



Govindrao Nikam College of Pharmacy, Sawarde

Report

on

**Carbon Estimation in trees/shrubs in
campus (2021-22)**

April 2022

SUMMARY

This is report of estimation of carbon sequestration in trees/shrubs in campus of Govindrao Nikam College of Pharmacy, Sawarde.

The campus of the college has been visited frequently during 2021-22 for survey of trees and required measurements. The carbon Nondestructive method of carbon estimation was followed for this report.

On the basis of careful and extensive observations, measurement and successive calculations, trees of entire campus area has been assessed and presented in form of report. The report demonstrates actual efforts of the college for sequestration of carbon and contribution towards environmental conservation.



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INTRODUCTION

The growing concentration of atmospheric carbon dioxide due to various anthropogenic activities is one of important contributor to global warming. Global emissions of carbon have been increasing for about 140 years since the beginning of the Industrial Revolution. The sharpest increase is observed during the most recent 50 years.

Carbon, in greenhouse gases, is a major cause of global warming. Almost everything humans do, including breathing, releases carbon into the atmosphere. Plants, on the other hand, absorb carbon, turning it into foliage, branches, and roots by the process known as sequestration. Presently there is increasing concern about climate change and subsequently carbon sequestration as mitigation measure to climate change.

Trees from rural as well as urban regions currently store carbon, which can be released into the atmosphere after the death of tree, and capture carbon as they grow. Due to more photosynthesis, more CO₂ is converted into biomass, and sequestering carbon in plant tissue above and below ground (IPCC, 2003). Fifty percent of the biomass of the stems, branches, roots and foliage of trees is made up of carbon absorbed from the atmosphere. The rate of carbon sequestration depends on the growth characteristics of the tree species, the conditions for growth where the tree is planted, and the density of the tree's wood. Although maximum rate of carbon assimilation usually occurs early in the new plantation, mature forests continue to store carbon in significant amounts for the effective life. Along with increasing controls on emissions of greenhouse gases, effective management of additional forest plantations for carbon sequestration provides one of the few low-cost, low-energy alternatives for amelioration of greenhouse effects.

Carbon stored in biomass is usually measured in CO₂ equivalents – the weight of CO₂ removed from the atmosphere to create the biomass. In the global carbon cycle biomass which stores carbon stock is used to help quantify pools and changes of carbon di oxide from the terrestrial biosphere to the atmosphere associated with land-use and land cover changes. Carbon sequestration is useful to either mitigate or defer global warming and avoid dangerous climate change.

Estimates of carbon stocks and stock changes in tree biomass (above and belowground) are necessary for reporting to the United Nations Framework Convention on Climate Change (UNFCCC) and will be required for Kyoto Protocol reporting. Trees planted in college campus area also playing very important role because their environmental services. These trees are not only indicators of biodiversity but also help in producing more oxygen and cleaner, pollution free environment. So this report represents estimate of carbon stock stored in trees at Govindrao Nikam College of Pharmacy, Sawarde campus.

ABOUT THE COLLEGE

The Govindrao Nikam College of Pharmacy is the first pharmacy college of the Konkan region of Maharashtra providing degree course and was established in 2005 by founder of Sahyadri Shikshan Sanstha Late Shri Govindrao Nikam. College is affiliated to Mumbai University and is approved by AICTE New Delhi and Govt. of Maharashtra. The college is working with the vision : Fostering generations of Scientific minded pharmacist to spread Health, Hope, Happiness. Mission of college is to imbibe principles of scientific mind in learner, to become centre of excellence in pharmacy education, to promote integral development of learner by providing harmonious learning ambience, to develop learner to meet challenges of pharmacy world, to bridge academia, industry and healthcare system, to inculcate sense of social responsibility in learner to spread Health, Hope, Happiness....

The college is situated at the foot hills of Western Ghats at an altitude of 16 m. from sea level and located at latitude and longitude 17°24'08.4"N 73°31'46.4"E to 17°24'04.2"N 73°31'41.5"E. The college campus is of 3.5 acres which is surrounded by lush green vegetation. In College campus different buildings are located like Central building, library, laboratories, class rooms, hostel as well as playground, Vaikuntheshwar temple and medicinal plant garden. In medicinal plant garden various varieties of plants are grown.

Location Map of the College



Geotagged Photos of the Greenery in the College campus







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Table Carbon sequestration in tree/shrub species of college campus

Sr. No.	Tree/Shrub Species	Volume (m³/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
1	<i>Nyctanthes arbor-tristis</i>	0.00433	0.00311	11.357	6.121	17.478
2	<i>Grewia asiatica</i>	0.00208	0.00150	5.456	3.202	8.658
3	<i>Magnolia champaca</i>	0.00382	0.00229	8.353	4.666	13.019
4	<i>Albizia lebbeck</i>	0.58965	0.38917	1419.108	436.007	1855.115
5	<i>Albizia lebbeck</i>	0.78268	0.51657	1883.662	559.970	2443.632
6	<i>Albizia lebbeck</i>	0.19811	0.13076	476.802	166.323	643.125
7	<i>Magnolia champaca</i>	0.01433	0.00860	31.355	15.015	46.370
8	<i>Plumeria acuminata</i>	0.09642	0.06942	253.150	95.060	348.211
9	<i>Polyalthia longifolia</i>	0.11086	0.07982	291.061	107.535	398.596
10	<i>Polyalthia longifolia</i>	0.14868	0.10705	390.358	139.376	529.735
11	<i>Terminalia catappa</i>	0.05593	0.04027	146.850	58.752	205.602
12	<i>Terminalia catappa</i>	0.00697	0.00502	18.301	9.331	27.632
13	<i>Dyopsis cabadae</i>	0.01119	0.00895	32.643	15.558	48.201
14	<i>Dyopsis cabadae</i>	0.01625	0.01300	47.409	21.635	69.045
15	<i>Magnolia champaca</i>	0.01339	0.00804	29.300	14.141	43.441
16	<i>Magnolia champaca</i>	0.00749	0.00449	16.388	8.463	24.852
17	<i>Magnolia champaca</i>	0.01468	0.00881	32.108	15.333	47.440
18	<i>Magnolia champaca</i>	0.01259	0.00755	27.542	13.389	40.931
19	<i>Terminalia catappa</i>	0.06604	0.04755	173.382	68.039	241.421

