

Ethnomedicinal evaluation of Medicinal Plants of Bir Bara Ban (A conservation reserve in the Jind district of Haryana) used for the treatment of joint pain

Renu Jatan¹, Manisha Ahlawat², Nidhi Verma³, Ashmita Chhikara⁴, Seema Devi⁵, Kanupriya⁶, Anju Tanwar⁷

¹Assistant professor, GPGCW Rohtak.

Email ID: renujatan@gmail.com

²Assistant Professor, Department of Botany, A.I.J.H.M College, Rohtak.

Email ID: manishaahlawat28@gmail.com

³Extension lecturer GPGCW Rohtak.

Email ID: Nidhi.verma40@gmail.com

⁴Research Scholar, Department of Botany, Maharshi Dayanand University, Rohtak-124001 (Haryana), India.

Email ID: ashmitaa0715@gmail.com ORCID: 0000-0003-0981-3764

⁵Assistant Professor GCW Gohana.

Email ID: seemakalhiya1@gmail.com

⁶Assistant Professor in Botany, Gaur Brahman Degree College Rohtak.

Email ID: kanupriyabhardwaj5@gmail.com

⁷Assistant professor, Department of Botany, Government P.G. College, Ambala Cantt-133001, Haryana, India.

Email ID: anjutanwarbotany@gmail.com

Cite this paper as: Renu Jatan, Manisha Ahlawat, Nidhi Verma, Ashmita Chhikara, Seema Devi, Kanupriya, Anju Tanwar, (2025) Ethnomedicinal evaluation of Medicinal Plants of Bir Bara Ban (A conservation reserve in the Jind district of Haryana) used for the treatment of joint pain. *Journal of Neonatal Surgery*, 14 (10s), 844-850.

1. INTRODUCTION

Due to changes in lifestyles and food habits, there is an enormous increase in diseases. Joint pain is a common complaint nowadays. It refers to soreness discomfort and aches in body joints. Arthritis is also a common cause of joint pain. The immune system of our body plays a crucial role, as an overactive immune system may lead to certain fatal diseases because of various hypersensitive or allergic reactions which may cause numerous derangements; and loss of normal capacity to differentiate self from non-self-resulting in immune responses against our own's cells and tissues called autoimmune diseases. Certain common autoimmune diseases like myasthenia gravis, serum sickness, pernicious anemia, reactive arthritis, etc., are severe issues for the medical and pharmaceutical community because of unknown etiology (Chitme and Patel, 2009). Recent advances in science especially in human physiology led to the discovery of synthetic drugs for control of diseases. But these synthetic drugs have many side effects. Plants play a major role in human life and one of them is their medicinal role. Herbal medicines are one of the oldest healing and healthcare systems available to man on earth (Dangwal and Sharma, 2011). Most Indian medicine systems show their roots in folk medicines and household remedies. The use of many remedial herbs is referred to in many books like Charka Samhita and Susruta Samhita (Jain, 1968). People are still using remedies mentioned in this literature. Some information is found in recorded form and the information which is not in recorded form and moves mouth to mouth from one generation to another is the main field of ethnobotany (Dhiman and Khanna, 2001). Human experts capable of recognizing and identifying medicinal plants declining day by day and much of this knowledge is lost due to a decline in traditional culture (Hamilton, 1995). Traditional cultures are facing serious threats due to excessive developmental programs. Ethnobotany is about gathering information about plants and searching for new drugs and other useful plants based on the experiences of local and rural people. Ethnomedicines are simply plant products that are used by local communities to heal various maladies of humans and livestock. In primary healthcare of local and rural people major role is played by traditional and ethnomedicines (Rajiv, 1996; Patil, 2008). Even after so much enhancement of modern medicines system in India more than 90% of rural people strongly rely on local healers or medicine men for cure of diseases (Yadav and Patil, 2001). Therefore chief priority should be to collect traditional knowledge and preserve it in the form of inventories. As a result, medicinal herbs are gaining much attention in India from a pharmacological and clinical point of

view. Traditional medicinal plants are practiced worldwide for the treatment of arthritis and joint pain, especially in developing countries where resources are meager. This paper aims to document plants used for the treatment of joint pain in Bir Bara Ban and adjoining areas in the Jind district of Haryana.

2. MATERIAL AND METHODS

Haryana is rich in floral diversity due to varied climatic, physiographic, and edaphic factors. Haryana is located in northwest India having 44212 Km² covered areas. The protected area cover of Haryana is 33138.12 hectares which includes 2 national parks 8 wildlife sanctuaries and 2 conservation reserves. Bir Bara Ban Jind is one of them. Bir Bara Ban (Latitude 29°19', Longitude 76° 23') is located on National Highway 71A, Jind No. 8, in the Jind district of Haryana.



