

International Journal of Advanced Research in Biological Sciences
ISSN: 2348-8069
www.ijarbs.com
Coden: IJARQG(USA)

Research Article



SOI: <http://s-o-i.org/1.15/ijarbs-2-12-39>

**Study of some Ethno Medicinal plants cultivated in Botanical garden,
Science College, Bilaspur (C.G.)**

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Abstract

Bilaspur district is very much riched with large number of trees, shrubs and herbal plants. From these plant species some plant species are economically and medicinally very important. Generally plants are grow natural condition in forest and open fields but peoples are also grow these plants in agriculture fields, farm houses, protective zones and cultivated in gardens. Department of Botany, Science College, Bilaspur prepared botanical garden. In this garden more than fifty medicinal plant species were cultivated. Out of these plant species 17 medicinal plant species were selected to study medicinal values. The plants are belongs to family Acanthaceae, Zingiberaceae, Menispermaceae, Moraceae, Fabaceae, Lythraceae, Cyperaceae, Verbanaceae, Liliaceae, Acoraceae, Lauraceae, Crassulaceae, Poaceae, Euphorbiaceae, Rubiaceae, Combritaceae, and Vitaceae. Present investigation revealed that the villagers, tribal's are also used traditionally these plant species against various diseases like diabetes, tumor, heart problems, dysentery, skin disease, fever, epilepsy, hair problems and other diseases. Generally barks, roots, leaves, seeds and some time whole plants are used for the treatment of diseases. Herbariums of these plants have been prepared, noted with entire information like botanical name, local name, family and plant part used.

Keywords: Bilaspur district, Medicinal plants species, Science College, Bilaspur.

Introduction

Over three- quarters of the world population relies mainly on plants and plant extract for health care. More than 3% of the entire plant species at one time or other, where used for medicinal purposes.

In India drugs of herbal origin have been used in traditional system of medicines such as Unani, Siddha and Ayurveda since ancient times. The Ayurveda system of medicine uses about 700 species, Unani 700, Siddha 600, Amehi 600 and modern medicine around 30 species. The drugs are derived either from the whole plant or from different organs like leaves, stem, bark, root, flower, seed etc. (Sharan, 2011).

The popularity of herbal plants have increased because of side effect of synthetic drugs, development of resistance of many drugs and high cost of synthetic drugs.

Traditional herbal medicine is practiced in several parts of the world specially those areas where large ethnic community lives. A traditional herbal medicine in last one decade has gained importance in various developed countries specially in India. In India ethnic communities of Madhya Pradesh, Chhattisgarh, Orissa, Assam, Nagaland etc. used wide range of herbal plants for their health care.

India with its great topographic and climatic diversity has a very rich and diverse flora and fauna. The uses of plant as medicine have practiced from an ancient time, but increasing demand for herbal raw material and product the useful plant species become endangered, so cultivation and conservation of medicinal plant species is must, specially for the tribal's and other traditional communities in India.

Chhattisgarh state is rich in the natural resources of herb and medicinal plants, which traditionally being used to treat various diseases. Hence it is essential to conserve, protect and document the important plant species.

During the present investigation Bilaspur district in Chhattisgarh was selected for medicinal studies of herbal plants. Most of the area of Bilaspur district is covered by thick forest where as collection of herbal plants has been perform throughout the natural vegetation area and cultivated these herbal medicinal plant species in botanical garden of Science college, Bilaspur.

The present paper has been restricted to the medicinal uses of only 17 plant species have been properly identified and stored as herbarium.

