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Pratap GK

Research Scholar, Dept. of
Studies in Biochemistry
Mangalore University, PG
Centre Chikka Aluvara, Kodagu
district, Karnataka, India

Ashwini S

Research Scholar, Dept. of
Studies in Biochemistry
Mangalore University, PG
Centre Chikka Aluvara, Kodagu
district, Karnataka, India

Manjula Shantaram

Professor, Dept. of Studies in
Biochemistry Mangalore
University, PG Centre Chikka
Aluvara, Kodagu district,
Karnataka, India

Correspondence

Manjula Shantaram
Research Scholar, Dept. of
Studies in Biochemistry
Mangalore University, PG
Centre Chikka Aluvara, Kodagu
district, Karnataka, India

Practice of traditional medicinal plants in humans and cattle in Arasikere hobli of Karnataka

Pratap GK, Ashwini S and Manjula Shantaram

Abstract

A database on indigenous knowledge of medicinal plants used by the humans and cattle, in the local communities in Arasikere hobli of Karnataka is documented. People living in rural areas have traditional health care practices, the knowledge of which is valuable for curing several ailments. In the present survey, it was recognized that eleven medicinal plants belonging to nine families are being used by the local groups to cure different human complaints and eleven plants belonging to ten families are used for treating animal infirmities. Majority of the villagers use these plants since these are effortlessly and freely available with no side effects. The present study reveals that the local population is well versed with the natural resources around them and this traditional knowledge should be preserved for the betterment of future mankind.

Keywords: Traditional knowledge, Medicinal plants, ailments, humans, cattle

1. Introduction

In India, the traditional system of medicine plays an important role in health care of rural people for all types of ailments. The healing power of traditional herbal medicines have been realized and documented since Rigveda and Atharvaveda (Taid *et al*, 2014) ^[1]. Human beings were dependent on medicinal plants for their health complications since thousands of years. Even after the induction of 200 years of modern system of medicine, about 90% of people in rural India seek help of local health practitioners for the treatment of various diseases (Siddalingamurthy and Vidyasagar, 2013) ^[2]. The usage of medicinal plants since many centuries is based on different Indian medicinal systems such as Ayurveda, Unani and Siddha. In recent years, it is reported that traditional ayurvedic *pandits* use 2,500 plant species. About 100 plant species are being used on a regular basis for the treatment of many illnesses like diabetes, fever, jaundice, foot and mouth disease and so on (Siddalingamurthy, 2015) ^[3]. Recently, World Health Organization (WHO) estimates that 80% of population in developing countries use traditional medicine (Kunle *et al*, 2012) ^[4]. Traditional health care practices are observed in the areas where rural people dwell. This is actually a valuable knowledge to maintain human and animal health (Parusharama and Kavyashree, 2015) ^[5].

2. Materials and Methods

The primary objective of this study was to present a database on indigenous knowledge of medicinal plants used in Arasikere hobli of Harapanahalli taluk of Davangere district in Karnataka, India. It is located at 14.8° north latitude and 75.98° east longitude. It has an average elevation of 633 meters above the sea level. Major parts of Arasikere hobli is covered by red sandy loam soil, followed by black soil. Major crops cultivated in this region are maize, jowar, ragi, sunflower, groundnut and cotton. As per the evidence of traditional medicinal plants being used for treating various ailments of humans and cattle by ayurvedic *pandits*, 21 villages were visited. Among the 21 villages, only 8 villages had the knowledge of using these medicinal plants. A total of 11 herbal healers (8 men and 3 women) of the age group between 42 and 84 years were interviewed. The information collected from the traditional healers were the local names of medicinal plants, habit, plant parts used, conventional uses, method of drug preparation and dosage.