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
20	<i>Terminalia catappa</i>	0.01347	0.00970	35.369	16.701	52.069
21	<i>Albizia lebbeck</i>	0.42216	0.27863	1016.018	324.542	1340.560
22	<i>Albizia lebbeck</i>	0.17888	0.11806	430.515	151.972	582.487
23	<i>Dyopsis cabadae</i>	0.01598	0.01278	46.616	21.315	67.931
24	<i>Bougainvillea glabra</i>	0.00310	0.00223	8.127	4.554	12.681
25	<i>Magnolia champaca</i>	0.00462	0.00277	10.117	5.526	15.644
26	<i>Magnolia champaca</i>	0.00929	0.00557	20.318	10.233	30.552
27	<i>Bougainvillea glabra</i>	0.00575	0.00414	15.092	7.869	22.961
28	<i>Magnolia champaca</i>	0.00862	0.00517	18.863	9.583	28.447
29	<i>Magnolia champaca</i>	0.00978	0.00587	21.405	10.716	32.121
30	<i>Magnolia champaca</i>	0.01486	0.00892	32.509	15.502	48.011
31	<i>Magnolia champaca</i>	0.01040	0.00624	22.764	11.315	34.079
32	<i>Bougainvillea glabra</i>	0.00206	0.00149	5.418	3.183	8.601
33	<i>Magnolia champaca</i>	0.01744	0.01046	38.156	17.858	56.014
34	<i>Magnolia champaca</i>	0.01018	0.00611	22.268	11.096	33.364
35	<i>Magnolia champaca</i>	0.00646	0.00388	14.131	7.424	21.555
36	<i>Bougainvillea glabra</i>	0.00322	0.00232	8.452	4.714	13.166
37	<i>Magnolia champaca</i>	0.00999	0.00599	21.851	10.913	32.764
38	<i>Magnolia champaca</i>	0.01756	0.01053	38.410	17.963	56.374
39	<i>Magnolia champaca</i>	0.01744	0.01046	38.156	17.858	56.014

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
40	<i>Magnolia champaca</i>	0.01473	0.00884	32.219	15.380	47.599
41	<i>Magnolia champaca</i>	0.01283	0.00770	28.076	13.618	41.694
42	<i>Magnolia champaca</i>	0.00978	0.00587	21.405	10.716	32.121
43	<i>Magnolia champaca</i>	0.00385	0.00231	8.431	4.704	13.135
44	<i>Magnolia champaca</i>	0.00505	0.00303	11.058	5.978	17.036
45	<i>Magnolia champaca</i>	0.00337	0.00202	7.372	4.178	11.550
46	<i>Magnolia champaca</i>	0.00550	0.00330	12.040	6.445	18.486
47	<i>Magnolia champaca</i>	0.00447	0.00268	9.780	5.363	15.143
48	<i>Magnolia champaca</i>	0.00387	0.00232	8.478	4.727	13.205
49	<i>Albizia lebbeck</i>	0.07243	0.04780	174.317	68.363	242.680
50	<i>Albizia lebbeck</i>	0.00929	0.00613	22.350	11.133	33.483
51	<i>Albizia lebbeck</i>	0.05870	0.03874	141.275	56.777	198.051
52	<i>Magnolia champaca</i>	0.00255	0.00153	5.574	3.264	8.838
53	<i>Magnolia champaca</i>	0.00472	0.00283	10.321	5.625	15.945
54	<i>Magnolia champaca</i>	0.00385	0.00231	8.431	4.704	13.135
55	<i>Albizia lebbeck</i>	0.68896	0.45471	1658.114	500.292	2158.407
56	<i>Albizia lebbeck</i>	0.83683	0.55231	2014.006	594.074	2608.081
57	<i>Caesalpinia pulcherrima</i>	0.01445	0.01517	55.311	24.792	80.103
58	<i>Caesalpinia pulcherrima</i>	0.01966	0.02065	75.284	32.556	107.840
59	<i>Caesalpinia pulcherrima</i>	0.03083	0.03237	118.035	48.440	166.475

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
60	<i>Caesalpinia pulcherrima</i>	0.02591	0.02721	99.203	41.544	140.747
61	<i>Caesalpinia pulcherrima</i>	0.02644	0.02776	101.239	42.296	143.534
62	<i>Caesalpinia pulcherrima</i>	0.03369	0.03538	129.010	52.398	181.408
63	<i>Caesalpinia pulcherrima</i>	0.02650	0.02782	101.458	42.377	143.835
64	<i>Magnolia champaca</i>	0.00495	0.00297	10.836	5.872	16.709
65	<i>Bougainvillea glabra</i>	0.00368	0.00265	9.659	5.305	14.964
66	<i>Magnolia champaca</i>	0.00796	0.00478	17.420	8.932	26.352
67	<i>Magnolia champaca</i>	0.01045	0.00627	22.858	11.356	34.214
68	<i>Magnolia champaca</i>	0.00749	0.00449	16.388	8.463	24.852
69	<i>Magnolia champaca</i>	0.01071	0.00643	23.440	11.611	35.051
70	<i>Magnolia champaca</i>	0.01841	0.01104	40.274	18.732	59.006
71	<i>Magnolia champaca</i>	0.01018	0.00611	22.268	11.096	33.364
72	<i>Bougainvillea glabra</i>	0.00460	0.00331	12.074	6.461	18.535
73	<i>Magnolia champaca</i>	0.00949	0.00569	20.759	10.429	31.188
74	<i>Bougainvillea glabra</i>	0.00310	0.00223	8.127	4.554	12.681
75	<i>Magnolia champaca</i>	0.01304	0.00783	28.540	13.817	42.357
76	<i>Magnolia champaca</i>	0.00882	0.00529	19.302	9.780	29.082
77	<i>Magnolia champaca</i>	0.01125	0.00675	24.612	12.122	36.734
78	<i>Magnolia champaca</i>	0.01249	0.00749	27.317	13.292	40.609
79	<i>Magnolia champaca</i>	0.00999	0.00599	21.851	10.913	32.764

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
80	<i>Magnolia champaca</i>	0.01003	0.00602	21.949	10.956	32.904
81	<i>Magnolia champaca</i>	0.01125	0.00675	24.612	12.122	36.734
82	<i>Magnolia champaca</i>	0.00573	0.00344	12.532	6.677	19.210
83	<i>Magnolia champaca</i>	0.07499	0.04500	164.079	64.803	228.882
84	<i>Magnolia champaca</i>	0.06991	0.04195	152.958	60.906	213.864
85	<i>Magnolia champaca</i>	0.07166	0.04299	156.777	62.248	219.024
86	<i>Magnolia champaca</i>	0.22704	0.13622	496.731	172.451	669.182
87	<i>Magnolia champaca</i>	0.03823	0.02294	83.649	35.732	119.381
88	<i>Magnolia champaca</i>	0.05780	0.03468	126.467	51.485	177.951
89	<i>Magnolia champaca</i>	0.08848	0.05309	193.588	74.999	268.587
90	<i>Magnolia champaca</i>	0.06428	0.03857	140.639	56.551	197.190
91	<i>Dypsis cabadae</i>	0.00796	0.00637	23.226	11.517	34.743
92	<i>Palm big</i>	0.59864	0.47891	1746.367	523.749	2270.116
93	<i>Dypsis cabadae</i>	0.27380	0.21904	798.732	262.382	1061.113
94	<i>Dypsis cabadae</i>	0.08324	0.06659	242.816	91.623	334.438
95	<i>Magnolia champaca</i>	0.06522	0.03913	142.702	57.283	199.985
96	<i>Magnolia champaca</i>	0.07804	0.04682	170.747	67.124	237.872
97	<i>Magnolia champaca</i>	0.05218	0.03131	114.161	47.032	161.194
98	<i>Magnolia champaca</i>	0.06936	0.04162	151.760	60.484	212.244
99	<i>Magnolia champaca</i>	0.09363	0.05618	204.855	78.844	283.698

