Use of Plants in Traditional Medicines for the Cure of Respiratory Ailments in the Malwa Belt of Punjab, India

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Abstract

Traditional system of medicine is re-emerging health aid in the present scenario. A large number of plants find their use for ethnomedicinal purposes for the cure of acute as well as chronic type of ailments. Respiratory ailments due to their communicable nature are affecting human beings of almost all age groups. The chances of occurrence of such diseases fuel up in areas with high level of pollution. Keeping this in mind, the present study was commenced in the malwa region of Punjab state. During the study, ethnomedicinal knowledge regarding the use of plants against respiratory ailments in the folk medicines was documented. A total of 83 plants belonging to 37 families were recorded to be used against respiratory diseases. Some of the new claims pertaining to the use of plants during the investigation indicate the presence of some valuable phytochemicals present in them and their use in future with more significant perspectives. During the present investigation, it was also felt that there is need of sustainable use of such valuable resources and making the younger generation more aware of ethnomedicinal plants.

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Keywords

Ethnomedicinal plants, acute and chronic ailments, respiratory diseases, Traditional use, Phytochemicals, Folk medicine.

Introduction

According to WHO report, about 65-80% of the world population, especially of the developing nations is dependent on plants for their primary health care due to economic reasons and lack of access to modern medical facilities (Calixto, 2005). After facing a setback due to advent of conventional allopathic system of medicine, use of ethnobotanical knowledge regarding use of plants for curative purposes and research has gained a momentum (Heinrich, 2000). Studies also indicate that interest in the documentation of medicinal plants and their usage has been enhanced due to costly synthetic drugs and their side effect (Hoareau et al., 1999). Medicinal plants can judiciously used to treat acute as well as chronic health problems. Worldwide and specifically in developing countries, communicable diseases especially acute respiratory infections are one of the significant factor responsible for mortality rate (4 Boutayeb, 2006). According to WHO, after neonatal causes, respiratory problems are second significant factor responsible for the death of children under age of five. Similarly due to high co-occurrence with human deficiency virus (HIV), pneumonia is significantly responsible for mortality among the adults (WHO, 2005a). Modernized life style, industrialization, and pollution are accelerating the chances of respiratory diseases. A variety of drugs are available in the market. But most of these have number of side effects associated with them. Moreover, a major chunk of the population is
deprived of these due to economic reasons. A large number of people in the rural areas rely upon the use of traditional medicines for most of their ailments and respiratory diseases are no exception. Folk medicines are reported to be widely used for both acute as well as chronic respiratory ailments. Asthma, bronchitis, whooping cough, catarrh, sinusitis, rhinitis, common cold and cough are some the common respiratory ailments cured by traditional medicines. The main positive aspect is that these do not have side effects and are pocket friendly to the user (Lewis et al., 2003).

There are number of reports regarding the use of medicinal plants for cure of respiratory diseases from the different parts of the world (Loporath et al., 2003; Busia, 2005; Focho et al., 2009; Nunkoo et al., 2012; Maroyi Alfred, 2013; Asadbeigi et al., 2014; Kayani et al., 2014; Maroyi et al., 2015). Ethnobotanical surveys have also been conducted in various parts of India (Yadav et al., 2000; Jain et al., 2001; Paria, 2005; Mahishi et al., 2005; Das et al., 2006; Savithramma et al., 2007; Patil et al., 2008; Arjun et al., 2009; Sidhalinga et al., 2013; Sahu et al., 2014). But most of such studies have been restricted to some area with tribal populations. No doubt tribal people use plants more commonly for their therapeutic values, but still a large number of people living in rural areas or some remote locations depend upon the use of plants for cure of various acute and chronic ailments.

Punjab is one of the prosperous state of India, yet a large number of people are deprived of basic medical facilities. The malwa region occupies the maximum area of the state. Most of the part of the land is under cultivation. A variety of fertilizers and pesticides are used in the fields. This leads to the pollution in the area. These pollutants cause various health problems. Ludhiana, the industrial hub of the state is the worst affected region due to industrial pollution. Thermal power plants and fertilizer factories at Bathinda and Ropar also emit a large number of pollutants in the air. The inhabitants of the malwa belt belong to different social strata. Most of the people belong to middle class and poor people.

The latter mainly include farm labourers or migrant workers. This group of people are worst affected due to respiratory diseases. The most of the population, especially in rural areas is dependent on the local traditional and herbal healers for their medical needs. Keeping in the view above factors, the present study was planned in the malwa region of the Punjab state. In Punjab, a meager work has been carried on this aspect of the plants.

