

## Ethanobotanical Studies On *Piper betle* L. among the folk peoples of Vidul, Taluka Umarched, District Yavatmal, Maharashtra, India.

<sup>1</sup>Eanguwar Srinivas Reddy, <sup>1</sup>Shivraj Kashinath Bembekar <sup>2</sup>Rameshwar Ramchandra Bichewar and <sup>3</sup>Saiprabha Shirsat

<sup>1</sup>Department of Botany, Baliram Patil Arts, Commerce and Science College, Kinwat, District Nanded, Maharashtra, India-431805.

<sup>2</sup>Vidul farmer producer company Ltd, Vidul, Taluka Umarched, District Yavatmal, Maharashtra, India- 445206.

<sup>3</sup>Thetabeta Algorithms Pvt Ltd, Vashi, Navi Mumbai, Maharashtra, India - 400705.

Email : eanguwarsrinivas@gmail.com

**Abstract:** Since ages, herbs are being used for treating different ailments in different parts of world by different communities. The present ethno-botanical explorations undertaken in Vidul village of Umarched Taluka of District Yavatmal to collect information on the use of *Piper betel* Linn. an important species of the Piperaceae family. The traditional herbal remedies are based on ancestral knowledge and empiric experiences, information gathered from village people possess good knowledge of this plant for treating different ailments, but their continuous and progressive exposure to modernization may result in extinction of the rich heritage of knowledge in the course of time and majority of preparation are from leaves only. The present review is an attempt to highlight various traditional uses on *Piper betel* L.

**Key Words:** Ethanobotanical, *Piper betel*, folk peoples Vidul.

### 1. INTRODUCTION :

Vidul is a Village in Umarched Taluka in Yavatmal District of Maharashtra State, India. It belongs to Vidarbha region of Amravati Division. It is located 117 KM towards South from District head quarters Yavatmal, 5 Km from Umarched and 605 Km from State capital Mumbai. Vidul is surrounded by Himayatnagar Taluka towards South, Hadgaon Taluka towards west, Mahagaon Taluka towards North, Mahur Taluka towards North. This Place is in the border of the Yavatmal District and Nanded District. Vidul Local Language is Marathi, Vidul Village total population is 10168 and number of houses are 2251, Female Population is 48.5%, village literacy rate is 68.7% and the Female Literacy rate is 30.1%. After looking at the historical context of many villages and their names, we can see that village names, caste names are derived from different contexts and professions. From this point of view, there is a legend at this place that the name of this village may have been given as Vidalay to Vidul. Vidul village that produces vidya leaves. Along with Tambul means leaf, the people who are engaged in the business of leaf, cultivation of palm trees are called Tamboli and it is seen from the record that there are very large people of Bari and Tamboli caste selling leaves in this small village. It is because of this that we get to see Tambolis who grow tambul, Vidulkar who grow vida leaves in this village. From this it can be definitely concluded that the history of leaf cultivation of this village must have been going on for hundreds of years, in a historical and traditional way.

The betel leaf is an evergreen and perennial, creeper, with glossy heart-shaped and white catkin. The genus *Piper* (Piperaceae) is largely distributed in tropical and subtropical regions of the world. *Piper betel* is cultivated in India, Sri Lanka, Malaysia, Indonesia, Philippines, Island, and East Africa. It has light yellow aromatic essential oil, with sharp taste. There are more than 90 varieties of betel vine in the world, of which about 45 are found in India and 30 varieties in West Bengal itself. It is grown in tropics and subtropics for its evergreen leaves that are used in pooja/religious events and as a chewing stimulant. The leaves are chewed together in a wrapped package along with the areca nut (which, by association, is often inaccurately called the "betel nut" and mineral slaked lime (calcium hydroxide). Catechu called Kattha in Hindi and other flavoring substances and spices might be added. The lime acts to keep the active ingredient in its freebase.

Freebase or alkaline form, thus enabling it to enter the bloodstream *via* sublingual absorption<sup>2</sup>. The areca nut contains the alkaloid arecoline, which promotes salivation, the saliva is stained red and is itself a stimulant. This combination, known as a "betel quid", has been used for several thousand years. The plants of genus *Piper* are also used for many other purposes such as foods and spices, fish bait, fish poison, hallucinogens, insecticides, oils, ornaments, perfumes, *etc*<sup>3,4</sup>. It is an effective anti normal agent and excellent anti-infectious agent because of its pungent taste.

