Comparative Study of Some Ethnomedicinal Plants among the Tribals of Datia and Sheopurkalan District (M.P.)

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ABSTRACT- The term Ethnobotany was first used by Harshberger (1895) and its scope was much elaborated later. Ethnobotanists, as an organized discipline of study in India, is rather young, just about five decades old. A number of ethnobotanists of the world have conducted comparative ethno botanical studies on different ethnic groups and different geographical regions. The comparative ethnobotany is helpful in understanding the plant use patterns and factors that affect the use of plants among different populations inhabiting different environments. During the last two decades a number of comparative ethno botanical studies have been conducted in many regions of the world. The present research work was carried out in 19 villages of 4 blocks of Datia district and 41 villages of 5 blocks of Sheopurkalan district. The research work was carried out from January 2012 to October 2015. A total of 35 plant species were reported from both the study regions. As a result of comparative study of medicinal plants it was observed that 23 plant species were used for the treatment of dissimilar diseases in Datia and Sheopurkalan districts, while 12 plant species were used for similar diseases in Datia and Sheopurkalan districts.

Key-words: Comparative study, Datia, Ethnobotany, Sheopurkalan

INTRODUCTION

The term Ethnobotany was first used [1] and its scope was much elaborated later. Ethnobotany, as an organized discipline of study in India, is rather young, just about five decades old. The first bibliography of Ethnobotany in India was published in the early eighties. The term Ethnobotany has often been considered synonymous with traditional medicines or with economic botany. In India alone, three traditional systems of medicines, namely Ayurveda, Siddha and Unani are distinguished [2,3].

A comparative study of ethnomedicinal plants of Datia and Sheopurkalan provide very useful and interesting results. Because the concept of plant uses differs among different people, ethnobotany has become a more important subject. In comparative ethno-botanical studies ethnobotany of two or more ethnic groups or ethnobotany of two or more geographical regions can be compared. A number of ethnobotanists of the world have conducted comparative ethno botanical studies on different ethnic groups and different geographical regions. The comparative ethnobotany is helpful in understanding the plant use patterns and factors that affect the use of plants among different populations inhabiting different environments. During the last two decades a number of comparative ethno botanical studies have been conducted in many regions of the world.

Mallik et al. [9] presented a comparative analysis of medicinal plants used by folk medicinal healers in three districts of Bangladesh. Vanderbroek et al. [10] studied a comparison of traditional healer’s medicinal plant knowledge in the Bolivian Andes and Amazon.

**MATERIALS AND METHODS**

**Study Area and Data Collection**

The present research work was carried out in 19 villages of 4 blocks of Datia district, and 41 villages of 5 blocks of Sheopurkalan district. The research work was started from January 2012 to October 2015. During present study 51 key informants in Datia and 111 key informants in Sheopurkalan district were selected on the recommendation of knowledgeable elders and local authorities. The Datia district is the smallest district of Madhya Pradesh. It occupies 2902 sq. Km. Out of 308,245 sq. Km. of Madhya Pradesh. It has 786,754 total populations according to the census of 2011. The Sheopurkalan district is located in the North western part of Madhya Pradesh. It has 687,861 total populations, according to the census 2011. The Sheopurkalan district is lying between 25°15’ and 25°45’ N latitude and 76°22’ and 77°64’ E longitude.

Many plant species were collected during the study with informants in different villages. In cases where the informants were interviewed in their homes, the specimens of medicinal plants were collected shortly after the interview. The voucher specimens were collected with the help of informants and local people. The plant specimens were collected, dried, preserved and mounted on herbarium sheets. The voucher specimen numbers were assigned as EBH D and EBH S number. The voucher specimens were identified with the help of the flora of Madhya Pradesh and the flora of Upper Gangetic Plain [11].

**Semi structured Interview**

In semi-structured interview method the informants were asked prepared questions about the use of plants. Some questions, which arose during the conversation were also taken into account [12].

**RESULTS AND DISCUSSION**

During the survey a total of 35 medicinal plant species were reported in Datia and Sheopurkalan districts. These plant species are useful for different diseases or ailments. The result of comparative study of medicinal plants reported from Datia and Sheopurkalan had shown in followed in Table 1 [13-26].