### Materials and Methods

The present study was conducted during 2015-2016. Regular and exhaustive forays were made to the areas selected under study (Fig.1) during this period to gather information. For documentation of the information, semi-structured questionnaire was prepared. Traditional practitioners such as vaidyas, hakims and local people were interviewed. Queries were asked in the native language, i.e. Punjabi. Most of the localities were visited at regular intervals. The informants belonged to different age groups. They comprised of both males and female with different literacy level individuals of the area (Table 1).

![Fig.1 Showing study area](image)

All the information gathered was cross checked with available literature and other authenticated sources. The plants investigated have been collected, dried and preserved in the form of herbarium sheets following proper guidelines (Jain et al., 1977; Martin et al., 2004). Photographs of the plants in their habitat were also taken. Plants used in treatment of various respiratory diseases such as common cold, cough, bronchitis, catarrh, nasal and chest congestion, asthma whooping cough and tuberculosis etc. have been documented w.r.t. their botanical name, common name, family, habit, life span, part used and mode of administration was documented in table2.

### Results and Discussion

During the present study, 83 plants, falling under 80 different genera belonging to 44 families have been investigated for their ethnomedicinal use for various respiratory diseases. Maximum number of plants belongs...
to Asteraceae followed by Fabaceae. Most of the plants documented are dicots, few monocots and only one gymnosperm (fig.2). The present data shows that maximum of the plants used for the medicinal purpose include herbs (50%), followed by trees (29%) and shrubs (17-18%) others (13%) (Fig3). In most of the cases leaves were used either in powdered form or in the form of decoction. Whole plants, roots, bark, flowers, fruits and seeds of many plants were also reported to be used in folk medicines for this purpose. There are some of the new reports from the area, while others have been reported previously by different workers from different parts of the world as well as India. There are some reports of plants used for cure of respiratory diseases, which otherwise have been reported in case of other ailments by some other workers from different regions.

The present study indicates that a variety of plants are used for the cure of various respiratory disorders and diseases such as cough. Cold, flu, coryza, sinusitis, rhinitis, bronchitis, asthma, pneumonia, whooping cough and tuberculosis etc. Most of the plants used for their therapeutic value in respiratory ailments are herbs. In some cases, specific plant part such as root, stem, leaves, flowers, fruits or seeds are used while in others whole of the plant is used for this purpose. However, leaves were reported to be used in maximum cases.

**Table.1 Demographic details of the informants**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Demographic category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Male</td>
<td>62.8 %</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>32.7 %</td>
</tr>
<tr>
<td>Age</td>
<td>25-40 years</td>
<td>20.4%</td>
</tr>
<tr>
<td></td>
<td>40-60 years</td>
<td>28.6%</td>
</tr>
<tr>
<td></td>
<td>61-75 years</td>
<td>30.2%</td>
</tr>
<tr>
<td></td>
<td>Above 75 years</td>
<td>20.8%</td>
</tr>
<tr>
<td>Literacy level</td>
<td>Illiterate</td>
<td>38.2%</td>
</tr>
<tr>
<td></td>
<td>Primary pass</td>
<td>26.6%</td>
</tr>
<tr>
<td></td>
<td>Secondary pass</td>
<td>24.8%</td>
</tr>
<tr>
<td></td>
<td>Graduate or more</td>
<td>10.4%</td>
</tr>
</tbody>
</table>

**Fig.2 Diversity of investigated life forms**
Table 2: An inventory of plants investigated for the traditional treatment of various respiratory diseases in an alphabetical order of their botanical names, along with common name, family, habit, part used and mode of administration recommended

