

# 【改訂第2版】北海道カラマツ細り表

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この細り表は、北海道水産林務部による「カラマツ伐期延長促進事業」の一環として作成しました。

なお、計算方法の見直しにより、平成 27 年 4 月に表の数値と文章の一部を修正しました。

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## 発刊のことば

今、北海道のカラマツが全国から注目を浴びています。

本道のカラマツ林の蓄積は9千3百万 m<sup>3</sup>に上り、森林蓄積の13%、針葉樹人工林蓄積に対しては43%を占めています（平成20年度北海道林業統計）。このカラマツ資源が成熟しつつあり、これからいよいよ収穫期のピークを迎えようとしています。

カラマツ材は、かつてはねじれ等により嫌われたこともありましたが、それらの問題は乾燥技術や加工技術によりほぼ克服されたことから、梱包材などの輸送資材から構造用集成材、構造用合板、赤い色味を生かした内装材など、幅広い用途で利用されています。また、針葉樹材としては強度があること、まとまった資源量があることから、本道のみならず本州からも、北海道のカラマツ資源に熱い期待が寄せられています。

この度改訂する「北海道カラマツ細り表」は、収穫前に採材時の丸太の末口径を予測するものです。従来の細り表は胸高直径で最大36cmの立木までしか対応できませんでした。今回の改訂により、対応できる立木の最大直径が56cmまでとなり、充実期にあるカラマツ資源に十分に対応できるものとなりました。カラマツ資源を無駄なく有効に活用するためには、立木の形状を把握し、形状に合わせて適切に用途や採材を決定することにより、歩止まりを高める必要があります。この「細り表」は、立木段階で胸高直径と樹高から任意の高さの直径を知ることができ、カラマツ材を効率よく利用するために必要不可欠な資料として、収穫時の立木評価はもとより、育林関係者が間伐等の林分の施業計画を立てる際などにも広く利用されるものと考えています。

先人たちの弛まぬ努力によってようやく利用段階に達したカラマツ資源が有効に活用され、森林所有者に利益が還元されることにより、カラマツの保続的な利用の循環が確立するための一助として、本書が活用されることを心より願っています。

本書の作成にあたり、造材現場におけるデータ収集にご協力いただいた関係者の皆様ならびに林業普及指導員の方々に感謝いたします。

平成22年8月

地方独立行政法人北海道立総合研究機構  
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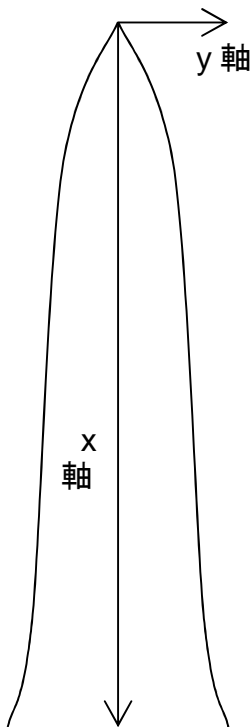
真山 良



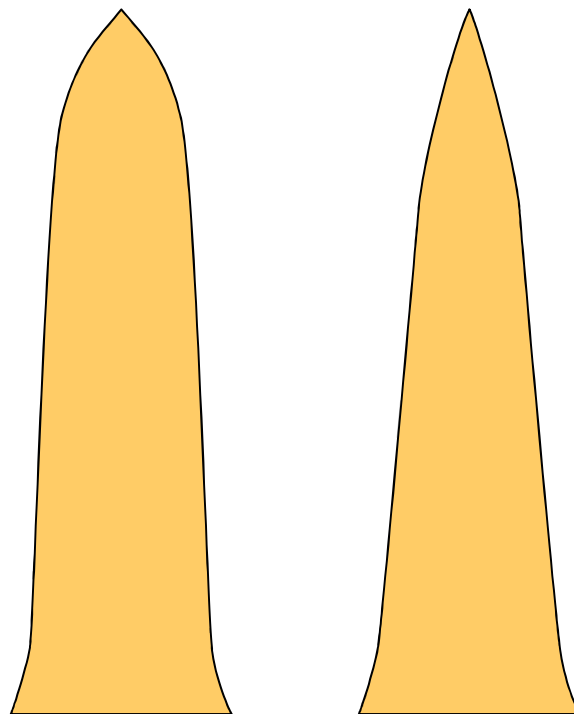
## 樹木の形状

樹木の形状は樹種によって異なり，また同じ樹種であっても気象や土壌，地形，他個体との競合などの環境要因や間伐，枝打ち等の施業の影響，遺伝的要因など，様々な要因に影響を受けて変化します。しかし，大まかに言えば，樹木の幹は横断面を円として全ての横断面の中心を垂直線が通過し，上部に行くに従って横断面の径が細くなる形状に近似できます。この近似された形状を縦割りにすると，中心に垂線を持つ左右対称の曲線が描かれます（図－1）。一般的に幹形といえばこの縦断面を指し，幹形を表現する曲線を幹曲線といいます。幹曲線は一般に， $xy$ 座標系において，梢端を原点に取り，梢端からの垂直方向の距離を  $x$  軸に，半径を  $y$  軸にとって示されます。同じ樹種の中では，この幹曲線は比較的似たような形状になることが期待されます。

幹形を表す用語として，上部から下部まで幹の太さが比較的均質なものを「完満（かんまん）」，上部に行くに従って細くなる傾向が強いものを「梢殺（うらごけ）」と言います（図－2）。林業的には，完満な幹形では材積が大きく，価値が高いといえます。



図－1 幹形の例



図－2 完満（左）と梢殺（右）

## 細り表の見方

「細り表」は、立木の胸高直径（地上高 1.3m の直径）と樹高をもとに、任意の高さでの材の直径を調べるための表です。胸高直径は樹皮の上から測定するので皮付きの値を利用し、地上高ごとの直径は材を利用できる皮なしの値を示しています。胸高直径ごとに表が分かれており、縦の列で樹高ごとの細りの値を記載しています。

例えば、胸高直径 20cm、樹高 22m の立木を伐採し、3.65m の丸太を 3 本採材する場合を考えてみましょう。胸高直径 20cm の表を開き、樹高 22m に相当する列を見ます。

胸高直径(皮付き) 20 cm												
樹高 地上高	13	14	15	16	17	18	19	20	21	22	23	24
2	18.0	18.1	18.2	18.2	18.3	18.3	18.3	18.4	18.4	18.4	18.5	18.5
3	17.0	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	17.9	18.0	18.1
4	16.0	16.2	16.5	16.7	16.8	17.0	17.1	17.2	17.3	17.4	17.5	17.6
5	14.9	15.2	15.6	15.8	16.1	16.3	16.5	16.6	16.8	16.9	17.1	17.2
6	13.7	14.2	14.6	15.0	15.3	15.6	15.8	16.0	16.2	16.4	16.6	16.7
7	12.4	13.0	13.6	14.1	14.5	14.8	15.1	15.4	15.6	15.9	16.1	16.3
8	10.9	11.8	12.5	13.1	13.6	14.0	14.4	14.7	15.0	15.3	15.5	15.8
9	9.2	10.3	11.2	12.0	12.6	13.1	13.6	14.0	14.4	14.7	15.0	15.2
10	7.4	8.7	9.9	10.8	11.5	12.2	12.7	13.2	13.6	14.0	14.4	14.7
11	5.2	6.9	8.3	9.4	10.3	11.1	11.8	12.3	12.9	13.3	13.7	14.1
12	2.8	4.9	6.6	7.9	9.0	9.9	10.7	11.4	12.0	12.5	13.0	13.4
13		2.6	4.6	6.2	7.6	8.7	9.6	10.4	11.1	11.7	12.2	12.7

図-3 細り表の例（胸高直径 20cm）とその読み取り方

一番丸太の末口は地上高 3.65m のため、地上高 4m の行と樹高 22m の列との交点である 17.4cm が末口径（皮なし）の予測値となります。同様に二番丸太では地上高 7.3m のため、地上高 7m の行から 15.9cm を、三番丸太では地上高 10.95m のため、地上高 11m の行から 13.3cm を、それぞれ予測値として読み取ることができます。なお、傾斜地や根元曲がりなどにより、地際の伐採面が高くなることが予想される場合には、それぞれの丸太末口の地上高に切り株の高さを加えて表を読み取る必要があります。





## 細り表

胸高直径(皮付き) 8 cm							
樹高 地上高	6	7	8	9	10	11	12
2	6.6	6.8	6.8	6.9	7.0	7.0	7.0
3	5.5	5.9	6.1	6.3	6.4	6.5	6.6
4	4.2	4.9	5.3	5.7	5.9	6.1	6.2
5	2.4	3.6	4.4	4.9	5.3	5.5	5.7
6		2.0	3.2	4.0	4.5	4.9	5.2
7			1.8	2.9	3.7	4.2	4.6
8				1.6	2.6	3.4	4.0
9					1.4	2.4	3.2
10						1.3	2.3
11							1.2

胸高直径(皮付き) 9 cm							
樹高 地上高	6	7	8	9	10	11	12
2	7.5	7.6	7.7	7.8	7.9	7.9	7.9
3	6.2	6.6	6.9	7.1	7.3	7.4	7.5
4	4.7	5.5	6.0	6.4	6.6	6.8	7.0
5	2.7	4.1	4.9	5.5	5.9	6.2	6.5
6		2.3	3.6	4.5	5.1	5.5	5.9
7			2.0	3.3	4.1	4.7	5.2
8				1.8	3.0	3.8	4.5
9					1.6	2.7	3.6
10						1.5	2.5
11							1.4

胸高直径(皮付き) 10 cm							
樹高 地上高	7	8	9	10	11	12	13
2	8.5	8.6	8.7	8.7	8.8	8.8	8.9
3	7.4	7.7	7.9	8.1	8.2	8.3	8.4
4	6.1	6.7	7.1	7.4	7.6	7.8	7.9
5	4.5	5.5	6.1	6.6	6.9	7.2	7.4
6	2.5	4.0	5.0	5.7	6.2	6.5	6.8
7		2.2	3.6	4.6	5.3	5.8	6.2
8			2.0	3.3	4.2	4.9	5.5
9				1.8	3.0	4.0	4.7
10					1.6	2.8	3.7
11						1.5	2.6
12							1.4

胸高直径(皮付き) 11 cm							
樹高 地上高	7	8	9	10	11	12	13
2	9.3	9.5	9.6	9.6	9.7	9.7	9.8
3	8.1	8.5	8.7	8.9	9.0	9.2	9.3
4	6.7	7.4	7.8	8.1	8.4	8.6	8.7
5	5.0	6.0	6.7	7.2	7.6	7.9	8.2
6	2.8	4.4	5.5	6.2	6.8	7.2	7.5
7		2.4	4.0	5.0	5.8	6.4	6.8
8			2.2	3.6	4.7	5.4	6.0
9				2.0	3.3	4.4	5.1
10					1.8	3.1	4.1
11						1.7	2.9
12							1.5

胸高直径(皮付き) 12 cm

樹高 地上高	7	8	9	10	11	12	13	14	15	16
2	10.2	10.3	10.5	10.5	10.6	10.6	10.7	10.7	10.8	10.8
3	8.9	9.3	9.5	9.7	9.9	10.0	10.1	10.2	10.3	10.4
4	7.3	8.0	8.5	8.9	9.1	9.4	9.5	9.7	9.8	9.9
5	5.4	6.6	7.3	7.9	8.3	8.6	8.9	9.1	9.3	9.5
6	3.0	4.8	6.0	6.8	7.4	7.9	8.2	8.5	8.8	9.0
7		2.7	4.3	5.5	6.3	7.0	7.5	7.8	8.2	8.5
8			2.4	4.0	5.1	5.9	6.6	7.1	7.5	7.9
9				2.1	3.7	4.8	5.6	6.3	6.8	7.2
10					2.0	3.4	4.5	5.3	6.0	6.5
11						1.8	3.2	4.2	5.0	5.7
12							1.7	3.0	4.0	4.8
13								1.6	2.8	3.8
14									1.5	2.7
15										1.4

胸高直径(皮付き) 13 cm

樹高 地上高	7	8	9	10	11	12	13	14	15	16
2	11.1	11.2	11.3	11.4	11.5	11.6	11.6	11.6	11.7	11.7
3	9.6	10.0	10.3	10.5	10.7	10.9	11.0	11.1	11.2	11.2
4	7.9	8.7	9.2	9.6	9.9	10.1	10.3	10.5	10.6	10.8
5	5.9	7.1	8.0	8.6	9.0	9.4	9.7	9.9	10.1	10.3
6	3.3	5.2	6.5	7.4	8.0	8.5	8.9	9.2	9.5	9.7
7		2.9	4.7	6.0	6.9	7.5	8.1	8.5	8.9	9.2
8			2.6	4.3	5.5	6.4	7.1	7.7	8.1	8.5
9				2.3	4.0	5.1	6.1	6.8	7.3	7.8
10					2.1	3.7	4.8	5.7	6.4	7.0
11						2.0	3.4	4.5	5.4	6.2
12							1.8	3.2	4.3	5.2
13								1.7	3.0	4.1
14									1.6	2.9
15										1.5

胸高直径(皮付き) 14 cm

樹高 地上高	8	9	10	11	12	13	14	15	16	17
2	12.1	12.2	12.3	12.4	12.5	12.5	12.6	12.6	12.6	12.7
3	10.8	11.1	11.4	11.6	11.7	11.8	12.0	12.0	12.1	12.2
4	9.4	9.9	10.3	10.7	10.9	11.1	11.3	11.5	11.6	11.7
5	7.7	8.6	9.2	9.7	10.1	10.4	10.7	10.9	11.1	11.2
6	5.6	7.0	7.9	8.6	9.2	9.6	9.9	10.2	10.5	10.7
7	3.1	5.1	6.4	7.4	8.1	8.7	9.2	9.5	9.9	10.1
8		2.8	4.6	5.9	6.9	7.7	8.3	8.8	9.2	9.5
9			2.5	4.3	5.5	6.5	7.3	7.9	8.4	8.9
10				2.3	3.9	5.2	6.2	6.9	7.6	8.1
11					2.1	3.7	4.9	5.9	6.6	7.3
12						2.0	3.5	4.6	5.6	6.4
13							1.8	3.3	4.4	5.3
14								1.7	3.1	4.2
15									1.6	2.9
16										1.5

胸高直径(皮付き) 15 cm

樹高 地上高	8	9	10	11	12	13	14	15	16	17
2	13.0	13.1	13.2	13.3	13.4	13.4	13.5	13.5	13.6	13.6
3	11.6	11.9	12.2	12.4	12.6	12.7	12.8	12.9	13.0	13.1
4	10.0	10.6	11.1	11.4	11.7	11.9	12.1	12.3	12.4	12.6
5	8.2	9.2	9.9	10.4	10.8	11.1	11.4	11.7	11.9	12.0
6	6.0	7.5	8.5	9.2	9.8	10.3	10.7	11.0	11.2	11.5
7	3.3	5.4	6.9	7.9	8.7	9.3	9.8	10.2	10.6	10.9
8		3.0	4.9	6.4	7.4	8.2	8.9	9.4	9.8	10.2
9			2.7	4.6	5.9	7.0	7.8	8.5	9.0	9.5
10				2.4	4.2	5.6	6.6	7.4	8.1	8.7
11					2.3	3.9	5.2	6.3	7.1	7.8
12						2.1	3.7	5.0	6.0	6.8
13							2.0	3.5	4.7	5.7
14								1.8	3.3	4.5
15									1.7	3.1
16										1.6

胸高直径(皮付き) 16 cm

樹高 地上高	9	10	11	12	13	14	15	16	17	18	19
2	14.0	14.1	14.2	14.3	14.4	14.4	14.5	14.5	14.5	14.6	14.6
3	12.7	13.0	13.2	13.4	13.6	13.7	13.8	13.9	14.0	14.1	14.1
4	11.4	11.8	12.2	12.5	12.8	13.0	13.1	13.3	13.4	13.5	13.6
5	9.8	10.5	11.1	11.5	11.9	12.2	12.4	12.7	12.8	13.0	13.2
6	8.0	9.0	9.8	10.5	11.0	11.4	11.7	12.0	12.2	12.5	12.6
7	5.8	7.3	8.4	9.3	9.9	10.5	10.9	11.3	11.6	11.9	12.1
8	3.2	5.3	6.8	7.9	8.8	9.4	10.0	10.5	10.9	11.2	11.5
9		2.9	4.8	6.3	7.4	8.3	9.0	9.6	10.1	10.5	10.9
10			2.6	4.5	5.9	7.0	7.9	8.6	9.3	9.8	10.2
11				2.4	4.2	5.6	6.7	7.6	8.3	8.9	9.5
12					2.2	3.9	5.3	6.4	7.3	8.0	8.6
13						2.1	3.7	5.0	6.1	7.0	7.7
14							2.0	3.5	4.8	5.8	6.7
15								1.9	3.3	4.6	5.6
16									1.8	3.2	4.4
17										1.7	3.1
18											1.6

胸高直径(皮付き) 17 cm

樹高 地上高	9	10	11	12	13	14	15	16	17	18	19
2	14.9	15.0	15.1	15.2	15.3	15.3	15.4	15.4	15.5	15.5	15.5
3	13.5	13.8	14.1	14.3	14.4	14.6	14.7	14.8	14.9	15.0	15.0
4	12.1	12.6	13.0	13.3	13.6	13.8	14.0	14.1	14.3	14.4	14.5
5	10.4	11.2	11.8	12.3	12.6	13.0	13.2	13.5	13.7	13.8	14.0
6	8.5	9.6	10.5	11.1	11.6	12.1	12.4	12.7	13.0	13.2	13.4
7	6.1	7.8	8.9	9.8	10.5	11.1	11.6	12.0	12.3	12.6	12.9
8	3.3	5.6	7.2	8.4	9.3	10.0	10.6	11.1	11.6	11.9	12.2
9		3.0	5.1	6.7	7.9	8.8	9.6	10.2	10.7	11.2	11.6
10			2.8	4.8	6.3	7.5	8.4	9.2	9.8	10.4	10.8
11				2.6	4.5	5.9	7.1	8.0	8.8	9.5	10.0
12					2.4	4.2	5.6	6.8	7.7	8.5	9.2
13						2.2	3.9	5.3	6.5	7.4	8.2
14							2.1	3.7	5.1	6.2	7.1
15								2.0	3.6	4.9	5.9
16									1.9	3.4	4.7
17										1.8	3.2
18											1.7

胸高直径(皮付き) 18 cm

樹高 地上高	10	11	12	13	14	15	16	17	18	19	20	21
2	15.9	16.0	16.1	16.2	16.3	16.3	16.4	16.4	16.4	16.5	16.5	16.5
3	14.7	14.9	15.1	15.3	15.4	15.6	15.7	15.8	15.8	15.9	16.0	16.1
4	13.3	13.7	14.1	14.4	14.6	14.8	15.0	15.1	15.3	15.4	15.5	15.6
5	11.8	12.5	13.0	13.4	13.7	14.0	14.3	14.5	14.7	14.8	15.0	15.1
6	10.2	11.1	11.8	12.3	12.8	13.2	13.5	13.8	14.0	14.2	14.4	14.6
7	8.2	9.5	10.4	11.1	11.8	12.2	12.7	13.0	13.3	13.6	13.9	14.1
8	5.9	7.6	8.9	9.8	10.6	11.2	11.8	12.2	12.6	13.0	13.3	13.5
9	3.2	5.4	7.1	8.3	9.3	10.1	10.8	11.4	11.8	12.2	12.6	12.9
10		2.9	5.0	6.6	7.9	8.9	9.7	10.4	11.0	11.5	11.9	12.3
11			2.7	4.7	6.3	7.5	8.5	9.3	10.0	10.6	11.1	11.6
12				2.5	4.4	5.9	7.1	8.1	9.0	9.7	10.3	10.8
13					2.3	4.2	5.6	6.8	7.8	8.7	9.4	10.0
14						2.2	3.9	5.4	6.5	7.5	8.4	9.1
15							2.1	3.8	5.1	6.3	7.3	8.1
16								2.0	3.6	4.9	6.1	7.0
17									1.9	3.4	4.7	5.8
18										1.8	3.3	4.6
19											1.7	3.2
20												1.6

