



Universal Impact
Factor 0.9285:2012;
1.2210:2013

Index Copernicus
ICV 2011: 5.09
ICV 2012: 6.42

NAAS Rating
2012 : 1.3;2013:2.69

Received on:
12th May 2014

Revised on:
20th May 2014

Accepted on:
10th June 2014

Published on:
1st August 2014

Volume No.
Online & Print
54 (2014)

Page No.
83 to 90

Life Sciences Leaflets is an international open access print & e journal, peer reviewed, worldwide abstract listed, published every month with ISSN, RNI Free-membership, downloads and access.

WILD MEDICINAL PLANTS FROM CHANDGAD REGION, KOLHAPUR DISTRICT, MAHARASHTRA STATE, INDIA

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ABSTRACT:

Present paper deals with survey of medicinal plants used by local people from Chandgad region of Kolhapur district. The information were documented from 10 villages with personal interviews of 35 local people and herbalists. Twenty one plants belonging to 15 families were covered under ethno-medico-botanical survey. Medicinal plants are described with their Botanical names, family, local name, parts used, ailments and administration.

KEY WORDS: *Wild herbal plants, Chandgad, Kolhapur district.*

INTRODUCTION:

Ethno-botany is the study of traditional knowledge of people for a particular culture and region. Ethno-botanists explore details of plants which are used for food, shelter, medicine, clothing, hunting and religious ceremonies from different parts of the world. Ethno-botany has its roots in our ancient literature, sculptures, paintings. Ancient Indian literature has heritage of Indian ethno-botany in Vedic era. This literature mentioned in common names or Sanskrit names. A large number of plants referred in ancient literature have controversy due to local names. In the case of Soma of Hindu epics, about 20 different plants viz. *Sarcostemma acidum* and *Ceropegia juncea*, *Ephedra sp.* etc, (Alam, *et al.* 1882. Mahadihassan, 1986). They vary from arid-regions to temperate regions. The main obstacle in identification of names given to drugs

in ancient literature is due to the lack of plant description and illustrations. The local names of medicinal plants collected through ethno-botanical research play an important role in the practical aspects of traditional medicines. The tribals people do not know botanical names of plants as they are non-botanists. Thus if their help is taken for collected materials for information, research and industry they tell names which are familiar to them and this is only real ethno-botanical work.

Most of the people living in tropical forests are the key communities in understanding, utilizing and conserving plant diversity. Traditional storage of ethno-botanical knowledge in memory and practice has a long history. At least 6500 species of plants are used locally in Asia in traditional and folk medicines. Several Asian countries have begun to encourage traditional medicines as an integral component of health care systems. It is realized that the scope of ethnobotany has now greatly enlarged, both in terms of its theoretical contributions to an understanding of plant human relationships, as well as for the practical applications of the biological knowledge of tribal people in medicine, agriculture, health and industry. In recent years development of ethnobotany in India, China, Nepal, Pakistan, Philippines, Malaysia, Sri Lanka Thailand, Indonesia and other countries has been strongly oriented towards the promotion of traditional herbal medicines, sustainable use of plant resources, rural development and biodiversity conservation with applied approaches in the field. (Maheshwari, 1996).

In Maharashtra the number of researchers reported the use of plants in folk medicine. There are 26 medicinal plants used by tribal communities to cure human ailments from hilly region of Western ghats reported by Vartak *et.al.* (1987). Kumbhojkar *et.al.*,(1999,2003) and Kulkarni *et.al.*, (2007)reported traditional knowledge of medicinal plants from Mahadeokoli tribal pockets of Western Maharashtra. South eastern parts of Kolhapurdistrict surveyed for folklore of medicinal plants and reported 34 wild plants species used in curing common human ailments. (Upadhya *et.al.*, (1986)

