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SOME LESS KNOWN PLANTS FROM MALDA DISTRICT OF WEST BENGAL USED FOR THE TREATMENT OF ARTHRITIS, RHEUMATISM AND GOUT

SUNIT MITRA¹, SOBHAN KR. MUKHERJEE²

1. Department of Botany, Ranaghat College, Ranaghat Nadia – 741201

2. Taxonomy and Biosystematics Laboratory, Department of Botany, University of Kalyani, Kalyani – 741235.

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Abstract: Malda district of West Bengal is situated at the northern half of the state. This district has different tribal groups, of which, Santal, Oraon, and Munda are the major tribal groups. These tribal people are residing at the lap of the nature and are using the resources of nature for their upliftment. But due to fast pace of civilization of this tribal group they give up their culture and traditional knowledge which had been acquired from their ancestors through successive generations. By this way vast acquired knowledge bank may be vanish gradually in long run, therefore, the present ethnobotanical study has been undertaken to preserve their acquired valuable ethnobotanical knowledge before it's extinction forever. Although Arthritis, Gout and Rheumatism are three different types of diseases in human beings but in the tribal societies these three different diseases are known as 'Vat' or 'Gathia'. Tribal people are very well known about these diseases and they are able to treat these diseases according to their own ways. In the present study 17 such plants have been identified which are used by the tribal community for the treatment of 'Vat' or 'Gathia'. These plants can be used for modern drug development programme in future.

Keywords: Ethnobotany, Malda district, West Bengal, Arthritis, Gout, Rheumatism



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Corresponding Author: Mr. SUNIT MITRA

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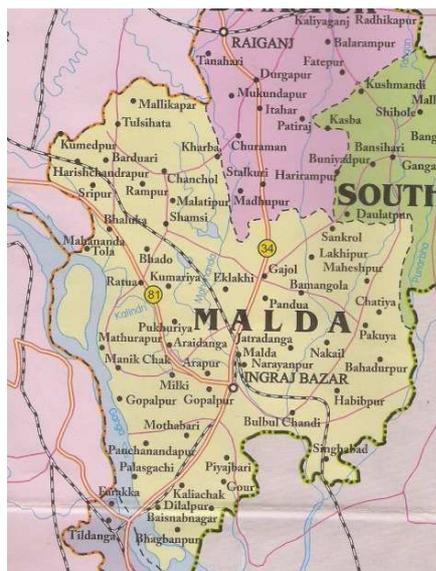
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INTRODUCTION

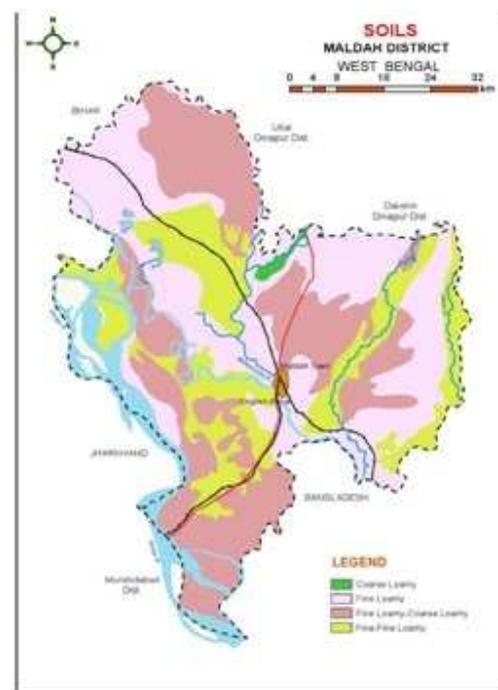
The District Malda is the gate way of northern part of the West Bengal. During sixteenth century, this place was treated as capital of Bengal, when it was ruled by the Hindu King *Sasanka*. Later on the Pal and Sen Dynasty ruled over this area. The present Malda district was formed in the Year 1813, taking out some area of the districts of Purnia (Bihar), Dinajpur (the then Bengal), Rajsahi district of adjoining country like Bangladesh. At present this district of West Bengal has two sub-divisions, (English Bazar and Chanchal) which are divided in to 15 blocks in total.

This district Malda exists on the North – East banks of the River *Ganga* and its geographical location is in between 24° 40' 20" N and 25° 32' 08" N latitude and 87° 45' 50" E and 88° 28' 10" E longitude, covering an area of 3733 Sq. Km. of total land areas of West Bengal. [Map - 1].



Map – 1 : Political map of Malda district.