Materials and Methods

The plants were collected from different areas of Bilaspur district of Chhattisgarh and cultivated in botanical garden of Science college, Bilaspur. Geographically Bilaspur located at $25^{\circ} 5' N$ Latitude and $82^{\circ} 12' E$ longitude. The height is 292.00 m above M.S.L. It is situated in the eastern part of the Madhya Pradesh, almost in the centre of the region as Chhattisgarh. The plants were collected and cultivated botanical garden and also in the form of herbarium sheets or museum specimens. The detailed information pertaining to their botanical name, local name, family name and medicinal uses. All information regarding the uses of plants for treating various ailments and diseases was collected by directly interviewing elderly learned and experienced person of rural people of the villages. The tribal students of our college comes from different tribal areas of Chhattisgarh like Bastar,

Jashpur, Korea, Korba etc. have great knowledge of herbal plants species archives by their parents.

The identification of plants was done using the following references:-

1. Flora of British India by Hooker (1875).
2. Taxonomy of Vascular plants by George (1964).
3. Herbaceous flora of Dehradun by C.R. Babu (1977).

Many workers have been studies about medicinal plants like Ambasta (1986), Babu (1977), Chopra (1956), Hooker (1875), Jain (1965), Jitendra et.al, (2006), Kirtikar et. al. (1999), Mishra (2011), Oommachan et. al. (1996), Pandey et.al.(1997), Panigrahi et.al. (1989), Pareek (1996), Prajapati et. al.(2003), Sharan (2011), Shukla et.al.(2010), Singh et.al.(2001) and Vijay et.al.(2004), under various require of Indian Subcontinent.

Results and Discussion

17 cultivated medicinal plant species were collected different areas of Bilaspur district and cultivated in botanical garden of science college, Bilaspur are used by local people of village of Bilaspur district in their day to day life to cure various ailments have been documented along with their uses, mentioned in for going table.1

A single species was used to cure more than one disease. Plants are very useful for dysentery, Jaundice, eye infection, asthma, joint pain, skin disease, cough and pneumonia .The plants are belongs to family Acanthaceae, Zingiberaceae, Menispermaceae, Moraceae, Fabaceae, Lythraceae, Cyperaceae, Verbanaceae, Liliaceae, Acoraceae, Lauraceae, Crassulaceae, Poaceae, Euphorbiacea, Combritaceae and Vitaceae. Leaves were reported to be the most frequently use part of plants for the treatment of various diseases followed by other plant parts namely stem, root, seed, bark and flowers.

Table:1 - List of Ethno medicinal plant species used in the treatment of various ailments in Bilaspur district

S. No	Scientific Name	Local Name	Family	Uses
1.	<i>Adhatoda vasica</i>	Basak or Arusa	Acanthaceae	(i). The roots, leaves, flowers are mainly used in treating bronchitis, cold, whooping cough and asthma. (ii). The whole plant is useful in the removal of intestinal parasites. (iii). The decoction of root and bark in doses of 30gms twice or thrice a day for destroying intestinal parasites. (iv). Flowers are used for treating tuberculosis. (v).30 ml of leaf juice with honey remove cough from lungs.
2.	<i>Elettaria cardemomum</i>	Elaichi	Zingiberaceae	(i).It is best herb for digestive system, bad breath and for nutritive purpose. (ii).It is helpful for high blood pressure. (iii).The oil of elaichi seeds is useful on the treatment of toothache. (iv).It is very good mouth freshener, deodorant and antiseptic. (v).Seeds are appetizer, digestive and laxative.
3.	<i>Tinospora cordifolia</i>	Guruchi/ Giloe	Menispermaceae	(i).Giloe is useful in some of the ail meals such as leprosy, asthma, jaundice, gout, skin infections, diabetes,, diarrheas fevers. (ii).Guruchi extracts have been controlled the cancer growth. (iii).Guruchi extract control the fasting blood sugar level. (iv).Guruchi root controls the cholesterol. (v).Also useful for heals ulcers.
4.	<i>Ficus carica</i>	Anjeer	Moraceae	(i).The health benefits of figs include as a treatment for constipation, indigestion, piles, diabetes, cough, bronchitis and asthma. (ii).The fibers in figs also help to reduce weight but there high calorie count can also result in weight gain, especially when consumed with milk. (iii).Dried figs contain phenol, omega-3 and omega-6. These fatty acids reduce the risk of coronary heart disease. (iv).Fig leaves reduce the amount of insulin needed by diabetic patients who have regularly take insulin injection. (v).Figs contain high amount of iron and calcium, so it is beneficial for anemia.
5.	<i>Bauhinia variegata</i>	Kachnar	Fabaceae	(i).Buds and roots are good for digestive problems. (ii).Bark used to cure asthma. (iii).Kachnar is useful for many diseases like diabetic, anti-inflammatory, antitumor, and antibacterial. (iv).Kachnar bark is used in treating stomach related problems, ulcers, cyst and tumors. (v). It's leaves are very nutritious and helpful in curing weakness and reducing sugar level in blood.

