

Ethnomedicinal Treatment of Cough and Asthma in the Rural Area of Wardha District (M.S.)

J. J. Shende¹, L. P. Dalal²

¹Assistant Professor in Botany, R. S. Bidkar Arts, Commerce and Science College, Hinganghat, India

²Associate Professor in Botany, J. B. College of Science, Wardha, India

Abstract: The present study is based on the field investigation of various plants used by tribals of Wardha district for the treatment of cough and asthma. In the present study 55 Plant species belonging to 30 families of dicotyledons and monocotyledons are documented. The family Euphorbiaceae and Fabaceae are dominant families with four species each followed by Family Acanthaceae, Caesalpiniaceae, Cucurbitaceae, Liliaceae and Lamiaceae with three species each, family Asteraceae, Asclepiadaceae, Amaranthaceae, Apiaceae, Poaceae, Rutaceae, Solanaceae, Verbenaceae, and Zingiberaceae represented by two species each and family Brassicaceae, Cactaceae, Cyperaceae, Mimosaceae, Moringaceae, Moraceae, Musaceae, Oleaceae, Papaveraceae, Punicaceae, Pedaliaceae, Plantaginaceae, Rhamnaceae, and Sapotaceae represented by one species each. The analysis of plant parts used for treatment of cough and asthma reveals that leaves of 28 Plants are used followed by roots, seeds and fruits of 8 plants each, stem of 7 plants, entire plant and bark of 4 plants, flowers of 3 plants, gum and rhizome each with 1 plant are employed by tribals of Wardha district.

Keywords: Cough, asthma, families, ethnomedicinal, tribals

1. Introduction

Ethnobotany has emerged as an important branch of study which focuses on the utility of different plant species and their properties as food, medicine and for other uses (Allen, *et al.*, 1990, Cotton, 1997). In India the rural population is dependent on nature for meeting their health care needs. India has a rich knowledge of medicinal plants and the art of herbal treatment has very deep roots in Indian culture. Even today in most of the rural areas people are depending on herbal drug system for primary health care. The knowledge of use of plants as a source of medicine was known to Ayurveda system of medicine since ancient time and is an important component of the health care system in India.

Plants are a great source of medicine especially in traditional medicine, which were useful in the treatment of various diseases (Bako, *et al.*, 2005). The use of plant species of the Himalaya, as medicine has been known for long time and about 1748 medicinal plants are reported from Indian Himalaya (Samant, *et al.*, 1998).

Wardha district which is under study has a dry tropical weather climate with 1100 mm rainfall. Highest maximum temperature is 47.9°C and highest minimum temperature is 25.4°C. Lowest maximum temperature was 28.9°C. and lowest minimum temperature is 10.2°C. Present study site is

at an elevation of 234 meter (767 feet) at the longitude of 78.61° East and latitude of 20.71° North (North eastern side of the state) and the landscape of the district face towards the south.

Acharya, R.M., (1985) has studied medicinal plants used for primary health care in rural areas in Wardha district. Pujani, *et al.*, (2002) reported 50 plant species belonging to 26 families are used for the treatment of cough and asthmatic disorders. Seema Gairola, *et al.*, (2010) reported 67 plant species used as cough suppressing activity. Anjaneyulu, *et al.*, (2013) reported 28 plant species belonging to 22 families are used for the treatment of cough. Mohsen Asabeigi, *et al.*, (2014) demonstrated 20 medicinal plants belonging to 10 families are used to treat respiratory diseases and disorder. Deka, *et al.*, (2014) have reported 16 plant species to cure cough from Goalpara district. Azam, *et al.*, (2016) have been reported 51 plant species belonging to 21 families used to anti cough property. Shahanaz Sultana, *et al.*, (2016) documented 60 plant species are used to remedies for cough. Salam, *et al.*, (2016) documented 30 plant species belonging to 18 families used to treat cough and cold. Rachana, *et al.*, (2016) analyze 6 plant species used in respiratory ailments. Ramteke, *et al.*, (2016) have reported electronic data base of 329 medicinal plants belonging to 76 families used for numerous health ailments from Wardha district.



Figure 1: Map of Maharashtra state showing Study area (Wardha District)



Figure 2: Map of Wardha District showing Study area

The present study was undertaken to know the medicinal plant employed by tribal for the treatment of cough and asthma. The Socioeconomic information has been provided along with valid botanical name, local name, family, parts used and method of use mention separately.

