

H圃場

胸高周囲長(cm)	2019.5	2019.11	2020.5	2020.11
1	89	101	101.5	112.5
2	52	55.5	56	57
3	74	79.5	81.3	89.9
4	81	89	89.4	97
5	61	62	no tree	no tree
6	33	41	40.3	46
7	70.5	71.5	no tree	no tree
8	75	81	82.6	90.7
9	39	42	43	46.2
10	75	82	81.50	87.7
11	89.5	92	no tree	no tree
12	51.2	56	57.5	59.5
13	55.5	63.5	64.6	70.2
14	51.4	54.5	56.8	59.4
15	100.2	114	111.2	114.4
16	40.8	42	41.5	41.3
17	101.8	115	115.4	124.5
18	67.5	77	77.5	81.1
19	39	44	44.5	47.4
20	76	88	86.5	94
平均	66.12	72.525	72.41765	77.5764706

樹高(m)	2019.5	2019.11	2020.5	2020.11
1	14.62	15	15	16.3
2	13.18	14.03	13.78	15.24
3	14.93	15.02	16.47	16.9
4	14.47	15.5	16.72	16.1
5	9.73	11.43	no tree	no tree
6	12.05	13.33	12.8	14.49
7	7.63	11.82	no tree	no tree
8	14.44	15.12	16.72	16.5
9	12.97	14.44	14.32	15.5
10	15.02	15.03	16.865	16.8
11	10.93	13.48	no tree	no tree
12	14.5	16.12	16.06	17.1
13	12.99	15.08	15.84	16.4
14	14.01	15.74	15.98	16.86
15	15.82	16.32	20.03	15
16	14	14.64	15.995	14.02
17	14.89	15.98	17.02	16.72
18	14.73	16.78	17	16.8
19	11.88	14.01	13.24	14.7
20	14.15	15.8	16.17	14.98
平均	13.347	14.7335	15.88294	15.90647

HM圃場

胸高周囲長(cm)	2019.5	2019.11	2020.5	2020.11
1	78	87	87	99.1
2	46.2	51	50.7	53
3	74.5	81	80.8	85.8
4	49	53.5	53.1	56.8
5	59.5	68	67.5	74.4
6	63.8	73	70.8	74.4
7	86	95	94.3	102
8	51	57.5	57.8	61.3
9	57	72	71	79.5
10	46.8	55	36.9	60.5
11	44	49	56.5	82.3
12	34.5	36.5	36.6	51
13	61.8	75	75.2	81
14	50.5	59	59	63.7
15	53.8	64	64.8	75
16	52.2	62	62	68.5
17	45.7	47.5	47.2	48.3
18	30.8	34	33.3	55
19	39.6	49.5	49.2	54.5
20	63.7	76	76.6	77.3
平均	54.42	62.275	61.515	70.17

樹高(m)	2019.5	2019.11	2020.5	2020.11
1	12.94	16	12	15.5
2	11.98	15.3	13.17	15.9
3	14.37	16.32	15.97	16.6
4	12.96	14.1	16.01	16.8
5	13.92	14.99	16.05	17.3
6	13.92	14.55	15.88	16.8
7	14.12	14.32	16.94	16.84
8	10.88	13.97	13.55	17
9	12.18	14.78	14.38	18
10	11.96	14.54	16.195	17
11	11.78	14.3	14.49	18.5
12	11.4	14.23	13.54	17
13	13.02	14.45	15.42	16.8
14	10.75	12.23	11.82	15
15	8.69	10.02	10.23	11.18
16	10.45	13.15	12.78	15.8
17	10.34	10.34	10.73	12.37
18	9.19	13.05	14.39	13.8
19	9.94	12.95	13.77	14
20	12.94	16.3	14.32	15.6
平均	11.8865	13.9945	14.08175	15.8895

