

## Exclusive ethnomedicinal uses of Rheumatism in Jhargram District of West Bengal.

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### ABSTRACT

Jhargram district consists of eight blocks and the eight blocks are covered with forests having different types of trees, herbs and shrubs. The district is locally called 'Jangal Mahal' of the state. The majority of populations are tribal. From ancient time tribal and other than tribal people of Jhargram district are well acquainted with different plant resources for the treatment of Rheumatism. Rheumatism or rheumatic diseases generally mean musculoskeletal diseases in which joints, tendons, ligaments, bones are affected. Generally, it is an autoimmune and inflammatory disease that occurs when a body immune system mistakenly attacks own body's tissue causing painful swellings. This investigation is an ethnobotanical survey which was carried out among local herbal practitioners, Medicine Men and Vaidyas of different blocks of Jhargram district. 40 medicinal plants belonging to 40 genera & 35 families are documented which are used to cure rheumatism in this district. Each investigated plant species is enumerated by the interaction with different local Medicine Men or Herbal Practitioners. Plants are described by their local names. During each survey, each plant with its parts used against rheumatism, preparation of medicine, mode of application of medicine is documented properly. A total of 42 people were interviewed (both male and female). Therefore, the present survey work has been written to document traditional knowledge which is going to vanish rapidly and should be digitally conserved for futuristic approach on medicinal plants in India.

**Key Words** - Rheumatism, Musculoskeletal disease, Jangal Mahal, Immune system, Ethnobotanical Survey, Jhargram District, Medicine Men, Herbal Practitioners, Vaidyas.

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### INTRODUCTION

Health position of a person is an important factor for socio-economic growth and development of any country. Medicinal herbs have been traditionally a resource for the treatment of many diseases. Treatment of inflammatory diseases, such as rheumatism is practiced based on traditional medicine in many countries like India. Generally, Rheumatism is an autoimmune disease and also a chronic inflammatory disease of the joints characterized by a specific destruction of bones, joints, tendons, ligaments and muscles also. Rheumatoid arthritis risk factors include genetic, hormonal, environmental, nutritional and so on. According to WHO, 0.3 - 1% of the World population

is affected from Rheumatism & among them females are 3 times prone to the disease as compared to males.

Documentation of indigenous knowledge through ethnomedicinal studies is very important for conservation and utilization of biological resources as also prevent it from misappropriation and bio-piracy as per National Biological Diversity Act, (NBA) 2002. Jhargram district is a hub of medicinal and aromatic plants and the said plants play a key role in the life of people of Jhargram district. Hence, it is felt, very important to explore and document this unique and indigenous traditional knowledge of the tribal and other community of the rural society

before it diminishes. Continuous research work and documentation will immensely help to update database of Traditional Knowledge Database Library (TKDL). The convention on Biological Diversity (CBD) also highlighted the need to promote and preserve traditional knowledge under article 8(J). India has enacted Biodiversity Act 2002, for documenting indigenous knowledge of tribal and other people. Some important worker who worked on Ethnomedicine and mentioned about the treatment of rheumatism and some other diseases are Chatterjee and Mukherjee (2015), Sikarwar, Pathak and Jaishwal (2007), Sikarwar (2017), Sarkar (2016), Zarei *et al.* (2017), Choudhary, Malhotra and Singh S. (2015), Haldani *et al.* (2017), Singh and Baske (2010).

## METHODOLOGY

### 1. Selection of the study area-

The present study was carried out in Jhargram district of West Bengal.

### 2. Sample design-

The Sample here consisted of 40 medicinal plants belonging to 40 genera & 35 families. The Plant samples are documented with the help of 42 herbal practitioners/vaidyas/medicine men.

### 3. Tools for data collection-

The prime tool used for the documentation was a semi-structured interview in Bengali language.