2. Methodology

The survey was conducted during the month May 2017 to April, 2018, as per the methodology suggested by Lipp, (1989). Survey of different localities of Wardha district was conducted at regular intervals and information of the plants regarding their medicinal uses were recorded from ‘Vaidus’ (medicine-man), elderly person, shepherds, and the uses of plants in specific rituals and the custom traditions are also recorded. The questionnaires for ethnobotanical studies were prepared and information was obtained by interviewing local people. The collected plants are identified with the help of flora of Nagpur district (Ugemuge, 1986), flora of Maharashtra (Almeda, 1996). Information of all species are recorded with Botanical name, Vernacular name, Family, parts used, ailments and remedy on.

3. Observations and Results

Sr.No.	Botanical Name (Vernacular Name)	Family	Parts used	Uses/ Remedy for
1.	<i>Abrus precatorius</i> L. (Gunja)	Fabaceae	Leaves	Fresh leaves are taken twice a day to cure bronchitis and cough.
2.	<i>Acacia nilotica</i> (L.) Willd. Ex. Del. (Babul)	Mimosaceae	Bark and Gum	Gum is kept inside the mouth to cure dry throat and dry cough. The stem bark powder is given orally at bed time for 10 to 12 days regularly to cure asthma.
3.	<i>Acalypha indica</i> L. (Kuppi)	Euphorbiaceae	Leaves and Branches	15 to 20 ml of whole plant extract is used in one week to cure asthma. Fresh branches of plant and leaves along with Neem extract is used to relief from cough.
4.	<i>Achyranthes aspera</i> L. (Aghada)	Amaranthaceae	Whole plant	1 to 2 gm of ash with honey is given twice a day for 3 to 6 days in cough and cold.
5.	<i>Adhatoda vasica</i> Nees. (Adulsa)	Acantheceae	Leaves and Flower	Powder of Haldi is cooked with adulsa juice and taken with fatty layer of milk to check dry cough. The juice of adulsa is mixed with honey to cure cough and asthma. The dried leaves, smoked as cigarette, give much relief in asthma.
6.	<i>Allium cepa</i> L. (Kanda)	Liliaceae (Alliaceae)	Bulb	10 to 15 ml of bulb extract with honey is given in the morning for 15 days to cure asthma. Extract of bulb along with sugar is mixed together and used in child and old person to cure cough. Boil the bulb and eat to get relief from cough.
7.	<i>Allium sativum</i> L. (Lason)	Liliaceae	Seeds	2 to 3 garlic cloves with saltis given at night for 3 days to cure cough.
8.	<i>Aloe vera</i> (L) Burm.f. (Korphad)	Liliaceae	Leaves	Extract of roasted leaf along with honey is taken for 3 to 4 days to cure cough.
9.	<i>Andrographis paniculata</i> (Burm. f.) Wall. ex. Nees. (Kalmegh)	Acanthaceae	Leaf	Prepare decoction of leaf and take six to seven days to cure cough.
10.	<i>Argemone mexicana</i> L.	Papaveraceae	Whole Plant	Decoction of entire plant, one teaspoonful twice a day, is taken orally

