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GPS based study of distribution and abundance of *Calotropis gigantea* in Bordi, Maharashtra

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Abstract:- *Distribution and abundance of Calotropis gigantea plant was carried out with the help of Global positioning system by using GPS machine (GARMIN eTerx10 model) during March 2014 to February 2015from a small tribal village situated in Palghar district Maharashtra. The leaves are offered to lord Hanuman every Saturday all over India. Being situated between Mumbai and Surat there is a lot of demand of leaves of this plant, pluckers from both mega cities comes to Bordi every Friday and pluck bags full of this plant, causing decrease of number of this plant in Bordi. Hence village was classified on the basis of different land use, location and human use. With the help of GPS machine, global positioning of this plants were recorded on Sundays and holidays during research period. All together 651 plants were recorded in different locations. From the data obtain the distribution and density of the Calotropis gigantea plant on different types of habitat was tabulated and conclusions were drawn.*

Keywords:- *GPS, Bordi, Calotropis, Gigantea*

I. INTRODUCTION

It is mentioned by the earliest Hindu writers and the ancient name of the plant which occurs in the Vedic literature was Arka alluding to the form of leaves, which was used in the sacrificial rites. Both the species are used as substitutes for one another and are said to have similar effects. In Dhanvantari Nigantu three varieties of Arka are mentioned viz. Rajarkah, Suklarkah and Svetamandarah. The latex is used as an abortifacient, spasm genic and carminative properties, antidysentric, antisyphilitic, antirheumatic, antifungal, mullusccide, diaphoretic and for the treatment of leprosy, bronchial asthma and skin affection. Different parts of the plant have been reported to possess a number of biological activities such as proteolytic, antimicrobial, larvicidal, nematocidal, anticancer, anti-inflammatory[3]. Its flowers possess digestive and tonic properties. On the contrary, the powdered root bark has been reported to give relief in diarrhea and dysentery. The root bark and leaves of *Calotropis procera* are used by various tribes of central India as a curative agent for jaundice.

Geographic distribution: C. gigantea is drought-resistant, salt-tolerant to a relatively high degree and it disperses seeds through wind and animals. It quickly becomes established as a weed along degraded roadsides, lagoon edges and in overgrazed native pastures. It has a preference for and is often dominant in areas of abandoned cultivation especially sandy soils in areas of low rainfall; assumed to be an indicator of over-cultivation. *C. Procera* is native to India, Pakistan, Nepal, Afghanistan, Algeria, Iran, Iraq, Israel, Kenya, Kuwait, Niger, Nigeria, Oman, Saudi Arabia, United Arab Emirates, Vietnam, Yemen and Zimbabwe .

Calotropis gigantea R. Br. (Asclepiadaceous), a wildly growing plant, has been reported to possess medicinal properties and is used in toothache and earache, sprain, anxiety, pain, epilepsy and in mental disorders [1]. Anti-diarrheal properties have been possessed by aerial parts of the plant as reported and flowers are known for their analgesic activity [2]. The roots of the plant have shown CNS activity1 as well as pregnancy interceptive properties [3][4]. Calotropain has marked anti-blood coagulating activities.[5] It is a promising anti- inflammatory agent. Besides medicinal use, bloom of Calotropis gigantea can be successfully used for production of biogas with higher fertilizer.

However, this plant has been regarded as one of the poisonous plants by the general populace in Maharashtra. This plant has been observed to be presents in the roadside. There has been no study done on the distribution of this plant in Bordi or in North West India. The presence of such as incredible medicinal plant inside a village boundary has been advantageous for medicinal and scientific study of it. *Calotropis gigantea* was mainly used in Africa and South-East Asia by immigrants from India and the uses have thus spread. The whole plant is used for skin diseases, boils and sores and as a tonic and purgative in small doses, and as an emetic in larger doses. The powdered root bark is used to cure dysentery, elephantiasis, and leprosy. The latex is used on stings, toothache, ringworm, leprosy, syphilis, rheumatism and tumors, and also as an antiseptic, vermifuge, emetic and purgative, as well as for poisoning arrows. The powdered flowers are given for coughs, colds and asthma. The crushed and warmed leaves are applied on burns, headaches and

rheumatic pains, and as a tincture for intermittent fever.

In the past both *Calotropis gigantea* (Madarfibre) and *Calotropis procera* (French cotton or Akund) were cultivated and used as a source of a strong bark fiber for string, fishing nets and cloth, and their seed floss was used for packing and stuffing, as it was too short and too light for spinning. In Indonesia and Thailand, however, the floss is said to be made into thread, sometimes combined with cotton fiber. *Calotropis gigantea* has also been tested for use in the paper pulp fabrication, and as a source of methane, through anaerobic fermentation for biofuel production, although its potential is limited due to its invasive properties. *Calotropis gigantea* is sometimes used as fuel wood, but it is of poor quality. In Indo-China, charcoal from the wood was used in gun powder and fireworks. The leaves can be used for mulching, green manuring of rice fields and for binding sandy soil. In Vietnam, *Calotropis gigantea* is planted as a hedge plant. A fermented mixture of the latex and salt is used to remove the hair from goat skins for production of 'nari leather' and of sheep skins to make leather which is used for book-binding. The Gynostegium is used by the Chinese in Indonesia in sweetmeats.