6.	<i>Lawsonia alba</i>	Mehandi	Lythraceae	<ul style="list-style-type: none"> (i). Cooling properties of leaves used as coagulant for open wounds and a poultice made with heena leaves works to soothe burns and certain type of eczema. (ii).Heena mixed with vinegar and applied to the head is reputed to heal headaches. (iii).It is used as dye prepared from the plant and the art of temporary tattooing based on those dyes. (iv).It has been used since antiquity to skin, hair and finger nails, as well as fabrics including silk and leathers. (v).It is also acts as an antifungal and a preservative for leather and cloth.
7.	<i>Cyperus scariosus</i>	Nagarmotha	Cyperaceae	<ul style="list-style-type: none"> (i).Nagarmotha, dried ginger and the dried pulp of the bael fruit, all crushed in equal parts, two gm of this powder taking twice a day, work well in case of chronic mucous diarrhea. It is also control coming of blood in the stool. (ii).Oil extract from roots used as massage, scent, air fresher, perfume oils, bath oils, facials steams, hair treatments and more. (iii).Nagarmotha essential oil helpful with broncopulmonary congestion, mucus and scabies. (iv).Oil also very good digestive and carminative properties. (v).Oil helpful for kidney stones, gout and other uric acid sensitive conditions.
8.	<i>Vitex negundo</i>	Nirgundi	Verbenaceae	<ul style="list-style-type: none"> (i).Leaves are richest source of stable vitamin c, increasing immunity of body. (ii).It is useful herb for hair growth. (iii).Leaf juice useful for cleaning and healing wounds. (iv).Dry powder of leaves help to improve memory. (v).Leaves after heated are tied over the affected part in headache and arthritic pain.
9.	<i>Aloe vera</i>	Ghrit kumara	Liliaceae	<ul style="list-style-type: none"> (i).Warm paste of leaf juice with turmeric powder can be applied over swollen, painful and enlarged spleen. (ii).Juice can be used in the eyes for conjunctivitis. (iii). <i>Aloe vera</i> pulp can be applied locally in headaches and eye problems. (iv). <i>Aloe vera</i> juice is laxative, ant flatulent and anthelmintic. (v). <i>Aloe vera</i> is useful in purification of blood and affections of liver.
10.	<i>Acorus calamus L.</i>	Buch	Araceae	<ul style="list-style-type: none"> (i).Leaf paste applies on head for headache. (ii).Leaf juice helpful for cough specially for children. (iii).Powder of leaf useful for intestinal worm. (iv).Plant is useful for mental problem and epilepsy. (v).Plant is also useful for migraine, sore throat and stop smoking.

