

# A Review on Chewing-Stick Practices Using Plants in Gujarat

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## ABSTRACT

Dental infections are one of the most common oral health issues in the world. Plaque-forming bacteria found in the oral cavity, such as *Myces*, *Actinobacillus*, *Streptococcus* and *Candida* species, cause them. Despite the widespread use of tooth brushes and tooth pastes, chewing sticks have remained a popular and accepted teeth cleaning tool in many parts of the world, particularly in developing countries. Furthermore, approximately 72 percent of the country's rural population uses a range of plant species as a tooth brush. An attempt was made to document all of the information found in ancient and modern literature, as well as information gathered during ethnobotanical surveys in various tribal and rural areas of the country. Present review highlights some of the plant species used as chewing-stick practices of specific Gujarat state.

**Keywords:** Chewing-stick, plants, Gujarat state

## INTRODUCTION

Plants have been utilised to improve dental health and promote oral hygiene for ages, and this tradition has persisted in many communities around the world since ancient civilizations. Since antiquity, India has been rich in cultural diversity, and plants have long played an important part in religion and spirituality. Plant also have utilised as natural teeth brushes in India since the dawn of humanity. Many of them were mentioned with their therapeutic characteristics and benefits for total oral

dental care in ancient literature such as Indian and Ayurvedic writings. Natural toothbrushes have a number of advantages, including acting as an antibacterial, astringent, and detergent. Additionally, it contains anti-inflammatory, abrasive, and plaque-inhibiting effects. It also improves saliva production, fights caries, and supplies nutrients for bone and tooth development, making it a natural way to whiten teeth, remove stains, and prevent plaque and cavities. (Ahmad et al, 2011). According Dhyey D. Mavani (2019) to previous data, Kharijal (*Salvadora oleoides*) is the best natural teeth cleaning stick, followed by toothpaste, Neem tree, and Babool in that order.

This is because natural products are well-known for their importance in medication development and chemical biology. In fact, many modern medications are either natural molecule mimics or have structures derived entirely or partially from natural motifs. In light of this, the current study attempted to evaluate an ethnobotanical study as well as the phytochemicals present in chewing sticks used by numerous Kenyan groups Kemboi Douglas (2016). Many studies on various chewing sticks have reported that chewing sticks have medicinal properties associated with gum healing, analgesia and antimicrobial and plaque inhibiting effect (Odongo O. et al., (2011), Muhammad S, Lawal T. (2010), Adeniyi A. et al., (2010),

Cai L et al (2000) and Wu D (2001)). This is mainly because plants contain useful compounds which exhibit antibacterial or anti-inflammatory activity (David M., 2011)