In India, Thailand, the Philippines and Hawaii the long-lasting flowers of *Calotropis gigantea* are used in various floral arrangements in temples and in rosaries. It is also widely planted as an ornamental. Besides medicinal use, bloom of Calotropis gigantea can be successfully used for production of biogas with higher fertilizer.

Different root and leaf extracts showed analgesic, antipyretic, anticonvulsant, antiarthritic, anxiolytic and sedative activity in various experimental models with rats.

The leaves are offered to lord Hanuman every Saturday all over India. Being situated between Mumbai and Surat there is a lot of demand of leaves of this plant, pluckers from both mega cities comes to Bordi every Friday and pluck bags full of this plant, causing decrease of number of this plant in Bordi. Hence we decided to create awareness among villagers and to do record of place of plant for future reference.

Distribution and abundance of Calotropis gigantea plant was carried out with the help of Global positioning system by using GPS machine during March 2014 to February 2015.

II. METHODOLOGY

Bordi is a small village known for its aesthetic value situated between Mumbai and Surat approximately 120 km from each city. In order to do recording of Global Position of each and every plant from classified section of village a modern GPS machine was used. The machine was GARMIN eTerx10 model. The GPS machine has feature of 2.2" monochrome display, high sensitivity WAAS-enabled GPS receiver with HotFix® and CLONASS support, worldwide base map, support paperless geocatching, USB interface and waterproof.

In order to ease collection of data for proper representation, the representative of different land use in the village was classified based on their vegetation structure, location and human use. Other habitat characteristic such as landscape characters, developmental activities was taken into consideration. Plants were recorded using GPS machine. Each and every plant of area was covered for global positioning. The work was carried out on every Sunday and public holidays. Position of plants was also recorded manually as per classified land. Proper permission was taken from government offices and private premises do record the position. After completion of recording, the was data obtain, from this distribution and density of the Calotropis gigantea plant on different types of habitat was calculated .A map was drawn using internet.

S. N.	Location	Number of plants	Percentage
1	Beach side	100	15.36
2	Road side	082	12.60
3	Private premises	382	58.68
4	Govt. premises	087	13.36
	Total	651	

III. OBJECTIVES, RESULT AND DISCUSSION

*(1)*To do survey of *Calotropis gigantea* plant with help of GPS. *(2)* To record the global position of each plant.*(3)*To develop map showing global position of plant as coordinates. Less number of plants was recorded on road side then other three locations, whereas highest number of plants was recorded in private premises.

Table 1 BEACH SIDE

NO	N	E	NO	N	E
1	N20°05.963'	E72°43.950'	51	N20°06.158'	E72°44.025'
2	N20°05.967'	E72°43.954'	52	N20°06.156'	E72°44.025'
3	N20°05.971'	E72°43.959'	53	N20°06.161'	E72°44.036'
4	N20°05.971'	E72°43.964'	54	N20°06.162'	E72°44.040'
5	N20°05.972'	E72°43.961'	55	N20°06.165'	E72°44.045'

6	N20°05.969'	E72°43.972'	56	N20°06.165'	E72°44.042'
7	N20°05.977'	E72°43.977'	57	N20°06.162'	E72°44.043'
8	N20°05.979'	E72°43.979'	58	N20°06.162'	E72°44.037'
9	N20°05.982'	E72°43.980'	59	N20°06.168'	E72°44.035'
10	N20°05.982'	E72°43.978'	60	N20°06.171'	E72°44.034'
11	N20°05.980'	E72°43.975'	61	N20°06.173'	E72°44.029'
12	N20°05.979'	E72°43.975'	62	N20°06.171'	E72°44.032'
13	N20°05.979'	E72°43.971'	63	N20°06.177'	E72°44.033'
14	N20°05.978'	E72°43.971'	64	N20°06.171'	E72°44.036'
15	N20°05.978'	E72°43.967'	65	N20°06.186'	E72°44.043'
16	N20°05.976'	E72°43.961'	66	N20°06.180'	E72°44.038'
17	N20°05.975'	E72°43.972'	67	N20°06.181'	E72°44.049'
18	N20°05.983'	E72°43.972'	68	N20°06.178'	E72°44.052'
19	N20°05.993'	E72°43.992'	69	N20°06.179'	E72°44.055'
20	N20°06.016'	E72°43.985'	70	N20°06.181'	E72°44.059'
21	N20°06.028'	E72°43.986'	71	N20°06.186'	E72°44.055'
22	N20°06.031'	E72°43.986'	72	N20°06.193'	E72°44.064'
23	N20°06.038'	E72°43.986'	73	N20°06.196'	E72°44.062'
24	N20°06.039'	E72°43.977'	74	N20°06.196'	E72°44.062'
25	N20°06.043'	E72°43.976'	75	N20°06.199'	E72°44.058'
26	N20°06.050'	E72°43.978'	76	N20°06.213'	E72°44.054'
27	N20°06.054'	E72°43.979'	77	N20°06.216'	E72°44.050'
28	N20°06.060'	E72°43.987'	78	N20°06.213'	E72°44.052'
29	N20°06.064'	E72°43.995'	79	N20°06.217'	E72°44.061'
30	N20°06.082'	E72°43.995'	80	N20°06.227'	E72°44.062'
31	N20°06.081'	E72°43.000'	81	N20°06.227'	E72°44.064'
32	N20°06.017'	E72°43.418'	82	N20°06.229'	E72°44.058'
33	N20°06.086'	E72°44.002'	83	N20°06.232'	E72°44.059'
34	N20°06.090'	E72°44.001'	84	N20°06.236'	E72°44.068'
35	N20°06.095'	E72°44.004'	85	N20°06.253'	E72°44.064'
36	N20°06.098'	E72°44.000'	86	N20°06.256'	E72°44.073'
37	N20°06.098'	E72°44.005'	87	N20°06.261'	E72°44.076'
38	N20°06.108'	E72°44.007'	88	N20°06.258'	E72°44.078'
39	N20°06.112'	E72°44.009'	89	N20°06.278'	E72°44.079'
40	N20°06.124'	E72°44.010'	90	N20°06.253'	E72°44.081'
41	N20°06.131'	E72°44.009'	91	N20°06.252'	E72°44.069'
42	N20°06.148'	E72°44.012'	92	N20°06.220'	E72°44.082'
43	N20°06.131'	E72°44.021'	93	N20°06.220'	E72°44.082'
44	N20°06.142'	E72°44.023'	94	N20°06.226'	E72°44.086'
45	N20°06.143'	E72°44.027'	95	N20°06.234'	E72°44.100'
46	N20°06.145'	E72°44.027'	96	N20°06.231'	E72°44.097'
47	N20°06.144'	E72°44.024'	97	N20°06.230'	E72°44.093'
48	N20°06.149'	E72°44.020'	98	N20°06.210'	E72°44.080'
49	N20°06.152'	E72°44.022'	99	N20°06.200'	E72°44.081'
50	N20°06.153'	E72°44.025'	100	N20°06.199'	E72°44.083'