## RESULT AND DISCUSSION

The ethnomedicinal plants are effective to cure Rheumatism collected from different herbal practitioners in different villages of Jhargram district were pooled and analysed. Out of these 40 plants species belonging to 40 genera and 35 families have been found to be used for curing disease Rheumatism. In the survey, Papilionaceae, Euphorbiaceae, Apocynaceae, Moraceae and Apiaceae are the dominant families having two species each followed by the other 30 families having one species each.

For treatment of Rheumatism the following parts of the studied plants are used - Seed (25.53%), Stem (19.14%), Root (12.76%), Fruit (10.63%), Leaf (10.63%), Whole plant (10.63%), Purified resin (2.12%), Flower (4.25%), Dried young inflorescence (2.12%), essential oil from wood (2.12%), fruit (2.12%). Different forms of the studied plants are being used for the treatment of rheumatism viz. emollient (43.85%), oral medicine (52.63%), fomentation (1.75%), take bath (1.75%).

**Table 1**

Sl. No.	Scientific name	Family	Local name	Parts used	Preparation of medicine	Mode of Application
1.	<i>Pterocarpus santalinus</i> L.f.	Papilionaceae	Rakta Chandan	Stem	The wood is to rub adequately.	When any part of body becomes reddish with severe pain without having any blow from outside then the wood is to rub and the paste apply on the affected area regularly to get relief from the ailments.
2.	<i>Hemidesmus indicus</i> (L.) R.Br.	Apocynaceae	Anantamool	Root	Adequate amount of root is to grind and make it paste.	Sometimes somebody muscle shows contraction and pain. In this situation sufficient root paste is to eat in empty stomach daily for a long period. The Rheumatic affection will be cured.
3.	<i>Tinospora cordifolia</i> (Willd.) Miers.	Menispermaceae	Gulanha	Stem	Adequate amount of stem is to take and make it to extract.	When very frequently hands and foot are throbbing with pain – at this time 10 gms. of the said root extract is mixing with a little amount of milk, patient has to take the mixture for a few days to get rid of the ailments. However, in this situation, the reason for rheumatic attack which comes from food and life style is to be avoided.
					The extract of the said stem is to be made in adequate amount.	Sometimes, round like hard swellings having aches, are seen in the body. In this case extract of the stem is to rub in the affected body parts and to take the extract orally for a few days. The patient will come round after few days.
4.	<i>Moringa oleifera</i> Lam.	Moringaceae	Sajina	Fruit	Drum stick is to collect.	The patients who are distressed with rheumatic pain, they are to take the drumstick in their food. They will feel comfort.
				Seed oil	Seed oil is to extract in adequate amount.	Seed oil used as emollient in the affected area regularly.

