Aromatic Medicinal Plant Resources in Uttar Pradesh, India

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Abstract

A study on the native uses of ethnomedicinal species was carried out in the Lakhimpur-kheri district of Uttar Pradesh state in India with the major objective of identifying different medicinal plant species. Production and productivity of many wild-type plants have increase manifold but the challenges of malnutrition and threat of climate change continues by the time. The ethnobotanical data were collected through questioners by interviewing local communities and Hakims. The medicinal practitioners were treating the common diseases like cough cold, snake bite, diabetes, wounds, fever, toothache and the antitumor activity. In total 21 species belonging to 18 Genera and 15 Families were recorded which were used by inhabitants of the area.

Keywords: Medicinal plants; Wild edible plants; Lakhimpur-kheri District; Uttar Pradesh.

Introduction

Human beings have always made use of their native flora, not just as a source of nutrition, but also for fuel, medicines, clothing, dwelling, and chemical production. Traditional knowledge of plants and their properties has always been transmitted from generation to generation through the natural course of everyday life [1]. Documentation of the indigenous knowledge through ethnobotanical studies is important for the conservation and utilization of biological resources [2]. Therefore, establishment of the local names and indigenous uses of plants has significant potential societal benefits [3]. In recent years, traditional use of plants for medical purposes has drawn the attention of researchers in our country as well [4-9]. World over tribal population still store a vast knowledge of using local plants as food material and other specific uses [10]. An Ethnobotanical field study reveals that the ethnic people have considerable traditional knowledge of wild-type plants and their utilization. The literacy percentage among between total people, tribal only 0.4% is found. They live in group comprising 8-10 families scattered over a wide range in terai region. The Tharu tribal inhabiting widely separated namlets in the terai region were studied for the first time for collection of ethnobotanical data. They follow Hinduism however there are quite a handful of them who have taken up other religions like Islam, Animism. It is a recent phenomenon that quite a few number of Tharu tribes have got influenced by the preaching of Buddhism as well as by Christianity. Each and every village of Tharu community has got their indigenous deities like Bhuinyar and Gor-raja. The vegetation growing in these forests plays a vital role in the life and health care of the tribes.

Materials and Methods

The Dudhwa National Park lies in the sub-Himalayan region referred to as the Terai belt. The Park is tucked between India and Nepal in the Lakhimpur-kheri District of the Indian State of Uttar Pradesh, is located between 27° 41’ and 28° 42’ N latitudes and 80° 2’ and 81° 19’ E longitudes. Dudhwa is the last remnant of Terai region. The Tharu tribal inhabiting widely separated namlets in the terai region were studied for the first time for collection of ethnobotanical data. They follow Hinduism however there are quite a handful of them who have taken up other religions like Islam, Animism. It is a recent phenomenon that quite a few number of Tharu tribes have got influenced by the preaching of Buddhism as well as by Christianity. Each and every village of Tharu community has got their indigenous deities like Bhuinyar and Gor-raja. The vegetation growing in these forests plays a vital role in the life and health care of the tribes.

The present investigations have recorded 21 aromatic medicinal plant species used by tribal and rural communities in north eastern part of Lakhimpur-Kheri District. Our study shows that many Gaudi-Funta households living close to the Dudhwara National Park harvest date and that it is a relatively profitable activity. The Ethnomedicinal data presented herein are only one major head namely; ethnomedicinal species used by tribal people for various purposes Table 1.

Medicinal plants are common and medicinally important to treat various diseases. The local people of Gauri-funta preferred preparing the medicines by plants either as single or as in a combination with two or several plants and plant parts, since the combination rapidly cures the diseases and also enhance the immunity power of the patients. For example Extract of Cordia dichotoma leaves is used to cure cough but is also used in hair oil. While Equal amount Tamarindus indica and Ficus racemosa stem bark powder mix in coconut oil and applied on just burned skin with help of feathers of hen. This is constant with the other general observation which has been reported earlier in relation to medicinal plant studies by the Indian Traditional System of Medicine like Siddha and Ayurveda (Kirtikar and Basu; Asolkar et al..) [31,22]. The ethanol extract of Dillenia pentagyna showed the most potent antitumor activity, i.e. % ILS – 55% and % ILS – 48% at a dose of 50 and 100 mg/kg/day [32]. Different plant parts of these species, such as, root, leaf, fruit, bark and seed were used as medicine.