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
100	<i>Magnolia champaca</i>	0.06121	0.03673	133.922	54.158	188.080
101	<i>Magnolia champaca</i>	0.07827	0.04696	171.242	67.296	238.538
102	<i>Magnolia champaca</i>	0.05035	0.03021	110.167	45.575	155.743
103	<i>Magnolia champaca</i>	0.07434	0.04460	162.649	64.304	226.953
104	<i>Gymnosperm Spp</i>	0.02684	0.01932	70.462	30.706	101.168
105	<i>Magnolia champaca</i>	0.21414	0.12848	468.518	163.767	632.286
106	<i>Magnolia champaca</i>	0.14859	0.08915	325.092	118.572	443.664
107	<i>Magnolia champaca</i>	0.02944	0.01767	64.418	28.367	92.785
108	<i>Magnolia champaca</i>	0.05368	0.03221	117.436	48.222	165.659
109	<i>Magnolia champaca</i>	0.06791	0.04075	148.588	59.366	207.954
110	<i>Magnolia champaca</i>	0.08848	0.05309	193.588	74.999	268.587
111	<i>Magnolia champaca</i>	0.05368	0.03221	117.436	48.222	165.659
112	<i>Magnolia champaca</i>	0.06492	0.03895	142.033	57.046	199.078
113	<i>Magnolia champaca</i>	0.06991	0.04195	152.958	60.906	213.864
114	<i>Magnolia champaca</i>	0.09354	0.05612	204.650	78.774	283.424
115	<i>Magnolia champaca</i>	0.04379	0.02627	95.808	40.285	136.093
116	<i>Magnolia champaca</i>	0.07178	0.04307	157.047	62.343	219.390
117	<i>Mammea suriga</i>	0.07584	0.05461	199.119	76.890	276.009
118	<i>Mammea suriga</i>	0.09150	0.06588	240.224	90.758	330.982
119	<i>Mimusops elengi</i>	0.04925	0.03546	129.293	52.500	181.793

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
120	<i>Mimusops elengi</i>	0.06028	0.04340	158.265	62.770	221.035
121	<i>Palm big</i>	0.19347	0.15478	564.402	193.053	757.454
122	<i>Dyopsis cabadae</i>	0.00969	0.00775	28.262	13.698	41.959
123	<i>Dyopsis cabadae</i>	0.01694	0.01355	49.403	22.437	71.840
124	<i>Dyopsis cabadae</i>	0.00771	0.00617	22.483	11.191	33.674
125	<i>Dyopsis cabadae</i>	0.01206	0.00964	35.170	16.618	51.788
126	<i>Dyopsis cabadae</i>	0.02006	0.01605	58.530	26.063	84.593
127	<i>Dyopsis cabadae</i>	0.02185	0.01748	63.740	28.103	91.843
128	<i>Dyopsis cabadae</i>	0.02319	0.01855	67.661	29.625	97.286
129	<i>Dyopsis cabadae</i>	0.02006	0.01605	58.530	26.063	84.593
130	<i>Dyopsis cabadae</i>	0.02575	0.02060	75.113	32.491	107.604
131	<i>Dyopsis cabadae</i>	0.00947	0.00758	27.634	13.428	41.062
132	<i>Dyopsis cabadae</i>	0.01607	0.01286	46.880	21.422	68.301
133	<i>Dyopsis cabadae</i>	0.00770	0.00616	22.476	11.188	33.663
134	<i>Dyopsis cabadae</i>	0.00917	0.00734	26.757	13.051	39.808
135	<i>Dyopsis cabadae</i>	0.01548	0.01238	45.152	20.723	65.874
136	<i>Dyopsis cabadae</i>	0.02025	0.01620	59.069	26.275	85.344
137	<i>Dyopsis cabadae</i>	0.01161	0.00929	33.864	16.071	49.935
138	<i>Dyopsis cabadae</i>	0.00675	0.00540	19.696	9.956	29.652
139	<i>Dyopsis cabadae</i>	0.01607	0.01286	46.880	21.422	68.301

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
140	<i>Dyopsis cabadae</i>	0.01373	0.01099	40.061	18.644	58.704
141	<i>Dyopsis cabadae</i>	0.01957	0.01565	57.081	25.492	82.573
142	<i>Dyopsis cabadae</i>	0.01989	0.01591	58.033	25.868	83.900
143	<i>Dyopsis cabadae</i>	0.01393	0.01114	40.637	18.880	59.517
144	<i>Dyopsis cabadae</i>	0.01075	0.00860	31.355	15.015	46.370
145	<i>Dyopsis cabadae</i>	0.01836	0.01469	53.569	24.101	77.670
146	<i>Dyopsis cabadae</i>	0.01859	0.01487	54.227	24.363	78.589
147	<i>Dyopsis cabadae</i>	0.01490	0.01192	43.479	20.043	63.522
148	<i>Dyopsis cabadae</i>	0.01519	0.01215	44.316	20.383	64.699
149	<i>Dyopsis cabadae</i>	0.01530	0.01224	44.641	20.515	65.156
150	<i>Dyopsis cabadae</i>	0.01519	0.01215	44.316	20.383	64.699
151	<i>Dyopsis cabadae</i>	0.00771	0.00617	22.483	11.191	33.674
152	<i>Dyopsis cabadae</i>	0.01227	0.00982	35.798	16.880	52.678
153	<i>Dyopsis cabadae</i>	0.00917	0.00734	26.757	13.051	39.808
154	<i>Dyopsis cabadae</i>	0.02577	0.02062	75.178	32.515	107.694
155	<i>Dyopsis cabadae</i>	0.02889	0.02311	84.283	35.971	120.255
156	<i>Dyopsis cabadae</i>	0.01473	0.01178	42.973	19.836	62.810
157	<i>Dyopsis cabadae</i>	0.01393	0.01114	40.637	18.880	59.517
158	<i>Dyopsis cabadae</i>	0.02120	0.01696	61.837	27.360	89.198
159	<i>Dyopsis cabadae</i>	0.01323	0.01059	38.604	18.043	56.647

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
160	<i>Dyopsis cabadae</i>	0.01836	0.01469	53.569	24.101	77.670
161	<i>Dyopsis cabadae</i>	0.01163	0.00930	33.914	16.092	50.006
162	<i>Dyopsis cabadae</i>	0.01161	0.00929	33.864	16.071	49.935
163	<i>Dyopsis cabadae</i>	0.01446	0.01157	42.192	19.517	61.709
164	<i>Dyopsis cabadae</i>	0.01347	0.01078	39.299	18.330	57.629
165	<i>Dyopsis cabadae</i>	0.01957	0.01565	57.081	25.492	82.573
166	<i>Dyopsis cabadae</i>	0.00842	0.00674	24.573	12.106	36.679
167	<i>Dyopsis cabadae</i>	0.02642	0.02113	77.059	33.233	110.292
168	<i>Dyopsis cabadae</i>	0.01803	0.01443	52.610	23.720	76.330
169	<i>Dyopsis cabadae</i>	0.01248	0.00999	36.419	17.138	53.557
170	<i>Dyopsis cabadae</i>	0.01230	0.00984	35.896	16.920	52.816
171	<i>Dyopsis cabadae</i>	0.01393	0.01114	40.637	18.880	59.517
172	<i>Dyopsis cabadae</i>	0.00995	0.00796	29.033	14.027	43.060
173	<i>Dyopsis cabadae</i>	0.02012	0.01609	58.680	26.122	84.803
174	<i>Dyopsis cabadae</i>	0.01744	0.01396	50.890	23.033	73.924
175	<i>Dyopsis cabadae</i>	0.01957	0.01565	57.081	25.492	82.573
176	<i>Dyopsis cabadae</i>	0.02055	0.01644	59.935	26.615	86.550
177	<i>Dyopsis cabadae</i>	0.01720	0.01376	50.169	22.744	72.913
178	<i>Dyopsis cabadae</i>	0.02220	0.01776	64.751	28.496	93.247
179	<i>Dyopsis cabadae</i>	0.02055	0.01644	59.935	26.615	86.550

