

# **Tablas de cubicación de clones de chopos**

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## Introducción

La populicultura en Castilla y León adquirió una gran importancia desde que, a partir de los años 1950, las administraciones públicas iniciaran las plantaciones de chopos a gran escala. Entonces, ya existían plantaciones realizadas principalmente por particulares, pero fueron estas administraciones las que extendieron el cultivo de chopos introduciendo el sistema de plantación a raíz profunda, que se había originado en Italia.

En un principio, en las plantaciones de chopos se utilizaron distintas selecciones clonales de *Populus nigra* y *Populus ×euramericana*, pero pronto se impuso la utilización del clon ‘I-214’, debido a las ventajosas características que presenta: se adapta fácilmente a distintos tipos de terrenos siempre que se trate de suelos aluviales, se adapta bien igualmente al clima de Castilla y León, presenta un buen crecimiento y proporciona una madera muy apreciada por la industria de transformación y por los utilizadores. Pero este clon no está exento de algunas desventajas, como su porte flexuoso que da lugar a una pérdida volumétrica en el desarollo superior a la de otros clones, la realización de las podas es complicada para obtener madera de calidad y, sobre todo, es sensible a algunos patógenos de difícil control, especialmente el pulgón lanígero (*Phloeomyzus passerinii*).

Estos inconvenientes de ‘I-214’ llevaron a experimentar otros clones en la región. Para ello, primero el Instituto Nacional de Investigaciones Agrarias (hoy INIA-CSIC) y después la Junta de Castilla y León, establecieron distintas parcelas de ensayo de clones de chopos. En las parcelas controladas por la administración castellano-leonesa se ha evaluado el comportamiento de diferentes clones y su adaptación al medio en distintos hábitats y, con los datos resultantes de las mediciones efectuadas, se ha venido construyendo tablas de cubicación de los clones ensayados.

Las tablas de cubicación se han obtenido a medida que las parcelas de ensayo llegaban a su turno de aprovechamiento y se han ido ajustando cada vez que se tenían datos de una nueva parcela aprovechada. En este documento se presentan las tablas de que se dispone actualmente, que serán actualizadas con los datos de las parcelas que todavía no han llegado al final del turno.

## Construcción de las tablas de cubicación

Las tablas de cubicación son funciones estadísticas que proporcionan el volumen unitario en función de variables individuales del árbol. En nuestro caso, se han tomado como variables el diámetro normal y la altura total de los pies.

Para la obtención de las tablas, se han utilizado los datos de diámetro normal, altura total y volumen con corteza de los árboles en el momento del aprovechamiento. El diámetro normal se ha obtenido midiendo la circunferencia normal (a 1,30 m del suelo) de los árboles antes de su apeo, utilizando cinta métrica y aproximando la medición a 1 mm. La altura total del árbol se ha obtenido con el árbol abatido, midiendo la altura del tocón que quedó en el suelo, la longitud del fuste abatido desde su base hasta alcanzar 8 cm de diámetro en la sección transversal (diámetro en punta delgada) y la longitud del raberón desde esa misma sección hasta el extremo, utilizando cinta métrica y aproximando a 1 cm. El cálculo del volumen con corteza se ha obtenido por cubicación de las trozas de 1 m de longitud con el fuste abatido, aplicando el método de Smalian, hasta alcanzar el diámetro de 8 cm.

Con los datos de diámetro, altura y volumen se ha construido una función de regresión utilizando, en todos los casos, la ecuación de Spurr:

$$v = a_0 + a_1 d^2 h$$

siendo

v: volumen con corteza ( $\text{dm}^3$ )

d: diámetro normal (cm)

h: altura total (m)

Los valores de los parámetros  $a_0$  y  $a_1$  permiten el desarrollo de la tabla de cubicación para cada clon considerado. El cálculo del coeficiente de determinación  $R^2$  proporciona la bondad del ajuste realizado.

## Presentación de las tablas

En las páginas que siguen se presentan las tablas de cubicación construidas para cada clon. Junto con cada tabla figura la ecuación de Spurr que ha resultado, el coeficiente de determinación ( $R^2$ ) estimado, el número de árboles medidos (n) y el número de parcelas (p) en las que se han efectuado las mediciones necesarias.

En cada tabla se dan los valores del volumen con corteza en  $\text{dm}^3$ , en función del diámetro normal, desde 15 cm hasta 50 cm, y de la altura total desde 15 m hasta 35 m. Para valores fuera de este ámbito, podrá utilizarse la ecuación expresada.

En las tablas figura un recinto que determina un campo en color amarillo pálido donde se encuentran los valores reales de diámetro y altura utilizados para su construcción. Los valores del volumen que aparecen fuera de este recinto deben considerarse extrapolaciones.

Los clones incluidos hasta el momento son:

- *Populus nigra*: ‘Anadolu’ (= ‘Tr-56/75’), ‘Italica’.

- *Populus deltoides*: ‘Alcinde’, ‘Harvard’, ‘Lux’, ‘Onda’.
- *Populus ×euramericana*: ‘Agathe F’, ‘A2A’, ‘A3A’, ‘A4A’, ‘B-1M’, ‘Belloto’, ‘Branagesi’, ‘Canadá Blanco’, ‘Canadiense Leonés’, ‘Dorskamp’, ‘Flevo’, ‘Gaver’, ‘Goulet’, ‘Guardi’, ‘Guariento’, ‘Hees’, ‘I-45/51’, ‘I-135/56’, ‘I-214’, ‘I-262’, ‘I-454/40’, ‘I-455’, ‘I-488’, ‘Koster’, ‘Luisa Avanzo’, ‘MC’, ‘Mincio’ (= ‘I-114/69’), ‘Orba’, ‘Pinseque’, ‘Primo’, ‘San Martino’, ‘Ticino’, ‘Triplo’, ‘1-z’, ‘2000 Verde’.
- *Populus ×interamericana*: ‘Beaupré’, ‘Hunnegem’, ‘Raspalje’, ‘Unal’.

En la tabla siguiente figuran las parcelas utilizadas en la construcción de las tablas, el año de aprovechamiento de cada parcela y los clones que incluyen.

**Tabla 1.** Parcelas utilizadas en la construcción de las tablas de cubicación.

| Parcela                         | Año  | Clones  |
|---------------------------------|------|---|
| LE-1 Valencia de Don Juan       | 2002 | B-1M, Branagesi, Canadá Blanco, Flevo, Hunnegem, I-214, I-488, Luisa Avanzo, Lux, MC, Onda, Pinseque, Raspalje, San Martino, Triplo   |
| LE-3 Gradeles                   | 2013 | Flevo, I-214, Luisa Avanzo, MC, Raspalje, Triplo  |
| LE-4 La Milla del Río           | 2017 | Alcinde, Beaupré, Branagesi, Canadiense Leonés, Dorskamp, I-214, Luisa Avanzo, MC, Raspalje, 1-z  |
| LE-5 Valle de Mansilla          | 2022 | Agathe F, Anadolu, A2A, A3A, A4A, Beaupré, Branagesi, Dorskamp, Guardi, I-214, I-454/40, Luisa Avanzo, MC, Orba, Raspalje, Ticino, Triplo, Unal, 2000 Verde                             |
| PA-3 Palenzuela                 | 2011 | Belloto, Gaver, I-214, Luisa Avanzo, MC, Raspalje   |
| SG-1 Cabezuela                  | 2011 | B-1M, Goulet, Guardi, Guariento, I-135/56, I-214, I-455, I-488, Luisa Avanzo, MC, Primo, Triplo, 2000 Verde   |
| SG-2 Muñoveros                  | 2015 | Flevo, I-214, Luisa Avanzo, MC, Raspalje, Triplo  |
| SO-1 Almazán                    | 2006 | Alcinde, B-1M, Beaupré, Branagesi, Canadá Blanco, Canadiense Leonés, Hunnegem, I-45/51, I-214, I-262, I-454/40, I-488, Italica, Luisa Avanzo, Lux, MC, Pinseque, Raspalje, Triplo, Unal |
| VA-2 Zamadueñas                 | 2017 | Agathe F, Belloto, Canadá Blanco, Flevo, Guardi, Harvard, I-214, I-488, Luisa Avanzo, Lux, MC, Mincio, Triplo, 2000 Verde   |
| VA-3 Zamadueñas                 | 2017 | Agathe F, Belloto, Canadá Blanco, Flevo, Guardi, Harvard, I-214, I-488, Luisa Avanzo, Lux, MC, Mincio, Triplo, 2000 Verde   |
| VA-4 Zamadueñas                 | 2017 | I-214, Luisa Avanzo, MC, 2000 Verde   |
| ZA-3 Manganeses de la Polvorosa | 2015 | Hees, I-214, Koster, Luisa Avanzo, MC   |

# Agathe F

(*Populus ×euramericana*)

$$v = 32,6 + 0,0292d^2h$$

$$R^2 = 0,9580$$

$$n = 50$$

$$p = 3$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35 |
|-------|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| 15    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 16    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 17    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 18    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 19    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 20    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 21    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 22    | 245 | 259 | 273 | 287 | 301 | 315  | 329  |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 23    | 264 | 280 | 295 | 311 | 326 | 342  | 357  | 372  | 388  |      |      |      |      |      |      |      |      |      |      |      |    |
| 24    | 285 | 302 | 319 | 335 | 352 | 369  | 386  | 403  | 419  |      |      |      |      |      |      |      |      |      |      |      |    |
| 25    | 306 | 325 | 343 | 361 | 379 | 398  | 416  | 434  | 452  | 471  |      |      |      |      |      |      |      |      |      |      |    |
| 26    | 329 | 348 | 368 | 388 | 408 | 427  | 447  | 467  | 487  | 506  |      |      |      |      |      |      |      |      |      |      |    |
| 27    | 352 | 373 | 394 | 416 | 437 | 458  | 480  | 501  | 522  | 543  |      |      |      |      |      |      |      |      |      |      |    |
| 28    | 376 | 399 | 422 | 445 | 468 | 490  | 513  | 536  | 559  | 582  |      |      |      |      |      |      |      |      |      |      |    |
| 29    |     | 450 | 475 | 499 | 524 | 548  | 573  | 597  | 622  | 647  | 671  | 696  |      |      |      |      |      |      |      |      |    |
| 30    |     | 479 | 506 | 532 | 558 | 584  | 611  | 637  | 663  | 690  | 716  | 742  | 768  | 795  | 821  | 847  | 874  | 900  | 926  | 952  |    |
| 31    |     | 510 | 538 | 566 | 594 | 622  | 650  | 678  | 706  | 734  | 762  | 790  | 818  | 846  | 874  | 902  | 931  | 959  | 987  | 1015 |    |
| 32    |     | 541 | 571 | 601 | 631 | 660  | 690  | 720  | 750  | 780  | 810  | 840  | 870  | 900  | 930  | 960  | 989  | 1019 | 1049 | 1079 |    |
| 33    |     | 573 | 605 | 637 | 669 | 700  | 732  | 764  | 796  | 828  | 859  | 891  | 923  | 955  | 987  | 1018 | 1050 | 1082 | 1114 | 1146 |    |
| 34    |     | 606 | 640 | 674 | 708 | 741  | 775  | 809  | 843  | 876  | 910  | 944  | 978  | 1011 | 1045 | 1079 | 1113 | 1147 | 1180 | 1214 |    |
| 35    |     | 641 | 676 | 712 | 748 | 784  | 820  | 855  | 891  | 927  | 963  | 998  | 1034 | 1070 | 1106 | 1141 | 1177 | 1213 | 1249 | 1285 |    |
| 36    |     |     |     |     | 789 | 827  | 865  | 903  | 941  | 979  | 1017 | 1054 | 1092 | 1130 | 1168 | 1206 | 1244 | 1281 | 1319 | 1357 |    |
| 37    |     |     |     |     | 872 | 912  | 952  | 992  | 1032 | 1072 | 1112 | 1152 | 1192 | 1232 | 1272 | 1312 | 1352 | 1392 | 1432 |      |    |
| 38    |     |     |     |     | 918 | 960  | 1002 | 1045 | 1087 | 1129 | 1171 | 1213 | 1255 | 1298 | 1340 | 1382 | 1424 | 1466 | 1508 |      |    |
| 39    |     |     |     |     | 965 | 1010 | 1054 | 1098 | 1143 | 1187 | 1232 | 1276 | 1321 | 1365 | 1409 | 1454 | 1498 | 1543 | 1587 |      |    |
| 40    |     |     |     |     |     | 1107 | 1154 | 1201 | 1247 | 1294 | 1341 | 1387 | 1434 | 1481 | 1528 | 1574 | 1621 | 1668 |      |      |    |
| 41    |     |     |     |     |     | 1211 | 1260 | 1309 | 1358 | 1407 | 1456 | 1505 | 1554 | 1603 | 1652 | 1701 | 1751 |      |      |      |    |
| 42    |     |     |     |     |     | 1320 | 1372 | 1423 | 1475 | 1526 | 1578 | 1629 | 1681 | 1732 | 1784 | 1835 |      |      |      |      |    |
| 43    |     |     |     |     |     | 1382 | 1436 | 1490 | 1544 | 1598 | 1652 | 1706 | 1760 | 1814 | 1868 | 1922 |      |      |      |      |    |
| 44    |     |     |     |     |     | 1446 | 1502 | 1559 | 1615 | 1672 | 1729 | 1785 | 1842 | 1898 | 1955 | 2011 |      |      |      |      |    |
| 45    |     |     |     |     |     | 1511 | 1570 | 1629 | 1688 | 1747 | 1806 | 1866 | 1925 | 1984 | 2043 | 2102 |      |      |      |      |    |
| 46    |     |     |     |     |     | 1639 | 1701 | 1763 | 1824 | 1886 | 1948 | 2010 | 2072 | 2133 | 2195 |      |      |      |      |      |    |
| 47    |     |     |     |     |     | 1710 | 1774 | 1839 | 1903 | 1968 | 2032 | 2097 | 2161 | 2226 | 2290 |      |      |      |      |      |    |
| 48    |     |     |     |     |     |      |      |      | 1849 | 1916 | 1984 | 2051 | 2118 | 2185 | 2253 | 2320 | 2387 |      |      |      |    |
| 49    |     |     |     |     |     |      |      |      | 1926 | 1996 | 2066 | 2136 | 2206 | 2276 | 2346 | 2416 | 2486 |      |      |      |    |
| 50    |     |     |     |     |     |      |      |      | 2004 | 2077 | 2150 | 2223 | 2296 | 2369 | 2442 | 2515 | 2588 |      |      |      |    |

# Alcinde

(*Populus deltoides*)

$$v = -15,5 + 0,0311d^2h$$

d: diámetro normal (cm)

$$R^2 = 0,9818$$

h: altura total (m)

$$n = 23$$

v: volumen con corteza (dm<sup>3</sup>)

$$p = 2$$

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 27   | 28   | 29   | 30  | 31  | 32 | 33 | 34 | 35 |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|-----|-----|----|----|----|----|
| 15    | 89  | 96  | 103 | 110 | 117 | 124 | 131 | 138 | 145 |     |     |     |      |      |      |     |     |    |    |    |    |
| 16    | 104 | 112 | 120 | 128 | 136 | 144 | 152 | 160 | 168 | 176 | 184 |     |      |      |      |     |     |    |    |    |    |
| 17    | 119 | 128 | 137 | 146 | 155 | 164 | 173 | 182 | 191 | 200 | 209 | 218 | 227  | 236  |      |     |     |    |    |    |    |
| 18    | 136 | 146 | 156 | 166 | 176 | 186 | 196 | 206 | 216 | 226 | 236 | 246 | 257  | 267  |      |     |     |    |    |    |    |
| 19    | 153 | 164 | 175 | 187 | 198 | 209 | 220 | 232 | 243 | 254 | 265 | 276 | 288  | 299  | 310  |     |     |    |    |    |    |
| 20    | 171 | 184 | 196 | 208 | 221 | 233 | 246 | 258 | 271 | 283 | 296 | 308 | 320  | 333  | 345  |     |     |    |    |    |    |
| 21    | 190 | 204 | 218 | 231 | 245 | 259 | 273 | 286 | 300 | 314 | 327 | 341 | 355  | 369  | 382  | 396 | 410 |    |    |    |    |
| 22    | 210 | 225 | 240 | 255 | 271 | 286 | 301 | 316 | 331 | 346 | 361 | 376 | 391  | 406  | 421  | 436 | 451 |    |    |    |    |
| 23    | 231 | 248 | 264 | 281 | 297 | 314 | 330 | 346 | 363 | 379 | 396 | 412 | 429  | 445  | 462  | 478 | 495 |    |    |    |    |
| 24    |     | 271 | 289 | 307 | 325 | 343 | 361 | 379 | 397 | 414 | 432 | 450 | 468  | 486  | 504  | 522 | 540 |    |    |    |    |
| 25    |     | 296 | 315 | 334 | 354 | 373 | 393 | 412 | 432 | 451 | 470 | 490 | 509  | 529  | 548  | 568 | 587 |    |    |    |    |
| 26    |     | 321 | 342 | 363 | 384 | 405 | 426 | 447 | 468 | 489 | 510 | 531 | 552  | 573  | 594  | 615 | 636 |    |    |    |    |
| 27    |     |     |     | 415 | 438 | 461 | 483 | 506 | 529 | 551 | 574 | 597 | 619  | 642  | 665  | 687 |     |    |    |    |    |
| 28    |     |     |     |     |     | 497 | 521 | 545 | 570 | 594 | 618 | 643 | 667  | 692  | 716  | 740 |     |    |    |    |    |
| 29    |     |     |     |     |     | 534 | 560 | 586 | 612 | 638 | 665 | 691 | 717  | 743  | 769  | 795 |     |    |    |    |    |
| 30    |     |     |     |     |     | 572 | 600 | 628 | 656 | 684 | 712 | 740 | 768  | 796  | 824  | 852 |     |    |    |    |    |
| 31    |     |     |     |     |     | 612 | 642 | 672 | 702 | 732 | 762 | 791 | 821  | 851  | 881  | 911 |     |    |    |    |    |
| 32    |     |     |     |     |     |     | 717 | 749 | 781 | 813 | 844 | 876 | 908  | 940  | 972  |     |     |    |    |    |    |
| 33    |     |     |     |     |     |     | 763 | 797 | 831 | 865 | 899 | 933 | 967  | 1001 | 1034 |     |     |    |    |    |    |
| 34    |     |     |     |     |     |     | 811 | 847 | 883 | 919 | 955 | 991 | 1027 | 1063 | 1099 |     |     |    |    |    |    |
| 35    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |
| 36    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |
| 37    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |
| 38    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |
| 39    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |
| 40    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |
| 41    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |
| 42    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |
| 43    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |
| 44    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |
| 45    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |
| 46    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |
| 47    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |
| 48    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |
| 49    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |
| 50    |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |     |     |    |    |    |    |

# Anadolu

(*Populus nigra*)

$$v = -36,3 + 0,0343d^2h$$

$$R^2 = 0,9822$$

$$n = 15$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|
| 15    | 79  | 87  | 95  | 103 | 110 | 118 | 126 | 133 | 141 |     |     |    |    |    |    |    |    |    |    |    |    |
| 16    | 95  | 104 | 113 | 122 | 131 | 139 | 148 | 157 | 166 | 174 | 183 |    |    |    |    |    |    |    |    |    |    |
| 17    | 112 | 122 | 132 | 142 | 152 | 162 | 172 | 182 | 192 | 202 | 211 |    |    |    |    |    |    |    |    |    |    |
| 18    | 130 | 141 | 153 | 164 | 175 | 186 | 197 | 208 | 219 | 230 | 242 |    |    |    |    |    |    |    |    |    |    |
| 19    | 149 | 162 | 174 | 187 | 199 | 211 | 224 | 236 | 248 | 261 | 273 |    |    |    |    |    |    |    |    |    |    |
| 20    |     |     |     | 211 | 224 | 238 | 252 | 266 | 279 | 293 | 307 |    |    |    |    |    |    |    |    |    |    |
| 21    |     |     |     | 236 | 251 | 266 | 281 | 296 | 312 | 327 | 342 |    |    |    |    |    |    |    |    |    |    |
| 22    |     |     |     | 262 | 279 | 296 | 312 | 329 | 346 | 362 | 379 |    |    |    |    |    |    |    |    |    |    |
| 23    |     |     |     | 290 | 308 | 327 | 345 | 363 | 381 | 399 | 417 |    |    |    |    |    |    |    |    |    |    |
| 24    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 25    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 26    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 27    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 28    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 29    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 30    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 31    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 32    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 33    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 34    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 35    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 36    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 37    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 38    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 39    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 40    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 41    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 42    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 43    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 44    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 45    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 46    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 47    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 48    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 49    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 50    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |

## A2A

(*Populus ×euramericana*)

$$v = -25,0 + 0,0320d^2h$$

d: diámetro normal (cm)

$$R^2 = 0,9055$$

h: altura total (m)

$$n = 15$$

v: volumen con corteza (dm<sup>3</sup>)

$$p = 1$$

| d \ h | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35 |
|-------|----|----|----|----|----|----|----|----|----|----|------|------|------|------|------|------|------|------|------|------|----|
| 15    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 16    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 17    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 18    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 19    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 20    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 21    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 22    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 23    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 24    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 25    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 26    |    |    |    |    |    |    |    |    |    |    | 559  | 581  | 602  | 624  | 646  | 667  | 689  | 710  |      |      |    |
| 27    |    |    |    |    |    |    |    |    |    |    | 605  | 628  | 652  | 675  | 698  | 721  | 745  | 768  |      |      |    |
| 28    |    |    |    |    |    |    |    |    |    |    | 652  | 677  | 703  | 728  | 753  | 778  | 803  | 828  | 853  |      |    |
| 29    |    |    |    |    |    |    |    |    |    |    | 702  | 729  | 755  | 782  | 809  | 836  | 863  | 890  | 917  |      |    |
| 30    |    |    |    |    |    |    |    |    |    |    | 753  | 781  | 810  | 839  | 868  | 897  | 925  | 954  | 983  |      |    |
| 31    |    |    |    |    |    |    |    |    |    |    | 805  | 836  | 867  | 898  | 928  | 959  | 990  | 1021 | 1051 |      |    |
| 32    |    |    |    |    |    |    |    |    |    |    | 860  | 892  | 925  | 958  | 991  | 1024 | 1056 | 1089 | 1122 |      |    |
| 33    |    |    |    |    |    |    |    |    |    |    | 916  | 951  | 986  | 1020 | 1055 | 1090 | 1125 | 1160 | 1195 |      |    |
| 34    |    |    |    |    |    |    |    |    |    |    | 1011 | 1048 | 1085 | 1122 | 1159 | 1196 | 1233 | 1270 |      |      |    |
| 35    |    |    |    |    |    |    |    |    |    |    | 1073 | 1112 | 1151 | 1190 | 1229 | 1269 | 1308 | 1347 |      |      |    |
| 36    |    |    |    |    |    |    |    |    |    |    | 1136 | 1178 | 1219 | 1261 | 1302 | 1344 | 1385 | 1427 |      |      |    |
| 37    |    |    |    |    |    |    |    |    |    |    | 1202 | 1245 | 1289 | 1333 | 1377 | 1421 | 1464 | 1508 |      |      |    |
| 38    |    |    |    |    |    |    |    |    |    |    | 1269 | 1315 | 1361 | 1407 | 1454 | 1500 | 1546 | 1592 |      |      |    |
| 39    |    |    |    |    |    |    |    |    |    |    | 1338 | 1386 | 1435 | 1484 | 1532 | 1581 | 1630 | 1679 |      |      |    |
| 40    |    |    |    |    |    |    |    |    |    |    | 1460 | 1511 | 1562 | 1613 | 1665 | 1716 | 1767 |      |      |      |    |
| 41    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      | 1696 | 1750 | 1804 | 1858 |      |    |
| 42    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      | 1781 | 1838 | 1894 | 1951 |    |
| 43    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 44    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 45    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 46    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 47    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 48    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 49    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |
| 50    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |    |