胸高直径(皮付き) 19 cm

樹高 地上高	11	12	13	14	15	16	17	18	19	20	21	22
2	17.0	17.0	17.1	17.2	17.2	17.3	17.3	17.4	17.4	17.4	17.5	17.5
3	15.8	16.0	16.2	16.3	16.4	16.6	16.7	16.7	16.8	16.9	17.0	17.0
4	14.5	14.9	15.2	15.4	15.6	15.8	16.0	16.1	16.2	16.4	16.5	16.6
5	13.2	13.7	14.1	14.5	14.8	15.0	15.3	15.5	15.7	15.8	16.0	16.1
6	11.7	12.4	13.0	13.5	13.9	14.2	14.5	14.8	15.0	15.2	15.4	15.6
7	10.0	11.0	11.8	12.4	12.9	13.4	13.8	14.1	14.4	14.6	14.9	15.1
8	8.0	9.3	10.4	11.2	11.9	12.4	12.9	13.3	13.7	14.0	14.3	14.5
9	5.7	7.5	8.8	9.8	10.7	11.4	12.0	12.5	12.9	13.3	13.6	13.9
10	3.1	5.3	7.0	8.3	9.4	10.2	11.0	11.6	12.1	12.6	13.0	13.3
11		2.8	5.0	6.6	7.9	9.0	9.8	10.6	11.2	11.7	12.2	12.6
12			2.6	4.7	6.2	7.5	8.6	9.5	10.2	10.9	11.4	11.9
13				2.5	4.4	5.9	7.2	8.2	9.1	9.9	10.5	11.1
14					2.3	4.2	5.7	6.9	7.9	8.8	9.6	10.3
15						2.2	4.0	5.4	6.6	7.7	8.5	9.3
16							2.1	3.8	5.2	6.4	7.4	8.3
17								2.0	3.6	5.0	6.2	7.2
18									1.9	3.5	4.8	6.0
19										1.8	3.3	4.6
20											1.7	3.2
21												1.7



胸高直径(皮付き) 20 cm

樹高 地上高	13	14	15	16	17	18	19	20	21	22	23	24
2	18.0	18.1	18.2	18.2	18.3	18.3	18.3	18.4	18.4	18.4	18.5	18.5
3	17.0	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	17.9	18.0	18.1
4	16.0	16.2	16.5	16.7	16.8	17.0	17.1	17.2	17.3	17.4	17.5	17.6
5	14.9	15.2	15.6	15.8	16.1	16.3	16.5	16.6	16.8	16.9	17.1	17.2
6	13.7	14.2	14.6	15.0	15.3	15.6	15.8	16.0	16.2	16.4	16.6	16.7
7	12.4	13.0	13.6	14.1	14.5	14.8	15.1	15.4	15.6	15.9	16.1	16.3
8	10.9	11.8	12.5	13.1	13.6	14.0	14.4	14.7	15.0	15.3	15.5	15.8
9	9.2	10.3	11.2	12.0	12.6	13.1	13.6	14.0	14.4	14.7	15.0	15.2
10	7.4	8.7	9.9	10.8	11.5	12.2	12.7	13.2	13.6	14.0	14.4	14.7
11	5.2	6.9	8.3	9.4	10.3	11.1	11.8	12.3	12.9	13.3	13.7	14.1
12	2.8	4.9	6.6	7.9	9.0	9.9	10.7	11.4	12.0	12.5	13.0	13.4
13		2.6	4.6	6.2	7.6	8.7	9.6	10.4	11.1	11.7	12.2	12.7
14			2.4	4.4	5.9	7.2	8.3	9.3	10.1	10.8	11.4	11.9
15				2.3	4.2	5.7	7.0	8.0	9.0	9.8	10.5	11.1
16					2.2	4.0	5.5	6.7	7.8	8.7	9.5	10.2
17						2.1	3.8	5.2	6.5	7.5	8.5	9.3
18							2.0	3.6	5.0	6.3	7.3	8.2
19								1.9	3.5	4.9	6.1	7.1
20									1.8	3.4	4.7	5.9
21										1.8	3.3	4.6
22											1.7	3.1
23												1.6

胸高直径(皮付き) 21 cm

樹高 地上高	13	14	15	16	17	18	19	20	21	22	23	24
2	19.0	19.0	19.1	19.2	19.2	19.2	19.3	19.3	19.3	19.4	19.4	19.4
3	17.9	18.0	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	18.9	19.0
4	16.8	17.0	17.3	17.5	17.7	17.8	18.0	18.1	18.2	18.3	18.4	18.5
5	15.6	16.0	16.3	16.6	16.9	17.1	17.3	17.5	17.6	17.8	17.9	18.0
6	14.4	14.9	15.3	15.7	16.1	16.4	16.6	16.8	17.1	17.2	17.4	17.6
7	13.0	13.7	14.3	14.8	15.2	15.6	15.9	16.2	16.4	16.7	16.9	17.1
8	11.4	12.3	13.1	13.7	14.2	14.7	15.1	15.5	15.8	16.1	16.3	16.5
9	9.7	10.8	11.8	12.6	13.2	13.8	14.3	14.7	15.1	15.4	15.7	16.0
10	7.7	9.2	10.3	11.3	12.1	12.8	13.3	13.9	14.3	14.7	15.1	15.4
11	5.5	7.3	8.7	9.9	10.8	11.6	12.3	13.0	13.5	14.0	14.4	14.8
12	2.9	5.1	6.9	8.3	9.5	10.4	11.3	12.0	12.6	13.1	13.6	14.1
13		2.7	4.8	6.5	7.9	9.1	10.1	10.9	11.6	12.3	12.8	13.3
14			2.6	4.6	6.2	7.6	8.7	9.7	10.6	11.3	11.9	12.5
15				2.4	4.4	6.0	7.3	8.4	9.4	10.3	11.0	11.7
16					2.3	4.2	5.7	7.0	8.2	9.1	10.0	10.7
17						2.2	4.0	5.5	6.8	7.9	8.9	9.7
18							2.1	3.8	5.3	6.6	7.7	8.6
19								2.0	3.7	5.1	6.3	7.4
20									1.9	3.5	4.9	6.2
21										1.8	3.4	4.8
22											1.8	3.3
23												1.7

胸高直径(皮付き) 22 cm

樹高 地上高	13	14	15	16	17	18	19	20	21	22	23	24	25
2	19.9	20.0	20.0	20.1	20.1	20.2	20.2	20.3	20.3	20.3	20.4	20.4	20.4
3	18.7	18.9	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.8	19.9	19.9
4	17.6	17.9	18.1	18.3	18.5	18.7	18.8	19.0	19.1	19.2	19.3	19.4	19.5
5	16.3	16.8	17.1	17.4	17.7	17.9	18.1	18.3	18.5	18.6	18.8	18.9	19.0
6	15.0	15.6	16.1	16.5	16.8	17.1	17.4	17.6	17.9	18.1	18.2	18.4	18.6
7	13.6	14.3	14.9	15.5	15.9	16.3	16.6	16.9	17.2	17.5	17.7	17.9	18.1
8	12.0	12.9	13.7	14.3	14.9	15.4	15.8	16.2	16.5	16.8	17.1	17.3	17.5
9	10.1	11.3	12.3	13.1	13.8	14.4	14.9	15.4	15.8	16.1	16.4	16.7	17.0
10	8.1	9.6	10.8	11.8	12.6	13.3	14.0	14.5	15.0	15.4	15.8	16.1	16.4
11	5.7	7.6	9.1	10.3	11.3	12.2	12.9	13.6	14.1	14.6	15.0	15.4	15.8
12	3.0	5.4	7.2	8.7	9.9	10.9	11.8	12.5	13.2	13.7	14.3	14.7	15.1
13		2.8	5.1	6.8	8.3	9.5	10.5	11.4	12.2	12.8	13.4	13.9	14.4
14			2.7	4.8	6.5	7.9	9.1	10.2	11.0	11.8	12.5	13.1	13.6
15				2.5	4.6	6.2	7.6	8.8	9.8	10.7	11.5	12.2	12.8
16					2.4	4.3	6.0	7.3	8.5	9.5	10.4	11.2	11.9
17						2.3	4.2	5.7	7.1	8.3	9.3	10.2	10.9
18							2.2	4.0	5.5	6.9	8.0	9.0	9.9
19								2.1	3.8	5.3	6.6	7.8	8.8
20									2.0	3.7	5.2	6.4	7.6
21										1.9	3.6	5.0	6.3
22											1.8	3.4	4.8
23												1.8	3.3
24													1.7

胸高直径(皮付き) 23 cm

樹高 地上高	13	14	15	16	17	18	19	20	21	22	23	24	25
2	20.8	20.9	21.0	21.0	21.1	21.1	21.2	21.2	21.2	21.3	21.3	21.3	21.3
3	19.6	19.8	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.8	20.9
4	18.4	18.7	18.9	19.2	19.4	19.5	19.7	19.8	20.0	20.1	20.2	20.3	20.4
5	17.1	17.5	17.9	18.2	18.5	18.7	19.0	19.2	19.3	19.5	19.6	19.8	19.9
6	15.7	16.3	16.8	17.2	17.6	17.9	18.2	18.4	18.7	18.9	19.1	19.2	19.4
7	14.2	15.0	15.6	16.1	16.6	17.0	17.4	17.7	18.0	18.2	18.5	18.7	18.9
8	12.5	13.5	14.3	15.0	15.6	16.1	16.5	16.9	17.2	17.6	17.8	18.1	18.3
9	10.6	11.8	12.9	13.7	14.4	15.0	15.6	16.1	16.5	16.8	17.2	17.5	17.8
10	8.4	10.0	11.3	12.3	13.2	13.9	14.6	15.1	15.6	16.1	16.5	16.8	17.2
11	6.0	7.9	9.5	10.8	11.8	12.7	13.5	14.1	14.7	15.2	15.7	16.1	16.5
12	3.2	5.6	7.5	9.0	10.3	11.4	12.3	13.1	13.8	14.4	14.9	15.4	15.8
13		3.0	5.3	7.1	8.6	9.9	11.0	11.9	12.7	13.4	14.0	14.6	15.1
14			2.8	5.0	6.8	8.3	9.5	10.6	11.5	12.3	13.0	13.7	14.2
15				2.6	4.8	6.5	8.0	9.2	10.3	11.2	12.0	12.7	13.4
16					2.5	4.5	6.2	7.7	8.9	10.0	10.9	11.7	12.4
17						2.4	4.3	6.0	7.4	8.6	9.7	10.6	11.4
18							2.3	4.2	5.8	7.2	8.3	9.4	10.3
19								2.2	4.0	5.6	6.9	8.1	9.2
20									2.1	3.9	5.4	6.7	7.9
21										2.0	3.7	5.2	6.5
22											1.9	3.6	5.1
23												1.9	3.5
24													1.8

胸高直径(皮付き) 24 cm

樹高 地上高	14	15	16	17	18	19	20	21	22	23	24	25	26
2	21.8	21.9	22.0	22.0	22.1	22.1	22.1	22.2	22.2	22.2	22.3	22.3	22.3
3	20.7	20.8	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.7	21.8	21.9
4	19.5	19.8	20.0	20.2	20.4	20.6	20.7	20.9	21.0	21.1	21.2	21.3	21.4
5	18.3	18.7	19.0	19.3	19.6	19.8	20.0	20.2	20.3	20.5	20.6	20.8	20.9
6	17.0	17.5	17.9	18.3	18.7	19.0	19.2	19.5	19.7	19.9	20.1	20.2	20.4
7	15.6	16.3	16.8	17.3	17.7	18.1	18.5	18.8	19.0	19.3	19.5	19.7	19.9
8	14.1	14.9	15.6	16.2	16.8	17.2	17.6	18.0	18.3	18.6	18.9	19.1	19.4
9	12.3	13.4	14.3	15.0	15.7	16.2	16.7	17.2	17.6	17.9	18.2	18.5	18.8
10	10.4	11.7	12.8	13.7	14.5	15.2	15.8	16.3	16.8	17.2	17.5	17.9	18.2
11	8.3	9.9	11.2	12.3	13.3	14.0	14.7	15.4	15.9	16.4	16.8	17.2	17.6
12	5.8	7.8	9.4	10.7	11.9	12.8	13.6	14.3	15.0	15.5	16.0	16.5	16.9
13	3.1	5.5	7.4	9.0	10.3	11.4	12.4	13.2	13.9	14.6	15.2	15.7	16.2
14		2.9	5.2	7.1	8.6	9.9	11.0	12.0	12.8	13.6	14.3	14.8	15.4
15			2.7	4.9	6.8	8.3	9.6	10.7	11.7	12.5	13.3	13.9	14.5
16				2.6	4.7	6.5	8.0	9.3	10.4	11.3	12.2	13.0	13.6
17					2.5	4.5	6.2	7.7	9.0	10.1	11.0	11.9	12.7
18						2.4	4.3	6.0	7.4	8.7	9.8	10.8	11.6
19							2.3	4.2	5.8	7.2	8.4	9.5	10.5
20								2.2	4.0	5.6	7.0	8.2	9.3
21									2.1	3.9	5.4	6.8	8.0
22										2.0	3.7	5.3	6.6
23											1.9	3.6	5.1
24												1.9	3.5
25													1.8

胸高直径(皮付き) 25 cm

樹高 地上高	14	15	16	17	18	19	20	21	22	23	24	25	26
2	22.8	22.8	22.9	23.0	23.0	23.0	23.1	23.1	23.2	23.2	23.2	23.2	23.3
3	21.5	21.7	21.9	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.7	22.8
4	20.3	20.6	20.8	21.1	21.3	21.4	21.6	21.7	21.9	22.0	22.1	22.2	22.3
5	19.0	19.4	19.8	20.1	20.4	20.6	20.8	21.0	21.2	21.4	21.5	21.6	21.8
6	17.7	18.2	18.7	19.1	19.4	19.8	20.0	20.3	20.5	20.7	20.9	21.1	21.2
7	16.2	16.9	17.5	18.0	18.5	18.9	19.2	19.5	19.8	20.1	20.3	20.5	20.7
8	14.6	15.5	16.2	16.9	17.4	17.9	18.3	18.7	19.1	19.4	19.7	19.9	20.1
9	12.8	13.9	14.9	15.6	16.3	16.9	17.4	17.9	18.3	18.6	19.0	19.3	19.6
10	10.8	12.2	13.3	14.3	15.1	15.8	16.4	17.0	17.4	17.9	18.3	18.6	18.9
11	8.6	10.3	11.7	12.8	13.8	14.6	15.3	16.0	16.5	17.0	17.5	17.9	18.3
12	6.1	8.1	9.8	11.2	12.3	13.3	14.2	14.9	15.6	16.1	16.7	17.1	17.6
13	3.2	5.7	7.7	9.4	10.7	11.9	12.9	13.7	14.5	15.2	15.8	16.3	16.8
14		3.0	5.4	7.4	9.0	10.3	11.5	12.5	13.4	14.1	14.8	15.4	16.0
15			2.8	5.1	7.0	8.6	10.0	11.1	12.1	13.0	13.8	14.5	15.1
16				2.7	4.9	6.7	8.3	9.6	10.8	11.8	12.7	13.5	14.2
17					2.6	4.7	6.5	8.0	9.3	10.5	11.5	12.4	13.2
18						2.4	4.5	6.2	7.7	9.0	10.2	11.2	12.1
19							2.3	4.3	6.0	7.5	8.8	9.9	10.9
20								2.2	4.2	5.8	7.3	8.5	9.7
21									2.2	4.0	5.6	7.1	8.3
22										2.1	3.9	5.5	6.9
23											2.0	3.8	5.3
24												1.9	3.7
25													1.9

胸高直径(皮付き) 26 cm

樹高 地上高	15	16	17	18	19	20	21	22	23	24	25	26	27	28
2	23.8	23.8	23.9	23.9	24.0	24.0	24.1	24.1	24.1	24.2	24.2	24.2	24.2	24.3
3	22.6	22.7	22.9	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.6	23.7	23.8	23.8
4	21.4	21.7	21.9	22.1	22.3	22.4	22.6	22.7	22.9	23.0	23.1	23.2	23.3	23.3
5	20.2	20.6	20.9	21.2	21.4	21.6	21.9	22.0	22.2	22.4	22.5	22.6	22.8	22.9
6	18.9	19.4	19.8	20.2	20.5	20.8	21.1	21.3	21.5	21.7	21.9	22.1	22.3	22.4
7	17.6	18.2	18.7	19.2	19.6	20.0	20.3	20.6	20.9	21.1	21.3	21.5	21.7	21.9
8	16.1	16.9	17.5	18.1	18.6	19.1	19.4	19.8	20.1	20.4	20.7	20.9	21.2	21.4
9	14.5	15.4	16.2	16.9	17.6	18.1	18.6	19.0	19.4	19.7	20.0	20.3	20.6	20.8
10	12.7	13.9	14.8	15.7	16.4	17.0	17.6	18.1	18.6	19.0	19.3	19.7	20.0	20.3
11	10.7	12.1	13.3	14.3	15.2	15.9	16.6	17.2	17.7	18.2	18.6	19.0	19.3	19.7
12	8.4	10.2	11.6	12.8	13.8	14.7	15.5	16.2	16.8	17.3	17.8	18.2	18.6	19.0
13	5.9	8.0	9.7	11.1	12.3	13.4	14.3	15.1	15.8	16.4	16.9	17.4	17.9	18.3
14	3.1	5.6	7.6	9.3	10.7	11.9	13.0	13.9	14.7	15.4	16.0	16.6	17.1	17.6
15		2.9	5.3	7.3	8.9	10.3	11.5	12.6	13.5	14.3	15.0	15.7	16.3	16.8
16			2.8	5.1	7.0	8.6	10.0	11.2	12.2	13.2	14.0	14.7	15.4	16.0
17				2.7	4.9	6.7	8.3	9.7	10.9	11.9	12.8	13.7	14.4	15.1
18					2.5	4.7	6.5	8.0	9.4	10.6	11.6	12.5	13.4	14.1
19						2.4	4.5	6.2	7.8	9.1	10.3	11.3	12.3	13.1
20							2.3	4.3	6.0	7.5	8.9	10.0	11.1	12.0
21								2.2	4.2	5.9	7.3	8.6	9.8	10.8
22									2.2	4.0	5.7	7.1	8.4	9.5
23										2.1	3.9	5.5	6.9	8.2
24											2.0	3.8	5.4	6.8
25												2.0	3.7	5.2
26													1.9	3.6
27														1.8

