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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.

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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 ý19°582 363 North latitude and 76°302 303 ÿþEast 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.

Helicteres isora (Murudsheng)

Withania somnifera (Ashwagandha)

Sr. No	Botanical Name	Family	Vernacular Name	Part Use	Uses	Doses and mode of administration	Market Value
01	*Asparagus racemosus* Willd. Var. *javanica* Baker.	Liliaceae	Shatavari	Tuberous Roots	Blood purification, Tonic	A tea spoon of root powder in a glass of milk is given for 21 day's	25Rs/50 gm
02	*Balanites aegyptica* (L.) Del.	Zygophyllaceae	Hinganbet	Fruits	Headache and to improve lactation	A decoction of the bark are also used as an Abortifacient	15/kg
03	*Caesalpinia bonducella* Flemi.	Caesalpinaceae	Sagargota	Seeds	Tonic for children	The aquatic paste is given in milk	10Rs./10 Piece
04	*Calotropis procera* (Ait.) R.Br.	Asclepiadaceae	Rui	Latex, leaves, Root bark	Fast healing of wound, purgative and emetic agent, anticancer, anticoagulant and antifungal agent	The crushed leaves and milk can apply directly on wound, the powder of Root bark and crushed leaves used as antifungal agent	22,000/bag
05	*Cardiospermum halicacabum* L.	Sapindaceae	Kapalphodi	Leaves, whole plant	Against arthritis, inflammations, constipation and abdominal disorders	The decoction of leaves in castor oil is ground and applied over the affected areas or juice of leaves is directly taken	--
06	*Cassia fistula* L.	Caesalpiniaceae	Bahava	Fruit, Pod	Wound healing	The aquatic paste is externally applied on wound	5Rs./piece
07	*Eclipta erecta* Linn.	Compositae	Maka, brungraj	Whole plant, seed	Liver tonic, anti-inflammatory, jaundice, hair nourishment	The essential oil is used for various treatment	150/kg
08	*Evolvulus alsinoides* (L.) L	Convolvulaceae	Shankhapushpi, Vishnukrant	Whole plant	Brain tonic, sleeplessness, chronic bronchitis, asthma	Juice of Whole plant is give twice in a day or syrup is prepared from whole plant	1,200/kg
09	*Helicteres isora* L	Sterculiaceae.	Murud shengh	Fruit, Pod	Tonic for children	The fruit paste is given in milk	10Rs./10 Piece
10	*Hemidesmus indicus* R.Br.	Asclepiadaceae	Gavati Kavali	Whole plant	Rheumatism	Decoction of whole plant in tea is given for 7 day's	10Rs/pauch
11	*Justicia adhatoda* L.	Acanthaceae	Adulsa	Leaves	Cough, asthma, sore throat, diarrhea and dysentery	A cup of leaf decoction is given twice in a day	350/kg
12	*Mucuna pruriens* (L.) DC.	Fabaceae	Khaj-kuyili	Fruit/ pods, seeds	Anti-helminthic, to control the intestinal worms of childrens and calves	The pod trichomes mixed in curd or in rice soup, is given once in a day	300/kg
13	*Solanum xanthocarpum* Schr. & Wendl.	Solanaceae	Kantakari, kate ringani	Whole plant, dried roots, fruits	Stomach, respiratory disorder, snake bite, antiasthma tic, kidney stone	The decoction of plant part with a tea spoon of honey is given twice in a day	2600/bag
14	*Tectona grandis* L.f.	Verbenaceae		Flowers, wood	Piles, leucoderma, dysentery, urinary discharges, headache, burning sensation	The cup of decoction of dried flowers or wood are given twice in a day	1,200/ Cubic feet
15	*Tinospora cordifolia* (Willd.) Hook. F. & Thomson	Menispermaceae	Gulvel	Stem	Acidity, Fever, Abdominal Pain	Stem – powder or aquatic paste in a cup of water is given twice in a day	20Rs./piece
16	*Tylophora asthmatica* W. & A. (*T. indica* (Burm.f.) Merr.)	Asclepiadaceae	Kavali, anantmul	Leaves, root, whole plant	Asthma, Bronchites, constipation, Antitumer	The decoction of leaves or root is used twice in day	200/250 gm
17	*Withania somnifera* (L.)Dunal.	Solanaceae	Ashwgandha	Leaves, root	Weight loss or gain, tuberculosis, backache, menstrual problems, and chronic liver disease.	Decoction of leaves is used for weight loss, Powder of root with a glass of milk is taken for other benefits	300/kg
18	*Woodfordia fruticosa* (L.)Kurz.	Lythraceae	Dhayati	Flowers	Menstrual disorder	The fried flowers in butter is given once in a day for 7 days	20Rs./50gm
19	*Wrightia tinctoria* R. Br.	Apocynaceae.	Kala kuda	Stem bark	Skin disease, anti-dandruff and anti-inflammatory, Carminative	Paste, hair oils is used for hairs and on skin diseases	250/kg

Caesalpinia bonducella (Sagargota)

Woodfordia fruticosa (Dhayati)

Balanites aegyptica (Hinganbet)

Solanum xanthocarpum (Kateringani)

Wrightia tinctoria (Kalakuda)

Tinospora cordifolia (Gulvel)

Mucuna pruriens (Khajkuilu)

Cassia fistula (Bahava)

Asparagus racemosus (Shatawari)

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