

Ethnobotanical Plants Used for Dental and Oral Healthcare in the Kali Gandaki and Bagmati Watersheds, Nepal

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Abstract

The local people of the Kali Gandaki and Bagmati watersheds of Nepal nurture rich knowledge about ethnobotanical plants of their surroundings. In the course of the survey of the useful plants, 22 species have been documented which are being used for dental and oral healthcare.

Key Words: Ethnobotanical plants; healthcare; traditional practices.

Introduction:

The rural people of Nepal rely on plant resources for their domestic and primary health care needs. They collect the useful plants and their parts from various habitats such as forests, scrubs, grasslands, cultivated fields, wetlands and riverbanks and use them following traditional practices. During the survey of the ethnobotanical plants of Nepal, the authors have also collected and documented some ethnobotanical plants used for dental and oral healthcare with the objectives of documentation of the useful species and their indigenous uses before some of these are eliminated, or before the inhabitants of the watersheds abandon their traditional practices. Although some works relating to this area have been already carried out by Acharya (1996); Bhattarai (1992); Joshi (1988); Joshi and Edington (1990); Joshi and Joshi (2000, 2005); Joshi, Shrestha and Joshi (2003); Manandhar (2002); and Panthi and Chaudhary (2003), the vast store of ethnobotanical information with traditional knowledge and practices have still not been comprehensively documented. In the present paper, an attempt has been made to enumerate the species which are being used by local people of some villages of the Kali Gandaki and Bagmati watersheds to cure dental and oral problems.

Materials and Methods

Ethnobotanical survey was conducted in the villages: Ramdi, Balam, Beltari, Mirmi, Ridi, Syalbas and in the surrounding areas of the Kali Gandaki watershed and Okharni, Mulkhadka, Sundarijal, Chaubas and surrounding areas of the Bagmati watershed. The studied area showed diverse physical, biological as well as ethnic features. Ethnobotanical information was collected

using various methods, such as RRA, PRA, direct interviews and discussions with local people.

Results and Discussion

During the field survey, ethnobotanical data of 22 species belonging to 13 families were gathered from various habitats of the study areas and each was documented with regard to its local name, part used, collection, mode of administration and habitats of the species. The prevalent oral health problems in these watersheds are dental caries and periodontal diseases (gingivitis and pyorrhoea) and sores. In the following enumeration, the species are arranged alphabetically. Botanical name followed by family, local name, plant part used and mode of utilization.

Enumeration

1. *Acacia catechu* (L.f.) Willd (Fabaceae), Local name: Khayar.

Use: Power of stem bark is used to cure bleeding gums and sores.

Habitat: Along the bank of Kali Gandaki River, Setibeni and on the hill slopes, Beltari and Mirmi

2. *Achyranthes aspera* L. (Amaranthaceae), Local name: Apamarga.

Uses : Stem is used as tooth brush; infusion of the twig is also used as a wash for toothpain.

Habitat: Forests, Sundarijal, Okharni, Mulkhadka and Chaubas.

3. *Achyranthes bidentata* Blume, (Amaranthaceae), Local Name: Datiwan, Rato apamarga.

Uses: Young branch and twing is used as tooth brush in the festival of Teej; infusion of the twigs is also used as a wash to get relief from tooth-ache.

Habitat: Forests, cultivated field, and shady places of Mirmi, and Chaubas.

4. *Azadirachta indica* A. Juss. (Meliaceae), Local name: Neem.

Use: Twigs are used as tooth brush.

Habitat: Forests, Mulkhadka and Sundarijal.

5. *Ficus benghalensis* L. (Moraceae), Local name: Bar.

Use: Leaf power is applied against gum swelling till cure.

Habitat: Forests and roadsides, Mulkhadka, Sundarijal and OKharni.

6. *Ficus racemosa* L. (Moraceae), Local name: Dumri.

Use: Latex is applied against gum swellings till cure.

Habitat: Roadsides, Sundarijal and Chaubas.

7. *Ficus religiosa* L. (Moraceae), Local name: Pipal.

Use: Decoction of stem bark is used as mouth wash to remove the foul smell of breathing.

Habitat: Roadsides, open places, Mirmi, Randi and Ridi.