Topographically, the Malda district can be divided in to two broad zone which are *Rarh* region and the *Barind* region. The district is made up of old and new alluvial type of soil mainly. This old and new alluvial soil can be grouped in to 4 – broad categories, which is shown in the map – II along with the distributional zones of the soil in the district.



Map – II : Soil types of the Malda district

At present in the district there is no natural forest within the boundary of the district. Plantation forest covers an area of 16.94 sq. km. which is only 0.49% of the total areas of the district. According to the classification of the forest department of Malda district, the forested area can be classified in to – i.

Low land forest and ii. High land forest. *Adina* forest area is the largest forest area of the district, besides this; there are some small forest areas in Old Malda, which are at Harish Chandrapur and at Gajol. The Bhalluka forest is another important forest of the district which still contains a remnant of the natural forest vegetation.

The district shows three dominant seasons, viz. hot summer, rainy monsoon and cold winter. The summer is prolonged one begins from the first week of March and extended up to the middle or end of the month of August. Month of May and June is the hottest one when the mercury reaches to 42 °C. A rainy season is with a very small duration of one and half month only and from the middle of October to February is recognized as the winter seasons. The district received a handsome amount of rainfall which has been estimated 1780.6mm per annum in an average during the period of 1995 to 2010.

According to the census report 2011, the district population is 3290468 of which 227047 belongs to tribal people that is recognized as the schedule tribe population of the district. Among these schedule tribe population, the major groups are Santal, Oraon, and Munda people, which are considered at the present study.

In general, rheumatism refers to various painful medical conditions, discomfort and disability, which affects bones, joints, muscles, tendons, nerves etc. Rheumatism is not a single disease. It is actually the net

result of some physiological disturbance of human body which produces unnoticed pain of the body. Rheumatism is more common among the middle aged and elderly people. The exact cause of most forms of rheumatism is not known. Arthritis, which literally means joint inflammation that, is a part of the rheumatic diseases. Arthritis primarily involves joint pains, joint stiffness, joint inflammation and joint damage.

Gout is a medical condition which is usually characterized by recurrent attacks of acute inflammatory arthritis - a red, tender, hot and swelling of joints. It is due to enhancements of uric acid levels in the blood serums, which is crystallized and are deposited in joints, tendons and surrounding tissues. Other joints such as the heels, knees, wrists and fingers may also be affected. Other symptoms that may occur along with the joint pain include fatigue and a high fever. In general, Gout is a disease that is produced from excess deposition of uric acid level in the body.

Most common things among these three diseases are exposure to wet and cold which may aggravate the sufferings of the pain.

According to Jain (1991) in his '*Dictionary of Indian folk medicine and Ethnobotany*' these three different diseases are regarded as the joint diseases. But during the field trips in different parts of tribal *basti* it has been observed that, all these three diseases are recognized as '*Vat*', '*Gathia*', by all the

major tribal communities of the district. The local people possess sufficient good knowledge about the diagnosis of these disease and their treatments. If it is not treated properly at the initial stages, joint diseases may be converted into chronic disease. Therefore, the local medicine men have been used various types of herbs, shrubs and trees available in their surrounding for the treatment of joint diseases. The medicines are prescribed only after proper checkup the symptoms and stage of the diseases by the medicine men.

Some earlier workers like Bandyopadhyay et al (2005, 2006, 2009) studied the ethnobotany of Koch Bihar district; Basak (2006), Mitra (2002), Mitra et al. (2005a, 2005b, 2007, 2009) studied the ethnobotany of West Dinajpur district; Sur, et al. (1987a,1987b, 1990) have reported work carried out on the ethnobotany of the Malda district. However, no attention has yet been given on the plants used particularly in the treatment of rheumatism, arthritis, and gout in Malda district of West Bengal. So, in this present paper an attempt has been taken to find out some plants resources which show some positive application to overcome this problem.

METHODOLOGY:

Present work is entirely based on the field survey in different tribal areas of Malda district. During the field trips, tribal medicine men and women are interviewed and collected information from them.

Collected information is cross checked from the other tribal informants of the same group and after that these information is recorded for the presentation. During collection voucher specimens of the plant materials are always collected for future consultation of the plants species. By the same way the local name of the plant is also recorded to relocate the plants once again in the field.

Information is arranged here alphabetically following the sequence of scientific name, family, vernacular name and prescription, etc.

In case of presenting the vernacular name, abbreviated form of communicative language from is given within the parenthesis from which are mentioned in text as B for Benagali; Mund. for Mundari; Or. For Oraon; Sant. for Santali and VN. for Vernacular Name.

Enumeration:

1. ***Abrus precatorius* L. (Papilionaceae)**
VN.: *Kunch* (B); *Swet Kunch* (Sant.)

