Biodiversity conservation of Medicinal plants through Ex situ method for sustainable environment

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Introduction:

There is growing concern for the medicinal plants and their conservation since last few decades. There is an urgent need to protect environment which is affected adversely by various factors.

Biodiversity is the very basis of Human survival and economic well being and constitutes the resources upon which families, communities, nations and future generations depend (Singh et al. 1994). The status and characteristics of biodiversity prevalent in a country/state/region is dependent on the land (Soil, topography),climate and people(their habitats and population density) inhabiting the region (Nayar 2011). India is one of the 33 hotspots of the world(conservation International 2007) and over 17,000 species of higher plants are reported to occur, of which 7500 are used for healthcare by various ethnic communities (Shiva 1996). About 600-700 species are in much use mostly by the tribal and the rural population. About 60% of the population of the world and 80% of the population in developing countries relay on traditional medicines, mostly plant drugs for their primary healthcare needs. In India, 70% of the population dependent on traditional plant based medicines as primary healthcare sources (Anonymous 2003] a.

Biological diversity is being viewed as the potential resource capital of a state, region or country that posses it. It is sad to see people destroying valuable flora in their immediate surrounding either satisfying sedative or individual gain .so some plants have already been extinct and there are many facing danger of extinction. The objective of the present study was conservation of some medicinal plant species by exsitu method in botanical garden of KFGS college, Tiptur.

Study area

Tiptur is taluk and sub divisional head quarters of Tumkur district ,Karnataka .It is at a distance of 141 KM from Bangaluru .The Bangalore –Honnavara national high way 206 and Bangalore –Meeraj broad gauge railway line passes through Tiptur.

The town is famous for its coconut cultivation ,marketing and is also called Kalpataru nadu .Tiptur is for coconut products .Tiptur lies at $13^0 \, 16^1$ north latitude , $76^0 29^1$ east longitude ad it is an altitude of 861 Mts above sea level with an average rain fall of Tiptur town is 503 mm .Kalpataru college campus is one of the areas in Tiptur town known for its richness in plant diversity mainly inhabited by wild herbs, cultivated one, ornamental plants, shade trees ,avenue trees ,climbers ,medicinal plants, ethno botanically important plants . College campus covers an area of 36 acres is situated in the centre of the campus with well protected by compound wall with vigilant securities, bounded by PAA College in the north ,Girls hostel in the east , stadium in the west and N H 206 in the south . The campus comprises plain terrain with red loamy, porous , soil suitable for coconut plantation .An average annual rain fall between 503 mm ,average temperature in summer is 34^0 c[93⁰ F]and in winter is 20^0 C [68⁰ F].

Material and method: Kalpataru First Grade Science College is situated in Tiptur of Tumkur District, Karnataka .In the college campus, more than 60 species of medicinally important plants are grown here. The medicinal plants saplings are procured from forest department, BAIF Institute .and collected from local area. Only few plant species are selected for present study .Their medicinal properties are documented based on available literature given in Table No:- 1.

Result: - The data document are arranged in alphabetical order of the genus , common name ,botanical name and medicinal uses are given to each species .

Discussion: In the present study plants of different families have been documented for various diseases .The medicinal plants of college campus are propagated as a part of conservation .The plants are propagated through cutting, seeds and by rhizomes.

