



Traditional medicinal plant remedies to treat cough and asthmatic disorders in the Aravalli ranges in North Gujarat, India

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Abstract

Objective : A survey of ethnomedicinal plant resources used by tribes of Banaskantha and Sabarkantha districts, Gujarat state, India for the treatment of cough and asthmatic disorders. **Materials and method:** Ethnobotanical field survey with local informants was used for the purpose. **Results and Conclusion:** 50 species of 45 genera belonging to 26 families of angiosperms along with plant parts and their local formulations being used traditionally for the treatment of cough and asthmatic disorders are reported.

Keywords : Traditional medicinal plants, asthma, cough, Sabarkantha, Banaskantha, Aravalli ranges, North Gujarat

1. Introduction

Millions of people in the third world use herbal and traditional remedies. Traditional medicines are recognized by WHO as essential building block for primary health care, specially in developing and vast country like India, where qualified doctors and other medicinal staff have not reached in the tribal and remote rural areas. There is a realization today that there is need to preserve the enormous trove of wisdom and traditional knowledge as also the cultures associated with them. Not only must flora and fauna be protected but also the knowledge database often stored in the memories of elder

tribals and traditional healers. The last couple of decades have seen a resurgence of interest in the use of traditional and folk medicines. Through ethnobotanical exploration, the literature on diverse native floras and medicinal utility of plants has become voluminous [1-15].

2. Study Area

The Banaskantha district is situated in the north western part of Gujarat state between 23°35' and 24°43' north latitudes and 71°0' and 73°0' east longitudes on the banks of the Banas river. The Sabarkantha district is situated in the north

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eastern part of Gujarat state between 23°03' and 24°30' north latitudes and 72°43' and 73°39' east longitudes.

The regions are inhabited by number of ethnic groups. The predominant Scheduled Tribes is Bhil, including Bhil Garasia, Dholi Bhil, Dungri Bhil, Dungri Garasia, Chokhla Garasiya, Nayaka, Dhanka, etc. The poor tribal people who live in different remote areas of Aravalli ranges of Banaskantha and Sabarkantha districts of North Gujarat, treat their various ailments with plant remedies on the basis of their rich heritage knowledge.

The perusal of literature revealed that both the districts have never been surveyed from ethnomedicinal view point except floral studies [14]. In continuation of our earlier attempt [15], the ethnomedicinal aspect is being covered by us to collect the information from tribes regarding uses of traditional and medicinal plants of these regions for curing cough and asthmatic disorders.

3. Materials and methods

The first hand information about the plants and plant parts used as traditional remedies against cough and asthmatic disorders was collected from tribal villages of Aravalli ranges of both the districts during 1999-2001.

The data were collected by personal interviews with chieftains of different villages, elderly persons and traditional herbalists (vaidyas) who have knowledge about the therapeutic values of wild plants in different illnesses. Tribal informants were taken to the forest along with identification and collection of plants and their local uses and local names were recorded.

4. Ethnobotanical observations

The total information is arranged in alphabetical order in following manner: accession number, botanical name, family in parentheses, local

name, plant part and some formulations of plant part used.

020. *Acacia leucophloea* (Roxb.) Willd. (Mimosaceae), Aniyar / Runjdo: The stem bark is kept in mouth for 3 - 4 times a day for the quick relief of cough.

021. *Acacia nilotica* (L.) Del. subsp. *indica* (Bth.) Brenan (Mimosaceae), Baval: The stem bark powder is given orally at bed time for 10 - 12 days regularly to cure asthma.

022. *Achyranthes aspera* L. (Amaranthaceae), Anghedi: The powdered seeds given with honey or jaggery in the morning is useful in asthma. The ash of the whole plant is mixed with honey and given 3 - 4 times a day for 8 - 10 days regularly to cure cough and asthma.

023. *Adhatoda vasaca* (L.) Nees (Acanthaceae), Ardusi: The juice of fresh leaves mixed with honey or fresh leaves boiled with ginger (*Zingiber officinale*) and the decoction is given twice a day for 7 - 10 days as excellent cough remedies for chronic bronchitis and asthma. The dried leaves, smoked as cigarette, give much relief in asthma.

024. *Ailanthus excelsa* Roxb. (Simaroubaceae), Arduso: The decoction of stem bark and leaves are given for 12 - 15 days for the treatment of chronic bronchitis and asthma.

025. *Alangium salvifolium* (L.f.) Wang. (Alangiaceae), Aankol: The infusion of root bark is useful in cough disorders.

026. *Anisomeles indica* (L.) O.Ktze. (Lamiaceae), Chodharo: The ash of whole plant is mixed with powdered lindi piper (*Piper longum*) and honey and then the mixture is given orally at bed time to reduce the cough.

027. *Anogeissus latifolia* (Roxb.) Wall.ex Bedd. (Combretaceae), Dhav : The stem bark is kept in mouth for 3 - 4 times a day to cure cough.