INA圃場

胸高周囲長(cm)	2019.5	2019.11	2020.5	2020.11
1	65	78.5	80.9	91
2	39	48.2	49.5	53.4
3	58.3	72	71.5	78.8
4	56.3	66.5	67	73.3
5	50	56	58	63
6	46.5	60	59.7	70.3
7	48.5	56.5	56.9	61.8
8	51	57	56.4	60.5
9	32	38.5	41.8	48.6
10	22.2	31.5	31.9	39.7
11	42	52	52.3	56.2
12	41.5	55.5	55	63
13	33.2	44	45.1	53
14	24.7	34.3	34.9	41.3
15	37	45.5	45.5	55.6
16	39.2	46.5	47.7	54.9
17	39	44	43.9	47.6
18	23.2	27	27.6	30.4
19	29.8	38	38.1	45
20	28.2	35	35	39.5
平均	40.33	49.325	49.935	56.345

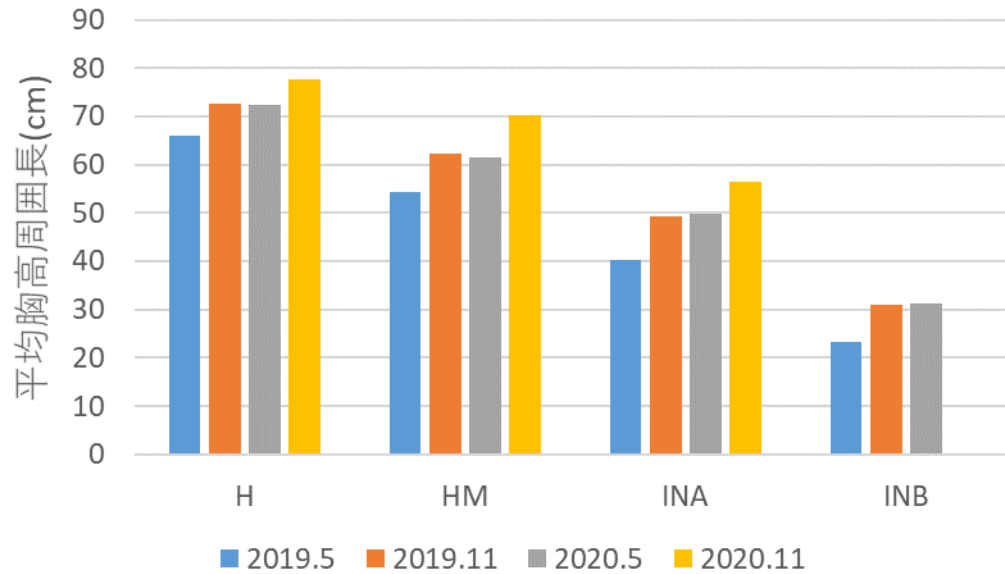
樹高(m)	2019.5	2019.11	2020.5	2020.11
1	11.26	14.78	13.5	14.11
2	8.62	10.92	11.97	12.56
3	10.64	12	14.14	13.7
4	10.34	12.17	12.96	13.94
5	7.79	9.23	9.97	12.98
6	8.33	10.57	10.41	13.14
7	9.82	10.98	11.15	13.17
8	8.92	10.63	10.62	12.55
9	5.76	7.58	7.33	11.26
10	4.12	5.98	6.59	10.27
11	8.38	9.48	9.4	11.95
12	7.26	9.7	9.87	11.03
13	7.07	9.05	9.01	11.31
14	5.32	7.84	7.96	10.34
15	6.73	8.46	8.99	10.46
16	6.74	7.77	8.02	10.1
17	6.73	7.84	8.38	10.12
18	5.04	7.22	7.15	9.8
19	6.25	7.7	7.26	9.05
20	5.44	6.18	6.14	6.97
平均	7.528	9.304	9.541	11.4405