**Table 1: Comparative study of medicinal plants in Datia and Sheopurkalan districts**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of plant species</th>
<th>Family</th>
<th>Study Area</th>
<th>Local name</th>
<th>Plant part used</th>
<th>Disease treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Acalypha indica</em> Linn.</td>
<td>Euphorbiaceae</td>
<td>Datia</td>
<td>Kuppi</td>
<td>Leaves</td>
<td>Rashes, Pimples, Burnt area Cough</td>
</tr>
<tr>
<td>2</td>
<td><em>Achyranthes aspera</em> Linn.</td>
<td>Amaranthaceae</td>
<td>Datia</td>
<td>Adhijhara</td>
<td>Leaves</td>
<td>Jaundice</td>
</tr>
<tr>
<td>3</td>
<td><em>Adhatoda vasica</em> Nees</td>
<td>Acanthaceae</td>
<td>Datia</td>
<td>Arusa</td>
<td>Leaves, Whole Plant</td>
<td>Diarrhoea Cold &amp; Cough, Constipation</td>
</tr>
<tr>
<td>4</td>
<td><em>Aegle marmelos</em> (Linn.) Correa</td>
<td>Rutaceae</td>
<td>Datia</td>
<td>Bel</td>
<td>Fruit, Leaves</td>
<td>Diarrhoea, Diabetes</td>
</tr>
<tr>
<td>5</td>
<td><em>Ageratum conyzoides</em> Linn.</td>
<td>Asteraceae</td>
<td>Datia</td>
<td>Kohbi</td>
<td>Leaves</td>
<td>Stomachache, Diabetes</td>
</tr>
<tr>
<td>6</td>
<td><em>Ailanthus excelsa</em> Roxb.</td>
<td>Simaroubaceae</td>
<td>Datia</td>
<td>Arlu</td>
<td>Leaves</td>
<td>Eye Lotion, Wounds</td>
</tr>
<tr>
<td>7</td>
<td><em>Alternanthera sessilis</em> DC.</td>
<td>Amaranthaceae</td>
<td>Datia</td>
<td>Kateeli</td>
<td>Whole plant</td>
<td>Lactation in cattle</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>No.</th>
<th>Species</th>
<th>Family</th>
<th>Parts</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Bauhinia purpurea Linn.</td>
<td>Caesalpinaceae</td>
<td>Bark, Leaf</td>
<td>Mouth ulcer &amp; Malaria</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mouth ulcer &amp; Malaria</td>
</tr>
<tr>
<td>9</td>
<td>Calotropis procera (Ait.) R. Br.</td>
<td>Asclepiadaceae</td>
<td>Bark, root</td>
<td>Discharging the pus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dysentery, Eczema</td>
</tr>
<tr>
<td>10</td>
<td>Cassia tora Linn.</td>
<td>Caesalpinaceae</td>
<td>Leaves</td>
<td>Blemish skin, dark spot</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cough</td>
</tr>
<tr>
<td>11</td>
<td>Centella asiatica (Linn.) Urban.</td>
<td>Apiaceae</td>
<td>Whole plant</td>
<td>Diarrhoea &amp; dysentery</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Memory booster</td>
</tr>
<tr>
<td>12</td>
<td>Cleome gynandra Linn.</td>
<td>Capparaceae</td>
<td>Leaves</td>
<td>Earache</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Earache</td>
</tr>
<tr>
<td>13</td>
<td>Clitoria ternatea Linn.</td>
<td>Papilionaceae</td>
<td>Root</td>
<td>Rheumatism</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eyes, Urinary disorders</td>
</tr>
<tr>
<td>14</td>
<td>Cocculus hirsutus (Linn.) Diels.</td>
<td>Menispermaceae</td>
<td>Whole plant</td>
<td>Rheumatism</td>
</tr>
<tr>
<td>15</td>
<td>Drypetes roxburgii (Wall.) Hurusawa.</td>
<td>Euphorbiaceae</td>
<td>Seeds</td>
<td>Stomachache</td>
</tr>
<tr>
<td>16</td>
<td>Echinops echinatus Roxb.</td>
<td>Asteraceae</td>
<td>Fruit</td>
<td>Headache</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fever, Rheumatism</td>
</tr>
<tr>
<td>17</td>
<td>Grewia asiatica Linn.</td>
<td>Tiliaceae</td>
<td>Root</td>
<td>Rheumatism</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Wounds</td>
</tr>
<tr>
<td>18</td>
<td>Holoptelia integrifolia (Roxb.) Planch.</td>
<td>Ulmaceae</td>
<td>Bark, Leaves</td>
<td>Rashes &amp; black spot</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rashes &amp; black spot</td>
</tr>
<tr>
<td>19</td>
<td>Indigofera tinctoria Linn.</td>
<td>Papilionaceae</td>
<td>Root</td>
<td>Urinary disorder</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Nervous disorder</td>
</tr>
<tr>
<td>20</td>
<td>Lantana camara Linn.</td>
<td>Verbenaceae</td>
<td>Leaves</td>
<td>Wounds</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Wounds</td>
</tr>
<tr>
<td>21</td>
<td>Mimusops elengi Linn.</td>
<td>Sapotaceae</td>
<td>Flower</td>
<td>Ulcers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ulcers</td>
</tr>
<tr>
<td>22</td>
<td>Momordica dioica Roxb. ex Wild.</td>
<td>Cucurbitaceae</td>
<td>Root</td>
<td>Fever</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Piles</td>
</tr>
<tr>
<td>23</td>
<td>Morus indica Linn.</td>
<td>Moraceae</td>
<td>Leaves</td>
<td>Blood purification</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Blood purification</td>
</tr>
<tr>
<td>24</td>
<td>Nyctanthes arbor-tristis Linn.</td>
<td>Nyctanthesaceae</td>
<td>Seeds</td>
<td>Cough</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cough</td>
</tr>
<tr>
<td>25</td>
<td>Oxalis corniculata Linn.</td>
<td>Oxalidaceae</td>
<td>Whole plant</td>
<td>Dysentery</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dysentery</td>
</tr>
<tr>
<td>26</td>
<td>Prosopis spicigera Linn.</td>
<td>Mimosaceae</td>
<td>Bark</td>
<td>Rheumatism</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rheumatism</td>
</tr>
<tr>
<td>27</td>
<td>Psidium guajava Linn.</td>
<td>Myrtaceae</td>
<td>Shoot</td>
<td>Diarrhoea</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Diarrhoea</td>
</tr>
<tr>
<td>28</td>
<td>Rauvolfia serpentine (Linn.) Benth. ex Kurz.</td>
<td>Apocynaceae</td>
<td>Root</td>
<td>Uterine contraction for child birth</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Uterine contraction for child birth</td>
</tr>
<tr>
<td>29</td>
<td>Syzygium heyeannum (Duthie) Wall ex Gamble</td>
<td>Myrtaceae</td>
<td>Fruit</td>
<td>Stomachache</td>
</tr>
<tr>
<td>30</td>
<td>Tephrosia purpurea</td>
<td>Papilionaceae</td>
<td>Leaves</td>
<td>Jaundice</td>
</tr>
</tbody>
</table>
Analysis of inter-district variation in use of medicinal plants
During the comparative study of ethnomedicinal plant species it has been recorded a total of 35 plant species. As a result of comparative study it was observed that 12 plant species are used for the treatment of similar diseases or ailments in Datia & Sheopurkalan district whereas 23 plant species are used for the treatment of dissimilar diseases or ailments in both the study areas. The result is shown in Table 2 & Table 3.