Fig. 1 Bir Bara Ban on NH 71 A



Fig.2 Group interview at Dhani village (near Bir Bara Ban)

Conventional tools and techniques in taxonomy and ethnobotany were used to document the floristic wealth of Bir Bara Ban Jind. During the study period, trips were organized during winter, summer, and rainy seasons. Most of the herbal flora blossoms during the rainy season, so most of the visits were conducted during the rainy season. During floristic studies, plant specimens were collected especially at the flowering and fruiting stage and if flowers and fruits were not found leaves were also collected. The following information of collected specimen i.e. scent of a flower, the color of the flower, size of leaves, texture, and color of bark was recorded. Photographs of plants were taken. Then, plant specimens were taxonomically identified using the pertinent literature and different herbaria. The help of taxonomists was also taken in the identification of plants by sending the sample. The help of many flora, icons, and monographs was also taken for identification. The method used for the collection of plant specimens for herbarium preparation was suggested by Jain and Rao (1978). The main aim of this paper was to document medicinal flora used for the treatment of Joint pain found in Bir Bara Ban and adjoining areas. Ethnobotanical notes were prepared by collecting information through discussion with the village sarpanch, spiritual leader, Azhar, vaidya, hakims, teacher, and social workers. Field notes were also prepared based on information on the medicinal values of plants collected from people interviewing them.

3. OBSERVATION



Solanum surattense Burm.f.



Salvadora oleoides Decne.



Populus deltoids W. Bartram ex Marshall



Dasmotachya bipinnata (L.) Stapf.



Carissa spinarum L.



Calotropis procera (Ait.) R. Br.



Albizia procera (Roxb.) Benth.



Cannabis sativa L.





Xanthium strumarium L.



Cassia obtusifolia L.



Delonix regia (Boj.) Raf.



Barleria prionitis L.

Table 1 Plants used for treatment of joint pain

Sr.No	Name	Plant part used	Family	Mode of Use
1	<i>Solanum sura- tense</i>	Fruit	Solanaceae	Fruit juice is used for the treatment of rheumatism
2	<i>Salvadora oleoides</i>	Leaves	Salvadoraceae	Leaves are heated and applied on areas affected by rheumatism
3	<i>Populus deltoids</i>	Bark	Salicaceae	Bark is used for the treatment of gout and rheumatism.

4	<i>Dasmostachya bipinnata</i>	Root	Poaceae	Paste of roots along with milk is highly effective in the treatment of rheumatism.
5	<i>Carissa spinarum</i>	Leaves, Root	Apocynaceae	. Decoction of leaves along with roots is used for the treatment of rheumatism
6	<i>Calotropis procera</i>	Root	Asclepiadaceae	Root powder used for the treatment of rheumatism
7	<i>Albizia procera</i>	Bark	Mimosaceae	Bark decoction is used to cure rheumatism,
8	<i>Cannabis sativa</i>	Seed	Cannabaceae	Seed oil used for the treatment of arthritis
9	<i>Xanthium strumarium</i>	Fruit	Asteraceae	Fruit is eaten for the treatment of rheumatoid arthritis
10	<i>Cassia obtusifolia</i>	Leaves	Caesalpiniaceae	Paste of leaves used as a balm for treatment of arthritis.
11	<i>Delonix regia</i>	Bark	Fabaceae	Bark powder useful in rheumatoid arthritis
12	<i>Barleria priorities</i>	Leaves	Acanthaceae	Leaf paste is used for wound healing and to relieve joint pain
13	<i>Ficus bengalhensis</i>	Latex	Moraceae	Latex or milk of plant is used in Joint pain
14	<i>Cirsium arvense</i>	Whole plant	Asteraceae	Boiled whole plant used in treatment and joint pain.
15	<i>Tamarindus indica</i>	Leaves	Caesalpiniaceae	Young leaves are used to reduce inflammation of joints and pain.
16	<i>Capparis decidua</i>	Root	Capparaceae	Swelling in joints is treated by a paste of

				roots.
17	<i>Cassia occidentalis</i>	Seed	Caesalpiniaceae	Roasted seeds used for the treatment of gout, rheumatism
18	<i>Melia azedarach</i>	Seed	Meliaceae	A paste of seeds is applied externally on rheumatic swelling.
19	<i>Cassia obtusifolia</i>	Leaves	Caesalpiniaceae	Paste of leaves used as a balm for treatment of arthritis.
20	<i>Trigonella foenum graecum</i>	Seed	Fabaceae	Seeds are soaked overnight and taken with warm water in the morning to cure backache and joint pain.