Nipunage *et.al.*, (2010) recorded sacred groves from Budargad taluka of Kolhapur district and reported rare, economically important plants. Ethno-botanical observations were also carried out from local people. The Documentation of wild edible plants from Kolhapur district was made by Jadhav *et.al.*, (2011). They studied 50 wild edible plants from this region. Valvi *et.al.*, (2011) reported 30 wild edible fruits from Kolhapur district. Mahadkar and Jadhav (2013) investigated the total 50 wild edible plants from Kolhapur district. Out of them 18 plants are used as leafy vegetables, 21 fruits species and 3 three tuberous rhizome. All 50 plants documented along with their medicinal uses and food values. Kambale and Jadhav (2013) studied the ethno-medicinal properties of some non cultivated green leafy vegetables from various regions of Kolhapur district of Maharashtra. On the basis of collected ethno-botanical information through field survey and literature studies, it is observed that they are used as tonics, antioxidants, cooling, digestive, laxative, diuretic etc. by rural people. It is due to that green leafy vegetables are cheap source of proteins, carbohydrates, iron, some other essential minerals etc. and used in regular diet. Thus indirectly they act as a alternative source of medicinal drugs, which are easily

available in natural habitat. Hence during upcoming time by analysing these plants for available bioactive contents they may be introduced as future herbal medicine. Present investigation on wild medicinal plants used by local people from Chandgad Taluka of Kolhapur district was recorded through field visits in 10 villages.

STUDY AREA:

It is located between 15° N and 74° E constituting an area about 952.20 sq. km. The climate of Chandgad region is moderate, during monsoon season it receive average annual rainfall 3000 mm. The height is about 800 mtr. from sea level. The climate and edaphic factors favours the vegetation types such as semievergreen to moist deciduous tropical forest.

METHODOLOGY:

Ethno-medico- botanical data were collected during 2009-2011. The region was frequently visited for collection of information through local herbalists and Vaidus. 10 Villages are surveyed includes 15 herbalists, 2 women and 18 men. The information about the wild plants used as herbal medicines is listed in table 1.

RESULT AND DISCUSSION:

These *vaidus* have integration with culture, religion and other aspects of a community's life; animal healers often also treat humans and human healers treat animals. Their main approach is holistic to treat whole patient and to depend mostly on observations and the senses (Hafeel & Shankar, 1999). One of the challenges posed by the modern age is finding ways of strengthening and nurturing the roots of traditional medicines.

The study area have been explored to collect 21 plants belong to 15 families for ethno-medico-botanical point of view. This information includes the use plant as medicines for curing piles, skin diseases, dysentery, gastric problems, tooth ache, diabetic, fever and some plants are useful for blood clotting and purification. Vaidus or Bhagats are specialized persons in the area and they handled uncommon cases which are not cured by physician like Jaundice, diabetes, chronic diarrhoea and dysentery, anemic conditions, etc. *Pavetta crassicaulis* Bremek and *Curcuma inodora* Blatt are used. for dysentery in present work. Kulkarni *et.al*, (2002) recorded more than 50 plants from Mahadeokoli tribe for anti-diarrhoea, anti-dysentery and stomach disorder from Western Maharashtra.

Present survey indicate that 5 plants belonging to family Zingiberaceae. Rhizomes of *Zingiber* Boehm. constitute essential oils and terpenes, these terpenes are like Borneol, Camphor, Cineole, Camphene, Pinene, Zingiberene, etc. This indicates that majority of the local people use rhizome for bone fracture and skin diseases having antiseptic and anti-inflammatory properties. Similarly, *Zingiber nesanum* Grah.) Ramam. rhizome contains β -pinene, while *Z. rerumbet* (L.) and *Z. cernuum* Dalz. rhizome

contains β -phellandrene and β - sesquiphellandrene, cineol, citral ar-curcumene and 6-shagaol. (Kasarkar et. al., 2013)

The scientific evaluations of *Zingiber* Boehm. have been carried out for mineral contents in leaves and rhizomes (Kasarkar & Kulkarni, 2012). *Zingiber* members of family Zingiberace have been deposited Iron, Calcium, Maganese, Copper, Zinc, Nitrogen and Potassium in the higher level in their rhizome and leaf. Iron combines with protein for the development of haemoglobin and the red pigment of the blood. The main function of Iron in haeme is to carry oxygen from the lungs to the cells and to carry back some Carbon dioxide formed to the lungs for exhalation. Iron is an essential constituent of many tissues (Muscles). Iron is stored in the liver, spleen and bone marrow in the form of the protein Ferritin (Mudambi, 2005).

