

RESEARCH REPORT



Commonly used medicinal plants in N. Mualcheng, Mizoram, India

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Medicinal plants are the source of therapeutic agents in traditional medicines. The present study investigated Mizo traditional medicinal plants commonly used and available at N. Mualcheng, a village in Mizoram, India. The most important plants in terms of usage and availability as 10 species belonging to 9 families, of which Asteraceae contributes two species (such as *Blumea lanceolaria*, *Acmella* sp.), while Fabaceae, Acanthaceae, Costaceae, Orobanchaceae, Proteaceae, Elaeagnaceae, Smilacaceae and Plantaginaceae contribute one species each such as *Mimosa pudica*, *Thunbergia grandiflora*, *Chamaecostus cuspidatus*, *Aeginetia indica*, *Helicia robusta*, *Elaeagnus caudata*, *Smilax perfoliata* and *Plantago asiatica* respectively. An important feature of these medicinal plants is that some of them are used for complex diseases including kidney problem, gastric ulcer and diabetes mellitus.

Keywords: N. Mualcheng, medicinal plants, traditional knowledge, disease, kidney problem.

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Introduction

Mizoram is known to have one of the highest species richness in medicinal plants and the uses and applications are varied from one place to another.¹ Before the times when modern pharmaceuticals and synthetic drugs were even introduced in Mizoram, plants had been used as medicinal remedies in search of a cure for diseases from the far past by our ancestors. From the times when each village had a chief, one of the most important tasks given to the local physicians, appointed by chief, was discovering new medicines suitable for the disease as having a good physician was the pride of the village. Furthermore, those discoveries have been still validated and extended till today. Even though the modern world and technology kicked in the state over a century, some hearts, exclusively the villagers', has been won by herbal medicines over synthetic ones since the plants used as medicines are easily

available to them and relatively less expensive while some with the think of zero money spending on medicines since they do not afford them. Undoubtedly, the true potential of these plants and compounds of their medicinal properties has not yet discovered and identified in many plants, but still many users choose to continue using them as they have less side effects on the human body.²

Rai and Lalramnghinglova reported from Mizoram in 2010 that there were 159 ethno-medicinal plants belonging to 134 genera and 56 families from different sites such as tropical forest, home gardens, roadsides and Mizoram University campus which significantly shows the importance and popularity of folk medicine in Mizo society.³ However, site-specific covering individual village or district has not been documented. This is important as geographical variants and differences in

application of some plants are evident across the state.

N. Mualcheng, East Lungdar Block of Serchhip district, is located in the northeastern part of Mizoram with a distance of about 160 km away from Aizawl, the capital city of the state. As per Census 2011, it has a population of 1423 with about 264 households.⁴ Most of the villagers are dependent on slash-and-burn cultivation while the only government job there is teaching at schools. This village also has some specific plants which have been practiced and mode of uses that has been inherited from their former inhabitants of the village. In addition to that, when people get injured, the most effective first aid is derived from plants, which are just near at hand such as *Thunbergia grandiflora* and other plants like *Mikania micrantha*, *Eupatorium*

odoratum, etc., which were not included in this study.

Methodology

The ethno botanical survey was conducted in November 2020. The folklore information was collected from one informant, the village elder, who is known as the longest user of traditional medicine in the village through interview and discussion. Out of 38 medicinal plants surveyed, only 10 plants, which are easily available, were selected for the present study.

Results and Discussion

The present study showed that people in N.



Figure 1 | Hlonuar



Figure 2 | Buarze



Figure 3 | Vako



Figure 4 | Sumbul chi khat



Figure 5 | Sangharvaibel



Figure 6 | Ankasate



Figure 7 | Pasaltakaza



Figure 8 | Sârzûk



Figure 9 | Kaiha



Figure 10 | Kelbaan

Table 1 | List of medicinal plants used in N. Mualcheng.

Local name	English name	Family	Scientific name	Parts used	Mode of uses	Medicinal uses
Hlonuar	Touch-me-not	Fabaceae	<i>Mimosa pudica</i> L.	Whole plant	Decoction	Kidney problems, jaundice
Buarze	Lanceleaf Blumea	Asteraceae	<i>Blumea lanceolaria</i> (Roxb.) Druce	Whole plant	Decoction	Stomach ulcers, wounds and cut
Vako	Blue trumpet vine	Acanthaceae	<i>Thunbergia grandiflora</i> Roxb.	Whole plant	Direct application, decoction	Cut and wounds, gastric ulcer
Sumbul chi khat	Insulin plant	Costaceae	<i>Chamaecostus cuspidatus</i> (Nees & Mart.) C. Specht & D.W. Stev.	Leaves and roots	Decoction	Blood sugar reducer
Sangharvaibel	Forest ghost flower	Orobanchaceae	<i>Aeginetia indica</i> L.	Whole plant	Decoction	Mumps
Ankasate	Toothache plant	Asteraceae	<i>Acmella sp.</i>	Leaves and flowers	Eaten raw or cooked	toothache, enterobiasis
Pasaltakaza		Proteaceae	<i>Helicia robusta</i> (Roxb.) R. Br. Ex Wall.	Bark	Decoction	Stomachache, Kidney problems
Sârzûk	Silverberry	Elaeagnaceae	<i>Elaeagnus caudata</i> Schlttdl	Leaves	Decoction	Stomachache, gynecologic problem, expelling placenta
Kaiha	Greenbriar	Smilacaceae	<i>Smilax perfoliata</i> Lour.	Tender stem gel (sap), root	Direct application on skin, decoction	Scar remover, Sciatica
Kelbaan	Asian plantain	Plantaginaceae	<i>Plantago asiatica</i> L.	Whole plant	Decoction, Direct application on skin	Gastric ulcer, diabetes, cuts and wounds, kidney problems