胸高直径(皮付き) 27 cm

樹高 地上高	15	16	17	18	19	20	21	22	23	24	25	26	27	28
2	24.7	24.8	24.8	24.9	24.9	25.0	25.0	25.1	25.1	25.1	25.1	25.2	25.2	25.2
3	23.5	23.6	23.8	23.9	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.6	24.7	24.7
4	22.2	22.5	22.7	23.0	23.1	23.3	23.5	23.6	23.7	23.9	24.0	24.1	24.2	24.3
5	21.0	21.3	21.7	22.0	22.2	22.5	22.7	22.9	23.1	23.2	23.4	23.5	23.6	23.8
6	19.6	20.1	20.6	21.0	21.3	21.6	21.9	22.1	22.4	22.6	22.8	22.9	23.1	23.3
7	18.2	18.9	19.4	19.9	20.3	20.7	21.1	21.4	21.6	21.9	22.1	22.3	22.5	22.7
8	16.7	17.5	18.2	18.8	19.3	19.8	20.2	20.5	20.9	21.2	21.5	21.7	22.0	22.2
9	15.0	16.0	16.8	17.6	18.2	18.8	19.2	19.7	20.1	20.5	20.8	21.1	21.4	21.6
10	13.1	14.4	15.4	16.3	17.0	17.7	18.3	18.8	19.2	19.7	20.1	20.4	20.7	21.0
11	11.1	12.5	13.8	14.8	15.7	16.5	17.2	17.8	18.3	18.8	19.3	19.7	20.1	20.4
12	8.7	10.5	12.0	13.3	14.3	15.2	16.0	16.7	17.4	17.9	18.4	18.9	19.3	19.7
13	6.1	8.3	10.1	11.5	12.8	13.9	14.8	15.6	16.3	17.0	17.6	18.1	18.6	19.0
14	3.2	5.8	7.9	9.6	11.1	12.4	13.4	14.4	15.2	15.9	16.6	17.2	17.8	18.3
15		3.1	5.5	7.6	9.3	10.7	12.0	13.0	14.0	14.8	15.6	16.3	16.9	17.4
16			2.9	5.3	7.2	8.9	10.3	11.6	12.7	13.6	14.5	15.3	15.9	16.6
17				2.8	5.0	7.0	8.6	10.0	11.3	12.3	13.3	14.2	14.9	15.6
18					2.6	4.8	6.7	8.3	9.7	10.9	12.0	13.0	13.9	14.6
19						2.5	4.6	6.5	8.1	9.4	10.6	11.7	12.7	13.6
20							2.4	4.5	6.3	7.8	9.2	10.4	11.5	12.4
21								2.3	4.3	6.1	7.6	8.9	10.1	11.2
22									2.2	4.2	5.9	7.4	8.7	9.9
23										2.2	4.1	5.7	7.2	8.5
24											2.1	3.9	5.6	7.0
25												2.0	3.8	5.4
26													2.0	3.7
27														1.9



胸高直径(皮付き) 28 cm

樹高 地上高	16	17	18	19	20	21	22	23	24	25	26	27	28	29
2	25.7	25.8	25.8	25.9	25.9	26.0	26.0	26.0	26.1	26.1	26.1	26.2	26.2	26.2
3	24.5	24.7	24.8	24.9	25.0	25.1	25.2	25.3	25.4	25.5	25.5	25.6	25.7	25.7
4	23.3	23.6	23.8	24.0	24.2	24.3	24.5	24.6	24.7	24.9	25.0	25.1	25.2	25.2
5	22.1	22.5	22.8	23.1	23.3	23.5	23.7	23.9	24.1	24.2	24.4	24.5	24.6	24.8
6	20.9	21.3	21.7	22.1	22.4	22.7	22.9	23.2	23.4	23.6	23.8	24.0	24.1	24.3
7	19.5	20.1	20.6	21.1	21.5	21.8	22.1	22.4	22.7	22.9	23.2	23.4	23.6	23.7
8	18.1	18.8	19.4	20.0	20.5	20.9	21.3	21.6	22.0	22.2	22.5	22.8	23.0	23.2
9	16.6	17.4	18.2	18.8	19.4	19.9	20.4	20.8	21.2	21.5	21.8	22.1	22.4	22.7
10	14.9	15.9	16.8	17.6	18.3	18.9	19.4	19.9	20.4	20.8	21.1	21.5	21.8	22.1
11	13.0	14.3	15.3	16.3	17.1	17.8	18.4	19.0	19.5	20.0	20.4	20.8	21.1	21.5
12	10.9	12.4	13.7	14.8	15.8	16.6	17.3	18.0	18.6	19.1	19.6	20.0	20.4	20.8
13	8.6	10.4	11.9	13.2	14.3	15.3	16.2	16.9	17.6	18.2	18.7	19.2	19.7	20.1
14	6.0	8.2	10.0	11.5	12.8	13.9	14.9	15.7	16.5	17.2	17.8	18.4	18.9	19.4
15	3.2	5.7	7.8	9.6	11.1	12.4	13.5	14.5	15.4	16.1	16.8	17.5	18.1	18.6
16		3.0	5.4	7.5	9.2	10.7	12.0	13.1	14.1	15.0	15.8	16.5	17.2	17.7
17			2.8	5.2	7.2	8.9	10.4	11.6	12.8	13.8	14.7	15.5	16.2	16.8
18				2.7	5.0	6.9	8.6	10.0	11.3	12.4	13.4	14.3	15.2	15.9
19					2.6	4.8	6.7	8.3	9.8	11.0	12.1	13.1	14.0	14.9
20						2.5	4.6	6.5	8.1	9.5	10.7	11.9	12.9	13.8
21							2.4	4.5	6.3	7.8	9.2	10.5	11.6	12.6
22								2.3	4.3	6.1	7.6	9.0	10.2	11.3
23									2.2	4.2	5.9	7.4	8.8	10.0
24										2.2	4.1	5.7	7.2	8.6
25											2.1	3.9	5.6	7.1
26												2.0	3.8	5.5
27													2.0	3.7
28														1.9

胸高直径(皮付き) 29 cm

樹高 地上高	17	18	19	20	21	22	23	24	25	26	27	28	29	30
2	26.7	26.7	26.8	26.9	26.9	26.9	27.0	27.0	27.0	27.1	27.1	27.1	27.2	27.2
3	25.5	25.7	25.8	25.9	26.0	26.1	26.2	26.3	26.4	26.5	26.5	26.6	26.6	26.7
4	24.4	24.6	24.8	25.0	25.2	25.4	25.5	25.6	25.7	25.9	26.0	26.1	26.1	26.2
5	23.3	23.6	23.9	24.1	24.3	24.6	24.8	24.9	25.1	25.2	25.4	25.5	25.6	25.7
6	22.1	22.5	22.8	23.2	23.5	23.7	24.0	24.2	24.4	24.6	24.8	25.0	25.1	25.3
7	20.8	21.3	21.8	22.2	22.6	22.9	23.2	23.5	23.7	24.0	24.2	24.4	24.6	24.8
8	19.5	20.1	20.7	21.2	21.6	22.0	22.4	22.7	23.0	23.3	23.6	23.8	24.0	24.2
9	18.0	18.8	19.5	20.1	20.6	21.1	21.5	21.9	22.3	22.6	22.9	23.2	23.4	23.7
10	16.5	17.4	18.2	18.9	19.5	20.1	20.6	21.1	21.5	21.9	22.2	22.5	22.8	23.1
11	14.7	15.9	16.8	17.7	18.4	19.1	19.6	20.2	20.6	21.1	21.5	21.9	22.2	22.5
12	12.8	14.2	15.3	16.3	17.2	17.9	18.6	19.2	19.8	20.3	20.7	21.1	21.5	21.9
13	10.8	12.3	13.7	14.8	15.8	16.7	17.5	18.2	18.8	19.4	19.9	20.4	20.8	21.2
14	8.4	10.3	11.9	13.2	14.4	15.4	16.3	17.1	17.8	18.4	19.0	19.5	20.0	20.5
15	5.9	8.1	9.9	11.4	12.8	13.9	15.0	15.9	16.7	17.4	18.1	18.7	19.2	19.7
16	3.1	5.6	7.7	9.5	11.1	12.4	13.5	14.6	15.5	16.3	17.1	17.7	18.3	18.9
17		2.9	5.4	7.4	9.2	10.7	12.0	13.2	14.2	15.1	16.0	16.7	17.4	18.0
18			2.8	5.2	7.2	8.9	10.4	11.7	12.9	13.9	14.8	15.7	16.4	17.1
19				2.7	5.0	6.9	8.6	10.1	11.4	12.5	13.6	14.5	15.4	16.1
20					2.6	4.8	6.7	8.3	9.8	11.1	12.2	13.3	14.2	15.1
21						2.5	4.6	6.5	8.1	9.5	10.8	12.0	13.0	13.9
22							2.4	4.5	6.3	7.9	9.3	10.6	11.7	12.7
23								2.3	4.3	6.1	7.7	9.1	10.3	11.5
24									2.2	4.2	5.9	7.5	8.9	10.1
25										2.2	4.1	5.8	7.3	8.7
26											2.1	4.0	5.6	7.1
27												2.0	3.9	5.5
28													2.0	3.8
29														1.9

胸高直径(皮付き) 30 cm

樹高 地上高	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	27.7	27.7	27.8	27.8	27.9	27.9	28.0	28.0	28.0	28.0	28.1	28.1	28.1	28.1
3	26.6	26.7	26.8	27.0	27.1	27.1	27.2	27.3	27.4	27.5	27.5	27.6	27.6	27.7
4	25.5	25.7	25.9	26.1	26.2	26.4	26.5	26.6	26.7	26.9	27.0	27.0	27.1	27.2
5	24.4	24.7	24.9	25.2	25.4	25.6	25.8	25.9	26.1	26.3	26.4	26.5	26.6	26.7
6	23.2	23.6	24.0	24.3	24.5	24.8	25.0	25.3	25.5	25.6	25.8	26.0	26.1	26.3
7	22.0	22.5	22.9	23.3	23.7	24.0	24.3	24.5	24.8	25.0	25.2	25.4	25.6	25.8
8	20.8	21.4	21.9	22.3	22.8	23.1	23.5	23.8	24.1	24.4	24.6	24.8	25.0	25.3
9	19.4	20.1	20.7	21.3	21.8	22.2	22.6	23.0	23.4	23.7	24.0	24.2	24.5	24.7
10	18.0	18.8	19.5	20.2	20.8	21.3	21.8	22.2	22.6	22.9	23.3	23.6	23.9	24.2
11	16.4	17.4	18.2	19.0	19.7	20.3	20.8	21.3	21.8	22.2	22.6	22.9	23.3	23.6
12	14.6	15.8	16.8	17.7	18.5	19.2	19.8	20.4	20.9	21.4	21.8	22.2	22.6	22.9
13	12.7	14.1	15.3	16.3	17.2	18.0	18.8	19.4	20.0	20.5	21.0	21.5	21.9	22.3
14	10.6	12.2	13.6	14.8	15.9	16.8	17.6	18.3	19.0	19.6	20.2	20.7	21.2	21.6
15	8.3	10.2	11.8	13.2	14.4	15.4	16.4	17.2	18.0	18.6	19.3	19.8	20.4	20.9
16	5.8	8.0	9.8	11.4	12.8	14.0	15.0	16.0	16.8	17.6	18.3	18.9	19.5	20.1
17	3.0	5.6	7.7	9.5	11.0	12.4	13.6	14.7	15.6	16.5	17.3	18.0	18.6	19.2
18		2.9	5.3	7.4	9.2	10.7	12.1	13.3	14.3	15.3	16.2	16.9	17.7	18.3
19			2.8	5.1	7.1	8.9	10.4	11.7	12.9	14.0	15.0	15.8	16.6	17.4
20				2.7	4.9	6.9	8.6	10.1	11.4	12.6	13.7	14.7	15.6	16.4
21					2.6	4.8	6.7	8.4	9.8	11.2	12.4	13.4	14.4	15.3
22						2.5	4.6	6.5	8.1	9.6	10.9	12.1	13.2	14.1
23							2.4	4.5	6.3	7.9	9.4	10.7	11.8	12.9
24								2.3	4.3	6.1	7.7	9.1	10.4	11.6
25									2.2	4.2	6.0	7.5	8.9	10.2
26										2.2	4.1	5.8	7.4	8.7
27											2.1	4.0	5.7	7.2
28												2.1	3.9	5.5
29													2.0	3.8
30														1.9

胸高直径(皮付き) 31 cm

樹高 地上高	19	20	21	22	23	24	25	26	27	28	29	30	31	32
2	28.7	28.7	28.8	28.8	28.9	28.9	28.9	29.0	29.0	29.0	29.0	29.1	29.1	29.1
3	27.6	27.7	27.8	28.0	28.1	28.1	28.2	28.3	28.4	28.4	28.5	28.6	28.6	28.7
4	26.5	26.7	26.9	27.1	27.2	27.4	27.5	27.6	27.7	27.8	27.9	28.0	28.1	28.2
5	25.5	25.7	26.0	26.2	26.4	26.6	26.8	27.0	27.1	27.3	27.4	27.5	27.6	27.7
6	24.4	24.7	25.1	25.3	25.6	25.9	26.1	26.3	26.5	26.7	26.8	27.0	27.1	27.3
7	23.2	23.7	24.1	24.4	24.8	25.1	25.3	25.6	25.8	26.0	26.2	26.4	26.6	26.8
8	22.0	22.6	23.1	23.5	23.9	24.2	24.6	24.9	25.1	25.4	25.6	25.9	26.1	26.3
9	20.8	21.4	22.0	22.5	22.9	23.4	23.7	24.1	24.4	24.7	25.0	25.3	25.5	25.7
10	19.4	20.1	20.8	21.4	22.0	22.4	22.9	23.3	23.7	24.0	24.4	24.7	24.9	25.2
11	17.9	18.8	19.6	20.3	20.9	21.5	22.0	22.5	22.9	23.3	23.7	24.0	24.3	24.6
12	16.3	17.3	18.3	19.1	19.8	20.4	21.0	21.6	22.1	22.5	22.9	23.3	23.7	24.0
13	14.5	15.8	16.8	17.8	18.6	19.3	20.0	20.6	21.2	21.7	22.2	22.6	23.0	23.4
14	12.6	14.0	15.3	16.4	17.3	18.2	18.9	19.6	20.2	20.8	21.3	21.8	22.3	22.7
15	10.5	12.2	13.6	14.8	15.9	16.9	17.7	18.5	19.2	19.9	20.5	21.0	21.5	22.0
16	8.2	10.1	11.8	13.2	14.4	15.5	16.5	17.4	18.1	18.9	19.5	20.1	20.7	21.2
17	5.7	7.9	9.8	11.4	12.8	14.0	15.1	16.1	17.0	17.8	18.5	19.2	19.8	20.4
18	3.0	5.5	7.6	9.4	11.0	12.4	13.7	14.8	15.8	16.7	17.5	18.2	18.9	19.5
19		2.9	5.3	7.3	9.1	10.7	12.1	13.3	14.4	15.4	16.3	17.2	17.9	18.6
20			2.7	5.1	7.1	8.9	10.4	11.8	13.0	14.1	15.1	16.0	16.9	17.6
21				2.6	4.9	6.9	8.6	10.1	11.5	12.7	13.8	14.8	15.7	16.6
22					2.5	4.7	6.7	8.4	9.9	11.2	12.5	13.6	14.6	15.5
23						2.5	4.6	6.5	8.2	9.6	11.0	12.2	13.3	14.3
24							2.4	4.5	6.3	7.9	9.4	10.8	12.0	13.1
25								2.3	4.3	6.1	7.8	9.2	10.5	11.7
26									2.2	4.2	6.0	7.6	9.0	10.3
27										2.2	4.1	5.8	7.4	8.8
28											2.1	4.0	5.7	7.3
29												2.1	3.9	5.6
30													2.0	3.8
31														2.0

胸高直径(皮付き) 32 cm

樹高 地上高	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
2	29.6	29.7	29.7	29.8	29.8	29.8	29.9	29.9	29.9	30.0	30.0	30.0	30.0	30.1	30.1
3	28.5	28.6	28.7	28.9	29.0	29.0	29.1	29.2	29.3	29.4	29.4	29.5	29.5	29.6	29.6
4	27.4	27.6	27.8	28.0	28.1	28.3	28.4	28.5	28.6	28.7	28.8	28.9	29.0	29.1	29.2
5	26.3	26.6	26.8	27.1	27.3	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.5	28.6	28.7
6	25.1	25.5	25.8	26.1	26.4	26.7	26.9	27.1	27.3	27.5	27.7	27.8	28.0	28.1	28.3
7	24.0	24.4	24.8	25.2	25.5	25.8	26.1	26.4	26.6	26.9	27.1	27.3	27.4	27.6	27.8
8	22.7	23.3	23.8	24.2	24.6	25.0	25.3	25.6	25.9	26.2	26.4	26.7	26.9	27.1	27.3
9	21.4	22.1	22.6	23.2	23.6	24.1	24.5	24.8	25.2	25.5	25.8	26.1	26.3	26.5	26.8
10	20.0	20.8	21.5	22.1	22.6	23.1	23.6	24.0	24.4	24.8	25.1	25.4	25.7	26.0	26.2
11	18.4	19.4	20.2	20.9	21.5	22.1	22.7	23.1	23.6	24.0	24.4	24.7	25.1	25.4	25.7
12	16.8	17.9	18.8	19.6	20.4	21.1	21.7	22.2	22.7	23.2	23.6	24.0	24.4	24.7	25.1
13	15.0	16.2	17.3	18.3	19.2	19.9	20.6	21.2	21.8	22.3	22.8	23.3	23.7	24.1	24.4
14	13.0	14.5	15.7	16.8	17.8	18.7	19.5	20.2	20.8	21.4	22.0	22.5	22.9	23.4	23.8
15	10.8	12.5	14.0	15.3	16.4	17.4	18.3	19.1	19.8	20.5	21.1	21.6	22.2	22.6	23.1
16	8.5	10.4	12.1	13.6	14.8	16.0	17.0	17.9	18.7	19.4	20.1	20.7	21.3	21.8	22.3
17	5.9	8.1	10.1	11.7	13.2	14.4	15.6	16.6	17.5	18.3	19.1	19.8	20.4	21.0	21.6
18	3.1	5.6	7.8	9.7	11.4	12.8	14.1	15.2	16.2	17.2	18.0	18.8	19.5	20.1	20.7
19		2.9	5.4	7.6	9.4	11.0	12.5	13.7	14.9	15.9	16.8	17.7	18.4	19.2	19.8
20			2.8	5.2	7.3	9.1	10.7	12.1	13.4	14.5	15.6	16.5	17.4	18.2	18.9
21				2.7	5.1	7.1	8.9	10.4	11.8	13.1	14.2	15.3	16.2	17.1	17.9
22					2.6	4.9	6.9	8.6	10.2	11.6	12.8	14.0	15.0	15.9	16.8
23						2.5	4.7	6.7	8.4	9.9	11.3	12.6	13.7	14.7	15.7
24							2.4	4.6	6.5	8.2	9.7	11.1	12.3	13.4	14.5
25								2.4	4.5	6.3	8.0	9.5	10.8	12.1	13.2
26									2.3	4.3	6.2	7.8	9.3	10.6	11.8
27										2.2	4.2	6.0	7.6	9.1	10.4
28											2.2	4.1	5.9	7.5	8.9
29												2.1	4.0	5.7	7.3
30													2.1	3.9	5.6
31														2.0	3.8
32															2.0