It helps in normalizing the digestive tract hence is very effective in maintaining the digestive system because of its light properties. Moreover, it helps in expelling out the mucus from the infusion prepared from the leaves and stems are supposed to be useful in treating indigestion, bronchitis, constipation, congestion, coughs, and asthma. The leaf juice is given systemically to treat cough and indigestion in children. Many research investigations to date have given a lot of potential information about *Piper betel* and its activity such as anti-malarial activity, anti-bacterial activity, anti-fungal study, insecticidal activities, antioxidant activity, anti-diabetic activity, gastroprotective activity, anti-nociceptive activity, cytotoxic activity, anti-platelet and In addition, its leaf extract was also indicated to have an anticancer activity for human breast cancer cells<sup>5</sup> *etc*.

**1.1. History:** *Piper betel* is blessed as evergreen and perennial plant, that has God created and has given the shape of his own heart. Anthropologists have found traces of betel in the spirit caves in Northwest Thailand dating back as to 5500 - 7000 BC, which is even before systematic and organized agriculture came to be practiced. There have been similar findings in Timor in Indonesia going back to 3000 BC and in the blacked teeth of a human skeleton in Palawan in the Philippines going back to 2600 BC. It had found a place in the most ancient Sri Lanka Historical Book "Mahawamsa" written in pali. Even today some hardened betel chewers in Thailand, Myanmar, and Indonesia were found with black teeth as result of long years of chewing. There is archaeological evidence that the betel leaves have been chewed along with the Areca nut since very ancient times is not known when these two different stimulant substances were first put together. Hence, it may difficult to clearly ascertain the period when the tradition of paan chewing was started.

However, its mention in the Vatsyayana's Kamasutra and Kalidas's Raghuvamsa in itself reflects the antiquity of this practice. Social status of paan can also be appreciated from the fact that it was considered to be a great honor to receive paan bida from kings and nobles that was the status of paan in ancient India.

During this period (Circa 600 AD) words like Tambuladhikara, Tambuladyaka, Tambuladayini and Tambulika, *etc*. used in different texts. Some of the common usages are mention in Kadamberi. Paan has been referred to in Saktatantra as one of the means of achieving siddhi. It was believed that without betel chewing and offering paan to Guru no siddhi can be gained.

**1.2. Ayurvedic Significance:** *Piper betel* is a Vedic plant and its Vedic name is Saptasira and in Sanskrit known as Tambool, Nagvelleri, Nagani were used as a remedy against various diseases. Reference to Tambool occurs right from Vatsyayana's Kamasutra & Panchatantra down to Kalhan's Rajatarngni. Tambool has thus roughly referred across a period of about 2000 years. In Ayurveda medicine system, the properties of betel leaf described as given below:

Guna (Quality) : Laghu, Ruksha, Tikshan

Rasa (Taste) : Tikt

Vipak (Metabolism) : Katu

Virya (Potency) : Ushan

Prabhav (Impact) : Hridya

In Ayurveda, betel leaf extract is frequently used as an adjuvant & mixed with different medicines possibly for better effects besides its independent use as medicine. In Sushruta Samhita tambool leaves have been described as aromatic, sharp, hot, acrid and beneficial for voice, laxative, appetizer, besides this they pacify Vata and aggravate pitta<sup>3</sup>.

### 1.3. Phytochemical Review:

*Piper betel* leaf extract contains phytosterols, alkaloids, carbohydrates, water, tannins, phenols, flavonoids, and essential oils. oils from the leaves contain carvacrol, eugenol, chavicol, allylkatekol, cineol, estragol, caryophyllene, cardinene, p-cymenedaneugenolmethylether. The leaves used for chewing contain up to 2.6% of bright yellow aromatic oil which is steam distillation. Chavibetol forms the characteristic component of betel oil. But some of Indian samples contain eugenol in larger quantities 25-40%. Other constituents of oil are chavicol, eugenol methyl ether, cineole, caryophyllene and cardinene<sup>5</sup>.