Mualcheng commonly use 10 medicinal plants belonging to 9 families. Two species belong to Asteraceae while there was one species each in Fabaceae, Acanthaceae, Costaceae, Orobanchaceae, Proteaceae, Elaeagnaceae, Smilacaceae and Plantaginaceae.

Mimosa pudica L. (Figure 1) is one of the widely used medicinal plants and claimed to have high ayurvedic properties to treat different types of diseases.⁵ The same ethno-botanical used of *M. pudica* in jaundice is also reported from central India.⁶ Some research also proved that this plant has high antimicrobial properties.⁷ It is also found that *M. pudica* is effectively used for nephrolithiasis treatment.⁸

Blumea lanceolaria (Roxb.) (Figure 2) seems to have high anti-inflammatory and wound healing properties. Druce *Blumea* of different species like *B. balsamifera* is effectively used as traditional medicine in Indonesia, Myanmar and in other parts of South-east Asia to treat peptic ulcers as this plant consists of flavonoids which help to increase the amount of gastric mucus glycoprotein and inhibition of prostaglandin production.⁹

Rai and Lalramnghinglova (2010) reported the same practice of using *vako* (*Thunbergia grandiflora*, Figure 3) in cuts and wounds in other parts of Mizoram as it has an antiseptic property. This report also mentioned that decoction of the leaves is taken

as diabetes medicine.³ Medicinal uses of this plant in stomach problems is reported from South west Bengal and Sonaghati district, Uttar Pradesh, India.^{10,11}

It is interesting to note that the insulin plant, *Chamaecostus cuspidatus* (Figure 4) is already known for its antidiabetic activity. The experiments and investigations performed in experimental diabetic rats by the leaves extract of *C. cuspidatus*, also known as *Costus igneus*, *C. cuspidatus*, *C. pictus*, *Globba cuspidatus*, revealed the presence of steroids and alkaloids which then showed significant antidiabetic activity.^{12,13}

The application of decoction of *Aeginetia indica* (Figure 5) rhizome is reported from western and other part of Mizoram.^{3,14} The experiment claimed that among six commonly used herbal decoctions thought to benefit the liver, *Aeginetia indica* decoction has the highest inhibitory effect on hepatitis C virus (HCV) infection by reducing NS5A phosphorylation at serine 235.¹⁵

There are several reports on *Acmella* sp. (Figure 6) as a commonly used medicinal plant for many dental problems such as periodontitis and toothache treatment by chewing flowers and leaves, and for this a common name, toothache plant, has been given. It also has an effective antifungal property against the fungi *Cryptococcus neoformans*, *Microsporium gypseum* and antibacterial properties against *Staphylococcus aureus*, *S. epidermidis*, *Escherichia coli*, etc.^{16,17} The uses of *Acmella* sp. to treat enterobiasis (itching of anal area caused by pinworm infection) is also reported from the studies of pinworms and other root canal pathogens like *Escherichia faecalis*, *Staphylococcus* sp., *Streptococcus* sp., etc.¹⁸

The record of medicinal plants and uses in some papers showed that the usage of decoction of bark and leaves of the *Helicia robusta* (Figure 7) for treating stomachache and kidney problems in different parts of Mizoram has been reported,^{19,20} and the uses of its root decoction for stomach ulcer is also recorded from other studies within Mizoram.²¹

Decoction of *Elaeagnus caudata* leaves (Figure 8), particularly taken as medicine for menstruation and gynecological problem, is widely used in all parts of Mizoram and the utilization of fresh root extract diluted with water to prevent miscarriage is also reported from North Cachar hills, Assam.^{22,23}

The root and stem of *Smilax perfoliata* (Figure 9) is taken as anti-cancer and anti-dysenteric remedies as well as in urinary problems. It richly contains antimicrobial and antioxidant properties.²⁴ Some reports also claimed that this plant is also used to prevent scars from smallpox.²⁵

Plantain plant (Figure 10) is widely used for many medicinal purposes such as wounds, diabetes, acne, etc. as it has an antibacterial property and many important biological activities which includes iridoid glucosides, phenylethanoid glycosides, flavonoids, terpenoids, phenolic acids and polysaccharides.²⁶ Many research and experiments have also been

performed on the utilization of this plant and its other species for its antipeptic activity.²⁷

Conclusion

This review clearly shows that the types and uses of medicinal plants has been surveyed, documented and recorded in every corner of Mizoram and the need of more and deeper studies on this field is required to exactly know the truth behind these plants. Moreover, this survey importantly shows that medicinal uses of some plants have not been made known to other places rather than this village which makes it obvious that many more discoveries can be done on scientific basis.

Conflict of interest

The authors declared no conflict of interest.

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