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## Simple phytotherapeutic practices of a Tripura tribal medicinal practitioner in Bandarban district, Bangladesh

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### Abstract

Bangladesh contains dozens of large and small tribes with the tribal population estimated to be around 1-2% of the total population of 160 million. Most tribes still reside in remote forested areas. Their own tribal medicinal practitioners form the mainstay for their medicinal needs, though in recent times the younger generation of tribal people is switching more and more towards allopathic medicine. It is therefore necessary to document tribal medicinal practices before they become irretrievably lost. The objective of the present study was to document the phytotherapeutic practices of a Tripura tribal medicinal practitioner (TMP) practicing in the Bandarban district of Bangladesh. The TMP was found to use 15 plants distributed into 14 families in his treatment. The plants were used to treat various disorders like respiratory tract disorders, fever, cuts and wounds, gastrointestinal tract disorders, allergy and hair loss. Three plants were used to brighten skin or lighten skin color suggesting that the Tripura tribal people may be susceptible to blackening of skin, which is quite possible from their toiling under the sun year around.

**Keywords:** tribal medicine, phytotherapy, tripura, bandarban, Bangladesh

### Introduction

Bangladesh is home to dozens of large and small tribes with one recent paper mentioning the number of tribes to be 58<sup>[1]</sup>. The tribal population has been variously estimated to comprise about 1-2% of the total population of 160 million people. The various tribes can be found residing in the comparatively more forested and remote regions in the northeast, northwest, north-central and southeast regions of the country. A survey conducted on the healthcare-seeking behavior of the tribal people of Bangladesh indicated that traditional healers or tribal medicinal practitioners (TMPs) are still popular among the various tribes of Bangladesh and distinct differences exist among the various tribal people regarding seeking of healthcare treatment<sup>[2]</sup>. However, tribal medicinal knowledge is rapidly getting lost due to a number of factors like introduction of allopathic medicine, deforestation with consequent loss of medicinal plants, and increase in literacy rate among the tribal people with consequent regarding of traditional medicine as antiquated<sup>[3]</sup>.

The knowledge of folk medicinal practitioners (FMPs) and tribal medicinal practitioners (TMPs) can play an important role in the discovery of new drugs for they mostly use plants in their treatment and plants have always been excellent sources for new drug discoveries<sup>[4-6]</sup>. At the same time, general awareness of the medicinal properties of plants can aid in their conservation, and spur scientific interests and research, which in turn can lead to discovery of new drugs. At the very least, scientific validation of traditional medicinal formulations can result in affordable and readily available formulations for disease treatment. We have been documenting folk and tribal medicinal practices of Bangladesh for a number of years<sup>[7-29]</sup>. The objective of the present study was to document the phytotherapeutic practices of a Tripura TMP practicing in the Bandarban district of Bangladesh.

### Materials and Methods

Information was collected from Dhanebadu Tripura, male, Antahapara, Rowangchaari, Bandarban district, Bangladesh. Interviews were conducted with the help of a semi-structured questionnaire and the guided field-walk method as described by Martin<sup>[30]</sup> and Maundu<sup>[31]</sup>. In this method, the TMP took the interviewers to locations from where he collected his medicinal

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plants, pointed out the plants, and described their uses along with providing the local names. Plant specimens were collected, pressed and dried in the field and later identified at the Bangladesh National Herbarium in Dhaka. Informed consent as to dissemination of any information provided by the TMP including mentioning the TMP's name and gender was obtained followed by interviews conducted in Bengali, in which language both TMP and interviewers were fluent. Plant specimens were deposited with the Medicinal Plant Collection Wing of the University of Development Alternative.

## Results and Discussion

The TMP was found to use 15 plants distributed into 14 families in his treatment. The plants were used to treat various disorders like respiratory tract disorders, fever, cuts and wounds, gastrointestinal tract disorders, allergy and hair loss. Three plants were used to brighten skin or lighten skin color. The results are shown in Table 1. The TMP used simple formulations; in most cases, a single plant or plant part was used to treat a single disease.