028. *Aristolochia indica* L. (Aristolochiaceae), Vasar: The paste of fresh root is applied over chest to cure cough in children.
029. *Barleria prionitis* L. (Acanthaceae), Pilo kantaselio: The juice of fresh leaves is mixed with powdered dried fruits of black pepper (*Piper nigrum*) and then given orally twice a day for 15-20 days against asthma.
030. *Bauhinia racemosa* Lam. (Caesalpiniaceae), Setri: The dried leaves powder is smoked as cigarette to cure cough and asthma.
031. *Butea monosperma* (Lam.) Taub. (Papilionaceae), Khakhro: The red brittle resin known as Butea gum (Kamarkas) mixed with water and the water extract is very much effective against cough.
032. *Calotropis procera* (Ait.) R.Br. (Asclepiadaceae), Aakdo: The dried flowers powder is mixed with black pepper (*Piper nigrum*), slight common salt and jaggery. This preparation is given orally to cure dry cough. The dried leaves powder is used in place of tobacco in the preparation of bidi and such bidi is smoked for quick relief in cough and asthma.
033. *Capparis decidua* (Forsk.) Edgew. (Capparaceae), Kerdo: The water decoction of root is given twice a day for 7 days is useful against asthma.
034. *Cassia tora* L. (Caesalpiniaceae), Puvadiyo: The dried seeds powder is given twice a day for 7 - 10 days to cure asthma.
035. *Celosia argentea* L. (Amaranthaceae), Lapdi: The ash of whole plant is given with honey to treat cough and asthma.
036. *Clerodendrum multiflorum* (Burm.f.) O.Ktze. (Verbenaceae), Arni: The leaf juice is mixed with dried fruit powder of *Piper nigrum* and given orally to cure cough and cold. The water decoction is also useful remedy against asthma.
037. *Curcuma longa* L. (Zingiberaceae), Haldar: The dried rhizome powder with warm water is given orally at bed time for complete relief from cough.
038. *Cynodon dactylon* (L.) Pers. (Poaceae), Dharo: The root juice mixed with honey is given orally for seven days to cure cough and cold.
039. *Datura innoxia* Mill. (Solanaceae), Dhaturu: The dried leaves powder or fruit powder is smoked to cure asthma.
040. *Emblica officinalis* Gaertn. (Euphorbiaceae), Aamla: The fruit powder is given orally against asthma and bronchitis.
041. *Euphorbia hirta* L. (Euphorbiaceae), Nagla dudheli: The pills are prepared from crushed leaves and jaggery. These pills are given with warm water or tea to cure asthma.
042. *Ficus racemosa* L. (Moraceae), Umro: The dried ripe fruits are mixed with jaggery and keep for 10 days. This preparation is given orally to treat asthma.
043. *Gmelina arborea* Roxb. (Verbenaceae), Sivan: The leaves powder mixed with honey and given orally for 3 - 4 times a day for complete cure of cough.
044. *Hemidesmus indicus* (L.) Schult. (Asclepiadaceae), Upalsali: The decoction of root is mixed with sugar and milk. The preparation is given twice a day especially against cough and cold in children.
045. *Holarrhena antidysenterica* (Heyne ex Roth) Wall. (Apocynaceae), Kudo: The root powder of the plant is mixed with root powder of sag (*Tectona grandis*) and boiled in water.

The decoction is given orally once a day for 10 - 15 days against asthma.

046. *Holostemma annulare* (Roxb.) Schum. (Asclepiadaceae), Shirdodi: The flowers are generally given orally for 7 days against cough and asthma for quick relief.

047. *Lawsonia inermis* L. (Lythraceae), Mendi: The leaves juice mixed with water and sugar, which is given orally for the treatment of asthma.

048. *Leptadenia reticulata* (Retz.) Wt. & Arn. (Asclepiadaceae), Kharkhodi: The leaves juice mixed with honey and given orally against cough.

049. *Leucas cephalotus* (Lamiaceae), Kubo: The leaves juice is given orally for 10 days to cure chronic cough.

050. *Madhuca indica* Gmel. (Sapotaceae), Mahudo: The extract of the flowers is given orally for 7 days to cure cough.

051. *Maerua oblongifolia* (Forsk.) A. Rich. (Capparaceae), Dholo hemkand: The root crushed into the paste and applied over the chest of children to relieve the pain due to cough and cold.

052. *Mimosa hamata* Willd. (Mimosaceae), Kaibaval: The ash of flowers and fruits mixed with honey and given orally twice a day against cough till relief.

053. *Neuracanthus sphaerostachyus* (Nees) Dalz. (Acanthaceae), Ganthel: The ash of whole plant is mixed with either jaggery or honey and given orally 2 - 3 times a day to cure cough and asthma.

054. *Pergularia daemia* (Forsk.) Chiov. (Asclepiadaceae), Chamar dudheli: The leaves of the plant mixed with the seeds of ajma (*Trachyspermum ammi*) are boiled with water and this extract is given orally for 7 days for quick relief against cough and asthma.

055. *Punica granatum* L. (Punicaceae), Dadam: The bark (rind) of fruit is kept in mouth 3 - 4 times a day and the juice is swallowed to cure cough.