Dried seeds (about 20g) are made in to paste with a few drops of honey (*Madhu*). This paste is warmed gently and applied on the joints as a pain balm twice a day to cure the rheumatic pain for 15 days or often until the pain is cured totally.

2. ***Alstonia scholaris* R. Br. (Apocynaceae)**
VN.: *Chattindaru* (Sant.)

Fresh twigs (about 10g) are boiled in mustered oil for 15 minutes, this oil infusion

is filtered and the filtrate is used as massage oil. This oil is applied in luke warm condition as a massage oil to reduce the swelling and pain.

3. *Andrographis paniculata* (Burm. f.) Wall. ex Nees. (**Acanthaceae**)
VN.: *Kalmegh* (B; Mund.), *Bhuineem* (Sant.)

Fresh root (about 15g) is made in to paste with a pinch of camphor (*Karpur*) and with a little amount of coconut oil. This paste is warm gently and then is applied on the joint to reduce the pain and swelling. It is said that, the application of this drug should be started on Tuesday or from the Saturday of the week, and is continued for three successive days.

4. *Anisomelis indica* (L.) Kuntze. (**Lamiaceae**) VN.: *Niltulsi* (Or.)

Tender twigs are made in to small pieces and these pieces are boiled in an earthen pot along with garlic paste (about 1:4 ratio), for 25 minutes, when the amount of water becomes 1/4th of the primary amount then the whole aqueous mixture is taken off from the oven, cooled and filtered and the filtrate is used as poultice materials to reduce the pain.

5. *Astercantha longifolia* Nees. (**Acanthaceae**) VN.: *Hincha* (Or.), *Kulekhara* (B)

Fresh leaves (about 20g) are made in to paste and that paste is applied on the joint to reduce the rheumatic pain. It is advice

that during the application of this medicine, intake of *Handia*(Rice beer) is strictly restricted.

6. *Aristolochia indica* L.(**Aristolochiaceae**)
VN.: *Ishwarmul* (Sant.)

Fresh leaves and young twigs (about 15g each) are mixed together, chopped in to small pieces and then boiled in coconut oil for 15 – 20 minutes and then this extracted oil is used as massage oil to reduce the swelling of gout. During massage, a warm cloth should be placed on the place of massage to hasten the processes.

7. *Azadirachta indica* A. Juss.(**Meliaceae**)
VN.: *Nim* (Sant.); *Neem* (B)

Fresh stem bark (about 15g) is made in paste with a little honey (*Sarishamadhu*) and *cow ghee*. The whole mixture thus obtained is divided in to three equal portions and each portion is taken three times a day for 7 days to cure pain of gout. It is advised that during administration of this medicine consumption of pork, country liquor and spicy food is restricted.

8. *Calotropis gigantia* (L.) R. Br. (**Asclepiadaceae**) VN.: *Akand* (Mund.)

Back side of fresh matured leaf of the said plant is coated with thin film of mustered oil and the leaf is warmed gently on a hot iron, this warm leaf is used as a poultice on the joint to reduce the pain. A hot pad of sand or salt should be used on it to hasten the process.

9. *Cardiospermum helicacabum* L.
(Sapindaceae) VN.: *Sibjul* (Or.)

Fresh leaves (about 5 – 7 pieces) are made in to paste with small garlic, a pinch of table salt and 7 -8 black pepper fruits (*Piper longum*). The whole paste thus obtained is taken at early morning in empty stomach with a glass of luke warm water to reduce the pain and swelling of the gout. This is continued for at least 15 days.

10. *Curculigo orchioides* Gaerten.
(Hypoxidaceae) VN.: *Talmuli* (Mund.)

The underground bulbous root portions (1 – 2 pieces) are taken, these are made in to paste and that paste is boiled in mastered oil mixed with equal amount of garlic paste and the whole mixture is boiled for 15 – 20 minutes. After that the mixture is cooled and applied on the joints as massage oil for half an hour before taking bath and then it is washed with warm water during bath. It is continued for 15 days to reduce the pain and inflammation due to gout and rheumatism.

11. *Curcuma caesia* Roxb. (Zingiberaceae)
VN.: *Kali Halud* (Sant.), *Ban Halud* (Mund.)

Fresh rhizome (about 15g.) is chopped in to small pieces, the pieces are boiled in mastered oil for 15 minutes and then it is stay for cool and is applied as massage oil by the Munda tribe of the district to reduce the pain.