Table 2: Road side

No.	E	N	No.	E	N
1	E072°430.974	N20°050.707	42	E072°440.248	N20°060.535
2	E072°430.986	N20°050.713	43	E072°440.247	N20°060.546
3	E072°430.986	N20°050.715	44	E072°440.243	N20°060.582
4	E072°430.986	N20°050.718	45	E072°440.2	N20°060.247
5	E072°430.987	N20°050.725	46	E072°440.256	N20°060.583
6	E072°430.989	N20°050.727	47	E072°440.24	N20°060.583
7	E072°430.988	N20°050.747	48	E072°440.258	N20°060.583
8	E072°430.99	N20°050.759	49	E072°440.282	N20°060.587
9	E072°430.985	N20°050.763	50	E072°440.289	N20°060.591
10	E072°430.985	N20°050.765	51	E072°440.287	N20°060.669
11	E072°430.985	N20°050.767	52	E072°440.288	N20°060.676
12	E072°430.989	N20°050.769	53	E072°440.333	N20°060.679
13	E072°430.99	N20°050.772	54	E072°440.333	N20°060.682
14	E072°430.986	N20°050.775	55	E072°440.356	N20°060.682
15	E072°430.991	N20°050.779	56	E072°440.529	N20°060.673
16	E072°430	N20°050.813	57	E072°440.529	N20°060.663
17	E072°440	N20°050.823	58	E072°440.53	N20°060.676
18	E072°440.027	N20°050.831	59	E072°440.526	N20°060.68
19	E072°440.037	N20°050.992	60	E072°440.528	N20°060.685
20	E072°440.035	N20°050.995	61	E072°440.544	N20°060.687
21	E072°440.067	N20°050.997	62	E072°440.559	N20°060.706
22	E072°440.102	N20°060.108	63	E072°440.569	N20°060.719
23	E072°440.107	N20°060.203	64	E072°440.571	N20°060.726
24	E072°440.109	N20°060.206	65	E072°440.573	N20°060.733
25	E072°440.112	N20°060.23	66	E072°440.603	N20°060.736
26	E072°440.	N20°060.	67	E072°440.	N20°060.

	115	239		599	755
27	E072°440.129	N20°060.254	68	E072°440.596	N20°060.706
28	E072°440.125	N20°060.304	69	E072°440.586	N20°060.705
29	E072°440.126	N20°060.3	70	E072°440.599	N20°060.702
30	E072°440.177	N20°060.3	71	E072°440.552	N20°060.755
31	E072°440.19	N20°060.409	72	E072°440.556	N20°060.733
32	E072°440.187	N20°060.387	73	E072°440.546	N20°060.765
33	E072°440.187	N20°060.416	74	E072°440.545	N20°060.765
34	E072°440.194	N20°060.187	75	E072°440.549	N20°060.767
35	E072°440.194	N20°060.194	76	E072°440.545	N20°060.764
36	E072°440.203	N20°060.441	77	E072°440.549	N20°060.782
37	E072°440.223	N20°060.464	78	E072°440.551	N20°060.858
38	E072°440.229	N20°060.515	79	E072°440.461	N20°060.867
39	E072°440.234	N20°060.514	80	E072°440.478	N20°060.868
40	E072°440.229	N20°060.53	81	E072°440.477	N20°070.037
41	E072°440.234	N20°060.532	82	E072°440.461	N20°070.044