胸高直径(皮付き) 33 cm

樹高 地上高	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
2	30.5	30.6	30.6	30.7	30.7	30.8	30.8	30.8	30.9	30.9	30.9	31.0	31.0	31.0	31.0
3	29.4	29.5	29.6	29.8	29.9	30.0	30.0	30.1	30.2	30.3	30.3	30.4	30.5	30.5	30.6
4	28.2	28.4	28.6	28.8	29.0	29.1	29.3	29.4	29.5	29.6	29.7	29.8	29.9	30.0	30.1
5	27.1	27.4	27.6	27.9	28.1	28.3	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.5	29.6
6	25.9	26.3	26.6	26.9	27.2	27.5	27.7	27.9	28.1	28.3	28.5	28.7	28.8	29.0	29.1
7	24.7	25.1	25.6	25.9	26.3	26.6	26.9	27.2	27.4	27.7	27.9	28.1	28.3	28.5	28.6
8	23.4	24.0	24.5	24.9	25.3	25.7	26.1	26.4	26.7	27.0	27.2	27.5	27.7	27.9	28.1
9	22.0	22.7	23.3	23.9	24.3	24.8	25.2	25.6	25.9	26.3	26.6	26.8	27.1	27.3	27.6
10	20.6	21.4	22.1	22.7	23.3	23.8	24.3	24.7	25.1	25.5	25.8	26.2	26.5	26.8	27.0
11	19.0	19.9	20.8	21.5	22.2	22.8	23.3	23.8	24.3	24.7	25.1	25.5	25.8	26.1	26.4
12	17.3	18.4	19.3	20.2	21.0	21.7	22.3	22.9	23.4	23.9	24.3	24.7	25.1	25.5	25.8
13	15.4	16.7	17.8	18.8	19.7	20.5	21.2	21.9	22.5	23.0	23.5	24.0	24.4	24.8	25.2
14	13.4	14.9	16.2	17.3	18.3	19.2	20.0	20.8	21.4	22.1	22.6	23.1	23.6	24.1	24.5
15	11.1	12.9	14.4	15.7	16.9	17.9	18.8	19.6	20.4	21.1	21.7	22.3	22.8	23.3	23.8
16	8.7	10.7	12.4	13.9	15.3	16.4	17.5	18.4	19.2	20.0	20.7	21.3	21.9	22.5	23.0
17	6.1	8.4	10.3	12.0	13.5	14.8	16.0	17.1	18.0	18.9	19.6	20.3	21.0	21.6	22.2
18	3.2	5.8	8.1	10.0	11.7	13.2	14.5	15.6	16.7	17.6	18.5	19.3	20.0	20.7	21.3
19		3.0	5.6	7.8	9.7	11.3	12.8	14.1	15.3	16.3	17.3	18.2	19.0	19.7	20.4
20			2.9	5.4	7.5	9.4	11.0	12.5	13.8	15.0	16.0	17.0	17.9	18.7	19.4
21				2.8	5.2	7.3	9.1	10.7	12.2	13.5	14.6	15.7	16.7	17.6	18.4
22					2.7	5.0	7.1	8.9	10.5	11.9	13.2	14.4	15.4	16.4	17.3
23						2.6	4.9	6.9	8.6	10.2	11.6	12.9	14.1	15.1	16.1
24							2.5	4.7	6.7	8.4	10.0	11.4	12.7	13.8	14.9
25								2.4	4.6	6.5	8.2	9.7	11.1	12.4	13.6
26									2.4	4.5	6.3	8.0	9.5	10.9	12.2
27										2.3	4.3	6.2	7.8	9.3	10.7
28											2.2	4.2	6.0	7.7	9.2
29												2.2	4.1	5.9	7.5
30													2.1	4.0	5.8
31														2.1	4.0
32															2.0

胸高直径(皮付き) 34 cm

樹高 地上高	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
2	31.5	31.5	31.6	31.6	31.7	31.7	31.8	31.8	31.8	31.9	31.9	31.9	31.9	32.0	32.0	32.0
3	30.3	30.4	30.5	30.6	30.8	30.9	30.9	31.0	31.1	31.2	31.3	31.3	31.4	31.4	31.5	31.5
4	29.1	29.3	29.5	29.7	29.8	30.0	30.1	30.3	30.4	30.5	30.6	30.7	30.8	30.9	31.0	31.1
5	27.9	28.2	28.4	28.7	28.9	29.1	29.3	29.5	29.7	29.8	30.0	30.1	30.3	30.4	30.5	30.6
6	26.6	27.0	27.4	27.7	28.0	28.3	28.5	28.8	29.0	29.2	29.4	29.5	29.7	29.8	30.0	30.1
7	25.4	25.9	26.3	26.7	27.1	27.4	27.7	28.0	28.2	28.5	28.7	28.9	29.1	29.3	29.5	29.6
8	24.0	24.6	25.2	25.6	26.1	26.5	26.8	27.2	27.5	27.8	28.0	28.3	28.5	28.7	28.9	29.1
9	22.6	23.3	24.0	24.5	25.0	25.5	25.9	26.3	26.7	27.0	27.3	27.6	27.9	28.1	28.4	28.6
10	21.1	22.0	22.7	23.4	24.0	24.5	25.0	25.4	25.8	26.2	26.6	26.9	27.2	27.5	27.8	28.1
11	19.5	20.5	21.3	22.1	22.8	23.4	24.0	24.5	25.0	25.4	25.8	26.2	26.6	26.9	27.2	27.5
12	17.7	18.9	19.9	20.8	21.6	22.3	22.9	23.5	24.1	24.6	25.0	25.4	25.8	26.2	26.6	26.9
13	15.8	17.2	18.3	19.3	20.3	21.1	21.8	22.5	23.1	23.6	24.2	24.6	25.1	25.5	25.9	26.2
14	13.7	15.3	16.6	17.8	18.8	19.8	20.6	21.4	22.0	22.7	23.3	23.8	24.3	24.7	25.2	25.6
15	11.4	13.2	14.8	16.1	17.3	18.4	19.3	20.2	20.9	21.6	22.3	22.9	23.4	24.0	24.4	24.9
16	8.9	11.0	12.8	14.3	15.7	16.9	17.9	18.9	19.8	20.5	21.3	21.9	22.5	23.1	23.6	24.1
17	6.2	8.6	10.6	12.4	13.9	15.3	16.5	17.5	18.5	19.4	20.2	20.9	21.6	22.2	22.8	23.3
18	3.2	6.0	8.3	10.3	12.0	13.5	14.9	16.1	17.1	18.1	19.0	19.8	20.6	21.3	21.9	22.5
19		3.1	5.7	8.0	9.9	11.6	13.2	14.5	15.7	16.8	17.8	18.7	19.5	20.3	21.0	21.6
20			3.0	5.5	7.7	9.6	11.3	12.8	14.2	15.4	16.5	17.4	18.4	19.2	20.0	20.7
21				2.9	5.3	7.5	9.4	11.0	12.5	13.8	15.0	16.1	17.1	18.0	18.9	19.7
22					2.8	5.2	7.3	9.1	10.7	12.2	13.5	14.7	15.8	16.8	17.8	18.6
23						2.7	5.0	7.0	8.9	10.5	11.9	13.3	14.5	15.6	16.6	17.5
24							2.6	4.8	6.9	8.6	10.2	11.7	13.0	14.2	15.3	16.3
25								2.5	4.7	6.7	8.4	10.0	11.4	12.7	13.9	15.0
26									2.4	4.6	6.5	8.2	9.8	11.2	12.5	13.7
27										2.4	4.5	6.3	8.1	9.6	11.0	12.3
28											2.3	4.4	6.2	7.9	9.4	10.8
29												2.2	4.2	6.1	7.7	9.2
30													2.2	4.2	5.9	7.6
31														2.1	4.1	5.8
32															2.1	4.0
33																2.0

胸高直径(皮付き) 35 cm

樹高 地上高	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
2	32.4	32.4	32.5	32.6	32.6	32.6	32.7	32.7	32.8	32.8	32.8	32.8	32.9	32.9	32.9	32.9
3	31.1	31.3	31.4	31.5	31.6	31.8	31.8	31.9	32.0	32.1	32.2	32.2	32.3	32.4	32.4	32.5
4	29.9	30.1	30.3	30.5	30.7	30.9	31.0	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	32.0
5	28.7	29.0	29.3	29.5	29.8	30.0	30.2	30.4	30.5	30.7	30.9	31.0	31.1	31.3	31.4	31.5
6	27.4	27.8	28.2	28.5	28.8	29.1	29.3	29.6	29.8	30.0	30.2	30.4	30.5	30.7	30.8	31.0
7	26.1	26.6	27.0	27.4	27.8	28.2	28.5	28.8	29.0	29.3	29.5	29.7	29.9	30.1	30.3	30.5
8	24.7	25.3	25.9	26.3	26.8	27.2	27.6	27.9	28.2	28.5	28.8	29.1	29.3	29.5	29.7	29.9
9	23.2	24.0	24.6	25.2	25.7	26.2	26.6	27.0	27.4	27.8	28.1	28.4	28.7	28.9	29.2	29.4
10	21.7	22.6	23.3	24.0	24.6	25.2	25.7	26.1	26.6	27.0	27.3	27.7	28.0	28.3	28.6	28.8
11	20.0	21.0	21.9	22.7	23.4	24.1	24.6	25.2	25.7	26.1	26.5	26.9	27.3	27.6	27.9	28.2
12	18.2	19.4	20.4	21.3	22.1	22.9	23.6	24.2	24.7	25.2	25.7	26.1	26.5	26.9	27.3	27.6
13	16.2	17.6	18.8	19.9	20.8	21.6	22.4	23.1	23.7	24.3	24.8	25.3	25.8	26.2	26.6	27.0
14	14.1	15.7	17.1	18.3	19.3	20.3	21.2	21.9	22.6	23.3	23.9	24.4	24.9	25.4	25.9	26.3
15	11.7	13.6	15.2	16.6	17.8	18.9	19.8	20.7	21.5	22.2	22.9	23.5	24.1	24.6	25.1	25.6
16	9.2	11.3	13.1	14.7	16.1	17.3	18.4	19.4	20.3	21.1	21.8	22.5	23.1	23.7	24.3	24.8
17	6.4	8.8	10.9	12.7	14.3	15.7	16.9	18.0	19.0	19.9	20.7	21.5	22.2	22.8	23.4	24.0
18	3.3	6.1	8.5	10.5	12.3	13.9	15.3	16.5	17.6	18.6	19.5	20.4	21.1	21.8	22.5	23.1
19		3.2	5.9	8.2	10.2	12.0	13.5	14.9	16.1	17.2	18.2	19.2	20.0	20.8	21.5	22.2
20			3.1	5.7	7.9	9.9	11.6	13.2	14.5	15.8	16.9	17.9	18.8	19.7	20.5	21.2
21				2.9	5.5	7.7	9.6	11.3	12.8	14.2	15.4	16.6	17.6	18.5	19.4	20.2
22					2.8	5.3	7.4	9.3	11.0	12.5	13.9	15.1	16.3	17.3	18.2	19.1
23						2.7	5.1	7.2	9.1	10.8	12.3	13.6	14.8	16.0	17.0	17.9
24							2.6	5.0	7.0	8.9	10.5	12.0	13.3	14.6	15.7	16.7
25								2.6	4.8	6.8	8.6	10.3	11.7	13.1	14.3	15.4
26									2.5	4.7	6.7	8.4	10.1	11.5	12.8	14.1
27										2.4	4.6	6.5	8.3	9.8	11.3	12.6
28											2.4	4.5	6.4	8.1	9.6	11.1
29												2.3	4.4	6.2	7.9	9.5
30													2.2	4.3	6.1	7.8
31														2.2	4.2	6.0
32															2.1	4.1
33																2.1



胸高直径(皮付き) 36 cm

樹高 地上高	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
2	33.3	33.4	33.4	33.5	33.5	33.6	33.6	33.7	33.7	33.7	33.8	33.8	33.8	33.8	33.9	33.9
3	32.0	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	33.0	33.1	33.1	33.2	33.3	33.3	33.4
4	30.7	31.0	31.2	31.4	31.6	31.7	31.9	32.0	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9
5	29.4	29.8	30.1	30.3	30.6	30.8	31.0	31.2	31.4	31.6	31.7	31.9	32.0	32.1	32.2	32.4
6	28.1	28.5	28.9	29.3	29.6	29.9	30.1	30.4	30.6	30.8	31.0	31.2	31.4	31.5	31.7	31.8
7	26.8	27.3	27.8	28.2	28.6	28.9	29.2	29.5	29.8	30.1	30.3	30.5	30.8	31.0	31.1	31.3
8	25.4	26.0	26.5	27.1	27.5	27.9	28.3	28.7	29.0	29.3	29.6	29.9	30.1	30.3	30.6	30.8
9	23.9	24.6	25.3	25.9	26.4	26.9	27.4	27.8	28.2	28.5	28.8	29.1	29.4	29.7	30.0	30.2
10	22.3	23.1	23.9	24.6	25.3	25.8	26.3	26.8	27.3	27.7	28.1	28.4	28.7	29.1	29.3	29.6
11	20.5	21.6	22.5	23.3	24.0	24.7	25.3	25.8	26.3	26.8	27.2	27.6	28.0	28.4	28.7	29.0
12	18.7	19.9	20.9	21.9	22.7	23.5	24.2	24.8	25.4	25.9	26.4	26.8	27.3	27.6	28.0	28.4
13	16.6	18.1	19.3	20.4	21.3	22.2	23.0	23.7	24.3	24.9	25.5	26.0	26.4	26.9	27.3	27.7
14	14.4	16.1	17.5	18.7	19.8	20.8	21.7	22.5	23.2	23.9	24.5	25.1	25.6	26.1	26.5	27.0
15	12.0	13.9	15.6	17.0	18.2	19.3	20.3	21.2	22.1	22.8	23.5	24.1	24.7	25.2	25.8	26.2
16	9.4	11.6	13.5	15.1	16.5	17.8	18.9	19.9	20.8	21.6	22.4	23.1	23.8	24.4	24.9	25.4
17	6.5	9.0	11.2	13.0	14.6	16.1	17.3	18.5	19.5	20.4	21.2	22.0	22.7	23.4	24.0	24.6
18	3.4	6.3	8.7	10.8	12.6	14.2	15.6	16.9	18.0	19.1	20.0	20.9	21.7	22.4	23.1	23.7
19		3.3	6.0	8.4	10.5	12.3	13.8	15.3	16.5	17.7	18.7	19.7	20.5	21.3	22.1	22.8
20			3.1	5.8	8.1	10.1	11.9	13.5	14.9	16.2	17.3	18.4	19.3	20.2	21.0	21.8
21				3.0	5.6	7.9	9.8	11.6	13.2	14.6	15.8	17.0	18.0	19.0	19.9	20.7
22					2.9	5.4	7.6	9.6	11.3	12.9	14.2	15.5	16.7	17.7	18.7	19.6
23						2.8	5.3	7.4	9.3	11.0	12.6	14.0	15.2	16.4	17.4	18.4
24							2.7	5.1	7.2	9.1	10.8	12.3	13.7	14.9	16.1	17.1
25								2.6	5.0	7.0	8.9	10.5	12.0	13.4	14.7	15.8
26									2.6	4.8	6.8	8.7	10.3	11.8	13.2	14.4
27										2.5	4.7	6.7	8.5	10.1	11.6	12.9
28											2.4	4.6	6.5	8.3	9.9	11.4
29												2.4	4.5	6.4	8.1	9.7
30													2.3	4.4	6.2	8.0
31														2.2	4.3	6.1
32															2.2	4.2
33																2.1

胸高直径(皮付き) 37 cm

樹高 地上高	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
2	34.2	34.3	34.3	34.4	34.5	34.5	34.5	34.6	34.6	34.7	34.7	34.7	34.7	34.8	34.8	34.8
3	32.9	33.0	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	34.0	34.1	34.1	34.2	34.2	34.3
4	31.5	31.8	32.0	32.2	32.4	32.6	32.7	32.9	33.0	33.2	33.3	33.4	33.5	33.6	33.7	33.8
5	30.2	30.6	30.9	31.1	31.4	31.6	31.8	32.0	32.2	32.4	32.6	32.7	32.9	33.0	33.1	33.2
6	28.9	29.3	29.7	30.0	30.4	30.7	30.9	31.2	31.4	31.6	31.9	32.0	32.2	32.4	32.5	32.7
7	27.5	28.0	28.5	28.9	29.3	29.7	30.0	30.3	30.6	30.9	31.1	31.4	31.6	31.8	32.0	32.1
8	26.0	26.7	27.2	27.8	28.2	28.7	29.1	29.4	29.8	30.1	30.4	30.6	30.9	31.1	31.4	31.6
9	24.5	25.2	25.9	26.5	27.1	27.6	28.1	28.5	28.9	29.3	29.6	29.9	30.2	30.5	30.7	31.0
10	22.8	23.7	24.5	25.3	25.9	26.5	27.0	27.5	28.0	28.4	28.8	29.1	29.5	29.8	30.1	30.4
11	21.0	22.1	23.1	23.9	24.6	25.3	25.9	26.5	27.0	27.5	27.9	28.4	28.7	29.1	29.4	29.8
12	19.1	20.4	21.5	22.4	23.3	24.1	24.8	25.4	26.0	26.5	27.1	27.5	27.9	28.4	28.7	29.1
13	17.1	18.5	19.8	20.9	21.9	22.7	23.5	24.3	24.9	25.6	26.1	26.6	27.1	27.6	28.0	28.4
14	14.8	16.5	17.9	19.2	20.3	21.3	22.2	23.1	23.8	24.5	25.1	25.7	26.2	26.8	27.2	27.7
15	12.3	14.3	15.9	17.4	18.7	19.8	20.8	21.8	22.6	23.4	24.1	24.7	25.3	25.9	26.4	26.9
16	9.6	11.9	13.8	15.4	16.9	18.2	19.3	20.4	21.3	22.2	23.0	23.7	24.3	25.0	25.5	26.1
17	6.7	9.3	11.4	13.3	15.0	16.4	17.7	18.9	20.0	20.9	21.8	22.6	23.3	24.0	24.6	25.2
18	3.5	6.4	8.9	11.1	12.9	14.6	16.0	17.3	18.5	19.6	20.5	21.4	22.2	23.0	23.7	24.3
19		3.3	6.2	8.6	10.7	12.6	14.2	15.6	16.9	18.1	19.2	20.1	21.0	21.9	22.6	23.3
20			3.2	5.9	8.3	10.4	12.2	13.8	15.3	16.6	17.7	18.8	19.8	20.7	21.5	22.3
21				3.1	5.7	8.1	10.1	11.9	13.5	14.9	16.2	17.4	18.5	19.5	20.4	21.2
22					3.0	5.6	7.8	9.8	11.6	13.2	14.6	15.9	17.1	18.2	19.2	20.1
23						2.9	5.4	7.6	9.5	11.3	12.9	14.3	15.6	16.8	17.9	18.9
24							2.8	5.2	7.4	9.3	11.0	12.6	14.0	15.3	16.5	17.6
25								2.7	5.1	7.2	9.1	10.8	12.3	13.7	15.0	16.2
26									2.6	4.9	7.0	8.9	10.6	12.1	13.5	14.8
27										2.5	4.8	6.8	8.7	10.3	11.9	13.2
28											2.5	4.7	6.7	8.5	10.1	11.6
29												2.4	4.6	6.5	8.3	9.9
30													2.3	4.5	6.4	8.1
31														2.3	4.4	6.3
32															2.2	4.3
33																2.2