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Family</th>
<th>Habit</th>
<th>Part Used</th>
<th>Ailment</th>
<th>Mode of Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Abrus precatorius</td>
<td>Ratti</td>
<td>Fabaceae</td>
<td>Climber</td>
<td>Leaves</td>
<td>Cough</td>
<td>Decoction of Leaves</td>
</tr>
<tr>
<td>2.</td>
<td>Acacia nilotica Linn.</td>
<td>Kikkar</td>
<td>Mimosidae</td>
<td>Tree</td>
<td>Bark and seeds</td>
<td>Cough, Asthma</td>
<td>Decoction of bark and powdered seeds</td>
</tr>
<tr>
<td>3.</td>
<td>Achyranthes aspera Linn.</td>
<td>Puthikanda</td>
<td>Amaranthaceae</td>
<td>Herb</td>
<td>Roots</td>
<td>Dry cough and sore throat</td>
<td>Decoction of roots</td>
</tr>
<tr>
<td>4.</td>
<td>Acalypha indica Linn.</td>
<td>Indian Nettle/Kuppi</td>
<td>Euphorbiaceae</td>
<td>Herb</td>
<td>Whole plant</td>
<td>Throat infections</td>
<td>Extract of Plant parts</td>
</tr>
<tr>
<td>5.</td>
<td>Aconiton violaceum L.</td>
<td>Zeharmora</td>
<td>Ranunculaceae</td>
<td>Herb</td>
<td>Roots</td>
<td>Asthma</td>
<td>Powdered roots</td>
</tr>
<tr>
<td>6.</td>
<td>Acorus calamus Linn.</td>
<td>Sweet myrtle/ Bach</td>
<td>Araceae</td>
<td>Herb</td>
<td>Whole plant</td>
<td>Throat problems</td>
<td>Root Powder with honey</td>
</tr>
<tr>
<td>7.</td>
<td>Adhatoda vesica Nees.</td>
<td>Vasaka</td>
<td>Acanthaceae</td>
<td>Shrub</td>
<td>Bark</td>
<td>Asthma</td>
<td>Powdered bark</td>
</tr>
<tr>
<td>8.</td>
<td>Ageratum conyzoides Linn.</td>
<td>Jangli pudina</td>
<td>Asteraceae</td>
<td>Herb</td>
<td>Whole plant</td>
<td>Cough, asthma, catarrh, Concoction of leaves</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Ailanthus excelsa Roxb.</td>
<td>Aralu</td>
<td>Xanthoxylaceae</td>
<td>Tree</td>
<td>Bark, leaves</td>
<td>Asthma</td>
<td>Decoction of bark and leaves</td>
</tr>
<tr>
<td>10.</td>
<td>Allium cepa Linn.</td>
<td>Piaz/Onion</td>
<td>Liliaceae</td>
<td>Herb</td>
<td>Bulb</td>
<td>Bronchitis and asthma</td>
<td>Juice of Fleshy Stem/bulb</td>
</tr>
<tr>
<td>11.</td>
<td>Allium sativus Linn.</td>
<td>Lasun/garlic</td>
<td>Liliaceae</td>
<td>Herb</td>
<td>Garlic cloves</td>
<td>Cough and bronchitis</td>
<td>Garlic extract</td>
</tr>
<tr>
<td>12.</td>
<td>Alstonia scholaris</td>
<td>Shaitaan/devil’s tree</td>
<td>Apocynaceae</td>
<td>Tree</td>
<td>Bark</td>
<td>Bronchitis, chest congestion</td>
<td>Decoction</td>
</tr>
<tr>
<td></td>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Family</td>
<td>Part Used</td>
<td>Medical Uses</td>
<td>Preparation</td>
<td></td>
</tr>
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<td></td>
</tr>
<tr>
<td>13</td>
<td><em>Amaranthus viridis</em></td>
<td>Chulai</td>
<td>Amaranthaceae</td>
<td>Leaves</td>
<td>Cough, cold, nasal congestion</td>
<td>Leaf juice</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td><em>Artemisia vulgaris</em> Linn.</td>
<td>Mug wort</td>
<td>Asteraceae</td>
<td>Leaves and flowers</td>
<td>Cough and cold</td>
<td>Powdered leaves and flower tops with honey</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td><em>Asclepias syriaca</em></td>
<td>Milkweed</td>
<td>Asclepiadaceae</td>
<td>Roots</td>
<td>Bronchitis, catarrh, pleurisy, pneumonia, dry cough, expulsion of mucus</td>
<td>Root powder</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td><em>Atropa belladona</em> Linn.</td>
<td>Belladona</td>
<td>Solanaceae</td>
<td>Roots</td>
<td>Asthma, bronchitis, Whooping cough</td>
<td>Root powder</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td><em>Azadirachta indica</em> Linn.</td>
<td>Neem</td>
<td>Meliaceae</td>
<td>Bark</td>
<td>Tuberculosis</td>
<td>Bark Powder With honey</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td><em>Barleria prionitis</em> Linn.</td>
<td>Vajardanti</td>
<td>Acanthaceae</td>
<td>Leaves</td>
<td>Cough, bronchitis</td>
<td>Decoction</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td><em>Bauhinia varigata</em> Linn.</td>
<td>Kachnaar</td>
<td>Fabaceae</td>
<td>Flowers, leaves</td>