Table 3: Private premises

NO.	NORTH	EAST	No	NORTH	EAST
1	N20°06.450'	E072°44.540'	41	N20°06.998'	E072°44.273'
2	N20°06.464'	E072°44.544'	42	N20°06.979'	E072°44.238'
3	N20°06.474'	E072°44.543'	43	N20°06.540'	E072°44.239'
4	N20°06.311'	E072°44.727'	44	N20°06.548'	E072°44.239'
5	N20°06.305'	E072°44.732'	45	N20°06.551'	E072°44.234'
6	N20°06.304'	E072°44.733'	46	N20°06.553'	E072°44.234'
7	N20°06.305'	E072°44.733'	47	N20°06.551'	E072°44.239'
8	N20°06.310'	E072°44.739'	48	N20°06.566'	E072°44.238'
9	N20°06.297'	E072°44.754'	49	N20°06.573'	E072°44.238'
10	N20°06.298'	E072°44.754'	50	N20°06.583'	E072°44.229'
11	N20°06.167'	E072°44.946'	51	N20°06.586'	E072°44.225'
12	N20°05.814'	E072°44.062'	52	N20°06.586'	E072°44.224'
13	N20°05.804'	E072°44.060'	53	N20°06.586'	E072°44.222'
14	N20°05.800'	E072°44.069'	54	N20°06.579'	E072°44.224'
15	N20°05.760'	E072°44.045'	55	N20°06.580'	E072°44.217'
16	N20°05.670'	E072°44.026'	56	N20°06.574'	E072°44.215'
17	N20°05.668'	E072°44.026'	57	N20°06.575'	E072°44.214'
18	N20°05.668'	E072°44.027'	58	N20°06.575'	E072°44.209'
19	N20°05.666'	E072°44.026'	59	N20°06.564'	E072°44.209'
20	N20°05.664'	E072°44.027'	60	N20°06.564'	E072°44.209'
21	N20°05.667'	E072°44.026'	61	N20°06.564'	E072°44.207'
22	N20°05.666'	E072°44.025'	62	N20°06.563'	E072°44.207'
23	N20°05.982'	E072°44.319'	63	N20°06.561'	E072°44.197'
24	N20°05.984'	E072°44.318'	64	N20°06.514'	E072°44.296'
25	N20°05.985'	E072°44.321'	65	N20°06.508'	E072°44.292'
26	N20°06.984'	E072°44.319'	66	N20°06.510'	E072°44.089'
27	N20°06.983'	E072°44.319'	67	N20°06.510'	E072°44.091'
28	N20°06.983'	E072°44.319'	68	N20°06.512'	E072°44.034'
29	N20°06.983'	E072°44.318'	69	N20°06.551'	E072°44.086'
30	N20°06.984'	E072°44.317'	70	N20°06.512'	E072°44.103'
31	N20°06.984'	E072°44.317'	71	N20°06.575'	E072°44.103'
32	N20°06.985'	E072°44.318'	72	N20°06.575'	E072°44.102'
33	N20°06.985'	E072°44.317'	73	N20°06.577'	E072°44.101'
34	N20°06.985'	E072°44.317'	74	N20°06.577'	E072°44.101'
35	N20°06.986'	E072°44.116'	75	N20°06.577'	E072°44.100'
36	N20°06.986'	E072°44.336'	76	N20°06.576'	E072°44.009'
37	N20°06.986'	E072°44.313'	77	N20°06.575'	E072°44.009'
38	N20°06.983'	E072°44.308'	78	N20°06.575'	E072°44.10'
39	N20°06.987'	E072°44.309'	79	N20°06.575'	E072°44.90'
40	N20°06.990'	E072°44.312'	80	N20°06.210'	E072°44.100'
81	N20°06.576'	E072°44.100'	121	N20°06.520'	E072°44.168'
82	N20°06.575'	E072°44.110'	122	N20°06.520'	E072°44.170'
83	N20°06.575'	E072°44.110'	123	N20°06.520'	E072°44.170'
84	N20°06.574'	E072°44.110'	124	N20°06.521'	E072°44.171'
85	N20°06.573'	E072°44.110'	125	N20°06.521'	E072°44.171'
86	N20°06.572'	E072°44.100'	126	N20°06.521'	E072°44.171'
87	N20°06.571'	E072°44.009'	127	N20°06.522'	E072°44.171'
88	N20°06.570'	E072°44.009'	128	N20°06.522'	E072°44.172'
89	N20°06.570'	E072°44.000'	129	N20°06.523'	E072°44.173'
90	N20°06.569'	E072°44.008'	130	N20°06.518'	E072°44.176'
91	N20°06.569'	E072°44.009'	131	N20°06.517'	E072°44.182'
92	N20°06.569'	E072°44.009'	132	N20°06.518'	E072°44.183'
93	N20°06.568'	E072°44.009'	133	N20°06.522'	E072°44.180'
94	N20°06.5	E072°44.0	13	N20°06.5	E072°44.1