胸高直径(皮付き) 38 cm

樹高 地上高	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
2	35.1	35.2	35.3	35.3	35.4	35.4	35.5	35.5	35.5	35.6	35.6	35.6	35.7	35.7	35.7	35.8
3	33.7	33.9	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	35.0	35.0	35.1	35.1	35.2
4	32.4	32.6	32.9	33.1	33.3	33.4	33.6	33.8	33.9	34.0	34.1	34.3	34.4	34.5	34.6	34.7
5	31.0	31.3	31.7	31.9	32.2	32.4	32.7	32.9	33.1	33.2	33.4	33.6	33.7	33.9	34.0	34.1
6	29.6	30.0	30.4	30.8	31.1	31.4	31.7	32.0	32.2	32.5	32.7	32.9	33.1	33.2	33.4	33.5
7	28.2	28.7	29.2	29.6	30.1	30.4	30.8	31.1	31.4	31.7	31.9	32.2	32.4	32.6	32.8	33.0
8	26.7	27.3	27.9	28.4	28.9	29.4	29.8	30.2	30.5	30.8	31.1	31.4	31.7	31.9	32.2	32.4
9	25.1	25.9	26.6	27.2	27.8	28.3	28.8	29.2	29.6	30.0	30.3	30.7	31.0	31.3	31.5	31.8
10	23.4	24.3	25.1	25.9	26.5	27.1	27.7	28.2	28.7	29.1	29.5	29.9	30.2	30.6	30.9	31.2
11	21.6	22.6	23.6	24.5	25.2	25.9	26.6	27.2	27.7	28.2	28.6	29.1	29.5	29.8	30.2	30.5
12	19.6	20.9	22.0	23.0	23.9	24.7	25.4	26.0	26.6	27.2	27.7	28.2	28.6	29.1	29.5	29.8
13	17.5	18.9	20.2	21.4	22.4	23.3	24.1	24.9	25.5	26.2	26.8	27.3	27.8	28.3	28.7	29.1
14	15.1	16.9	18.4	19.7	20.8	21.8	22.8	23.6	24.4	25.1	25.7	26.3	26.9	27.4	27.9	28.3
15	12.6	14.6	16.3	17.8	19.1	20.3	21.3	22.3	23.2	23.9	24.7	25.3	25.9	26.5	27.1	27.6
16	9.9	12.1	14.1	15.8	17.3	18.6	19.8	20.9	21.8	22.7	23.5	24.3	24.9	25.6	26.2	26.7
17	6.8	9.5	11.7	13.6	15.3	16.8	18.2	19.4	20.4	21.4	22.3	23.1	23.9	24.6	25.2	25.8
18	3.6	6.6	9.1	11.3	13.2	14.9	16.4	17.7	18.9	20.0	21.0	21.9	22.7	23.5	24.2	24.9
19		3.4	6.3	8.8	11.0	12.8	14.5	16.0	17.3	18.5	19.6	20.6	21.5	22.4	23.2	23.9
20			3.3	6.1	8.5	10.6	12.5	14.1	15.6	17.0	18.2	19.3	20.3	21.2	22.1	22.8
21				3.2	5.9	8.2	10.3	12.2	13.8	15.3	16.6	17.8	18.9	19.9	20.9	21.7
22					3.0	5.7	8.0	10.0	11.8	13.5	14.9	16.3	17.5	18.6	19.6	20.6
23						2.9	5.5	7.8	9.8	11.6	13.2	14.6	16.0	17.2	18.3	19.3
24							2.8	5.3	7.6	9.5	11.3	12.9	14.3	15.7	16.9	18.0
25								2.8	5.2	7.4	9.3	11.0	12.6	14.1	15.4	16.6
26									2.7	5.0	7.2	9.1	10.8	12.4	13.8	15.1
27										2.6	4.9	7.0	8.9	10.6	12.1	13.6
28											2.5	4.8	6.8	8.7	10.4	11.9
29												2.5	4.7	6.7	8.5	10.2
30													2.4	4.6	6.5	8.3
31														2.3	4.5	6.4
32															2.3	4.4
33																2.2
34																

胸高直径(皮付き) 39 cm

樹高 地上高	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
2	36.0	36.1	36.2	36.2	36.3	36.3	36.4	36.4	36.5	36.5	36.5	36.6	36.6	36.6	36.7	36.7
3	34.6	34.8	34.9	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	35.9	36.0	36.1	36.1
4	33.2	33.4	33.7	33.9	34.1	34.3	34.5	34.6	34.8	34.9	35.0	35.1	35.2	35.4	35.5	35.5
5	31.8	32.1	32.4	32.7	33.0	33.3	33.5	33.7	33.9	34.1	34.3	34.4	34.6	34.7	34.8	35.0
6	30.3	30.8	31.2	31.6	31.9	32.2	32.5	32.8	33.0	33.3	33.5	33.7	33.9	34.1	34.2	34.4
7	28.8	29.4	29.9	30.4	30.8	31.2	31.5	31.9	32.2	32.4	32.7	33.0	33.2	33.4	33.6	33.8
8	27.3	28.0	28.6	29.1	29.6	30.1	30.5	30.9	31.3	31.6	31.9	32.2	32.5	32.7	33.0	33.2
9	25.7	26.5	27.2	27.8	28.4	29.0	29.5	29.9	30.3	30.7	31.1	31.4	31.7	32.0	32.3	32.6
10	23.9	24.9	25.7	26.5	27.2	27.8	28.4	28.9	29.4	29.8	30.2	30.6	31.0	31.3	31.6	31.9
11	22.1	23.2	24.2	25.0	25.8	26.6	27.2	27.8	28.3	28.9	29.3	29.8	30.2	30.5	30.9	31.2
12	20.0	21.4	22.5	23.5	24.4	25.2	26.0	26.7	27.3	27.9	28.4	28.9	29.3	29.8	30.2	30.5
13	17.9	19.4	20.7	21.9	22.9	23.8	24.7	25.5	26.2	26.8	27.4	27.9	28.5	28.9	29.4	29.8
14	15.5	17.2	18.8	20.1	21.3	22.4	23.3	24.2	25.0	25.7	26.3	27.0	27.5	28.1	28.6	29.0
15	12.9	14.9	16.7	18.2	19.6	20.8	21.8	22.8	23.7	24.5	25.2	25.9	26.6	27.1	27.7	28.2
16	10.1	12.4	14.4	16.2	17.7	19.1	20.3	21.4	22.3	23.2	24.1	24.8	25.5	26.2	26.8	27.3
17	7.0	9.7	12.0	14.0	15.7	17.2	18.6	19.8	20.9	21.9	22.8	23.7	24.4	25.1	25.8	26.4
18	3.7	6.7	9.3	11.6	13.5	15.3	16.8	18.1	19.4	20.5	21.5	22.4	23.3	24.1	24.8	25.5
19		3.5	6.5	9.0	11.2	13.1	14.8	16.4	17.7	19.0	20.1	21.1	22.0	22.9	23.7	24.5
20			3.4	6.2	8.7	10.9	12.8	14.5	16.0	17.3	18.6	19.7	20.7	21.7	22.6	23.4
21				3.2	6.0	8.4	10.5	12.4	14.1	15.6	17.0	18.2	19.4	20.4	21.3	22.2
22					3.1	5.8	8.2	10.3	12.1	13.8	15.3	16.6	17.9	19.0	20.1	21.0
23						3.0	5.6	7.9	10.0	11.8	13.5	15.0	16.3	17.6	18.7	19.7
24							2.9	5.5	7.7	9.7	11.5	13.2	14.7	16.0	17.3	18.4
25								2.8	5.3	7.5	9.5	11.3	12.9	14.4	15.7	17.0
26									2.7	5.2	7.3	9.3	11.0	12.6	14.1	15.5
27										2.7	5.0	7.2	9.1	10.8	12.4	13.9
28											2.6	4.9	7.0	8.9	10.6	12.2
29												2.5	4.8	6.8	8.7	10.4
30													2.5	4.7	6.7	8.5
31														2.4	4.6	6.6
32															2.3	4.5
33																2.3
34																

胸高直径(皮付き) 40 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	37.0	37.1	37.2	37.2	37.3	37.3	37.3	37.4	37.4	37.5	37.5	37.5	37.6	37.6	37.6	37.6
3	35.6	35.8	35.9	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.7	36.8	36.9	37.0	37.0	37.1
4	34.3	34.5	34.7	34.9	35.1	35.3	35.5	35.6	35.8	35.9	36.0	36.1	36.2	36.3	36.4	36.5
5	32.9	33.2	33.5	33.8	34.1	34.3	34.5	34.7	34.9	35.1	35.3	35.4	35.6	35.7	35.8	36.0
6	31.5	31.9	32.3	32.7	33.0	33.3	33.6	33.8	34.1	34.3	34.5	34.7	34.9	35.1	35.2	35.4
7	30.1	30.6	31.1	31.5	31.9	32.3	32.6	32.9	33.2	33.5	33.7	34.0	34.2	34.4	34.6	34.8
8	28.6	29.3	29.8	30.3	30.8	31.2	31.6	32.0	32.3	32.7	33.0	33.2	33.5	33.8	34.0	34.2
9	27.1	27.8	28.5	29.1	29.6	30.1	30.6	31.0	31.4	31.8	32.2	32.5	32.8	33.1	33.3	33.6
10	25.4	26.3	27.1	27.8	28.4	29.0	29.6	30.0	30.5	30.9	31.3	31.7	32.0	32.4	32.7	33.0
11	23.7	24.7	25.6	26.4	27.2	27.8	28.4	29.0	29.5	30.0	30.5	30.9	31.3	31.6	32.0	32.3
12	21.8	23.0	24.0	25.0	25.8	26.6	27.3	27.9	28.5	29.0	29.5	30.0	30.5	30.9	31.3	31.6
13	19.8	21.2	22.4	23.4	24.4	25.2	26.0	26.8	27.4	28.0	28.6	29.1	29.6	30.1	30.5	30.9
14	17.6	19.2	20.6	21.8	22.9	23.8	24.7	25.5	26.3	26.9	27.6	28.2	28.7	29.2	29.7	30.1
15	15.3	17.1	18.6	20.0	21.2	22.3	23.3	24.2	25.1	25.8	26.5	27.2	27.8	28.3	28.9	29.3
16	12.7	14.7	16.5	18.1	19.5	20.7	21.8	22.8	23.8	24.6	25.4	26.1	26.8	27.4	28.0	28.5
17	9.9	12.2	14.3	16.0	17.6	19.0	20.2	21.4	22.4	23.3	24.2	25.0	25.7	26.4	27.0	27.6
18	6.9	9.5	11.8	13.8	15.6	17.1	18.5	19.8	20.9	22.0	22.9	23.8	24.6	25.4	26.0	26.7
19	3.6	6.6	9.2	11.4	13.4	15.2	16.7	18.1	19.4	20.5	21.6	22.5	23.4	24.2	25.0	25.7
20		3.4	6.4	8.9	11.1	13.0	14.8	16.3	17.7	19.0	20.1	21.2	22.2	23.1	23.9	24.7
21			3.3	6.1	8.6	10.8	12.7	14.4	16.0	17.4	18.6	19.8	20.8	21.8	22.7	23.6
22				3.2	5.9	8.3	10.5	12.4	14.1	15.6	17.0	18.3	19.4	20.5	21.5	22.4
23					3.1	5.7	8.1	10.2	12.1	13.8	15.3	16.7	17.9	19.1	20.2	21.2
24						3.0	5.6	7.9	9.9	11.8	13.5	15.0	16.4	17.6	18.8	19.9
25							2.9	5.4	7.7	9.7	11.5	13.2	14.7	16.1	17.3	18.5
26								2.8	5.3	7.5	9.5	11.3	12.9	14.4	15.8	17.1
27									2.7	5.1	7.3	9.3	11.1	12.7	14.2	15.5
28										2.6	5.0	7.1	9.1	10.8	12.4	13.9
29											2.6	4.9	7.0	8.9	10.6	12.2
30												2.5	4.8	6.8	8.7	10.4
31													2.5	4.7	6.7	8.5
32														2.4	4.6	6.6
33															2.3	4.5
34																2.3

胸高直径(皮付き) 41 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	37.9	38.0	38.1	38.1	38.2	38.2	38.3	38.3	38.3	38.4	38.4	38.4	38.5	38.5	38.5	38.6
3	36.5	36.7	36.8	36.9	37.1	37.2	37.3	37.4	37.5	37.6	37.6	37.7	37.8	37.9	37.9	38.0
4	35.1	35.3	35.6	35.8	36.0	36.1	36.3	36.5	36.6	36.7	36.9	37.0	37.1	37.2	37.3	37.4
5	33.7	34.0	34.3	34.6	34.9	35.1	35.3	35.6	35.7	35.9	36.1	36.3	36.4	36.6	36.7	36.8
6	32.2	32.7	33.1	33.4	33.8	34.1	34.4	34.6	34.9	35.1	35.3	35.5	35.7	35.9	36.1	36.2
7	30.8	31.3	31.8	32.2	32.7	33.0	33.4	33.7	34.0	34.3	34.5	34.8	35.0	35.2	35.4	35.6
8	29.3	29.9	30.5	31.0	31.5	32.0	32.4	32.7	33.1	33.4	33.7	34.0	34.3	34.5	34.8	35.0
9	27.7	28.4	29.1	29.8	30.3	30.8	31.3	31.8	32.2	32.5	32.9	33.2	33.5	33.8	34.1	34.4
10	26.0	26.9	27.7	28.4	29.1	29.7	30.2	30.7	31.2	31.6	32.0	32.4	32.8	33.1	33.4	33.7
11	24.2	25.3	26.2	27.0	27.8	28.4	29.1	29.7	30.2	30.7	31.1	31.6	32.0	32.4	32.7	33.0
12	22.3	23.5	24.6	25.5	26.4	27.2	27.9	28.5	29.1	29.7	30.2	30.7	31.1	31.6	32.0	32.3
13	20.2	21.6	22.8	23.9	24.9	25.8	26.6	27.3	28.0	28.6	29.2	29.8	30.3	30.7	31.2	31.6
14	18.0	19.6	21.0	22.2	23.4	24.4	25.3	26.1	26.8	27.5	28.2	28.8	29.3	29.9	30.4	30.8
15	15.6	17.4	19.0	20.4	21.7	22.8	23.8	24.8	25.6	26.4	27.1	27.8	28.4	29.0	29.5	30.0
16	13.0	15.1	16.9	18.5	19.9	21.2	22.3	23.3	24.3	25.1	25.9	26.7	27.4	28.0	28.6	29.1
17	10.1	12.5	14.6	16.4	18.0	19.4	20.7	21.8	22.9	23.8	24.7	25.5	26.3	27.0	27.6	28.2
18	7.0	9.7	12.1	14.1	15.9	17.5	18.9	20.2	21.4	22.4	23.4	24.3	25.1	25.9	26.6	27.3
19	3.6	6.7	9.4	11.7	13.7	15.5	17.1	18.5	19.8	21.0	22.0	23.0	23.9	24.8	25.5	26.3
20		3.5	6.5	9.1	11.3	13.3	15.1	16.7	18.1	19.4	20.6	21.7	22.6	23.6	24.4	25.2
21			3.4	6.3	8.8	11.0	13.0	14.7	16.3	17.7	19.0	20.2	21.3	22.3	23.2	24.1
22				3.2	6.1	8.5	10.7	12.6	14.4	15.9	17.4	18.7	19.9	20.9	22.0	22.9
23					3.1	5.9	8.3	10.4	12.3	14.1	15.6	17.0	18.3	19.5	20.6	21.6
24						3.0	5.7	8.1	10.2	12.0	13.8	15.3	16.7	18.0	19.2	20.3
25							2.9	5.5	7.8	9.9	11.8	13.5	15.0	16.4	17.7	18.9
26								2.9	5.4	7.6	9.7	11.5	13.2	14.7	16.1	17.4
27									2.8	5.2	7.5	9.5	11.3	12.9	14.5	15.9
28										2.7	5.1	7.3	9.3	11.1	12.7	14.2
29											2.6	5.0	7.1	9.1	10.9	12.5
30												2.6	4.9	7.0	8.9	10.7
31													2.5	4.8	6.8	8.7
32														2.4	4.7	6.7
33															2.4	4.6
34																2.3

胸高直径(皮付き) 42 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	38.8	38.9	39.0	39.0	39.1	39.1	39.2	39.2	39.3	39.3	39.3	39.4	39.4	39.4	39.4	39.5
3	37.3	37.5	37.7	37.8	37.9	38.0	38.2	38.3	38.4	38.4	38.5	38.6	38.7	38.7	38.8	38.9
4	35.9	36.1	36.4	36.6	36.8	37.0	37.2	37.3	37.5	37.6	37.7	37.9	38.0	38.1	38.2	38.3
5	34.4	34.8	35.1	35.4	35.7	35.9	36.2	36.4	36.6	36.8	36.9	37.1	37.3	37.4	37.5	37.7
6	33.0	33.4	33.8	34.2	34.5	34.9	35.1	35.4	35.7	35.9	36.1	36.3	36.5	36.7	36.9	37.1
7	31.5	32.0	32.5	33.0	33.4	33.8	34.1	34.5	34.8	35.1	35.3	35.6	35.8	36.0	36.2	36.4
8	29.9	30.6	31.2	31.7	32.2	32.7	33.1	33.5	33.8	34.2	34.5	34.8	35.1	35.3	35.6	35.8
9	28.3	29.1	29.8	30.4	31.0	31.5	32.0	32.5	32.9	33.3	33.6	34.0	34.3	34.6	34.9	35.2
10	26.6	27.5	28.3	29.0	29.7	30.3	30.9	31.4	31.9	32.3	32.7	33.1	33.5	33.8	34.2	34.5
11	24.7	25.8	26.7	27.6	28.4	29.1	29.7	30.3	30.8	31.4	31.8	32.3	32.7	33.1	33.4	33.8
12	22.8	24.0	25.1	26.1	26.9	27.7	28.5	29.1	29.8	30.3	30.9	31.4	31.8	32.3	32.7	33.0
13	20.7	22.1	23.3	24.4	25.4	26.3	27.2	27.9	28.6	29.3	29.9	30.4	30.9	31.4	31.9	32.3
14	18.4	20.0	21.4	22.7	23.8	24.9	25.8	26.6	27.4	28.1	28.8	29.4	30.0	30.5	31.0	31.5
15	15.9	17.8	19.4	20.9	22.1	23.3	24.3	25.3	26.1	26.9	27.7	28.4	29.0	29.6	30.1	30.7
16	13.2	15.4	17.2	18.9	20.3	21.6	22.8	23.8	24.8	25.7	26.5	27.2	27.9	28.6	29.2	29.8
17	10.3	12.8	14.9	16.7	18.3	19.8	21.1	22.3	23.4	24.3	25.2	26.1	26.8	27.6	28.2	28.8
18	7.1	9.9	12.3	14.4	16.2	17.9	19.3	20.6	21.8	22.9	23.9	24.8	25.7	26.5	27.2	27.9
19	3.7	6.9	9.6	11.9	14.0	15.8	17.4	18.9	20.2	21.4	22.5	23.5	24.4	25.3	26.1	26.8
20		3.6	6.6	9.3	11.6	13.6	15.4	17.0	18.5	19.8	21.0	22.1	23.1	24.1	24.9	25.7
21			3.4	6.4	9.0	11.2	13.2	15.0	16.6	18.1	19.4	20.6	21.7	22.8	23.7	24.6
22				3.3	6.2	8.7	10.9	12.9	14.7	16.3	17.7	19.1	20.3	21.4	22.4	23.4
23					3.2	6.0	8.4	10.6	12.6	14.3	15.9	17.4	18.7	19.9	21.0	22.1
24						3.1	5.8	8.2	10.4	12.3	14.0	15.6	17.1	18.4	19.6	20.7
25							3.0	5.6	8.0	10.1	12.0	13.7	15.3	16.8	18.1	19.3
26								2.9	5.5	7.8	9.9	11.8	13.5	15.0	16.5	17.8
27									2.8	5.3	7.6	9.7	11.5	13.2	14.8	16.2
28										2.8	5.2	7.4	9.5	11.3	13.0	14.5
29											2.7	5.1	7.3	9.3	11.1	12.7
30												2.6	5.0	7.1	9.1	10.9
31													2.6	4.9	7.0	8.9
32														2.5	4.8	6.8
33															2.4	4.7
34																2.4