**Table 1 Plant used as chewing-stick practices using plants in Gujarat**

Sr. No	Scientific name	Common name	Habit	References
1	<i>Millettia pinnata</i> (L.) Panigrahi	Karanj	Tree	Devi, S., et al (2020)
2	<i>Acacia nilotica</i> (L.) Del.	Baval	Tree	Gadhvi, K. J., & Modi, N. R. (2019), K. D Mitaliya (Unpublished)
3	<i>Holoptelea integrifolia</i> Planch.	Kanji	Tree	Gadhvi, K. J., & Modi, N. R. (2019)
4	<i>Achyranthes aspera</i> L.	Anghedi	Herb	Gadhvi, K. J., & Modi, N. R. (2019)
5	<i>Ficus benghalensis</i> L.	Vad	Tree	K. D Mitaliya (Unpublished)
6	<i>Phyllanthus emblica</i> L.	Amala	Tree	K. D Mitaliya (Unpublished), Patel H. and Patel, R. S. (2013).
7	<i>Aegle marmelos</i> (L.) Correa	Bili	Tree	Punjani, B. L. (1998).
8	<i>Alangium salvifolium</i> (L.f.) Wangerin	Ankol	Tree	Punjani, B. L. (1998).
9	<i>Albizia lebbbeck</i> (L.) Benth.	Shiris, Sarasdo	Tree	Punjani, B. L. (1998).
10	<i>Boswellia serrata</i> Roxb.	Saledi	Tree	Punjani, B. L. (1998).
11	<i>Breynia retusa</i> (Dennst.) Alston	Kamboj	Shrub	Punjani, B. L. (1998).
12	<i>Butea monosperma</i> (Lam.) Kuntze	Khakhro, Kesudo	Tree	Punjani, B. L. (1998).
13	<i>Delonix elata</i> (L.) Gamble	Sandesro	Tree	Punjani, B. L. (1998).
14	<i>Ficus racemosa</i> L.	Umro	Tree	Punjani, B. L. (1998), K. D Mitaliya (Unpublished)
15	<i>Helicteres isora</i> L. (Plate 2e)	Antedi	Shrub	Punjani, B. L. (1998).
16	<i>Madhuca indica</i> L.	Mahua, Mahudo	Tree	Punjani, B. L. (1998), K. D Mitaliya (Unpublished)
17	<i>Mimosa hamata</i> Willd.	Kasi	Shrub	Punjani, B. L. (1998).
18	<i>Mitragyna parvifolia</i> (Roxb.) Korth.	Kadamb	Tree	Punjani, B. L. (1998).
19	<i>Nyctanthes arbor-tristis</i> L.	Parijatak, Tarbat	Tree	Punjani, B. L. (1998).
20	<i>Senegalia catechu</i> (L.f.) P. J. H. Hurter & Mabb.	Khair	Tree	Punjani, B. L. (1998).
21	<i>Senna auriculata</i> (L.) Roxb	Aaval	Shrub	Punjani, B. L. (1998), K. D Mitaliya (Unpublished)
22	<i>Senna occidentalis</i> (L.) Link	Kasundro	Herb	Punjani, B. L. (1998).
23	<i>Terminalia anogeissiana</i> Gere & Boatwr.	Dhav	Tree	Punjani, B. L. (1998).
24	<i>Acacia leucophloea</i> (Roxb.) Maslin, Seigler & Ebinger	Runjdo	Tree	Punjani, B. L. (1998).
25	<i>Vitex negundo</i> L.	Nagod	Tree	Punjani, B. L. (1998).
26	<i>Vitex trifolia</i> L.	Dhuni	Tree	Punjani, B. L. (1998).
27	<i>Ziziphus nummularia</i> (Burm.f.) Wight & Arn.	Bordi	Shrub	Punjani, B. L. (1998).
28	<i>Syzygium cumini</i> (L.) Skeels	Jambu	Tree	K. D Mitaliya (Unpublished), Patel H. and Patel, R. S. (2013).
29	<i>Tamarindus indica</i> L.; Drainage. Well	Ambli	Tree	K. D Mitaliya (Unpublished)
30	<i>Casuarina equisetifolia</i> L.	Saru	Tree	K. D Mitaliya (Unpublished)
31	<i>Kirganelia reticulata</i> (Poir) Baill.	Kamboi	Small tree	K. D Mitaliya (Unpublished)
32	<i>Indigofera oblongifolia</i> Forssk.	Zil	Herb	K. D Mitaliya (Unpublished)
33	<i>Punica granatum</i> L.	Dadam	Tree	K. D Mitaliya (Unpublished)
34	<i>Mimusops elengi</i> L.	Borsali	Tree	K. D Mitaliya (Unpublished)
35	<i>Tinospora cordifolia</i> (Willd.) Miers	Galo	Climber	K. D Mitaliya (Unpublished)
36	<i>Azadirachta indica</i> A. Juss.	Limado	Tree	K. D Mitaliya (Unpublished)
37	<i>Streblus asper</i> Lour	Sarero	Tree	K. D Mitaliya (Unpublished)
38	<i>Salvadora persica</i> L.	Kharjar, Piludi	Tree	K. D Mitaliya (Unpublished)

Present review showed total 38 plant species used as chewing-stick practices in Gujarat state, majority of plants forms were trees, shrubs, herb and only one climber. Mastication of food is the major function of the teeth, which is aided by the movement of the tongue and cheek muscles. And these structures must have enough work to accomplish in order to develop properly and remain efficient and healthy, because no tissue or organ will keep its strength and efficiency if it is not exercised. The need for robust muscular exertion is no longer

necessary and the invigorating effect of such action is lost, thanks to current methods of refining raw ingredients and softening meals through various cooking processes.

The lower region of the face has shrunk in size, especially in the civilised race, but the teeth have not changed in proportion, resulting in persons with teeth that are out of proportion to their other features and lack the space to develop properly. Chewing sticks provide this mechanical aspect, which increases jaw growth, jaw exercise and tooth hardening

Ugoji et al (2000). Dental caries, which is produced by a combination of taking a surgical substance, bacterial plaque and a vulnerable tooth surface, is the leading cause of tooth loss in young individuals. Because of their function, teeth should be cleaned at least twice a day after meals to remove any food particles lodged between them. A good flow of saliva also aids in the removal of these food particles, but this flow is greatly reduced at night and during mouth breathing, so teeth should be cleaned before retiring.

If food remains, bacteria decompose it, producing acids that destroy the enamel and expose the dentine to the bacteria's action, allowing them to penetrate the pulp cavity and cause pain. When the pulp cavity is irritated, toothache develops and a decaying tooth can cause a variety of problems, including rheumatism, lumbago and indigestion Bone's (2005).

## CONCLUSION

Using a chewing stick meets the basic criterion of oral health care and can be a good alternative to using a toothbrush to prevent oral illnesses. It is suitable for cleaning practically all teeth, is inexpensive, has a variety of medicinal characteristics and is readily available in most developing country cities and rural locations. Chewing sticks will be extremely beneficial in underdeveloped nations with inadequate financial resources and oral health care facilities for their citizens. However, more long-term trials with a bigger sample size are needed to see if the herbal-based product can replace standard tooth brush formulations. Further pharmacological and phytochemical evaluation is needed for these plant species, also medicinal plants, which may be of great importance in the creation of novel medications and antibiotic manufacturing.

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