Table 2: List of Plant species used to treat similar diseases/Ailments in Datia & Sheopurkalan District

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of plant species of Datia &amp; Sheopurkalan</th>
<th>Diseases/ Ailments treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Bauhinia purpurea Linn.</td>
<td>Mouth ulcer, headache</td>
</tr>
<tr>
<td>2.</td>
<td>Cleome gynandra Linn.</td>
<td>Earache</td>
</tr>
<tr>
<td>3.</td>
<td>Holoptelea integrifolia (Roxb.) Planch.</td>
<td>Rashes, black spot</td>
</tr>
<tr>
<td>4.</td>
<td>Lantana camara Linn.</td>
<td>Wounds</td>
</tr>
<tr>
<td>5.</td>
<td>Morus indica Linn.</td>
<td>Blood purification</td>
</tr>
<tr>
<td>6.</td>
<td>Nyctanthes arbor-tristis Linn.</td>
<td>Cough</td>
</tr>
<tr>
<td>7.</td>
<td>Oxalis corniculata Linn.</td>
<td>Dysentery</td>
</tr>
<tr>
<td>8.</td>
<td>Prosopis spicigera Linn.</td>
<td>Rheumatism</td>
</tr>
<tr>
<td>9.</td>
<td>Psidium guajava Linn.</td>
<td>Diarrhoea</td>
</tr>
<tr>
<td>10.</td>
<td>Rauvolfia serpentine (Linn.) Benth. ex Kurz.</td>
<td>Uterine contraction for child birth</td>
</tr>
<tr>
<td>11.</td>
<td>Tinospora cordifolia (Willd.) Miers ex Hook. f. &amp;Thoms.</td>
<td>Diabetes</td>
</tr>
<tr>
<td>12.</td>
<td>Withania somnifera (Linn.) Dunal</td>
<td>Joint pain &amp; reduce swelling</td>
</tr>
</tbody>
</table>
Table 3: List of Plant species used to treat dissimilar diseases/ ailments in Datia & Sheopurkalan

