Shri Balaji Sansthan Deulgaon Raja’s
Shri Vyankatesh Arts, Commerce & Science College
Deulgaon Raja, Dist. Buldana (MS), PIN – 443204
RE-ACCREDITED AT ‘B’ LEVEL BY NAAC

A Special Issue on

December, 2017
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POTENTIAL MEDICINAL PLANT RESOURCES FROM LONAR CRATER

Mahendra R. Bhise
Department of Botany,
L.K.D.K. Banmeru Science College,
Lonar, Dist. Buldana.
mahendrabhise17@gmail.com

Suryakant B. Borul
Department of Chemistry,
L.K.D.K. Banmeru Science College,
Lonar, Dist. Buldana.

Abstract

Since the ancient times, the plants have been used as a source of medicine. About 80% of the local individuals depend and regularly used traditional medicines, because only these medicines are safe and eco-friendly. Currently all the nations, realizing the value of these natural resources, has embarked on a mission of documenting the traditional knowledge. These plants act as a great economic source for the poor people, due to their enormous market value. While exploring the various forest pockets of Lonar crater and its surrounding, author collected the unexplored but potential bio-resources. The present paper highlights a rich and unique profile of potential medicinal plant resources of the area surveyed, with 15 families belongs to 19 species with correct botanical identification, vernacular names, parts used, used for, doses and mode of administration in respect to different diseases with their current market value.

Key words: Herbal drug plants, Lonar, Buldhana.

Introduction:

The Lonar crater is the third biggest meteoritic impact crater in the world. This Lake is mysterious because it is a saline and alkaline lake located at Lonar in Buldhana district in Maharashtra, India. Lonar Lake has a mean diameter of 1.2 kilometers (3,900 ft) and is about 137 meters (449 ft) below the crater rim. The Biologists, Geologists, ecologists, archaeologists and astronomers from the world have reported several studies on the various aspects of this Crater Lake. (Malu et.al., 2000; Tambekar et. al., 2010)

The rain water along the different minerals of surrounding area flow inside the lake and constant evaporation over the years has led to a high concentration of salt in the lake. Such alkaline water do not support life-forms. Yet, biologists have reported the presence of primitive life forms like both the chemotropic and phototrophic organisms (Varier, 1997; Rathod, 2014). The Lonar Crater is also famous as a cradle for Biodiversity. Therefore, many of foreigner as well as Indian biologist attract towards the lake. This area rich with economically and medicinally important plants, also many of animals and Birds has survived in this area. Therefore, forest department declare this area as a smallest ‘Wild Life Sanctuary’ to conserve this biodiversity. Lonar crater is the unique ecosystem with its own feature (Ahirrao & Patil, 2010; Tambekar et. al., 2010). These plants possess various types of pharmacological drugs and can be used as the medicine in various ayurvedic preparations.

The medicinal plants are the plants whose parts (leaves, seeds, stem, roots, fruits, foliage etc.) extracts, infusions, decoctions, powders are used in the treatment of different diseases of humans as well as for plants and animals. Besides the use of medicinal plants by local individuals as their raw material, the demand for medicinal plants has also increased day by day by the modern pharmaceutical industries (Patil et. al., 2010; Dabhadkar & Borul, 2013). From the thousands of years, natural products have been used in traditional medicine all over the world and predate the introduction of antibiotics and other modern drugs (Maheshwari, 2000; Tambekar et. al., 2012). However, the local peoples of the
surrounding area of Lonar Lake largely depend on plant resources in their vicinity for healthcare and other necessities of their life. Therefore, in present study, the authors find out some important herbal drug plants and communicate in present paper which has high potential as a medicinal resource and economic importance, with correct botanical identification, vernacular names, parts used, used for, doses and mode of administration in respect to different diseases with their current market value.

Methodology:

Lonar crater is situated between 19°58’36” North latitude and 76°30’30” East longitude in Southern region of Buldana district of Maharashtra state (India). During the year 2016-2017, the number of excursion tours was made to survey and collect various medicinal plants from Lonar crater in different seasons. The collected plants were firstly identifying by using different botanical floras (Singh et al., 2000; 2001; Diwakar & Sharma, 2000; Patil et al., 2007). The plant specimens were deposited as herbarium in college laboratory. The medicinal use of plants and their various data was also collected through interviewing local experienced informants, medicine men and women, and farmers. The information accrued was verified in different botanical literature (Agharakar, 1991; Maheshwari, 2000; Ahirrao et al., 2009; Patil et al., 2010). Photographs of these medicinal plants were taken in the field and from its record. The potential medicinal plant species have been arranged alphabetically in Table 1 with their uses.

