

Ethnomedicinal study of medicinal plants in the Kelve Beach area, Kelve Mumbai, India

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Abstract

This paper offers to provide an information on the traditional uses of medicinal plants in the area of kelve beach Mumbai Maharashtra, India. Most of the peoples in the world are still using medicinal plants to treat various types of diseases. Medicinal plants constitute effective source of both traditional and modern medicines. About 80% of rural population depends on medicinal plants as a primary health care. Medicinal plants are the richest bio sources. Natural bioactive compounds found in different parts of the plant like fruit, flower, stem, leaf, root etc. In this study we investigated traditional uses of medicinal plants in kelve beach area. Ethnomedicinal data were collected by using semi-structured and open ended questionnaires. Field excursions with traditional healers and herbal medicine collectors were carried out. Descriptive statistics were used to present data. The top four plants used in kelve beach area are *Averrhoa carambola*, *Syzygium jambos*, *Citrus maxima*, *Dioscorea bulbifera*.

Keywords: Pharmaceutical, *Syzygium jambos*, ethnobotanical

Introduction

Plants have been used for medicinal purposes long before prehistoric period. Treatment with medicinal plants is considered as very safe as there is no side effects. This treatment with medicinal plant is independent of any age group or sexes. Human beings are depending on medicinal plant for the treatment of various ailments since ancient time. According to World Health Organization, reports nearly 80% psychological and physical health mainly because of two reasons once is that they cannot afford the products of western pharmaceutical industries and the second reason is due to side effects of synthetic drugs followed by lack of healthcare facilities. India has a rich culture of medicinal herb and spices, with high potential abilities for ayurvedic traditional medicines. Hence the peoples in kelve area are still rely on traditional medicines for their primary healthcare needs. The use of these medicinal plants is relatively safer and cheaper than synthetic or modern medicines. The most commonly plants found in this area are *Moringa concanensis*, *Casearia graveolens*, *Bauhinia racemosa*, *Trichodesma indicum*, *Avicennia marina*, *Averrhoa carambola*, *Syzygium jambos*, *Citrus maxima*, *Dioscorea bulbifera*, *Syzygium samarangense*, *Syzygium cumini*, *Manikara zapota*, *Citrus limon*, *Ziziphus mauritiana*. Among all of these plants most important and most widely used plants in this area are *Averrhoa carambola*, *Syzygium jambos*, *Citrus maxima*, *Dioscorea bulbifera* and in this paper we have focused on importance and medicinal properties of these four plants.

Materials and methods

Study area

Kelwa or kelve is a town in Maharashtra, India. It is served by kelve road railway station on the western line of the Mumbai Suburban Railway which extends from churchgate to Dahanu road. Kelwa is located 35 km North of Virar on Western Railway line of Mumbai railway. The famous kelwa beach which is situated around 5 kilometres from the kelwa road station. Palghar town is situated 12 kilometres

away to the north while Saphale lies to its south. Tarapur Industrial Estate, Tarapur atomic power station and a thermal power station owned by Reliance energy limited are located around 30 kilometres from kelwa.

The study area lies between the north latitudes 19°35'00" and 19°41'00" East longitude 72°42'00" and 72°47'30". The area falls in quadrant C-2 of survey of Indian topo sheet no. 47A/14 and 47A/10. Coconut, Banana, Chikku, Betel leaves are the main cash crops found in this location (Goud et. al. 2018) ^[1]



Fig 1

Materials collection

Ethnobotanical survey was conducted at kelwa beach area, dist. Palghar. Ethnobotanical survey was carried out in January 2023 to march 2024. The data is collected by direct visits, personal observation of treated peoples and interview with traditional healers namely medicine man, vaidus, traditional medicine practitioner, rural herbal medicine sellers and compared it with available literature (More et. al. 2023) ^[8] The information collected in this study includes plants name, description of medicinally important part of the

plant, most commonly known and unknown features of the plant etc.

After the interviews, preliminary identification of plants was done in the laboratory using available floras. The herbarium specimen was prepared and photographs were taken. Plant parts such as stem, bark, root, leaves, fruits were collected and dried in shade for making it powder.