## Plant Profile:



**Figure:** leaves of betel leaf

## Taxonomical Classification:<sup>6</sup>

Kingdom	:	Plantae
Division	:	Spermatophyta
Sub-division	:	Angiosperms
Class	:	Magnolipsida
Sub-class	:	Magnolilidae
Order	:	Piperales
Family	:	Piperaceae
Genus	:	<i>Piper</i>
Species	:	<i>betel L.</i>

## 2. MATERIALS AND METHODOLOGY:

For documentation of ethno-botanical information and collection of plant material, several tours were undertaken during the period 2020 - 2022. Data presented here is based on personal observations and interviews with traditional healers Viz. medicine men, hakims and old aged people of Vidul village and methodology used is based on the methods available in literature <sup>7</sup> and <sup>8</sup>. Ethnobotanical information gathered was documented in datasheets prepared. For collection of plant material, local informer accompanied to authors. Plant identification was done by using regional flora and flora of adjoining districts <sup>9</sup> and <sup>10</sup>. Medicinal uses of plant were compared with major published literature <sup>11</sup>, <sup>12</sup>, <sup>13</sup>, <sup>14</sup>, <sup>15</sup>, <sup>16</sup>, <sup>17</sup>, <sup>18</sup>, <sup>19</sup>, <sup>20</sup>, <sup>21</sup>, <sup>22</sup>, <sup>23</sup>, <sup>24</sup>, <sup>25</sup>, <sup>26</sup>, <sup>27</sup> and <sup>28</sup>.

### Enumeration:

The present ethno-botanical explorations conducted in Vidul village by six traditional practitioners resulted the uses of betel leaves with other medicinal plants for various ailments. Following data includes name of the informer, age, method of preparation and use for the disease.

#### 1. Name of informer: Shri. Vishvnath Sambaji Ganjre (Age 78).

For piles 2 *betel leaves* with 4 leaves of *Tridax procumbens* daily morning empty stomach for four days.

For Jaundice 2 *betel leaves* with hand full leaves of *Phyllanthus amarus* prepare a juice for twice a day for three days.

The crushed fruit or berry should be mixed with honey and taken to relieve from cough.

The leaves smeared with oil is said to promote the secretion of milk when applied on the breasts during lactation.

#### 2. Name of informer: Shri. Ramji Kerba Shetewar (Age 77).

For intimated fever 2 *betel leaves* mix with 6 inches *Tinospora cordifolia* stem prepare a juice give 50 ml for three days.

*Apium graveolens* seeds, one clove of *Allium sativum L* wrapped in a betle leaf is chewed and held in the mouth to quick relief from cough.

The *betel leaf* has applied on forehead to relieve deep headache.

The leaves soaked in mustard oil and warmed and applied to the chest to relieve a cough.

#### 3. Name of informer: Shri. Shanker Baliram Gajre (Age 65).

A mixture of leaf juice, rock salt, and a ginger decoction is used to treat asthma, and whooping cough.

A leaf decoration made with turmeric and a bit of salt is taken for fever.

For children crushed leaves with honey to diarrhea.

#### 4. Name of informer: Shri. Tukaram Jayram Hingmere (Age 68).

*Piper betle* leaf sheets rolled and then inserted into the nostril to stop nose bleeds.

The juice of a few betel leaves, with a teaspoon of honey, serves as a good nerve tonic. A teaspoon of this mixture can be taken twice a day.

The juice of a few leaves should be extracted and applied to the wound. Then a betel leaf should be wrapped over it and bandaged.

5. **Name of informer: Shri. Ganesh Giri (Age 58).**  
Juice from crushed leaves is consumed with milk for menstrual problem.  
Roasted leaves are applied with coconut oil of children's heads to cure running nose.  
Leaf extract is applied as eye drops for night blindness and eye problems.
6. **Name of informer: Shri. Arun Bonsale (Age 49).**  
Betel leaf juice mixed with diluted milk and sweetened slightly helps in easing urination.  
The leaves soaked in mustard oil and warmed may be applied to chest it relive from cough.  
The juice of the leaves dropped into the ear to relieve earache and dropped into the eye for painful eye affections.

### 3. RESULTS AND DISCUSSION:

Information gathered from traditional practitioners of vidul village of Umardhed Taluka, Yavatmal District indicates that the people of this region possess good knowledge of herbal use of *Betel leaf* mostly for these ailments are for piles, jaundice, cough, fever, headache, asthma, diarrhea, night blindness, boils and wounds, stomach pain, menstrual problem, eye problem, ear problem, nerve tonic and for milk secretion, easing urination etc. But their continuous and progressive exposure to modernization may result in extinction of the such rich heritage of knowledge in the course of time. The collective efforts of ethno-botanists, phytochemists, pharmacognostists, and pharmacologists are needed to document and evaluate the efficacy and safety of the claims, to test the scientific validity of the herbal preparations clinical studies are required, which can establish therapeutic properties of these preparations for safe use. It provides deeper insight into the indigenous method of applications and effectiveness of the plant derivatives in treating for various ailments.

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