胸高直径(皮付き) 43 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	39.7	39.8	39.9	39.9	40.0	40.0	40.1	40.1	40.2	40.2	40.2	40.3	40.3	40.3	40.4	40.4
3	38.2	38.4	38.5	38.7	38.8	38.9	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.6	39.7	39.8
4	36.7	37.0	37.2	37.4	37.6	37.8	38.0	38.2	38.3	38.5	38.6	38.7	38.8	38.9	39.0	39.1
5	35.2	35.6	35.9	36.2	36.5	36.7	37.0	37.2	37.4	37.6	37.8	37.9	38.1	38.2	38.4	38.5
6	33.7	34.1	34.6	34.9	35.3	35.6	35.9	36.2	36.5	36.7	36.9	37.1	37.4	37.5	37.7	37.9
7	32.1	32.7	33.2	33.7	34.1	34.5	34.9	35.2	35.5	35.8	36.1	36.4	36.6	36.8	37.0	37.2
8	30.5	31.2	31.8	32.4	32.9	33.4	33.8	34.2	34.6	34.9	35.2	35.5	35.8	36.1	36.4	36.6
9	28.9	29.7	30.4	31.0	31.6	32.2	32.7	33.1	33.6	34.0	34.4	34.7	35.0	35.3	35.6	35.9
10	27.1	28.0	28.9	29.6	30.3	31.0	31.5	32.1	32.6	33.0	33.4	33.8	34.2	34.6	34.9	35.2
11	25.2	26.3	27.3	28.2	29.0	29.7	30.3	30.9	31.5	32.0	32.5	33.0	33.4	33.8	34.1	34.5
12	23.2	24.5	25.6	26.6	27.5	28.3	29.1	29.8	30.4	31.0	31.5	32.0	32.5	32.9	33.4	33.8
13	21.1	22.5	23.8	24.9	26.0	26.9	27.7	28.5	29.2	29.9	30.5	31.0	31.6	32.1	32.5	33.0
14	18.7	20.4	21.9	23.2	24.3	25.4	26.3	27.2	28.0	28.7	29.4	30.0	30.6	31.2	31.7	32.2
15	16.2	18.1	19.8	21.3	22.6	23.8	24.8	25.8	26.7	27.5	28.2	28.9	29.6	30.2	30.8	31.3
16	13.5	15.7	17.6	19.2	20.7	22.0	23.2	24.3	25.3	26.2	27.0	27.8	28.5	29.2	29.8	30.4
17	10.5	13.0	15.2	17.0	18.7	20.2	21.5	22.7	23.8	24.8	25.8	26.6	27.4	28.1	28.8	29.4
18	7.3	10.1	12.6	14.7	16.6	18.2	19.7	21.1	22.3	23.4	24.4	25.3	26.2	27.0	27.7	28.4
19	3.8	7.0	9.8	12.2	14.3	16.1	17.8	19.3	20.6	21.8	23.0	24.0	24.9	25.8	26.6	27.4
20		3.6	6.7	9.4	11.8	13.9	15.7	17.4	18.8	20.2	21.4	22.6	23.6	24.5	25.4	26.3
21			3.5	6.5	9.1	11.5	13.5	15.3	17.0	18.5	19.8	21.0	22.2	23.2	24.2	25.1
22				3.4	6.3	8.9	11.1	13.2	15.0	16.6	18.1	19.4	20.7	21.8	22.9	23.8
23					3.3	6.1	8.6	10.8	12.8	14.6	16.3	17.7	19.1	20.3	21.5	22.5
24						3.2	5.9	8.4	10.6	12.5	14.3	15.9	17.4	18.8	20.0	21.1
25							3.1	5.8	8.2	10.3	12.3	14.0	15.6	17.1	18.4	19.7
26								3.0	5.6	8.0	10.1	12.0	13.7	15.3	16.8	18.1
27									2.9	5.5	7.8	9.8	11.7	13.5	15.1	16.5
28										2.8	5.3	7.6	9.6	11.5	13.2	14.8
29											2.7	5.2	7.4	9.4	11.3	13.0
30												2.7	5.1	7.3	9.3	11.1
31													2.6	5.0	7.1	9.1
32														2.5	4.9	7.0
33															2.5	4.8
34																2.4



胸高直径(皮付き) 44 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	40.6	40.7	40.8	40.8	40.9	40.9	41.0	41.0	41.1	41.1	41.1	41.2	41.2	41.2	41.3	41.3
3	39.0	39.2	39.4	39.5	39.7	39.8	39.9	40.0	40.1	40.2	40.3	40.4	40.4	40.5	40.6	40.6
4	37.5	37.8	38.0	38.2	38.4	38.6	38.8	39.0	39.2	39.3	39.4	39.6	39.7	39.8	39.9	40.0
5	35.9	36.3	36.7	37.0	37.3	37.5	37.8	38.0	38.2	38.4	38.6	38.8	38.9	39.1	39.2	39.4
6	34.4	34.9	35.3	35.7	36.1	36.4	36.7	37.0	37.2	37.5	37.7	38.0	38.2	38.4	38.5	38.7
7	32.8	33.4	33.9	34.4	34.8	35.2	35.6	36.0	36.3	36.6	36.9	37.1	37.4	37.6	37.8	38.0
8	31.2	31.9	32.5	33.1	33.6	34.1	34.5	34.9	35.3	35.7	36.0	36.3	36.6	36.9	37.1	37.4
9	29.5	30.3	31.0	31.7	32.3	32.8	33.4	33.8	34.3	34.7	35.1	35.4	35.8	36.1	36.4	36.7
10	27.7	28.6	29.5	30.2	30.9	31.6	32.2	32.7	33.2	33.7	34.1	34.6	34.9	35.3	35.6	36.0
11	25.7	26.9	27.8	28.7	29.5	30.3	30.9	31.6	32.1	32.7	33.2	33.6	34.1	34.5	34.9	35.2
12	23.7	25.0	26.1	27.1	28.1	28.9	29.7	30.4	31.0	31.6	32.2	32.7	33.2	33.6	34.0	34.5
13	21.5	23.0	24.3	25.4	26.5	27.4	28.3	29.1	29.8	30.5	31.1	31.7	32.2	32.7	33.2	33.6
14	19.1	20.8	22.3	23.6	24.8	25.9	26.8	27.7	28.5	29.3	30.0	30.6	31.2	31.8	32.3	32.8
15	16.5	18.5	20.2	21.7	23.0	24.2	25.3	26.3	27.2	28.0	28.8	29.5	30.2	30.8	31.4	31.9
16	13.7	16.0	17.9	19.6	21.1	22.5	23.7	24.8	25.8	26.7	27.6	28.4	29.1	29.8	30.4	31.0
17	10.7	13.2	15.4	17.4	19.1	20.6	21.9	23.2	24.3	25.3	26.3	27.1	27.9	28.7	29.4	30.0
18	7.4	10.3	12.8	15.0	16.9	18.6	20.1	21.5	22.7	23.8	24.9	25.8	26.7	27.5	28.3	29.0
19	3.9	7.1	10.0	12.4	14.5	16.4	18.1	19.6	21.0	22.3	23.4	24.4	25.4	26.3	27.1	27.9
20		3.7	6.9	9.6	12.0	14.1	16.0	17.7	19.2	20.6	21.8	23.0	24.1	25.0	25.9	26.8
21			3.6	6.6	9.3	11.7	13.8	15.6	17.3	18.8	20.2	21.4	22.6	23.7	24.7	25.6
22				3.4	6.4	9.0	11.3	13.4	15.3	16.9	18.4	19.8	21.1	22.2	23.3	24.3
23					3.3	6.2	8.8	11.0	13.1	14.9	16.6	18.1	19.5	20.7	21.9	23.0
24						3.2	6.0	8.5	10.8	12.8	14.6	16.2	17.7	19.1	20.4	21.6
25							3.1	5.9	8.3	10.5	12.5	14.3	15.9	17.4	18.8	20.1
26								3.0	5.7	8.1	10.3	12.2	14.0	15.6	17.1	18.5
27									2.9	5.6	7.9	10.0	12.0	13.7	15.3	16.8
28										2.9	5.4	7.7	9.8	11.7	13.5	15.1
29											2.8	5.3	7.6	9.6	11.5	13.2
30												2.7	5.2	7.4	9.4	11.3
31													2.7	5.1	7.2	9.3
32														2.6	5.0	7.1
33															2.5	4.8
34																2.5

胸高直径(皮付き) 45 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	41.5	41.6	41.6	41.7	41.8	41.8	41.9	41.9	42.0	42.0	42.0	42.1	42.1	42.1	42.2	42.2
3	39.9	40.0	40.2	40.4	40.5	40.6	40.8	40.9	41.0	41.1	41.2	41.2	41.3	41.4	41.5	41.5
4	38.3	38.6	38.8	39.0	39.3	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.5	40.6	40.8	40.9
5	36.7	37.1	37.4	37.7	38.0	38.3	38.6	38.8	39.0	39.2	39.4	39.6	39.7	39.9	40.1	40.2
6	35.1	35.6	36.0	36.4	36.8	37.1	37.5	37.8	38.0	38.3	38.5	38.7	39.0	39.2	39.3	39.5
7	33.5	34.1	34.6	35.1	35.5	36.0	36.3	36.7	37.0	37.3	37.6	37.9	38.2	38.4	38.6	38.8
8	31.8	32.5	33.1	33.7	34.3	34.8	35.2	35.6	36.0	36.4	36.7	37.0	37.3	37.6	37.9	38.1
9	30.0	30.9	31.6	32.3	32.9	33.5	34.0	34.5	35.0	35.4	35.8	36.2	36.5	36.8	37.1	37.4
10	28.2	29.2	30.0	30.8	31.6	32.2	32.8	33.4	33.9	34.4	34.8	35.2	35.6	36.0	36.4	36.7
11	26.2	27.4	28.4	29.3	30.1	30.9	31.6	32.2	32.8	33.3	33.8	34.3	34.8	35.2	35.6	35.9
12	24.1	25.5	26.6	27.7	28.6	29.5	30.2	30.9	31.6	32.2	32.8	33.3	33.8	34.3	34.7	35.1
13	21.9	23.4	24.7	25.9	27.0	28.0	28.8	29.6	30.4	31.1	31.7	32.3	32.9	33.4	33.9	34.3
14	19.5	21.2	22.7	24.1	25.3	26.4	27.4	28.3	29.1	29.9	30.6	31.2	31.8	32.4	33.0	33.5
15	16.8	18.8	20.6	22.1	23.5	24.7	25.8	26.8	27.7	28.6	29.4	30.1	30.8	31.4	32.0	32.6
16	14.0	16.3	18.2	20.0	21.5	22.9	24.1	25.3	26.3	27.2	28.1	28.9	29.7	30.3	31.0	31.6
17	10.9	13.5	15.7	17.7	19.4	21.0	22.4	23.6	24.8	25.8	26.8	27.6	28.5	29.2	29.9	30.6
18	7.6	10.5	13.0	15.3	17.2	18.9	20.5	21.9	23.1	24.3	25.3	26.3	27.2	28.1	28.8	29.6
19	3.9	7.3	10.1	12.6	14.8	16.7	18.5	20.0	21.4	22.7	23.8	24.9	25.9	26.8	27.7	28.5
20		3.8	7.0	9.8	12.2	14.4	16.3	18.0	19.6	21.0	22.3	23.4	24.5	25.5	26.4	27.3
21			3.6	6.8	9.5	11.9	14.0	15.9	17.6	19.2	20.6	21.8	23.0	24.1	25.1	26.1
22				3.5	6.5	9.2	11.6	13.7	15.5	17.2	18.8	20.2	21.5	22.7	23.8	24.8
23					3.4	6.3	8.9	11.2	13.3	15.2	16.9	18.4	19.8	21.1	22.3	23.4
24						3.3	6.1	8.7	11.0	13.0	14.9	16.5	18.1	19.5	20.8	22.0
25							3.2	6.0	8.5	10.7	12.7	14.5	16.2	17.7	19.1	20.4
26								3.1	5.8	8.3	10.5	12.4	14.3	15.9	17.4	18.8
27									3.0	5.7	8.1	10.2	12.2	14.0	15.6	17.1
28										2.9	5.5	7.9	10.0	11.9	13.7	15.4
29											2.8	5.4	7.7	9.8	11.7	13.5
30												2.8	5.3	7.5	9.6	11.5
31													2.7	5.1	7.4	9.4
32														2.6	5.0	7.2
33															2.6	4.9
34																2.5

胸高直径(皮付き) 46 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	42.4	42.5	42.5	42.6	42.6	42.7	42.8	42.8	42.8	42.9	42.9	43.0	43.0	43.0	43.1	43.1
3	40.7	40.9	41.1	41.2	41.4	41.5	41.6	41.7	41.8	41.9	42.0	42.1	42.2	42.3	42.3	42.4
4	39.1	39.3	39.6	39.9	40.1	40.3	40.5	40.6	40.8	41.0	41.1	41.2	41.4	41.5	41.6	41.7
5	37.4	37.8	38.2	38.5	38.8	39.1	39.3	39.6	39.8	40.0	40.2	40.4	40.6	40.7	40.9	41.0
6	35.8	36.3	36.7	37.2	37.5	37.9	38.2	38.5	38.8	39.1	39.3	39.5	39.8	40.0	40.2	40.3
7	34.1	34.7	35.3	35.8	36.2	36.7	37.1	37.4	37.8	38.1	38.4	38.7	38.9	39.2	39.4	39.6
8	32.4	33.1	33.8	34.4	34.9	35.4	35.9	36.3	36.7	37.1	37.5	37.8	38.1	38.4	38.7	38.9
9	30.6	31.5	32.2	32.9	33.6	34.2	34.7	35.2	35.7	36.1	36.5	36.9	37.2	37.6	37.9	38.2
10	28.7	29.7	30.6	31.4	32.2	32.8	33.5	34.0	34.6	35.0	35.5	35.9	36.3	36.7	37.1	37.4
11	26.7	27.9	28.9	29.8	30.7	31.5	32.2	32.8	33.4	34.0	34.5	35.0	35.4	35.9	36.3	36.6
12	24.6	25.9	27.1	28.2	29.1	30.0	30.8	31.5	32.2	32.8	33.4	34.0	34.5	35.0	35.4	35.8
13	22.3	23.8	25.2	26.4	27.5	28.5	29.4	30.2	31.0	31.7	32.3	32.9	33.5	34.0	34.5	35.0
14	19.8	21.6	23.1	24.5	25.7	26.9	27.9	28.8	29.6	30.4	31.1	31.8	32.4	33.0	33.6	34.1
15	17.1	19.2	20.9	22.5	23.9	25.1	26.3	27.3	28.2	29.1	29.9	30.7	31.4	32.0	32.6	33.2
16	14.2	16.6	18.6	20.3	21.9	23.3	24.6	25.7	26.8	27.7	28.6	29.4	30.2	30.9	31.6	32.2
17	11.1	13.7	16.0	18.0	19.8	21.4	22.8	24.1	25.2	26.3	27.3	28.2	29.0	29.8	30.5	31.2
18	7.7	10.7	13.3	15.5	17.5	19.3	20.8	22.3	23.6	24.7	25.8	26.8	27.7	28.6	29.4	30.1
19	4.0	7.4	10.3	12.8	15.1	17.0	18.8	20.4	21.8	23.1	24.3	25.4	26.4	27.3	28.2	29.0
20		3.8	7.1	10.0	12.5	14.6	16.6	18.3	19.9	21.4	22.7	23.9	25.0	26.0	26.9	27.8
21			3.7	6.9	9.7	12.1	14.3	16.2	17.9	19.5	20.9	22.2	23.4	24.6	25.6	26.5
22				3.6	6.7	9.4	11.8	13.9	15.8	17.5	19.1	20.5	21.9	23.1	24.2	25.2
23					3.4	6.4	9.1	11.4	13.6	15.5	17.2	18.7	20.2	21.5	22.7	23.8
24						3.3	6.3	8.8	11.2	13.2	15.1	16.8	18.4	19.8	21.1	22.4
25							3.2	6.1	8.6	10.9	12.9	14.8	16.5	18.1	19.5	20.8
26								3.1	5.9	8.4	10.6	12.7	14.5	16.2	17.7	19.2
27									3.0	5.8	8.2	10.4	12.4	14.2	15.9	17.4
28										3.0	5.6	8.0	10.2	12.2	14.0	15.6
29											2.9	5.5	7.8	10.0	11.9	13.7
30												2.8	5.4	7.7	9.8	11.7
31													2.7	5.2	7.5	9.6
32														2.7	5.1	7.4
33															2.6	5.0
34																2.6

胸高直径(皮付き) 47 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	43.2	43.3	43.4	43.5	43.5	43.6	43.6	43.7	43.7	43.8	43.8	43.9	43.9	43.9	44.0	44.0
3	41.5	41.7	41.9	42.0	42.2	42.3	42.5	42.6	42.7	42.8	42.9	43.0	43.0	43.1	43.2	43.3
4	39.8	40.1	40.4	40.7	40.9	41.1	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.3	42.5	42.6
5	38.2	38.6	38.9	39.3	39.6	39.9	40.1	40.4	40.6	40.8	41.0	41.2	41.4	41.5	41.7	41.9
6	36.5	37.0	37.5	37.9	38.3	38.6	39.0	39.3	39.6	39.8	40.1	40.3	40.5	40.7	40.9	41.1
7	34.8	35.4	36.0	36.5	36.9	37.4	37.8	38.2	38.5	38.8	39.1	39.4	39.7	39.9	40.2	40.4
8	33.0	33.8	34.4	35.0	35.6	36.1	36.6	37.0	37.4	37.8	38.2	38.5	38.8	39.1	39.4	39.7
9	31.2	32.1	32.8	33.6	34.2	34.8	35.4	35.9	36.3	36.8	37.2	37.6	37.9	38.3	38.6	38.9
10	29.2	30.3	31.2	32.0	32.8	33.4	34.1	34.7	35.2	35.7	36.2	36.6	37.0	37.4	37.8	38.1
11	27.2	28.4	29.4	30.4	31.3	32.0	32.8	33.4	34.0	34.6	35.1	35.6	36.1	36.5	36.9	37.3
12	25.0	26.4	27.6	28.7	29.7	30.6	31.4	32.1	32.8	33.5	34.0	34.6	35.1	35.6	36.1	36.5
13	22.7	24.3	25.6	26.9	28.0	29.0	29.9	30.8	31.5	32.2	32.9	33.5	34.1	34.6	35.2	35.6
14	20.2	22.0	23.5	25.0	26.2	27.3	28.4	29.3	30.2	31.0	31.7	32.4	33.0	33.6	34.2	34.7
15	17.4	19.5	21.3	22.9	24.3	25.6	26.7	27.8	28.8	29.6	30.5	31.2	31.9	32.6	33.2	33.8
16	14.5	16.8	18.9	20.7	22.3	23.7	25.0	26.2	27.3	28.2	29.1	30.0	30.8	31.5	32.2	32.8
17	11.3	14.0	16.3	18.3	20.1	21.7	23.2	24.5	25.7	26.7	27.7	28.7	29.5	30.3	31.1	31.8
18	7.8	10.9	13.5	15.8	17.8	19.6	21.2	22.7	24.0	25.2	26.3	27.3	28.2	29.1	29.9	30.7
19	4.1	7.5	10.5	13.1	15.3	17.3	19.1	20.7	22.2	23.5	24.7	25.8	26.8	27.8	28.7	29.5
20		3.9	7.2	10.1	12.7	14.9	16.9	18.7	20.3	21.7	23.1	24.3	25.4	26.4	27.4	28.3
21			3.8	7.0	9.8	12.3	14.5	16.5	18.2	19.8	21.3	22.6	23.9	25.0	26.0	27.0
22				3.6	6.8	9.5	12.0	14.1	16.1	17.8	19.4	20.9	22.2	23.5	24.6	25.7
23					3.5	6.6	9.3	11.6	13.8	15.7	17.5	19.1	20.5	21.9	23.1	24.3
24						3.4	6.4	9.0	11.4	13.5	15.4	17.1	18.7	20.2	21.5	22.8
25							3.3	6.2	8.8	11.1	13.2	15.1	16.8	18.4	19.8	21.2
26								3.2	6.0	8.5	10.8	12.9	14.8	16.5	18.1	19.5
27									3.1	5.9	8.3	10.6	12.6	14.5	16.2	17.8
28										3.0	5.7	8.1	10.4	12.4	14.2	15.9
29											2.9	5.6	8.0	10.1	12.1	14.0
30												2.9	5.4	7.8	9.9	11.9
31													2.8	5.3	7.6	9.8
32														2.7	5.2	7.5
33															2.7	5.1
34																2.6