5.	<i>Allium ampeloprasum</i> Boiss.	Amaryllidaceae	Rasun	Seed vessel	Some Garlic vessel is to grind.	2 – 3 seed vessels of Garlic duly grinded and mixed with one spoonful of cow-ghee and be taken daily. Garlic seed vessels (6 pieces) are scorched in mustard oil (100 ml). The oil mixture is used as emollient in the affected area regularly. Rheumatic pain will be controlled.
				Seed vessel	Some Garlic seed is taken.	
6.	<i>Vitex negundo</i> L.	Lamiaceae	Nishinda	Leaf	Leaf dust of ½ gm is taken.	½ gm leaf dust is mixed with 1 cup of warm water and taken orally daily. With this medicine 8 – 10 leaves of <i>Nyctanthes arbortristis</i> to be boiled in water and to take the water to get relief of the pain. Sometimes muscles become globular or lumplike due to deformities of muscles in disease rheumatism. In this case the grinded & warmed leaves are rubbed on the affected place and also whole body for few days to cure the patients.
					Sufficient leaves are taken, grinded & warmed.	
7.	<i>Mimosa pudica</i> Mill.	Mimosaceae	Lajjabati	Whole plant	Whole plant is to grind and mixing with milk. The mixture is to make by warming ghee.	Patient has to take the prepared 'Ghee mixture' regularly and used the mixture too as emollient to cure joint pain.
8.	<i>Ricinus communis</i> L.	Euphorbiaceae	Rerhi	Seed	Kernel of 6 – 7 seeds of <i>Ricinus communis</i> are grinded and mixed with milk and cooked.	In the case of rheumatic pain flows from waist to foot with the feeling of pricking by thorn, patients have to take the said medicine orally at least 10 days. After taking this patient will feel comfort. The oil mixture is used as emollient in the affected area regularly. The patient will feel comfort. The Rheumatism which is associated with body swelling with severe pain, the extraction is to use as emollient in the affected area or whole body in case of severe patients.
				Seed Oil	The Seed oil is called in Bengali "Erond Oil". The boiled erond oil is mixed with sandhak salt.	
				Root/Root bark	The root of the plant is boiled in water and the extract is to take. In case of older plant the root becomes woody. In this case root bark is used.	
9.	<i>Strychnos nux-vomica</i> L.	Loganiaceae	Kuchila	Seed	150 gm of purified seed dust of the plant is mixed with a cup of milk.	In the severe case of rheumatism, when the patients loss their ability to press the wrist, cannot hold a pen, whole body vibrate due to inability to stand, in this case the prepared medicine is to take once daily for one week followed by twice daily
10.	<i>Solanum indicum</i> L.	Solanaceae	Brihati	Fruit	Fruit of the plant is boiled and then fried in the refined Castor oil and make it to 10-20 gm for daily medicine.	In traditional medicine system the medical term Sciatica nerve pain is known as 'Gridhashi baat'. In this case pain starts from waist to heel including the muscles and nerve. In this situation, patient has to take the medicine in the morning or in the afternoon. After few days, he/she will feel comfort from the unbearable pain.
11.	<i>Commiphora wightii</i> (Arn.)Bhandari	Burseraceae	Goggul	Resin/Olibanum / Bdellium	Purified resin i.e. called locally goggul is to collect.	If cough and constipation affects a person persistently with rheumatic pain in any part of the body (Sometimes in waist, sometimes in hands, legs etc.), then one gram of purified resin is to take with warm water in the morning and afternoon till recovery. In Rheumatism when the muscle movement is damaged, the prepared medicine is to take orally daily for two times (i.e. in morning & in afternoon). Here in this case, restrictions are, not to take sweets, not to rub the body, not to apply hot compress. The filtered water with 1 to 1.5 gm of goggul is to take when the patient suffers from severe pain from waist to ankle in 24 hrs. and does not get comfort either hot or cold. The medicine is taken continuously till recovery.
				Olibanum	Goggul is mixed with juice of <i>Tinospora cordifolia</i> . The normal dose preparation is 400 mg of purified resin is to take with ½ teaspoonful of juice of <i>Tinospora cordifolia</i> .	
					1 to 1.5 gm of purified resin is to take with the extract of 'Trifala' [i.e. myrobalan, Bohera (a kind of medicinal fruit) and emblic myrobalan]. Taking 5 gm mixture of Triphala is to boil with water and filter the mixture.	