<td>Nasal congestion, cough and cold, catarrh</td>
<td>Dried powdered flowers as snuff or steam of leaves along with menthe</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td><em>Boerhaavia procumbens</em></td>
<td>Punernava</td>
<td>Nyctaginaceae</td>
<td>Leaves</td>
<td>Cough, bronchitis</td>
<td>Leaf juice</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td><em>Bryophyllum spp.</em></td>
<td>Pathar chat</td>
<td>Crassulaceae</td>
<td>Leaves</td>
<td>Dry cough</td>
<td>Leaf juice with powdered black pepper</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td><em>Butea monosperma</em></td>
<td>Palash/Dhak</td>
<td>Fabaceae</td>
<td>Bark</td>
<td>Bronchitis, asthma</td>
<td>Decoction</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td><em>Calotropis procera</em></td>
<td>Milkweed/Ak</td>
<td>Asclepiadaceae</td>
<td>Flowers</td>
<td>Asthma, Bronchitis</td>
<td>Dried, Powdered flowers with honey</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Family</td>
<td>Part Used</td>
<td>Medical Uses</td>
<td>Preparation</td>
<td></td>
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</tr>
<tr>
<td>24</td>
<td>Cannabis sativus Linn.</td>
<td>Bhang</td>
<td>Cannabinaceae</td>
<td>Leaves</td>
<td>Cough, cold, bronchitis, chest congestion, asthma</td>
<td>Leaf extract</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Capparis aphylla Linn.</td>
<td>Karir</td>
<td>Capparidaceae</td>
<td>Shrub</td>
<td>Throat infection, catarrh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Capsicum annuum Linn.</td>
<td>Chilly/Mirch</td>
<td>Solanaceae</td>
<td>Fruit</td>
<td>Cold, cough, flu, nasal discharge</td>
<td>Paste with honey and ginger</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Carica papaya Linn.</td>
<td>Papaya/papita</td>
<td>Caricaceae</td>
<td>Tree</td>
<td>Cough and asthma</td>
<td>Decoction of leaves and bark</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Cassia fistula Linn.</td>
<td>Indian Laburnum/Amaltas</td>
<td>Caesalpinioideae</td>
<td>Tree</td>
<td>Bark and leaves</td>
<td>Whooping cough, asthma, throat problems</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Cassia glauca Linn.</td>
<td>Chotta amaltas</td>
<td>Caesalpinioideae</td>
<td>shrub</td>
<td>Leaves</td>
<td>Cough and sore throat</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Centella asiatica Linn.</td>
<td>Brahmi booti</td>
<td>Apiaceae</td>
<td>Whole plant</td>
<td>Cough, cold, flu, nasal congestion</td>
<td>Decoction</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Citrus limon</td>
<td>Lemon</td>
<td>Rutaceae</td>
<td>Tree</td>
<td>Cough, cold, asthma</td>
<td>Juice with honey and ginger</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Citrus sinensis Linn.</td>
<td>Mausambi</td>
<td>Rutaceae</td>
<td>Tree</td>
<td>Asthma, bronchitis</td>
<td>Powdered Seeds with lukewarm water</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Conyza sumatrensis</td>
<td>Buttre weed/Makhan booti</td>
<td>Asteraceae</td>
<td>Leaves</td>
<td>Nasal congestion, Rhinitis, nasal drops</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Corianderum sativum Linn.</td>
<td>Coriander /Dhania</td>
<td>Apiaceae</td>
<td>Whole plant</td>
<td>Dry cough, bronchitis, throat problems</td>
<td>Powdered Seeds with mishri in dry cough, juice in Throat problems</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Plant Name</td>
<td>Common Name</td>
<td>Family</td>
<td>Part Used</td>
<td>Medical Conditions</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>35.</td>
<td>Cuminum cyminum</td>
<td>Safed zira</td>
<td>Apiaceae</td>
<td>Fruit</td>
<td>Asthma and bronchitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Roasted Powdered seeds along with salt and cloves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36.</td>
<td>Curcuma longa</td>
<td>Turmeric/Haldi</td>
<td>Zingiberaceae</td>
<td>Herb</td>
<td>Asthma and bronchitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Powdered Or Paste</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37.</td>