Fresh (about 5g) or Sundried rhizome powder (about 1 - 2 g) is taken in an earthen pot, and made in to paste with mustered oil and castor oil (oil of *Ricinus communis*), this paste is applied as poultice on the joints to reduce the pain and swelling of the gout. A piece of cloth heated on hot iron or a gently heated sand pad is used over it to hasten the process by the Santal tribe of the district.

12. *Dalbergia sissoo* Roxb. (Papilionaceae)
VN.: *Sisso* (Sant.)

Fresh stem bark is collected on Tuesday or Saturday before the sunrise, kept in a piece of white new cloth and that cloth is tied over the waste of the patient after taking bath for three days to reduce the rheumatic pain. It is stated that during this three days period, the patient should stay in rest and never consume any type of meat or fish item in his diet.

13. *Datura metel* L. (Solanaceae) VN.:
Dhatura (Or.)

Fresh seeds (about 5g) are made in to paste with honey. That paste is given as sedative to the patient to reduce the pain of the gout.

14. *Elephantopus scaber* L. (Asteraceae)
VN.: *Bonpan* (Mund.)

Fresh leaves (about 10g) or sundried leaf powder (about 2 tea spoonful) is taken in an earthen pot and then sesame oil (*Tiltel*) is mixed with it in excess amount and mixed carefully. The whole mixture is then boiled

on a low temperature for 20 - 30 minutes and at the end of the time it is observed carefully if the whole solution is turned into reddish brown in colour then it is stay for some time to cool down or otherwise it put on the oven again to boil further till the expected result is observed. After that it cooled and filtered, the filtrate oil is kept in a glass pot and used as massage oil to reduce the rheumatic pain. It is stated that every time before its use, the oil the oil should be warm gently.

15. *Gloriosa superb* L.(Liliaceae) VN.:
Chandalnati (Sant.)

Oil decoction of the fresh flower is applied for massaging on the joint to reduce the pain of arthritis.

16. *Hemidesmus indicus* (L.) R. Br. (Asclepiadaceae) VN.:
Annantnati (Sant.)

Sundried root powder of about 1 teaspoonful is taken at early morning in empty stomach with a glass of luke warm water in every alternative day for 7 – days to cure the pain of arthritis. Consumption of *handia* (Rice beer) is strictly prohibited during the course of medicine.

17. *Tephrosia purpurea* (L.) Pers. (Papilionaceae) VN.:
Bonnil (Or.)

Aqueous root decoction is warmed gently. This warm decoction is taken in a pot and the affected part is immersed into it to reduce the swelling and pain of arthritis.

CONCLUSION:

Tribal people of the district are very shy in nature, they are normally avoid the civilized people to talk, but if once they starts to talk they talks a lot and lots and lots of information comes out from them. In the tribal societies there are no written documents. All the age-old traditional knowledge of the tribal societies is living with the day to day practices. Moreover, the existing knowledge on traditional uses of plants are destroying in fast pace, because the lack of interest of local youth to learn the traditional knowledge from the old herbal healer. It is also felt that the valuable and time-tested knowledge on the medicinal uses of plants are also disappearing due to modernization, acculturation, forests destruction, urbanization, industrialization, etc. Scientific investigations through the evaluation of plants for their biological activity and isolation of active constituents responsible for their medicinal properties for joint diseases like rheumatism, arthritis, gout and lumbago need to be carried out in various pharmaceutical industries and National laboratories which will give a lead to develop new natural drug molecules so as to reach the benefit of research for the welfare of human beings.

From the above enumeration it is predicted that 17 species of angiosperms belongs to 17 genera distributed under 13 families are used by 3 different tribal community viz. Munda, Oraon and Santal of the district.

On the point of view of the diversity of exploitation members of the family Papilionaceae is the most diversified family because 3 genera of this family is used for the treatment of the Arthritis, Gout and Rheumatism.

By the same way among the three tribal communities, the Santal tribe is the richest knowledgeable tribe on the point of view of the exploitation of the plant resources as this group has been provided nine information about the utility of the plants for the treatment of the Arthritis, Gout and Rheumatism.

It is also mentionable that in the enumeration it is documented here as three different disease like Arthritis, Gout and Rheumatism, but during the field trips it is observed that among the tribal society these three diseases are recognized as 'Vaata' or 'Ganthia', but in the present documentation based on the description of the disease symptoms as mentioned by the tribal informants the present work has been classified into three different types of disease classes of joint pains as indicated in the modern system of disease classification.

Out of these 17 plant species, *Gloriosa* and *Hemidesmus* are included in the rare and endangered list of plants, so, special attention should be given for their conservation and preservation of the plants for our future use.

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