	68'	09'	4	26'	80'
95	N20°06.568'	E072°44.009'	135	N20°06.527'	E072°44.175'
96	N20°06.566'	E072°44.009'	136	N20°06.534'	E072°44.176'
97	N20°06.566'	E072°44.100'	137	N20°06.533'	E072°44.178'
98	N20°06.566'	E072°44.100'	138	N20°06.532'	E072°44.178'
99	N20°06.567'	E072°44.100'	139	N20°06.541'	E072°44.183'
100	N20°06.568'	E072°44.101'	140	N20°06.552'	E072°44.181'
101	N20°06.568'	E072°44.101'	141	N20°06.551'	E072°44.181'
102	N20°06.568'	E072°44.101'	142	N20°06.553'	E072°44.182'
103	N20°06.568'	E072°44.101'	143	N20°06.554'	E072°44.182'
104	N20°06.566'	E072°44.009'	144	N20°06.555'	E072°44.182'
105	N20°06.566'	E072°44.009'	145	N20°06.557'	E072°44.184'
106	N20°06.564'	E072°44.190'	146	N20°06.556'	E072°44.181'
107	N20°06.513'	E072°44.192'	147	N20°06.556'	E072°44.186'
108	N20°06.513'	E072°44.186'	148	N20°06.557'	E072°44.186'
109	N20°06.514'	E072°44.185'	149	N20°06.559'	E072°44.186'
110	N20°06.512'	E072°44.181'	150	N20°06.561'	E072°44.185'
111	N20°06.509'	E072°44.177'	151	N20°06.564'	E072°44.185'
112	N20°06.510'	E072°44.175'	152	N20°06.566'	E072°44.190'
113	N20°06.506'	E072°44.174'	153	N20°06.568'	E072°44.192'
114	N20°06.506'	E072°44.176'	154	N20°06.567'	E072°44.189'
115	N20°06.513'	E072°44.176'	155	N20°06.567'	E072°44.19'
116	N20°06.513'	E072°44.170'	156	N20°06.572'	E072°44.193'
117	N20°06.515'	E072°44.170'	157	N20°06.572'	E072°44.194'
118	N20°06.516'	E072°44.170'	158	N20°06.573'	E072°44.196'
119	N20°06.516'	E072°44.170'	159	N20°06.574'	E072°44.195'
120	N20°06.517'	E072°44.169'	160	N20°06.574'	E072°44.197'
161	N20°06.579'	E072°44.197'	201	N20°06.605'	E072°44.204'
162	N20°06.573'	E072°44.196'	202	N20°06.605'	E072°44.205'
163	N20°06.580'	E072°44.197'	203	N20°06.606'	E072°44.205'
164	N20°06.581'	E072°44.192'	204	N20°06.607'	E072°44.206'
165	N20°06.581'	E072°44.196'	205	N20°06.608'	E072°44.208'
166	N20°06.580'	E072°44.195'	206	N20°06.605'	E072°44.208'
167	N20°06.586'	E072°44.196'	207	N20°06.604'	E072°44.211'
168	N20°06.587'	E072°44.196'	208	N20°06.601'	E072°44.212'
169	N20°06.587'	E072°44.196'	209	N20°06.603'	E072°44.213'
170	N20°06.584'	E072°44.195'	210	N20°06.603'	E072°44.215'
171	N20°06.583'	E072°44.195'	211	N20°06.603'	E072°44.216'
172	N20°06.582'	E072°44.197'	212	N20°06.603'	E072°44.216'
173	N20°06.582'	E072°44.194'	213	N20°06.604'	E072°44.217'
174	N20°06.582'	E072°44.198'	214	N20°06.604'	E072°44.218'
175	N20°06.581'	E072°44.197'	215	N20°06.601'	E072°44.217'
176	N20°06.581'	E072°44.201'	216	N20°06.600'	E072°44.213'
177	N20°06.579'	E072°44.201'	217	N20°06.608'	E072°44.211'
178	N20°06.578'	E072°44.200'	218	N20°06.606'	E072°44.210'
179	N20°06.578'	E072°44.202'	219	N20°06.608'	E072°44.210'
180	N20°06.580'	E072°44.203'	220	N20°06.608'	E072°44.210'
181	N20°06.579'	E072°44.204'	221	N20°06.609'	E072°44.210'
182	N20°06.578'	E072°44.203'	222	N20°06.609'	E072°44.210'
183	N20°06.577'	E072°44.207'	223	N20°06.609'	E072°44.209'
184	N20°06.576'	E072°44.204'	224	N20°06.609'	E072°44.209'
185	N20°06.575'	E072°44.204'	225	N20°06.611'	E072°44.209'
186	N20°06.574'	E072°44.204'	226	N20°06.611'	E072°44.208'
187	N20°06.573'	E072°44.204'	227	N20°06.611'	E072°44.207'
188	N20°06.571'	E072°44.205'	228	N20°06.612'	E072°44.205'
189	N20°06.585'	E072°44.206'	229	N20°06.612'	E072°44.205'
190	N20°06.590'	E072°44.208'	230	N20°06.612'	E072°44.205'
191	N20°06.592'	E072°44.208'	231	N20°06.612'	E072°44.202'
192	N20°06.592'	E072°44.208'	232	N20°06.612'	E072°44.206'
193	N20°06.592'	E072°44.208'	233	N20°06.613'	E072°44.207'
194	N20°06.594'	E072°44.208'	234	N20°06.614'	E072°44.206'
195	N20°06.595'	E072°44.204'	235	N20°06.614'	E072°44.203'
196	N20°06.593'	E072°44.206'	236	N20°06.607'	E072°44.203'
197	N20°06.596'	E072°44.205'	237	N20°06.616'	E072°44.203'
198	N20°06.598'	E072°44.205'	238	N20°06.617'	E072°44.203'
199	N20°06.599'	E072°44.199'	239	N20°06.618'	E072°44.204'
200	N20°06.607'	E072°44.199'	240	N20°06.619'	E072°44.204'
241	N20°06.620'	E072°44.205'	281	N20°06.623'	E072°44.214'
242	N20°06.620'	E072°44.206'	282	N20°06.624'	E072°44.214'
243	N20°06.618'	E072°44.208'	283	N20°06.622'	E072°44.217'
244	N20°06.618'	E072°44.208'	284	N20°06.622'	E072°44.218'
24	N20°06.6	E072°44.2	28	N20°06.6	E072°44.2