## A3A

(*Populus ×euramericana*)

$$v = 36,0 + 0,0280d^2h$$

$$R^2 = 0,9745$$

$$n = 14$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15 | 16 | 17 | 18 | 19  | 20  | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33 | 34 | 35 |
|-------|----|----|----|----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|----|----|----|
| 15    |    |    |    |    |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 16    |    |    |    |    |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 17    |    |    |    |    |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 18    |    |    |    |    |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 19    |    |    |    |    |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 20    |    |    |    |    |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 21    |    |    |    |    |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 22    |    |    |    |    |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 23    |    |    |    |    |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 24    |    |    |    |    |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 25    |    |    |    |    | 439 | 456 | 474  | 491  | 509  | 526  | 544  | 561  |      |      |      |      |      |      |    |    |    |
| 26    |    |    |    |    | 471 | 490 | 509  | 528  | 547  | 566  | 585  | 604  |      |      |      |      |      |      |    |    |    |
| 27    |    |    |    |    | 505 | 526 | 546  | 567  | 587  | 608  | 628  | 648  |      |      |      |      |      |      |    |    |    |
| 28    |    |    |    |    | 541 | 563 | 585  | 607  | 629  | 651  | 673  | 695  | 717  | 738  |      |      |      |      |    |    |    |
| 29    |    |    |    |    | 578 | 601 | 625  | 648  | 672  | 695  | 719  | 742  | 766  | 790  |      |      |      |      |    |    |    |
| 30    |    |    |    |    | 616 | 641 | 666  | 691  | 716  | 742  | 767  | 792  | 817  | 842  | 868  | 893  | 918  |      |    |    |    |
| 31    |    |    |    |    | 655 | 682 | 709  | 736  | 763  | 789  | 816  | 843  | 870  | 897  | 924  | 951  | 978  |      |    |    |    |
| 32    |    |    |    |    | 695 | 724 | 753  | 781  | 810  | 839  | 868  | 896  | 925  | 954  | 982  | 1011 | 1040 |      |    |    |    |
| 33    |    |    |    |    | 768 | 798 | 829  | 859  | 890  | 920  | 951  | 981  | 1012 | 1042 | 1073 | 1103 |      |      |    |    |    |
| 34    |    |    |    |    | 813 | 845 | 878  | 910  | 942  | 975  | 1007 | 1039 | 1072 | 1104 | 1137 | 1169 |      |      |    |    |    |
| 35    |    |    |    |    | 859 | 894 | 928  | 962  | 996  | 1031 | 1065 | 1099 | 1134 | 1168 | 1202 | 1237 |      |      |    |    |    |
| 36    |    |    |    |    | 907 | 943 | 980  | 1016 | 1052 | 1088 | 1125 | 1161 | 1197 | 1234 | 1270 | 1306 |      |      |    |    |    |
| 37    |    |    |    |    | 956 | 994 | 1033 | 1071 | 1109 | 1148 | 1186 | 1224 | 1263 | 1301 | 1339 | 1378 |      |      |    |    |    |
| 38    |    |    |    |    |     |     |      |      | 1087 | 1128 | 1168 | 1209 | 1249 | 1289 | 1330 | 1370 | 1411 | 1451 |    |    |    |
| 39    |    |    |    |    |     |     |      |      | 1143 | 1186 | 1228 | 1271 | 1314 | 1356 | 1399 | 1441 | 1484 | 1527 |    |    |    |
| 40    |    |    |    |    |     |     |      |      | 1201 | 1246 | 1290 | 1335 | 1380 | 1425 | 1470 | 1514 | 1559 | 1604 |    |    |    |
| 41    |    |    |    |    |     |     |      |      | 1260 | 1307 | 1354 | 1401 | 1448 | 1495 | 1542 | 1589 | 1636 | 1683 |    |    |    |
| 42    |    |    |    |    |     |     |      |      | 1320 | 1370 | 1419 | 1468 | 1518 | 1567 | 1617 | 1666 | 1715 | 1765 |    |    |    |
| 43    |    |    |    |    |     |     |      |      | 1382 | 1434 | 1486 | 1537 | 1589 | 1641 | 1693 | 1744 | 1796 | 1848 |    |    |    |
| 44    |    |    |    |    |     |     |      |      | 1445 | 1500 | 1554 | 1608 | 1662 | 1716 | 1771 | 1825 | 1879 | 1933 |    |    |    |
| 45    |    |    |    |    |     |     |      |      | 1510 | 1567 | 1624 | 1680 | 1737 | 1794 | 1850 | 1907 | 1964 | 2021 |    |    |    |
| 46    |    |    |    |    |     |     |      |      | 1576 | 1636 | 1695 | 1754 | 1813 | 1873 | 1932 | 1991 | 2050 | 2110 |    |    |    |
| 47    |    |    |    |    |     |     |      |      | 1644 | 1706 | 1768 | 1830 | 1892 | 1953 | 2015 | 2077 | 2139 | 2201 |    |    |    |
| 48    |    |    |    |    |     |     |      |      | 1713 | 1778 | 1842 | 1907 | 1971 | 2036 | 2100 | 2165 | 2229 | 2294 |    |    |    |
| 49    |    |    |    |    |     |     |      |      | 1784 | 1851 | 1918 | 1986 | 2053 | 2120 | 2187 | 2255 | 2322 | 2389 |    |    |    |
| 50    |    |    |    |    |     |     |      |      |      | 1926 | 1996 | 2066 | 2136 | 2206 | 2276 | 2346 | 2416 | 2486 |    |    |    |

## A4A

(*Populus ×euramericana*)

$$v = 23,8 + 0,0298d^2h$$

$$R^2 = 0,9716$$

$$n = 15$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15 | 16 | 17 | 18 | 19  | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35 |
|-------|----|----|----|----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| 15    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 16    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 17    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 18    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 19    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 20    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 21    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 22    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 23    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 24    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 25    |    |    |    |    | 434 | 452  | 471  | 489  | 508  | 527  | 545  | 564  |      |      |      |      |      |      |      |      |    |
| 26    |    |    |    |    | 467 | 487  | 507  | 527  | 548  | 568  | 588  | 608  |      |      |      |      |      |      |      |      |    |
| 27    |    |    |    |    | 502 | 523  | 545  | 567  | 589  | 610  | 632  | 654  | 676  |      |      |      |      |      |      |      |    |
| 28    |    |    |    |    | 538 | 561  | 584  | 608  | 631  | 655  | 678  | 701  | 725  |      |      |      |      |      |      |      |    |
| 29    |    |    |    |    | 575 | 600  | 625  | 650  | 675  | 700  | 726  | 751  | 776  |      |      |      |      |      |      |      |    |
| 30    |    |    |    |    | 614 | 641  | 667  | 694  | 721  | 748  | 775  | 802  | 828  | 855  |      |      |      |      |      |      |    |
| 31    |    |    |    |    | 654 | 682  | 711  | 740  | 768  | 797  | 826  | 854  | 883  | 912  | 940  | 969  | 997  | 1026 |      |      |    |
| 32    |    |    |    |    | 695 | 726  | 756  | 787  | 817  | 848  | 878  | 909  | 939  | 970  | 1000 | 1031 | 1061 | 1092 |      |      |    |
| 33    |    |    |    |    | 738 | 770  | 803  | 835  | 868  | 900  | 932  | 965  | 997  | 1030 | 1062 | 1095 | 1127 | 1160 |      |      |    |
| 34    |    |    |    |    | 782 | 816  | 851  | 885  | 919  | 954  | 988  | 1023 | 1057 | 1092 | 1126 | 1161 | 1195 | 1229 |      |      |    |
| 35    |    |    |    |    | 827 | 863  | 900  | 936  | 973  | 1009 | 1046 | 1082 | 1119 | 1155 | 1192 | 1228 | 1265 | 1301 |      |      |    |
| 36    |    |    |    |    | 873 | 912  | 951  | 989  | 1028 | 1067 | 1105 | 1144 | 1182 | 1221 | 1260 | 1298 | 1337 | 1376 |      |      |    |
| 37    |    |    |    |    | 921 | 962  | 1003 | 1044 | 1084 | 1125 | 1166 | 1207 | 1248 | 1288 | 1329 | 1370 | 1411 | 1452 |      |      |    |
| 38    |    |    |    |    | 970 | 1013 | 1057 | 1100 | 1143 | 1186 | 1229 | 1272 | 1315 | 1358 | 1401 | 1444 | 1487 | 1530 |      |      |    |
| 39    |    |    |    |    |     | 1066 | 1112 | 1157 | 1202 | 1248 | 1293 | 1338 | 1384 | 1429 | 1474 | 1520 | 1565 | 1610 |      |      |    |
| 40    |    |    |    |    |     | 1120 | 1168 | 1216 | 1263 | 1311 | 1359 | 1406 | 1454 | 1502 | 1550 | 1597 | 1645 | 1693 |      |      |    |
| 41    |    |    |    |    |     | 1176 | 1226 | 1276 | 1326 | 1376 | 1426 | 1476 | 1527 | 1577 | 1627 | 1677 | 1727 | 1777 |      |      |    |
| 42    |    |    |    |    |     | 1233 | 1285 | 1338 | 1391 | 1443 | 1496 | 1548 | 1601 | 1653 | 1706 | 1758 | 1811 | 1864 |      |      |    |
| 43    |    |    |    |    |     | 1291 | 1346 | 1401 | 1456 | 1511 | 1567 | 1622 | 1677 | 1732 | 1787 | 1842 | 1897 | 1952 |      |      |    |
| 44    |    |    |    |    |     | 1351 | 1408 | 1466 | 1524 | 1581 | 1639 | 1697 | 1755 | 1812 | 1870 | 1928 | 1985 | 2043 |      |      |    |
| 45    |    |    |    |    |     | 1412 | 1472 | 1532 | 1593 | 1653 | 1713 | 1774 | 1834 | 1894 | 1955 | 2015 | 2076 | 2136 |      |      |    |
| 46    |    |    |    |    |     |      |      |      |      |      |      |      |      |      | 1915 | 1979 | 2042 | 2105 | 2168 | 2231 |    |
| 47    |    |    |    |    |     |      |      |      |      |      |      |      |      |      | 1999 | 2064 | 2130 | 2196 | 2262 | 2328 |    |
| 48    |    |    |    |    |     |      |      |      |      |      |      |      |      |      | 2084 | 2152 | 2221 | 2290 | 2358 | 2427 |    |
| 49    |    |    |    |    |     |      |      |      |      |      |      |      |      |      | 2170 | 2242 | 2313 | 2385 | 2456 | 2528 |    |
| 50    |    |    |    |    |     |      |      |      |      |      |      |      |      |      | 2259 | 2333 | 2408 | 2482 | 2557 | 2631 |    |

## B-1M

(*Populus ×euramericana*)

$$v = -115,2 + 0,0371d^2h$$

$$R^2 = 0,9730$$

$$n = 42$$

$$p = 3$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   |
|-------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 15    | 10  | 18  | 27  | 35  | 43  | 52  | 60   | 68   | 77   | 85   | 93   | 102  | 110  | 119  |      |      |      |      |      |      |      |
| 16    | 27  | 37  | 46  | 56  | 65  | 75  | 84   | 94   | 103  | 113  | 122  | 132  | 141  | 151  |      |      |      |      |      |      |      |
| 17    | 46  | 56  | 67  | 78  | 89  | 99  | 110  | 121  | 131  | 142  | 153  | 164  | 174  | 185  |      |      |      |      |      |      |      |
| 18    | 65  | 77  | 89  | 101 | 113 | 125 | 137  | 149  | 161  | 173  | 185  | 197  | 209  | 221  |      |      |      |      |      |      |      |
| 19    | 86  | 99  | 112 | 126 | 139 | 153 | 166  | 179  | 193  | 206  | 220  | 233  | 246  | 260  |      |      |      |      |      |      |      |
| 20    | 107 | 122 | 137 | 152 | 167 | 182 | 196  | 211  | 226  | 241  | 256  | 271  | 285  | 300  |      |      |      |      |      |      |      |
| 21    | 130 | 147 | 163 | 179 | 196 | 212 | 228  | 245  | 261  | 277  | 294  | 310  | 327  | 343  |      |      |      |      |      |      |      |
| 22    | 154 | 172 | 190 | 208 | 226 | 244 | 262  | 280  | 298  | 316  | 334  | 352  | 370  | 388  |      |      |      |      |      |      |      |
| 23    | 179 | 199 | 218 | 238 | 258 | 277 | 297  | 317  | 336  | 356  | 375  | 395  | 415  | 434  |      |      |      |      |      |      |      |
| 24    | 205 | 227 | 248 | 269 | 291 | 312 | 334  | 355  | 376  | 398  | 419  | 440  | 462  | 483  | 505  | 526  | 547  | 569  |      |      |      |
| 25    | 233 | 256 | 279 | 302 | 325 | 349 | 372  | 395  | 418  | 441  | 464  | 488  | 511  | 534  | 557  | 580  | 604  | 627  |      |      |      |
| 26    | 261 | 286 | 311 | 336 | 361 | 386 | 411  | 437  | 462  | 487  | 512  | 537  | 562  | 587  | 612  | 637  | 662  | 687  |      |      |      |
| 27    | 290 | 318 | 345 | 372 | 399 | 426 | 453  | 480  | 507  | 534  | 561  | 588  | 615  | 642  | 669  | 696  | 723  | 750  |      |      |      |
| 28    | 321 | 350 | 379 | 408 | 437 | 467 | 496  | 525  | 554  | 583  | 612  | 641  | 670  | 699  | 728  | 757  | 786  | 816  |      |      |      |
| 29    |     |     | 415 | 446 | 478 | 509 | 540  | 571  | 602  | 634  | 665  | 696  | 727  | 758  | 790  | 821  | 852  | 883  |      |      |      |
| 30    |     |     | 452 | 486 | 519 | 553 | 586  | 619  | 653  | 686  | 720  | 753  | 786  | 820  | 853  | 887  | 920  | 953  |      |      |      |
| 31    |     |     | 491 | 527 | 562 | 598 | 634  | 669  | 705  | 740  | 776  | 812  | 847  | 883  | 919  | 954  | 990  | 1026 |      |      |      |
| 32    |     |     | 531 | 569 | 607 | 645 | 683  | 721  | 759  | 797  | 835  | 873  | 911  | 949  | 987  | 1025 | 1063 | 1100 | 1138 | 1176 |      |
| 33    |     |     | 572 | 612 | 652 | 693 | 733  | 774  | 814  | 854  | 895  | 935  | 976  | 1016 | 1056 | 1097 | 1137 | 1178 | 1218 | 1258 |      |
| 34    |     |     | 614 | 657 | 700 | 743 | 785  | 828  | 871  | 914  | 957  | 1000 | 1043 | 1086 | 1129 | 1171 | 1214 | 1257 | 1300 | 1343 |      |
| 35    |     |     |     |     |     |     | 839  | 885  | 930  | 976  | 1021 | 1066 | 1112 | 1157 | 1203 | 1248 | 1294 | 1339 | 1385 | 1430 |      |
| 36    |     |     |     |     |     |     | 895  | 943  | 991  | 1039 | 1087 | 1135 | 1183 | 1231 | 1279 | 1327 | 1375 | 1423 | 1471 | 1520 | 1568 |
| 37    |     |     |     |     |     |     | 951  | 1002 | 1053 | 1104 | 1155 | 1205 | 1256 | 1307 | 1358 | 1408 | 1459 | 1510 | 1561 | 1612 | 1662 |
| 38    |     |     |     |     |     |     | 1010 | 1063 | 1117 | 1171 | 1224 | 1278 | 1331 | 1385 | 1438 | 1492 | 1546 | 1599 | 1653 | 1706 | 1760 |
| 39    |     |     |     |     |     |     | 1070 | 1126 | 1183 | 1239 | 1296 | 1352 | 1408 | 1465 | 1521 | 1578 | 1634 | 1691 | 1747 | 1803 | 1860 |
| 40    |     |     |     |     |     |     | 1131 | 1191 | 1250 | 1309 | 1369 | 1428 | 1488 | 1547 | 1606 | 1666 | 1725 | 1784 | 1844 | 1903 | 1962 |
| 41    |     |     |     |     |     |     | 1194 | 1257 | 1319 | 1382 | 1444 | 1506 | 1569 | 1631 | 1693 | 1756 | 1818 | 1880 | 1943 | 2005 | 2068 |
| 42    |     |     |     |     |     |     |      |      |      |      |      | 1586 | 1652 | 1717 | 1783 | 1848 | 1914 | 1979 | 2044 | 2110 | 2175 |
| 43    |     |     |     |     |     |     |      |      |      |      |      | 1668 | 1737 | 1806 | 1874 | 1943 | 2011 | 2080 | 2149 | 2217 | 2286 |
| 44    |     |     |     |     |     |     |      |      |      |      |      | 1752 | 1824 | 1896 | 1968 | 2040 | 2111 | 2183 | 2255 | 2327 | 2399 |
| 45    |     |     |     |     |     |     |      |      |      |      |      | 1838 | 1913 | 1988 | 2063 | 2139 | 2214 | 2289 | 2364 | 2439 | 2514 |
| 46    |     |     |     |     |     |     |      |      |      |      |      | 1926 | 2004 | 2083 | 2161 | 2240 | 2318 | 2397 | 2475 | 2554 | 2632 |
| 47    |     |     |     |     |     |     |      |      |      |      |      | 2016 | 2098 | 2180 | 2261 | 2343 | 2425 | 2507 | 2589 | 2671 | 2753 |
| 48    |     |     |     |     |     |     |      |      |      |      |      | 2107 | 2193 | 2278 | 2364 | 2449 | 2535 | 2620 | 2706 | 2791 | 2877 |
| 49    |     |     |     |     |     |     |      |      |      |      |      | 2201 | 2290 | 2379 | 2468 | 2557 | 2646 | 2735 | 2824 | 2913 | 3002 |
| 50    |     |     |     |     |     |     |      |      |      |      |      | 2296 | 2389 | 2482 | 2575 | 2667 | 2760 | 2853 | 2946 | 3038 | 3131 |

# Beaupré

(*Populus ×interamericana*)

$$v = -4,8 + 0,0301d^2h$$

$$R^2 = 0,9897$$

$$n = 58$$

$$p = 3$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15 | 16  | 17  | 18  | 19  | 20  | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   |      |
|-------|----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 15    |    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 16    |    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 17    |    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 18    |    | 151 | 161 | 171 | 181 | 190 | 200  | 210  | 220  | 229  |      |      |      |      |      |      |      |      |      |      |      |      |
| 19    |    | 169 | 180 | 191 | 202 | 213 | 223  | 234  | 245  | 256  | 267  | 278  | 289  | 299  |      |      |      |      |      |      |      |      |
| 20    |    | 188 | 200 | 212 | 224 | 236 | 248  | 260  | 272  | 284  | 296  | 308  | 320  | 332  |      |      |      |      |      |      |      |      |
| 21    |    | 208 | 221 | 234 | 247 | 261 | 274  | 287  | 301  | 314  | 327  | 340  | 354  | 367  |      |      |      |      |      |      |      |      |
| 22    |    | 228 | 243 | 257 | 272 | 287 | 301  | 316  | 330  | 345  | 359  | 374  | 389  | 403  |      |      |      |      |      |      |      |      |
| 23    |    | 250 | 266 | 282 | 298 | 314 | 330  | 346  | 361  | 377  | 393  | 409  | 425  | 441  | 457  | 473  | 489  |      |      |      |      |      |
| 24    |    | 273 | 290 | 307 | 325 | 342 | 359  | 377  | 394  | 411  | 429  | 446  | 463  | 481  | 498  | 515  | 533  |      |      |      |      |      |
| 25    |    | 296 | 315 | 334 | 353 | 371 | 390  | 409  | 428  | 447  | 466  | 484  | 503  | 522  | 541  | 560  | 578  |      |      |      |      |      |
| 26    |    | 321 | 341 | 361 | 382 | 402 | 423  | 443  | 463  | 484  | 504  | 524  | 545  | 565  | 585  | 606  | 626  | 646  |      |      |      |      |
| 27    |    | 346 | 368 | 390 | 412 | 434 | 456  | 478  | 500  | 522  | 544  | 566  | 588  | 610  | 632  | 654  | 675  | 697  | 719  |      |      |      |
| 28    |    |     | 396 | 420 | 444 | 467 | 491  | 514  | 538  | 562  | 585  | 609  | 632  | 656  | 680  | 703  | 727  | 750  | 774  |      |      |      |
| 29    |    |     |     | 451 | 476 | 502 | 527  | 552  | 577  | 603  | 628  | 653  | 679  | 704  | 729  | 755  | 780  | 805  | 831  |      |      |      |
| 30    |    |     |     | 483 | 510 | 537 | 564  | 591  | 618  | 645  | 672  | 700  | 727  | 754  | 781  | 808  | 835  | 862  | 889  |      |      |      |
| 31    |    |     |     |     | 516 | 545 | 574  | 603  | 632  | 661  | 689  | 718  | 747  | 776  | 805  | 834  | 863  | 892  | 921  | 950  |      |      |
| 32    |    |     |     |     | 550 | 581 | 612  | 642  | 673  | 704  | 735  | 766  | 797  | 827  | 858  | 889  | 920  | 951  | 982  | 1012 |      |      |
| 33    |    |     |     |     |     | 618 | 651  | 684  | 716  | 749  | 782  | 815  | 847  | 880  | 913  | 946  | 979  | 1011 | 1044 | 1077 | 1110 |      |
| 34    |    |     |     |     |     | 656 | 691  | 726  | 761  | 796  | 830  | 865  | 900  | 935  | 970  | 1004 | 1039 | 1074 | 1109 | 1143 | 1178 | 1213 |
| 35    |    |     |     |     |     | 696 | 733  | 770  | 806  | 843  | 880  | 917  | 954  | 991  | 1028 | 1065 | 1101 | 1138 | 1175 | 1212 | 1249 | 1286 |
| 36    |    |     |     |     |     | 736 | 775  | 814  | 853  | 892  | 931  | 970  | 1009 | 1048 | 1087 | 1127 | 1166 | 1205 | 1244 | 1283 | 1322 | 1361 |
| 37    |    |     |     |     |     | 778 | 819  | 861  | 902  | 943  | 984  | 1025 | 1067 | 1108 | 1149 | 1190 | 1231 | 1273 | 1314 | 1355 | 1396 | 1437 |
| 38    |    |     |     |     |     | 821 | 865  | 908  | 951  | 995  | 1038 | 1082 | 1125 | 1169 | 1212 | 1256 | 1299 | 1343 | 1386 | 1430 | 1473 | 1516 |
| 39    |    |     |     |     |     |     | 957  | 1002 | 1048 | 1094 | 1140 | 1196 | 1231 | 1277 | 1323 | 1369 | 1414 | 1460 | 1506 | 1552 | 1598 |      |
| 40    |    |     |     |     |     |     | 1007 | 1055 | 1103 | 1151 | 1199 | 1247 | 1296 | 1344 | 1392 | 1440 | 1488 | 1536 | 1585 | 1633 | 1681 |      |
| 41    |    |     |     |     |     |     |      |      |      |      | 1210 | 1260 | 1311 | 1361 | 1412 | 1463 | 1513 | 1564 | 1614 | 1665 | 1716 | 1766 |
| 42    |    |     |     |     |     |     |      |      |      |      | 1270 | 1323 | 1376 | 1429 | 1482 | 1535 | 1588 | 1641 | 1694 | 1747 | 1801 | 1854 |
| 43    |    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      | 1665 | 1721 | 1776 | 1832 | 1887 | 1943 |
| 44    |    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      | 1743 | 1802 | 1860 | 1918 | 1977 | 2035 |
| 45    |    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      | 1824 | 1885 | 1946 | 2007 | 2068 | 2129 |
| 46    |    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      | 1906 | 1970 | 2033 | 2097 | 2161 | 2224 |
| 47    |    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      | 1990 | 2056 | 2123 | 2189 | 2256 | 2322 |
| 48    |    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      | 2076 | 2145 | 2214 | 2284 | 2353 | 2422 |
| 49    |    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      | 2163 | 2236 | 2308 | 2380 | 2452 | 2525 |
| 50    |    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      | 2328 | 2403 | 2478 | 2554 | 2629 |      |