INB圃場

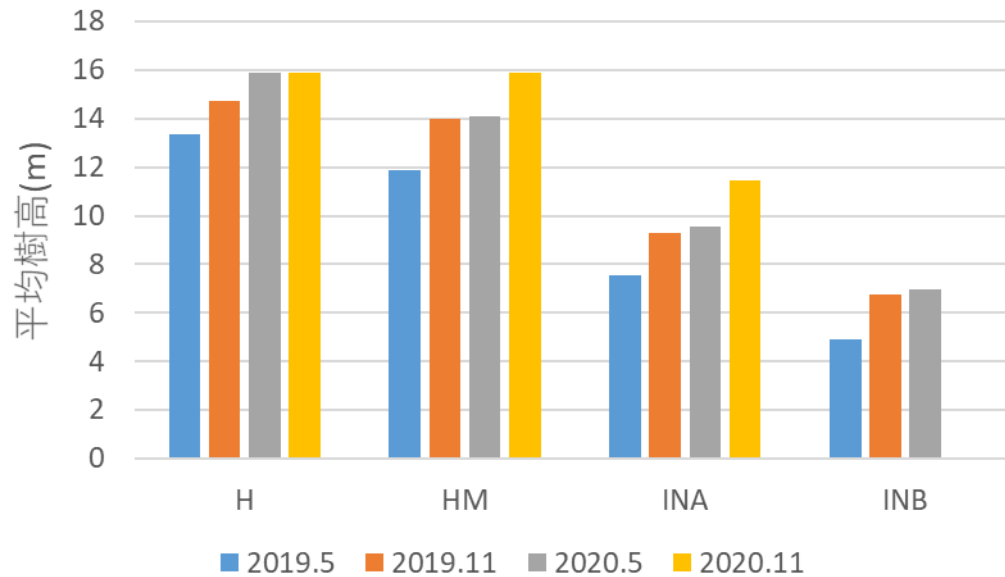
胸高周囲長(cm)	2019.5	2019.11	2020.5
1	29	40	39.8
2	33	44.5	43.9
3	29	39	39.1
4	18.3	22.3	22.1
5	17.3	21	20.9
6	22	30	30.2
7	22.1	29.5	30.3
8	25.7	36.5	36.4
9	25	31.5	31.7
10	28	37.5	38.1
11	26.8	31.3	30.6
12	28.3	40.5	40.5
13	26.3	34	34.3
14	20.5	27.5	27.4
15	26.2	31.5	31.4
16	19.7	25	26.4
17	15.6	23.5	23
18	22.2	29	29.5
19	13.4	18	19.8
20	20.5	30	30.3
平均	23.445	31.105	31.285

樹高(m)	2019.5	2019.11	2020.5
1	6.12	7.86	8.94
2	6.51	7.8	9.01
3	6.05	8.58	8.93
4	3.69	5.91	5.95
5	4.35	4.95	4.95
6	4.22	6.58	6.83
7	4.4	6.11	6
8	5.04	7.65	7.6
9	4.55	7.39	7.57
10	5.47	7.88	8.17
11	5.25	7.29	7.45
12	5.61	5.73	6.26
13	4.92	7	7.2
14	4.94	7.98	7.69
15	6.27	7.96	8.14
16	3.79	5.72	6.01
17	4.09	5.29	5.18
18	4.95	6.18	6.34
19	3.44	4.87	4.85
20	4.63	6.5	6.57
平均	4.9145	6.7615	6.982

各圃場の平均胸高周囲長の変化



各圃場の平均樹高の変化

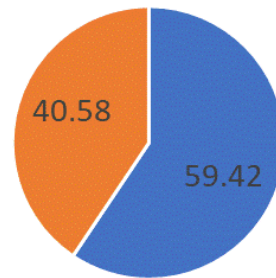


	1本目	2本目	3本目	4本目	5本目
胸高周囲長(cm)	94.3	51	112.5	57	89.9
樹高(m)	15.3	15.7	16.3	15.24	16.9
全バイオマス(kg)	676.9	219.45	786.05	147.35	386.35
地上部バイオマス量(kg)	545.6	164.3	658.15	147.35	386.35
木質重量(kg)	642.4	204.8	744	144.15	359.55
幹(材分)	313	117	401.5	58	227
葉	34.5	14.65	42.05	3.2	26.8
枝+幹	198.1	32.65	214.6	86.15	132.55
根	131.3	55.15	127.9		