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12.	<i>Madhuca indica</i> <i>J.F.Gmel.</i>	Sapotaceae	Mahua	Flower	Adequate amount of flower is to grind with little amount of water.	The flower paste is to apply as an emollient in the affected area in disease Rheumatism. The ache & swelling will be normal.
				Seed oil	Seed oil extraction is to be done. The oil is to warm.	Seed oil is rubbed in the affected area regularly. The pain will be recovered.
13.	<i>Nordostachys jatamansi</i> DC	Valerianaceae	Jatamansi	Root	5 gm of root is mixed in a pot containing & 2 cups of water in the night and on the next morning it is to grind and boil. When the solution comes down to one cup, the pot is taken from oven and filter. Now the medicine is ready.	When suddenly redish round shaped mark or spot appears on body accompanied by burning sensation. It comes at the initial stage of the ailment. In this case the medicine is to take in the morning in empty stomach for one month.
					Root of Jatamansi is grinded in adequate amount.	In the severe case of the same ailment with the oral medicine, the grinded root is to rub in the affected area gently. The patient will feel comfort. The medicine is to use for one month.
14.	<i>Tamarindus indica</i> L.	Caesalpiniaceae	Tentul	Leaf	The leaves of tamarind is boiled with water, the leaves are grinded, warmed.	In case of swelling in leg, knee, ankle with aches and pain, the prepared leaf pulp applied as an emollient in the affected area twice daily. After few days patient feel comfort.
				Fruit	The kernel of ripe tamarind is diluted with water, kept in pot of copper, smashed for 5-10 min.	The body swells in different area with round swellings and the whole body scratches with itching. These symptoms are locally called in Bengali 'Ambaat'. Here in the case; the pulp is to apply on the affected area of body as emollient twice daily. The patients get relief both from swelling, scratching, itching after few days. In this case, special attention is given to clear stool regularly, otherwise satisfactory result will not get.
15.	<i>Alstonia scholaris</i> (L.) <i>R.Br.</i>	Apocynaceae	Chhatim	Stem bark	7-8 gm of stem bark is to boil with 3 cups of water when the mixture reduces to one cup – it is to filter.	Those who feels aches and pain due to rheumatism, they are to drink the concentrated solution regularly. The patient will feel comfort.
16.	<i>Amorphophallus campanulatus</i> <i>Blume ex Decne.</i>	Araceae	Ole	Edible stem	The underground edible stem of arum is burnt in fire, grinded and mixed with ghee or ernold oil and keep the mixture in packet of cotton. Now the medicine is prepared.	This medicine is to foment on the affected place twice daily till recovery. The patient will feel comfort from aches and pain.
17.	<i>Tragia involucrata</i> L.	Euphorbiaceae	Bichhuti	Root	(i) 10 gms of root are to boil in 4 cups of water. When water comes down to one cup then filter the mixture.	The filtered mixture is to take orally once daily for few days.
					(ii) Adequate amount of root is to grind.	Patient has to take the grinded root as emollient in the affected area in addition to drinking. After few days the patient will cure.
18.	<i>Boerhaavia diffusa</i> <i>var.hirsuta</i> <i>Kuntze</i>	Nyctaginaceae	Punarnava	Whole plant	10-15 gms of whole plant including root are to boil in 4 cups of water. When the mixture comes down to one cup, it is to filter.	The patients whose stool is not clear every day, the ailments starts by the delayed or impaired wind in the body. When the excited wind takes shelter in ankle and while walking carelessly or walking beyond capacity at a stretch – the heel feels aches and the person cannot walk. In this case the patient has to take the medicine orally twice daily i.e. in the morning and in the afternoon.
					If it is possible oil is to prepare from the extract.	The oil is rubbed gently in the muscles in the affected area of the body. After few days patients will come round.