# Belloto

(*Populus ×euramericana*)

$$v = -52,8 + 0,0345d^2h$$

$$R^2 = 0,9848$$

$$n = 71$$

$$p = 3$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   |
|-------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 15    | 64  | 71  | 79  | 87  | 95  | 102 | 110  | 118  | 126  |      |      |      |      |      |      |      |      |      |      |      |      |
| 16    | 80  | 89  | 97  | 106 | 115 | 124 | 133  | 142  | 150  | 159  | 168  |      |      |      |      |      |      |      |      |      |      |
| 17    | 97  | 107 | 117 | 127 | 137 | 147 | 157  | 167  | 177  | 187  | 197  |      |      |      |      |      |      |      |      |      |      |
| 18    | 115 | 126 | 137 | 148 | 160 | 171 | 182  | 193  | 204  | 216  | 227  | 238  | 249  |      |      |      |      |      |      |      |      |
| 19    | 134 | 147 | 159 | 171 | 184 | 196 | 209  | 221  | 234  | 246  | 259  | 271  | 284  |      |      |      |      |      |      |      |      |
| 20    | 154 | 168 | 182 | 196 | 209 | 223 | 237  | 251  | 265  | 278  | 292  | 306  | 320  | 334  |      |      |      |      |      |      |      |
| 21    | 175 | 191 | 206 | 221 | 236 | 252 | 267  | 282  | 297  | 312  | 328  | 343  | 358  | 373  |      |      |      |      |      |      |      |
| 22    | 198 | 214 | 231 | 248 | 265 | 281 | 298  | 315  | 331  | 348  | 365  | 381  | 398  | 415  | 431  | 448  | 465  | 482  |      |      |      |
| 23    | 221 | 239 | 257 | 276 | 294 | 312 | 331  | 349  | 367  | 385  | 404  | 422  | 440  | 458  | 477  | 495  | 513  | 531  |      |      |      |
| 24    | 245 | 265 | 285 | 305 | 325 | 345 | 365  | 384  | 404  | 424  | 444  | 464  | 484  | 504  | 524  | 543  | 563  | 583  |      |      |      |
| 25    | 271 | 292 | 314 | 335 | 357 | 378 | 400  | 422  | 443  | 465  | 486  | 508  | 529  | 551  | 573  | 594  | 616  | 637  |      |      |      |
| 26    | 297 | 320 | 344 | 367 | 390 | 414 | 437  | 460  | 484  | 507  | 530  | 554  | 577  | 600  | 624  | 647  | 670  | 694  |      |      |      |
| 27    | 324 | 350 | 375 | 400 | 425 | 450 | 475  | 501  | 526  | 551  | 576  | 601  | 626  | 651  | 677  | 702  | 727  | 752  |      |      |      |
| 28    | 353 | 380 | 407 | 434 | 461 | 488 | 515  | 542  | 569  | 596  | 623  | 650  | 678  | 705  | 732  | 759  | 786  | 813  |      |      |      |
| 29    | 382 | 411 | 440 | 470 | 499 | 528 | 557  | 586  | 615  | 644  | 673  | 702  | 731  | 760  | 789  | 818  | 847  | 876  |      |      |      |
| 30    |     | 444 | 475 | 506 | 537 | 568 | 599  | 630  | 661  | 692  | 723  | 755  | 786  | 817  | 848  | 879  | 910  | 941  |      |      |      |
| 31    |     |     | 544 | 577 | 610 | 643 | 677  | 710  | 743  | 776  | 809  | 842  | 876  | 909  | 942  | 975  | 1008 |      |      |      |      |
| 32    |     |     |     | 583 | 618 | 654 | 689  | 724  | 760  | 795  | 830  | 866  | 901  | 936  | 972  | 1007 | 1042 | 1078 |      |      |      |
| 33    |     |     |     | 624 | 661 | 699 | 736  | 774  | 811  | 849  | 887  | 924  | 962  | 999  | 1037 | 1074 | 1112 | 1149 |      |      |      |
| 34    |     |     |     | 665 | 705 | 745 | 785  | 825  | 865  | 904  | 944  | 984  | 1024 | 1064 | 1104 | 1144 | 1184 | 1223 | 1263 | 1303 | 1343 |
| 35    |     |     |     | 708 | 750 | 792 | 835  | 877  | 919  | 962  | 1004 | 1046 | 1088 | 1131 | 1173 | 1215 | 1257 | 1300 | 1342 | 1384 | 1426 |
| 36    |     |     |     | 752 | 797 | 841 | 886  | 931  | 976  | 1020 | 1065 | 1110 | 1154 | 1199 | 1244 | 1289 | 1333 | 1378 | 1423 | 1467 | 1512 |
| 37    |     |     |     |     |     |     | 986  | 1034 | 1081 | 1128 | 1175 | 1222 | 1270 | 1317 | 1364 | 1411 | 1459 | 1506 | 1553 | 1600 |      |
| 38    |     |     |     |     |     |     | 1043 | 1093 | 1143 | 1193 | 1243 | 1292 | 1342 | 1392 | 1442 | 1492 | 1541 | 1591 | 1641 | 1691 |      |
| 39    |     |     |     |     |     |     | 1102 | 1154 | 1207 | 1259 | 1312 | 1364 | 1417 | 1469 | 1521 | 1574 | 1626 | 1679 | 1731 | 1784 |      |
| 40    |     |     |     |     |     |     |      |      | 1327 | 1382 | 1438 | 1493 | 1548 | 1603 | 1658 | 1714 | 1769 | 1824 | 1879 |      |      |
| 41    |     |     |     |     |     |     |      |      |      |      |      |      |      |      | 1745 | 1803 | 1861 | 1919 | 1977 |      |      |
| 42    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 43    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 44    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 45    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 46    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 47    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 48    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 49    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 50    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

# Branagesi

(*Populus ×euramericana*)

$$v = 45,3 + 0,0294d^2h$$

$$R^2 = 0,9779$$

$$n = 71$$

$$p = 4$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20   | 21   | 22   | 23  | 24  | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   |
|-------|-----|-----|-----|-----|-----|------|------|------|-----|-----|------|------|------|------|------|------|------|------|------|------|------|
| 15    | 145 | 151 | 158 | 164 | 171 | 178  | 184  | 191  | 197 |     |      |      |      |      |      |      |      |      |      |      |      |
| 16    | 158 | 166 | 173 | 181 | 188 | 196  | 203  | 211  | 218 |     |      |      |      |      |      |      |      |      |      |      |      |
| 17    | 173 | 181 | 190 | 198 | 207 | 215  | 224  | 232  | 241 |     |      |      |      |      |      |      |      |      |      |      |      |
| 18    | 188 | 198 | 207 | 217 | 226 | 236  | 245  | 255  | 264 |     |      |      |      |      |      |      |      |      |      |      |      |
| 19    | 204 | 215 | 226 | 236 | 247 | 258  | 268  | 279  | 289 |     |      |      |      |      |      |      |      |      |      |      |      |
| 20    | 222 | 233 | 245 | 257 | 269 | 280  | 292  | 304  | 316 | 328 | 339  | 351  | 363  | 375  |      |      |      |      |      |      |      |
| 21    | 240 | 253 | 266 | 279 | 292 | 305  | 318  | 331  | 343 | 356 | 369  | 382  | 395  | 408  |      |      |      |      |      |      |      |
| 22    | 259 | 273 | 287 | 301 | 316 | 330  | 344  | 358  | 373 | 387 | 401  | 415  | 429  | 444  |      |      |      |      |      |      |      |
| 23    | 279 | 294 | 310 | 325 | 341 | 356  | 372  | 387  | 403 | 419 | 434  | 450  | 465  | 481  |      |      |      |      |      |      |      |
| 24    | 299 | 316 | 333 | 350 | 367 | 384  | 401  | 418  | 435 | 452 | 469  | 486  | 503  | 519  |      |      |      |      |      |      |      |
| 25    | 321 | 339 | 358 | 376 | 394 | 413  | 431  | 450  | 468 | 486 | 505  | 523  | 541  | 560  | 578  |      |      |      |      |      |      |
| 26    | 343 | 363 | 383 | 403 | 423 | 443  | 463  | 483  | 502 | 522 | 542  | 562  | 582  | 602  | 622  |      |      |      |      |      |      |
| 27    | 367 | 388 | 410 | 431 | 453 | 474  | 495  | 517  | 538 | 560 | 581  | 603  | 624  | 645  | 667  | 688  | 710  | 731  | 753  | 774  | 795  |
| 28    | 391 | 414 | 437 | 460 | 483 | 506  | 529  | 552  | 575 | 598 | 622  | 645  | 668  | 691  | 714  | 737  | 760  | 783  | 806  | 829  | 852  |
| 29    |     |     |     |     |     | 466  | 490  | 515  | 540 | 565 | 589  | 614  | 639  | 663  | 688  | 713  | 738  | 762  | 787  | 812  | 837  |
| 30    |     |     |     |     |     | 495  | 522  | 548  | 574 | 601 | 627  | 654  | 680  | 707  | 733  | 760  | 786  | 813  | 839  | 866  | 892  |
| 31    |     |     |     |     |     | 526  | 554  | 582  | 610 | 639 | 667  | 695  | 723  | 752  | 780  | 808  | 836  | 865  | 893  | 921  | 949  |
| 32    |     |     |     |     |     | 617  | 647  | 678  | 708 |     | 738  | 768  | 798  | 828  | 858  | 888  | 918  | 948  | 979  | 1009 | 1039 |
| 33    |     |     |     |     |     | 654  | 686  | 718  | 750 |     | 782  | 814  | 846  | 878  | 910  | 942  | 974  | 1006 | 1038 | 1070 | 1102 |
| 34    |     |     |     |     |     | 691  | 725  | 759  | 793 |     | 827  | 861  | 895  | 929  | 963  | 997  | 1031 | 1065 | 1099 | 1133 | 1167 |
| 35    |     |     |     |     |     | 730  | 766  | 802  | 838 |     | 874  | 910  | 946  | 982  | 1018 | 1054 | 1090 | 1126 | 1162 | 1198 | 1234 |
| 36    |     |     |     |     |     | 807  | 845  | 884  | 922 |     | 960  | 998  | 1036 | 1074 | 1112 | 1150 | 1188 | 1226 | 1265 | 1303 | 1341 |
| 37    |     |     |     |     |     | 850  | 891  | 931  | 971 |     | 1011 | 1052 | 1092 | 1132 | 1172 | 1213 | 1253 | 1293 | 1333 | 1373 | 1414 |
| 38    |     |     |     |     |     | 979  | 1022 | 1064 |     |     | 1107 | 1149 | 1192 | 1234 | 1276 | 1319 | 1361 | 1404 | 1446 | 1489 | 1531 |
| 39    |     |     |     |     |     | 1029 | 1074 | 1119 |     |     | 1163 | 1208 | 1253 | 1297 | 1342 | 1387 | 1432 | 1476 | 1521 | 1566 | 1610 |
| 40    |     |     |     |     |     | 1080 | 1127 | 1174 |     |     | 1221 | 1268 | 1315 | 1362 | 1409 | 1456 | 1504 | 1551 | 1598 | 1645 | 1692 |
| 41    |     |     |     |     |     | 1133 | 1182 | 1231 |     |     | 1281 | 1330 | 1380 | 1429 | 1479 | 1528 | 1577 | 1627 | 1676 | 1726 | 1775 |
| 42    |     |     |     |     |     | 1186 | 1238 | 1290 |     |     | 1342 | 1394 | 1446 | 1497 | 1549 | 1601 | 1653 | 1705 | 1757 | 1809 | 1860 |
| 43    |     |     |     |     |     | 1350 | 1404 | 1459 |     |     | 1513 | 1567 | 1622 | 1676 | 1730 | 1785 | 1839 | 1894 | 1948 |      |      |
| 44    |     |     |     |     |     | 1411 | 1468 | 1525 |     |     | 1582 | 1639 | 1696 | 1753 | 1810 | 1867 | 1924 | 1981 | 2037 |      |      |
| 45    |     |     |     |     |     | 1534 | 1593 | 1653 |     |     | 1712 | 1772 | 1831 | 1891 | 1950 | 2010 | 2069 | 2129 |      |      |      |
| 46    |     |     |     |     |     |      |      |      |     |     |      |      |      | 1787 | 1849 | 1912 | 1974 | 2036 | 2098 | 2160 | 2223 |
| 47    |     |     |     |     |     |      |      |      |     |     |      |      |      |      | 1929 | 1994 | 2059 | 2124 | 2188 | 2253 | 2318 |
| 48    |     |     |     |     |     |      |      |      |     |     |      |      |      |      | 2010 | 2077 | 2145 | 2213 | 2281 | 2348 | 2416 |
| 49    |     |     |     |     |     |      |      |      |     |     |      |      |      |      | 2092 | 2163 | 2234 | 2304 | 2375 | 2445 | 2516 |
| 50    |     |     |     |     |     |      |      |      |     |     |      |      |      |      | 2177 | 2250 | 2324 | 2397 | 2471 | 2544 | 2618 |

# Canadá Blanco

(*Populus ×euramericana*)

$$v = 15,5 + 0,0301d^2h$$

$$R^2 = 0,9752$$

$$n = 69$$

$$p = 4$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   |      |      |      |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 15    | 117 | 124 | 131 | 137 | 144 | 151 | 158 | 164 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 16    | 131 | 139 | 146 | 154 | 162 | 170 | 177 | 185 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 17    | 146 | 155 | 163 | 172 | 181 | 189 | 198 | 207 | 216  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 18    | 162 | 172 | 181 | 191 | 201 | 211 | 220 | 230 | 240  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 19    | 178 | 189 | 200 | 211 | 222 | 233 | 244 | 255 | 265  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 20    | 196 | 208 | 220 | 232 | 244 | 256 | 268 | 280 | 292  | 304  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 21    | 215 | 228 | 241 | 254 | 268 | 281 | 294 | 307 | 321  | 334  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 22    | 234 | 249 | 263 | 278 | 292 | 307 | 321 | 336 | 351  | 365  | 380  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 23    | 254 | 270 | 286 | 302 | 318 | 334 | 350 | 366 | 382  | 398  | 414  | 429  | 445  |      |      |      |      |      |      |      |      |      |      |      |
| 24    | 276 | 293 | 310 | 328 | 345 | 362 | 380 | 397 | 414  | 432  | 449  | 466  | 484  |      |      |      |      |      |      |      |      |      |      |      |
| 25    | 298 | 316 | 335 | 354 | 373 | 392 | 411 | 429 | 448  | 467  | 486  | 505  | 523  | 542  | 561  | 580  | 599  |      |      |      |      |      |      |      |
| 26    | 321 | 341 | 361 | 382 | 402 | 422 | 443 | 463 | 483  | 504  | 524  | 545  | 565  | 585  | 606  | 626  | 646  |      |      |      |      |      |      |      |
| 27    | 367 | 388 | 410 | 432 | 454 | 476 | 498 | 520 | 542  | 564  | 586  | 608  | 630  | 652  | 674  | 696  |      |      |      |      |      |      |      |      |
| 28    | 393 | 417 | 440 | 464 | 487 | 511 | 535 | 558 | 582  | 605  | 629  | 653  | 676  | 700  | 723  | 747  |      |      |      |      |      |      |      |      |
| 29    | 420 | 446 | 471 | 496 | 522 | 547 | 572 | 598 | 623  | 648  | 674  | 699  | 724  | 750  | 775  | 800  |      |      |      |      |      |      |      |      |
| 30    |     | 476 | 503 | 530 | 557 | 584 | 611 | 639 | 666  | 693  | 720  | 747  | 774  | 801  | 828  | 855  |      |      |      |      |      |      |      |      |
| 31    |     | 507 | 536 | 565 | 594 | 623 | 652 | 681 | 710  | 739  | 768  | 796  | 825  | 854  | 883  | 912  |      |      |      |      |      |      |      |      |
| 32    |     | 539 | 570 | 601 | 632 | 663 | 694 | 724 | 755  | 786  | 817  | 848  | 878  | 909  | 940  | 971  |      |      |      |      |      |      |      |      |
| 33    |     |     | 605 | 638 | 671 | 704 | 737 | 769 | 802  | 835  | 868  | 900  | 933  | 966  | 999  | 1032 |      |      |      |      |      |      |      |      |
| 34    |     |     |     | 642 | 677 | 711 | 746 | 781 | 816  | 851  | 885  | 920  | 955  | 990  | 1025 | 1059 | 1094 | 1129 | 1164 | 1199 | 1233 |      |      |      |
| 35    |     |     |     |     | 679 | 716 | 753 | 790 | 827  | 864  | 900  | 937  | 974  | 1011 | 1048 | 1085 | 1122 | 1159 | 1195 | 1232 | 1269 | 1306 |      |      |
| 36    |     |     |     |     |     | 796 | 835 | 874 | 913  | 952  | 991  | 1030 | 1069 | 1108 | 1147 | 1186 | 1225 | 1264 | 1303 | 1342 | 1381 |      |      |      |
| 37    |     |     |     |     |     |     | 840 | 881 | 922  | 963  | 1004 | 1046 | 1087 | 1128 | 1169 | 1210 | 1252 | 1293 | 1334 | 1375 | 1417 | 1458 |      |      |
| 38    |     |     |     |     |     |     | 885 | 928 | 972  | 1015 | 1059 | 1102 | 1146 | 1189 | 1232 | 1276 | 1319 | 1363 | 1406 | 1450 | 1493 | 1537 |      |      |
| 39    |     |     |     |     |     |     |     | 931 | 977  | 1023 | 1068 | 1114 | 1160 | 1206 | 1252 | 1297 | 1343 | 1389 | 1435 | 1480 | 1526 | 1572 | 1618 |      |
| 40    |     |     |     |     |     |     |     |     | 1027 | 1075 | 1123 | 1171 | 1219 | 1268 | 1316 | 1364 | 1412 | 1460 | 1508 | 1557 | 1605 | 1653 | 1701 |      |
| 41    |     |     |     |     |     |     |     |     |      | 1078 | 1129 | 1179 | 1230 | 1280 | 1331 | 1382 | 1432 | 1483 | 1533 | 1584 | 1635 | 1685 | 1736 | 1786 |
| 42    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 43    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 44    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 45    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 46    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 47    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 48    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 49    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 50    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

# Canadiense Leonés

(*Populus ×euramericana*)

$$v = 68,0 + 0,0262d^2h$$

d: diámetro normal (cm)

$$R^2 = 0,9823$$

h: altura total (m)

$$n = 18$$

v: volumen con corteza (dm<sup>3</sup>)

$$p = 2$$

| d \ h | 15 | 16  | 17  | 18  | 19  | 20  | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
|-------|----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|----|----|----|----|----|----|----|----|
| 15    |    |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |    |    |    |    |
| 16    |    | 175 | 182 | 189 | 195 | 202 | 209  | 216  | 222  |      |      |      |      |    |    |    |    |    |    |    |    |
| 17    |    | 189 | 197 | 204 | 212 | 219 | 227  | 235  | 242  |      |      |      |      |    |    |    |    |    |    |    |    |
| 18    |    | 204 | 212 | 221 | 229 | 238 | 246  | 255  | 263  |      |      |      |      |    |    |    |    |    |    |    |    |
| 19    |    | 219 | 229 | 238 | 248 | 257 | 267  | 276  | 286  |      |      |      |      |    |    |    |    |    |    |    |    |
| 20    |    | 236 | 246 | 257 | 267 | 278 | 288  | 299  | 309  | 320  | 330  | 340  |      |    |    |    |    |    |    |    |    |
| 21    |    | 253 | 264 | 276 | 288 | 299 | 311  | 322  | 334  | 345  | 357  | 368  |      |    |    |    |    |    |    |    |    |
| 22    |    | 271 | 284 | 296 | 309 | 322 | 334  | 347  | 360  | 372  | 385  | 398  |      |    |    |    |    |    |    |    |    |
| 23    |    | 290 | 304 | 317 | 331 | 345 | 359  | 373  | 387  | 401  | 415  | 428  |      |    |    |    |    |    |    |    |    |
| 24    |    | 325 | 340 | 355 | 370 | 385 | 400  | 415  | 430  | 445  | 460  |      |      |    |    |    |    |    |    |    |    |
| 25    |    | 346 | 363 | 379 | 396 | 412 | 428  | 445  | 461  | 477  | 494  | 510  |      |    |    |    |    |    |    |    |    |
| 26    |    | 369 | 387 | 405 | 422 | 440 | 458  | 475  | 493  | 511  | 529  | 546  |      |    |    |    |    |    |    |    |    |
| 27    |    | 393 | 412 | 431 | 450 | 469 | 488  | 507  | 526  | 546  | 565  | 584  |      |    |    |    |    |    |    |    |    |
| 28    |    |     | 438 | 458 | 479 | 499 | 520  | 540  | 561  | 582  | 602  | 623  |      |    |    |    |    |    |    |    |    |
| 29    |    |     | 465 | 487 | 509 | 531 | 553  | 575  | 597  | 619  | 641  | 663  | 685  |    |    |    |    |    |    |    |    |
| 30    |    |     | 492 | 516 | 540 | 563 | 587  | 610  | 634  | 658  | 681  | 705  | 728  |    |    |    |    |    |    |    |    |
| 31    |    |     | 521 | 546 | 572 | 597 | 622  | 647  | 672  | 697  | 723  | 748  | 773  |    |    |    |    |    |    |    |    |
| 32    |    |     | 551 | 578 | 605 | 631 | 658  | 685  | 712  | 739  | 766  | 792  | 819  |    |    |    |    |    |    |    |    |
| 33    |    |     |     | 639 | 667 | 696 | 724  | 753  | 781  | 810  | 838  | 867  | 895  |    |    |    |    |    |    |    |    |
| 34    |    |     |     | 674 | 704 | 734 | 765  | 795  | 825  | 855  | 886  | 916  | 946  |    |    |    |    |    |    |    |    |
| 35    |    |     |     | 710 | 742 | 774 | 806  | 838  | 870  | 902  | 935  | 967  | 999  |    |    |    |    |    |    |    |    |
| 36    |    |     |     | 747 | 781 | 815 | 849  | 883  | 917  | 951  | 985  | 1019 | 1053 |    |    |    |    |    |    |    |    |
| 37    |    |     |     |     | 857 | 893 | 929  | 965  | 1001 | 1036 | 1072 | 1108 |      |    |    |    |    |    |    |    |    |
| 38    |    |     |     |     | 900 | 938 | 976  | 1014 | 1052 | 1090 | 1127 | 1165 |      |    |    |    |    |    |    |    |    |
| 39    |    |     |     |     |     | 945 | 985  | 1024 | 1064 | 1104 | 1144 | 1184 | 1224 |    |    |    |    |    |    |    |    |
| 40    |    |     |     |     |     | 990 | 1032 | 1074 | 1116 | 1158 | 1200 | 1242 | 1284 |    |    |    |    |    |    |    |    |
| 41    |    |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |    |    |    |    |
| 42    |    |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |    |    |    |    |
| 43    |    |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |    |    |    |    |
| 44    |    |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |    |    |    |    |
| 45    |    |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |    |    |    |    |
| 46    |    |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |    |    |    |    |
| 47    |    |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |    |    |    |    |
| 48    |    |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |    |    |    |    |
| 49    |    |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |    |    |    |    |
| 50    |    |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |    |    |    |    |