5	18'	08'	5	21'	19'
246	N20°06.618'	E072°44.210'	286	N20°06.622'	E072°44.220'
247	N20°06.619'	E072°44.212'	287	N20°06.622'	E072°44.223'
248	N20°06.618'	E072°44.213'	288	N20°06.623'	E072°44.212'
249	N20°06.621'	E072°44.213'	289	N20°06.623'	E072°44.215'
250	N20°06.621'	E072°44.213'	290	N20°06.623'	E072°44.215'
251	N20°06.621'	E072°44.213'	291	N20°06.624'	E072°44.215'
252	N20°06.621'	E072°44.213'	292	N20°06.624'	E072°44.210'
253	N20°06.621'	E072°44.212'	293	N20°06.625'	E072°44.212'
254	N20°06.621'	E072°44.211'	294	N20°06.624'	E072°44.213'
255	N20°06.621'	E072°44.211'	295	N20°06.627'	E072°44.216'
256	N20°06.621'	E072°44.210'	296	N20°06.630'	E072°44.216'
257	N20°06.622'	E072°44.210'	297	N20°06.637'	E072°44.217'
258	N20°06.621'	E072°44.212'	298	N20°06.637'	E072°44.217'
259	N20°06.621'	E072°44.213'	299	N20°06.636'	E072°44.280'
260	N20°06.622'	E072°44.213'	300	N20°06.636'	E072°44.220'
261	N20°06.622'	E072°44.215'	301	N20°06.638'	E072°44.220'
262	N20°06.621'	E072°44.215'	302	N20°06.634'	E072°44.220'
263	N20°06.621'	E072°44.214'	303	N20°06.633'	E072°44.219'
264	N20°06.617'	E072°44.215'	304	N20°06.633'	E072°44.219'
265	N20°06.617'	E072°44.215'	305	N20°06.638'	E072°44.219'
266	N20°06.616'	E072°44.21'	306	N20°06.634'	E072°44.234'
267	N20°06.615'	E072°44.260'	307	N20°06.633'	E072°44.221'
268	N20°06.615'	E072°44.210'	308	N20°06.633'	E072°44.221'
269	N20°06.616'	E072°44.280'	309	N20°06.633'	E072°44.222'
270	N20°06.617'	E072°44.218'	310	N20°06.632'	E072°44.224'
271	N20°06.615'	E072°44.021'	311	N20°06.631'	E072°44.225'
272	N20°06.617'	E072°44.029'	312	N20°06.629'	E072°44.226'
273	N20°06.618'	E072°44.210'	313	N20°06.626'	E072°44.225'
274	N20°06.618'	E072°44.220'	314	N20°06.625'	E072°44.223'
275	N20°06.620'	E072°44.211'	315	N20°06.625'	E072°44.222'
276	N20°06.620'	E072°44.223'	316	N20°06.630'	E072°44.222'
277	N20°06.619'	E072°44.210'	317	N20°06.629'	E072°44.225'
278	N20°06.620'	E072°44.219'	318	N20°06.630'	E072°44.227'
279	N20°06.623'	E072°44.215'	319	N20°06.632'	E072°44.229'
280	N20°06.623'	E072°44.215'	320	N20°06.634'	E072°44.230'
321	N20°06.635'	E072°44.233'	352	N20°06.610'	E072°44.241'
322	N20°06.640'	E072°44.233'	353	N20°06.609'	E072°44.240'
323	N20°06.646'	E072°44.233'	354	N20°06.610'	E072°44.238'
324	N20°06.647'	E072°44.237'	355	N20°06.611'	E072°44.235'
325	N20°06.649'	E072°44.236'	356	N20°06.609'	E072°44.231'
326	N20°06.639'	E072°44.236'	357	N20°06.610'	E072°44.231'
327	N20°06.636'	E072°44.234'	358	N20°06.610'	E072°44.229'
328	N20°06.635'	E072°44.234'	359	N20°06.611'	E072°44.210'
329	N20°06.630'	E072°44.235'	360	N20°06.601'	E072°44.227'
330	N20°06.630'	E072°44.232'	361	N20°06.601'	E072°44.226'
331	N20°06.624'	E072°44.232'	362	N20°06.609'	E072°44.225'
332	N20°06.624'	E072°44.229'	363	N20°06.608'	E072°44.225'
333	N20°06.623'	E072°44.230'	364	N20°06.605'	E072°44.225'
334	N20°06.623'	E072°44.236'	365	N20°06.601'	E072°44.223'
335	N20°06.618'	E072°44.238'	366	N20°06.601'	E072°44.223'
336	N20°06.622'	E072°44.239'	367	N20°06.600'	E072°44.224'
337	N20°06.621'	E072°44.240'	368	N20°06.600'	E072°44.224'
338	N20°06.621'	E072°44.242'	369	N20°06.599'	E072°44.224'
339	N20°06.620'	E072°44.242'	370	N20°06.596'	E072°44.231'
340	N20°06.619'	E072°44.242'	371	N20°06.597'	E072°44.230'
341	N20°06.618'	E072°44.241'	372	N20°06.594'	E072°44.232'
342	N20°06.617'	E072°44.241'	373	N20°06.590'	E072°44.237'
343	N20°06.616'	E072°44.243'	374	N20°06.587'	E072°44.238'
344	N20°06.616'	E072°44.242'	375	N20°06.590'	E072°44.244'
345	N20°06.614'	E072°44.246'	376	N20°06.587'	E072°44.248'
346	N20°06.614'	E072°44.249'	377	N20°06.593'	E072°44.245'
347	N20°06.613'	E072°44.246'	378	N20°06.596'	E072°44.242'
348	N20°06.614'	E072°44.224'	379	N20°06.600'	E072°44.241'
349	N20°06.611'	E072°44.243'	380	N20°06.600'	E072°44.244'
350	N20°06.612'	E072°44.242'	381	N20°06.603'	E072°44.249'
351	N20°06.613'	E072°44.243'	382	N20°06.607'	E072°44.251'