19.	<i>Hygrophila auriculata</i> (Schumach.) Heine	Acanthaceae	Kulekhanra	Whole plant	The entire plants are grinded and take 4 teaspoonful juices and warm it.	In these ailments, the body wounded or bruised all over the body – it is called Rheumatic blood disease. To treat the patient and make him/ her complete cure following procedure to be taken. The juice mixture (warmed) is to drink twice daily i.e. in the morning and afternoon.
					The entire plant is to grind.	In addition to oral therapy, if the grinded plant mixture is to anoint on the whole body of the patient, he/she will cure quickly.
20.	<i>Ficus religiosa</i> L.	Moraceae	Ashwtha	Stem bark	20 gm. of fresh stem bark is grinded and boiled in 4 cups of water. When the mixture comes down to one cup, it is to filter and the solution is mixed with teaspoonful of honey. Honey is mixed just before to take the mixture.	This mixture is to take ½ cup in the morning and ½ cup in the evening for 15 days. After 15 days the patient will come round. It is used in case of rheumatic blood.
21.	<i>Sida cordifolia</i> L.	Malvaceae	Berela	Root	20 g root of the plant is to boil in 4 cups of water. When the mixture comes down to one cup – to filter it.	The ailment is very dangerous. It can cause deformation of any part of the body. Here patient has to take the paste of the mixture regularly. Patient will feel comfort.
					20 gm of root is to collect and grinded to make it paste.	In addition to this, from this extraction the medicine men prepared an oil called 'Berela oil', and is rubbed gently in the affected area regularly.
22.	<i>Trigonella foenum-graecum</i> L.	Papilionaceae	Methi	Seed	Seeds are to grind.	Those persons who are feeling aches in joints after taking cold food they are to eat ½ gm dust of 'methi' with warm water in the morning and afternoon i.e. twice daily for 30 days at least. Then the pain will go away slowly.
23.	<i>Canabis sativa</i> L.	Urticaceae	Ganja	Dried young inflorescence	100 gms mustard oil is to boil in a frying pan and when the oil becomes without foam, then 10 gm grinded mixture of matted hair of hemp plant is mixed in oil. Then to filter the solution and keep the oil in a bottle.	Aches and pain in the joints may be new or old – in this situation the patient has to rub the oil prepared in bottle in the affected area i.e. joints of body for few days. It will reduce the aches and pain.
24.	<i>Nyctanthus arbortistis</i> L.	Oleaceae	Shiuli	Leaf	8-10 leaves of plant is grinded and boiled in 4-5 cups of water. When the solution comes down to one cup it is to filter.	The patient has to drink twice daily i.e. in the morning and afternoon for few days. The patient will feel comfort.
25.	<i>Enhydra sessilis</i> (Sw.) DC.	Asteraceae	Hingche	Whole plant	2 teaspoonful juices from the whole plant are to be extracted and warmed.	The lower portion of waist is cramped & aches, sometimes leg muscles is pulled; in this case 2 teaspoonful juice is warmed and fed the patient in the morning for a few days. The patient will cure.
26.	<i>Cinnamomum camphora</i> (L.) J.Presl	Lauraceae	Karpur	Essential oil from wood	Mixing camphor with cow-ghee to form a mixture or camphor is to mix with mustard oil and warmed.	The mixture is applied on the affected area as emollient to feel comfort by the patient.
27.	<i>Brassia juncea</i> (L.) Czern.	Brassicaceae	Rai sarse	Seed	Seeds of mustard is to fry in mustard oil and grinded and prepare a mixture.	The mixture is to apply as an emollient in the affected and swelling area. The patient will feel comfort from pain.