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
180	<i>Dyopsis cabadae</i>	0.01095	0.00876	31.936	15.260	47.196
181	<i>Dyopsis cabadae</i>	0.01101	0.00881	32.108	15.333	47.440
182	<i>Dyopsis cabadae</i>	0.01163	0.00930	33.914	16.092	50.006
183	<i>Dyopsis cabadae</i>	0.01631	0.01304	47.567	21.699	69.266
184	<i>Dyopsis cabadae</i>	0.02209	0.01767	64.439	28.375	92.814
185	<i>Dyopsis cabadae</i>	0.01734	0.01387	50.587	22.912	73.498
186	<i>Dyopsis cabadae</i>	0.01720	0.01376	50.169	22.744	72.913
187	<i>Dyopsis cabadae</i>	0.02319	0.01855	67.661	29.625	97.286
188	<i>Dyopsis cabadae</i>	0.01553	0.01243	45.317	20.790	66.107
189	<i>Dyopsis cabadae</i>	0.02577	0.02062	75.178	32.515	107.694
190	<i>Dyopsis cabadae</i>	0.01989	0.01591	58.033	25.868	83.900
191	<i>Dyopsis cabadae</i>	0.00995	0.00796	29.033	14.027	43.060
192	<i>Dyopsis cabadae</i>	0.01873	0.01498	54.634	24.524	79.158
193	<i>Dyopsis cabadae</i>	0.01836	0.01469	53.569	24.101	77.670
194	<i>Dyopsis cabadae</i>	0.01826	0.01461	53.275	23.984	77.260
195	<i>Dyopsis cabadae</i>	0.01576	0.01261	45.988	21.061	67.049
196	<i>Dyopsis cabadae</i>	0.01248	0.00999	36.419	17.138	53.557
197	<i>Dyopsis cabadae</i>	0.01957	0.01565	57.081	25.492	82.573
198	<i>Dyopsis cabadae</i>	0.01744	0.01396	50.890	23.033	73.924
199	<i>Dyopsis cabadae</i>	0.01393	0.01114	40.637	18.880	59.517

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
200	<i>Dyopsis cabadae</i>	0.01463	0.01170	42.668	19.712	62.380
201	<i>Dyopsis cabadae</i>	0.02731	0.02185	79.666	34.224	113.890
202	<i>Dyopsis cabadae</i>	0.01548	0.01238	45.152	20.723	65.874
203	<i>Dyopsis cabadae</i>	0.02081	0.01665	60.704	26.917	87.621
204	<i>Dyopsis cabadae</i>	0.02497	0.01997	72.837	31.619	104.456
205	<i>Dyopsis cabadae</i>	0.01248	0.00999	36.419	17.138	53.557
206	<i>Dyopsis cabadae</i>	0.01622	0.01298	47.319	21.599	68.918
207	<i>Dyopsis cabadae</i>	0.00972	0.00778	28.362	13.741	42.103
208	<i>Dyopsis cabadae</i>	0.02642	0.02113	77.059	33.233	110.292
209	<i>Dyopsis cabadae</i>	0.01292	0.01033	37.682	17.662	55.344
210	<i>Dyopsis cabadae</i>	0.02220	0.01776	64.751	28.496	93.247
211	<i>Dyopsis cabadae</i>	0.01462	0.01169	42.643	19.702	62.345
212	<i>Dyopsis cabadae</i>	0.01339	0.01071	39.066	18.234	57.301
213	<i>Dyopsis cabadae</i>	0.01761	0.01409	51.373	23.226	74.599
214	<i>Dyopsis cabadae</i>	0.01519	0.01215	44.316	20.383	64.699
215	<i>Dyopsis cabadae</i>	0.02341	0.01873	68.285	29.866	98.151
216	<i>Dyopsis cabadae</i>	0.02283	0.01826	66.594	29.212	95.806
217	<i>Dyopsis cabadae</i>	0.01573	0.01258	45.887	21.021	66.908
218	<i>Dyopsis cabadae</i>	0.02087	0.01670	60.886	26.988	87.874
219	<i>Dyopsis cabadae</i>	0.01463	0.01170	42.668	19.712	62.380

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
220	<i>Dyopsis cabadae</i>	0.01556	0.01244	45.377	20.814	66.191
221	<i>Dyopsis cabadae</i>	0.02428	0.01942	70.821	30.844	101.666
222	<i>Dyopsis cabadae</i>	0.01339	0.01071	39.066	18.234	57.301
223	<i>Dyopsis cabadae</i>	0.01519	0.01215	44.316	20.383	64.699
224	<i>Dyopsis cabadae</i>	0.01957	0.01565	57.081	25.492	82.573
225	<i>Dyopsis cabadae</i>	0.01591	0.01273	46.426	21.239	67.665
226	<i>Dyopsis cabadae</i>	0.01184	0.00947	34.541	16.355	50.896
227	<i>Dyopsis cabadae</i>	0.02476	0.01981	72.243	31.391	103.634
228	<i>Dyopsis cabadae</i>	0.01194	0.00955	34.839	16.480	51.319
229	<i>Dyopsis cabadae</i>	0.00954	0.00763	27.827	13.511	41.338
230	<i>Dyopsis cabadae</i>	0.01373	0.01099	40.061	18.644	58.704
231	<i>Dyopsis cabadae</i>	0.01161	0.00929	33.864	16.071	49.935
232	<i>Dyopsis cabadae</i>	0.01068	0.00854	31.155	14.930	46.084
233	<i>Dyopsis cabadae</i>	0.01420	0.01136	41.410	19.198	60.608
234	<i>Dyopsis cabadae</i>	0.01714	0.01371	49.998	22.676	72.673
235	<i>Dyopsis cabadae</i>	0.01631	0.01304	47.567	21.699	69.266
236	<i>Dyopsis cabadae</i>	0.01230	0.00984	35.896	16.920	52.816
237	<i>Dyopsis cabadae</i>	0.01393	0.01114	40.637	18.880	59.517
238	<i>Dyopsis cabadae</i>	0.01661	0.01328	48.442	22.051	70.494
239	<i>Dyopsis cabadae</i>	0.01720	0.01376	50.169	22.744	72.913