# Dorskamp

(*Populus ×euramericana*)

$$v = -42,5 + 0,0331d^2h$$

$$R^2 = 0,9836$$

$$n = 41$$

$$p = 2$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35 |
|-------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| 15    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 16    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 17    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 18    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 19    | 149 | 161 | 173 | 185 | 197 | 208 | 220  | 232  | 244  |      |      |      |      |      |      |      |      |      |      |      |    |
| 20    | 169 | 183 | 196 | 209 | 222 | 236 | 249  | 262  | 275  |      |      |      |      |      |      |      |      |      |      |      |    |
| 21    | 191 | 206 | 220 | 235 | 249 | 264 | 279  | 293  | 308  | 322  |      |      |      |      |      |      |      |      |      |      |    |
| 22    | 214 | 230 | 246 | 262 | 278 | 294 | 310  | 326  | 342  | 358  | 374  | 390  | 406  | 422  |      |      |      |      |      |      |    |
| 23    | 238 | 255 | 273 | 290 | 308 | 325 | 343  | 360  | 378  | 395  | 413  | 430  | 448  | 465  | 483  |      |      |      |      |      |    |
| 24    | 263 | 282 | 301 | 320 | 339 | 358 | 377  | 396  | 415  | 434  | 453  | 472  | 491  | 510  | 529  |      |      |      |      |      |    |
| 25    | 289 | 309 | 330 | 351 | 371 | 392 | 413  | 433  | 454  | 475  | 495  | 516  | 537  | 557  | 578  |      |      |      |      |      |    |
| 26    | 316 | 338 | 360 | 383 | 405 | 427 | 450  | 472  | 495  | 517  | 539  | 562  | 584  | 606  | 629  | 651  |      |      |      |      |    |
| 27    |     | 368 | 392 | 416 | 440 | 464 | 488  | 513  | 537  | 561  | 585  | 609  | 633  | 657  | 681  | 706  |      |      |      |      |    |
| 28    |     | 399 | 425 | 451 | 477 | 502 | 528  | 554  | 580  | 606  | 632  | 658  | 684  | 710  | 736  | 762  |      |      |      |      |    |
| 29    |     | 431 | 459 | 486 | 514 | 542 | 570  | 598  | 626  | 653  | 681  | 709  | 737  | 765  | 793  | 820  | 848  | 876  | 904  | 932  |    |
| 30    |     |     | 494 | 524 | 553 | 583 | 613  | 643  | 672  | 702  | 732  | 762  | 792  | 821  | 851  | 881  | 911  | 941  | 970  | 1000 |    |
| 31    |     |     | 530 | 562 | 594 | 626 | 657  | 689  | 721  | 753  | 785  | 816  | 848  | 880  | 912  | 944  | 975  | 1007 | 1039 | 1071 |    |
| 32    |     |     | 568 | 602 | 635 | 669 | 703  | 737  | 771  | 805  | 839  | 873  | 907  | 940  | 974  | 1008 | 1042 | 1076 | 1110 | 1144 |    |
| 33    |     |     |     | 678 | 714 | 751 | 787  | 823  | 859  | 895  | 931  | 967  | 1003 | 1039 | 1075 | 1111 | 1147 | 1183 | 1219 |      |    |
| 34    |     |     |     |     | 723 | 761 | 799  | 838  | 876  | 914  | 952  | 991  | 1029 | 1067 | 1105 | 1144 | 1182 | 1220 | 1258 | 1297 |    |
| 35    |     |     |     |     | 768 | 809 | 850  | 890  | 931  | 971  | 1012 | 1052 | 1093 | 1133 | 1174 | 1214 | 1255 | 1296 | 1336 | 1377 |    |
| 36    |     |     |     |     |     | 901 | 944  | 987  | 1030 | 1073 | 1116 | 1159 | 1202 | 1244 | 1287 | 1330 | 1373 | 1416 | 1459 |      |    |
| 37    |     |     |     |     |     | 954 | 1000 | 1045 | 1090 | 1136 | 1181 | 1226 | 1272 | 1317 | 1362 | 1408 | 1453 | 1498 | 1544 |      |    |
| 38    |     |     |     |     |     |     | 1105 | 1152 | 1200 | 1248 | 1296 | 1344 | 1391 | 1439 | 1487 | 1535 | 1583 | 1630 |      |      |    |
| 39    |     |     |     |     |     |     |      |      | 1266 | 1317 | 1367 | 1418 | 1468 | 1518 | 1569 | 1619 | 1669 | 1720 |      |      |    |
| 40    |     |     |     |     |     |     |      |      | 1334 | 1387 | 1440 | 1493 | 1546 | 1599 | 1652 | 1705 | 1758 | 1811 |      |      |    |
| 41    |     |     |     |     |     |     |      |      | 1404 | 1460 | 1515 | 1571 | 1627 | 1682 | 1738 | 1794 | 1849 | 1905 |      |      |    |
| 42    |     |     |     |     |     |     |      |      | 1476 | 1534 | 1592 | 1651 | 1709 | 1768 | 1826 | 1884 | 1943 | 2001 |      |      |    |
| 43    |     |     |     |     |     |     |      |      | 1549 | 1610 | 1671 | 1732 | 1794 | 1855 | 1916 | 1977 | 2038 | 2100 |      |      |    |
| 44    |     |     |     |     |     |     |      |      | 1624 | 1688 | 1752 | 1816 | 1880 | 1944 | 2008 | 2072 | 2136 | 2200 |      |      |    |
| 45    |     |     |     |     |     |     |      |      | 1700 | 1767 | 1834 | 1901 | 1968 | 2035 | 2102 | 2169 | 2236 | 2303 |      |      |    |
| 46    |     |     |     |     |     |     |      |      |      | 1919 | 1989 | 2059 | 2129 | 2199 | 2269 | 2339 | 2409 |      |      |      |    |
| 47    |     |     |     |     |     |     |      |      |      | 2005 | 2078 | 2151 | 2224 | 2297 | 2370 | 2444 | 2517 |      |      |      |    |
| 48    |     |     |     |     |     |     |      |      |      | 2093 | 2169 | 2245 | 2322 | 2398 | 2474 | 2550 | 2627 |      |      |      |    |
| 49    |     |     |     |     |     |     |      |      |      | 2183 | 2262 | 2342 | 2421 | 2501 | 2580 | 2660 | 2739 |      |      |      |    |
| 50    |     |     |     |     |     |     |      |      |      | 2275 | 2357 | 2440 | 2523 | 2606 | 2688 | 2771 | 2854 |      |      |      |    |

# Flevo

(*Populus ×euramericana*)

$$v = -14,5 + 0,0318d^2h$$

$$R^2 = 0,9879$$

$$n = 87$$

$$p = 6$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   |
|-------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 15    | 93  | 100 | 107 | 114 | 121 |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 16    | 108 | 116 | 124 | 132 | 140 | 148 | 156  | 165  | 173  | 181  | 189  | 197  |      |      |      |      |      |      |      |      |      |
| 17    | 123 | 133 | 142 | 151 | 160 | 169 | 178  | 188  | 197  | 206  | 215  | 224  |      |      |      |      |      |      |      |      |      |
| 18    | 140 | 150 | 161 | 171 | 181 | 192 | 202  | 212  | 222  | 233  | 243  | 253  |      |      |      |      |      |      |      |      |      |
| 19    | 158 | 169 | 181 | 192 | 204 | 215 | 227  | 238  | 250  | 261  | 272  | 284  | 295  | 307  | 318  | 330  | 341  |      |      |      |      |
| 20    | 176 | 189 | 202 | 214 | 227 | 240 | 253  | 265  | 278  | 291  | 303  | 316  | 329  | 342  | 354  | 367  | 380  |      |      |      |      |
| 21    | 196 | 210 | 224 | 238 | 252 | 266 | 280  | 294  | 308  | 322  | 336  | 350  | 364  | 378  | 392  | 406  | 420  |      |      |      |      |
| 22    | 216 | 232 | 247 | 263 | 278 | 293 | 309  | 324  | 339  | 355  | 370  | 386  | 401  | 416  | 432  | 447  | 463  |      |      |      |      |
| 23    | 238 | 255 | 271 | 288 | 305 | 322 | 339  | 356  | 372  | 389  | 406  | 423  | 440  | 456  | 473  | 490  | 507  |      |      |      |      |
| 24    | 260 | 279 | 297 | 315 | 333 | 352 | 370  | 388  | 407  | 425  | 443  | 462  | 480  | 498  | 517  | 535  | 553  |      |      |      |      |
| 25    | 284 | 303 | 323 | 343 | 363 | 383 | 403  | 423  | 443  | 462  | 482  | 502  | 522  | 542  | 562  | 582  | 602  |      |      |      |      |
| 26    | 308 | 329 | 351 | 372 | 394 | 415 | 437  | 458  | 480  | 501  | 523  | 544  | 566  | 587  | 609  | 630  | 652  |      |      |      |      |
| 27    | 333 | 356 | 380 | 403 | 426 | 449 | 472  | 495  | 519  | 542  | 565  | 588  | 611  | 635  | 658  | 681  | 704  |      |      |      |      |
| 28    |     | 384 | 409 | 434 | 459 | 484 | 509  | 534  | 559  | 584  | 609  | 634  | 659  | 684  | 708  | 733  | 758  |      |      |      |      |
| 29    |     | 413 | 440 | 467 | 494 | 520 | 547  | 574  | 601  | 627  | 654  | 681  | 708  | 734  | 761  | 788  | 815  |      |      |      |      |
| 30    |     | 443 | 472 | 501 | 529 | 558 | 586  | 615  | 644  | 672  | 701  | 730  | 758  | 787  | 815  | 844  | 873  | 901  | 930  | 959  | 987  |
| 31    |     | 474 | 505 | 536 | 566 | 597 | 627  | 658  | 688  | 719  | 749  | 780  | 811  | 841  | 872  | 902  | 933  | 963  | 994  | 1024 | 1055 |
| 32    |     |     | 572 | 604 | 637 | 669 | 702  | 734  | 767  | 800  | 832  | 865  | 897  | 930  | 962  | 995  | 1027 | 1060 | 1093 | 1125 |      |
| 33    |     |     |     | 609 | 643 | 678 | 713  | 747  | 782  | 817  | 851  | 886  | 920  | 955  | 990  | 1024 | 1059 | 1094 | 1128 | 1163 | 1198 |
| 34    |     |     |     |     | 684 | 721 | 757  | 794  | 831  | 868  | 904  | 941  | 978  | 1015 | 1052 | 1088 | 1125 | 1162 | 1199 | 1235 | 1272 |
| 35    |     |     |     |     | 726 | 765 | 804  | 842  | 881  | 920  | 959  | 998  | 1037 | 1076 | 1115 | 1154 | 1193 | 1232 | 1271 | 1310 | 1349 |
| 36    |     |     |     |     |     | 892 | 933  | 975  | 1016 | 1057 | 1098 | 1139 | 1181 | 1222 | 1263 | 1304 | 1345 | 1387 | 1428 |      |      |
| 37    |     |     |     |     |     |     | 943  | 987  | 1030 | 1074 | 1117 | 1161 | 1204 | 1248 | 1291 | 1335 | 1379 | 1422 | 1466 | 1509 |      |
| 38    |     |     |     |     |     |     | 996  | 1042 | 1088 | 1133 | 1179 | 1225 | 1271 | 1317 | 1363 | 1409 | 1455 | 1501 | 1547 | 1593 |      |
| 39    |     |     |     |     |     |     | 1050 | 1098 | 1146 | 1195 | 1243 | 1291 | 1340 | 1388 | 1436 | 1485 | 1533 | 1582 | 1630 | 1678 |      |
| 40    |     |     |     |     |     |     |      | 1207 | 1257 | 1308 | 1359 | 1410 | 1461 | 1512 | 1563 | 1614 | 1665 | 1715 | 1766 |      |      |
| 41    |     |     |     |     |     |     |      | 1268 | 1322 | 1375 | 1429 | 1482 | 1536 | 1589 | 1643 | 1696 | 1750 | 1803 | 1856 |      |      |
| 42    |     |     |     |     |     |     |      |      | 1388 | 1444 | 1500 | 1556 | 1612 | 1668 | 1724 | 1781 | 1837 | 1893 | 1949 |      |      |
| 43    |     |     |     |     |     |     |      |      | 1455 | 1514 | 1573 | 1632 | 1691 | 1749 | 1808 | 1867 | 1926 | 1985 | 2043 |      |      |
| 44    |     |     |     |     |     |     |      |      | 1525 | 1586 | 1648 | 1709 | 1771 | 1832 | 1894 | 1956 | 2017 | 2079 | 2140 |      |      |
| 45    |     |     |     |     |     |     |      |      | 1595 | 1660 | 1724 | 1789 | 1853 | 1917 | 1982 | 2046 | 2111 | 2175 | 2239 |      |      |
| 46    |     |     |     |     |     |     |      |      | 1668 | 1735 | 1802 | 1870 | 1937 | 2004 | 2071 | 2139 | 2206 | 2273 | 2341 |      |      |
| 47    |     |     |     |     |     |     |      |      | 1742 | 1812 | 1882 | 1952 | 2023 | 2093 | 2163 | 2233 | 2304 | 2374 | 2444 |      |      |
| 48    |     |     |     |     |     |     |      |      |      | 2037 | 2110 | 2183 | 2257 | 2330 | 2403 | 2477 | 2550 |      |      |      |      |
| 49    |     |     |     |     |     |     |      |      |      | 2123 | 2200 | 2276 | 2352 | 2429 | 2505 | 2581 | 2658 |      |      |      |      |
| 50    |     |     |     |     |     |     |      |      |      | 2211 | 2291 | 2370 | 2450 | 2529 | 2609 | 2688 | 2768 |      |      |      |      |

# Gaver

(*Populus ×euramericana*)

$$v = 35,2 + 0,0262d^2h$$

$$R^2 = 0,9367$$

$$n = 33$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32 | 33 | 34 | 35 |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|----|----|----|----|
| 15    | 124 | 130 | 135 | 141 | 147 | 153 | 159 | 165 |     |      |      |      |      |      |      |      |      |    |    |    |    |
| 16    | 136 | 143 | 149 | 156 | 163 | 169 | 176 | 183 | 189 | 196  |      |      |      |      |      |      |      |    |    |    |    |
| 17    | 149 | 156 | 164 | 172 | 179 | 187 | 194 | 202 | 209 | 217  | 225  | 232  |      |      |      |      |      |    |    |    |    |
| 18    | 163 | 171 | 180 | 188 | 197 | 205 | 213 | 222 | 230 | 239  | 247  | 256  |      |      |      |      |      |    |    |    |    |
| 19    | 177 | 187 | 196 | 205 | 213 | 224 | 234 | 243 | 253 | 262  | 272  | 281  |      |      |      |      |      |    |    |    |    |
| 20    | 192 | 203 | 213 | 224 | 234 | 245 | 255 | 266 | 276 | 287  | 297  | 308  |      |      |      |      |      |    |    |    |    |
| 21    | 209 | 220 | 232 | 243 | 255 | 266 | 278 | 289 | 301 | 313  | 324  | 336  |      |      |      |      |      |    |    |    |    |
| 22    | 225 | 238 | 251 | 263 | 276 | 289 | 302 | 314 | 327 | 340  | 352  | 365  |      |      |      |      |      |    |    |    |    |
| 23    | 243 | 257 | 271 | 285 | 299 | 312 | 326 | 340 | 354 | 368  | 382  | 396  | 409  |      |      |      |      |    |    |    |    |
| 24    | 262 | 277 | 292 | 307 | 322 | 337 | 352 | 367 | 382 | 397  | 413  | 428  | 443  |      |      |      |      |    |    |    |    |
| 25    | 281 | 297 | 314 | 330 | 346 | 363 | 379 | 395 | 412 | 428  | 445  | 461  | 477  | 494  | 510  | 526  | 543  |    |    |    |    |
| 26    |     | 319 | 336 | 354 | 372 | 389 | 407 | 425 | 443 | 460  | 478  | 496  | 513  | 531  | 549  | 567  | 584  |    |    |    |    |
| 27    |     | 341 | 360 | 379 | 398 | 417 | 436 | 455 | 475 | 494  | 513  | 532  | 551  | 570  | 589  | 608  | 627  |    |    |    |    |
| 28    |     | 364 | 384 | 405 | 426 | 446 | 467 | 487 | 508 | 528  | 549  | 569  | 590  | 610  | 631  | 651  | 672  |    |    |    |    |
| 29    |     | 388 | 410 | 432 | 454 | 476 | 498 | 520 | 542 | 564  | 586  | 608  | 630  | 652  | 674  | 696  | 718  |    |    |    |    |
| 30    |     | 413 | 436 | 460 | 483 | 507 | 530 | 554 | 578 | 601  | 625  | 648  | 672  | 695  | 719  | 743  | 766  |    |    |    |    |
| 31    |     |     | 463 | 488 | 514 | 539 | 564 | 589 | 614 | 640  | 665  | 690  | 715  | 740  | 765  | 791  | 816  |    |    |    |    |
| 32    |     |     |     |     | 572 | 599 | 625 | 652 | 679 | 706  | 733  | 760  | 786  | 813  | 840  | 867  |      |    |    |    |    |
| 33    |     |     |     |     |     | 634 | 663 | 691 | 720 | 749  | 777  | 806  | 834  | 863  | 891  | 920  |      |    |    |    |    |
| 34    |     |     |     |     |     |     | 671 | 702 | 732 | 762  | 792  | 823  | 853  | 883  | 914  | 944  | 974  |    |    |    |    |
| 35    |     |     |     |     |     |     | 709 | 741 | 773 | 806  | 838  | 870  | 902  | 934  | 966  | 998  | 1030 |    |    |    |    |
| 36    |     |     |     |     |     |     | 748 | 782 | 816 | 850  | 884  | 918  | 952  | 986  | 1020 | 1054 | 1088 |    |    |    |    |
| 37    |     |     |     |     |     |     | 788 | 824 | 860 | 896  | 932  | 968  | 1004 | 1040 | 1075 | 1111 | 1147 |    |    |    |    |
| 38    |     |     |     |     |     |     | 830 | 868 | 905 | 943  | 981  | 1019 | 1057 | 1095 | 1132 | 1170 | 1208 |    |    |    |    |
| 39    |     |     |     |     |     |     | 872 | 912 | 952 | 992  | 1031 | 1071 | 1111 | 1151 | 1191 | 1231 | 1271 |    |    |    |    |
| 40    |     |     |     |     |     |     | 916 | 957 | 999 | 1041 | 1083 | 1125 | 1167 | 1209 | 1251 | 1293 | 1335 |    |    |    |    |
| 41    |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |    |    |    |    |
| 42    |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |    |    |    |    |
| 43    |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |    |    |    |    |
| 44    |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |    |    |    |    |
| 45    |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |    |    |    |    |
| 46    |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |    |    |    |    |
| 47    |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |    |    |    |    |
| 48    |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |    |    |    |    |
| 49    |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |    |    |    |    |
| 50    |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |    |    |    |    |

# Goulet

(*Populus ×euramericana*)

$$v = -23,2 + 0,0342d^2h$$

$$R^2 = 0,9550$$

$$n = 10$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15 | 16 | 17 | 18 | 19  | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33 | 34 | 35 |
|-------|----|----|----|----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|----|----|----|
| 15    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 16    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 17    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 18    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 19    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 20    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 21    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 22    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 23    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 24    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 25    |    |    |    |    | 468 | 490  | 511  | 533  | 554  | 575  | 597  | 618  | 639  | 661  |      |      |      |      |    |    |    |
| 26    |    |    |    |    | 509 | 532  | 555  | 578  | 601  | 624  | 647  | 670  | 694  | 717  |      |      |      |      |    |    |    |
| 27    |    |    |    |    | 550 | 575  | 600  | 625  | 650  | 675  | 700  | 725  | 750  | 775  |      |      |      |      |    |    |    |
| 28    |    |    |    |    | 594 | 620  | 647  | 674  | 701  | 728  | 754  | 781  | 808  | 835  |      |      |      |      |    |    |    |
| 29    |    |    |    |    | 638 | 667  | 696  | 725  | 753  | 782  | 811  | 840  | 868  | 897  |      |      |      |      |    |    |    |
| 30    |    |    |    |    | 685 | 716  | 746  | 777  | 808  | 839  | 869  | 900  | 931  | 962  | 993  |      |      |      |    |    |    |
| 31    |    |    |    |    | 733 | 766  | 798  | 831  | 864  | 897  | 930  | 963  | 996  | 1029 | 1061 |      |      |      |    |    |    |
| 32    |    |    |    |    | 782 | 817  | 852  | 887  | 922  | 957  | 992  | 1027 | 1062 | 1097 | 1133 |      |      |      |    |    |    |
| 33    |    |    |    |    | 833 | 871  | 908  | 945  | 982  | 1020 | 1057 | 1094 | 1131 | 1169 | 1206 |      |      |      |    |    |    |
| 34    |    |    |    |    | 886 | 926  | 965  | 1005 | 1044 | 1084 | 1123 | 1163 | 1202 | 1242 | 1281 | 1321 | 1361 |      |    |    |    |
| 35    |    |    |    |    | 940 | 982  | 1024 | 1066 | 1108 | 1150 | 1192 | 1234 | 1276 | 1317 | 1359 | 1401 | 1443 |      |    |    |    |
| 36    |    |    |    |    | 996 | 1041 | 1085 | 1129 | 1174 | 1218 | 1262 | 1307 | 1351 | 1395 | 1439 | 1484 | 1528 |      |    |    |    |
| 37    |    |    |    |    |     |      |      |      | 1194 | 1241 | 1288 | 1335 | 1381 | 1428 | 1475 | 1522 | 1569 | 1616 |    |    |    |
| 38    |    |    |    |    |     |      |      |      | 1261 | 1310 | 1360 | 1409 | 1458 | 1508 | 1557 | 1607 | 1656 | 1705 |    |    |    |
| 39    |    |    |    |    |     |      |      |      | 1329 | 1381 | 1433 | 1485 | 1537 | 1589 | 1641 | 1693 | 1745 | 1797 |    |    |    |
| 40    |    |    |    |    |     |      |      |      | 1400 | 1454 | 1509 | 1564 | 1618 | 1673 | 1728 | 1783 | 1837 | 1892 |    |    |    |
| 41    |    |    |    |    |     |      |      |      | 1472 | 1529 | 1587 | 1644 | 1702 | 1759 | 1817 | 1874 | 1931 | 1989 |    |    |    |
| 42    |    |    |    |    |     |      |      |      | 1545 | 1606 | 1666 | 1726 | 1787 | 1847 | 1907 | 1968 | 2028 | 2088 |    |    |    |
| 43    |    |    |    |    |     |      |      |      | 1621 | 1684 | 1747 | 1811 | 1874 | 1937 | 2000 | 2064 | 2127 | 2190 |    |    |    |
| 44    |    |    |    |    |     |      |      |      | 1698 | 1765 | 1831 | 1897 | 1963 | 2029 | 2096 | 2162 | 2228 | 2294 |    |    |    |
| 45    |    |    |    |    |     |      |      |      | 1777 | 1847 | 1916 | 1985 | 2054 | 2124 | 2193 | 2262 | 2331 | 2401 |    |    |    |
| 46    |    |    |    |    |     |      |      |      |      | 1931 | 2003 | 2075 | 2148 | 2220 | 2293 | 2365 | 2437 | 2510 |    |    |    |
| 47    |    |    |    |    |     |      |      |      |      | 2017 | 2092 | 2168 | 2243 | 2319 | 2394 | 2470 | 2545 | 2621 |    |    |    |
| 48    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 49    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 50    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |

# Guardi

(*Populus ×euramericana*)

$$v = 41,8 + 0,0312d^2h$$

$$R^2 = 0,9407$$

$$n = 60$$

$$p = 4$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35 |
|-------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| 15    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 16    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 17    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 18    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 19    | 211 | 222 | 233 | 245 | 256 | 267 | 278  | 290  | 301  | 312  | 323  | 335  | 346  | 357  |      |      |      |      |      |      |    |
| 20    | 229 | 241 | 254 | 266 | 279 | 291 | 304  | 316  | 329  | 341  | 354  | 366  | 379  | 391  |      |      |      |      |      |      |    |
| 21    | 248 | 262 | 276 | 289 | 303 | 317 | 331  | 344  | 358  | 372  | 386  | 400  | 413  | 427  | 441  |      |      |      |      |      |    |
| 22    | 268 | 283 | 298 | 314 | 329 | 344 | 359  | 374  | 389  | 404  | 419  | 434  | 449  | 465  | 480  |      |      |      |      |      |    |
| 23    | 289 | 306 | 322 | 339 | 355 | 372 | 388  | 405  | 421  | 438  | 454  | 471  | 487  | 504  | 520  |      |      |      |      |      |    |
| 24    | 311 | 329 | 347 | 365 | 383 | 401 | 419  | 437  | 455  | 473  | 491  | 509  | 527  | 545  | 563  | 581  |      |      |      |      |    |
| 25    | 334 | 354 | 373 | 393 | 412 | 432 | 451  | 471  | 490  | 510  | 529  | 549  | 568  | 588  | 607  | 627  |      |      |      |      |    |
| 26    | 358 | 379 | 400 | 421 | 442 | 464 | 485  | 506  | 527  | 548  | 569  | 590  | 611  | 632  | 653  | 675  | 696  |      |      |      |    |
| 27    | 383 | 406 | 428 | 451 | 474 | 497 | 519  | 542  | 565  | 588  | 610  | 633  | 656  | 679  | 701  | 724  | 747  |      |      |      |    |
| 28    |     |     |     |     |     |     | 555  | 580  | 604  | 629  | 653  | 678  | 702  | 727  | 751  | 776  | 800  | 825  | 849  | 873  |    |
| 29    |     |     |     |     |     |     | 593  | 619  | 645  | 672  | 698  | 724  | 750  | 776  | 803  | 829  | 855  | 881  | 908  | 934  |    |
| 30    |     |     |     |     |     |     | 631  | 660  | 688  | 716  | 744  | 772  | 800  | 828  | 856  | 884  | 912  | 940  | 968  | 996  |    |
| 31    |     |     |     |     |     |     | 671  | 701  | 731  | 761  | 791  | 821  | 851  | 881  | 911  | 941  | 971  | 1001 | 1031 | 1061 |    |
| 32    |     |     |     |     |     |     | 713  | 745  | 777  | 809  | 840  | 872  | 904  | 936  | 968  | 1000 | 1032 | 1064 | 1096 | 1128 |    |
| 33    |     |     |     |     |     |     | 789  | 823  | 857  | 891  | 925  | 959  | 993  | 1027 | 1061 | 1095 | 1129 | 1163 | 1197 | 1231 |    |
| 34    |     |     |     |     |     |     | 835  | 871  | 907  | 943  | 980  | 1016 | 1052 | 1088 | 1124 | 1160 | 1196 | 1232 | 1268 | 1304 |    |
| 35    |     |     |     |     |     |     | 883  | 921  | 959  | 997  | 1035 | 1074 | 1112 | 1150 | 1188 | 1227 | 1265 | 1303 | 1341 | 1379 |    |
| 36    |     |     |     |     |     |     | 972  | 1012 | 1053 | 1093 | 1134 | 1174 | 1214 | 1255 | 1295 | 1336 | 1376 | 1417 | 1457 |      |    |
| 37    |     |     |     |     |     |     | 1067 | 1110 | 1152 | 1195 | 1238 | 1280 | 1323 | 1366 | 1409 | 1451 | 1494 | 1537 |      |      |    |
| 38    |     |     |     |     |     |     | 1123 | 1168 | 1213 | 1258 | 1303 | 1348 | 1393 | 1438 | 1483 | 1529 | 1574 | 1619 |      |      |    |
| 39    |     |     |     |     |     |     | 1181 | 1228 | 1276 | 1323 | 1371 | 1418 | 1465 | 1513 | 1560 | 1608 | 1655 | 1703 |      |      |    |
| 40    |     |     |     |     |     |     | 1240 | 1290 | 1340 | 1390 | 1440 | 1489 | 1539 | 1589 | 1639 | 1689 | 1739 | 1789 |      |      |    |
| 41    |     |     |     |     |     |     | 1300 | 1353 | 1405 | 1458 | 1510 | 1563 | 1615 | 1668 | 1720 | 1773 | 1825 | 1877 |      |      |    |
| 42    |     |     |     |     |     |     | 1363 | 1418 | 1473 | 1528 | 1583 | 1638 | 1693 | 1748 | 1803 | 1858 | 1913 | 1968 |      |      |    |
| 43    |     |     |     |     |     |     | 1599 | 1657 | 1715 | 1772 | 1830 | 1888 | 1945 | 2003 | 2061 |      |      |      |      |      |    |
| 44    |     |     |     |     |     |     | 1673 | 1733 | 1793 | 1854 | 1914 | 1975 | 2035 | 2095 | 2156 |      |      |      |      |      |    |
| 45    |     |     |     |     |     |     | 1748 | 1811 | 1874 | 1937 | 2000 | 2064 | 2127 | 2190 | 2253 |      |      |      |      |      |    |
| 46    |     |     |     |     |     |     | 1824 | 1890 | 1956 | 2022 | 2088 | 2154 | 2220 | 2286 | 2352 |      |      |      |      |      |    |
| 47    |     |     |     |     |     |     | 1903 | 1972 | 2040 | 2109 | 2178 | 2247 | 2316 | 2385 | 2454 |      |      |      |      |      |    |
| 48    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 49    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 50    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |

# Guariuento

(*Populus ×euramericana*)

$$v = -4,3 + 0,0339d^2h$$

$$R^2 = 0,9734$$

$$n = 15$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32 | 33 | 34 | 35 |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|----|----|----|----|
| 15    | 110 | 118 | 125 | 133 | 141 | 148 |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |
| 16    | 126 | 135 | 143 | 152 | 161 | 169 |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |
| 17    | 143 | 152 | 162 | 172 | 182 | 192 | 201 | 211 | 221 |     |      |      |      |      |      |      |      |    |    |    |    |
| 18    | 160 | 171 | 182 | 193 | 204 | 215 | 226 | 237 | 248 | 259 | 270  |      |      |      |      |      |      |    |    |    |    |
| 19    | 179 | 191 | 204 | 216 | 228 | 240 | 253 | 265 | 277 | 289 | 302  |      |      |      |      |      |      |    |    |    |    |
| 20    | 199 | 213 | 226 | 240 | 253 | 267 | 280 | 294 | 308 | 321 | 335  | 348  | 362  | 375  |      |      |      |    |    |    |    |
| 21    | 220 | 235 | 250 | 265 | 280 | 295 | 310 | 325 | 340 | 354 | 369  | 384  | 399  | 414  |      |      |      |    |    |    |    |
| 22    | 242 | 258 | 275 | 291 | 307 | 324 | 340 | 357 | 373 | 389 | 406  | 422  | 439  | 455  |      |      |      |    |    |    |    |
| 23    | 265 | 283 | 301 | 318 | 336 | 354 | 372 | 390 | 408 | 426 | 444  | 462  | 480  | 498  |      |      |      |    |    |    |    |
| 24    | 289 | 308 | 328 | 347 | 367 | 386 | 406 | 425 | 445 | 464 | 484  | 503  | 523  | 542  |      |      |      |    |    |    |    |
| 25    | 314 | 335 | 356 | 377 | 398 | 419 | 441 | 462 | 483 | 504 | 525  | 547  | 568  | 589  |      |      |      |    |    |    |    |
| 26    | 339 | 362 | 385 | 408 | 431 | 454 | 477 | 500 | 523 | 546 | 569  | 592  | 614  | 637  | 660  |      |      |    |    |    |    |
| 27    | 366 | 391 | 416 | 441 | 465 | 490 | 515 | 539 | 564 | 589 | 614  | 638  | 663  | 688  | 712  |      |      |    |    |    |    |
| 28    | 394 | 421 | 448 | 474 | 501 | 527 | 554 | 580 | 607 | 634 | 660  | 687  | 713  | 740  | 766  |      |      |    |    |    |    |
| 29    | 423 | 452 | 480 | 509 | 537 | 566 | 594 | 623 | 651 | 680 | 708  | 737  | 765  | 794  | 822  |      |      |    |    |    |    |
| 30    |     | 484 | 514 | 545 | 575 | 606 | 636 | 667 | 697 | 728 | 758  | 789  | 819  | 850  | 880  |      |      |    |    |    |    |
| 31    |     | 517 | 550 | 582 | 615 | 647 | 680 | 712 | 745 | 778 | 810  | 843  | 875  | 908  | 940  |      |      |    |    |    |    |
| 32    |     | 551 | 586 | 621 | 655 | 690 | 725 | 759 | 794 | 829 | 864  | 898  | 933  | 968  | 1002 |      |      |    |    |    |    |
| 33    |     | 586 | 623 | 660 | 697 | 734 | 771 | 808 | 845 | 882 | 919  | 956  | 992  | 1029 | 1066 |      |      |    |    |    |    |
| 34    |     |     | 662 | 701 | 740 | 779 | 819 | 858 | 897 | 936 | 975  | 1015 | 1054 | 1093 | 1132 |      |      |    |    |    |    |
| 35    |     |     |     | 702 | 743 | 785 | 826 | 868 | 909 | 951 | 992  | 1034 | 1075 | 1117 | 1158 | 1200 |      |    |    |    |    |
| 36    |     |     |     |     | 743 | 787 | 830 | 874 | 918 | 962 | 1006 | 1050 | 1094 | 1138 | 1182 | 1226 | 1270 |    |    |    |    |
| 37    |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |
| 38    |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |
| 39    |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |
| 40    |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |
| 41    |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |
| 42    |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |
| 43    |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |
| 44    |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |
| 45    |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |
| 46    |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |
| 47    |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |
| 48    |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |
| 49    |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |
| 50    |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |    |    |    |    |

# Harvard

(*Populus deltoides*)

$$v = -77,0 + 0,0318d^2h$$

$$R^2 = 0,9782$$

$$n = 36$$

$$p = 2$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33 | 34 | 35 |
|-------|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|----|----|
| 15    |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 16    |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 17    | 61  | 70  | 79  | 88   | 98   | 107  | 116  | 125  | 134  |      |      |      |      |      |      |      |      |      |    |    |    |
| 18    | 78  | 88  | 98  | 108  | 119  | 129  | 139  | 150  | 160  |      |      |      |      |      |      |      |      |      |    |    |    |
| 19    | 95  | 107 | 118 | 130  | 141  | 153  | 164  | 176  | 187  |      |      |      |      |      |      |      |      |      |    |    |    |
| 20    | 114 | 127 | 139 | 152  | 165  | 177  | 190  | 203  | 216  |      |      |      |      |      |      |      |      |      |    |    |    |
| 21    | 133 | 147 | 161 | 175  | 189  | 204  | 218  | 232  | 246  |      |      |      |      |      |      |      |      |      |    |    |    |
| 22    | 154 | 169 | 185 | 200  | 215  | 231  | 246  | 262  | 277  |      |      |      |      |      |      |      |      |      |    |    |    |
| 23    | 175 | 192 | 209 | 226  | 243  | 259  | 276  | 293  | 310  |      |      |      |      |      |      |      |      |      |    |    |    |
| 24    | 198 | 216 | 234 | 253  | 271  | 289  | 308  | 326  | 344  |      |      |      |      |      |      |      |      |      |    |    |    |
| 25    | 221 | 241 | 261 | 281  | 301  | 321  | 340  | 360  | 380  | 400  | 420  | 440  |      |      |      |      |      |      |    |    |    |
| 26    | 245 | 267 | 288 | 310  | 331  | 353  | 374  | 396  | 417  | 439  | 460  | 482  | 503  |      |      |      |      |      |    |    |    |
| 27    | 294 | 317 | 340 | 364  | 387  | 410  | 433  | 456  | 479  | 503  | 526  | 549  |      |      |      |      |      |      |    |    |    |
| 28    |     |     |     | 397  | 422  | 447  | 472  | 496  | 521  | 546  | 571  | 596  | 621  |      |      |      |      |      |    |    |    |
| 29    |     |     |     | 431  | 458  | 485  | 511  | 538  | 565  | 592  | 618  | 645  | 672  |      |      |      |      |      |    |    |    |
| 30    |     |     |     | 467  | 495  | 524  | 553  | 581  | 610  | 639  | 667  | 696  | 724  |      |      |      |      |      |    |    |    |
| 31    |     |     |     | 504  | 534  | 565  | 595  | 626  | 656  | 687  | 718  | 748  | 779  |      |      |      |      |      |    |    |    |
| 32    |     |     |     | 542  | 574  | 607  | 639  | 672  | 705  | 737  | 770  | 802  | 835  |      |      |      |      |      |    |    |    |
| 33    |     |     |     | 581  | 616  | 650  | 685  | 720  | 754  | 789  | 823  | 858  | 893  | 927  | 962  | 997  | 1031 | 1066 |    |    |    |
| 34    |     |     |     | 621  | 658  | 695  | 732  | 769  | 805  | 842  | 879  | 916  | 952  | 989  | 1026 | 1063 | 1099 | 1136 |    |    |    |
| 35    |     |     |     | 663  | 702  | 741  | 780  | 819  | 858  | 897  | 936  | 975  | 1014 | 1053 | 1092 | 1131 | 1170 | 1209 |    |    |    |
| 36    |     |     |     | 747  | 789  | 830  | 871  | 912  | 953  | 995  | 1036 | 1077 | 1118 | 1159 | 1201 | 1242 | 1283 |      |    |    |    |
| 37    |     |     |     | 837  | 881  | 924  | 968  | 1011 | 1055 | 1098 | 1142 | 1186 | 1229 | 1273 | 1316 | 1360 |      |      |    |    |    |
| 38    |     |     |     | 887  | 933  | 979  | 1025 | 1071 | 1117 | 1163 | 1209 | 1255 | 1301 | 1347 | 1392 | 1438 |      |      |    |    |    |
| 39    |     |     |     | 939  | 987  | 1036 | 1084 | 1132 | 1181 | 1229 | 1277 | 1326 | 1374 | 1422 | 1471 | 1519 |      |      |    |    |    |
| 40    |     |     |     | 992  | 1042 | 1093 | 1144 | 1195 | 1246 | 1297 | 1348 | 1399 | 1449 | 1500 | 1551 | 1602 |      |      |    |    |    |
| 41    |     |     |     | 1099 | 1153 | 1206 | 1259 | 1313 | 1366 | 1420 | 1473 | 1527 | 1580 | 1634 | 1687 |      |      |      |    |    |    |
| 42    |     |     |     | 1213 | 1269 | 1325 | 1382 | 1438 | 1494 | 1550 | 1606 | 1662 | 1718 | 1774 | 1830 |      |      |      |    |    |    |
| 43    |     |     |     | 1275 | 1334 | 1393 | 1452 | 1511 | 1569 | 1628 | 1687 | 1746 | 1805 | 1863 | 1922 |      |      |      |    |    |    |
| 44    |     |     |     | 1339 | 1401 | 1462 | 1524 | 1585 | 1647 | 1708 | 1770 | 1832 | 1893 | 1955 | 2016 |      |      |      |    |    |    |
| 45    |     |     |     | 1533 | 1597 | 1662 | 1726 | 1790 | 1855 | 1919 | 1984 | 2048 | 2112 |      |      |      |      |      |    |    |    |
| 46    |     |     |     | 1605 | 1673 | 1740 | 1807 | 1874 | 1942 | 2009 | 2076 | 2144 | 2211 |      |      |      |      |      |    |    |    |
| 47    |     |     |     | 1679 | 1749 | 1820 | 1890 | 1960 | 2030 | 2101 | 2171 | 2241 | 2311 |      |      |      |      |      |    |    |    |
| 48    |     |     |     | 1755 | 1828 | 1901 | 1975 | 2048 | 2121 | 2194 | 2268 | 2341 | 2414 |      |      |      |      |      |    |    |    |
| 49    |     |     |     | 1832 | 1908 | 1985 | 2061 | 2137 | 2214 | 2290 | 2366 | 2443 | 2519 |      |      |      |      |      |    |    |    |
| 50    |     |     |     | 1911 | 1990 | 2070 | 2149 | 2229 | 2308 | 2388 | 2467 | 2547 | 2626 |      |      |      |      |      |    |    |    |

# Hees

(*Populus ×euramericana*)

$$v = -64,9 + 0,0327d^2h$$

$$R^2 = 0,8337$$

$$n = 16$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15 | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 28  | 29   | 30 | 31 | 32 | 33 | 34 | 35 |
|-------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----|----|----|----|----|----|
| 15    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 16    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 17    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 18    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 19    |    | 148 | 159 | 171 | 183 | 195 | 207 | 218 | 230 | 242 | 254 | 266 |     |     |      |    |    |    |    |    |    |
| 20    |    | 171 | 184 | 197 | 210 | 223 | 236 | 249 | 262 | 275 | 288 | 301 |     |     |      |    |    |    |    |    |    |
| 21    |    | 195 | 209 | 224 | 238 | 252 | 267 | 281 | 296 | 310 | 324 | 339 |     |     |      |    |    |    |    |    |    |
| 22    |    | 220 | 236 | 252 | 267 | 283 | 299 | 315 | 331 | 347 | 362 | 378 |     |     |      |    |    |    |    |    |    |
| 23    |    | 246 | 264 | 281 | 298 | 316 | 333 | 350 | 368 | 385 | 402 | 419 |     |     |      |    |    |    |    |    |    |
| 24    |    | 274 | 293 | 312 | 331 | 349 | 368 | 387 | 406 | 425 | 444 | 463 |     |     |      |    |    |    |    |    |    |
| 25    |    | 303 | 323 | 344 | 364 | 385 | 405 | 426 | 446 | 466 | 487 | 507 | 528 | 548 |      |    |    |    |    |    |    |
| 26    |    | 333 | 355 | 377 | 399 | 421 | 444 | 466 | 488 | 510 | 532 | 554 | 576 | 598 |      |    |    |    |    |    |    |
| 27    |    | 364 | 388 | 412 | 436 | 460 | 483 | 507 | 531 | 555 | 579 | 603 | 626 | 650 |      |    |    |    |    |    |    |
| 28    |    | 397 | 422 | 448 | 473 | 499 | 525 | 550 | 576 | 602 | 627 | 653 | 679 | 704 |      |    |    |    |    |    |    |
| 29    |    | 430 | 458 | 485 | 513 | 540 | 568 | 595 | 623 | 650 | 678 | 705 | 733 | 760 |      |    |    |    |    |    |    |
| 30    |    |     |     |     | 524 | 553 | 583 | 612 | 641 | 671 | 700 | 730 | 759 | 789 | 818  |    |    |    |    |    |    |
| 31    |    |     |     |     | 564 | 595 | 626 | 658 | 689 | 721 | 752 | 784 | 815 | 846 | 878  |    |    |    |    |    |    |
| 32    |    |     |     |     | 605 | 638 | 672 | 705 | 739 | 772 | 806 | 839 | 873 | 906 | 940  |    |    |    |    |    |    |
| 33    |    |     |     |     | 647 | 683 | 719 | 754 | 790 | 825 | 861 | 897 | 932 | 968 | 1003 |    |    |    |    |    |    |
| 34    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 35    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 36    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 37    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 38    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 39    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 40    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 41    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 42    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 43    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 44    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 45    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 46    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 47    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 48    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 49    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |
| 50    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |

# Hunnegem

(*Populus ×interamericana*)

$$v = 15,4 + 0,0293d^2h$$

$$R^2 = 0,9938$$

$$n = 34$$

$$p = 2$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35 |
|-------|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| 15    | 114 | 121 | 127 | 134 | 141 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 16    | 128 | 135 | 143 | 150 | 158 | 165  | 173  | 180  |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 17    | 142 | 151 | 159 | 168 | 176 | 185  | 193  | 202  |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 18    | 158 | 167 | 177 | 186 | 196 | 205  | 215  | 224  |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 19    | 174 | 185 | 195 | 206 | 216 | 227  | 237  | 248  |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 20    | 191 | 203 | 215 | 226 | 238 | 250  | 261  | 273  | 285  | 297  |      |      |      |      |      |      |      |      |      |      |    |
| 21    | 209 | 222 | 235 | 248 | 261 | 274  | 287  | 300  | 313  | 325  | 338  | 351  |      |      |      |      |      |      |      |      |    |
| 22    | 228 | 242 | 256 | 271 | 285 | 299  | 313  | 327  | 342  | 356  | 370  | 384  |      |      |      |      |      |      |      |      |    |
| 23    | 248 | 263 | 279 | 294 | 310 | 325  | 341  | 356  | 372  | 387  | 403  | 418  | 434  |      |      |      |      |      |      |      |    |
| 24    | 269 | 285 | 302 | 319 | 336 | 353  | 370  | 387  | 404  | 420  | 437  | 454  | 471  |      |      |      |      |      |      |      |    |
| 25    | 290 | 308 | 327 | 345 | 363 | 382  | 400  | 418  | 437  | 455  | 473  | 491  | 510  |      |      |      |      |      |      |      |    |
| 26    | 312 | 332 | 352 | 372 | 392 | 411  | 431  | 451  | 471  | 491  | 511  | 530  | 550  | 570  | 590  | 610  | 629  |      |      |      |    |
| 27    |     | 357 | 378 | 400 | 421 | 443  | 464  | 485  | 507  | 528  | 549  | 571  | 592  | 613  | 635  | 656  | 678  |      |      |      |    |
| 28    |     | 383 | 406 | 429 | 452 | 475  | 498  | 521  | 544  | 567  | 590  | 613  | 636  | 659  | 682  | 704  | 727  |      |      |      |    |
| 29    |     | 410 | 434 | 459 | 484 | 508  | 533  | 557  | 582  | 607  | 631  | 656  | 681  | 705  | 730  | 755  | 779  |      |      |      |    |
| 30    |     |     | 490 | 516 | 543 | 569  | 596  | 622  | 648  | 675  | 701  | 727  | 754  | 780  | 806  | 833  | 859  |      |      |      |    |
| 31    |     |     | 522 | 550 | 579 | 607  | 635  | 663  | 691  | 719  | 747  | 776  | 804  | 832  | 860  | 888  | 916  | 945  |      |      |    |
| 32    |     |     | 555 | 585 | 615 | 645  | 675  | 705  | 735  | 765  | 795  | 825  | 855  | 885  | 915  | 945  | 975  | 1005 |      |      |    |
| 33    |     |     | 590 | 622 | 654 | 685  | 717  | 749  | 781  | 813  | 845  | 877  | 909  | 941  | 973  | 1004 | 1036 | 1068 |      |      |    |
| 34    |     |     | 625 | 659 | 693 | 727  | 761  | 794  | 828  | 862  | 896  | 930  | 964  | 998  | 1031 | 1065 | 1099 | 1133 |      |      |    |
| 35    |     |     | 733 | 769 | 805 | 841  | 877  | 913  | 949  | 984  | 1020 | 1056 | 1092 | 1128 | 1164 | 1200 | 1236 |      |      |      |    |
| 36    |     |     |     |     |     | 813  | 851  | 889  | 927  | 965  | 1003 | 1041 | 1079 | 1117 | 1155 | 1193 | 1230 | 1268 | 1306 |      |    |
| 37    |     |     |     |     |     | 858  | 898  | 938  | 978  | 1018 | 1058 | 1098 | 1138 | 1179 | 1219 | 1259 | 1299 | 1339 | 1379 | 1419 |    |
| 38    |     |     |     |     |     | 904  | 946  | 988  | 1031 | 1073 | 1115 | 1158 | 1200 | 1242 | 1285 | 1327 | 1369 | 1412 | 1454 | 1496 |    |
| 39    |     |     |     |     |     | 951  | 996  | 1040 | 1085 | 1129 | 1174 | 1219 | 1263 | 1308 | 1352 | 1397 | 1441 | 1486 | 1531 | 1575 |    |
| 40    |     |     |     |     |     | 1047 | 1094 | 1140 | 1187 | 1234 | 1281 | 1328 | 1375 | 1422 | 1469 | 1516 | 1562 | 1609 | 1656 |      |    |
| 41    |     |     |     |     |     | 1099 | 1148 | 1197 | 1247 | 1296 | 1345 | 1394 | 1444 | 1493 | 1542 | 1591 | 1641 | 1690 | 1739 |      |    |
| 42    |     |     |     |     |     | 1152 | 1204 | 1256 | 1307 | 1359 | 1411 | 1463 | 1514 | 1566 | 1618 | 1669 | 1721 | 1773 | 1824 |      |    |
| 43    |     |     |     |     |     | 1207 | 1261 | 1316 | 1370 | 1424 | 1478 | 1532 | 1586 | 1641 | 1695 | 1749 | 1803 | 1857 | 1912 |      |    |
| 44    |     |     |     |     |     | 1263 | 1320 | 1377 | 1433 | 1490 | 1547 | 1604 | 1660 | 1717 | 1774 | 1831 | 1887 | 1944 | 2001 |      |    |
| 45    |     |     |     |     |     | 1321 | 1380 | 1439 | 1499 | 1558 | 1617 | 1677 | 1736 | 1795 | 1855 | 1914 | 1973 | 2033 | 2092 |      |    |
| 46    |     |     |     |     |     | 1379 | 1441 | 1503 | 1565 | 1627 | 1689 | 1751 | 1813 | 1875 | 1937 | 1999 | 2061 | 2123 | 2185 |      |    |
| 47    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 48    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 49    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 50    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |

# I-45/51

(*Populus ×euramericana*)

$$v = -10,2 + 0,0306d^2h$$

$$R^2 = 0,9760$$

$$n = 20$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30 | 31 | 32 | 33 | 34 | 35 |
|-------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|----|----|----|----|----|----|
| 15    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |    |    |
| 16    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |    |    |
| 17    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |    |    |
| 18    | 139 | 148 | 158 | 168 | 178  | 188  | 198  | 208  |      |      |      |      |      |      |      |    |    |    |    |    |    |
| 19    | 156 | 167 | 178 | 189 | 200  | 211  | 222  | 233  |      |      |      |      |      |      |      |    |    |    |    |    |    |
| 20    | 173 | 186 | 198 | 210 | 222  | 235  | 247  | 259  | 271  | 284  | 296  |      |      |      |      |    |    |    |    |    |    |
| 21    | 192 | 206 | 219 | 233 | 246  | 260  | 273  | 287  | 300  | 314  | 327  | 341  |      |      |      |    |    |    |    |    |    |
| 22    | 212 | 227 | 242 | 256 | 271  | 286  | 301  | 316  | 330  | 345  | 360  | 375  |      |      |      |    |    |    |    |    |    |
| 23    | 233 | 249 | 265 | 281 | 297  | 314  | 330  | 346  | 362  | 378  | 395  | 411  |      |      |      |    |    |    |    |    |    |
| 24    | 254 | 272 | 289 | 307 | 325  | 342  | 360  | 378  | 395  | 413  | 430  | 448  |      |      |      |    |    |    |    |    |    |
| 25    | 277 | 296 | 315 | 334 | 353  | 372  | 391  | 411  | 430  | 449  | 468  | 487  | 506  |      |      |    |    |    |    |    |    |
| 26    |     | 321 | 341 | 362 | 383  | 404  | 424  | 445  | 466  | 486  | 507  | 528  | 548  |      |      |    |    |    |    |    |    |
| 27    |     | 347 | 369 | 391 | 414  | 436  | 458  | 481  | 503  | 525  | 548  | 570  | 592  |      |      |    |    |    |    |    |    |
| 28    |     | 374 | 398 | 422 | 446  | 470  | 494  | 518  | 542  | 566  | 590  | 614  | 638  | 662  | 686  |    |    |    |    |    |    |
| 29    |     | 402 | 427 | 453 | 479  | 505  | 530  | 556  | 582  | 607  | 633  | 659  | 685  | 710  | 736  |    |    |    |    |    |    |
| 30    |     |     |     | 513 | 541  | 568  | 596  | 623  | 651  | 678  | 706  | 733  | 761  | 788  |      |    |    |    |    |    |    |
| 31    |     |     |     | 549 | 578  | 607  | 637  | 666  | 696  | 725  | 754  | 784  | 813  | 843  | 872  |    |    |    |    |    |    |
| 32    |     |     |     | 585 | 617  | 648  | 679  | 711  | 742  | 773  | 805  | 836  | 867  | 899  | 930  |    |    |    |    |    |    |
| 33    |     |     |     | 623 | 656  | 690  | 723  | 756  | 790  | 823  | 856  | 890  | 923  | 956  | 990  |    |    |    |    |    |    |
| 34    |     |     |     | 662 | 697  | 733  | 768  | 803  | 839  | 874  | 910  | 945  | 980  | 1016 | 1051 |    |    |    |    |    |    |
| 35    |     |     |     | 702 | 740  | 777  | 814  | 852  | 889  | 927  | 964  | 1002 | 1039 | 1077 | 1114 |    |    |    |    |    |    |
| 36    |     |     |     | 743 | 783  | 823  | 862  | 902  | 942  | 981  | 1021 | 1061 | 1100 | 1140 | 1180 |    |    |    |    |    |    |
| 37    |     |     |     | 828 | 870  | 911  | 953  | 995  | 1037 | 1079 | 1121 | 1163 | 1205 | 1247 |      |    |    |    |    |    |    |
| 38    |     |     |     | 874 | 918  | 962  | 1006 | 1050 | 1094 | 1139 | 1183 | 1227 | 1271 | 1315 |      |    |    |    |    |    |    |
| 39    |     |     |     | 921 | 967  | 1014 | 1060 | 1107 | 1153 | 1200 | 1246 | 1293 | 1340 | 1386 |      |    |    |    |    |    |    |
| 40    |     |     |     |     | 1018 | 1067 | 1116 | 1165 | 1214 | 1263 | 1312 | 1361 | 1410 | 1459 |      |    |    |    |    |    |    |
| 41    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |    |    |
| 42    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |    |    |
| 43    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |    |    |
| 44    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |    |    |
| 45    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |    |    |
| 46    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |    |    |
| 47    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |    |    |
| 48    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |    |    |
| 49    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |    |    |
| 50    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |    |    |

# I-135/56

(*Populus ×euramericana*)

$$v = -151,4 + 0,0393d^2h$$

$$R^2 = 0,9535$$

$$n = 10$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35 |  |
|-------|----|----|----|----|----|----|----|----|------|------|------|------|------|------|------|------|------|------|------|------|----|--|
| 15    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 16    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 17    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 18    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 19    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 20    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 21    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 22    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 23    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 24    |    |    |    |    |    |    |    |    | 392  | 415  | 437  | 460  | 482  | 505  | 528  | 550  |      |      |      |      |    |  |
| 25    |    |    |    |    |    |    |    |    | 438  | 463  | 487  | 512  | 536  | 561  | 585  | 610  |      |      |      |      |    |  |
| 26    |    |    |    |    |    |    |    |    | 486  | 513  | 539  | 566  | 592  | 619  | 646  | 672  |      |      |      |      |    |  |
| 27    |    |    |    |    |    |    |    |    | 536  | 565  | 593  | 622  | 651  | 679  | 708  | 737  |      |      |      |      |    |  |
| 28    |    |    |    |    |    |    |    |    | 588  | 619  | 650  | 680  | 711  | 742  | 773  | 804  |      |      |      |      |    |  |
| 29    |    |    |    |    |    |    |    |    | 642  | 675  | 708  | 741  | 774  | 807  | 840  | 873  |      |      |      |      |    |  |
| 30    |    |    |    |    |    |    |    |    | 697  | 733  | 768  | 804  | 839  | 874  | 910  | 945  |      |      |      |      |    |  |
| 31    |    |    |    |    |    |    |    |    | 755  | 793  | 831  | 868  | 906  | 944  | 982  | 1019 | 1057 | 1095 |      |      |    |  |
| 32    |    |    |    |    |    |    |    |    | 814  | 855  | 895  | 935  | 975  | 1016 | 1056 | 1096 | 1136 | 1177 |      |      |    |  |
| 33    |    |    |    |    |    |    |    |    | 876  | 919  | 961  | 1004 | 1047 | 1090 | 1133 | 1175 | 1218 | 1261 |      |      |    |  |
| 34    |    |    |    |    |    |    |    |    | 939  | 984  | 1030 | 1075 | 1121 | 1166 | 1212 | 1257 | 1302 | 1348 |      |      |    |  |
| 35    |    |    |    |    |    |    |    |    | 1052 | 1100 | 1148 | 1197 | 1245 | 1293 | 1341 | 1389 | 1437 | 1485 | 1534 |      |    |  |
| 36    |    |    |    |    |    |    |    |    | 1122 | 1173 | 1224 | 1275 | 1326 | 1377 | 1427 | 1478 | 1529 | 1580 | 1631 |      |    |  |
| 37    |    |    |    |    |    |    |    |    | 1194 | 1247 | 1301 | 1355 | 1409 | 1463 | 1516 | 1570 | 1624 | 1678 | 1732 |      |    |  |
| 38    |    |    |    |    |    |    |    |    | 1267 | 1324 | 1381 | 1438 | 1494 | 1551 | 1608 | 1665 | 1721 | 1778 | 1835 |      |    |  |
| 39    |    |    |    |    |    |    |    |    | 1343 | 1403 | 1463 | 1522 | 1582 | 1642 | 1702 | 1761 | 1821 | 1881 | 1941 |      |    |  |
| 40    |    |    |    |    |    |    |    |    | 1421 | 1483 | 1546 | 1609 | 1672 | 1735 | 1798 | 1861 | 1924 | 1987 | 2049 |      |    |  |
| 41    |    |    |    |    |    |    |    |    | 1566 | 1632 | 1698 | 1764 | 1830 | 1897 | 1963 | 2029 | 2095 | 2161 |      |      |    |  |
| 42    |    |    |    |    |    |    |    |    | 1651 | 1720 | 1790 | 1859 | 1928 | 1998 | 2067 | 2136 | 2206 | 2275 |      |      |    |  |
| 43    |    |    |    |    |    |    |    |    | 1738 | 1811 | 1883 | 1956 | 2029 | 2101 | 2174 | 2247 | 2319 | 2392 |      |      |    |  |
| 44    |    |    |    |    |    |    |    |    | 1827 | 1903 | 1979 | 2055 | 2131 | 2207 | 2283 | 2359 | 2435 | 2512 |      |      |    |  |
| 45    |    |    |    |    |    |    |    |    |      |      |      |      | 2077 | 2156 | 2236 | 2316 | 2395 | 2475 | 2554 | 2634 |    |  |
| 46    |    |    |    |    |    |    |    |    |      |      |      |      | 2177 | 2260 | 2343 | 2427 | 2510 | 2593 | 2676 | 2759 |    |  |
| 47    |    |    |    |    |    |    |    |    |      |      |      |      | 2279 | 2366 | 2453 | 2540 | 2627 | 2713 | 2800 | 2887 |    |  |
| 48    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 49    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 50    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |    |  |

# I-214

(*Populus ×euramericana*)

$$v = -48,9 + 0,0331d^2h$$

$$R^2 = 0,9673$$

$$n = 264$$

$$p = 12$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35 |
|-------|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| 15    | 63  | 70  | 78  | 85  | 93  | 100  | 107  | 115  | 122  |      |      |      |      |      |      |      |      |      |      |      |    |
| 16    | 78  | 87  | 95  | 104 | 112 | 121  | 129  | 137  | 146  |      |      |      |      |      |      |      |      |      |      |      |    |
| 17    | 95  | 104 | 114 | 123 | 133 | 142  | 152  | 162  | 171  |      |      |      |      |      |      |      |      |      |      |      |    |
| 18    | 112 | 123 | 133 | 144 | 155 | 166  | 176  | 187  | 198  | 208  | 219  |      |      |      |      |      |      |      |      |      |    |
| 19    | 130 | 142 | 154 | 166 | 178 | 190  | 202  | 214  | 226  | 238  | 250  | 262  |      |      |      |      |      |      |      |      |    |
| 20    | 150 | 163 | 176 | 189 | 203 | 216  | 229  | 242  | 256  | 269  | 282  | 295  |      |      |      |      |      |      |      |      |    |
| 21    | 170 | 185 | 199 | 214 | 228 | 243  | 258  | 272  | 287  | 301  | 316  | 331  | 345  | 360  |      |      |      |      |      |      |    |
| 22    | 191 | 207 | 223 | 239 | 255 | 271  | 288  | 304  | 320  | 336  | 352  | 368  | 384  | 400  | 416  | 432  |      |      |      |      |    |
| 23    | 214 | 231 | 249 | 266 | 284 | 301  | 319  | 336  | 354  | 371  | 389  | 406  | 424  | 441  | 459  | 476  |      |      |      |      |    |
| 24    | 237 | 256 | 275 | 294 | 313 | 332  | 351  | 371  | 390  | 409  | 428  | 447  | 466  | 485  | 504  | 523  | 542  |      |      |      |    |
| 25    | 261 | 282 | 303 | 323 | 344 | 365  | 386  | 406  | 427  | 448  | 468  | 489  | 510  | 530  | 551  | 572  | 592  |      |      |      |    |
| 26    | 287 | 309 | 331 | 354 | 376 | 399  | 421  | 443  | 466  | 488  | 510  | 533  | 555  | 578  | 600  | 622  | 645  | 667  | 689  |      |    |
| 27    | 313 | 337 | 361 | 385 | 410 | 434  | 458  | 482  | 506  | 530  | 554  | 578  | 603  | 627  | 651  | 675  | 699  | 723  | 747  | 771  |    |
| 28    |     | 392 | 418 | 444 | 470 | 496  | 522  | 548  | 574  | 600  | 626  | 652  | 678  | 704  | 730  | 756  | 781  | 807  | 833  |      |    |
| 29    |     | 424 | 452 | 480 | 508 | 536  | 563  | 591  | 619  | 647  | 675  | 703  | 731  | 758  | 786  | 814  | 842  | 870  | 898  |      |    |
| 30    |     |     |     | 517 | 547 | 577  | 606  | 636  | 666  | 696  | 726  | 755  | 785  | 815  | 845  | 875  | 904  | 934  | 964  | 994  |    |
| 31    |     |     |     | 555 | 587 | 619  | 651  | 683  | 714  | 746  | 778  | 810  | 842  | 874  | 905  | 937  | 969  | 1001 | 1033 | 1064 |    |
| 32    |     |     |     | 595 | 629 | 663  | 697  | 731  | 765  | 798  | 832  | 866  | 900  | 934  | 968  | 1002 | 1036 | 1070 | 1103 | 1137 |    |
| 33    |     |     |     | 636 | 672 | 708  | 744  | 780  | 816  | 852  | 888  | 924  | 960  | 996  | 1032 | 1069 | 1105 | 1141 | 1177 | 1213 |    |
| 34    |     |     |     |     | 716 | 755  | 793  | 831  | 869  | 908  | 946  | 984  | 1022 | 1061 | 1099 | 1137 | 1176 | 1214 | 1252 | 1290 |    |
| 35    |     |     |     |     | 762 | 803  | 843  | 884  | 924  | 965  | 1005 | 1046 | 1086 | 1127 | 1168 | 1208 | 1249 | 1289 | 1330 | 1370 |    |
| 36    |     |     |     |     | 809 | 852  | 895  | 938  | 981  | 1024 | 1066 | 1109 | 1152 | 1195 | 1238 | 1281 | 1324 | 1367 | 1410 | 1452 |    |
| 37    |     |     |     |     | 857 | 903  | 948  | 993  | 1039 | 1084 | 1129 | 1175 | 1220 | 1265 | 1310 | 1356 | 1401 | 1446 | 1492 | 1537 |    |
| 38    |     |     |     |     | 907 | 955  | 1003 | 1050 | 1098 | 1146 | 1194 | 1242 | 1289 | 1337 | 1385 | 1433 | 1481 | 1528 | 1576 | 1624 |    |
| 39    |     |     |     |     | 958 | 1008 | 1059 | 1109 | 1159 | 1210 | 1260 | 1310 | 1361 | 1411 | 1461 | 1512 | 1562 | 1612 | 1663 | 1713 |    |
| 40    |     |     |     |     |     | 1063 | 1116 | 1169 | 1222 | 1275 | 1328 | 1381 | 1434 | 1487 | 1540 | 1593 | 1646 | 1699 | 1752 | 1805 |    |
| 41    |     |     |     |     |     |      | 1231 | 1286 | 1342 | 1398 | 1453 | 1509 | 1565 | 1620 | 1676 | 1732 | 1787 | 1843 | 1899 |      |    |
| 42    |     |     |     |     |     |      | 1294 | 1352 | 1411 | 1469 | 1528 | 1586 | 1644 | 1703 | 1761 | 1820 | 1878 | 1936 | 1995 |      |    |
| 43    |     |     |     |     |     |      | 1359 | 1420 | 1481 | 1542 | 1604 | 1665 | 1726 | 1787 | 1848 | 1910 | 1971 | 2032 | 2093 |      |    |
| 44    |     |     |     |     |     |      |      | 1489 | 1553 | 1617 | 1681 | 1745 | 1809 | 1874 | 1938 | 2002 | 2066 | 2130 | 2194 |      |    |
| 45    |     |     |     |     |     |      |      | 1560 | 1627 | 1694 | 1761 | 1828 | 1895 | 1962 | 2029 | 2096 | 2163 | 2230 | 2297 |      |    |
| 46    |     |     |     |     |     |      |      | 1632 | 1702 | 1772 | 1842 | 1912 | 1982 | 2052 | 2122 | 2192 | 2262 | 2332 | 2402 |      |    |
| 47    |     |     |     |     |     |      |      | 1706 | 1779 | 1852 | 1925 | 1998 | 2071 | 2145 | 2218 | 2291 | 2364 | 2437 | 2510 |      |    |
| 48    |     |     |     |     |     |      |      |      | 1934 | 2010 | 2086 | 2163 | 2239 | 2315 | 2391 | 2468 | 2544 | 2620 |      |      |    |
| 49    |     |     |     |     |     |      |      |      | 2017 | 2097 | 2176 | 2256 | 2335 | 2415 | 2494 | 2574 | 2653 | 2733 |      |      |    |
| 50    |     |     |     |     |     |      |      |      | 2103 | 2185 | 2268 | 2351 | 2434 | 2516 | 2599 | 2682 | 2765 | 2847 |      |      |    |

## I-262

(*Populus ×euramericana*)

$$v = 2,8 + 0,0301d^2h$$

$$R^2 = 0,9924$$

$$n = 18$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 27   | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----|----|----|----|----|----|----|----|
| 15    | 104 | 111 | 118 | 125 | 131 | 138 | 145 | 152 |     |     |     |     |      |    |    |    |    |    |    |    |    |
| 16    | 118 | 126 | 134 | 141 | 149 | 157 | 165 | 172 | 180 |     |     |     |      |    |    |    |    |    |    |    |    |
| 17    | 133 | 142 | 151 | 159 | 168 | 177 | 185 | 194 | 203 |     |     |     |      |    |    |    |    |    |    |    |    |
| 18    | 149 | 159 | 169 | 178 | 188 | 198 | 208 | 217 | 227 |     |     |     |      |    |    |    |    |    |    |    |    |
| 19    | 166 | 177 | 188 | 198 | 209 | 220 | 231 | 242 | 253 | 264 |     |     |      |    |    |    |    |    |    |    |    |
| 20    | 183 | 195 | 207 | 220 | 232 | 244 | 256 | 268 | 280 | 292 |     |     |      |    |    |    |    |    |    |    |    |
| 21    | 202 | 215 | 228 | 242 | 255 | 268 | 282 | 295 | 308 | 321 |     |     |      |    |    |    |    |    |    |    |    |
| 22    | 221 | 236 | 250 | 265 | 280 | 294 | 309 | 323 | 338 | 352 |     |     |      |    |    |    |    |    |    |    |    |
| 23    | 242 | 258 | 273 | 289 | 305 | 321 | 337 | 353 | 369 | 385 |     |     |      |    |    |    |    |    |    |    |    |
| 24    | 263 | 280 | 298 | 315 | 332 | 350 | 367 | 384 | 402 | 419 |     |     |      |    |    |    |    |    |    |    |    |
| 25    | 285 | 304 | 323 | 341 | 360 | 379 | 398 | 417 | 435 | 454 |     |     |      |    |    |    |    |    |    |    |    |
| 26    | 308 | 328 | 349 | 369 | 389 | 410 | 430 | 450 | 471 | 491 |     |     |      |    |    |    |    |    |    |    |    |
| 27    |     | 354 | 376 | 398 | 420 | 442 | 464 | 486 | 507 | 529 |     |     |      |    |    |    |    |    |    |    |    |
| 28    |     | 380 | 404 | 428 | 451 | 475 | 498 | 522 | 546 | 569 |     |     |      |    |    |    |    |    |    |    |    |
| 29    |     | 408 | 433 | 458 | 484 | 509 | 534 | 560 | 585 | 610 | 636 | 661 |      |    |    |    |    |    |    |    |    |
| 30    |     | 436 | 463 | 490 | 518 | 545 | 572 | 599 | 626 | 653 | 680 | 707 |      |    |    |    |    |    |    |    |    |
| 31    |     | 466 | 495 | 523 | 552 | 581 | 610 | 639 | 668 | 697 | 726 | 755 |      |    |    |    |    |    |    |    |    |
| 32    |     |     | 527 | 558 | 588 | 619 | 650 | 681 | 712 | 743 | 773 | 804 |      |    |    |    |    |    |    |    |    |
| 33    |     |     |     |     | 626 | 658 | 691 | 724 | 757 | 789 | 822 | 855 |      |    |    |    |    |    |    |    |    |
| 34    |     |     |     |     |     | 664 | 699 | 734 | 768 | 803 | 838 | 873 | 907  |    |    |    |    |    |    |    |    |
| 35    |     |     |     |     |     | 703 | 740 | 777 | 814 | 851 | 888 | 925 | 961  |    |    |    |    |    |    |    |    |
| 36    |     |     |     |     |     | 744 | 783 | 822 | 861 | 900 | 939 | 978 | 1017 |    |    |    |    |    |    |    |    |
| 37    |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |    |    |
| 38    |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |    |    |
| 39    |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |    |    |
| 40    |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |    |    |
| 41    |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |    |    |
| 42    |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |    |    |
| 43    |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |    |    |
| 44    |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |    |    |
| 45    |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |    |    |
| 46    |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |    |    |
| 47    |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |    |    |
| 48    |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |    |    |
| 49    |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |    |    |
| 50    |     |     |     |     |     |     |     |     |     |     |     |     |      |    |    |    |    |    |    |    |    |