Result and Discussion

Medicinally important plants used in kelwe beach area

Averrhoa carambola

It is commonly known as starfruit. It belongs to family Oxalidaceae. It is native to Philippines, Indonesia, Malaysia, India, Bangladesh and Sri Lanka. Star fruits are fleshly, crunchy, acidic, juicy and sweet. The starfruit has rich antioxidant property. Fruits are dark green in colour when in unripe later they turn yellow in colour when fully ripe. Natural antioxidants like Gallic acid, L- ascorbic acid (Vitamin C) are found in starfruit. It also shows a good

source of phosphorous, potassium, magnesium. Because of antioxidants present in starfruit it aids in strengthening the immune system. The hypocholesterolemic and hypolipidaemic effect is also seen in starfruit. The starfruit is widely used in ayurvedic medicines as a remedy for chronic headache, asthma, sore throat, cough, fever. The phytochemical and pharmacological studies suggest that the extracts of leaves, roots and fruits of starfruit contain saponins, alkaloids, flavonoids, and tannins (Lakmal et. al. 2021) [6]. It is also used to treat chickenpox, intestinal parasites and other illness. The starfruit is rich in oxalic acid which is toxic in high concentration. There have been reports of intoxication in dialysis and uremic patients caused by carambotoxin present in starfruit. After drinking the fruit juice such toxin is normally filtered by the kidneys, but patients in dialysis or the patients suffering from kidney deficiencies may show severe symptoms (Muthu et. al. 2016) [9].



Fig 2

Syzygium jambos

It is commonly known as rose apple. It belongs to family Myrtaceae. It is a large shrub or small to medium sized tree. Its leaves and twigs are glabrous. The leaves are lanceolate. The ripe fruit has strong, pleasant floral bouquet hence the name rose apple is given. It is native to India, Philippines, Sri Lanka, Bangladesh, Australia, Nepal, Tanzania and United states of America. The fruit is regarded as a tonic for the brain and liver. An infusion of the fruit acts as a diuretic. The leaf decoction is applied to sore eyes. It is also used in the treatment of rheumatism. The bark decoction is used to relieve asthma, bronchitis and hoarseness (Mohanty et. al.

2010) [12]. The seeds are employed against diarrhoea, dysentery, catarrh. *Syzygium jambos* is also involved in improvement of heart health. It also helps in the treatment of acne. It also helps in controlling diabetes, hydrating skin, protection from UV, reduction of toxicity, preventing cancer, strengthening of bones, boosting of immune system, treating bladder infections, promoting healthy hair etc. It is popular for the number of health benefits such as prevention of cardiovascular diseases, reducing the risk of cancer, reducing blood pressure because of their antioxidant activity. A number of phytoconstituents are present in the plant. (Joseph et. al. 2021) [4].



Fig 3

Citrus maxima

It is commonly known as pomelo, papanus. It belongs to family Rutaceae. It is the principal ancestor of grapefruit. It is natural, non-hybrid, largest citrus fruit. It is native to Southeast Asia. This plant is commercially grown in Nepal, Malaysia, India, China etc. Different types of phytochemicals have been reported in this plant are carotenoids, polyphenols, terpenoids, sterols, vitamins, and amino acids. The *Citrus maxima* plant possesses significant



Fig 4

Dioscorea bulbifera

It is also known as Ramkand-mool. It is a perennial vine that belongs to family Dioscoreaceae. It is a fascinating root vegetable that has been a part of traditional cuisine and herbal medicine for centuries. This plant is treasured for its tuberous roots. It is native to tropical regions of Africa and Asia. This plant is also found in Bihar, West Bengal, Assam, Uttar Pradesh etc. The roots can be cooked in various ways. They can be boiled, roasted, fried. Ramkand mool is a good source of vitamins, dietary fiber, minerals including magnesium, potassium, and vitamin C. This plant is effective in treating wide range of diseases like pyogenic skin infections, goitre, cancer, pharyngitis, orchitis. Certain bioactive compounds like saponins, cardiac glycosides, terpenoids, flavonoids, steroids are present in this plant. The plant possesses anti-oxidant and radical scavenging activity.

bioactivities like antidiabetic, anticancer, antioxidant, antimicrobial, anti-inflammatory, anti-Alzheimer's disease, insecticidal, hepatoprotective, antimalarial, analgesic (Sapkota et. al. 2022) [3]. This plant is used as a sedative in case of cough, fever, ulcer, diarrhea, asthma. Pulp has been used for cosmetic purpose. Leaves are used in case of cholera, epilepsy. The seeds of this plant are used against coughs, dyspepsia, lumbago (Vijaylakshmi et. al. 2015) [11].