胸高直径(皮付き) 48 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	44.1	44.2	44.3	44.3	44.4	44.5	44.5	44.6	44.6	44.7	44.7	44.7	44.8	44.8	44.8	44.9
3	42.3	42.5	42.7	42.9	43.0	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	44.0	44.1	44.1
4	40.6	40.9	41.2	41.4	41.7	41.9	42.1	42.3	42.5	42.6	42.8	42.9	43.0	43.2	43.3	43.4
5	38.9	39.3	39.7	40.0	40.3	40.6	40.9	41.2	41.4	41.6	41.8	42.0	42.2	42.4	42.5	42.7
6	37.2	37.7	38.2	38.6	39.0	39.4	39.7	40.0	40.3	40.6	40.8	41.1	41.3	41.5	41.7	41.9
7	35.4	36.0	36.6	37.2	37.6	38.1	38.5	38.9	39.2	39.6	39.9	40.2	40.4	40.7	41.0	41.2
8	33.6	34.4	35.1	35.7	36.3	36.8	37.3	37.7	38.1	38.5	38.9	39.2	39.6	39.9	40.2	40.4
9	31.7	32.6	33.4	34.2	34.8	35.4	36.0	36.5	37.0	37.5	37.9	38.3	38.7	39.0	39.3	39.6
10	29.8	30.8	31.7	32.6	33.4	34.1	34.7	35.3	35.9	36.4	36.8	37.3	37.7	38.1	38.5	38.8
11	27.7	28.9	30.0	30.9	31.8	32.6	33.3	34.0	34.7	35.2	35.8	36.3	36.8	37.2	37.6	38.0
12	25.5	26.8	28.1	29.2	30.2	31.1	31.9	32.7	33.4	34.1	34.7	35.2	35.8	36.3	36.7	37.2
13	23.1	24.7	26.1	27.3	28.5	29.5	30.4	31.3	32.1	32.8	33.5	34.1	34.7	35.3	35.8	36.3
14	20.5	22.3	23.9	25.4	26.7	27.8	28.9	29.8	30.7	31.5	32.3	33.0	33.6	34.2	34.8	35.4
15	17.7	19.8	21.7	23.3	24.7	26.0	27.2	28.3	29.3	30.2	31.0	31.8	32.5	33.2	33.8	34.4
16	14.7	17.1	19.2	21.0	22.7	24.1	25.4	26.6	27.7	28.7	29.7	30.5	31.3	32.0	32.7	33.4
17	11.5	14.2	16.6	18.6	20.5	22.1	23.6	24.9	26.1	27.2	28.2	29.2	30.0	30.9	31.6	32.3
18	8.0	11.1	13.7	16.1	18.1	19.9	21.6	23.0	24.4	25.6	26.7	27.8	28.7	29.6	30.4	31.2
19	4.1	7.6	10.7	13.3	15.6	17.6	19.4	21.1	22.6	23.9	25.1	26.3	27.3	28.3	29.2	30.0
20		4.0	7.4	10.3	12.9	15.1	17.2	19.0	20.6	22.1	23.4	24.7	25.8	26.9	27.9	28.8
21			3.8	7.1	10.0	12.5	14.7	16.7	18.5	20.2	21.7	23.0	24.3	25.4	26.5	27.5
22				3.7	6.9	9.7	12.2	14.4	16.4	18.1	19.8	21.3	22.6	23.9	25.0	26.1
23					3.6	6.7	9.4	11.8	14.0	16.0	17.8	19.4	20.9	22.2	23.5	24.7
24						3.4	6.5	9.1	11.5	13.7	15.6	17.4	19.0	20.5	21.9	23.1
25							3.3	6.3	8.9	11.3	13.4	15.3	17.1	18.7	20.2	21.5
26								3.2	6.1	8.7	11.0	13.1	15.0	16.8	18.4	19.8
27									3.1	6.0	8.5	10.8	12.8	14.7	16.5	18.1
28										3.1	5.8	8.3	10.5	12.6	14.4	16.2
29											3.0	5.7	8.1	10.3	12.3	14.2
30												2.9	5.5	7.9	10.1	12.1
31													2.8	5.4	7.8	9.9
32														2.8	5.3	7.6
33															2.7	5.2
34																2.7

胸高直径(皮付き) 49 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	45.0	45.1	45.1	45.2	45.3	45.3	45.4	45.4	45.5	45.5	45.6	45.6	45.6	45.7	45.7	45.7
3	43.1	43.3	43.5	43.7	43.9	44.0	44.1	44.3	44.4	44.5	44.6	44.7	44.8	44.8	44.9	45.0
4	41.4	41.7	42.0	42.2	42.5	42.7	42.9	43.1	43.3	43.4	43.6	43.7	43.9	44.0	44.1	44.2
5	39.6	40.0	40.4	40.8	41.1	41.4	41.7	41.9	42.2	42.4	42.6	42.8	43.0	43.2	43.3	43.5
6	37.8	38.4	38.9	39.3	39.7	40.1	40.4	40.8	41.1	41.3	41.6	41.9	42.1	42.3	42.5	42.7
7	36.0	36.7	37.3	37.8	38.3	38.8	39.2	39.6	40.0	40.3	40.6	40.9	41.2	41.5	41.7	42.0
8	34.2	35.0	35.7	36.3	36.9	37.4	37.9	38.4	38.8	39.2	39.6	40.0	40.3	40.6	40.9	41.2
9	32.3	33.2	34.0	34.8	35.4	36.1	36.6	37.2	37.7	38.1	38.6	39.0	39.4	39.7	40.1	40.4
10	30.3	31.3	32.3	33.2	33.9	34.7	35.3	35.9	36.5	37.0	37.5	38.0	38.4	38.8	39.2	39.6
11	28.2	29.4	30.5	31.5	32.4	33.2	33.9	34.6	35.3	35.9	36.4	36.9	37.4	37.9	38.3	38.7
12	25.9	27.3	28.6	29.7	30.7	31.6	32.5	33.3	34.0	34.6	35.3	35.8	36.4	36.9	37.4	37.8
13	23.5	25.1	26.5	27.8	29.0	30.0	31.0	31.8	32.6	33.4	34.1	34.7	35.3	35.9	36.4	36.9
14	20.8	22.7	24.3	25.8	27.1	28.3	29.4	30.3	31.2	32.1	32.8	33.6	34.2	34.8	35.4	36.0
15	18.0	20.2	22.0	23.7	25.1	26.5	27.7	28.8	29.8	30.7	31.5	32.3	33.1	33.7	34.4	35.0
16	15.0	17.4	19.5	21.4	23.0	24.5	25.9	27.1	28.2	29.2	30.2	31.0	31.8	32.6	33.3	34.0
17	11.7	14.4	16.8	18.9	20.8	22.5	24.0	25.3	26.5	27.7	28.7	29.7	30.6	31.4	32.2	32.9
18	8.1	11.2	13.9	16.3	18.4	20.3	21.9	23.4	24.8	26.0	27.2	28.2	29.2	30.1	30.9	31.7
19	4.2	7.8	10.8	13.5	15.8	17.9	19.8	21.4	22.9	24.3	25.6	26.7	27.8	28.8	29.7	30.5
20		4.0	7.5	10.5	13.1	15.4	17.4	19.3	21.0	22.5	23.8	25.1	26.3	27.3	28.3	29.3
21			3.9	7.2	10.1	12.7	15.0	17.0	18.9	20.5	22.0	23.4	24.7	25.8	26.9	28.0
22				3.7	7.0	9.8	12.4	14.6	16.6	18.4	20.1	21.6	23.0	24.3	25.5	26.6
23					3.6	6.8	9.6	12.0	14.2	16.2	18.1	19.7	21.2	22.6	23.9	25.1
24						3.5	6.6	9.3	11.7	13.9	15.9	17.7	19.3	20.8	22.2	23.5
25							3.4	6.4	9.0	11.4	13.6	15.6	17.3	19.0	20.5	21.9
26								3.3	6.2	8.8	11.2	13.3	15.3	17.0	18.7	20.2
27									3.2	6.0	8.6	10.9	13.0	15.0	16.7	18.3
28										3.1	5.9	8.4	10.7	12.8	14.7	16.4
29											3.0	5.8	8.2	10.5	12.5	14.4
30												3.0	5.6	8.1	10.3	12.3
31													2.9	5.5	7.9	10.1
32														2.8	5.4	7.7
33															2.8	5.3
34																2.7

胸高直径(皮付き) 50 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	45.8	45.9	46.0	46.1	46.1	46.2	46.2	46.3	46.4	46.4	46.4	46.5	46.5	46.6	46.6	46.6
3	44.0	44.2	44.3	44.5	44.7	44.8	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.8
4	42.1	42.4	42.7	43.0	43.2	43.5	43.7	43.9	44.1	44.2	44.4	44.5	44.7	44.8	44.9	45.1
5	40.3	40.7	41.1	41.5	41.8	42.1	42.4	42.7	42.9	43.2	43.4	43.6	43.8	44.0	44.1	44.3
6	38.5	39.1	39.6	40.0	40.4	40.8	41.2	41.5	41.8	42.1	42.4	42.6	42.9	43.1	43.3	43.5
7	36.7	37.3	37.9	38.5	39.0	39.5	39.9	40.3	40.7	41.0	41.3	41.7	41.9	42.2	42.5	42.7
8	34.8	35.6	36.3	36.9	37.5	38.1	38.6	39.1	39.5	39.9	40.3	40.7	41.0	41.3	41.6	41.9
9	32.8	33.8	34.6	35.4	36.1	36.7	37.3	37.8	38.3	38.8	39.2	39.7	40.0	40.4	40.8	41.1
10	30.8	31.9	32.8	33.7	34.5	35.2	35.9	36.5	37.1	37.7	38.2	38.6	39.1	39.5	39.9	40.2
11	28.6	29.9	31.0	32.0	32.9	33.7	34.5	35.2	35.9	36.5	37.0	37.6	38.1	38.5	39.0	39.4
12	26.3	27.7	29.0	30.2	31.2	32.2	33.0	33.8	34.6	35.2	35.9	36.5	37.0	37.5	38.0	38.5
13	23.8	25.5	27.0	28.3	29.4	30.5	31.5	32.4	33.2	33.9	34.7	35.3	35.9	36.5	37.0	37.6
14	21.2	23.1	24.7	26.2	27.6	28.8	29.8	30.8	31.8	32.6	33.4	34.1	34.8	35.4	36.0	36.6
15	18.3	20.5	22.4	24.1	25.5	26.9	28.1	29.2	30.2	31.2	32.1	32.9	33.6	34.3	35.0	35.6
16	15.2	17.7	19.8	21.7	23.4	24.9	26.3	27.5	28.7	29.7	30.7	31.5	32.4	33.1	33.9	34.5
17	11.8	14.7	17.1	19.2	21.1	22.8	24.3	25.7	27.0	28.1	29.2	30.1	31.1	31.9	32.7	33.4
18	8.2	11.4	14.2	16.6	18.7	20.6	22.3	23.8	25.2	26.5	27.6	28.7	29.7	30.6	31.5	32.3
19	4.3	7.9	11.0	13.7	16.1	18.2	20.1	21.8	23.3	24.7	26.0	27.1	28.2	29.2	30.2	31.0
20		4.1	7.6	10.6	13.3	15.6	17.7	19.6	21.3	22.8	24.2	25.5	26.7	27.8	28.8	29.8
21			3.9	7.3	10.3	12.9	15.2	17.3	19.1	20.8	22.4	23.8	25.1	26.3	27.4	28.4
22				3.8	7.1	10.0	12.5	14.8	16.9	18.7	20.4	21.9	23.4	24.7	25.9	27.0
23					3.7	6.9	9.7	12.2	14.5	16.5	18.3	20.0	21.6	23.0	24.3	25.5
24						3.5	6.7	9.4	11.9	14.1	16.1	18.0	19.6	21.2	22.6	23.9
25							3.4	6.5	9.2	11.6	13.8	15.8	17.6	19.3	20.8	22.2
26								3.3	6.3	9.0	11.4	13.5	15.5	17.3	19.0	20.5
27									3.2	6.1	8.7	11.1	13.2	15.2	17.0	18.6
28										3.2	6.0	8.5	10.9	13.0	14.9	16.7
29											3.1	5.8	8.4	10.6	12.7	14.6
30												3.0	5.7	8.2	10.4	12.5
31													2.9	5.6	8.0	10.2
32														2.9	5.5	7.9
33															2.8	5.4
34																2.7

胸高直径(皮付き) 51 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	46.7	46.8	46.8	46.9	47.0	47.0	47.1	47.2	47.2	47.3	47.3	47.3	47.4	47.4	47.5	47.5
3	44.7	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7
4	42.9	43.2	43.5	43.8	44.0	44.3	44.5	44.7	44.9	45.0	45.2	45.3	45.5	45.6	45.8	45.9
5	41.0	41.5	41.9	42.2	42.6	42.9	43.2	43.4	43.7	43.9	44.2	44.4	44.6	44.7	44.9	45.1
6	39.2	39.7	40.2	40.7	41.1	41.5	41.9	42.2	42.5	42.8	43.1	43.4	43.6	43.8	44.1	44.3
7	37.3	38.0	38.6	39.1	39.7	40.1	40.6	41.0	41.4	41.7	42.1	42.4	42.7	43.0	43.2	43.5
8	35.4	36.2	36.9	37.6	38.2	38.7	39.3	39.7	40.2	40.6	41.0	41.4	41.7	42.0	42.3	42.6
9	33.4	34.3	35.2	35.9	36.7	37.3	37.9	38.5	39.0	39.5	39.9	40.3	40.7	41.1	41.5	41.8
10	31.3	32.4	33.4	34.3	35.1	35.8	36.5	37.2	37.7	38.3	38.8	39.3	39.7	40.2	40.6	40.9
11	29.1	30.3	31.5	32.5	33.4	34.3	35.1	35.8	36.5	37.1	37.7	38.2	38.7	39.2	39.6	40.1
12	26.7	28.2	29.5	30.7	31.7	32.7	33.6	34.4	35.1	35.8	36.5	37.1	37.6	38.2	38.7	39.1
13	24.2	25.9	27.4	28.7	29.9	31.0	32.0	32.9	33.7	34.5	35.2	35.9	36.5	37.1	37.7	38.2
14	21.5	23.4	25.1	26.6	28.0	29.2	30.3	31.3	32.3	33.1	33.9	34.7	35.4	36.0	36.6	37.2
15	18.6	20.8	22.7	24.4	25.9	27.3	28.6	29.7	30.7	31.7	32.6	33.4	34.2	34.9	35.5	36.2
16	15.4	17.9	20.1	22.1	23.8	25.3	26.7	28.0	29.1	30.2	31.1	32.0	32.9	33.7	34.4	35.1
17	12.0	14.9	17.4	19.5	21.5	23.2	24.7	26.1	27.4	28.6	29.6	30.6	31.5	32.4	33.2	34.0
18	8.3	11.6	14.4	16.8	19.0	20.9	22.6	24.2	25.6	26.9	28.0	29.1	30.1	31.1	32.0	32.8
19	4.3	8.0	11.2	13.9	16.3	18.5	20.4	22.1	23.7	25.1	26.4	27.6	28.7	29.7	30.6	31.5
20		4.2	7.7	10.8	13.5	15.9	18.0	19.9	21.6	23.2	24.6	25.9	27.1	28.2	29.3	30.2
21			4.0	7.4	10.5	13.1	15.4	17.5	19.4	21.2	22.7	24.1	25.5	26.7	27.8	28.9
22				3.9	7.2	10.1	12.7	15.1	17.1	19.0	20.7	22.3	23.7	25.0	26.3	27.4
23					3.7	7.0	9.8	12.4	14.7	16.7	18.6	20.3	21.9	23.3	24.6	25.9
24						3.6	6.8	9.6	12.1	14.3	16.4	18.2	19.9	21.5	22.9	24.3
25							3.5	6.6	9.3	11.8	14.0	16.0	17.9	19.6	21.1	22.6
26								3.4	6.4	9.1	11.5	13.7	15.7	17.6	19.2	20.8
27									3.3	6.2	8.9	11.3	13.4	15.4	17.2	18.9
28										3.2	6.1	8.7	11.0	13.2	15.1	16.9
29											3.1	5.9	8.5	10.8	12.9	14.9
30												3.0	5.8	8.3	10.6	12.7
31													3.0	5.7	8.1	10.4
32														2.9	5.6	8.0
33															2.8	5.4
34																2.8



胸高直径(皮付き) 52 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	47.5	47.6	47.7	47.8	47.8	47.9	48.0	48.0	48.1	48.1	48.2	48.2	48.2	48.3	48.3	48.3
3	45.5	45.8	46.0	46.1	46.3	46.5	46.6	46.7	46.8	47.0	47.1	47.2	47.3	47.4	47.4	47.5
4	43.6	44.0	44.3	44.5	44.8	45.0	45.3	45.5	45.6	45.8	46.0	46.1	46.3	46.4	46.6	46.7
5	41.7	42.2	42.6	43.0	43.3	43.6	43.9	44.2	44.5	44.7	44.9	45.1	45.3	45.5	45.7	45.9
6	39.8	40.4	40.9	41.4	41.8	42.2	42.6	42.9	43.3	43.6	43.9	44.1	44.4	44.6	44.8	45.0
7	37.9	38.6	39.2	39.8	40.3	40.8	41.3	41.7	42.1	42.4	42.8	43.1	43.4	43.7	44.0	44.2
8	35.9	36.8	37.5	38.2	38.8	39.4	39.9	40.4	40.9	41.3	41.7	42.1	42.4	42.7	43.1	43.4
9	33.9	34.9	35.7	36.5	37.3	37.9	38.5	39.1	39.6	40.1	40.6	41.0	41.4	41.8	42.2	42.5
10	31.8	32.9	33.9	34.8	35.6	36.4	37.1	37.8	38.4	38.9	39.4	39.9	40.4	40.8	41.2	41.6
11	29.5	30.8	32.0	33.0	34.0	34.8	35.6	36.4	37.0	37.7	38.3	38.8	39.3	39.8	40.3	40.7
12	27.1	28.6	29.9	31.1	32.2	33.2	34.1	34.9	35.7	36.4	37.0	37.7	38.2	38.8	39.3	39.8
13	24.6	26.3	27.8	29.1	30.4	31.5	32.5	33.4	34.3	35.0	35.8	36.5	37.1	37.7	38.3	38.8
14	21.8	23.8	25.5	27.0	28.4	29.7	30.8	31.8	32.8	33.6	34.5	35.2	35.9	36.6	37.2	37.8
15	18.9	21.1	23.1	24.8	26.3	27.7	29.0	30.1	31.2	32.2	33.1	33.9	34.7	35.4	36.1	36.7
16	15.7	18.2	20.4	22.4	24.1	25.7	27.1	28.4	29.6	30.6	31.6	32.5	33.4	34.2	34.9	35.6
17	12.2	15.1	17.6	19.8	21.8	23.5	25.1	26.5	27.8	29.0	30.1	31.1	32.0	32.9	33.7	34.5
18	8.4	11.7	14.6	17.1	19.3	21.2	23.0	24.5	26.0	27.3	28.5	29.6	30.6	31.6	32.5	33.3
19	4.4	8.1	11.3	14.1	16.6	18.7	20.7	22.4	24.0	25.4	26.8	28.0	29.1	30.1	31.1	32.0
20		4.2	7.8	11.0	13.7	16.1	18.3	20.2	21.9	23.5	25.0	26.3	27.5	28.7	29.7	30.7
21			4.1	7.6	10.6	13.3	15.7	17.8	19.7	21.5	23.1	24.5	25.8	27.1	28.2	29.3
22				3.9	7.3	10.3	12.9	15.3	17.4	19.3	21.0	22.6	24.1	25.4	26.7	27.8
23					3.8	7.1	10.0	12.6	14.9	17.0	18.9	20.6	22.2	23.7	25.0	26.3
24						3.7	6.9	9.7	12.3	14.6	16.6	18.5	20.2	21.8	23.3	24.6
25							3.5	6.7	9.5	12.0	14.2	16.3	18.2	19.9	21.5	22.9
26								3.4	6.5	9.2	11.7	13.9	16.0	17.8	19.5	21.1
27									3.3	6.3	9.0	11.4	13.6	15.6	17.5	19.2
28										3.3	6.2	8.8	11.2	13.4	15.4	17.2
29											3.2	6.0	8.6	11.0	13.1	15.1
30												3.1	5.9	8.4	10.7	12.9
31													3.0	5.8	8.3	10.5
32														2.9	5.6	8.1
33															2.9	5.5
34																2.8