Manganese is a trace element and an essential part of cell enzymes. It is a component of enzymes required for glucose utilization (Joshi, 2002). Manganese is a very useful for chlorophyll synthesis and respiration. Heavy consumption of Manganese mainly effects on respiratory tract and brain. Symptoms of manganese poisoning are hallucinations, forgetfulness and nerve damage. Manganese can also cause Parkinson, lung embolism and bronchitis.

Calcium is beneficial for mechanical strength to the tissues (Cleland, 1960). Calcium strengthens bones and teeth. It controls the transmission of nerve impulses. It also helps in clotting of blood. (Mudambi, 2005). Zinc is a mineral in the human environment but the elevated levels of Zn may cause pancreatitis, anemia, muscle pain, acute renal failure and even death. Potassium is required for the maintenance of osmotic pressure and fluid balance within the cell.

Diabetes mellitus (DM) is the commonest endocrine disorder that affects more than 100 million people worldwide (6% of the population). It is caused by the deficiency or ineffective production of insulin by pancreas which results in increase or decrease in concentrations of glucose in the blood. It is found to damage many of the body systems, particularly the blood vessels and nerves. For its therapy along with the synthetic drugs, many agents of the plant origin are also in used particularly for the treatment of non insulin dependent diabetes mellitus (NIDDM). Over the centuries, Indian herbal drugs have served as a major source of medicines for the prevention and treatment of diseases including diabetes mellitus. The study was performed in the desert region with the aim of producing an inventory of the plants used by traditional healers in tribal pockets of Rajasthan to treat diabetes, A list of over 50 plants that are present in arid zone of Rajasthan having anti-diabetic potentials (Menghani *et.al*, 2010). In present survey local people from Chandgad area using plants like *Murraya koengii* Spreng. and *Syzygium cuminii* Skeels. for diabetes.

Chemical compounds and ethno-medico-botanical knowledge have very close relationship to find out new drugs from traditional knowledge preserved by local people. Kamble *et.al*, (2011) reported 60 plant species used to cure skin diseases from Bhor region of Western Maharashtra. They classified skin

diseases like abscess, dry boils, scabies, boil, pimples, skin rashes, herpes, alopecia, eczema, inflammation on skin, etc. In present work well known medicine of *Curcuma longa* L. is used for skin diseases.

CONCLUSION:

Folklore systems of medicine continue to serve a large segment of population, especially those in rural and tribal areas, regardless of the advent of modern medicine. The entries regarding the multifarious applications in folk medicine have been grouped regionally to emphasize the ethno-botanical diversity and ubiquity of the plant. All parts of the plant, from root to fruit, possess a multitude of phytochemical secondary metabolites which impart an unprecedented variety of medicinal uses to the plant. It is interesting to note that a single plant species finds use for treatment of a wide spectrum of health disorders in traditional and folk medicine; some of which have been experimentally validated. The plant is a component of a number of commercially available herbal formulations and has also shown potential as an effective bio-control agent. (Vishwanathan and Basavaraju, 2010).

In conclusion ethno-medico-botany has wide scope in terms of its theoretical contributions and understanding plant-human relationship, as well as practical application of biological knowledge of tribal people in medicine, agriculture, health and industry. Traditional herbal medicines, sustainable use of plant resources, rural development and biodiversity conservation with applied approaches in the fields are important aspects of ethno-botanical search.

ACKNOWLEDGEMENT:

Authors are thankful to local people for sharing their knowledge regarding plants and their uses in day to day healthcare practices. It is worth to give thanks to Principals, Vivekanand College, Kolhapur-416004 and D.K.A.S.C. College, Ichalkaranji- 416115 and President, BAIF Development Research Foundation, Warje –Malwadi, Pune- 411 058 for encouragement in present work.