# I-454/40

(*Populus ×euramericana*)

$$v = -41,7 + 0,0313d^2h$$

$$R^2 = 0,9858$$

$$n = 30$$

$$p = 2$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35 |
|-------|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| 15    | 64  | 71  | 78  | 85   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 16    | 79  | 87  | 95  | 103  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 17    | 94  | 103 | 112 | 121  | 130  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 18    | 110 | 121 | 131 | 141  | 151  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 19    | 128 | 139 | 150 | 162  | 173  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 20    | 146 | 159 | 171 | 184  | 196  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 21    | 165 | 179 | 193 | 207  | 221  | 234  | 248  | 262  | 276  | 290  | 303  |      |      |      |      |      |      |      |      |      |    |
| 22    | 186 | 201 | 216 | 231  | 246  | 261  | 276  | 292  | 307  | 322  | 337  |      |      |      |      |      |      |      |      |      |    |
| 23    | 207 | 223 | 240 | 256  | 273  | 290  | 306  | 323  | 339  | 356  | 372  |      |      |      |      |      |      |      |      |      |    |
| 24    | 229 | 247 | 265 | 283  | 301  | 319  | 337  | 355  | 373  | 391  | 409  |      |      |      |      |      |      |      |      |      |    |
| 25    | 252 | 271 | 291 | 310  | 330  | 350  | 369  | 389  | 408  | 428  | 447  |      |      |      |      |      |      |      |      |      |    |
| 26    | 276 | 297 | 318 | 339  | 360  | 382  | 403  | 424  | 445  | 466  | 487  |      |      |      |      |      |      |      |      |      |    |
| 27    | 301 | 323 | 346 | 369  | 392  | 415  | 438  | 460  | 483  | 506  | 529  |      |      |      |      |      |      |      |      |      |    |
| 28    | 326 | 351 | 376 | 400  | 425  | 449  | 474  | 498  | 523  | 547  | 572  | 596  |      |      |      |      |      |      |      |      |    |
| 29    | 353 | 380 | 406 | 432  | 458  | 485  | 511  | 537  | 564  | 590  | 616  | 643  |      |      |      |      |      |      |      |      |    |
| 30    | 381 | 409 | 437 | 465  | 494  | 522  | 550  | 578  | 606  | 634  | 663  | 691  | 719  | 747  |      |      |      |      |      |      |    |
| 31    |     | 470 | 500 | 530  | 560  | 590  | 620  | 650  | 680  | 710  | 740  | 770  | 801  | 831  | 861  | 891  | 921  | 951  | 981  | 1011 |    |
| 32    |     |     |     | 567  | 599  | 631  | 663  | 696  | 728  | 760  | 792  | 824  | 856  | 888  | 920  | 952  | 984  | 1016 | 1048 | 1080 |    |
| 33    |     |     |     | 606  | 640  | 674  | 708  | 742  | 776  | 810  | 845  | 879  | 913  | 947  | 981  | 1015 | 1049 | 1083 | 1117 | 1151 |    |
| 34    |     |     |     | 646  | 682  | 718  | 754  | 791  | 827  | 863  | 899  | 935  | 971  | 1008 | 1044 | 1080 | 1116 | 1152 | 1189 | 1225 |    |
| 35    |     |     |     | 687  | 725  | 764  | 802  | 840  | 879  | 917  | 955  | 994  | 1032 | 1070 | 1109 | 1147 | 1185 | 1224 | 1262 | 1300 |    |
| 36    |     |     |     | 729  | 770  | 810  | 851  | 891  | 932  | 972  | 1013 | 1054 | 1094 | 1135 | 1175 | 1216 | 1256 | 1297 | 1338 | 1378 |    |
| 37    |     |     |     | 772  | 815  | 858  | 901  | 944  | 987  | 1030 | 1072 | 1115 | 1158 | 1201 | 1244 | 1287 | 1330 | 1372 | 1415 | 1458 |    |
| 38    |     |     |     | 817  | 862  | 907  | 953  | 998  | 1043 | 1088 | 1133 | 1179 | 1224 | 1269 | 1314 | 1359 | 1405 | 1450 | 1495 | 1540 |    |
| 39    |     |     |     | 863  | 910  | 958  | 1006 | 1053 | 1101 | 1149 | 1196 | 1244 | 1291 | 1339 | 1387 | 1434 | 1482 | 1529 | 1577 | 1625 |    |
| 40    |     |     |     | 960  | 1010 | 1060 | 1110 | 1160 | 1210 | 1260 | 1311 | 1361 | 1411 | 1461 | 1511 | 1561 | 1611 | 1661 | 1711 |      |    |
| 41    |     |     |     | 1011 | 1063 | 1116 | 1169 | 1221 | 1274 | 1326 | 1379 | 1432 | 1484 | 1537 | 1589 | 1642 | 1695 | 1747 | 1800 |      |    |
| 42    |     |     |     | 1063 | 1118 | 1173 | 1228 | 1283 | 1339 | 1394 | 1449 | 1504 | 1560 | 1615 | 1670 | 1725 | 1780 | 1836 | 1891 |      |    |
| 43    |     |     |     | 1116 | 1174 | 1232 | 1289 | 1347 | 1405 | 1463 | 1521 | 1579 | 1637 | 1695 | 1752 | 1810 | 1868 | 1926 | 1984 |      |    |
| 44    |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      | 1776 | 1837 | 1897 | 1958 | 2019 |    |
| 45    |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      | 1860 | 1923 | 1987 | 2050 | 2113 |    |
| 46    |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      | 1945 | 2012 | 2078 | 2144 | 2210 |    |
| 47    |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      | 2033 | 2102 | 2171 | 2240 | 2309 |    |
| 48    |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      | 2122 | 2194 | 2266 | 2338 | 2410 |    |
| 49    |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      | 2213 | 2288 | 2363 | 2438 | 2513 |    |
| 50    |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      | 2306 | 2384 | 2462 | 2541 | 2619 |    |

# I-455

(*Populus ×euramericana*)

$$v = -68,9 + 0,0377d^2h$$

$$R^2 = 0,9194$$

$$n = 14$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15 | 16  | 17  | 18  | 19  | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35 |
|-------|----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| 15    |    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 16    |    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 17    |    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 18    |    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 19    |    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 20    |    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 21    |    | 247 | 264 | 280 | 297 | 313  | 330  | 347  | 363  |      |      |      |      |      |      |      |      |      |      |      |    |
| 22    |    | 278 | 296 | 314 | 333 | 351  | 369  | 387  | 405  |      |      |      |      |      |      |      |      |      |      |      |    |
| 23    |    | 310 | 330 | 350 | 370 | 390  | 410  | 430  | 450  |      |      |      |      |      |      |      |      |      |      |      |    |
| 24    |    | 344 | 365 | 387 | 409 | 431  | 452  | 474  | 496  |      |      |      |      |      |      |      |      |      |      |      |    |
| 25    |    | 379 | 402 | 426 | 449 | 473  | 497  | 520  | 544  |      |      |      |      |      |      |      |      |      |      |      |    |
| 26    |    | 415 | 441 | 466 | 492 | 517  | 543  | 568  | 594  | 619  | 645  | 670  | 696  |      |      |      |      |      |      |      |    |
| 27    |    | 453 | 481 | 508 | 536 | 563  | 591  | 618  | 646  | 673  | 701  | 728  | 756  |      |      |      |      |      |      |      |    |
| 28    |    | 493 | 522 | 552 | 581 | 611  | 640  | 670  | 700  | 729  | 759  | 788  | 818  | 847  | 877  |      |      |      |      |      |    |
| 29    |    |     |     |     |     | 660  | 692  | 724  | 755  | 787  | 819  | 851  | 882  | 914  | 946  |      |      |      |      |      |    |
| 30    |    |     |     |     |     | 711  | 745  | 779  | 813  | 847  | 881  | 915  | 949  | 983  | 1017 | 1051 |      |      |      |      |    |
| 31    |    |     |     |     |     | 764  | 801  | 837  | 873  | 909  | 946  | 982  | 1018 | 1054 | 1090 | 1127 | 1163 | 1199 |      |      |    |
| 32    |    |     |     |     |     | 819  | 858  | 896  | 935  | 973  | 1012 | 1051 | 1089 | 1128 | 1166 | 1205 | 1244 | 1282 |      |      |    |
| 33    |    |     |     |     |     | 875  | 916  | 957  | 999  | 1040 | 1081 | 1122 | 1163 | 1204 | 1245 | 1286 | 1327 | 1368 |      |      |    |
| 34    |    |     |     |     |     | 933  | 977  | 1021 | 1064 | 1108 | 1151 | 1195 | 1239 | 1282 | 1326 | 1369 | 1413 | 1456 |      |      |    |
| 35    |    |     |     |     |     | 993  | 1039 | 1086 | 1132 | 1178 | 1224 | 1270 | 1317 | 1363 | 1409 | 1455 | 1501 | 1547 |      |      |    |
| 36    |    |     |     |     |     | 1055 | 1104 | 1153 | 1201 | 1250 | 1299 | 1348 | 1397 | 1446 | 1495 | 1543 | 1592 | 1641 |      |      |    |
| 37    |    |     |     |     |     | 1118 | 1170 | 1221 | 1273 | 1325 | 1376 | 1428 | 1479 | 1531 | 1583 | 1634 | 1686 | 1737 |      |      |    |
| 38    |    |     |     |     |     | 1183 | 1238 | 1292 | 1346 | 1401 | 1455 | 1510 | 1564 | 1619 | 1673 | 1728 | 1782 | 1836 |      |      |    |
| 39    |    |     |     |     |     | 1250 | 1307 | 1365 | 1422 | 1479 | 1537 | 1594 | 1651 | 1709 | 1766 | 1823 | 1881 | 1938 |      |      |    |
| 40    |    |     |     |     |     | 1318 | 1379 | 1439 | 1499 | 1560 | 1620 | 1680 | 1741 | 1801 | 1861 | 1922 | 1982 | 2042 |      |      |    |
| 41    |    |     |     |     |     |      |      |      | 1579 | 1642 | 1706 | 1769 | 1832 | 1896 | 1959 | 2022 | 2086 | 2149 |      |      |    |
| 42    |    |     |     |     |     |      |      |      | 1660 | 1727 | 1793 | 1860 | 1926 | 1993 | 2059 | 2126 | 2192 | 2259 |      |      |    |
| 43    |    |     |     |     |     |      |      |      |      | 1883 | 1953 | 2022 | 2092 | 2162 | 2231 | 2301 | 2371 |      |      |      |    |
| 44    |    |     |     |     |     |      |      |      |      |      |      |      |      |      | 2121 | 2194 | 2267 | 2340 | 2413 | 2486 |    |
| 45    |    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 46    |    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 47    |    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 48    |    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 49    |    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 50    |    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |

# I-488

(*Populus ×euramericana*)

$$v = -39,1 + 0,0349d^2h$$

$$R^2 = 0,9758$$

$$n = 79$$

$$p = 5$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 28  | 29  | 30   | 31   | 32   | 33   | 34   | 35   |      |      |      |      |      |      |      |      |  |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| 15    | 79  | 87  | 94  | 102 | 110 | 118 | 126 | 134 | 142 | 149 |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 16    | 95  | 104 | 113 | 122 | 131 | 140 | 149 | 157 | 166 | 175 | 184 |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 17    | 112 | 122 | 132 | 142 | 153 | 163 | 173 | 183 | 193 | 203 | 213 |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 18    | 131 | 142 | 153 | 164 | 176 | 187 | 198 | 210 | 221 | 232 | 244 | 255 | 266 | 278 | 289 | 300  | 311  | 323  |      |      |      |      |      |      |      |      |      |      |      |  |
| 19    | 150 | 162 | 175 | 188 | 200 | 213 | 225 | 238 | 251 | 263 | 276 | 288 | 301 | 314 | 326 | 339  | 351  | 364  |      |      |      |      |      |      |      |      |      |      |      |  |
| 20    | 170 | 184 | 198 | 212 | 226 | 240 | 254 | 268 | 282 | 296 | 310 | 324 | 338 | 352 | 366 | 380  | 394  | 408  |      |      |      |      |      |      |      |      |      |      |      |  |
| 21    | 192 | 207 | 223 | 238 | 253 | 269 | 284 | 300 | 315 | 330 | 346 | 361 | 376 | 392 | 407 | 423  | 438  | 453  |      |      |      |      |      |      |      |      |      |      |      |  |
| 22    | 214 | 231 | 248 | 265 | 282 | 299 | 316 | 333 | 349 | 366 | 383 | 400 | 417 | 434 | 451 | 468  | 485  | 501  |      |      |      |      |      |      |      |      |      |      |      |  |
| 23    | 238 | 256 | 275 | 293 | 312 | 330 | 349 | 367 | 386 | 404 | 422 | 441 | 459 | 478 | 496 | 515  | 533  | 552  |      |      |      |      |      |      |      |      |      |      |      |  |
| 24    | 262 | 283 | 303 | 323 | 343 | 363 | 383 | 403 | 423 | 443 | 463 | 484 | 504 | 524 | 544 | 564  | 584  | 604  | 624  |      |      |      |      |      |      |      |      |      |      |  |
| 25    |     | 310 | 332 | 354 | 375 | 397 | 419 | 441 | 463 | 484 | 506 | 528 | 550 | 572 | 593 | 615  | 637  | 659  | 681  |      |      |      |      |      |      |      |      |      |      |  |
| 26    |     | 338 | 362 | 386 | 409 | 433 | 456 | 480 | 504 | 527 | 551 | 574 | 598 | 622 | 645 | 669  | 692  | 716  | 739  |      |      |      |      |      |      |      |      |      |      |  |
| 27    |     |     | 393 | 419 | 444 | 470 | 495 | 521 | 546 | 572 | 597 | 622 | 648 | 673 | 699 | 724  | 750  | 775  | 801  |      |      |      |      |      |      |      |      |      |      |  |
| 28    |     |     |     | 453 | 481 | 508 | 536 | 563 | 590 | 618 | 645 | 672 | 700 | 727 | 754 | 782  | 809  | 836  | 864  |      |      |      |      |      |      |      |      |      |      |  |
| 29    |     |     |     |     | 489 | 519 | 548 | 577 | 607 | 636 | 665 | 695 | 724 | 753 | 783 | 812  | 841  | 871  | 900  | 929  |      |      |      |      |      |      |      |      |      |  |
| 30    |     |     |     |     |     | 526 | 558 | 589 | 621 | 652 | 683 | 715 | 746 | 778 | 809 | 840  | 872  | 903  | 935  | 966  | 997  |      |      |      |      |      |      |      |      |  |
| 31    |     |     |     |     |     |     | 565 | 598 | 632 | 665 | 699 | 732 | 766 | 799 | 833 | 866  | 900  | 934  | 967  | 1001 | 1034 |      |      |      |      |      |      |      |      |  |
| 32    |     |     |     |     |     |     |     | 640 | 676 | 711 | 747 | 783 | 819 | 854 | 890 | 926  | 962  | 996  | 1033 | 1069 | 1105 |      |      |      |      |      |      |      |      |  |
| 33    |     |     |     |     |     |     |     |     | 683 | 721 | 759 | 797 | 835 | 873 | 911 | 949  | 987  | 1025 | 1063 | 1101 | 1139 |      |      |      |      |      |      |      |      |  |
| 34    |     |     |     |     |     |     |     |     |     | 727 | 768 | 808 | 848 | 889 | 929 | 970  | 1010 | 1050 | 1091 | 1131 | 1171 |      |      |      |      |      |      |      |      |  |
| 35    |     |     |     |     |     |     |     |     |     |     | 773 | 816 | 859 | 901 | 944 | 987  | 1030 | 1072 | 1115 | 1158 | 1201 | 1243 |      |      |      |      |      |      |      |  |
| 36    |     |     |     |     |     |     |     |     |     |     |     | 820 | 866 | 911 | 956 | 1001 | 1046 | 1092 | 1137 | 1182 | 1227 | 1273 | 1318 |      |      |      |      |      |      |  |
| 37    |     |     |     |     |     |     |     |     |     |     |     |     | 869 | 916 | 964 | 1012 | 1060 | 1108 | 1155 | 1203 | 1251 | 1299 | 1346 | 1394 |      |      |      |      |      |  |
| 38    |     |     |     |     |     |     |     |     |     |     |     |     |     | 918 | 969 | 1019 | 1070 | 1120 | 1170 | 1221 | 1271 | 1322 | 1372 | 1422 | 1473 |      |      |      |      |  |
| 39    |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 969 | 1023 | 1076 | 1129 | 1182 | 1235 | 1288 | 1341 | 1394 | 1447 | 1500 | 1553 |      |      |      |  |
| 40    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 1245 | 1301 | 1357 | 1413 | 1469 | 1524 | 1580 | 1636 | 1692 | 1748 | 1804 | 1859 |      |      |  |
| 41    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      | 1310 | 1369 | 1428 | 1486 | 1545 | 1604 | 1662 | 1721 | 1780 | 1838 | 1897 | 1956 |      |  |
| 42    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      | 1377 | 1438 | 1500 | 1562 | 1623 | 1685 | 1746 | 1808 | 1869 | 1931 | 1993 | 2054 |  |
| 43    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      | 1639 | 1703 | 1768 | 1832 | 1897 | 1961 | 2026 | 2090 | 2155 | 2219 |      |  |
| 44    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 45    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 46    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 47    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 48    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 49    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 50    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |

# Italica

(*Populus nigra*)

$$v = 24,7 + 0,0250d^2h$$

$$R^2 = 0,9596$$

$$n = 16$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 28  | 29  | 30 | 31 | 32 | 33 | 34 | 35 |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|
| 15    | 119 | 125 | 130 | 136 | 142 | 147 |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 16    | 131 | 127 | 133 | 150 | 156 | 163 |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 17    | 143 | 140 | 148 | 165 | 172 | 179 | 186 | 194 | 201 | 208 | 215 |     |     |     |     |    |    |    |    |    |    |
| 18    | 156 | 154 | 162 | 180 | 189 | 197 | 205 | 213 | 221 | 229 | 237 |     |     |     |     |    |    |    |    |    |    |
| 19    | 170 | 169 | 178 | 197 | 206 | 215 | 224 | 233 | 242 | 251 | 260 |     |     |     |     |    |    |    |    |    |    |
| 20    | 185 | 185 | 195 | 205 | 215 | 225 | 235 | 245 | 265 | 275 | 285 |     |     |     |     |    |    |    |    |    |    |
| 21    | 200 | 201 | 212 | 223 | 234 | 245 | 256 | 267 | 288 | 299 | 310 |     |     |     |     |    |    |    |    |    |    |
| 22    | 216 | 228 | 240 | 242 | 255 | 267 | 279 | 291 | 313 | 325 | 337 | 349 | 361 |     |     |    |    |    |    |    |    |
| 23    | 233 | 246 | 260 | 263 | 276 | 289 | 302 | 316 | 339 | 352 | 365 | 379 | 392 |     |     |    |    |    |    |    |    |
| 24    | 251 | 265 | 279 | 294 | 298 | 313 | 327 | 341 | 366 | 380 | 395 | 409 | 423 |     |     |    |    |    |    |    |    |
| 25    | 269 | 285 | 300 | 316 | 322 | 337 | 353 | 368 | 384 | 400 | 425 | 441 | 457 |     |     |    |    |    |    |    |    |
| 26    | 288 | 305 | 322 | 339 | 356 | 363 | 380 | 396 | 413 | 430 | 457 | 474 | 491 |     |     |    |    |    |    |    |    |
| 27    |     | 326 | 345 | 363 | 381 | 389 | 407 | 426 | 444 | 462 | 490 | 509 | 527 |     |     |    |    |    |    |    |    |
| 28    |     | 348 | 368 | 387 | 407 | 417 | 436 | 456 | 475 | 495 | 525 | 544 | 564 |     |     |    |    |    |    |    |    |
| 29    |     |     | 392 | 413 | 434 | 455 | 476 | 497 | 518 | 539 | 560 | 581 | 602 |     |     |    |    |    |    |    |    |
| 30    |     |     |     | 417 | 440 | 462 | 485 | 507 | 530 | 552 | 575 | 597 | 620 | 642 |     |    |    |    |    |    |    |
| 31    |     |     |     |     | 443 | 467 | 491 | 515 | 539 | 563 | 587 | 611 | 635 | 659 | 683 |    |    |    |    |    |    |
| 32    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 33    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 34    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 35    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 36    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 37    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 38    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 39    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 40    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 41    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 42    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 43    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 44    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 45    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 46    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 47    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 48    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 49    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 50    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |

# Koster

(*Populus ×euramericana*)

$$v = 57,6 + 0,0253d^2h$$

$$R^2 = 0,9278$$

$$n = 17$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15 | 16  | 17  | 18  | 19  | 20  | 21  | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34 | 35 |
|-------|----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|----|----|
| 15    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |
| 16    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |
| 17    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |
| 18    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |
| 19    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |
| 20    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |
| 21    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |
| 22    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |
| 23    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |
| 24    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |
| 25    |    | 390 | 406 | 421 | 437 | 453 | 469 | 485  | 500  | 516  |      |      |      |      |      |      |      |      |      |    |    |
| 26    |    | 417 | 434 | 451 | 468 | 485 | 502 | 519  | 537  | 554  | 571  |      |      |      |      |      |      |      |      |    |    |
| 27    |    | 445 | 463 | 482 | 500 | 519 | 537 | 556  | 574  | 593  | 611  | 629  | 648  |      |      |      |      |      |      |    |    |
| 28    |    | 474 | 494 | 514 | 534 | 554 | 573 | 593  | 613  | 633  | 653  | 673  | 692  |      |      |      |      |      |      |    |    |
| 29    |    | 504 | 526 | 547 | 568 | 590 | 611 | 632  | 653  | 675  | 696  | 717  | 739  |      |      |      |      |      |      |    |    |
| 30    |    | 536 | 559 | 581 | 604 | 627 | 650 | 672  | 695  | 718  | 741  | 764  | 786  |      |      |      |      |      |      |    |    |
| 31    |    | 568 | 593 | 617 | 641 | 665 | 690 | 714  | 738  | 763  | 787  | 811  | 836  |      |      |      |      |      |      |    |    |
| 32    |    | 602 | 628 | 654 | 679 | 705 | 731 | 757  | 783  | 809  | 835  | 861  | 887  |      |      |      |      |      |      |    |    |
| 33    |    | 636 | 664 | 691 | 719 | 746 | 774 | 802  | 829  | 857  | 884  | 912  | 939  |      |      |      |      |      |      |    |    |
| 34    |    | 672 | 701 | 730 | 760 | 789 | 818 | 847  | 877  | 906  | 935  | 964  | 994  | 1023 |      |      |      |      |      |    |    |
| 35    |    | 708 | 739 | 770 | 801 | 832 | 863 | 894  | 925  | 956  | 987  | 1018 | 1049 | 1080 |      |      |      |      |      |    |    |
| 36    |    |     |     |     |     |     |     | 845  | 877  | 910  | 943  | 976  | 1009 | 1041 | 1074 | 1107 | 1140 | 1172 | 1205 |    |    |
| 37    |    |     |     |     |     |     |     | 889  | 924  | 958  | 993  | 1027 | 1062 | 1097 | 1131 | 1166 | 1201 | 1235 | 1270 |    |    |
| 38    |    |     |     |     |     |     |     | 934  | 971  | 1008 | 1044 | 1081 | 1117 | 1154 | 1190 | 1227 | 1263 | 1300 | 1336 |    |    |
| 39    |    |     |     |     |     |     |     | 981  | 1020 | 1058 | 1097 | 1135 | 1174 | 1212 | 1251 | 1289 | 1328 | 1366 | 1404 |    |    |
| 40    |    |     |     |     |     |     |     | 1070 | 1110 | 1151 | 1191 | 1232 | 1272 | 1313 | 1353 | 1393 | 1434 | 1474 |      |    |    |
| 41    |    |     |     |     |     |     |     | 1121 | 1163 | 1206 | 1248 | 1291 | 1334 | 1376 | 1419 | 1461 | 1504 | 1546 |      |    |    |
| 42    |    |     |     |     |     |     |     | 1173 | 1218 | 1263 | 1307 | 1352 | 1397 | 1441 | 1486 | 1530 | 1575 | 1620 |      |    |    |
| 43    |    |     |     |     |     |     |     | 1227 | 1274 | 1321 | 1367 | 1414 | 1461 | 1508 | 1555 | 1601 | 1648 | 1695 |      |    |    |
| 44    |    |     |     |     |     |     |     | 1282 | 1331 | 1380 | 1429 | 1478 | 1527 | 1576 | 1625 | 1674 | 1723 | 1772 |      |    |    |
| 45    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |
| 46    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |
| 47    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |
| 48    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |
| 49    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |
| 50    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |    |    |