Results and Discussion

The present investigation comprises 19 plants belonging to 15 different plant families showing medicinal potential and wildly used locally. For each species botanical name, family, vernacular name, part use, Doses and mode of administration and Current Market value of each plant species are provided in the table 1. Traditional healers and local individuals have been used these plants to cure various diseases. The specific plant parts like root, leaves, stem, bark, flowers, fruits, latex etc. in specific dosages is used for the treatment of ailments. The plant products are used as a raw material or in the form of decoction, infusion, juice, oral treatment or applied externally as paste or ointments. Each of the plant having some specific chemical constituents or secondary metabolites like alkaloids, steroids, volatile oils, etc those have economic value in Pharmaceuticals. These ingredients are extracted and the drugs have been prepared in Pharmaceuticals. These plants may be used separately or in mixture of several plants for better and quick result.

Now a day’s these plants have great demand in ayurveda and some herbal product industries like, Dabar, Baidhyanath, Sharangdhar, Patanjali, etc. These medicinal plants also sold by traditional vendors and vaidus. Therefore, these plants have great economic value in local as well as in an international market. So, such a medicinal plants are great potential resource and can be full fill the basic demand of surrounding poor peoples. Besides, the conservation and multiplication of these potential plants is also needful.
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Botanical Name</th>
<th>Family</th>
<th>Vernacular Name</th>
<th>Part Use</th>
<th>Uses</th>
<th>Dosage and mode of administration</th>
<th>Market Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Asparagus racemosus Wld.</td>
<td>Liliaceae</td>
<td>Shatavar</td>
<td>Tuberous Roots</td>
<td>Blood purification, Tonic</td>
<td>A tea spoon of root powder in a glass of milk is given for 21 days</td>
<td>25Rs/50 gm</td>
</tr>
<tr>
<td>02</td>
<td>Balantia eugenia (L.) Del.</td>
<td>Zygophyllaceae</td>
<td>Hingambat</td>
<td>Fruits</td>
<td>Headache and to improve lactation</td>
<td>A decoction of the bark are also used as an Abstoficient</td>
<td>15 gm</td>
</tr>
<tr>
<td>03</td>
<td>Cassia fistula L.</td>
<td>Caesalpinaceae</td>
<td>Sugargattu</td>
<td>Seeds</td>
<td>Tonic for children</td>
<td>The aquatic paste is given in milk</td>
<td>10Rs/10 Piece</td>
</tr>
<tr>
<td>04</td>
<td>Calotropis procera (Ait.) K. Br.</td>
<td>Asclepiadaceae</td>
<td>Rau</td>
<td>Root bark</td>
<td>Fast healing of wound, purgative and emetic agent, antitumor, anticoagulant and antifungal agent</td>
<td>The crushed leaves and milk can apply directly on wound the powder of Root bark and crushed leaves used as antifungal agent</td>
<td>22000/1000 gm</td>
</tr>
<tr>
<td>05</td>
<td>Cardiospermum halicacabum L.</td>
<td>Sapindaceae</td>
<td>Kapalpati</td>
<td>Leaves, whole plant</td>
<td>Against arthritis, inflammations, constipation and abdominal disorders</td>
<td>The decoction of leaves in castor oil is ground and applied over the affected areas or juice of leaves is directly taken</td>
<td>--</td>
</tr>
<tr>
<td>06</td>
<td>Carya fistula L.</td>
<td>Caesalpinaceae</td>
<td>Bahara</td>
<td>Fruit, Pod</td>
<td>Wound healing</td>
<td>The aquatic paste is externally applied on wound</td>
<td>5Rs/piece</td>
</tr>
<tr>
<td>07</td>
<td>Eclipta prostrata Linn.</td>
<td>Composite</td>
<td>Matki,</td>
<td>Whole plant, seed</td>
<td>Liver tonic, anti-inflammatory, jaundice, hair nourishment</td>
<td>The essential oil is used for various utensinment</td>
<td>150 kg</td>
</tr>
<tr>
<td>08</td>
<td>Euphroasia salsoloides (L.)</td>
<td>Convolvulaceae</td>
<td>Shankhpushpi,</td>
<td>Whole plant</td>