Table 4 Government's Building

no.	N	E	no.	N	E
1	N20°06.105'	E072°44.072'	45	N20°06.689'	E072°44.233'

2	N20°06.107'	E072°44.074'	46	N20°06.690'	E072°44.233'
3	N20°06.107'	E072°44.073'	47	N20°06.691'	E072°44.233'
4	N20°06.108'	E072°44.073'	48	N20°06.692'	E072°44.234'
5	N20°06.108'	E072°44.073'	49	N20°06.693'	E072°44.233'
6	N20°06.109'	E072°44.073'	50	N20°06.695'	E072°44.235'
7	N20°06.109'	E072°44.074'	51	N20°06.706'	E072°44.235'
8	N20°06.112'	E072°44.074'	52	N20°06.706'	E072°44.244'
9	N20°06.113'	E072°44.077'	53	N20°06.721'	E072°44.256'
10	N20°06.115'	E072°44.077'	54	N20°06.722'	E072°44.254'
11	N20°06.111'	E072°44.077'	55	N20°06.725'	E072°44.254'
12	N20°06.111'	E072°44.077'	56	N20°06.725'	E072°44.253'
13	N20°06.110'	E072°44.078'	57	N20°06.725'	E072°44.254'
14	N20°06.107'	E072°44.078'	58	N20°06.725'	E072°44.255'
15	N20°06.108'	E072°44.079'	59	N20°06.728'	E072°44.255'
16	N20°06.055'	E072°44.077'	60	N20°06.728'	E072°44.255'
17	N20°06.055'	E072°44.076'	61	N20°06.726'	E072°44.257'
18	N20°06.081'	E072°44.072'	62	N20°06.727'	E072°44.266'
19	N20°06.706'	E072°44.059'	63	N20°06.729'	E072°44.262'
20	N20°06.703'	E072°44.063'	64	N20°06.727'	E072°44.262'
21	N20°06.706'	E072°44.273'	65	N20°06.726'	E072°44.273'
22	N20°06.707'	E072°44.244'	66	N20°06.727'	E072°44.270'
23	N20°06.704'	E072°44.273'	67	N20°06.724'	E072°44.272'
24	N20°06.702'	E072°44.254'	68	N20°06.725'	E072°44.273'
25	N20°06.702'	E072°44.252'	69	N20°06.721'	E072°44.265'
26	N20°06.701'	E072°44.250'	70	N20°06.767'	E072°44.264'
27	N20°06.696'	E072°44.250'	71	N20°06.804'	E072°44.302'
28	N20°06.694'	E072°44.250'	72	N20°06.813'	E072°44.323'
29	N20°06.702'	E072°44.248'	73	N20°06.813'	E072°44.207'
30	N20°06.692'	E072°44.247'	74	N20°06.855'	E072°44.283'
31	N20°06.696'	E072°44.242'	75	N20°06.851'	E072°44.286'
32	N20°06.692'	E072°44.248'	76	N20°06.851'	E072°44.325'
33	N20°06.692'	E072°44.233'	77	N20°06.850'	E072°44.326'
34	N20°06.690'	E072°44.228'	78	N20°06.881'	E072°44.328'
35	N20°06.688'	E072°44.228'	79	N20°06.844'	E072°44.329'
36	N20°06.688'	E072°44.226'	80	N20°06.847'	E072°44.400'
37	N20°06.68	E072°44.2	81	N20°06.84	E072°44.5
38	N20°06.686'	E072°44.224'	82	N20°06.844'	E072°44.600'
39	N20°06.687'	E072°44.223'	83	N20°06.844'	E072°44.604'
40	N20°06.687'	E072°44.229'	84	N20°06.849'	E072°44.608'
41	N20°06.688'	E072°44.230'	85	N20°06.689'	E072°44.611'
42	N20°06.687'	E072°44.231'	86	N20°06.688'	E072°44.633'
43	N20°06.688'	E072°44.232'	87	N20°06.690'	E072°44.333'
44	N20°06.687'	E072°44.232'			

IV. CONCLUSION

12.60% plants are recorded from roadside suggest that pluckers can easily plucked plants from roadside which result in there less numbers. Only 82 plants are remained on roadside. More than 50% plants are recorded from Private premises; clearly indicate that these plants are protected from plucking since pluckers are not allowed into private property. Whereas 100 and 87 out of total 651 were recorded from beachside and government premises respectively. Proper care of roadside plants is the need of hour.