056. *Pupalia lappacea* (L.) Juss. (Amaranthaceae), Gadar zipto: The root extract is given orally against congested cough.

057. *Solanum indicum* L. (Solanaceae), Jangli ringni: The dried leaves and fruits are mixed and smoked through Chilam (smoking pipe) to cure cough and asthma. The root powder is boiled with water and given orally to cure asthma and other respiratory complaints.

058. *Sphaeranthus indicus* L. (Asteraceae), Gorakhmundi: The juice of the whole plant is warmed and mixed with powdered black pepper (*Piper nigrum*) and then given orally to cure cough.

059. *Tecoma undulata* (Sm.) Seem (Bignoniaceae), Ragat rohido: The stem bark powder boiled with milk is given orally against asthma for quick relief.

060. *Terminalia arjuna* (Roxb. ex DC.) Wt. & Arn. (Combretaceae), Arjun sadad: The decoction of stem bark is given orally to cure cough problems.

061. *Terminalia bellirica* (Gaertn.) Roxb. (Combretaceae), Baheda: The cortical part of dried fruit is kept into the mouth 3-4 times a day to cure cough.

062. *Terminalia crenulata* Roth. (Combretaceae), Sadad: The decoction of stem bark is given orally generally 1-2 tablespoon a day to cure cough problems till relief.

063. *Trachyspermum ammi* (L.) Spr. (Apiaceae), Ajmo: The paste of seeds are largely applied over chest to relieve pain in bronchitis and other problems of chest in children.

064. *Tylophora indica* (Burm.f.) Merr. (Asclepiadaceae), Damvel: The juice of fresh root bark and leaves mixed with water and given orally against asthma, till relief.

065. *Uraria picta* (Jacq.) Desv. (Papilionaceae), Pilo samervo: The ash of whole plant or leaves mixed with honey and given orally 2 - 3 times a day against cough.

066. *Urginea indica* L. (Liliaceae), Pankando: Very limited amount of crushed bulbs are given orally twice a day to reduce the stickiness of the mucus in cough and bronchitis.

067. *Vitex negundo* L. (Verbenaceae), Nagod: The leaves powder is mixed with jaggery and then it is given orally to cure cough.

068. *Vitex trifolia* L. (Verbenaceae), Nagod: The dried leaves are smoked to treat cough and asthma.

069. *Zingiber officinale* L. (Zingiberaceae), Aadu: The dried rhizome (Sunth) powder is used as medicine for chest diseases. The fresh juice of the rhizome is mixed with honey and given orally for 7 - 10 days to cure dry cough.

5. Results and Conclusion

Fifty plant species used to cure cough and asthmatic disorders in folk and traditional medicine by the tribal people of Banaskantha and Sabarkantha districts of Gujarat state, India are presented from accession no. 020 to 069 arranged in alphabetical order of botanical names.

Amongst the plants of 26 families used on cough and asthmatic disorders, maximum 6 plants were from Asclepiadaceae, followed by Combretaceae, Verbenaceae, Mimosaceae and Amaranthaceae with 4 plants each, Euphorbiaceae, Solanaceae, Zingiberaceae, Capparaceae, Papilionaceae, Caesalpiniaceae and Lamiaceae with 2 plants each and remaining 13 families had one plant each of this action.

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References

1. Chaudhury RR. (1994) *Herbal medicine for Human health*, CBS Publishers and Distributors: Delhi.
2. Chopra RN, Nayar SL, Chopra IC. (1956) *Glossary of Indian Medicinal Plants*, C.S.I.R.: New Delhi.
3. Chopra RN, Chopra IC, Varma BS. (1969) *Supplement to Glossary of Indian Medicinal Plants*, C.S.I.R.: New Delhi.
4. Nadkarni KM. (1954) *Indian Mat. Med.* Vol. I and II, Popular Prakashan Ltd.: Mumbai.
5. Anonymous (1986) *The Useful Plants of India*, C.S.I.R.: New Delhi.
6. Sharma H., Chhangte L, Dolui AK. (2001) *Fitoterapia* 72 : 146-161.
7. Nandy AK, Chakraborty A, Poddar G. (1997) *Fitoterapia* 68 (2) : 178.
8. Jain SK. (1991) *Dictionary of Indian Folk Medicine and Ethnobotany*, Deep Publication: Delhi.
9. Anonymous (1982) *The Wealth of India*, Vol. I - XI, C.S.I.R.: New Delhi.

10. Kirtikar KR, Basu BD. (1982) *Indian Medicinal Plants*, Vol. I-IV, Bishen Singh Mahendra Pal Singh: Dehradun.
11. Essman EJ. (1984) *Fitoterapia* 55(5) : 279.
12. Kakrani HN, Saluja AK. (2001) *J. Nat. Remed.* 1(2) : 121-124.
13. Rai D. (1998) *Grand Mother's Herbal Remedies*, Aditya Prakashan: Lucknow.
14. Shah GL. (1978) *Flora of Gujarat State* Part I and II, Sardar Patel University: Vallabh Vidyanagar.
15. Punjani BL, Kumar V. (2002) *J. Nat. Remed.* 2(1) : 84-87.