Other activities like anti-microbial, analgesic, anti-inflammatory are also found in this plant (Guanet.al.2017).



Fig 5

Table 1

Sr. no	Botanical name	Local name	Family	Habit	Activities found in plant extract	Medicinal uses
1.	<i>Averrhoa carambola</i>	Star fruit	Oxalidaceae	Tree	Antioxidant, Hypoglycemic, Hypotensive, Hypocholesterolemic, Anti-inflammatory, Anti-infective, Anti-tumour, Antibacterial, Neuroprotective.	Used in the treatment of Chronic headache, Asthma, Cough, Sore throat, Skin diseases (eczema), Fever, Fungal skin infections, Chickenpox, Intestinal parasites, other illness.
2.	<i>Syzygium jambos</i>	Rose apple	Myrtaceae	Tree	Antibacterial, Antioxidant, Anti-inflammatory, Antidiabetic, Hepatoprotective.	Sore eyes, Rheumatism, Asthma, Bronchitis, Hoarseness, Diarrhoea, Dysentery, Cararrh, Improvement of heart health, Acne treatment, Diabetes, Hydrates skin, UV Protection, Reduction of toxicity, Cancer prevention, Boosts immune system.
3.	<i>Citrus maxima</i>	Papanus, Pomelo	Rutaceae	Tree	Antidiabetic, Anticancer, Antioxidant, Antimicrobial, Anti-inflammatory, Anti-Alzheimer's disease, Insecticidal, Hepatoprotective, Antimalarial, Analgesic.	Cough, Fever, Diarrhoea, Dyspepsia, Asthma, Cholera, Epilepsy, Lumbago, Cardiovascular protective effects, regulate blood pressure, Anticancer potential, Promote weight loss, Aid in digestion.
4.	<i>Dioscorea bulbifera</i>	Ramkand-mool	Dioscoreaceae	Perennial climber	Antioxidant and Radical Scavenging activity, Antimicrobial, Analgesic, Anti-	Pyogenic skin infections, Goitre, Cancer, Pharyngitis, Orchitis, Treatment of Piles,

					inflammatory.	Dysentery, Syphilis, Ulcers, Cough, Leprosy, Diabetes, Asthma.
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Conclusion

All the information is collected on the basis of interview, by asking open ended questions to the local peoples, tribes' herbal sellers. The collected data and information is checked by using literature and computed with many reputed research papers published in journals. Many of the peoples in kelwa most commonly use these four plants for their primary healthcare needs. Many visitors came to the beech to saw beauty of nature also gets a chance to eat these fruits which are also tasty. *Averrhoa carambola* or Starfruit is most commonly used fruit in this area with large number of medicinal properties. This fruit is most commonly used for the treatment of various diseases. The starfruit is most commonly used for the treatment of chronic headache, asthma, sore throat, cough, fever.

Syzygium jambos is used for the improvement of heart health. It also helps in the treatment of acne. It controls diabetes, protects from UV, prevents cancer, boosts immune system, treats bladder infections, strengthens bones, hydrates skin etc. The seeds of this plant are also used against diarrhoea, dysentery, catarrh.

Citrus maxima is used as a sedative in case of coughs, fever, ulcer, diarrhoea, asthma. Pulp of this fruit is used in Cosmetic purpose. Leaves are used in cholera, epilepsy. Besides this many types of activities like antimicrobial, Anticancer, antioxidant, anti-Alzheimer's disease etc. are found in this plant

Dioscorea bulbifera is used in the treatment of pyogenic skin infections, goitre, cancer, pharyngitis etc. The plant mainly possesses anti-oxidant and radical scavenging activity.

Future aspect and suggestion

Different types of phytochemicals are present in the plants are used to cure various types of diseases without any side effects or very little amount of side effects. Medicinal plants are richest bio-sources. Various parts of the plants like fruit, flower, leaf, root, stem contains natural bioactive compounds. Allopathic medicines cause various side effects on the patients after prolonged use. Hence, medicinal plants can be preferred by many of the people as an alternative for allopathic medicines. These four plants namely *Averrhoa carambola*, *Syzygium jambos*, *Citrus maxima*, *Dioscorea bulbifera* are medicinally very much important to cure many types of diseases. And not so much research or work is done on these plants so my suggestion is if further research and work could be done, so it will be useful as well as beneficial in the field of pharmacology.

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