<td>Cymbopogon citratus Linn.</td>
<td>Lemon grass</td>
<td>Poaceae</td>
<td>Whole plant</td>
<td>Nasal congestion, cold, cough, bronchitis and asthma</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Whole Plant Extract</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38.</td>
<td>Cyperus rotundus</td>
<td>Nagarmotha</td>
<td>Cyperaceae</td>
<td>Herb</td>
<td>Bronchitis, asthma</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Whole Plant Extract</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39.</td>
<td>Dalbergia sisso</td>
<td>Shisham</td>
<td>Fabaceae</td>
<td>Tree</td>
<td>Throat problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Leaves</td>
<td>Decoction Of Leaves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40.</td>
<td>Datura stramonium</td>
<td>Jimson weed/Datura</td>
<td>Solanaceae</td>
<td>Shrub</td>
<td>Bronchitis, Asthma</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Leaves, seeds</td>
<td>Dried And Powdered Parts Are Sniffed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41.</td>
<td>Desmodium triflorum (L) DC</td>
<td></td>
<td>Fabaceae</td>
<td>Herb</td>
<td>Cough, flu, bronchitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Leaves</td>
<td>Decoction of leaves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42.</td>
<td>Ephedra gerardiana</td>
<td>Dwijpriya</td>
<td>Ephedraceae</td>
<td>Shrub</td>
<td>Sinusitis, rhinitis, hay fever, bronchial asthma, cough and cold</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stem and leaves</td>
<td>Decoction or Powdered form</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43.</td>
<td>Emblica officinalis Geartn.</td>
<td>Indian gooseberry/amla</td>
<td>Euphorbiaceae</td>
<td>Tree</td>
<td>Common cold and cough, bronchial asthma, chest congestion</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fruit and leaves</td>
<td>Fruit pulp, juice or concoction of leaves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>44.</td>
<td>Eucalyptus globulus Linn.</td>
<td>Safeda</td>
<td>Myrtaceae</td>
<td>Tree</td>
<td>Cold, nasal lockage, chest congestion, bronchitis, asthma</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Leaves</td>
<td>Inhalation of leaf extract</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45.</td>
<td><strong>Euphorbia hirta</strong></td>
<td>Duddhi</td>
<td>Euphorbiaceae</td>
<td>Shrub</td>
<td>Leaves</td>
<td>Cough, coryza, bronchitis, asthma</td>
<td>Extract of leaves</td>
</tr>
<tr>
<td>46.</td>
<td><strong>Feronia limonia</strong> Linn.</td>
<td>Kaith</td>
<td>Rutaceae</td>
<td>Tree</td>
<td>Fruit</td>
<td>Sore throat</td>
<td>Fruit</td>
</tr>
<tr>
<td>47.</td>
<td><strong>Ficus religiosa</strong> Linn.</td>
<td>Peepal</td>
<td>Moraceae</td>
<td>Tree</td>
<td>Leaves, Fruit</td>
<td>Cough, bronchitis, asthma</td>
<td>Decoction of leaves or fruits</td>
</tr>
<tr>
<td>48.</td>
<td><strong>Foeniculum vulgare</strong> Linn.</td>
<td>Fennel/Saunf</td>
<td>Apiaceae</td>
<td>Herb</td>
<td>Whole plant, mainly fruit</td>
<td>Cough, cold, nasal discharge, Asthma</td>
<td>Decoction of fruits or powdered seeds with luke warm milk</td>
</tr>
<tr>
<td>49.</td>
<td><strong>Fumaria officinalis</strong> Linn.</td>
<td>Pit pappra</td>
<td>Fumariaceae</td>
<td>Herb</td>
<td>Whole plant</td>
<td>Cough, throat problems</td>
<td>Decoction</td>
</tr>
<tr>
<td>50.</td>
<td><strong>Glycrrhiza glabra</strong> Linn.</td>
<td>Liquorice/ Mulatthi</td>
<td>Fabaceae</td>
<td>Shrub</td>
<td>Rhizome</td>
<td>Intermittent cough, chest congestion, bronchitis, asthma</td>
<td>Portion of rhizome is chewed or decoction</td>
</tr>
<tr>
<td>51.</td>
<td><strong>Hyocyamus niger</strong> Linn.</td>
<td>Khurasani ajwain</td>
<td>Solanaceae</td>
<td>Herb</td>
<td>Seeds</td>
<td>Cough, coryza, asthma, throat infections</td>
<td>Decoction of seeds</td>
</tr>
<tr>
<td>52.</td>
<td><strong>Ixora coccinea</strong> Linn.</td>
<td>Lal phul</td>
<td>Rubiaceae</td>
<td>Herb</td>
<td>Leaves and flowers</td>