	(Piwala Dhatura)			to cure cough.
11.	<i>Butea monosperma</i> (Lamk.) Taub. (Palas)	Fabaceae	Barkandstem	The red brittle resin known as Butea gum is mixed with water and extract is prepared. The extracts are very much effective against cough.
12.	<i>Calotropis procera</i> L. (Rui)	Asclepiadaceae	Root	5 gm of root bark powder is taken with honey twice a day for 3 to 6 days in all types of cough.
13.	<i>Cassia occidentalis</i> L. (Kaswinda)	Caesalpiniaceae	Leaves	Leaf juice is given along with honey to cure high cough.
14.	<i>Cassia tora</i> L. (Tarota)	Caesalpiniaceae	Seeds	The dried powder of seeds is given twice a day for 7 to 10 days to cure asthma.
15.	<i>Celosia argentea</i> L. (Kombada)	Amaranthaceae	Whole Plant	The ash of entire plant is given with honey to cure cough and asthma.
16.	<i>Cereus peruvianus</i> Haw. (Apple cactus)	Cactaceae	Leaf	Fresh leaf is roasted over flame and greenish juice is obtained. Take one teaspoon of juice and one teaspoon of honey mixed together and take for seven days to cure cough.
17.	<i>Citrullus lanatus</i> (Thumb) Matsum & Nakai. (Watermelon)	Cucurbitaceae	Stem	Chew young stem daily for seven days to cure cough.
18.	<i>Clitoria ternatea</i> L. (Gokarn)	Fabaceae	Roots, Flower and Seeds	Roots are used for Vomiting and Loose motion by which unwanted substances and cough are removed from body.
19.	<i>Coriandrum sativum</i> L. (Dhane)	Apiaceae	Leaves and fruits	About 50 ml of extract is taken twice in a week for 3 weeks in case of asthma and cough.
20.	<i>Curcuma longa</i> L. (Halad)	Zingiberaceae	Stem	1 teaspoonful of turmeric powder with little black pepper powder is taken with honey or milk at night for 3 to 5 days in case of cough and cold.
21.	<i>Cyanodon dactylon</i> (L.) Pers. (Durva / Dhoob grass)	Poaceae	Whole plant	50 to 100 ml of plant juice is given twice a day for 3 to 5 days to cure asthma.
22.	<i>Datura innoxia</i> Mill. (Dhotra)	Solanaceae	Leaves and fruits	Inhalations of smoke of dried leaves powder or fruit powder is taken to cure asthma. Inhalation of smoke of Leaves is taken to release cough in the form of bulgum.
23.	<i>Euphorbia antiquorum</i> L. (Nivdung)	Euphorbiaceae	Roots and Stem	1 to 5 ml extract of roasted stem is given to children to cure cough.
24.	<i>Euphorbia hirta</i> L. (Dudnali)	Euphorbiaceae	Leaves	The pills are prepared from crushed leaves and jaggery and used the pills are given with warm water or tea to cure asthma.
25.	<i>Ficus racemosa</i> L. (Umbar)	Moraceae	Leaves, Bark and Fruit	The leaves are used in bronchitis, fruits are used in treatment of dry cough and bark is used in asthma.
26.	<i>Foeniculum vulgare</i> Mill (Sounf)	Apiaceae	Roots and Fruits	Fruits or seeds are kept inside the mouth to cure dry cough and mouth smell.
27.	<i>Hygrophila schulli</i> (Hamilt) M.R. Almeida, and S.M. Almeida. (Kolsunda)	Acanthaceae	Seeds	Paste of seeds with honey is given to cure cough
28.	<i>Lagenaria siceraria</i> (Molina) Standley (KaduBhopala)	Cucurbitaceae	Leaves	Leaves are used to get relief from cough and Pitta.
29.	<i>Lantana camara</i> L. (Ghaneri/Tantani)	Verbenaceae	Leaves	The decoction of leaves is used to treat cold, cough and flue.
30.	<i>Limonia acidissima</i> L. (Kawath)	Rutaceae	Fruit	Fruits are employed to get relief from cough, pitta and oral dehydration.
31.	<i>Madhuca indica</i> Gmel (Moh)	Sapotaceae	Flower	The extract of the flower is given orally for 7 days to cure cough.
32.	<i>Marrubium vulgare</i> L. (White horehound)	Lamiaceae	Leaf	Extract of leaf is taken with honey to cure cough and cold.
33.	<i>Momordica charantia</i> L. (Karle)	Cucurbitaceae	Leaf	Drink extracted juice from the leaves to cure cough.
34.	<i>Moringa oleifera</i> Lam. (Shevga)	Moringaceae	Leaf, Flower and Fruit.	Prepare decoction of leaf, flower and fruit separately and drink to cure cough.
35.	<i>Murraya koenigii</i> (L.) Spreng. (Kadipatta)	Rutaceae	Leaves and seeds	About 100 ml of decoction prepared by boiling fresh leaves with cumin seeds, Jaggery and Ginger is given two times a day for three days in cough and cold.
36.	<i>Musa paradisiacal</i> L. (Keli)	Musaceae	Fruit	Ripe banana with equal amount of sugar is kept in close bottle and kept this bottle on slow flame to prepare the syrup. This syrup is used in treatment of cough
37.	<i>Nyctanthes arbor-tristis</i> L. (Ratrani)	Oleaceae	Leaves and Bark	The powder of dried leaves or barks of tree are given with Betel leaf juice in a dose of 5 gm for 3 days to get relief from cough and asthma.
38.	<i>Ocimum americanum</i> L. (Ran tulas)	Lamiaceae	Leaves	50 ml of leaf decoction is administered twice a day for 3 days in all types of cough.
39.	<i>Ocimum sanctum</i> L.	Lamiaceae	Leaves	Fresh leaves of <i>Leucas aspera</i> and <i>Momordica charantia</i> and dried