Table 1: Plants used in human health conditions

Botanical name	Family	Local name (Kannada)	Habit	Parts used & mode of administration
<i>Anethum sowa</i> Roxb.	Apiaceae	<i>Sabbassige</i>	Herb	Fruits are used to deworm the gastrointestinal tract.
<i>Amaranthus tricolor</i>	Amaranthaceae	<i>Arvesoppu</i>	Herb	About 15 to 20 ml leaf juice is given twice a day on alternate days in a week for treating jaundice.
<i>Aegle marmelos</i> (L.)	Rutaceae	<i>Bilvapatre</i>	Tree	Few fresh leaves are eaten daily in the morning half an hour before breakfast for 3 months to control diabetes.
<i>Argyrea elliptica</i>	Convolvulaceae	<i>Uganiballi</i>	Climber	Latex of the plant is used to make a paste with garlic and ginger, is applied on chronic wounds of diabetics for healing.
<i>Abutilon indicum</i> (L)	Malvaceae	Kari jail or <i>Mudregida</i>	Shrub	Two teaspoonful of stem-bark decoction is given twice a day for two weeks to reduce blood sugar in diabetics.
<i>Cocculus hirsutus</i> (L)	Menispermaceae	Dagdiballi	Climber	Half a teaspoon of root powder is taken with water twice a day for 21 days by diabetics to maintain sugar level.
<i>Celosia argentia</i> L.	Amaranthaceae	<i>Kolanisoppu</i>	Shrub	Leaf juice is given to cure stomach ulcers while its decoction is gargled for mouth ulcers.
<i>Mucuna pruriens</i> (L.)	Fabaceae	<i>Nasugunni</i>	Climber	Few soaked seeds are eaten daily in the morning for 21 days to treat all types of digestive disorders such as indigestion, ulcers, etc.
<i>Ocimum americanum</i>	Lamiaceae	<i>Nayithulasi</i>	Herb	Leaf decoction is given twice a day for 3 days to treat whooping cough.
<i>Pergularia daemia</i>	Asclepiadiaceae	<i>Kuntiginaballi</i>	Climber	Five to six leaves and a small piece of garlic and a pinch of salt are made into small pills. Two pills are given twice a day for 3 days to treat asthma.
<i>Ricinus cummunis</i> L.	Euphorbiaceae	<i>Oudala</i>	Shrub	About ten ml of leaf juice is given orally once a day for three days to cure jaundice.

Table 2: Plants used in the treatment of cattle ailments

Botanical name	Family	Local name	Habit	Parts used & mode of administration
<i>Azadirachta indica</i>	Meliaceae	<i>Bevu</i>	Tree	The bark of <i>A. indica</i> is ground in water and the juice is given twice daily for 3 days to cure fever.
<i>Azadirachta indica</i>	Meliaceae	<i>Bevu</i>	Tree	Six leaves of <i>A. indica</i> are boiled in 2 glasses of water and reduced to ½ glass decoction. From this, 2 spoons are given on empty stomach for 2 days to deworm the gastrointestinal tract.
<i>Bambusa arundinacea</i> RETZ	Gramineae	<i>Bidiru</i>	Shrub	Leaves are given orally with jaggary twice daily, for 3 days to control dysentery.
<i>Blepharis repens</i> (Vahl)	Acanthaceae	--	Herb	Leaves are ground into paste with cow's milk, applied topically on the fractured part for 15 days. Helps in rejoining of bones.
<i>Jatropha curcas</i> L.	Euphorbiaceae	<i>Kerugida</i>	Tree	Leaves are given orally once to cure fever (<i>Neerjwara</i>).
<i>Leucas aspera</i>	Lamiaceae	<i>Thumbe</i>	Herb	Leaves of these plants are ground into paste and given orally with water for 3 days to cure cough.
<i>Malva rotundifolia</i> L.	Malvaceae	<i>Kadukalegida</i>	Herb	Leaves are ground into paste with cow's milk, applied topically on the fractured part for 15 days. Helps in rejoining of bones.
<i>Piper betle</i> L.	Piperaceae	<i>Veeleyadayele</i>	Herb	Two seeds of <i>S. anacardium</i> , 3 leaves of <i>P. betle</i> , 1 bulb of onion are ground into paste and mixed with 200 grams of coriander powder. This mixture is given orally in water twice daily for 2 days. This controls foot and mouth disease of cattle.
<i>Semecarpus anacardium</i> L. f	Anacardiaceae	<i>Bhilva</i>	Tree	Two -three handful of leaves are given orally once daily for 3-4 days. This increases milk production in cows.
<i>Sida rhombifolia</i> L	Malvaceae	<i>Binnerugagida</i>	Shrub	
<i>Wrightia tinctoria</i> R.Br	Apocynaceae	<i>Ajamara</i>	Tree	Leaves are ground with pepper and garlic in water and the juice is given orally only twice. This is used to treat snake bites.

