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#### Janifer Kalam

Department of Pharmacy,  
University of Development  
Alternative, Lalmatia, Dhaka,  
Bangladesh

#### Md Shamim Bappy

Department of Pharmacy,  
University of Development  
Alternative Lalmatia, Dhaka,  
Bangladesh

#### Mohammed Rahmatullah

Professor, Department of  
Pharmacy, University of  
Development Alternative,  
Lalmatia, Dhaka, Bangladesh

#### Correspondence

**Mohammed Rahmatullah**  
Professor, Department of  
Pharmacy, University of  
Development Alternative,  
Lalmatia, Dhaka, Bangladesh

## A folk herbalist's use of medicinal plants in Feni district, Bangladesh

**Janifer Kalam, Md Shamim Bappy and Mohammed Rahmatullah**

#### Abstract

A folk herbalist (FH) is generally considered a folk medicinal practitioner with a small repertoire of medicinal plants or who practices folk medicine on a part-time basis. Usually FHs do not treat a large number of diseases, but occasionally they would use a known plant for a novel therapeutic purpose. The objective of this study was to document the therapeutic uses of plants by a FH in Feni district, Bangladesh. The FH was observed to use only 6 plants distributed into 6 families, which plants were used for treatment of pyorrhea, gastrointestinal problems, pain, diabetes, urinary tract infections, fever and coughs.

**Keywords:** Phytotherapy, folk herbalist, feni, Bangladesh

#### Introduction

Folk herbalists (FHs) are essentially part-time folk medicinal practitioners in Bangladesh. Although they practice phytotherapy, their choice of plants and diseases treated are few in number. On the other hand, FHs occasionally use novel plants or novel treatment methods. Phytotherapy is possibly the oldest form of therapeutic practice used by human beings, and over thousands of years many important medicinal plants have been identified resulting in isolation and identification of many allopathic drugs.

Globally, medicinal plants are fast disappearing under the twin threats of climate change and human encroachment of forests and fallow lands. If this trend continues, many floral species will go extinct along with the possibility of discovering new drugs from them. As such we had been documenting the medicinal plants used by traditional medicinal practitioners of Bangladesh for almost a decade<sup>[1-18]</sup>. The objective of the present study was to document the use of plants for therapeutic purposes by a FH from Feni district, Bangladesh.

#### Materials and Methods

The documentation was carried out in 2017 with a male FH named Kamal Uddin practicing in Abdul Nabi village in Feni district, Bangladesh. Prior Informed Consent was first obtained from the FH. He was told about the nature of our visit. Actual interviews were conducted in the Bengali language, which was spoken fluently by the FH as well as the interviewers. The interviews were conducted with the help of a semi-structured questionnaire and the guided field-walk method of Martin<sup>[19]</sup> and Maundu<sup>[20]</sup>. In this method the FH took the interviewers on guided field-walks through areas from where he collected his medicinal plants, pointed out the plants, and described their uses. All plant specimens were photographed and collected on the spot, pressed, dried and brought back to Bangladesh National Herbarium at Dhaka for identification. Voucher specimens were also deposited with the Medicinal Plant Collection Wing of the University of Development Alternative.

#### Results and Discussion

The FH used a total of 6 plants only in his treatment. The plants were distributed into 6 families and were used for treatment of pyorrhea, gastrointestinal problems, pain, diabetes, urinary tract infections, fever and coughs. Different parts of the same plant may be used to treat different diseases, like while flowers of *Spilanthes acmella* were used to treat pyorrhea, the leaves were used to treat gastric problems. The results are shown in Table 1

**Table 1:** Medicinal plants and formulations of the FH from Feni district, Bangladesh

Serial Number	Scientific Name (English name) Accession Number	Family Name	Local Name	Parts used	Ailments and mode of medicinal use
1	<i>Spilanthes acmella</i> (L.) L. (Toothache plant) 45451	Asteraceae	Piriya (pyorrhea) gach	Leaf, flower	Pyorrhea. Flower paste is applied over the gums. Gastric problems. Paste of leaves is taken orally.
2	<i>Heliotropium indicum</i> L. (Indian Heliotrope) 45453	Boraginaceae	Hati chota	Leaf, stem	Pain in various parts of the body. Juice obtained from crushed or boiled leaves and stems is topically applied to painful areas.
3	<i>Phyllanthus reticulatus</i> Poir. (Black honey shrub) 45455	Phyllanthaceae	Chikti	Young stem	Dysentery in children (1-5 months old). One spoon juice obtained from crushed young stems is orally administered thrice daily till cure.
4	<i>Scoparia dulcis</i> L. (Sweet-broom) 45452	Plantaginaceae	Bon dhonia	Leaf	Diabetes, urinary tract infection. Leaf juice is taken orally.
5	<i>Leea indica</i> (Burm.f.) Merr. (Bandicoot Berry) 45454	Vitaceae	With langa	Leaf, stem	Lower abdominal pain. Paste of leaf and stem is taken orally on an empty stomach in the morning.
6	<i>Alpinia nigra</i> (Gaertn.) Burt. (Black Galangal) 45450	Zingiberaceae	Tara gach	Leaf, flower, rhizome	Fever. Juice obtained from crushed rhizome is taken orally. Coughs. Juice obtained from crushed leaves and flowers is taken orally.

The stems of *Spilanthes acmella* have been reviewed for their use in tooth problems, while roots are used for gastrointestinal disturbances<sup>[21]</sup>. However, the FH used flowers for pyorrhea, and leaves for gastric problems. Pyorrhea is a periodontal disease, which can lead to serious complications. It is treated in allopathic medicine with antibiotic, which suggests that the flowers of the plant may have antimicrobial properties. Alcoholic extract of whole plant is reportedly anti-microbial against a number of bacteria<sup>[22]</sup>. Analgesic activity of *Heliotropium indicum* extracts has been reported<sup>[23]</sup>; the plant was used by the FH to treat pain. Anti-diarrheal effect of methanolic extract of leaves of *Phyllanthus reticulatus* leaves have been reported in mice against magnesium sulfate-induced diarrhea<sup>[24]</sup>; the FH used young stems of the plant against dysentery in children.

*Scoparia dulcis* leaves were used by the FH to treat diabetes and urinary tract infections. Anti-diabetic activity has been observed with methanol extract of plant in streptozotocin diabetic rats<sup>[25]</sup>. Fruit extract of the plant has been shown to inhibit common bacterial pathogens causing urinary tract infections<sup>[26]</sup>. *Leea indica* was used by the FH to treat abdominal pain; the analgesic potential of the plant has been scientifically validated<sup>[27]</sup>. In Ayurveda, a number of *Alpinia* species are used against coughs and fevers<sup>[28]</sup>; the FH used *Alpinia nigra* against coughs and fever.

The above discussion suggests that the FH did not use plants indiscriminately for therapeutic purposes. Instead, all his plants can be taken as scientifically validated in their therapeutic uses from available pharmacological studies. This does not automatically qualify a plant as a drug; bio-active components need to be isolated and identified, toxicological studies need to be carried out, clinical trials need to be performed. But the results clearly point out that plants have been and still can be potential sources of useful drugs.

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