	(Tulsi)			fruits of <i>Piper longum</i> are crushed together and prepared the pills. Two pills, twice a day, are administered for one week to cure asthma.
40.	<i>Pergularia daemia</i> (Forsk) Choiv (Utran)	Asclepiadaceae	Leaves	Fresh leaves of <i>Pergularia</i> , garlic, cloves and young buds of <i>Euphorbia tirucalli</i> are crushed to prepare the pills and used, daily one pill, for 10 days to cure bronchitis.
41.	<i>Plantago lanceolata</i> L. (Ribwort plantain)	Plantaginaceae	Leaf	With preparation of tea add leaves to cure cough.
42.	<i>Pongamia pinnata</i> (L.) Pierre (Karanji)	Fabaceae	Seeds and leaves	10 ml fresh leaf juice with black paper is given twice a day for three days to cure cough. Seed paste is also given in severe cough.
43.	<i>Punica granatum</i> L. (Dalimb /Anar)	Punicaceae	Seeds and Fruits wall	The fruit walls are kept in mouth for 3 to 4 times a day and the juice is swallowed to cure cough.
44.	<i>Raphanus sativus</i> L. (Moola)	Brassicaceae	Root	Teaspoonful of root extracts is given with honey twice a day for 3 days to relief cough.
45.	<i>Ricinus communis</i> L. (Erand/ Castor)	Euphorbiaceae	Roots	Decoctions of roots are used to relief from cough.
46.	<i>Saccharum officinarum</i> L. (Ganna)	Poaceae	Stem	Keep the boiled sugarcane juice in glass bottles. This liquid becomes Vinegar. This vinegar is used after Lunch or dinner to relief from dry cough for seven days.
47.	<i>Saussurea costus</i> (Falc.) Lipsch. (Costus)	Asteraceae	Rhizome	Preparation of extract from root is used to cure cough and asthma.
48.	<i>Scleria scrobiculata</i> Nees and Meyen (Nutrushes)	Cyperaceae	Leaf and Root	Prepare decoction of leaf and root to cure cough for three to five days.
49.	<i>Sesamum orientale</i> L. (Til)	Pedaliaceae	Seeds	Extract of seeds with sugar is given to cure cough.
50.	<i>Solanum nigrum</i> L. (Kamoni)	Solanaceae	Leaves, roots and Fruits	Leaves are useful as vegetable in cough. Fruits and leaves are used in cough. The dried leaves and fruits are mixed and smoked through <i>Chilam</i> (Smoking pipe) to cure cough and asthma. The root powder is boiled with water and given orally to cure asthma and other respiratory complaints.
51.	<i>Spilanthes acmella</i> (L.) C. B. Clarke ex Hook. f. (Akalkhada)	Asteraceae	Stem	Stem is squeezed to get a clean juice. Take two teaspoon of juice along with one teaspoon of honey twice daily for seven days to cure cough.
52.	<i>Tamarindus indica</i> L. (Chinch)	Caesalpiniaceae	Seeds	Paste of seeds is applied on children's head to cure from whooping cough.
53.	<i>Vitex negundo</i> L. (Nirgundi)	Verbenaceae	Leaves	The leaf powder is mixed with jaggery and employed orally to cure cough.
54.	<i>Zingiber officinale</i> L. (Ala, Sunth)	Zingiberaceae	Stem	The dried rhizome powder is used as medicine for chest diseases. The fresh juice of rhizome is mixed with honey and given orally for three to five days to cure dry cough.
55.	<i>Zizyphus mauritiana</i> Lam. (Ber)	Rhamnaceae	Leaf and Fruit	Eating of fruit gives good protection against cough.

4. Results and Discussion

The present study is based on the field investigation of various plants used by tribals of Wardha district for the treatment of cough and asthma. In the present study 55 Plant species belonging to 30 families of dicotyledons and monocotyledons are documented. The families, Fabaceae and Euphorbiaceae are dominant families with four species each followed by Families, Acanthaceae, Caesalpiniaceae, Cucurbitaceae, Liliaceae and Lamiaceae with three species each; families, Asteraceae, Asclepiadaceae, Amaranthaceae, Apiaceae, Poaceae, Rutaceae, Solanaceae, Verbenaceae, and Zingiberaceae represented by two species each and families, Brassicaceae, Cactaceae, Cyperaceae, Mimosaceae, Moringaceae, Moraceae, Musaceae, Oleaceae, Papaveraceae, Punicaceae, Pedaliaceae, Plantaginaceae, Rhamnaceae and Sapotaceae represented by one species each.