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Table No: - 01

Sl No	Name of the plant	Common name in kannada	Family	Habit	Part used.	Medicinal uses
1	Abrus precatorius	language Gulagangi	Fabaceae	Twin	Seeds –,roots	Purgative,cough
				e	,leaves .	cold
2	Adathoda vesica	Adusoge	Acanthaceae	Shrub	Leaves	Cold ,to control asthama
3	Aloe veera	Lolesara	liliaceae	Herb	Leaves	Cold ,skin diseases
4	Aegle mermelos	Bilvapatre	Rutaceae	Tree	Leaves and fruits	Cold ,anti dandurf
5	Azardiracta Indica	Bevu	Meliaceae	Tree	Leaves ,seeds ,resin	Stomach pain ,skin diseases
6	Aspargus racemoses	Shatavari	liliaceae	Herb	Root for rhematism	Rheumatism ,constipation ,kidney pain and swelling
7	Acacia farnesiana	Sampige jaly	Mimosa	Shrub	Resin	Treat bleeding gums ,to treat cough .
8	Bauhinia sp	Basavanpada	caesalpiniaceae	Small tree	Seed	Aphrodisiae,dysent ery
9	Boerhaavia diffusa	Boerhaavia	Chenopodiacea	Creep er	Leaves and stem	For rheumatism
10	Bamboo	Bidiru (Bamboo)	Poaceae	Large shrub	Tender shoot	As food ,birth to death plant
11	Calotropis gigantia	yakka	asclepiadaceae	shrub	Latex	Bronchitis ,asthma ,leprosy eczema ,
12	Cassia auriculata	Tangadi	Caesalpiniacea	shrub	Leaves	Sugar control
13	Centella asiatica	ondelaga	umbelliferae	Herb	Leaves	To improve mental IQ
14	Citrus reticulate	Lemon	Rutacea	Shrub	Fruits	Vitamin C
15	Cymbopogon	Lemongrass	Poaceae	Herb	Leaves	Wormicide ,diuretic ,mosqueto repellent .
16	Coccinia cordifolia	Tonde	Cucurbitaceae	Creep er	Fruits and leaves	Skin problem
17	Cuminum cyminum	Jeerige (Cumin)	Umbellfeara	Herb	Fruits	Stomach pain
18	Cynodon dactilon	Garike	Poacea e	Herb	Leaves and stem	Fever
19	Cycas revoluta	cycas	cuccadaceae	Tree	Seeds	Source of sagograin as food
20	Clerodendro inermisn	Vishamadhari	Verbinaceae	Shrub	Leaves	To trat fever, veneral infections , rheumatism
21	Caryota urens	Bhagani	Palmae	Tree	Juice from inflorescence cutting	Toddy
22	Datura metel	Ummatti	solanaceae	Herb	Seeds ,leaf and roots	Leprosy ,insanity
23	Euphorbia tirukalli	Kolgalli	Euphorbiacea	Shrub	Latex	Antifungal
24	Ficus racemosa	Atti mara	Moraceae	Tree	Latex, fruits	Piles pulmonary diseases

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25	Hibiscus rosa sinensis	Dasavala	Malvacea	Shrub	Leaves	Dysentery
26	Jatropa curcus	Marangle (Jatropa)	Euphorbiacea	shrub	Latex, seeds	Dental ache
27	Lawsonia inermis	Mehandi (Henna)	Lythraceae	Shrub	Leaves	As cosmatics
28	Moringa oleifera	Nugge (Drum stick)	Moringacea	Tree	Leaves	Rich in iron ,vegetable leaves
29	Michelia champaka	Sampige. (Champaka)	Magnoliacea	tree	Flowers and seeds	Ornamental and secred
30	Monihot esculanta	Maragenasu. (Cassava)	Euphorbiacea	Shrub	Tuber root	As food
31	Morinda citrifolia	Noni	Rubiaceae	Shrub	Fruits	As health drink ,beverage
32	oscimumsanctum	Tulasi	Labiatae	herb	Leaves	Cold
33	Oscimum basilicum	Kamakasturi	labiatae	Herb	Leaves and seeds	Cold
34	Plectranthus amboinicus	Doddapatre	Labiatae	Herb	Leaves	Allergy treatment
35	Phyllanthes niruri	Nelanelli	Euphorbiacea	Herb	Leaves	Lever treatment
36	Phyllanthes emblica	Nelli kaya	Euphorbiacea	Tree	Fruits	Vitmin C
37	Piper betal	Velya ele (Betal leaves)	Piperacea	climb er	Leaves	Cold ,rich in menerals
38	Plumaria alba	Deva ganagale (Temple tree)	Euphorbiacea	Tree	latex	Summer cold
39	Psidium guava	Sibe	Myrtacea	Tree	Fruits	Rich in vit c,oral care
40	Roystonea regia	Royal palm	Palmae	Tree endan gered	Seeds	Source of oil used for live stock
41	Rawolfia tetra folia	Sarpagandh	Apocyancea	Herb	Leaves	To control Bp
42	Sapindus saponaria	Antuvala	Sapindaceae	Tree	Fruits	As detergent
43	Syzigium cumini	Nerale	Myrtaceae	Tree	Fruits ,seeds,tree bark	Source of vit ,minerals ,sugar control
44	Tylophora indica	Adumuttada balli	asclepiadaceae	Twin e	leaves	Bronchial Asthama
45	Tinospora cordifolia	Amrithballi	Menispermacea	climb er	Leaves,roots	Fever ,sugar control
46	Terminalis chebula	Taremara	Combretaceae	tree	Fruits	Triphal churna ,laxative,diuretic ,homeostatic
47	Vinca rosea	Sadapushpa	apocyanaceae	Herb	Leaves and roots	Diabetic control
48	Vitex negundo	Lakke	Verbinaceae	shrub	Leaves	Joint Pain killer
49	Vitis quadrangularis	Nagele	vitaceae	Herb	Stem	To treat pain ,and swelling of various types
50	Withenia somnifera	Ashawagandha	Solanacea	Herb	Root	Indian gensing

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