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
240	<i>Dyopsis cabadae</i>	0.01141	0.00913	33.286	15.829	49.114
241	<i>Dyopsis cabadae</i>	0.01015	0.00812	29.613	14.275	43.888
242	<i>Dyopsis cabadae</i>	0.01298	0.01039	37.875	17.742	55.618
243	<i>Dyopsis cabadae</i>	0.01161	0.00929	33.864	16.071	49.935
244	<i>Dyopsis cabadae</i>	0.01490	0.01192	43.479	20.043	63.522
245	<i>Dyopsis cabadae</i>	0.00995	0.00796	29.033	14.027	43.060
246	<i>Dyopsis cabadae</i>	0.01607	0.01286	46.880	21.422	68.301
247	<i>Dyopsis cabadae</i>	0.01076	0.00861	31.402	15.034	46.436
248	<i>Dyopsis cabadae</i>	0.00694	0.00555	20.235	10.196	30.431
249	<i>Dyopsis cabadae</i>	0.01248	0.00999	36.419	17.138	53.557
250	<i>Dyopsis cabadae</i>	0.01490	0.01192	43.479	20.043	63.522
251	<i>Dyopsis cabadae</i>	0.01091	0.00873	31.832	15.216	47.048
252	<i>Dyopsis cabadae</i>	0.01098	0.00878	32.030	15.300	47.329
253	<i>Dyopsis cabadae</i>	0.01398	0.01119	40.789	18.943	59.732
254	<i>Dyopsis cabadae</i>	0.01527	0.01221	44.536	20.473	65.008
255	<i>Dyopsis cabadae</i>	0.01098	0.00878	32.030	15.300	47.329
256	<i>Dyopsis cabadae</i>	0.01277	0.01022	37.250	17.483	54.733
257	<i>Dyopsis cabadae</i>	0.01339	0.01071	39.066	18.234	57.301
258	<i>Dyopsis cabadae</i>	0.01277	0.01022	37.250	17.483	54.733
259	<i>Dyopsis cabadae</i>	0.01033	0.00827	30.146	14.502	44.647

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
260	<i>Dyopsis cabadae</i>	0.01259	0.01007	36.722	17.264	53.987
261	<i>Dyopsis cabadae</i>	0.01099	0.00879	32.048	15.307	47.356
262	<i>Dyopsis cabadae</i>	0.00917	0.00734	26.757	13.051	39.808
263	<i>Dyopsis cabadae</i>	0.01068	0.00854	31.155	14.930	46.084
264	<i>Dyopsis cabadae</i>	0.00844	0.00675	24.616	12.124	36.740
265	<i>Dyopsis cabadae</i>	0.01161	0.00929	33.864	16.071	49.935
266	<i>Dyopsis cabadae</i>	0.00955	0.00764	27.871	13.531	41.402
267	<i>Dyopsis cabadae</i>	0.01055	0.00844	30.774	14.768	45.542
268	<i>Dyopsis cabadae</i>	0.01527	0.01221	44.536	20.473	65.008
269	<i>Dyopsis cabadae</i>	0.01473	0.01178	42.974	19.837	62.811
270	<i>Dyopsis cabadae</i>	0.01661	0.01328	48.442	22.051	70.494
271	<i>Dyopsis cabadae</i>	0.01161	0.00929	33.864	16.071	49.935
272	<i>Dyopsis cabadae</i>	0.01248	0.00999	36.419	17.138	53.557
273	<i>Dyopsis cabadae</i>	0.01223	0.00979	35.690	16.835	52.525
274	<i>Dyopsis cabadae</i>	0.01339	0.01071	39.066	18.234	57.301
275	<i>Dyopsis cabadae</i>	0.01114	0.00892	32.509	15.502	48.011
276	<i>Dyopsis cabadae</i>	0.01339	0.01071	39.066	18.234	57.301
277	<i>Dyopsis cabadae</i>	0.01370	0.01096	39.959	18.602	58.561
278	<i>Dyopsis cabadae</i>	0.01161	0.00929	33.864	16.071	49.935
279	<i>Dyopsis cabadae</i>	0.00955	0.00764	27.871	13.531	41.402

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
280	<i>Dyopsis cabadae</i>	0.01323	0.01059	38.604	18.043	56.647
281	<i>Dyopsis cabadae</i>	0.01114	0.00892	32.509	15.502	48.011
282	<i>Dyopsis cabadae</i>	0.01161	0.00929	33.864	16.071	49.935
283	<i>Dyopsis cabadae</i>	0.00936	0.00748	27.292	13.282	40.573
284	<i>Dyopsis cabadae</i>	0.00995	0.00796	29.033	14.027	43.060
285	<i>Dyopsis cabadae</i>	0.00899	0.00719	26.221	12.820	39.042
286	<i>Dyopsis cabadae</i>	0.00809	0.00647	23.590	11.677	35.267
287	<i>Dyopsis cabadae</i>	0.01055	0.00844	30.774	14.768	45.542
288	<i>Dyopsis cabadae</i>	0.01393	0.01114	40.637	18.880	59.517
289	<i>Dyopsis cabadae</i>	0.01523	0.01218	44.431	20.430	64.861
290	<i>Dyopsis cabadae</i>	0.01206	0.00964	35.170	16.618	51.788
291	<i>Dyopsis cabadae</i>	0.01339	0.01071	39.066	18.234	57.301
292	<i>Dyopsis cabadae</i>	0.01230	0.00984	35.896	16.920	52.816
293	<i>Dyopsis cabadae</i>	0.01223	0.00979	35.690	16.835	52.525
294	<i>Dyopsis cabadae</i>	0.01033	0.00827	30.146	14.502	44.647
295	<i>Dyopsis cabadae</i>	0.00995	0.00796	29.033	14.027	43.060
296	<i>Dyopsis cabadae</i>	0.00910	0.00728	26.539	12.957	39.497
297	<i>Dyopsis cabadae</i>	0.01323	0.01059	38.605	18.044	56.648
298	<i>Dyopsis cabadae</i>	0.01206	0.00964	35.170	16.618	51.788
299	<i>Dyopsis cabadae</i>	0.01248	0.00999	36.419	17.138	53.557

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
300	<i>Dyopsis cabadae</i>	0.01720	0.01376	50.169	22.744	72.913
301	<i>Dyopsis cabadae</i>	0.01298	0.01039	37.875	17.742	55.618
302	<i>Dyopsis cabadae</i>	0.01055	0.00844	30.774	14.768	45.542
303	<i>Dyopsis cabadae</i>	0.00917	0.00734	26.757	13.051	39.808
304	<i>Dyopsis cabadae</i>	0.01373	0.01099	40.061	18.644	58.704
305	<i>Dyopsis cabadae</i>	0.00632	0.00506	18.436	9.391	27.827
306	<i>Dyopsis cabadae</i>	0.01033	0.00827	30.146	14.502	44.647
307	<i>Dyopsis cabadae</i>	0.01045	0.00836	30.477	14.643	45.120
308	<i>Dyopsis cabadae</i>	0.01433	0.01146	41.807	19.360	61.167
309	<i>Dyopsis cabadae</i>	0.01348	0.01079	39.332	18.344	57.676
310	<i>Dyopsis cabadae</i>	0.01198	0.00959	34.962	16.531	51.493
311	<i>Dyopsis cabadae</i>	0.01230	0.00984	35.896	16.920	52.816
312	<i>Dyopsis cabadae</i>	0.01161	0.00929	33.864	16.071	49.935
313	<i>Dyopsis cabadae</i>	0.01098	0.00878	32.030	15.300	47.329
314	<i>Dyopsis cabadae</i>	0.01035	0.00828	30.194	14.522	44.716
315	<i>Dyopsis cabadae</i>	0.01114	0.00892	32.509	15.502	48.011
316	<i>Dyopsis cabadae</i>	0.01462	0.01169	42.643	19.702	62.345
317	<i>Dyopsis cabadae</i>	0.00904	0.00723	26.378	12.888	39.265
318	<i>Dyopsis cabadae</i>	0.01348	0.01079	39.332	18.344	57.676
319	<i>Dyopsis cabadae</i>	0.01205	0.00964	35.160	16.613	51.773