	早生桐
乾燥前重量(g)	621
乾燥後重量(g)	252
水分重量(g)	369

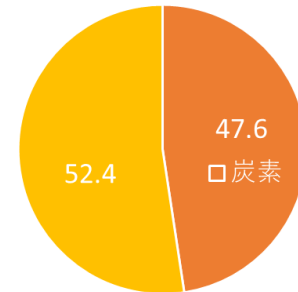
	炭素率(w/w%)
早生桐1	46.3
早生桐2	48.9

早生桐の樹木の乾燥後重量割合

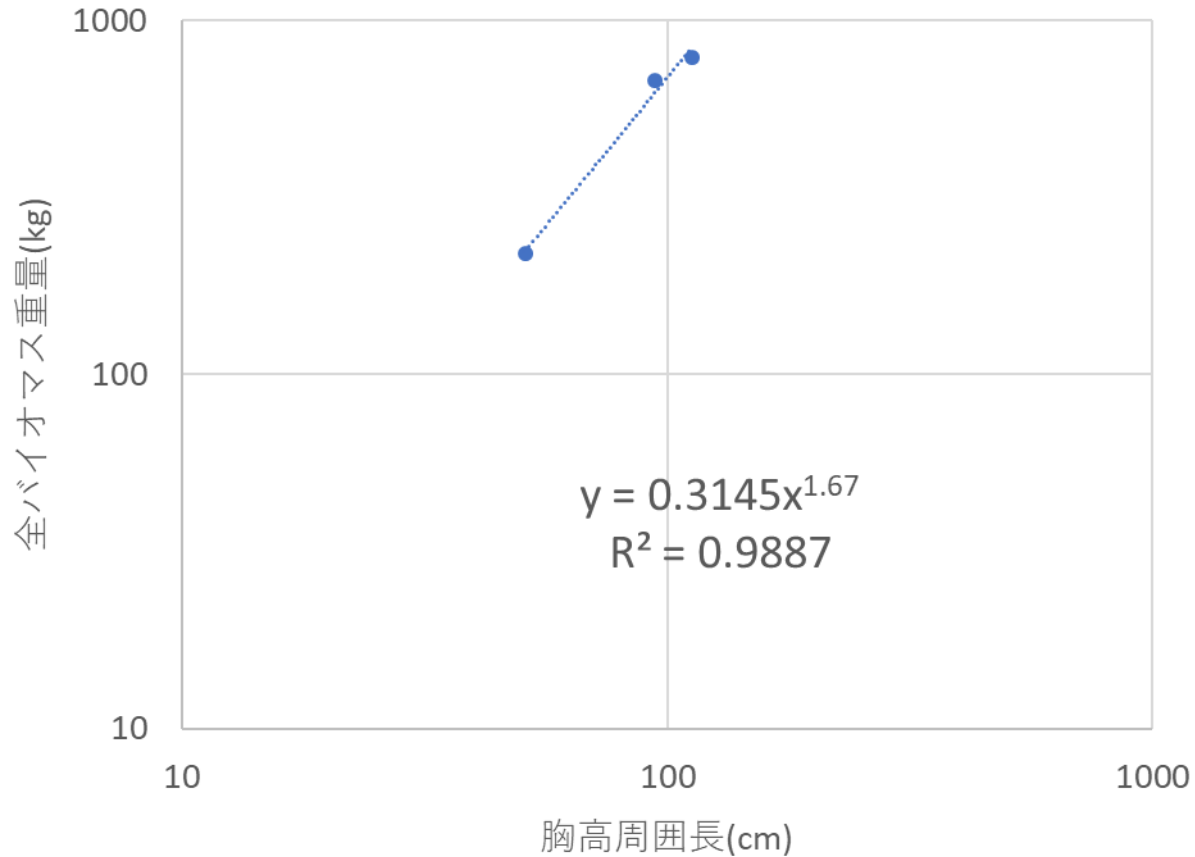


■ 水分 ■ 木質

早生桐木質中の炭素重量割合



樹木1本当たりのバイオマス重量に対する胸高周囲長を用いたアロメトリー式



$$(\text{全バイオマス重量}) = 0.3145 * (\text{胸高周囲長}) ^{1.67}$$

$$77.6(\text{cm})^{1.67} \times 0.3145 \times 0.406 \times 0.476 \times 3.67 = \mathbf{320(\text{kg-CO}_2/\text{tree}/7.5 \text{ years})}$$
$$= \mathbf{42.6 (\text{kg-CO}_2/\text{tree}/\text{year})}$$