4. RESULTS AND DISCUSSION

The present study documented the medicinal importance of 20 species of plants belonging to 15 families (Table 1). Family Caesalpiniaceae was dominant represented by 4 species followed by Fabaceae and Asteraceae each represented by 2 species. Moraceae, Acanthaceae, Meliaceae, Salvadoraceae, Apocynaceae, Mimosaceae, Poaceae, Asclepiadaceae, Capparaceae, Salicaceae, and Solanaceae Cannabaceae each represented by 1 species (Fig.3). Most frequent plant part used for the treatment of joint pain and arthritis was found to be leaf followed by root and seed. Fruit, bark whole plant, and latex were also found to be used for the treatment of joint pain. (Fig.4)

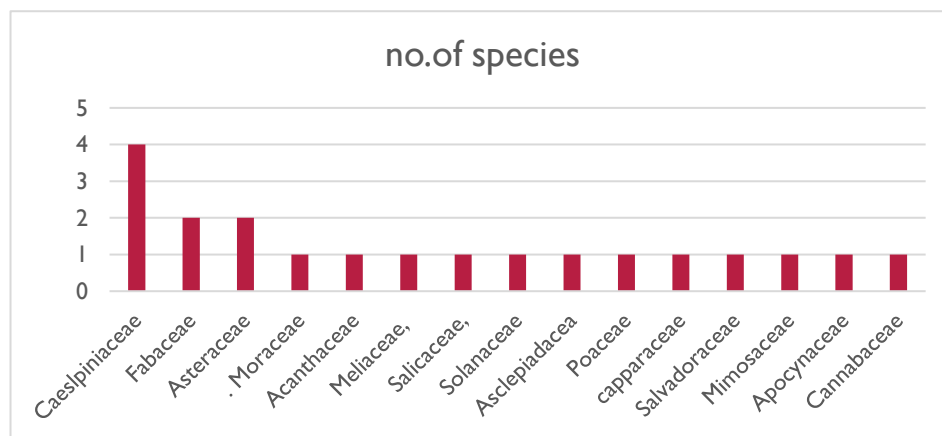


Fig.3

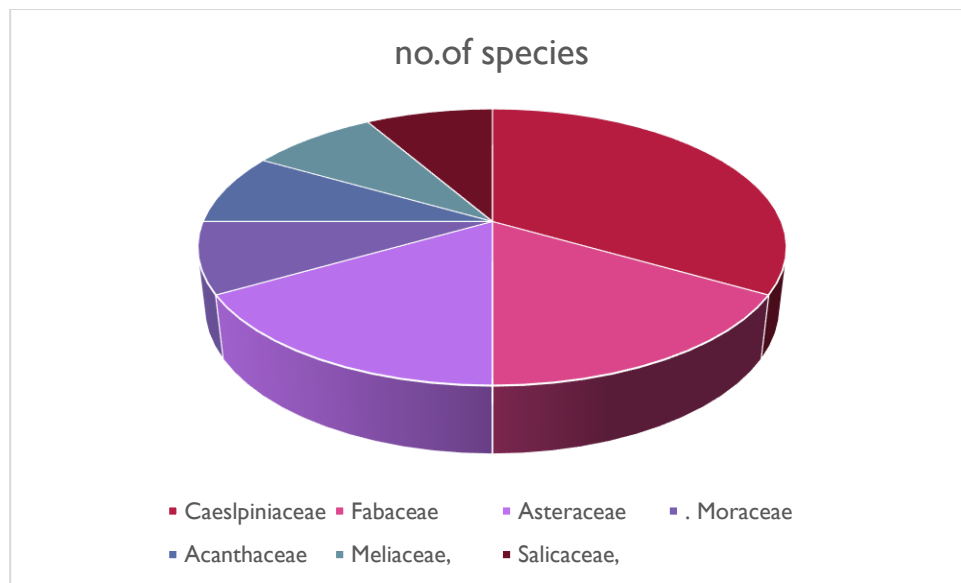


Fig.4 Plant part used to treat joint pain and arthritis.

5. CONCLUSION

The present study revealed that local people used plants for the treatment of arthritis and joint pain. The area is rich in medicinal flora and this data will provide a database for further research.

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