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28.	<i>Piper longum L.</i>	Piperaceae	Pipul	Fruit	250 gm dust of pipul is mixed with one teaspoonful juice of ginger.	This type of gout is phlegmatic i.e. establish superiority of cough. It is felt that body is immovable to or motionless. In this situation, the mixture is to take twice daily. If the body becomes hot after taking the medicine twice daily; the mixture is to be taken once daily. After few days the patient feels comfort.
29.	<i>Papaver somniferum L.</i>	Papaveraceae	Afing	Gum/ extract of fruit	25 gm of opium seed and 50 gm dust of dried ginger to mix together and grinded carefully.	During the days of 'Fullmoon', "No moon" and in the "eleventh day of fort-night" i.e. in Bengali 'Ekadashi' the whole body becomes weighty and inside the body feel like needle pricking pain. In this situation, the patient has to take the mixture for 3-4 day for curing. After taking the mixture, the patient is to drink one cup of warm water mixed with sugar cane.
30.	<i>Rosa damascene fo.brachyacantha Focke</i>	Rosaceae	Golap	Flower	The flower is to grind and mix with sugar and one glass of water.	The rheumatic patient has to drink the mixture once daily in the morning in empty stomach for the time-being.
31.	<i>Bacopa acuminata (Walter) B.L.Rob.</i>	Plantaginaceae	Brahmi	Whole plant	Adequate amount of plant is to collect and grinded carefully.	This is effective in case of depression & loss of spirit in the patient of rheumatic affection.
32.	<i>Coriandrum sativum L.</i>	Apiaceae	Dhane	Seed	250 gm of Coriander seed and 250 gm white cumin seed is to grind and then mix with 500 gm molasses and warm the mixture to prepare ball of sweetmeat.	Everyday 10-12 gm of sweetmeat is to take daily in the morning with a glass of water. The patient will feel comfort. By taking the medicine for long time the patient will come round completely.
33.	<i>Sesamum indicum L.</i>	Pedaliaceae	Til	Seed	Seeds are roasted in frying pan without sand or oil laid on it and then grinded with milk.	The mixture is to rub gently on the affected place to make the patient cure.
34.	<i>Wrightia antidysenterica (L.)R.Br.</i>	Apocynaceae	Kurchi	Stem bark	Stem bark is boiled in 4 cups of water, when the mixture comes down to one cup it is to filter.	In case of veinous Rheumatism, the main symptom of the ailment is swelling of the body. Sometimes discharging wounds. In this case, patient has to take the mixture twice daily – in the morning and afternoon. The patient has to take for 7 days, then a gap for 7 days, then to take for 7 days and on for 49 days. The symptoms of the ailment will vanish.
35.	<i>Streblus asper Lour.</i>	Moraceae	Shaora	Leaf	Leaves of the plant are grinded and warmed.	Main symptoms of the ailment are pain in joints, muscles and thigh. Sometimes urine becomes unclear. In this situation, the mixture is to use as emollient in the affected area very gently. Both the aches and pain will go away. Patient will feel comfort.
36.	<i>Cissus quadrangularis L.</i>	Vitaceae	Harjora	Stem	1- 2 inches of the stem of the said plant to be taken and removing the bark of the stem to be mixed and grinded with 25 gm of pulses to prepare 'Tikia'.	When hands, feet and body are affected with ache and severe pain. The patient has to take the 'Tikia' with rice during lunch regularly. Rheumatic pain will be cured.
37.	<i>Vetiveria zizanioides (L.) Nash</i>	Poaceae	Bena	Root	4-5 gm of roots are grinded, filtered and take the solution after keeping the extract in warm water for 3 hrs. at least to cure the patient.	In case of rheumatism in joints, it is seen, in the body of the patient, round shaped swelling & itching as well as pain in joints & swelling. In this situation, the solution is to take 4-5 times taking little amount.

38.	<i>Momordica charantia</i> L.	Cucurbitaceae	Uchchhe	Leaf	Leaf juice of one teaspoonful is mixed with one spoonful cow-ghee gently.	Rheumatic patient is to take the mixture daily with rice.
				Fruit	3 teaspoonful fruit juice is to warm and mix with little water.	When patients feel aches and pain on the day of full moon, no-moon and Ekadashi on the whole body. When winter comes, pain increases, while during summer season they feel comfort. In this situation, the mixture is to take twice daily i.e. in the morning and in the evening.
39.	<i>Oroxylum indicum</i> (L.) Kurz	Bignoniaceae	Shona	Stem bark	At least 400 gm of stem bark is to boil in water.	Patients with joint pain in Rheumatism have to bath this little hot water to sponge the body with this prepared water.
					Stem bark of adequate amount is grinded and warmed.	Rheumatic patients with swelling in the body have to rub the mixture in the affected area regularly till recovery.
40.	<i>Foeniculum vulgare</i> Mill.	Apiaceae	Mouri	Seed	Adequate amount of seeds are to collect and grinded.	The grinded extract is applied in the swellings of Rheumatic patient externally as emollient. Patient can also take his/her bath in the water mixed with grinded seeds.