<td>Cough, sore throat, whooping cough, bronchitis, asthma</td>
<td>Leaf juice or dried, powdered flowers with honey</td>
</tr>
<tr>
<td>53.</td>
<td><strong>Lagenaria siceraria</strong> Linn.</td>
<td>Bottle gourd/ Lauki</td>
<td>Cucurbitaceae</td>
<td>Climber</td>
<td>Seeds</td>
<td>Throat problems</td>
<td>Infusion of seeds</td>
</tr>
<tr>
<td>54.</td>
<td><strong>Lippia javanica</strong> Linn.</td>
<td>Verbenaceae</td>
<td>Herb</td>
<td>Leaves</td>
<td>Asthma, Bronchitis</td>
<td>Leaf juice</td>
<td></td>
</tr>
<tr>
<td>55.</td>
<td><strong>Mangifera indica</strong> Linn.</td>
<td>Mango / Aam</td>
<td>Anacardiaceae</td>
<td>Tree</td>
<td>Seeds</td>
<td>Whooping cough, bronchitis, asthma</td>
<td>Roasted, powdered seeds</td>
</tr>
<tr>
<td>56.</td>
<td><strong>Mentha virdis</strong> Linn.</td>
<td>Mint/ Pudina</td>
<td>Lamiaceae</td>
<td>Herb</td>
<td>Whole plant</td>
<td>Cough, cold, flu, Asthma</td>
<td>Tincture or Powdered leaves</td>
</tr>
<tr>
<td>57.</td>
<td><strong>Momordica dioica</strong> Linn.</td>
<td>Jangli karela</td>
<td>Cucurbitaceae</td>
<td>Climber</td>
<td>Fruit</td>
<td>Cough, bronchitis, asthma, hay fever</td>
<td>Fruit juice</td>
</tr>
<tr>
<td>No.</td>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Family</td>
<td>Plant Part</td>
<td>Use</td>
<td>Preparation</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>----------------</td>
<td>-------------</td>
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<td>------------</td>
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<td></td>
</tr>
<tr>
<td>58.</td>
<td><em>Musa paradisiaca</em> Linn.</td>
<td>Banana</td>
<td>Musaceae</td>
<td>Shrub</td>
<td>Fruit</td>
<td>Cough, cold, bronchitis, asthma</td>
<td>Fruit pulp with black pepper or ash of banana peel with lemon juice and honey</td>
</tr>
<tr>
<td>59.</td>
<td><em>Murraya koenigii</em> Linn.</td>
<td>Meetha Neem</td>
<td>Rutaceae</td>
<td>Tree</td>
<td>Leaves</td>
<td>Cough and sore throat</td>
<td>Leaf juice</td>
</tr>
<tr>
<td>60.</td>
<td><em>Nyctanthes arbor-tris</em> Linn.</td>
<td>Haar-shingaar</td>
<td>Oleaceae</td>
<td>Tree</td>
<td>Leaves, flowers</td>
<td>Asthma</td>
<td>Powdered seeds or infusion of flowers</td>
</tr>
<tr>
<td>61.</td>
<td><em>Ocimum basilicum</em> Linn.</td>
<td>Basil / marua</td>
<td>Lamiaceae</td>
<td>Herb</td>
<td>Leaves</td>
<td>Bronchitis, asthma</td>
<td>Decoction of leaves</td>
</tr>
<tr>
<td>62.</td>
<td><em>Ocimum sanctum</em> Linn.</td>
<td>Tulsi</td>
<td>Lamiaceae</td>
<td>Herb</td>
<td>Leaves</td>
<td>Asthma, bronchitis</td>
<td>Decoction of leaves</td>
</tr>
<tr>
<td>63.</td>
<td><em>Piper nigrum</em> Linn.</td>
<td>Black pepper</td>
<td>Piperaceae</td>
<td>Climber</td>
<td>Seeds</td>
<td>Cough, bronchitis, asthma, whooping cough</td>
<td>Powdered seeds with honey</td>
</tr>
<tr>
<td>64.</td>
<td><em>Pongamia pinnata</em> Linn.</td>
<td>Karanj</td>
<td>Fabaceae</td>
<td>Tree</td>
<td>Leaves</td>
<td>Cough, asthma</td>
<td>Leaf juice</td>
</tr>
<tr>
<td>65.</td>
<td><em>Prosopis juliflora</em> Linn.</td>
<td>Jand</td>
<td>Mimosidae</td>
<td>Tree</td>
<td>Bark</td>
<td>Cough, asthma, bronchitis</td>
<td>Infusion of bark</td>
</tr>
<tr>
<td>66.</td>
<td><em>Punica granatum</em> Linn.</td>
<td>Pomegranate/ Anar</td>
<td>Punicaceae</td>
<td>Tree</td>
<td>Fruit</td>
<td>Cough, asthma, bronchitis</td>
<td>Ash of fruit peel</td>
</tr>
<tr>
<td>67.</td>
<td><em>Rumex dentatus</em> Linn.</td>
<td>Jangli palak</td>
<td>Polygonaceae</td>
<td>Herb</td>
<td>Leaves</td>
<td>Cough, cold, catarrh</td>
<td>Leaf juice is instilled in nose</td>
</tr>
<tr>
<td>68.</td>
<td><em>Ruta vulgaris</em> Linn.</td>
<td>Jangli palak</td>
<td>Rutaceae</td>
<td>Shrub</td>
<td>Leaves</td>
<td>Throat infections</td>
<td>Leaf juice with zinger</td>
</tr>
<tr>
<td>69.</td>
<td><em>Salvia officinalis</em> Linn.</td>
<td>Sage</td>
<td>Lamiaceae</td>
<td>Herb</td>
<td>Leaves, flowers</td>
<td>Bronchitis, asthma</td>
<td>Inhalation of leaves and flowers</td>
</tr>
<tr>
<td>70.</td>
<td><em>Solanum nigrum</em> Linn.</td>