胸高直径(皮付き) 53 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	48.3	48.4	48.5	48.6	48.7	48.7	48.8	48.9	48.9	49.0	49.0	49.0	49.1	49.1	49.2	49.2
3	46.3	46.5	46.7	46.9	47.1	47.3	47.4	47.5	47.7	47.8	47.9	48.0	48.1	48.2	48.3	48.3
4	44.4	44.7	45.0	45.3	45.6	45.8	46.0	46.2	46.4	46.6	46.8	46.9	47.1	47.2	47.4	47.5
5	42.4	42.9	43.3	43.7	44.0	44.4	44.7	44.9	45.2	45.5	45.7	45.9	46.1	46.3	46.5	46.6
6	40.5	41.0	41.6	42.1	42.5	42.9	43.3	43.7	44.0	44.3	44.6	44.9	45.1	45.4	45.6	45.8
7	38.5	39.2	39.9	40.4	41.0	41.5	41.9	42.4	42.8	43.1	43.5	43.8	44.1	44.4	44.7	44.9
8	36.5	37.3	38.1	38.8	39.4	40.0	40.6	41.1	41.5	42.0	42.4	42.7	43.1	43.4	43.8	44.1
9	34.4	35.4	36.3	37.1	37.8	38.5	39.1	39.7	40.3	40.8	41.2	41.7	42.1	42.5	42.8	43.2
10	32.2	33.4	34.4	35.3	36.2	37.0	37.7	38.3	39.0	39.5	40.1	40.6	41.0	41.5	41.9	42.3
11	30.0	31.3	32.5	33.5	34.5	35.4	36.2	36.9	37.6	38.3	38.9	39.4	40.0	40.4	40.9	41.4
12	27.5	29.0	30.4	31.6	32.7	33.7	34.6	35.5	36.2	37.0	37.6	38.2	38.8	39.4	39.9	40.4
13	24.9	26.7	28.2	29.6	30.8	31.9	33.0	33.9	34.8	35.6	36.3	37.0	37.7	38.3	38.9	39.4
14	22.1	24.1	25.9	27.4	28.8	30.1	31.2	32.3	33.3	34.2	35.0	35.8	36.5	37.1	37.8	38.4
15	19.1	21.4	23.4	25.2	26.7	28.1	29.4	30.6	31.7	32.7	33.6	34.4	35.2	36.0	36.7	37.3
16	15.9	18.5	20.7	22.7	24.5	26.1	27.5	28.8	30.0	31.1	32.1	33.0	33.9	34.7	35.5	36.2
17	12.4	15.3	17.9	20.1	22.1	23.9	25.5	26.9	28.2	29.4	30.5	31.6	32.5	33.4	34.2	35.0
18	8.6	11.9	14.8	17.3	19.5	21.5	23.3	24.9	26.3	27.7	28.9	30.0	31.1	32.0	32.9	33.8
19	4.5	8.2	11.5	14.3	16.8	19.0	21.0	22.7	24.4	25.8	27.2	28.4	29.5	30.6	31.6	32.5
20		4.3	7.9	11.1	13.9	16.3	18.5	20.5	22.2	23.9	25.3	26.7	27.9	29.1	30.1	31.1
21			4.1	7.7	10.8	13.5	15.9	18.1	20.0	21.8	23.4	24.9	26.2	27.5	28.6	29.7
22				4.0	7.4	10.4	13.1	15.5	17.6	19.6	21.3	22.9	24.4	25.8	27.1	28.2
23					3.8	7.2	10.1	12.8	15.1	17.2	19.2	20.9	22.5	24.0	25.4	26.7
24						3.7	7.0	9.9	12.4	14.8	16.9	18.8	20.5	22.1	23.6	25.0
25							3.6	6.8	9.6	12.1	14.4	16.5	18.4	20.2	21.8	23.2
26								3.5	6.6	9.4	11.9	14.1	16.2	18.1	19.8	21.4
27									3.4	6.4	9.1	11.6	13.8	15.9	17.7	19.5
28										3.3	6.3	8.9	11.3	13.6	15.6	17.4
29											3.2	6.1	8.7	11.1	13.3	15.3
30												3.1	6.0	8.5	10.9	13.1
31													3.1	5.8	8.4	10.7
32														3.0	5.7	8.2
33															2.9	5.6
34																2.9

胸高直径(皮付き) 54 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	49.2	49.3	49.4	49.4	49.5	49.6	49.6	49.7	49.7	49.8	49.8	49.9	49.9	50.0	50.0	50.0
3	47.1	47.3	47.5	47.7	47.9	48.0	48.2	48.3	48.5	48.6	48.7	48.8	48.9	49.0	49.1	49.2
4	45.1	45.4	45.7	46.0	46.3	46.6	46.8	47.0	47.2	47.4	47.6	47.7	47.9	48.0	48.2	48.3
5	43.1	43.6	44.0	44.4	44.7	45.1	45.4	45.7	45.9	46.2	46.4	46.7	46.9	47.1	47.2	47.4
6	41.1	41.7	42.2	42.7	43.2	43.6	44.0	44.4	44.7	45.0	45.3	45.6	45.8	46.1	46.3	46.5
7	39.1	39.8	40.5	41.1	41.6	42.1	42.6	43.0	43.4	43.8	44.2	44.5	44.8	45.1	45.4	45.7
8	37.1	37.9	38.7	39.4	40.0	40.6	41.2	41.7	42.2	42.6	43.0	43.4	43.8	44.1	44.5	44.8
9	34.9	35.9	36.8	37.7	38.4	39.1	39.7	40.3	40.9	41.4	41.9	42.3	42.7	43.1	43.5	43.9
10	32.7	33.9	34.9	35.9	36.7	37.5	38.3	38.9	39.6	40.1	40.7	41.2	41.7	42.1	42.5	43.0
11	30.4	31.7	32.9	34.0	35.0	35.9	36.7	37.5	38.2	38.8	39.5	40.0	40.6	41.1	41.5	42.0
12	27.9	29.5	30.8	32.1	33.2	34.2	35.1	36.0	36.8	37.5	38.2	38.8	39.4	40.0	40.5	41.0
13	25.3	27.0	28.6	30.0	31.3	32.4	33.5	34.4	35.3	36.1	36.9	37.6	38.2	38.9	39.5	40.0
14	22.4	24.5	26.2	27.8	29.2	30.5	31.7	32.8	33.8	34.7	35.5	36.3	37.0	37.7	38.4	39.0
15	19.4	21.7	23.7	25.5	27.1	28.5	29.8	31.0	32.1	33.1	34.1	34.9	35.7	36.5	37.2	37.9
16	16.1	18.7	21.0	23.0	24.8	26.4	27.9	29.2	30.4	31.5	32.6	33.5	34.4	35.2	36.0	36.7
17	12.5	15.5	18.1	20.4	22.4	24.2	25.8	27.3	28.6	29.8	31.0	32.0	33.0	33.9	34.7	35.5
18	8.7	12.1	15.0	17.5	19.8	21.8	23.6	25.2	26.7	28.1	29.3	30.5	31.5	32.5	33.4	34.3
19	4.5	8.3	11.6	14.5	17.0	19.3	21.3	23.1	24.7	26.2	27.5	28.8	30.0	31.0	32.0	33.0
20		4.3	8.0	11.3	14.1	16.6	18.8	20.8	22.6	24.2	25.7	27.1	28.3	29.5	30.6	31.6
21			4.2	7.8	10.9	13.7	16.1	18.3	20.3	22.1	23.7	25.2	26.6	27.9	29.0	30.1
22				4.0	7.5	10.6	13.3	15.7	17.9	19.8	21.6	23.3	24.8	26.2	27.4	28.6
23					3.9	7.3	10.3	12.9	15.3	17.5	19.4	21.2	22.8	24.3	25.7	27.0
24						3.8	7.1	10.0	12.6	15.0	17.1	19.0	20.8	22.4	23.9	25.3
25							3.6	6.9	9.7	12.3	14.6	16.7	18.7	20.4	22.1	23.6
26								3.5	6.7	9.5	12.0	14.3	16.4	18.3	20.1	21.7
27									3.4	6.5	9.3	11.7	14.0	16.1	18.0	19.7
28										3.3	6.3	9.0	11.5	13.7	15.8	17.7
29											3.3	6.2	8.8	11.3	13.5	15.5
30												3.2	6.0	8.7	11.0	13.2
31													3.1	5.9	8.5	10.8
32														3.0	5.8	8.3
33															3.0	5.7
34																2.9

胸高直径(皮付き) 55 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	50.0	50.1	50.2	50.3	50.3	50.4	50.5	50.5	50.6	50.6	50.7	50.7	50.8	50.8	50.8	50.9
3	47.9	48.1	48.3	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.5	49.6	49.7	49.8	49.9	50.0
4	45.8	46.2	46.5	46.8	47.1	47.3	47.5	47.8	48.0	48.2	48.3	48.5	48.7	48.8	48.9	49.1
5	43.8	44.2	44.7	45.1	45.5	45.8	46.1	46.4	46.7	46.9	47.2	47.4	47.6	47.8	48.0	48.2
6	41.7	42.3	42.9	43.4	43.9	44.3	44.7	45.1	45.4	45.7	46.0	46.3	46.6	46.8	47.1	47.3
7	39.7	40.4	41.1	41.7	42.3	42.8	43.3	43.7	44.1	44.5	44.9	45.2	45.5	45.8	46.1	46.4
8	37.6	38.5	39.3	40.0	40.6	41.2	41.8	42.3	42.8	43.3	43.7	44.1	44.5	44.8	45.2	45.5
9	35.4	36.5	37.4	38.2	39.0	39.7	40.3	40.9	41.5	42.0	42.5	43.0	43.4	43.8	44.2	44.6
10	33.2	34.4	35.4	36.4	37.3	38.1	38.8	39.5	40.1	40.7	41.3	41.8	42.3	42.8	43.2	43.6
11	30.8	32.2	33.4	34.5	35.5	36.4	37.3	38.0	38.8	39.4	40.0	40.6	41.2	41.7	42.2	42.6
12	28.3	29.9	31.3	32.5	33.7	34.7	35.6	36.5	37.3	38.1	38.8	39.4	40.0	40.6	41.1	41.6
13	25.6	27.4	29.0	30.4	31.7	32.9	33.9	34.9	35.8	36.6	37.4	38.1	38.8	39.4	40.0	40.6
14	22.7	24.8	26.6	28.2	29.7	31.0	32.1	33.2	34.2	35.2	36.0	36.8	37.6	38.3	38.9	39.5
15	19.6	22.0	24.0	25.9	27.5	28.9	30.3	31.5	32.6	33.6	34.6	35.4	36.2	37.0	37.7	38.4
16	16.3	19.0	21.3	23.3	25.2	26.8	28.3	29.6	30.8	32.0	33.0	34.0	34.9	35.7	36.5	37.3
17	12.7	15.7	18.4	20.7	22.7	24.5	26.2	27.7	29.0	30.3	31.4	32.5	33.5	34.4	35.2	36.0
18	8.8	12.2	15.2	17.8	20.1	22.1	23.9	25.6	27.1	28.5	29.7	30.9	32.0	33.0	33.9	34.8
19	4.6	8.5	11.8	14.7	17.3	19.5	21.6	23.4	25.0	26.5	27.9	29.2	30.4	31.5	32.5	33.4
20		4.4	8.1	11.4	14.3	16.8	19.0	21.0	22.9	24.5	26.0	27.4	28.7	29.9	31.0	32.0
21			4.2	7.9	11.0	13.8	16.3	18.6	20.6	22.4	24.0	25.6	27.0	28.2	29.4	30.6
22				4.1	7.6	10.7	13.5	15.9	18.1	20.1	21.9	23.6	25.1	26.5	27.8	29.0
23					3.9	7.4	10.4	13.1	15.5	17.7	19.7	21.5	23.2	24.7	26.1	27.4
24						3.8	7.1	10.1	12.8	15.2	17.3	19.3	21.1	22.7	24.3	25.7
25							3.7	6.9	9.9	12.5	14.8	17.0	18.9	20.7	22.4	23.9
26								3.6	6.8	9.6	12.2	14.5	16.6	18.6	20.4	22.0
27									3.5	6.6	9.4	11.9	14.2	16.3	18.2	20.0
28										3.4	6.4	9.2	11.7	13.9	16.0	17.9
29											3.3	6.3	9.0	11.4	13.7	15.7
30												3.2	6.1	8.8	11.2	13.4
31													3.1	6.0	8.6	11.0
32														3.1	5.9	8.4
33															3.0	5.7
34																2.9

胸高直径(皮付き) 56 cm

樹高 地上高	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
2	50.8	50.9	51.0	51.1	51.1	51.2	51.3	51.3	51.4	51.5	51.5	51.5	51.6	51.6	51.7	51.7
3	48.6	48.9	49.1	49.3	49.4	49.6	49.8	49.9	50.0	50.2	50.3	50.4	50.5	50.6	50.7	50.8
4	46.5	46.9	47.2	47.5	47.8	48.0	48.3	48.5	48.7	48.9	49.1	49.3	49.4	49.6	49.7	49.9
5	44.4	44.9	45.4	45.8	46.2	46.5	46.8	47.1	47.4	47.7	47.9	48.1	48.4	48.6	48.8	48.9
6	42.4	43.0	43.5	44.1	44.5	45.0	45.4	45.7	46.1	46.4	46.7	47.0	47.3	47.5	47.8	48.0
7	40.3	41.0	41.7	42.3	42.9	43.4	43.9	44.4	44.8	45.2	45.5	45.9	46.2	46.5	46.8	47.1
8	38.1	39.0	39.8	40.6	41.2	41.9	42.4	43.0	43.5	43.9	44.4	44.8	45.1	45.5	45.8	46.2
9	35.9	37.0	37.9	38.8	39.5	40.3	40.9	41.5	42.1	42.6	43.1	43.6	44.0	44.5	44.8	45.2
10	33.6	34.9	35.9	36.9	37.8	38.6	39.4	40.1	40.7	41.3	41.9	42.4	42.9	43.4	43.8	44.2
11	31.2	32.6	33.9	35.0	36.0	36.9	37.8	38.6	39.3	40.0	40.6	41.2	41.8	42.3	42.8	43.3
12	28.7	30.3	31.7	33.0	34.1	35.2	36.1	37.0	37.8	38.6	39.3	40.0	40.6	41.2	41.7	42.2
13	26.0	27.8	29.4	30.8	32.1	33.3	34.4	35.4	36.3	37.1	37.9	38.7	39.4	40.0	40.6	41.2
14	23.0	25.1	27.0	28.6	30.1	31.4	32.6	33.7	34.7	35.6	36.5	37.3	38.1	38.8	39.5	40.1
15	19.9	22.3	24.4	26.2	27.8	29.3	30.7	31.9	33.0	34.1	35.0	35.9	36.8	37.5	38.3	39.0
16	16.5	19.2	21.6	23.6	25.5	27.2	28.7	30.0	31.3	32.4	33.5	34.5	35.4	36.2	37.0	37.8
17	12.9	15.9	18.6	20.9	23.0	24.8	26.5	28.0	29.4	30.7	31.8	32.9	33.9	34.8	35.7	36.5
18	8.9	12.4	15.4	18.0	20.3	22.4	24.2	25.9	27.4	28.8	30.1	31.3	32.4	33.4	34.4	35.2
19	4.6	8.6	11.9	14.9	17.5	19.8	21.8	23.7	25.4	26.9	28.3	29.6	30.8	31.9	32.9	33.9
20		4.4	8.2	11.5	14.4	17.0	19.3	21.3	23.2	24.8	26.4	27.8	29.1	30.3	31.4	32.5
21			4.3	8.0	11.2	14.0	16.5	18.8	20.8	22.7	24.3	25.9	27.3	28.6	29.8	31.0
22				4.1	7.7	10.8	13.6	16.1	18.3	20.4	22.2	23.9	25.4	26.9	28.2	29.4
23					4.0	7.5	10.5	13.3	15.7	17.9	19.9	21.8	23.5	25.0	26.4	27.8
24						3.8	7.2	10.2	12.9	15.4	17.5	19.5	21.4	23.0	24.6	26.0
25							3.7	7.0	10.0	12.6	15.0	17.2	19.2	21.0	22.7	24.2
26								3.6	6.8	9.7	12.3	14.7	16.8	18.8	20.6	22.3
27									3.5	6.7	9.5	12.1	14.4	16.5	18.5	20.3
28										3.4	6.5	9.3	11.8	14.1	16.2	18.1
29											3.3	6.3	9.1	11.6	13.8	15.9
30												3.3	6.2	8.9	11.3	13.6
31													3.2	6.1	8.7	11.1
32														3.1	5.9	8.5
33															3.0	5.8
34																3.0

## 【参考】 表の作成にあたって

### 1 資料の収集

この「細り表」は、全道各地の伐採現場で調査収集したデータから作成したものです。伐採現場での調査は、全道の林業普及指導員の方々にご協力いただいて実施しました。

胸高直径を測定後に伐採された立木について、樹高を測定し、玉切り後の末口断面において、切り株の高さも加味した断面高、直径が最大となる方向とそれに直交する方向の2方向での皮なし直径、皮の厚さの両側合計値をそれぞれ測定しました。

収集したデータは、平成6年に発行した「北海道カラマツ細り表」の作成のために収集されたデータと、今回の改訂版作成のために主として大径材を対象に収集したデータを合わせ、630本の立木から4,562の断面データが収集されました。なお、根張り部分のデータを含めると予測誤差が大きくなるため、根張りの影響の少ない1.3m以上の断面データ4,120点を用い、樹幹形状の推定を行いました。(表-1)

表-1 収集したデータの概要

本数	胸高直径		樹高		断面数
	最小値	最大値	最小値	最大値	
630本	8cm	56cm	10m	38m	4,120点

## 2 計算方法

伐採現場で得られたデータをもとに、断面高と直径の幹形を数式化しました。サイズの異なる樹木の幹曲線を統一的に取り扱うために、樹高、直径をそれぞれ相対値化したものが、相対幹曲線です。樹高方向では頂端からの距離を樹高で割った値を相対樹高 (rh) とし、直径方向では一般的に基準直径を相対樹高 0.9 の位置の直径 (d0.9) にとり、直径を d0.9 で割った値を相対直径 (rd) としました。

$$rh = (Ht - h) / Ht \quad (1)$$

$$rd = d / D0.9 \quad (2)$$

相対幹曲線の基本式としては、スギなどの針葉樹で適合性が確認されている 3 次の式を用いました。

$$rd = a1 * rh^3 + a2 * rh^2 + a3 * rh \quad (3)$$

しかし、様々な林分から集めた様々なサイズの個体においては、幹曲線の形状を規定するパラメータ a1~a3 が変化する可能性が考えられます。このため、各パラメータが樹高 Ht と胸高直径 DBH によって線形に変化すると仮定し、式(3)を以下のように変形しました。

$$\begin{aligned} rd = & (a1 + b1 * Ht + c1 * DBH) * rh^3 \\ & + (a2 + b2 * Ht + c2 * DBH) * rh^2 \\ & + (a3 + b3 * Ht + c3 * DBH) * rh \end{aligned} \quad (4)$$

この式(4)の 9 つのパラメータ a1~c3 について、データにもっとも適合する値を計算する手法として、一般化線形混合モデル (GLMM) によるモデル選択という統計手法を用いました。計算の結果、3 次のサイズ影響を表す b1 と c1 を除く全てのパラメータが選択されたことから、樹高と胸高直径がそれぞれ樹形に影響を与えており、それらの影響も加味した曲線式がデータに最も適合している考えることができます。「細り表」は、この計算式に胸高直径と樹高、地上高を入力し、その地上高における直径を算出することによって作成されました。

**【改訂第2版】北海道カラマツ細り表**

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