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Table- 1 Herbal medicines from Chandgad region

| Sr. No. | Botanical Name | Family | Local Name | Parts Used | Disease/ Ailment | Uses |
|---------|--------------------------------------|-----------------|------------|---------------|----------------------------|--|
| 1 | <i>Ficus benghalensis</i> L. | Moraceae | Wad | Bark | Menstrual Problems | Fresh Bark Juice is mixed with ash and Lavang (<i>Syzygium aromatic</i>) and taken one tea spoon orally. |
| 2 | <i>Butea monosperma</i> (Lam.) Taub. | Fabaceae | Palas | Flowers | Gastric Problems | Flowers are boiled in water and filtered. One teaspoon extract taken orally for 2-3 days |
| 3 | <i>Mangifera indica</i> L. | Anacardiaceae | Amba | Bark | Dysentery (in livestock) | Barks of Mango, Umber(<i>Ficus racemosa</i> L.), Jambhul (<i>Syzygium cumini</i> Skeels.) are mixed and prepared extract /decocotion and given orally for two times. |
| 4 | <i>Clematis gauriana</i> Roxb. | Ranunculaceae | Morvel | Leaves | Bone Fracture (livestock) | Fresh leaves are boiled in water and applied on fractured area of animals. |
| 5 | <i>Cassia fistula</i> L. | Caesalpinaceae | Bhava | Fruit | Piles | Fruit pulp and sugar is mixed and taken orally for one week. |
| 6 | <i>Curcuma inodora</i> Blatt. | Zingiberaceae | Ambehalad | Rhizome | Dysentery | The fresh or dry rhizome juice is given to animals to control dysentery . |
| 7 | <i>Moringa oleifera</i> Goern. | Moringaceae | Shevga | Bark | Body Heat | The fresh bark juice is taken orally for 2-3 days. |
| 8 | <i>Adhatoda vasica</i> Nees. | Acanthaceae | Adulsa | Leaves | Swelling of Body | Leaves are boiled in water and applied on swelling part of body. |
| 9 | <i>Carissa carandus</i> L. Mant. | Apocynaceae | Karvand | Root | Toothache | Root juice is applied against toothache. |
| 10 | <i>Tamarindus indica</i> Linn. | Caesalpiniaceae | Chinch | Ripened Fruit | Blood Clotting | Ripened fruit and salt is mixed and applied on wound. |

| | | | | | | |
|----|---|---------------|-----------|-------------|------------------------------|--|
| 11 | <i>Pongamia pinnata</i> (L.) pierre | Fabaceae | Karanj | Bark | Blood purification | The bark juice is taken orally for 2-3 days. |
| 12 | <i>Hedychium coronarium</i> Koenig. | Zingiberaceae | Sontaka | Leaves | Bone Fracture (For animals) | Leaves are boiled in water and applied on fractured area of animals. |
| 13 | <i>Emblica officinalis</i> Gaertn. Fract. | Euphorbiaceae | Awala | Fruit | Vomiting | Fruits are eaten to stop vomiting. |
| 14 | <i>Zingiber nesianum</i> (Grah.) Ramam | Zingiberaceae | Ale | Rhizome | Piles | Fresh juice of rhizome taken orally for 2-3 days. |
| 15 | <i>Curcuma longa</i> L. | Zingiberaceae | Halad | Rhizome | Skin diseases | Rhizome paste is applied on skin diseases. |
| 16 | <i>Costus speciosus</i> L. | Zingiberaceae | Kosht | Rhizome | Blood Purification | Rhizome juice is taken orally for Blood purification. |
| 17 | <i>Tectona grandis</i> L. | Verbenaceae | Sagwan | Leaf | Acidity | The fresh leaf juice is taken orally to reduce the acidity. |
| 18 | <i>Syzygium cumini</i> Skeels. | Myrtaceae | Jambul | Seeds | Diabetis | The seeds are dried and make the powder and taken orally to reduce sugar level. |
| 19 | <i>Achyranthes aspera</i> L. varaspera | Amarathaceae | Aghada. | Whole plant | Fever | One cup of whole plant juice along with two teaspoon honey is given twice a day for two days to cure fever . |
| 20 | <i>Pavetta crassicaulis</i> Bremek | Rubiaceae | Phapati | Root | Dysentery and diarrhoea | Three tablespoon root juice is given twice a day for three days to cure diarrhoea and dysentery |
| 21 | <i>Murraya koenigii</i> (L.) Spreng. | Rutaceae | Kadipatta | Leaf | Diabetes | One teaspoon leaf powder along with 25 ml milk or water is given early in morning for two month |