3. Results

The various plant species are arranged in an alphabetical order. A total of 11 species belonging to 10 families have been noticed for the treatment of human diseases and 10 species belonging to 9 families for the treatment of cattle diseases. For each plant scientific name, family, local name, habit, parts used, mode of drug preparation and dosage are provided. The herbal preparations are in the form of juice, decoction, powder and paste (Siddalingamurthy, 2015) [3]. Some of the plant pictures are shown in figure 1. The plants used by the traditional healers constitute five shrubs, seven herbs, five climbers and six trees (fig.2). The dominant six plant families (Hiremath *et al.*, 2010) [6] used in the treatment

are Apiaceae, Amaranthaceae, Malvaceae, Euphorbiaceae, Lamiaceae, Asclepiadiaceae (fig.3). Utilization of plant parts by traditional healers are leaf (68%), stem bark (11%), fruit (11%), latex (5%) and root (5%) depicted in figure 4. Commonly used plants to treat more number of diseases (Muth *et al.*, 2006) [7] are *Aegle marmelos*(L.), *Argyrea elliptica*, *Cocculus hirsutus*, *Mucuna pruriens* L. The therapeutic use of the herbal drug and preparation techniques differed from one region to the other (Shivanna and Rajakumar, 2010) [8].

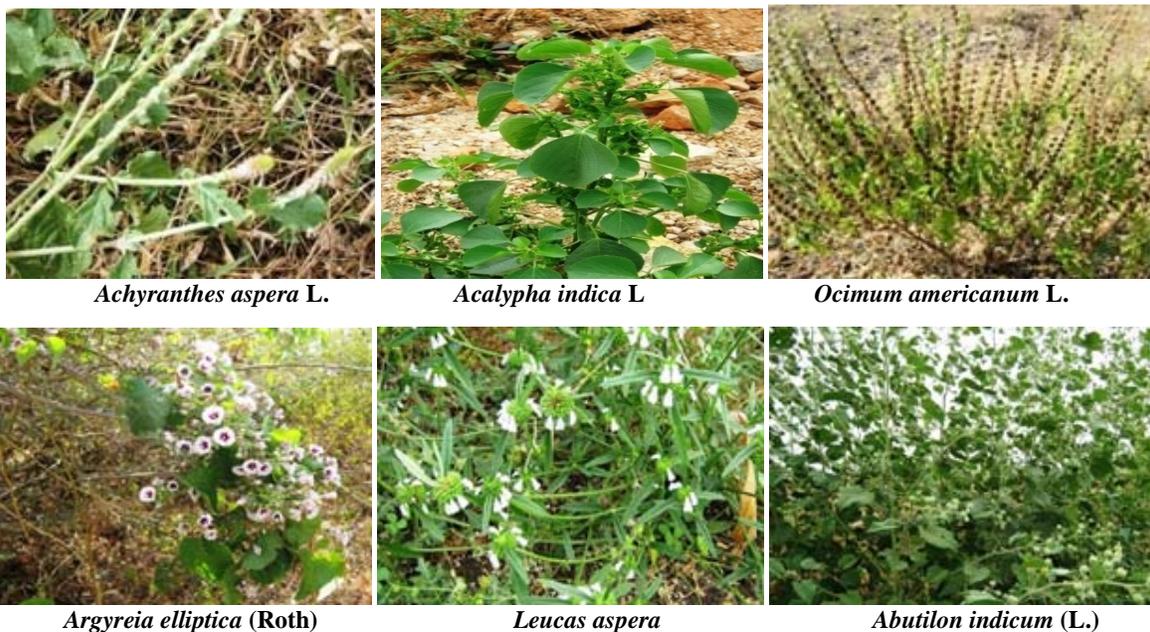


Fig 1: Commonly used medicinal plants

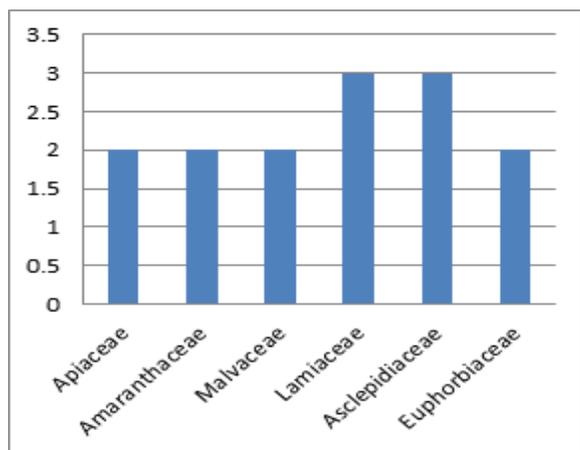


Fig 2: Habit wise analysis of medicinal

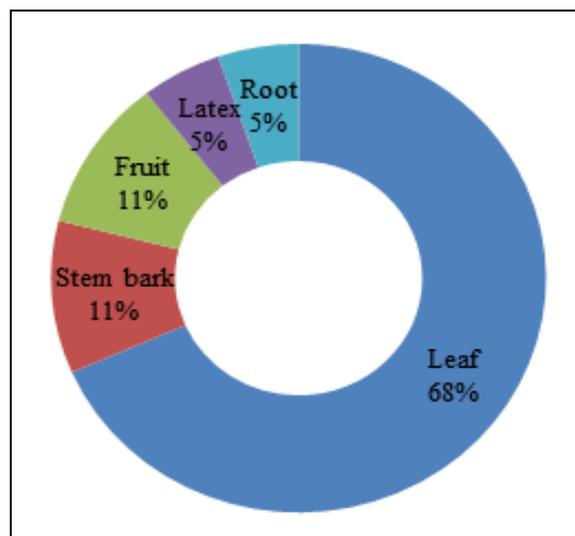


Fig 4: Utilization of plant parts by traditional healers

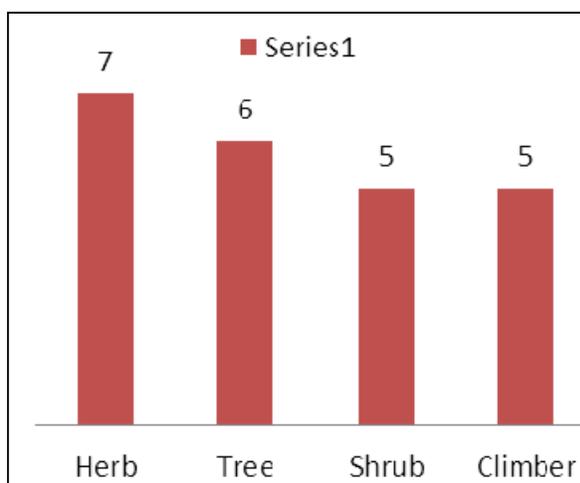


Fig 3: Dominant plant families in ethno-medicine

4. Discussion