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of Plant Species</th>
<th>Disease/ Ailments treated in Datia</th>
<th>Disease/ Ailments treated in Sheopurkalan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Acalypha indica Linn.</td>
<td>Rashes, pimples, burn part</td>
<td>Cough</td>
</tr>
<tr>
<td>2.</td>
<td>Achyranthes aspera Linn.</td>
<td>Jaundice</td>
<td>Asthma, dysentery</td>
</tr>
<tr>
<td>3.</td>
<td>Adhatoda vasicapl. Nees.</td>
<td>Diarrhoea</td>
<td>Cold, cough &amp; constipation</td>
</tr>
<tr>
<td>4.</td>
<td>Aegle marmelos (Linn.) Correa</td>
<td>Diarrhoea, Diabetes</td>
<td>Stomachache, diabetes</td>
</tr>
<tr>
<td>5.</td>
<td>Ageratum conyzoides Linn.</td>
<td>Diarrhoea &amp; Dysentery</td>
<td>Eye lotion, wounds</td>
</tr>
<tr>
<td>6.</td>
<td>Ailanthus excelsa Roxb.</td>
<td>Wounds</td>
<td>Asthma, earache</td>
</tr>
<tr>
<td>7.</td>
<td>Alternanthera sessilis (Linn.) R. Br.</td>
<td>Lactation in cattle</td>
<td>Gonorrhoea</td>
</tr>
<tr>
<td>8.</td>
<td>Calotropis procera (Ait.) R. Br.</td>
<td>Discharging pus</td>
<td>Dysentery, eczema</td>
</tr>
<tr>
<td>9.</td>
<td>Cassia tora Linn.</td>
<td>Blemish skin, dark spot</td>
<td>Cough</td>
</tr>
<tr>
<td>10.</td>
<td>Centella asiatica (Linn.) Urban.</td>
<td>Diarrhoea &amp; Dysentery</td>
<td>Memory booster</td>
</tr>
<tr>
<td>11.</td>
<td>Cleome viscosa Linn.</td>
<td>Wounds, ulcer</td>
<td>Earache</td>
</tr>
<tr>
<td>12.</td>
<td>Clitoria ternatea Linn.</td>
<td>Rheumatism</td>
<td>Eye, urinary disorder</td>
</tr>
<tr>
<td>13.</td>
<td>Cocculu shirsatus (Linn.) Diels.</td>
<td>Rheumatism</td>
<td>Stomachache</td>
</tr>
<tr>
<td>14.</td>
<td>Drypetes roxburgii (Wall.) Hurusawa.</td>
<td>Headache</td>
<td>Fever, rheumatism</td>
</tr>
<tr>
<td>15.</td>
<td>Echinops echinatus Roxb.</td>
<td>Headache</td>
<td>Child birth</td>
</tr>
<tr>
<td>16.</td>
<td>Grewia asiatica Linn.</td>
<td>Wounds</td>
<td>Rheumatism</td>
</tr>
<tr>
<td>17.</td>
<td>Indigofera tinctoria Linn.</td>
<td>Urinary disorder</td>
<td>Nervous disorder</td>
</tr>
<tr>
<td>18.</td>
<td>Minusops eleni Linn.</td>
<td>Wounds</td>
<td>Ulcer</td>
</tr>
<tr>
<td>19.</td>
<td>Momordica dioica Roxb. ex Willd.</td>
<td>Fever</td>
<td>Piles</td>
</tr>
<tr>
<td>20.</td>
<td>Syzygium heyneanum (Duthie) Gamble</td>
<td>Stomachache</td>
<td>Mouth ulcer</td>
</tr>
<tr>
<td>22.</td>
<td>Terminalia arjuna (Roxb. ex DC.) Wt &amp; Arn.</td>
<td>Diarrhoea &amp; Dysentery, fracture</td>
<td>Asthma, boils, earache</td>
</tr>
<tr>
<td>23.</td>
<td>Zizyphus nummulari (Burm. f.) Wt &amp; Arn.</td>
<td>Boils</td>
<td>Cold &amp; cough</td>
</tr>
</tbody>
</table>

CONCLUSIONS

The present study provides information on ethnomedical uses of plant species in Datia and Sheopurkalan districts. A total of 35 plant species belonging to 35 genera 26 families have been reported in both the study regions. Ethnomedicinally most important families are Papilionaceae with 3 plant species, Amaranthaceae, Myrtaceae and Euphorbiaceae with 2 plant species each. It shows that more plant species are used to treat dissimilar diseases while less number of plant species is used to treat similar diseases in Datia and Sheopurkalan districts. The reason of inter-district variation in the use of medicinal plants may be geological isolation and dissimilarity of tribal clans. Furthermore, the over-exploitation of plant species for food, fodder, agricultural implements etc. may lead to the decline of these species from the regions. On the basis of present study some recommendation are made for sustainable development and conservation of ethnomedicinically useful plant species, such as the people of Sahariya tribe of both the districts should be encouraged to cultivate the medicinal plants in their locality.

REFERENCES


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