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
320	<i>Dyopsis cabadae</i>	0.01055	0.00844	30.774	14.768	45.542
321	<i>Dyopsis cabadae</i>	0.01161	0.00929	33.864	16.071	49.935
322	<i>Dyopsis cabadae</i>	0.00936	0.00748	27.292	13.282	40.573
323	<i>Dyopsis cabadae</i>	0.01298	0.01039	37.875	17.742	55.618
324	<i>Dyopsis cabadae</i>	0.01076	0.00861	31.402	15.034	46.436
325	<i>Dyopsis cabadae</i>	0.01519	0.01215	44.316	20.383	64.699
326	<i>Dyopsis cabadae</i>	0.01049	0.00839	30.592	14.691	45.283
327	<i>Dyopsis cabadae</i>	0.01114	0.00892	32.509	15.502	48.011
328	<i>Dyopsis cabadae</i>	0.01634	0.01307	47.660	21.737	69.397
329	<i>Dyopsis cabadae</i>	0.01138	0.00910	33.186	15.787	48.973
330	<i>Dyopsis cabadae</i>	0.01248	0.00999	36.419	17.138	53.557
331	<i>Dyopsis cabadae</i>	0.01098	0.00878	32.030	15.300	47.329
332	<i>Dyopsis cabadae</i>	0.01957	0.01565	57.081	25.492	82.573
333	<i>Dyopsis cabadae</i>	0.00741	0.00593	21.625	10.813	32.437
334	<i>Dyopsis cabadae</i>	0.02064	0.01651	60.202	26.720	86.922
335	<i>Dyopsis cabadae</i>	0.01049	0.00839	30.592	14.691	45.283
336	<i>Dyopsis cabadae</i>	0.00952	0.00762	27.768	13.486	41.255
337	<i>Dyopsis cabadae</i>	0.01433	0.01146	41.807	19.360	61.167
338	<i>Dyopsis cabadae</i>	0.01761	0.01409	51.373	23.226	74.599
339	<i>Dyopsis cabadae</i>	0.01161	0.00929	33.864	16.071	49.935

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
340	<i>Dyopsis cabadae</i>	0.01098	0.00878	32.030	15.300	47.329
341	<i>Dyopsis cabadae</i>	0.01298	0.01039	37.875	17.742	55.618
342	<i>Dyopsis cabadae</i>	0.00876	0.00701	25.549	12.529	38.078
343	<i>Dyopsis cabadae</i>	0.00789	0.00631	23.011	11.423	34.433
344	<i>Dyopsis cabadae</i>	0.01347	0.01078	39.299	18.330	57.629
345	<i>Dyopsis cabadae</i>	0.00926	0.00741	27.006	13.158	40.164
346	<i>Dyopsis cabadae</i>	0.00708	0.00566	20.642	10.377	31.019
347	<i>Dyopsis cabadae</i>	0.00816	0.00653	23.807	11.771	35.578
348	<i>Dyopsis cabadae</i>	0.00929	0.00743	27.091	13.195	40.286
349	<i>Dyopsis cabadae</i>	0.01312	0.01050	38.285	17.912	56.197
350	<i>Dyopsis cabadae</i>	0.01248	0.00999	36.419	17.138	53.557
351	<i>Dyopsis cabadae</i>	0.01015	0.00812	29.613	14.275	43.888
352	<i>Dyopsis cabadae</i>	0.00730	0.00584	21.305	10.671	31.976
353	<i>Dyopsis cabadae</i>	0.01076	0.00861	31.402	15.034	46.436
354	<i>Dyopsis cabadae</i>	0.00998	0.00799	29.123	14.066	43.189
355	<i>Dyopsis cabadae</i>	0.01049	0.00839	30.592	14.691	45.283
356	<i>Dyopsis cabadae</i>	0.01376	0.01101	40.135	18.674	58.809
357	<i>Dyopsis cabadae</i>	0.01530	0.01224	44.641	20.515	65.156
358	<i>Dyopsis cabadae</i>	0.01138	0.00910	33.186	15.787	48.973
359	<i>Dyopsis cabadae</i>	0.01248	0.00999	36.419	17.138	53.557

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
360	<i>Dyopsis cabadae</i>	0.01323	0.01059	38.605	18.044	56.648
361	<i>Dyopsis cabadae</i>	0.01298	0.01039	37.875	17.742	55.618
362	<i>Dyopsis cabadae</i>	0.00678	0.00543	19.785	9.996	29.781
363	<i>Dyopsis cabadae</i>	0.01033	0.00827	30.146	14.502	44.647
364	<i>Dyopsis cabadae</i>	0.01248	0.00999	36.419	17.138	53.557
365	<i>Dyopsis cabadae</i>	0.01024	0.00819	29.863	14.381	44.245
366	<i>Dyopsis cabadae</i>	0.00926	0.00741	27.006	13.158	40.164
367	<i>Dyopsis cabadae</i>	0.01312	0.01050	38.285	17.912	56.197
368	<i>Dyopsis cabadae</i>	0.01024	0.00819	29.863	14.381	44.245
369	<i>Dyopsis cabadae</i>	0.00969	0.00775	28.262	13.698	41.959
370	<i>Dyopsis cabadae</i>	0.02012	0.01609	58.680	26.122	84.803
371	<i>Dyopsis cabadae</i>	0.00995	0.00796	29.033	14.027	43.060
372	<i>Dyopsis cabadae</i>	0.01462	0.01169	42.643	19.702	62.345
373	<i>Dyopsis cabadae</i>	0.01744	0.01396	50.890	23.033	73.924
374	<i>Dyopsis cabadae</i>	0.01376	0.01101	40.135	18.674	58.809
375	<i>Dyopsis cabadae</i>	0.01339	0.01071	39.066	18.234	57.301
376	<i>Dyopsis cabadae</i>	0.01068	0.00854	31.155	14.930	46.084
377	<i>Dyopsis cabadae</i>	0.00741	0.00593	21.625	10.813	32.437
378	<i>Dyopsis cabadae</i>	0.00861	0.00689	25.121	12.344	37.465
379	<i>Dyopsis cabadae</i>	0.00741	0.00593	21.625	10.813	32.437