8. *Jatropha curcas* L. (Euphorbiaceae), Local name: Sajiwa.

Use: Young twig is used as tooth-brush to cure dental caries.

Habitat: Common along roadsides, cultivated fields and in wasteland, Mirmi and Beltari.

9. *Melia azedarach* L. (Meliaceae), Local name: Bakainu. .

Uses: Tender stem and branches are used as tooth brush..

Habitat: Forests, edges of cultivated fields, Okharni and Mirmi.

10. *Nicotiana tabacum* L. (Solanaceae), Local name: Surti.

Use: Leaf power is burned and applied against tooth-ache.

Habitat: Forests, wasteland, cultivated fields, Sundaijal, Mulkhdkka, Chaubas and Mirmi.

11. *Mimosa pudica* L. (Fabaceae), Local name: Lajjawati.

Use: decoction of root is used with water to gargle to reduce toothache.

Habitat: Scrubs, Mirmi.

12. *Myrica esculenta* Buch.-Ham. ex D. Don. (Myricaceae), Local name: Kaaphal.

Use: Decoction of bark is used to gargle to get relief from toothache.

Habitat: Forests, Chaubas and Sundarijal.

13. *Phyllanthus emblica* L. (Euphorbiaceae), Local name: Amalaa.

Use: Tender twigs are used as tooth-brush for mouth and teeth cleaning.

Habitat: Forests, cultivated fields, Mirmi.

14. *Portulaca oleracea* L. (Portulacaceae), Local name: Omili.

Use: Fruits and seed paste is applied on teeth and gum to get relief from tooth-ache.

Habitat: Dry places of forests, Mirmi.

15. *Potentilla flugens* Wall. (Rosaceae), Local name: Bajradanti.

Use: Infusion of roots is used as a wash of tooth pain .

Habitat: Common in open fields as well as on damp places, Forests, Mirmi.

16. *Ricinus communis* L. (Euphorbiaceae), Local name: Ander.

Uses: seeds are smoked like a cigarettes to treat worms in the teeth.

Habitats: road-side, Okharni and Mulkhadka.

17. *Rumex nepalensis* Spreng. (Polygonaceae), Local name: Halhale.

Uses: Leaf juice in water is gargled to check bleeding from teeth. .

Habitat: Moist and shady places, waste lands, Mirmi, Okharni and Chaubas.

18. *Smlix zeylanica* L. (Liliaceae).

Use: Twig boiled and is use to make a gargle to alleviate tooth pain.

Habitat: Forests, scrubs, Mirmi.

19. *Solanum xanthocarpum* Schrad. & Wendl. (Solanaceae), Local name: Kantkari.

Uses: Paste of seed is applied to gums to cure tooth-ache; fruits are burnt and fumes are inhaled to check bacterial disease of teeth.

Habitat: waste land and scrubs, Chaubas.

20. *Terminalia bellirica* (Gaertn.) Roxb. (Combricitaceae), Local name: Barro.

Uses: Decoction of fruits is gargled to cure sores in mouth; tender twigs are also used as tooth brush.

Habitat: Roadsides and forest, Syalbas, Balam and Ridi.

21. *Trichilia cannaroides* (Wight & Arn.) Benth. (Meliaceae), Local name: Akhataruva, Tamtari.

Use : Fruits are chewed to treat tooth problem.

Habitat: Forests, Mirmi.

22. *Vitex negundo* L. (Verbenaceae), Local name: Simali.

Use : Tender leaves are heated and kept between teeth against tooth-ache.

Habitat: Forests, Mulkhadka and Mirmi.

The present study reveals that the study areas are rich in useful plant diversity and the inhabitants have remarkable detailed knowledge of species identity and uses of the plant resources. The present trend of urbinization of the study areas also indicate that in spite of establishment of small western styled health centers in the area, uses of plants and traditional practices will continue to play a significant role in the socio-cultural life of these village communities. Prior to loss of these potential species and erosion of indiginous knowledge, efforts should be made to document useful species and the vast stores of indigenious ethenobotanical knowledge and practices. It will be also deserable to carry out chemical constituents of the plants and their pharmacological effects on the treatment of diseases in order to validate these plant resources as alternative drugs.

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