<td>Black night shade/ Makoh</td>
<td>Solanaceae</td>
<td>Herb</td>
<td>Leaves</td>
<td>Sore throat</td>
<td>Decoction of leaves</td>
</tr>
<tr>
<td>71.</td>
<td><em>Sonchus asper</em> (L.) Hill</td>
<td>Asgandh</td>
<td>Asteraceae</td>
<td>Herb</td>
<td>Roots</td>
<td>Cough, throat problems</td>
<td>Powdered roots</td>
</tr>
<tr>
<td>72.</td>
<td><em>Tagetes erecta</em> Linn.</td>
<td>Marigold/ Genda</td>
<td>Asteraceae</td>
<td>Herb</td>
<td>Leaves, flowers</td>
<td>Cough, cold, Bronchitis</td>
<td>Extract</td>
</tr>
<tr>
<td>73.</td>
<td><em>Terminalia arjuna</em></td>
<td>Arjun</td>
<td>Combretaceae</td>
<td>Tree</td>
<td>Bark</td>
<td>Cough, bronchitis, asthma</td>
<td>Decoction</td>
</tr>
<tr>
<td>No.</td>
<td>Name</td>
<td>Genus</td>
<td>Family</td>
<td>Part Used</td>
<td>Uses</td>
<td>Preparation</td>
<td></td>
</tr>
<tr>
<td>-----</td>
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<td></td>
</tr>
<tr>
<td>74</td>
<td><em>Thevetia peruviana</em></td>
<td>Kaner</td>
<td>Apocynaceae</td>
<td>Tree</td>
<td>Cough, nasal congestion</td>
<td>Snuff</td>
<td></td>
</tr>
<tr>
<td>75</td>
<td><em>Thymus vulgaris</em> Linn.</td>
<td>Thyme</td>
<td>Lamiaceae</td>
<td>Herb</td>
<td>Whole plant, leaves, flowers</td>
<td>Asthma, bronchitis, pneumonia</td>
<td>Decoction</td>
</tr>
<tr>
<td>76</td>
<td><em>Tinospora cordifolia</em> Linn.</td>
<td>Gilow</td>
<td>Menispermaceae</td>
<td>Leaves</td>
<td>Asthma, bronchitis</td>
<td>Juice</td>
<td></td>
</tr>
<tr>
<td>77</td>
<td><em>Trifolium pretense</em></td>
<td>Red clover</td>
<td>Fabaceae</td>
<td>Herb</td>
<td>Flowers</td>
<td>Asthma, bronchitis, whooping cough</td>
<td>Decoction</td>
</tr>
<tr>
<td>78</td>
<td><em>Verbascum Thapsus</em></td>
<td>Jangli tambacu</td>
<td>Scrophulariaceae</td>
<td>Herb, flower root</td>
<td>Cough, bronchitis, Asthma, nasal congestion</td>
<td>Decoction or Powdered roots</td>
<td></td>
</tr>
<tr>
<td>79</td>
<td><em>Viola odorata</em></td>
<td>Banafsha</td>
<td>Violaceae</td>
<td>Herb</td>
<td>Whole plant</td>
<td>Cough, cold chest congestion, bronchitis, asthma pneumonia</td>
<td>Decoction of Whole plant</td>
</tr>
<tr>
<td>80</td>
<td><em>Vitex negundo</em></td>
<td>Nirgundi</td>
<td>Verbenaceae</td>
<td>Herb</td>
<td>Leaves</td>
<td>Cough, asthma</td>
<td>Leaf juice</td>
</tr>
<tr>
<td>81</td>
<td><em>Xanthium stratumum</em> Linn.</td>
<td>Cocklebur/ chotta datura</td>
<td>Asteraceae</td>
<td>Shrub</td>
<td>Bronchitis, asthma, Tuberculosis</td>
<td>Infusion of Leaves in TB, fruit juice in asthma</td>
<td></td>
</tr>
<tr>
<td>82</td>
<td><em>Zingiber officinal</em> Linn.</td>
<td>Ginger/ Adrak</td>
<td>Zingiberaceae</td>
<td>Herb</td>
<td>Rhizome</td>
<td>Cough, cold, flu, asthma, bronchitis, Catarrh</td>
<td>Extract</td>
</tr>
<tr>
<td>83</td>
<td><em>Zizyphus mauritiana</em> Lamk.</td>
<td>Ber</td>
<td>Rhamnaceae</td>
<td>Tree</td>
<td>Leaves, bark</td>
<td>Cough, bronchitis</td>
<td>Leaf juice</td>
</tr>
</tbody>
</table>
Various medicines are administered in a variety of modes such as decoction, infusion, tincture, juice, powder, inhalation etc. It was also observed that people in the age group 40-70 years of age showed more knowledge regarding the medicinal value of various plants. Some of the plants are frequently used for medicinal purposes due to their easy availability and comparatively convenient mode of administration, while others are specifically used by traditional medical practitioners only as some of these are not commonly found and also have toxic effects, if administered in larger doses. There were some of the reports indicating use of the same plant for cure of more than one type of ailments. Some of such type of examples include *Acacia nilotica*, *Achyranthes aspera*, *Allium cepa*, *Allium sativus*, *Boerhaavia procumbens*, *Butea monosperma*, *Cannbis sativus*, *Calotropis procera*, *Cassia fistula*, *Emblica officinalis*, *Foeniculum vulgare*, *Ocimum sanctum*, *Terminalia arjuna*, *Zingiber officinale* etc.