The medicinal plants are used in the treatment of various ailments of humans and cattle. The rural people of Arasikere hobli are highly dependent on these medicinal plants as those are easily available and proved to be effective. The bioactive compounds like coumarins, flavonoids and other indirect sources from medicinal plants can act against the deadly diseases (Praseetha *et al*, 2016) ^[9]. Their botanical names are: *Aegle marmelos* (L.), *Argyreia elliptica*, *Cocculus hirsutus*, *Mucuna pruriens* L. These plant species could be taken up for further pharmacological and clinical studies which will be useful in the formulation of novel drugs for treating human diseases. The knowledge of the traditional healers helps in the development of modern medicinal system (Prashantha Kumar and Vidyasagar, 2006) ^[10]. The present records of traditional information from a region where novel knowledge has been generated will not only provide recognition to this knowledge but it also helps in conservation in relation to providing pharmacological leads for the improvement of human society (Uniyal *et al*, 2006) ^[11]. The current medicine may exist equal

with such traditional practice and herbal medicines have often maintained their popularity for historical and cultural reasons (Hosseinzadeh *et al.*, 2015) ^[12].

5. Conclusion

The plant species reported in the present study were cross checked with the available literature. Some of these plant species were already identified for the same purpose but the parts used, method of drug preparation and dosage were different. It is found that ethno-medicinal knowledge is becoming restricted only to the elders, the traditional practitioners and local farmers, while young people are totally ignorant of this treasure. Our earnest attempt is to revive the usage of traditional medicine and make it popular among the younger generation.

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