<td>Brain tonic, sleeplessness, chronic bronchitis, asthma</td>
<td>Juice of Whole plant is give twice in a day or syrup is prepared from whole plant</td>
<td>1,200 kg</td>
</tr>
<tr>
<td>09</td>
<td>Helicteres isora L.</td>
<td>Sterculiaceae</td>
<td>Munar</td>
<td>Fruit, Pod</td>
<td>Tonic for children</td>
<td>The fruit paste is given in milk</td>
<td>10Rs/10 Piece</td>
</tr>
<tr>
<td>10</td>
<td>Humulus indicus R.Br.</td>
<td>Asclepiadaceae</td>
<td>Gavati Kivali</td>
<td>Whole plant</td>
<td>Rhumatism</td>
<td>Decoction of whole plant in tea is given for 7 days</td>
<td>10Rs/pouch</td>
</tr>
<tr>
<td>11</td>
<td>Jatropha cordifolia L.</td>
<td>Caesalpinaceae</td>
<td>Adulsa</td>
<td>Leaves</td>
<td>Cough, asthma, sore throat, diarhoo and dysentery</td>
<td>A cup of hot decoction is given twice in a day</td>
<td>350 kg</td>
</tr>
<tr>
<td>12</td>
<td>Macuna pruriens (L.) Vahl.</td>
<td>Fabaceae</td>
<td>Kaj-kayli</td>
<td>Fruit, pods, seeds</td>
<td>Anti-helmintic, to control the intestinal worms of children and calves.</td>
<td>The pod in the rice, mixed in curd or in rice soup, is given once in a day.</td>
<td>300 kg</td>
</tr>
<tr>
<td>13</td>
<td>Selenium chamisson Schr. &amp; Wendl.</td>
<td>Solandreae</td>
<td>Kantakari, sake ringani</td>
<td>Whole plant, dried roots, fruits</td>
<td>Stomach, respiratory disorder, snake bite, asthma, tic, kidney stone</td>
<td>The decoction of plant part with a tea spoon of honey is given twice in a day.</td>
<td>2600/1000 gm</td>
</tr>
<tr>
<td>14</td>
<td>Tectona grandis L. I.</td>
<td>Verbenaceae</td>
<td>Flowers, wood</td>
<td>Piles, leucorrhrea, dysentery, urinary disorders, headache, burning sensation</td>
<td>The cup of decoction of dried flowers or wood are given twice in a day</td>
<td>1,200/ Cubic feet</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Tinospora cordifolia (Wild.)</td>
<td>Menispermaceae</td>
<td>Galvoll</td>
<td>Stem</td>
<td>Acidity, Fever, Abdominal Pain</td>
<td>Stem - powder or aquatic paste in a cup of water is given twice in a day</td>
<td>20Rs/piece</td>
</tr>
<tr>
<td>16</td>
<td>Asclepias lacunosa W. &amp; A. (T. indica (Burm.f.) Merr.</td>
<td>Asclepiadaceae</td>
<td>Kavali, amamal</td>
<td>Leaves, root, whole plant</td>
<td>Asinina, Bursitis, constipation, Antihistamine</td>
<td>The decoction of leaves or root is used twice in 250 gm</td>
<td>200/250 gm</td>
</tr>
<tr>
<td>17</td>
<td>Withania somnifera (L.) Dunal.</td>
<td>Solandreae</td>
<td>Ashwagandha</td>
<td>Leaves, root</td>
<td>Weight loss or gain, tuberculosis, backache, manstural problems, and chronic liver disease</td>
<td>Decoction of leaves is used for weight loss, Powder of root with a glass of milk is taken for other benefits</td>
<td>300 kg</td>
</tr>
<tr>
<td>18</td>
<td>Woodfordia phyllostachys (L.) Kar.</td>
<td>Lythraceae</td>
<td>Dhanyati</td>
<td>Flowers</td>
<td>Menstrual disorder</td>
<td>The fried flowers in butter is given once in a day for 7 days</td>
<td>20Rs/5 gm</td>
</tr>
<tr>
<td>19</td>
<td>Wrightia心动动 (P. Br.</td>
<td>Apocynaceae</td>
<td>Kala luada</td>
<td>Stem, bark</td>
<td>Skin disease, anti-dandruff and anti-inflammatory, Carminative</td>
<td>Paste, hair oils is used for hairs and on skin diseases</td>
<td>250 kg</td>
</tr>
</tbody>
</table>
Caesalpinia bonducella (Sagargota)

Balanites aegyptica (Hinganbet)

Wrightia tinctoria (Kalakuda)

Mucuna pruriens (Khajkuulu)

Woodfordia fruticosa (Dhayati)

Solanum xanthocarpum (Kateringani)

Tinospora cordifolia (Gulvel)
Acknowledgment:
Authors are grateful to the all the local healers, local vendors, local tribal inhabitants and forest officials, Lonar Wild Life Sanctuary, Lonar for their valuable cooperation. Authors are also grateful to the Principal, Late Ku. Durga K. Banmeru Science College, Lonar for regular inspiration and providing laboratory facilities.

References