*Calotropis procera* was used by the TMP to treat asthma and respiratory difficulties. The plant is also used in Ayurveda to treat asthma and respiratory infections like bronchitis [32]. Interestingly, flowers of the plant were asked by the TMP to be both smelled and taken orally. Aromatherapy is an ancient system of medicinal practice still in use [33]. In this case, the TMP was using a combination of oral partaking and

aromatherapy for treatment. To our knowledge, this is the first report of aromatherapy treatment used by a Tripura tribal practitioner.

Three plants were used by the TMP to brighten or lighten skin. The plants are *Aloe barbadensis*, *Santalum album*, and *Curcuma longa*. All three plants are in use in most Bangladesh households for brightening or lightening skin colors or improving the texture of skin. *Aloe barbadensis* leaf pulp contains a number of compounds belonging to the anthrone and chromone class, which can be responsible for the brightening of skin and for softening skin [34]. The anti-tussive activity of *Ocimum sanctum* (used by the TMP to treat coughs) has been reported [35]. *Oxalis corniculata* (used by the TMP to treat dysentery) has been reported to inhibit enteric pathogens [36].

Overall it can be concluded that there is merit to the TMP's phytotherapeutic practices. Tribes have resided in remote or forest areas for possibly thousands of years, and so through possible trials and errors are more knowledgeable about the medicinal properties of plants. This, even today, is a necessity to be knowledgeable about the medicinal properties of plants because tribes do not have ready access to or prefer allopathic doctors. Thus the flora surrounding their habitat forms the major means for curing diseases. Scientists have utilized this knowledge to discover new drugs and this process is likely to continue.

**Table 1:** Medicinal plants of the Tripura tribal medicinal practitioner and ailments treated.

S. N.	Scientific Name	Family Name	Local Name	Parts used	Ailments treated
1	<i>Calotropis procera</i> (Ait.) Ait.f.	Apocynaceae	Akondo	Flower	Asthma, respiratory difficulties. Flowers are taken orally and also smelled.
2	<i>Aloe barbadensis</i> L.	Asphodelaceae	Ghritokumari	Leaf pulp	To brighten skin. Paste of leaf pulp is topically applied to skin.
3	<i>Tagetes erecta</i> L.	Asteraceae	Gada	Flower	To stop bleeding from external cuts and wounds. Flower paste is topically applied.
4	<i>Ocimum sanctum</i> L.	Lamiaceae	Tulsi	Leaf	Fever, cold and coughs. Leaf juice is orally taken.
5	<i>Lygodium flexuosum</i> (L.) Sw.	Lygodiaceae	Dheki shak	Leaf	Gastric problems. Leaves are cooked and eaten as vegetable.
6	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Neem	Leaf	Allergy. A few leaves are taken orally daily.
7	<i>Moringa oleifera</i> Lam.	Moringaceae	Sajina	Leaf	Indigestion, constipation. Leaves are cooked and eaten as vegetable.
8	<i>Oxalis corniculata</i> L.	Oxalidaceae	Amrul shak	Whole plant	Fever, dysentery. Whole plants are cooked and eaten as vegetable.
9	<i>Emblica officinalis</i> Gaertn.	Phyllanthaceae	Amloki	Fruit	Hair loss. Fruits are eaten and fruit paste applied topically to scalp.
10	<i>Aegle marmelos</i> (L.) Corr.	Rutaceae	Bael	Fruit	Diarrhea, constipation. Ripe fruits are eaten.
11	<i>Santalum album</i> L.	Santalaceae	Chandan	Bark, root	To lighten skin color. Paste of bark and root is topically applied to skin.
12	<i>Solanum torvum</i> Sw.	Solanaceae	Tit begun	Fruit	Allergy. Fruits are taken orally.
13	<i>Coriandrum sativum</i> L.	Umbelliferae	Dhone pata	Whole plant	Indigestion. Whole plant is added to various culinary dishes and eaten in the cooked form. Whole plants are also eaten raw in salads.
14	<i>Curcuma longa</i> L.	Zingiberaceae	Holud	Rhizome	To brighten skin. Rhizome paste is applied to skin.
15	<i>Zingiber officinale</i> Roscoe	Zingiberaceae	Ada	Rhizome	Dizziness, indigestion, cold. Rhizome slices are taken orally.

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