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reduce pressure on tribe populations and improve local livelihood. Cultivation is often proposed as an alternative to wild harvesting to *Aegle marmelos*, *Achyranthes aspera*, *Boerrhavia diffusa*, *Achyranthes aspera racemosa*, *Tamarindus indica*, *Solanum surattense*, *Scopariadulics*, threatened in the area need both, *Andrographis paniculata* and *Neobuxbaumia hirsuta*. The species like *Ziziphus xylopyrus*, *Solanum nigrum*, *Solanum indicum*, *Dillenia pentagyna*, *Solanum surattense* are used in toothache.

**Conclusion**

Nowadays, data on restricted population and scarce distribution of the species like *Achyranthes aspera*, *Aegle marmelos*, *Andrographis paniculata*, *Cordia dichotoma*, *Carissa opaca*, *Ziziphus xylopyrus*, *Tamarindus indica* and *Dillenia pentagyna* were observed locally threatened in the area need both, *in-situ* and *ex-situ* conservation and urgent protection for sustainable utilization.

The species like *Cordia dichotoma*, *Dillenia pentagyna*, *Ficus racemosa*, *Tamarindus indica* and *Dillenia pentagyna* were observed locally threatened in the area need both, *in-situ* and *ex-situ* conservation and urgent protection for sustainable utilization.

The species like *Cordia dichotoma*, *Dillenia pentagyna*, *Ficus racemosa*, *Tamarindus indica*, *Dillenia pentagyna* were observed locally threatened in the area need both, *in-situ* and *ex-situ* conservation and urgent protection for sustainable utilization.

Of these maximum numbers of plants belong to the family *Moraceae* and *Rhamnaceae*, which shows a significant ethnobotanical diversity in different regions of northern eastern part of Lakhimpur-kheri District.