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
380	<i>Dyopsis cabadae</i>	0.00856	0.00685	24.968	12.277	37.245
381	<i>Dyopsis cabadae</i>	0.00590	0.00472	17.208	8.836	26.044
382	<i>Dyopsis cabadae</i>	0.00752	0.00602	21.940	10.952	32.892
383	<i>Dyopsis cabadae</i>	0.00995	0.00796	29.033	14.027	43.060
384	<i>Dyopsis cabadae</i>	0.01141	0.00913	33.286	15.829	49.114
385	<i>Dyopsis cabadae</i>	0.00916	0.00732	26.710	13.031	39.741
386	<i>Dyopsis cabadae</i>	0.00844	0.00675	24.616	12.124	36.740
387	<i>Dyopsis cabadae</i>	0.00881	0.00704	25.686	12.589	38.275
388	<i>Dyopsis cabadae</i>	0.01055	0.00844	30.774	14.768	45.542
389	<i>Dyopsis cabadae</i>	0.01141	0.00913	33.286	15.829	49.114
390	<i>Dyopsis cabadae</i>	0.01446	0.01157	42.192	19.517	61.709
391	<i>Dyopsis cabadae</i>	0.01076	0.00861	31.402	15.034	46.436
392	<i>Dyopsis cabadae</i>	0.00955	0.00764	27.871	13.531	41.402
393	<i>Dyopsis cabadae</i>	0.00460	0.00483	17.608	9.017	26.625
394	<i>Dyopsis cabadae</i>	0.00555	0.00583	21.246	10.645	31.892
395	<i>Dyopsis cabadae</i>	0.00623	0.00655	23.867	11.798	35.664
396	<i>Dyopsis cabadae</i>	0.00368	0.00386	14.086	7.404	21.490
397	<i>Dyopsis cabadae</i>	0.00446	0.00468	17.071	8.774	25.845
398	<i>Dyopsis cabadae</i>	0.00506	0.00531	19.359	9.805	29.164
399	<i>Dyopsis cabadae</i>	0.00617	0.00647	23.607	11.684	35.291

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
400	<i>Dyopsis cabadae</i>	0.00379	0.00398	14.526	7.608	22.134
401	<i>Dyopsis cabadae</i>	0.00590	0.00619	22.577	11.232	33.809
402	<i>Dyopsis cabadae</i>	0.00420	0.00441	16.096	8.330	24.425
403	<i>Dyopsis cabadae</i>	0.01468	0.01057	38.529	18.013	56.542
404	<i>Dyopsis cabadae</i>	0.00637	0.00459	16.723	8.616	25.339
405	<i>Dyopsis cabadae</i>	0.00550	0.00396	14.449	7.572	22.020
406	<i>Dyopsis cabadae</i>	0.00344	0.00248	9.030	4.998	14.029
407	<i>Dyopsis cabadae</i>	0.01326	0.00955	34.825	16.474	51.299
408	<i>Dyopsis cabadae</i>	0.00917	0.00660	24.081	11.891	35.972
409	<i>Dyopsis cabadae</i>	0.02955	0.02127	77.576	33.430	111.005
410	<i>Dyopsis cabadae</i>	0.08937	0.05362	195.526	75.663	271.189
411	<i>Dyopsis cabadae</i>	0.04741	0.02845	103.735	43.216	146.951
412	<i>Dyopsis cabadae</i>	0.02959	0.01776	64.751	28.496	93.247
413	<i>Dyopsis cabadae</i>	0.07584	0.04551	165.935	65.450	231.385
414	<i>Dyopsis cabadae</i>	0.01089	0.00784	28.596	13.841	42.437
415	<i>Dyopsis cabadae</i>	0.01561	0.01124	40.975	19.019	59.995
416	<i>Dyopsis cabadae</i>	0.02146	0.01545	56.349	25.203	81.553
417	<i>Dyopsis cabadae</i>	0.02419	0.01742	63.505	28.011	91.516
418	<i>Dyopsis cabadae</i>	0.01657	0.01193	43.496	20.050	63.546
419	<i>Dyopsis cabadae</i>	0.01665	0.01199	43.707	20.135	63.842

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
420	<i>Dyopsis cabadae</i>	0.01951	0.01405	51.229	23.169	74.397
421	<i>Dyopsis cabadae</i>	0.01981	0.01426	52.015	23.482	75.497
422	<i>Dyopsis cabadae</i>	0.02398	0.01727	62.957	27.798	90.755
423	<i>Dyopsis cabadae</i>	0.01152	0.01209	44.096	20.294	64.390
424	<i>Dyopsis cabadae</i>	0.01204	0.01264	46.092	21.104	67.196
425	<i>Dyopsis cabadae</i>	0.01408	0.01478	53.904	24.234	78.138
426	<i>Dyopsis cabadae</i>	0.01024	0.01075	39.196	18.288	57.483
427	<i>Dyopsis cabadae</i>	0.12102	0.08713	317.734	116.197	433.931
428	<i>Dyopsis cabadae</i>	0.06189	0.04456	162.504	64.253	226.757
429	<i>Dyopsis cabadae</i>	0.07075	0.05094	185.754	72.311	258.065
430	<i>Dyopsis cabadae</i>	0.08188	0.05895	214.967	82.273	297.240
431	<i>Dyopsis cabadae</i>	0.07005	0.05044	183.919	71.680	255.598
432	<i>Dyopsis cabadae</i>	0.08541	0.06150	224.247	85.403	309.650
433	<i>Dyopsis cabadae</i>	0.07175	0.05166	188.366	73.209	261.575
434	<i>Caesalpinia pulcherrima</i>	0.01519	0.01595	58.164	25.919	84.083
435	<i>Caesalpinia pulcherrima</i>	0.01728	0.01815	66.178	29.051	95.228
436	<i>Caesalpinia pulcherrima</i>	0.02267	0.02380	86.805	36.921	123.726
437	<i>Caesalpinia pulcherrima</i>	0.02616	0.02747	100.152	41.894	142.046
438	<i>Caesalpinia pulcherrima</i>	0.01526	0.01602	58.428	26.023	84.450
439	<i>Caesalpinia pulcherrima</i>	0.01232	0.01294	47.173	21.540	68.713

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
440	<i>Gymnosperm spp</i>	0.10273	0.07396	269.706	100.533	370.239
441	<i>Plumeria acuminata</i>	0.05573	0.04013	146.325	58.566	204.891
442	<i>Gymnosperm spp</i>	0.04369	0.03146	114.719	47.235	161.954
443	<i>Caesalpinia pulcherrima</i>	0.00899	0.00944	34.416	16.302	50.718
444	<i>Caesalpinia pulcherrima</i>	0.01304	0.01370	49.946	22.655	72.601
445	<i>Caesalpinia pulcherrima</i>	0.01756	0.01843	67.218	29.454	96.672
446	<i>Caesalpinia pulcherrima</i>	0.02064	0.02167	79.015	33.977	112.993
447	<i>Caesalpinia pulcherrima</i>	0.01678	0.01761	64.231	28.294	92.524
448	<i>Dypsis cabadae</i>	0.00401	0.00289	10.522	5.721	16.243
449	<i>Polyalthia longifolia</i>	0.16199	0.11663	425.295	150.343	575.639
450	<i>Polyalthia longifolia</i>	0.13045	0.09392	342.484	124.160	466.644
451	<i>Polyalthia longifolia</i>	0.13179	0.09489	346.012	125.289	471.302
452	<i>Polyalthia longifolia</i>	0.12784	0.09204	335.634	121.963	457.597
453	<i>Polyalthia longifolia</i>	0.10112	0.07281	265.492	99.144	364.635
454	<i>Polyalthia longifolia</i>	0.14011	0.10088	367.866	132.256	500.122
455	<i>Polyalthia longifolia</i>	0.13525	0.09738	355.095	128.191	483.286
456	<i>Magnolia champaca</i>	0.02355	0.01413	51.534	23.291	74.825
457	<i>Magnolia champaca</i>	0.01748	0.01049	38.234	17.891	56.125
458	<i>Magnolia champaca</i>	0.01857	0.01114	40.637	18.880	59.517
459	<i>Bougainvillea glabra</i>	0.00640	0.00461	16.808	8.654	25.463