The analysis of plant parts used for treatment of cough and asthma reveals that leaves of 28 Plants are used followed by roots, seeds and fruits of 8 plants each, stem of 7 plants, entire plant and bark of 4 plants, flowers of 3 plants, gum

and rhizome each with 1 plant were employed by tribals of Wardha district.

The most common species used for treatment of cough and asthma are *Abrus precatorius*, *Acacia nilotica*, *Achyranthes aspera*, *Adhatodavasica*, *Acalypha indica*, *Allium cepa*, *Allium sativum*, *Aloe vera*, *Andrographis paniculata*, *Argemone mexicana*, *Butea monosperma*, *Calotropis procera*, *Cassia tora*, *Cassia occidentalis*, *Cereus peruvianus*, *Celosia argentea*, *Citrullus lanatus*, *Clitoria ternatea*, *Coriandrum sativum*, *Curcuma longa*, *Cyanodon dactylon*, *Datura innoxia*, *Euphorbia hirta*, *Euphorbia antiquorum*, *Ficus racemosa*, *Foeniculum vulgare*, *Hygrophila schulli*, *Lagenaria siceraria*, *Limnoria acidissima*, *Lantana camera*, *Marrubium vulgare*, *Madhuca indica*, *Moringa oleifera*, *Momordica charantia*, *Musa paradisiacal* l *Murraya koenigii*, *Nyctanthes arbortristis*, *Ocimum sanctum*, *Ocimum americanum*, *Pergularia daemia*, *Plantago lanceolata*, *Pongamia pinnata*, *Punica granatum*, *Raphanus sativus*, *Ricinus communis*, *Saccharum officinarum*, *Saussurea costus*, *Scleria scrobiculata*, *Sesamum orientale*, *Solanum nigrum*, *Spilanthes acumella*, *Tamarindus indica*, *Vitex negundo*, *Zingibe rofficinale* and *Zizyphus mauritiana*.

These observations are well supported by the previous studies of Pujani *et al.*, (2002) reported 50 plant species belonging to 26 families used for the treatment of cough and asthmatic disorders. Seema Gairola, *et al.*, (2010) reported 67 plant species used as a cough suppressing activity. Anjaneyulu, *et al.*, (2013) reported 28 plant species belonging to 22 families are used for treatment of cough. Deka *et al.*, (2014) have reported 16 plant species belonging to 13 families used to cure cough. Mohsen Asadbeigi, *et al.*, (2014) demonstrated 20 medicinal plant belonging to 10 families are used to treat respiratory diseases and disorder. Azam *et al.*, (2016) have been reported 51 plant species belonging to 21 families used to anti cough property. Shahnaz Sultana *et al.*, (2016) documented 60 plant species remedies for cough. Salam *et al.*, (2016) documented 30 plant species belonging to 18 families used to treat cough and cold. Rachana, *et al.*, (2016) analysis 6 plant species used in respiratory ailments. Ramteke, *et al.*, (2016) have reported electronic data base of 329 medicinal plants belonging to 76 families used for numerous health ailments from Wardha district.

5. Conclusion

From the result it is concluded that 55 medicinally important plants are used to cure cough and asthma. Most of the identified plants used to cure cough and asthma are the members of family Euphorbiaceae and Fabaceae and lowest number of plants used to cure cough the families are Brassicaceae, Cactaceae, Cyperaceae, Mimosaceae, Moringaceae, Moraceae, Musaceae, Oleaceae, Papaveraceae, Punicaceae, Pedaliaceae, Plantaginaceae, Rhamnaceae, and Sapotaceae.

Leaves of maximum number of 28 plants and gum and rhizome of minimum one plant are used to cure cough. The plants parts frequently used are leaf. It is also found that the preparation are mixed with honey are more effective and without side effect. These plants are *Adhatoda vasica*, *Zingiber officinale*, *Cassia occidentalis*, *Aloe vera*, *Hygrophila schullii*, *Celosia agentea*, *Achyranthes aspera*, *Calotropis procera*, *Curcuma longa*, *Raphanus sativus*, *Spilanthes acmella*, *Cereus peruvianus*, and *Marrubium vulgare*.

It has also been seen from the study that the young generation often ignore the ancient traditional practices. There is possibility that these practices will very soon become extinct with expiry of older knowledgeable people. Every steps should be taken to conserve the rare and endangered medicinal plant species by involving research institutions, colleges, and various state department through the establishment of botanical garden and herbal garden to know the importance of medicinal plants.

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