11.	<i>Cinnamoum tamala</i>	Tejpatta/ Tamalpatra	Lauraceae	(i).It's have antibacterial and purgative properties. (ii).In Ayurvedic medicine, bay leaf has been used a component of remedies for paralysis, abdominal pain, and antidote if poison. (iii).Dry fruit taken orally to improve appetite and digestion. (iv).Leaf may be used for throat infection, as a digestive aid, to induce sweating. (v).The essential oil from fruit may be used topically for wounds and for pain due to rheumatism.
12.	<i>Kalanchoe pinnata</i>	Pathar Chatta	Crassulaceae	(i).Leaves is astringent, antiseptic, antimicrobial, mucilaginous, anti-inflammatory and tonic. (ii). Pounded fresh malarial is applied as a poultice for a variety of conditions sprains, eczema, infection, burns, and carbuncle. (iii).For asthma, leaves places in hot water for 15 minutes, the juice squeezed out the leaves and drunk. (iv).Leaves are rubbed or tied on the head for headaches. (v).Leaf juice is helpful for low blood pressure.
13.	<i>Cymbopogon citracus</i>	Lemon Grass	Poaceae	(i).Lemon grass oil, used as a pesticide and preservative. (ii).It is commonly used in leas, soups and curries. (iii).It is used for treating digestive tract spasms, stomachache, high blood pressure, convulsions pain, vomiting, cough, rheumatism, fever etc. (iv).By inhalation, the essential oil is used as aromatherapy for muscle pain. (v).Lemon grass used as a fragrance in soaps and cosmetics.
14.	<i>Emblica officinalis</i>	Amla	Euphorbiaceae	(i).Fruit is refrigerant, hair tonic, complexion enhancer. (ii). It is useful for digestion and heart disease. (iii). Fruit juice is useful for cough, asthma and tuberculosis. (iv). Fruit juice is good brain tonic. (v). Leaf juice is useful for dysentery.
15.	<i>Neolmarckia cadamba</i>	Kadam	Rubiaceae	(i).Leaves are useful to treat injuries and swellings. (ii).The bark helps relief to sore eyes (conjunctivitis) and is used to treat fevers. (iii).The root helpful for urinary problems. (iv).The leaves are helpful in treating diabetes. (v).Externally the ulcers and wounds are dressed with its leaves slightly warmed to alleviate pain, and swelling and for cleaning and better healing of wounds.

16.	<i>Terminalia catappa</i>	Badam	Combretaceae	(i).Leaves used in liver disorders. (ii).Leaves prescribed against dysentery and diarrhea. (iii).Leaves contain agents for prevention of cancers. (iv).Leaves also used rheumatic joint pain. (v).Juice of young leaves used in south India to prepare an ointment for treating scabies, leprosy and other skin diseases.
17.	<i>Cissus quadrangularis</i>	Harjora	Vitaceae	(i).It is used in the treatment of gastrointestinal disorders, indigestion, piles, worms, asthma, gout, syphilis. (ii).A paste of the fresh stem applied externally is used in traditional Indian medicine to promote healing of bone fractures. (iii).It is also used to relieve burns, wounds and the bites of poisonous insects. (iv).The whole plant and roots used to treat piles, abdominal disorders, diarrhea and dysentery. (v).It is also useful to help reduced the body weight.

Figures of Ethno medicinal plant species used in the treatment of various ailments in Bilaspur district:-



Fig. 1 - *Adhatoda Vasica*



Fig. 2- *Elettaria cardemomum*



Fig. 3 *Ficus carica*



Fig. 4 *Tinospora cordifolia*



Fig. 5 *Bauhinia variegata*



Fig. 6 *Lawsonia Alba*



Fig. 7 *Cyperus cariosus*



Fig. 8 *Vitex Nigundo*



Fig. 9 *Aloe Vera*



Fig. 10 *Acorus calamus L.*



Fig. 11 *Cinnamomum tamala*



Fig. 12 *Kalanchoe pinnata*



Fig. 13 *Cymbopogon citratus*



Fig. 14 *Embilica officinalis*



Fig. 15 *Neolmarckia Kadamba*



Fig. 16 *Terminalia catappa*



Fig. 17 *Cissus quadrangularis*

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How to cite this article:

U.Tewari, A.N.Bahadur, Prerna Soni. (2015). Study of some ethno medicinal plants cultivated in Botanical garden, Science College, Bilaspur (C.G.). Int. J. Adv. Res. Biol. Sci. 2(12): 353-359.

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