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
460	<i>Bougainvillea glabra</i>	0.01146	0.00825	30.101	14.483	44.584
461	<i>Bougainvillea glabra</i>	0.00813	0.00585	21.334	10.684	32.018
462	<i>Bougainvillea glabra</i>	0.00646	0.00465	16.957	8.722	25.679
463	<i>Bougainvillea glabra</i>	0.00587	0.00423	15.412	8.016	23.428
464	<i>Bougainvillea glabra</i>	0.00946	0.00681	24.833	12.219	37.052
465	<i>Bougainvillea glabra</i>	0.00882	0.00635	23.163	11.490	34.652
466	<i>Bougainvillea glabra</i>	0.01387	0.00999	36.422	17.139	53.562
467	<i>Bougainvillea glabra</i>	0.01316	0.00948	34.552	16.359	50.911
468	<i>Bougainvillea glabra</i>	0.00924	0.00665	24.255	11.967	36.222
469	<i>Bougainvillea glabra</i>	0.01074	0.00773	28.188	13.666	41.854
470	<i>Bougainvillea glabra</i>	0.00882	0.00635	23.163	11.490	34.652
471	<i>Bougainvillea glabra</i>	0.00736	0.00530	19.336	9.795	29.131
472	<i>Bougainvillea glabra</i>	0.00624	0.00449	16.375	8.457	24.832
473	<i>Bougainvillea glabra</i>	0.00710	0.00512	18.653	9.489	28.141
474	<i>Bougainvillea glabra</i>	0.00937	0.00675	24.612	12.122	36.734
475	<i>Caesalpinia pulcherrima</i>	0.00840	0.00882	32.148	15.349	47.497
476	<i>Caesalpinia pulcherrima</i>	0.00949	0.00996	36.328	17.100	53.428
477	<i>Dyopsis cabadae</i>	0.00206	0.00149	5.418	3.183	8.601
478	<i>Magnolia champaca</i>	0.00229	0.00165	6.020	3.493	9.514
479	<i>Ziziphus mauritiana</i>	0.01912	0.01453	52.978	23.866	76.844

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
480	<i>Helicteres isora</i>	0.00774	0.00557	20.318	10.233	30.552
481	<i>Citrus limon</i>	0.00205	0.00147	5.370	3.158	8.527
482	<i>Acacia concinna</i>	0.03822	0.02752	100.337	41.963	142.300
483	<i>Acacia spp</i>	0.01287	0.00927	33.801	16.045	49.846
484	<i>Lawsonia inermis</i>	0.00371	0.00267	9.731	5.340	15.071
485	<i>Santalum album</i>	0.00960	0.00691	25.212	12.383	37.595
486	<i>Garcinia indica</i>	0.00956	0.00688	25.091	12.331	37.422
487	<i>Pterocarpus santalinus</i>	0.00119	0.00085	3.114	1.951	5.065
488	<i>Magnolia champaca</i>	0.02283	0.01644	59.935	26.615	86.550
489	<i>Magnolia champaca</i>	0.02944	0.01767	64.418	28.367	92.785
490	<i>Cinnamomum tamala</i>	0.03955	0.02848	103.836	43.253	147.088
491	<i>Cinnamomum verum</i>	0.02642	0.01902	69.353	30.279	99.632
492	<i>Mangifera indica</i>	0.15881	0.11435	416.965	147.738	564.703
493	<i>Butea monosperma</i>	0.00632	0.00455	16.592	8.556	25.149
494	<i>Cinnamomum verum</i>	0.04256	0.03064	111.735	46.148	157.883
495	<i>Syzygium jambos</i>	0.01572	0.01132	41.262	19.137	60.399
496	<i>mangifera indica</i>	0.02476	0.01783	65.018	28.600	93.619
497	<i>Dyopsis cabadae</i>	0.00401	0.00289	10.522	5.721	16.243
498	<i>Dyopsis cabadae</i>	0.00276	0.00199	7.244	4.114	11.358
499	<i>Dyopsis cabadae</i>	0.00186	0.00134	4.876	2.900	7.776

Sr. No.	Tree/Shrub Species	Volume (m3/tree)	Biomass of VOB	Above ground Carbon (Kg)	Below ground Carbon (Kg)	Total carbon (Kg)
500	<i>Dypsis cabadae</i>	0.00175	0.00126	4.605	2.757	7.363
501	<i>Magnolia champaca</i>	0.00799	0.00479	17.481	8.960	26.441
502	<i>Magnolia champaca</i>	0.01071	0.00643	23.436	11.609	35.046
503	<i>Magnolia champaca</i>	0.01370	0.00822	29.967	14.426	44.393
504	<i>Magnolia champaca</i>	0.00556	0.00334	12.164	6.503	18.667
505	<i>Magnolia champaca</i>	0.00324	0.00194	7.082	4.033	11.115
506	<i>Magnolia champaca</i>	0.00478	0.00287	10.452	5.688	16.139
507	<i>Magnolia champaca</i>	0.00438	0.00263	9.584	5.268	14.852
508	<i>Magnolia champaca</i>	0.00248	0.00149	5.418	3.183	8.601
	TOTAL	15.744	11.281	41134.95	16130.55	57265.50

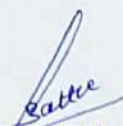
Total Carbon sequestrated in Tree/shrubs is 57.265 Ton

In Govindrao Nikam College of Pharmacy, Sawarde campus total 508 tree/shrub were found. But majority of them are shrub. The most common species were *Dypsis cabadae*, *Magnolia champaca*, *Bougainvillea glabra*. The tree/shrubs have average height of 5 m. Total volume is 15.744, Biomass of Volume Over Bark is 11.281, Total above ground Carbon stock in these 508 tree/shrub is **41134.95 Kg** while, total below ground Carbon is **16130.55 Kg**.

In **508 tree/shrub** of college campus, total carbon sequestrated is **57.265 Ton**. In college campus area many plants are flourishing. Total campus is beautiful with greenery of herbs, shrubs, tree, climbers etc. Tree and shrubs are in developing condition now and carbon sequestration will be increased day by day with increase in biomass. As compared to earlier period majority of plants have shown good growth as increase in height and girth of plants was

observed. Some new plants are also grown in campus. Proper care of all the plants is taken by college. The college is also active in plantation drive and following other ecofriendly ways. Students and staff of college is engaged in various environment conservation activities. In conclusion Govindrao Nikam College of Pharmacy, Sawarde is actively engaged in environment conservation initiatives and with proper care of 508 tree/shrub in area of 3.5 acres with total carbon sequestration of 57.265 Ton. This carbon credit in college campus is green initiative towards capturing atmospheric CO₂ and mitigation of climate change and global warming. It is highly appreciated. Plant survival rate is well maintained, watering schedule is also planned according the season.




PRINCIPAL
Govindrao Nikam College of Pharmacy
Sawarde, Tal. Chiplun, Dist. Ratnagiri