**Conclusion**

India, especially Punjab is bestowed with a huge diversity of flora due to its climatic conditions and fertile land. A variety of plants growing here are economically important. Most of the portion of the Malwa region of Punjab is under cultivation. A number of plants, both cultivated as well as wild are of immense ethnobotanical importance. Many of the plants are used by traditional healers and common people for their medicinal value. Presently, huge number of people irrespective of their age, sex, country caste and creed are suffering from respiratory diseases. Many of people due to lack of their access to medical treatment or poor economic conditions are solely dependent on traditional and folk medicines.

Now a days, even the upper strata of the society is also showing inclination towards the traditional system of medicine due to its long term benefits and almost nil side effects, especially in case of various respiratory ailments like cough, bronchitis and asthma etc. Such studies can be beneficial to investigate the various phytochemicals with promising approach to be used for treatment of both acute as well as chronic respiratory diseases. However, efficacy and safety of traditional medicines is needed to be evaluated. At the same time, conservation strategies should be evaluated for sustainable use of the plant resources. This type of ethnomedicinal studies help to explore the resources of the area for medicinal purposes and preserve the nature’s precious gift to the mankind. Such surveys also generate the interest of young and future generations in this aspect of nature and also play a significant role in socio-economic upliftment of the local people.

**References**


Paria, N.D. 2005. Medicinal plant resources vol. 1&2, Kolkata, Directorate of Forest, Govt. of Bengal.


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