Tribal Medicine



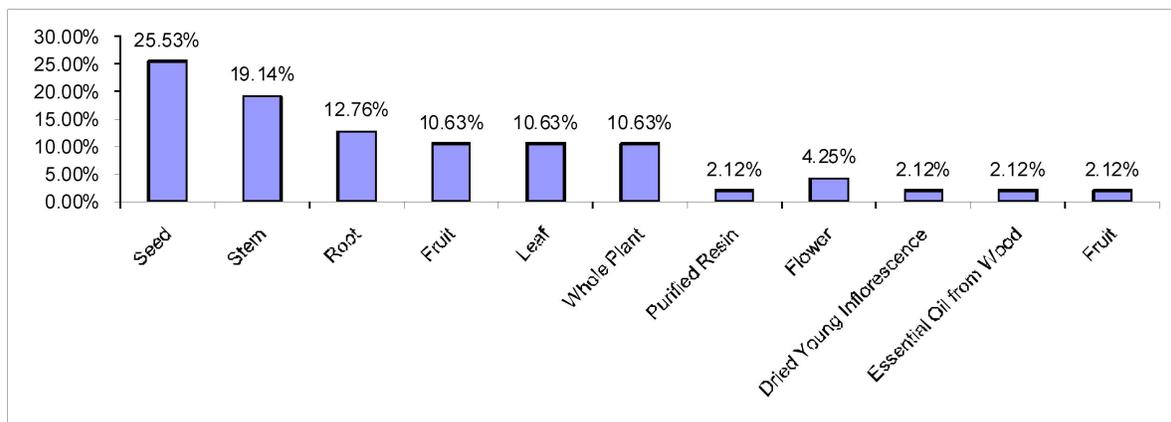
Herbalist Mrs. Uma Bhunia treating a patient



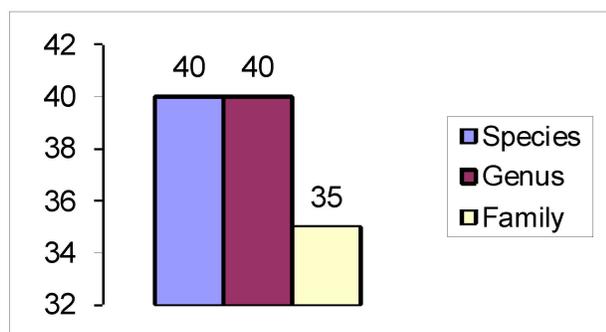
*Ricinus communis* L.



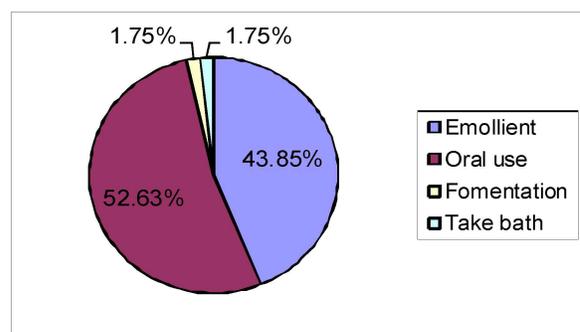
*Vitex negundo* L.



**Analysis of different types of plant parts used in the disease Rheumatism**



**Floristic analysis of documented plants used in Rheumatism.**



**Analysis of different types of mode of Administration in case of Rheumatism.**

## CONCLUSION

Traditional medicines used for the treatment of Rheumatism are used in various tribal / non-tribal/ rural cultures in the Jhargram district. At present, investigation of anti-arthritic activity of traditional medicine has led to the development and studies of many herbal remedies employed for such purpose. The information that has been gathered from various sources is helpful in preserving folk indigenous knowledge as well as discovery of potential compounds having anti-rheumatoid activity. But it is also felt that the exiting knowledge on traditional uses of plants are on fast declining in the district because lack of interest of most of the local youth to learn the traditional knowledge from the old herbal healers.

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