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## Ethnobotanical investigation of underground rhizome bearing plants at Paachmauli village: Green fragment of Kondaibari forest, Taluka Sakri, Dhule, Maharashtra

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### Abstract

Paachmauli is a green fragment of Kondaibari forest area situated in Taluka Sakri dist. Dhule. Paachi pandava hill is famous and surrounded by dense vegetation. Local farmers, villagers, Bhagats, Maharaj, Boharies, and Vaidus are well known to the ethnomedicinal properties of the plants of this area. Many ethnomedicinal plants practiced in this region. Health of the natives is depending upon practice of the local healers. Rainy season favors growth of many types of underground rhizome bearing plants. These rhizomes collected from the forest area for the ethnomedicinal uses. Five important underground plants are studied in the present paper for their ethnomedicinal uses.

**Keywords:** Paachmauli area, underground rhizomes, ethnomedicinal plants

### 1. Introduction

Kondaibari forest and its green fragments is located at the end of Saihyadri. Paach mauli is a very small village and one of the green fragments of Kondaibari forest. It contains dense vegetation. Large trees like *Tectona grandis*, *Syzygium cumini*, *Terminalia sp.*, *Pongamia pinnata*, *Holorrhena pubescens*, *Azadirachta indica*, *Holoptelea integrifolia*, *Madhuca indica* etc. were abundant in this area. Plants have always been the source of medicines and have many uses to mankind [4]. Numerous waterfalls, large forest trees, trenches, and small lakes makes it beautiful. The name of Paachmauli indicates residence of five gods in the area. The hilly area called Paachipandava is famous. The five gods called Paachi pandava along with devi mata worshiped by villagers. Fair is held on the hill top yearly. This is the unique example where epic personalities from Mahabharata are worshiped by the tribal people. Kokani, Bhill, Gavit, Gaurbanjara Pardhi, Thelari, Mauchi, were different ethnic groups [3]. Agricultural activities along with farming and fishing are seen on large scale in this area. Pinjarzadi is the nearby post office. Autorikshaw can get from Pinjarzadi to Paachmauli. On Sunday local weakly market held at Pinjarzadi, here local vegetables, fruits, grains, rice, household utilities, cloths, fishes, meet, and medicinal plant parts sold as per availability.



**Fig 1:** Name of Pachmaule area five gods

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Medicine-men of the area used to carry different dried kanda, bulbils, leaf powder, flower, stem and seeds along with underground rhizomes. Rainy season favors the growth of the rhizomes. Many threatened species of plants occur in rainy season. They complete their life cycle and in winter leaf get dried. Underground rhizome work as reserve food as well it is full of medicinal value. Local practitioner know the site of vegetation of underground rhizome from generation to generation. They collect underground rhizomes and dried it. While preparation of medicinal recipes these rhizomes used as per the requirement of formulations. In present paper five species of ethnomedicinal plants are discussed which bear underground rhizomes. This species are very important as they used as primary health care ethnomedicines.



*Chlorophytum borivillianum*, *Curculigo orchioides*, *Curcuma aromatica*, *Gloriosa superba*, and *Hemidesmus indicus* etc. ethnomedicinal species are studied in the present paper. Out of this list *Chlorophytum borivillianum* is cultivated and eaten as a leaf vegetable in some parts of India, and its roots are used as a health tonic under the name *safed musli*. [1] traditional Indian medicine it is used as 'Rasayan' or adaptogen [6]. Now commercially produced in the Rasayana class of vitality and longevity promoting herbs, touted to also be an aphrodisiac as well as a tonic (aid) for diabetes, inflammation, and used to intentionally increase body immunity [2]. *Curculigo orchioides* is called as Kali musali. The medicinal plants have showed wide spectrum pharmacological activities, including adaptive, immunostimulatory, taste-modifying and sweet-tasting, antioxidant, mast cell stabilization, antihistaminic and




antiasthmatic, hepatoprotective and neuroprotective activity [5]. *Curcuma aromatica* having the rhizomes which are tuberous, large, orange-red and aromatic and the fresh root has a camphoraceous odour. They are used in combination with astringents and aromatics for bruises, sprains, and hiccough, bronchitis, cough, leucoderma and skin eruptions [8]. The rhizome of the plant is rich in alkaloids, flavonoids, curcuminoids, tannins, and terpenoids which are reported to be the reasons for its various pharmacological properties [9]. *Gloriosa superba* its tuber is used as an abortifacient, alterative, antiarthritic, antihaemorrhoid, antileprotic, antiperiodic, cholagogue, purgative and tonic. It is considered to be useful in the treatment of ulcers, leprosy, piles, inflammations, abdominal pains, itching and thirst. *Hemidesmus indicus* is called as Kawali jad by Gaurbanjara tribes of the study area. They add root decoction while making tea in rainy season. It is also called Anantmul in ayurveda. It is one of the Rasayana plants of Ayurveda, as it is anabolic in its effect. It is used for venereal diseases, herpes, skin diseases, arthritis, rheumatism, gout, epilepsy, insanity, chronic nervous diseases, abdominal distention, intestinal gas, debility, impotence and turbid urine [10].

**Material and methods**

Survey method is adopted for present study semistructured questionnaire used as data collection tool. Planned field tours and visits at the study area help to collect data. Various respondents like Bhagat, local healers, boharis, medicine men, and villagers are interviewed and ethnomedicinal information collected. Local dialect was used in field trips to collect correct information.