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**References**


**Table 1:** Ethnomedicinal plant species used by tribal people for various purposes.

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Botanical name /Family</th>
<th>Vernacular name / Life form</th>
<th>Phenology</th>
<th>Chemistry</th>
<th>Mode of utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><em>Abrus precatorius</em> Linn./ Fabaceae</td>
<td>Gumachi / climber</td>
<td>July/ November</td>
<td>Two new steroids- abrinin and abrinid isolated from seeds [14].</td>
<td>Root powder is used for the treatment of scorpion bite.</td>
</tr>
<tr>
<td>2.</td>
<td><em>Abutilon indicum</em> (Linn.) Sweet / Malvaceae</td>
<td>Kanghi / Shrub</td>
<td>September / November</td>
<td>Amino acids, glucose, fructose, and galactose isolated from leaves [15].</td>
<td>Eat the four to five leaves for regularity in Menstrual cycle.</td>
</tr>
<tr>
<td>3.</td>
<td><em>Achyranthes aspera</em> Linn. / Acanthaceae</td>
<td>Aghada / Herb</td>
<td>October/ March</td>
<td>Ecodyosterone (Polycodeine-A) from roots and two oleanolic acid based Saponin from fruits [16].</td>
<td>The plant is used in eye disease and antifertility.</td>
</tr>
<tr>
<td>4.</td>
<td><em>Adhatoda zylamei</em> Medic/ Acanthaceae</td>
<td>Arusa / Shrub</td>
<td>October/ April</td>
<td>Four new quinozoline alkaloids- vasicoline, adhatodine, vasicolinine and anisotine isolated from inflorrence [17].</td>
<td>Leaf power is cooked then after used in cold and cough.</td>
</tr>
<tr>
<td>5.</td>
<td><em>Aegle marmelos</em> (L.) Corr. / Rutaceae</td>
<td>Bel / Tree</td>
<td>April/ August</td>
<td>6‘,7’-epoxyaurapten, marmesin-1’-α-L-rhamnoside and palmittic, oleic, linoleic, linolenic &amp; stearic acid [18].</td>
<td>Crushed leaves applied on knee joint pain. The ripe fruits are eaten.</td>
</tr>
<tr>
<td>7.</td>
<td><em>Aristolochia indica</em> Linn. / Aristolochiaceae</td>
<td>Israul / Climber</td>
<td>September / December</td>
<td>Two new sesquiterpenes hydrocarbons- ishwarane and aristolochene from roots [20].</td>
<td>Leaf and fruit juice is used in fever.</td>
</tr>
<tr>
<td>8.</td>
<td><em>Boerhavie diffusa</em> Linn. / Nyctaginaceae</td>
<td>Gadapurna / Herb</td>
<td>Major part of the year</td>
<td>β-ecdysone, triacantol and β-sitosterol 5,7-dihydroxy, 3, 4’-dimethoxy and 6, 8 dimethyl flavone [21].</td>
<td>Root is used in Jaundice.</td>
</tr>
<tr>
<td>9.</td>
<td><em>Datura inoxia</em> Mill. / Acanthaceae</td>
<td>Datura / Shrub</td>
<td>July/ December</td>
<td>Alkaloid rich species, such as tropine, tropin, scopine pseudotropine, scopoline,etc.[22].</td>
<td>Seed paste along with Koina oil is used in arthritis.</td>
</tr>
<tr>
<td>10.</td>
<td><em>Carissa opaca</em> Stapf / Apocynaceae</td>
<td>Karunda / Shrub</td>
<td>March/ October</td>
<td>Carissone [23].</td>
<td>Root paste is used as body pain.</td>
</tr>
<tr>
<td>11.</td>
<td><em>Cassia fistula</em> Linn. / Caesalpinaceae</td>
<td>Ahiroga / Tree</td>
<td>April/ October</td>
<td>Rhein, glucose, sucrose and fructose isolated from bark [24].</td>
<td>Dry fruit is making powder then like toothpaste.</td>
</tr>
<tr>
<td>12.</td>
<td><em>Cordia dichotoma</em> Forst. / Boraginaceae</td>
<td>Lasoura / Tree</td>
<td>March / May</td>
<td>Macrophylline-β-sitosterol, α- lenolenic, palmittic, linoleic and oleic acids [25].</td>
<td>Leaf power is used as cough medicine.</td>
</tr>
<tr>
<td>13.</td>
<td><em>Dillenia pentagyna</em> Roxb. / Discoreaceae</td>
<td>Agai / Tree</td>
<td>April/ June</td>
<td>Alkaloids, flavonoids, tanins and Saponin are isolated from fruits [6].</td>
<td>The leaf extract is used as anticancer diseases.</td>
</tr>
<tr>
<td>14.</td>
<td><em>Ficus religiosa</em> Linn. / Moraceae</td>
<td>Papai / Tree</td>
<td>April / September</td>
<td>Tannins, saponin, flavonoids, steroids, terpenoids and glycosides [26].</td>
<td>Fruit along with milk is used in astenile women.</td>
</tr>
<tr>
<td>15.</td>
<td><em>Ficus racemosa</em> Linn. / Moraceae</td>
<td>Gular / Tree</td>
<td>April / July</td>
<td>β– Sitosterol glucoside, Friedelin and lupeol isolated from stem bark [27].</td>
<td>Bark power is used as medicine.</td>
</tr>
<tr>
<td>16.</td>
<td><em>Scopariadulics</em> Linn. / Scrophulariaceae</td>
<td>Bundighas / Herb</td>
<td>Most part of the year</td>
<td>Friedelin, glitocin, α-amyrin, betulin, iffaionic and dulceoic, colixol and betulinic acid isolated from roots [27].</td>
<td>The leaf paste is applied boiled skin disease.</td>
</tr>
<tr>
<td>17.</td>
<td><em>Solanum indicum</em> Linn. / Solanaceae</td>
<td>Tukovilati / Shrub</td>
<td>Most part of the year</td>
<td>Glycoalkaloid solasumone, solanine isolated from fruits [7].</td>
<td>Seeds are used in toothache.</td>
</tr>
<tr>
<td>18.</td>
<td><em>Solanum surattense</em> Burm./ Solanaceae</td>
<td>Bhatkoya /Herb</td>
<td>December/ June</td>
<td>Solasodine isolated from berries of both normal and albino strains [27].</td>
<td>The root and stem is used for easy delivery.</td>
</tr>
<tr>
<td>19.</td>
<td><em>Solanum nigrum</em> Linn. / Solanaceae</td>
<td>Makoa / Herb</td>
<td>Most part of the year</td>
<td>Fatty oil isolated from seeds contained palmittic, stearic, oleic and linoleic acid along with linolenic acid [28].</td>
<td>The leaf decoction is given to women twice a day in delivery fever.</td>
</tr>
<tr>
<td>20.</td>
<td><em>Tamarindus indica</em> Linn. / Caesalpinaceae</td>
<td>Intli / Tree</td>
<td>May /April</td>
<td>A polysaccharide isolated from seeds contained glucose, galactose and xyllose [29].</td>
<td>Stem bark and leaf are used as medicine for joint pain.</td>
</tr>
<tr>
<td>21.</td>
<td><em>Ziziphus xylopyrus</em> Wild. / Rhamnaceae</td>
<td>Kathiber / Tree</td>
<td>April/ November</td>
<td>Betulinc acid from Wood and bark [30].</td>
<td>The fruits and bark is used as tannin.</td>
</tr>
</tbody>
</table>