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REFERENCES

[1]. Ahmed, K.K.M., Rana, A.C. & Dixit, V. K., "Calotropis species Ascelpediaceae - a comprehensive review", Pharmacognosy Magazine 1(2): 48–52. 2005.

[2]. Ajay, K., Patil, P.A. Purnima, A. &Basavaraj, H., "Anti-inflammatory and anti-ulcer effects of Calotropisgigantea R.Br flowers in rodent", Journal of Natural Remedies 8(2): 183–190, 2008.

[3]. Ashori, A. &Bahreini, Z., "Evaluation of Calotropisgigantea as a promising raw material for fiber-reinforced composite".., Journal of Composite Materials 1(1): 1–8,2009.

[4]. Chitme, H.R., Ghobadi, R., Chandra, M. &Kaushik, S., "Studies on anti-diarrhoeal activity of Calotropisgigantea R.Br. in experimental animals", Journal of Pharmacy and Pharmaceutical Science 7(1): 70–75, 2004.

[5]. Gurib-Fakim, A., Guého, J. &Bissoondoyal, M.D., "Plantesmédicinales de Maurice, tome 1", Editions de l' Ocean Indian, Rose-Hill, Mauritius. 495 pp, 1995.

[6]. Kiew, R., Calotropis R.Br. In: "van Valkenburg", "J.L.C.H. &Bunyapraphatsara, N. (Editors)", Plant Resources of South-East Asia No 12(2): Medicinal and poisonous plants 2. Backhuys Publishers, Leiden, Netherlands. pp. 133–138, 2001.

[7]. Lodhi, G., Singh, H.K., Pant, K.K. &Hussain, Z., "Hepatoprotective effects of Calotropisgigantea extract against carbon tetrachloride induced liver injury in rats", ActaPharmaceutica 59(1): 89–96, 2009.

[8]. Pathak, A.K. &Argal, A. "Analgesic activity of Calotropisgigantea flower", Fitoterapia 78(1): 40–42, 2007.

[9]. Srivastava, S.R., Keshri, G., Bhargavan, B., Singh, C. & Singh, M.M., "Pregnancy interceptive activity of the roots of Calotropisgigantea Linn. in rats. Contraception" 75(4): 318–322, 2007.Adak, M. & Gupta, J.K., "Evaluation of anti-inflammatory activity of Calotropisgigantea (Akanda) in various biological systems", Nepal Medical College Journal 8(3): 156–161, 2006.

[10]. Argal, A. & Pathak, A.K., "Antidiarrhoeal activity of Calotropisgigantea flowers", Indian Journal of Natural Products 21(3): 42–44, 2005.

[11]. Argal, A. & Pathak, A.K., "CNS activity of Calotropisgigantea roots" Journal of Ethno pharmacology 106(1): 142–145,2006.

[12]. Arul Prakash, R. &Veeravel, R., "Effect of milkweed plant, Calotropisgigantea R. Br. on biochemical constituents of some important storage pests", Journal of Plant Protection and Environment 4(2): 47–50, 2007.

[13]. Chitme, H.R, Chandra, R. &Kaushik, S., "Evaluation of analgesic activities of Calotropisgigantea extract in vivo" Asia Pacific Journal of Pharmacology 16(3/4): 157–162, 2006.

[14]. Chitme, H.R., Ramesh, C. &Sadhna, K., "Evaluation of antipyretic activity of Calotropisgigantea (Asclepiadaceae) in experimental animals", Phytotherapy Research 19(5): 454–456, 2004.

[15]. Dev, U., Deva Kumar, C., Agarwal, P.C, Mohan, J., Joshi, K.D. & Rani, I., "Antifungal effect of Vitexnegundo, Calotropis spp. and other plant extracts against seed-borne fungi", Pesticide Research Journal 14(2): 229–233, 2002.

[16]. Maji, M.D, Chattopadhyay, S., Kumar, P. &Saratchandra, B., "In vitro screening of some plant extracts against fungal pathogens of mulberry (Morus spp.)", Archives of Phytopathology and Plant Protection 38(3): 157–164, 2005.

[17]. Park, G., Lee, E.-J., Min, H.-Y., Choi, H.-Y., Han, A.-R., Lee, S.-K. &Seo, E.-K., "Evaluation of cytotoxic potential of Indonesian medicinal plants in cultured human cancer cells", Natural Product Sciences 8(4): 165–169, 2002.

[18]. Patil, K.S., Babu, A.R.S. & Chaturvedi, S.C., "Anti-convulsant activity of roots and barks of Calotropisgigantea Linn", Journal of Natural Remedies 8(1): 109–114,2008.

[19]. Patil, K.S., Mamatha, G. C. & Chaturvedi, S.C., "Antiarthritic activity of leaves of Calotropisgigantea Linn", Journal of Natural Remedies 7(2): 189–194, 2007.

[20]. Patil, S.V., Salunke, B.K. &Bhat, J.A., "Herbal rennet from Calotropisgigantea", Journal of Medicinal and Aromatic Plant Sciences 25(2): 392–396, 2003.