**Table 1:** Ethnomedicinal uses of rhizome

Sr. No	Photos of underground rhizome	Ethnomedicinal uses of the rhizome
1		<ul style="list-style-type: none"> <li>• Lactation increases eating tubers powder added to laddu made up of coconut, jaguars, gum and dry fruits with ghee after delivery.</li> <li>• Memory improvement done eating tubers as brain tonic.</li> <li>• Inflammation and dysentery prevent eating raw tubers.</li> <li>• Blood and nerve related disorders treated using tubers paste.</li> <li>• Anemia cures eating raw tubers early in the morning as a tonic and aphrodisiac.</li> <li>• Urinary disorders and kidney stones cure eating tubers.</li> <li>• Menstruation problems, white discharge cure using consumption of tubers or tubers powder.</li> </ul>
2		<ul style="list-style-type: none"> <li>• To increases sperm count powder of kali musali mixed in cow milk and given.</li> <li>• Wounds and cuts cured using paste made with water.</li> <li>• Jaundice cure using dry rhizome powder mixed in warm water and given for eight days.</li> <li>• Disturbed menstrual cycle treated using kadha of dried rhizome powder.</li> <li>• Piles treated with the help of rhizome powder.</li> <li>• Skin itching and irruptions treated with rhizome powder.</li> <li>• Stomachache and indigestion treated using rhizome powder, for three days.</li> <li>• Cough, dysentery, diarrhea cure using rhizome powder given with milk.</li> </ul>

3		<ul style="list-style-type: none"> <li>• Inflammation of body part cured using paste of the rhizome and applied externally.</li> <li>• Diseases related to purity of blood treated using dried powder of rhizome.</li> <li>• Skin diseases cured applying paste of rhizome externally.</li> <li>• Skin complexion improved using dried powder mixed with different face packs.</li> <li>• Sprains and bruises cured by external application of rhizome powder mixed and boiled in oil.</li> <li>• Infants bathed using mixture made up of rhizome powder to remove early hair and enhance skin glow.</li> <li>• Piles cure applying thick paste of rhizome powder added with salt for seven days.</li> </ul>
4		<ul style="list-style-type: none"> <li>• Gonorrhoea cured taking root infusion orally.</li> <li>• Skin disease cure using whole plant juice applied externally.</li> <li>• Head-lice treated using leaf paste applied externally.</li> <li>• Snake –bite and scorpion sting cure using root paste applied externally.</li> <li>• Abortion done using extract of the rhizomes.</li> <li>• Rheumatism cure using application of paste of rhizome applied externally.</li> <li>• Tumors treated using rhizome powder.</li> </ul>
5		<ul style="list-style-type: none"> <li>• Scorpion sting and snake bite treated using decoction of the rhizome.</li> <li>• Urinary infection cured using infusion of the rhizome.</li> <li>• Loss of appetite and other nutritional disorders cured using powder of the roots.</li> <li>• Liver problems treated using decoction of the rhizome.</li> <li>• Blood purification done using powder of the rhizome.</li> </ul>

### Results and Discussion

Paachmauli is a small village though it contains valuable ethnomedicinal plants. As these plants are available in rainy season, only ethnic groups of the area know its population and utilization. Formulations and ethnic uses were transferred from generation to generation. The five plant species discussed in present paper were very important ethno medicinally.

*Chlorophytum borivilianum* is called as 'safed musali'. Musali word is indication of underground rhizome. As per IUCN it included in the list of critically endangered medicinal plant of India. This plant is one of the wonder drug for increasing potency and fertility. A native person knows it's potential. So they use to eat laddues made up of dried powder of rhizome of safed musali. This sweet delicacy offered to newly married couples. In field tour it is noted that many villagers use to eat rhizome piece everyday to remain healthy. The plant is harvested for tubers and traded at local, regional, national and international market. The plant foreign demand has been estimated as 300-700 tons annually, a quantity which Indian forest cannot sustain. Due to high demand, the tubers are harvested in indiscriminate manner and thus resulting in declining of its natural populations. <sup>[5]</sup> *Curculigo orchioides* as per IUCN included in the list of threatened plants. Kali musali is used by local healers for many medicinal purposes. Many times

in draught condition villagers used to dig out the rhizomes and used it as supplementary food. From generations to generation it is used as aromatic tonic. Safed musali and Kali musali regularly used to increase sexual potency. Many drug formulation companies know this fact. Unsustainable collection and habitat loss are results of these company policies. They use to appoint local trader for collection in very small amount and they gain large profit on such deals. *Curcuma aromatica* rhizomes mostly used in cosmetic industry. It used to enhance complexion and skin glows. Tribals of the study area used rhizomes for skin treatments. It works as aromatic supporting drug to other medicinal preparations. So its demand is increasing in cosmetic industry. *Gloriosa superba* is natural source of Colchicines and its derivative used in cell studies. Its action of reversible reduction in cell mobility helps to arrest cell for detail studies. It also used as abortifacient from long time in study area. Many women of the study area used it as Ethinogynaecomedicines. *Hemidesmus indicus* is famous in Gourbanjara community of the study area. They use to add its rhizome in tea preparations to fight the atmospheric changes due to rainy season. It is used in many medicinal preparations. It is alternative tonic to Safed musali and Kali musali. Its endless roots easily available to local healers. All the above discussed underground rhizome bearing species are very important ethno medicinally. Due to there over

exploitation and habitat loss they become endemic. Paachmauli is small endemic site for this ethnomedicinal plants. But due to deforestation for agriculture purposes turn the natural site into endemic one. Many pharmacy companies taking benefits from these incredible plant species. Ethnic groups of the area are main beneficiaries, but they were neglected. Nation health scheme and policies towards Ethnomedicines changing now, but they are out of reach of the natives. We have to take firm step toward these neglected ethnic groups.

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