants should be documented to disseminate their therapeutic efficacy to pave the way for preparation of acceptable medicine and to reduce the pressure on overexploited species (Kala et al., 2006). Considering a sharp decrease in the biological species all across the globe and the increasing economic values placed on medicinal plants, documentation on ethno-botanical knowledge is a way to understand the use of different plant species to cure various ailments and means to conserve these natural resources. Globally, there is currently a renaissance of ethnobotanical surveys of medicinal plants and the need to screen specific parts of the plants.

Gujjars-Bakerwal tribe of the study area has developed indigenous traditional knowledge about the plant resource utilization through the experience of their social groupings embedded in specific localities, profession and cultural contexts and can be developed, validated and disseminated to provide sustainable rural livelihood to these tribal people and others in the country. The reported plant species must be subjected to the further pharmacological studies to validate the folk claims. District Rajouri is a rich repository of flora and Indigenous traditional knowledge but have not been subjected to the specific detailed studies on the various aspects of biodiversity and conservation. A detailed study is required to assess the status, utilisation and conservation of the reported plant species. Also there is urgent need to spread a highly motivated awareness and involvement campaign about the biodiversity conservation, ITK and the role and need of the local people in the protection of environment.

Table 1: Ethnomedicinal plants used in the treatment of gastrointestinal disorders in the study area. Plant name, family, local name, part used and preparation is given as under

***Abrus precatorius* L.**

Family: Fabaceae)

Local Name: Ratie

Use: Leaves decoction is given in stomach pains.

***Achyranthes aspera* L.**

Family: Amaranthaceae

Local Name: Phut Kanda

Uese: Root powdered given in small quantity is effective in digestion and gas problems.

***Adiantum venustum* G.Don.**

Family: Adiantaceae

Local Name: Kali Kakei, Kakei

Use: Fronds crushed are given as emetic and given to vomiting patients.

***Albizia lebbeck* Benth.**

Family: Fabaceae

Local Name: Dhrienk

Use: Boiled fruit extact mixed with wheat floor in small quantity is given for three days against stomach infection

***Amaranthus gangeticus* L.**

Family: Amaranthaceae

Local Name: Bari Ghanar

Use: Plant seeds cooked with maize floor, curd and a little salt is given in darrhoea and dysentery.

***Bauhinia vahlii* Wight & Arnott.**

Family: Caesalpiniaceae

Local Name: Kalari bhel

Use: Bark extract is given in diarrhea and intestinal cramps.

***Bauhinia variegata* L.**

Family: Caesalpinaceae

Local Name: Kaliari, Kachnar

Use: Dried bud are crushed and mixed with curd are taken in case of darrhoea, dysentery and intestinal cramps.

***Berberis lycium* Royle**
Family: Berberidaceae
Local name: Simblu
Use: Rasaunt from root bark is used as mild laxative and gastric tonic.

***Bergenia ciliata* (Wall.) Engl.**
Family: Saxifragaceae
Local name: Zakhm e hayat
Use: Root powder is used against diarrhea. Given with like warm water.

***Bombax ceiba* L.**
Family: Bombacaceae
Local name: Simbal
Use: Root stock powder is used in stomach aches.

***Carissa opaca* Stapf. Ex Haines.**
Family: Apocyanaceae
Local name: Garanda
Use: Roots bark extract is given to cure poor digestion

***Cassia fistula* L..**
Family: Caesalpiniaceae
Local name: Amaltas
Use: Cassia pulp is kept in water for two days and given as laxative for habitual constipation.

Cedrus deodara
(Roxb.) G. Don.
Family: Pinaceae
Local name : Devdar
Use: Bark powder is given in small quantities to dysentery and diarrhea patients.

***Chenopodium album* L.**
Family: Chenopodiaceae
Local name: Batwa
Use: Leaves are rich in vitamin C. Cooked leaves relieve stomach pains.

***Fragaria vesca* L.**
Family: Rosaceae
Local name: Kunchi
Use: Roots are eaten for better digestion and bowl movement.

***Hypericum perforatum* L.**
Local name: Basanti phool
Family: Hypericaceae
Use: Herb decoction is used in acute dysentery.

***Melia azadirachta* (L.) Adelb.**
Family: Meliaceae
Local name: Nemi, Kourh
Use: Crushed seeds, mixed in bread cakes (not more than 2 cakes) are given dysentery.

***Mentha longifolia* (L.) Huds.**
Family: Lamiaceae
Local name: Pudhina
Use: Dried leaves and young twigs are carminative and stimulant and are recommended in dysentery and darrhoea.

***Morus alba* L.**
Family: Moraceae
Local name: Tout
Use: Fruits used against dyspepsia.

***Nymphia alba* L.**
Family: Nymphaeaceae
Local name:
Use: Rhizome decoction is given in darrhoea.

***Pistacia integerrima* J.L. Stewart ex Brandis.**
Family: Anacardiaceae
Local name: Kangar
Use: Powered galls are fried in ghee and given internally in dysentery and dyspepsia.

***Syzygium cumini* (L.) Skeels.**
Family: Myrtaceae
Local name: Jamnu
Use: Fresh juice of the Bark given with the milk of the goat for curing diarrhea in children.

***Tagetes minuta* L.**
Family: Asteraceae
Local name: Guta
Use: Flower powder with curd is taken in the morning for curing dyspepsia

***Taxus wallichiana* Zucc.**
Family: Taxaceae
Local name: Barmi
Use: Leaves (in small quantity) used against indigestion.

***Tinospora cordifolia* (Thunb.) Miers.**
Family: Menispermaceae
Local name: Guloh
Use: Stem and leaves crushed are also against stomach troubles.

***Verbascum Thapsus* L.**

Family: Scorphulariaceae

Local name: Gidar tamaku

Use: Crushed leaves are made into a pill and given in constipation and allied stomach pains.

***Vitex negundo* L.**

Family: Verbenaceae

Local name: Bana

Use: Roots extract used in dyspepsia and flowers are used in diarrhea.

***Zanthoxylum alatum* Roxb**

Family: Rutaceae

Local name: Timro, Temer.

Use: Fruit is used against general stomach troubles.

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