# Luisa Avanzo

(*Populus ×euramericana*)

$$v = -10,2 + 0,0307d^2h$$

$$R^2 = 0,9776$$

$$n = 228$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   |  |
|-------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| 15    | 93  | 100 | 107 | 114 | 121  | 128  | 135  | 142  | 149  | 156  |      |      |      |      |      |      |      |      |      |      |      |  |
| 16    | 108 | 116 | 123 | 131 | 139  | 147  | 155  | 163  | 171  | 178  |      |      |      |      |      |      |      |      |      |      |      |  |
| 17    | 123 | 132 | 141 | 149 | 158  | 167  | 176  | 185  | 194  | 203  |      |      |      |      |      |      |      |      |      |      |      |  |
| 18    | 139 | 149 | 159 | 169 | 179  | 189  | 199  | 209  | 219  | 229  | 238  | 248  |      |      |      |      |      |      |      |      |      |  |
| 19    | 156 | 167 | 178 | 189 | 200  | 211  | 223  | 234  | 245  | 256  | 267  | 278  |      |      |      |      |      |      |      |      |      |  |
| 20    | 174 | 186 | 199 | 211 | 223  | 235  | 248  | 260  | 272  | 284  | 297  | 309  | 321  |      |      |      |      |      |      |      |      |  |
| 21    | 193 | 206 | 220 | 233 | 247  | 261  | 274  | 288  | 301  | 315  | 328  | 342  | 355  |      |      |      |      |      |      |      |      |  |
| 22    | 213 | 228 | 242 | 257 | 272  | 287  | 302  | 317  | 332  | 346  | 361  | 376  | 391  |      |      |      |      |      |      |      |      |  |
| 23    | 233 | 250 | 266 | 282 | 298  | 315  | 331  | 347  | 363  | 380  | 396  | 412  | 428  | 445  | 461  |      |      |      |      |      |      |  |
| 24    | 255 | 273 | 290 | 308 | 326  | 343  | 361  | 379  | 396  | 414  | 432  | 450  | 467  | 485  | 503  | 520  | 538  |      |      |      |      |  |
| 25    | 278 | 297 | 316 | 335 | 354  | 374  | 393  | 412  | 431  | 450  | 469  | 489  | 508  | 527  | 546  | 565  | 585  |      |      |      |      |  |
| 26    | 301 | 322 | 343 | 363 | 384  | 405  | 426  | 446  | 467  | 488  | 509  | 529  | 550  | 571  | 592  | 612  | 633  | 654  | 675  | 695  |      |  |
| 27    | 325 | 348 | 370 | 393 | 415  | 437  | 460  | 482  | 505  | 527  | 549  | 572  | 594  | 616  | 639  | 661  | 684  | 706  | 728  | 751  |      |  |
| 28    | 351 | 375 | 399 | 423 | 447  | 471  | 495  | 519  | 543  | 567  | 591  | 616  | 640  | 664  | 688  | 712  | 736  | 760  | 784  | 808  |      |  |
| 29    | 377 | 403 | 429 | 455 | 480  | 506  | 532  | 558  | 584  | 609  | 635  | 661  | 687  | 713  | 739  | 764  | 790  | 816  | 842  | 868  |      |  |
| 30    | 404 | 432 | 459 | 487 | 515  | 542  | 570  | 598  | 625  | 653  | 681  | 708  | 736  | 763  | 791  | 819  | 846  | 874  | 902  | 929  |      |  |
| 31    | 432 | 462 | 491 | 521 | 550  | 580  | 609  | 639  | 668  | 698  | 727  | 757  | 786  | 816  | 845  | 875  | 904  | 934  | 963  | 993  | 1022 |  |
| 32    | 493 | 524 | 556 | 587 | 619  | 650  | 681  | 713  | 744  | 776  | 807  | 839  | 870  | 901  | 933  | 964  | 996  | 1027 | 1059 | 1090 |      |  |
| 33    | 525 | 558 | 592 | 625 | 658  | 692  | 725  | 759  | 792  | 826  | 859  | 892  | 926  | 959  | 993  | 1026 | 1060 | 1093 | 1126 | 1160 |      |  |
| 34    |     |     | 629 | 664 | 700  | 735  | 771  | 806  | 842  | 877  | 912  | 948  | 983  | 1019 | 1054 | 1090 | 1125 | 1161 | 1196 | 1232 |      |  |
| 35    |     |     | 667 | 704 | 742  | 780  | 817  | 855  | 892  | 930  | 968  | 1005 | 1043 | 1080 | 1118 | 1156 | 1193 | 1231 | 1268 | 1306 |      |  |
| 36    |     |     | 706 | 746 | 786  | 825  | 865  | 905  | 945  | 984  | 1024 | 1064 | 1104 | 1144 | 1183 | 1223 | 1263 | 1303 | 1343 | 1382 |      |  |
| 37    |     |     | 746 | 788 | 830  | 872  | 914  | 956  | 998  | 1040 | 1083 | 1125 | 1167 | 1209 | 1251 | 1293 | 1335 | 1377 | 1419 | 1461 |      |  |
| 38    |     |     |     | 832 | 876  | 921  | 965  | 1009 | 1054 | 1098 | 1142 | 1187 | 1231 | 1275 | 1320 | 1364 | 1408 | 1453 | 1497 | 1541 |      |  |
| 39    |     |     |     |     | 924  | 970  | 1017 | 1064 | 1110 | 1157 | 1204 | 1251 | 1297 | 1344 | 1391 | 1437 | 1484 | 1531 | 1577 | 1624 |      |  |
| 40    |     |     |     |     | 972  | 1021 | 1070 | 1120 | 1169 | 1218 | 1267 | 1316 | 1365 | 1414 | 1463 | 1512 | 1562 | 1611 | 1660 | 1709 |      |  |
| 41    |     |     |     |     | 1022 | 1074 | 1125 | 1177 | 1228 | 1280 | 1332 | 1383 | 1435 | 1486 | 1538 | 1590 | 1641 | 1693 | 1744 | 1796 |      |  |
| 42    |     |     |     |     | 1073 | 1127 | 1181 | 1235 | 1289 | 1344 | 1398 | 1452 | 1506 | 1560 | 1614 | 1669 | 1723 | 1777 | 1831 | 1885 |      |  |
| 43    |     |     |     |     |      | 1352 | 1409 | 1466 | 1522 | 1579 | 1636 | 1693 | 1749 | 1806 | 1863 | 1920 | 1977 |      |      |      |      |  |
| 44    |     |     |     |     |      |      | 1416 | 1476 | 1535 | 1595 | 1654 | 1713 | 1773 | 1832 | 1892 | 1951 | 2011 | 2070 |      |      |      |  |
| 45    |     |     |     |     |      |      | 1482 | 1544 | 1606 | 1668 | 1730 | 1793 | 1855 | 1917 | 1979 | 2041 | 2103 | 2166 |      |      |      |  |
| 46    |     |     |     |     |      |      | 1549 | 1614 | 1679 | 1744 | 1809 | 1874 | 1939 | 2004 | 2069 | 2133 | 2198 | 2263 |      |      |      |  |
| 47    |     |     |     |     |      |      | 1617 | 1685 | 1753 | 1821 | 1889 | 1956 | 2024 | 2092 | 2160 | 2228 | 2296 | 2363 |      |      |      |  |
| 48    |     |     |     |     |      |      |      |      |      |      |      | 1900 | 1970 | 2041 | 2112 | 2182 | 2253 | 2324 | 2395 | 2465 |      |  |
| 49    |     |     |     |     |      |      |      |      |      |      |      | 1980 | 2054 | 2127 | 2201 | 2275 | 2349 | 2422 | 2496 | 2570 |      |  |
| 50    |     |     |     |     |      |      |      |      |      |      |      |      | 2292 | 2369 | 2446 | 2523 | 2599 | 2676 |      |      |      |  |

# Lux

(*Populus deltoides*)

$$v = 15,6 + 0,0313d^2h$$

$$R^2 = 0,9822$$

$$n = 54$$

$$p = 4$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   |      |      |      |      |      |      |      |  |  |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| 15    | 121 | 128 | 135 | 142 | 149 | 156 | 164 | 171 | 178  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 16    | 136 | 144 | 152 | 160 | 168 | 176 | 184 | 192 | 200  | 208  | 216  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 17    | 151 | 160 | 169 | 178 | 188 | 197 | 206 | 215 | 224  | 233  | 242  | 251  | 260  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 18    | 168 | 178 | 188 | 198 | 208 | 218 | 229 | 239 | 249  | 259  | 269  | 279  | 289  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 19    | 185 | 196 | 208 | 219 | 230 | 242 | 253 | 264 | 276  | 287  | 298  | 309  | 321  | 332  | 343  | 355  |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 20    | 203 | 216 | 228 | 241 | 254 | 266 | 279 | 291 | 304  | 316  | 329  | 341  | 354  | 366  | 379  | 391  |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 21    | 223 | 237 | 250 | 264 | 278 | 292 | 306 | 319 | 333  | 347  | 361  | 375  | 388  | 402  | 416  | 430  |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 22    | 243 | 258 | 273 | 288 | 303 | 319 | 334 | 349 | 364  | 379  | 394  | 410  | 425  | 440  | 455  | 470  | 485  |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 23    | 264 | 281 | 297 | 314 | 330 | 347 | 363 | 380 | 396  | 413  | 430  | 446  | 463  | 479  | 496  | 512  | 529  | 545  |      |      |      |      |      |      |      |      |      |      |  |  |
| 24    | 286 | 304 | 322 | 340 | 358 | 376 | 394 | 412 | 430  | 448  | 466  | 484  | 502  | 520  | 538  | 557  | 575  | 593  |      |      |      |      |      |      |      |      |      |      |  |  |
| 25    | 309 | 329 | 348 | 368 | 387 | 407 | 426 | 446 | 466  | 485  | 505  | 524  | 544  | 563  | 583  | 603  | 622  | 642  |      |      |      |      |      |      |      |      |      |      |  |  |
| 26    | 333 | 354 | 375 | 397 | 418 | 439 | 460 | 481 | 502  | 523  | 545  | 566  | 587  | 608  | 629  | 650  | 672  | 693  |      |      |      |      |      |      |      |      |      |      |  |  |
| 27    | 358 | 381 | 404 | 426 | 449 | 472 | 495 | 518 | 540  | 563  | 586  | 609  | 632  | 655  | 677  | 700  | 723  | 746  |      |      |      |      |      |      |      |      |      |      |  |  |
| 28    | 384 | 408 | 433 | 457 | 482 | 506 | 531 | 556 | 580  | 605  | 629  | 654  | 678  | 703  | 727  | 752  | 776  | 801  |      |      |      |      |      |      |      |      |      |      |  |  |
| 29    |     | 463 | 489 | 516 | 542 | 568 | 595 | 621 | 647  | 674  | 700  | 726  | 753  | 779  | 805  | 832  | 858  |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 30    |     |     | 495 | 523 | 551 | 579 | 607 | 635 | 664  | 692  | 720  | 748  | 776  | 804  | 833  | 861  | 889  | 917  |      |      |      |      |      |      |      |      |      |      |  |  |
| 31    |     |     |     | 527 | 557 | 587 | 617 | 647 | 677  | 707  | 738  | 768  | 798  | 828  | 858  | 888  | 918  | 948  | 978  |      |      |      |      |      |      |      |      |      |  |  |
| 32    |     |     |     |     | 561 | 593 | 625 | 657 | 689  | 721  | 753  | 785  | 817  | 849  | 881  | 913  | 945  | 977  | 1009 | 1041 |      |      |      |      |      |      |      |      |  |  |
| 33    |     |     |     |     |     | 595 | 629 | 663 | 697  | 731  | 766  | 800  | 834  | 868  | 902  | 936  | 970  | 1004 | 1038 | 1072 | 1106 |      |      |      |      |      |      |      |  |  |
| 34    |     |     |     |     |     | 631 | 667 | 703 | 739  | 775  | 812  | 848  | 884  | 920  | 956  | 993  | 1029 | 1065 | 1101 | 1137 | 1173 |      |      |      |      |      |      |      |  |  |
| 35    |     |     |     |     |     |     | 782 | 821 | 859  | 898  | 936  | 974  | 1013 | 1051 | 1089 | 1128 | 1166 | 1204 | 1243 |      |      |      |      |      |      |      |      |      |  |  |
| 36    |     |     |     |     |     |     |     | 868 | 908  | 949  | 989  | 1030 | 1070 | 1111 | 1151 | 1192 | 1233 | 1273 | 1314 |      |      |      |      |      |      |      |      |      |  |  |
| 37    |     |     |     |     |     |     |     | 915 | 958  | 1001 | 1044 | 1087 | 1130 | 1173 | 1215 | 1258 | 1301 | 1344 | 1387 |      |      |      |      |      |      |      |      |      |  |  |
| 38    |     |     |     |     |     |     |     |     | 1010 | 1055 | 1100 | 1146 | 1191 | 1236 | 1281 | 1326 | 1372 | 1417 | 1462 |      |      |      |      |      |      |      |      |      |  |  |
| 39    |     |     |     |     |     |     |     |     |      | 1063 | 1111 | 1158 | 1206 | 1253 | 1301 | 1349 | 1396 | 1444 | 1491 | 1539 |      |      |      |      |      |      |      |      |  |  |
| 40    |     |     |     |     |     |     |     |     |      |      | 1167 | 1218 | 1268 | 1318 | 1368 | 1418 | 1468 | 1518 | 1568 | 1618 |      |      |      |      |      |      |      |      |  |  |
| 41    |     |     |     |     |     |     |     |     |      |      |      | 1278 | 1331 | 1384 | 1436 | 1489 | 1541 | 1594 | 1647 | 1699 |      |      |      |      |      |      |      |      |  |  |
| 42    |     |     |     |     |     |     |     |     |      |      |      |      | 1341 | 1396 | 1451 | 1506 | 1562 | 1617 | 1672 | 1727 | 1782 | 1838 | 1893 | 1948 |      |      |      |      |  |  |
| 43    |     |     |     |     |     |     |     |     |      |      |      |      | 1405 | 1462 | 1520 | 1578 | 1636 | 1694 | 1752 | 1810 | 1868 | 1925 | 1983 | 2041 |      |      |      |      |  |  |
| 44    |     |     |     |     |     |     |     |     |      |      |      |      |      | 1470 | 1531 | 1591 | 1652 | 1712 | 1773 | 1834 | 1894 | 1955 | 2015 | 2076 | 2137 |      |      |      |  |  |
| 45    |     |     |     |     |     |     |     |     |      |      |      |      |      |      | 1537 | 1600 | 1664 | 1727 | 1790 | 1854 | 1917 | 1981 | 2044 | 2107 | 2171 | 2234 |      |      |  |  |
| 46    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      | 1605 | 1671 | 1738 | 1804 | 1870 | 1936 | 2003 | 2069 | 2135 | 2201 | 2267 | 2334 |      |  |  |
| 47    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      | 1675 | 1744 | 1813 | 1882 | 1952 | 2021 | 2090 | 2159 | 2228 | 2297 | 2366 | 2436 |  |  |
| 48    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      | 1891 | 1963 | 2035 | 2107 | 2179 | 2251 | 2323 | 2395 | 2468 | 2540 |      |  |  |
| 49    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      | 1970 | 2045 | 2120 | 2195 | 2270 | 2345 | 2420 | 2496 | 2571 | 2646 |  |  |
| 50    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |

# MC

(*Populus ×euramericana*)

$$v = -37,3 + 0,0330d^2h$$

$$R^2 = 0,9673$$

$$n = 251$$

$$p = 12$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   |
|-------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 15    | 74  | 82  | 89  | 96  | 104 | 111 | 119  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 16    | 89  | 98  | 106 | 115 | 123 | 132 | 140  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 17    | 106 | 115 | 125 | 134 | 144 | 153 | 163  | 173  | 182  | 192  | 201  | 211  | 220  |      |      |      |      |      |      |      |      |
| 18    | 123 | 134 | 144 | 155 | 166 | 177 | 187  | 198  | 209  | 219  | 230  | 241  | 251  | 262  |      |      |      |      |      |      |      |
| 19    | 141 | 153 | 165 | 177 | 189 | 201 | 213  | 225  | 237  | 249  | 261  | 272  | 284  | 296  | 308  | 320  |      |      |      |      |      |
| 20    | 161 | 174 | 187 | 200 | 214 | 227 | 240  | 253  | 266  | 280  | 293  | 306  | 319  | 332  | 346  | 359  |      |      |      |      |      |
| 21    | 181 | 196 | 210 | 225 | 239 | 254 | 268  | 283  | 297  | 312  | 327  | 341  | 356  | 370  | 385  | 399  |      |      |      |      |      |
| 22    |     | 218 | 234 | 250 | 266 | 282 | 298  | 314  | 330  | 346  | 362  | 378  | 394  | 410  | 426  | 442  | 458  | 474  |      |      |      |
| 23    |     | 242 | 260 | 277 | 294 | 312 | 329  | 347  | 364  | 382  | 399  | 417  | 434  | 452  | 469  | 486  | 504  | 521  |      |      |      |
| 24    |     | 267 | 286 | 305 | 324 | 343 | 362  | 381  | 400  | 419  | 438  | 457  | 476  | 495  | 514  | 533  | 552  | 571  |      |      |      |
| 25    |     | 293 | 313 | 334 | 355 | 375 | 396  | 416  | 437  | 458  | 478  | 499  | 520  | 540  | 561  | 581  | 602  | 623  | 643  |      |      |
| 26    |     | 320 | 342 | 364 | 387 | 409 | 431  | 454  | 476  | 498  | 520  | 543  | 565  | 587  | 610  | 632  | 654  | 677  | 699  |      |      |
| 27    |     |     | 372 | 396 | 420 | 444 | 468  | 492  | 516  | 540  | 564  | 588  | 612  | 636  | 660  | 684  | 709  | 733  | 757  | 781  | 805  |
| 28    |     |     | 403 | 428 | 454 | 480 | 506  | 532  | 558  | 584  | 610  | 635  | 661  | 687  | 713  | 739  | 765  | 791  | 817  | 842  | 868  |
| 29    |     |     |     | 462 | 490 | 518 | 546  | 573  | 601  | 629  | 657  | 684  | 712  | 740  | 768  | 795  | 823  | 851  | 879  | 906  | 934  |
| 30    |     |     |     | 497 | 527 | 557 | 586  | 616  | 646  | 676  | 705  | 735  | 765  | 794  | 824  | 854  | 883  | 913  | 943  | 973  | 1002 |
| 31    |     |     |     | 534 | 565 | 597 | 629  | 660  | 692  | 724  | 756  | 787  | 819  | 851  | 882  | 914  | 946  | 978  | 1009 | 1041 | 1073 |
| 32    |     |     |     |     | 639 | 672 | 706  | 740  | 774  | 808  | 841  | 875  | 909  | 943  | 976  | 1010 | 1044 | 1078 | 1112 | 1145 |      |
| 33    |     |     |     |     |     | 681 | 717  | 753  | 789  | 825  | 861  | 897  | 933  | 969  | 1005 | 1041 | 1077 | 1113 | 1149 | 1185 | 1221 |
| 34    |     |     |     |     |     | 726 | 764  | 802  | 840  | 878  | 916  | 955  | 993  | 1031 | 1069 | 1107 | 1145 | 1183 | 1222 | 1260 | 1298 |
| 35    |     |     |     |     |     | 771 | 812  | 852  | 893  | 933  | 973  | 1014 | 1054 | 1095 | 1135 | 1175 | 1216 | 1256 | 1297 | 1337 | 1378 |
| 36    |     |     |     |     |     | 818 | 861  | 904  | 946  | 989  | 1032 | 1075 | 1117 | 1160 | 1203 | 1246 | 1289 | 1331 | 1374 | 1417 | 1460 |
| 37    |     |     |     |     |     | 866 | 911  | 957  | 1002 | 1047 | 1092 | 1137 | 1183 | 1228 | 1273 | 1318 | 1363 | 1408 | 1454 | 1499 | 1544 |
| 38    |     |     |     |     |     | 916 | 963  | 1011 | 1059 | 1106 | 1154 | 1202 | 1249 | 1297 | 1345 | 1392 | 1440 | 1488 | 1535 | 1583 | 1631 |
| 39    |     |     |     |     |     |     | 1017 | 1067 | 1117 | 1167 | 1218 | 1268 | 1318 | 1368 | 1418 | 1469 | 1519 | 1569 | 1619 | 1669 | 1719 |
| 40    |     |     |     |     |     |     | 1072 | 1124 | 1177 | 1230 | 1283 | 1336 | 1388 | 1441 | 1494 | 1547 | 1600 | 1652 | 1705 | 1758 | 1811 |
| 41    |     |     |     |     |     |     | 1128 | 1183 | 1239 | 1294 | 1350 | 1405 | 1461 | 1516 | 1571 | 1627 | 1682 | 1738 | 1793 | 1849 | 1904 |
| 42    |     |     |     |     |     |     | 1243 | 1302 | 1360 | 1418 | 1476 | 1534 | 1593 | 1651 | 1709 | 1767 | 1826 | 1884 | 1942 | 2000 |      |
| 43    |     |     |     |     |     |     | 1305 | 1366 | 1427 | 1488 | 1549 | 1610 | 1671 | 1732 | 1793 | 1854 | 1915 | 1976 | 2037 | 2098 |      |
| 44    |     |     |     |     |     |     | 1368 | 1432 | 1496 | 1560 | 1624 | 1688 | 1752 | 1815 | 1879 | 1943 | 2007 | 2071 | 2135 | 2199 |      |
| 45    |     |     |     |     |     |     | 1433 | 1500 | 1567 | 1633 | 1700 | 1767 | 1834 | 1901 | 1967 | 2034 | 2101 | 2168 | 2235 | 2302 |      |
| 46    |     |     |     |     |     |     |      | 1639 | 1708 | 1778 | 1848 | 1918 | 1988 | 2058 | 2127 | 2197 | 2267 | 2337 | 2407 |      |      |
| 47    |     |     |     |     |     |     |      |      | 1712 | 1785 | 1858 | 1931 | 2004 | 2077 | 2150 | 2223 | 2295 | 2368 | 2441 | 2514 |      |
| 48    |     |     |     |     |     |     |      |      | 1788 | 1864 | 1940 | 2016 | 2092 | 2168 | 2244 | 2320 | 2396 | 2472 | 2548 | 2624 |      |
| 49    |     |     |     |     |     |     |      |      | 1864 | 1944 | 2023 | 2102 | 2181 | 2260 | 2340 | 2419 | 2498 | 2577 | 2657 | 2736 |      |
| 50    |     |     |     |     |     |     |      |      |      | 2108 | 2190 | 2273 | 2355 | 2438 | 2520 | 2603 | 2685 | 2768 | 2850 |      |      |

# Mincio

(*Populus ×euramericana*)

$$v = 163,6 + 0,0238d^2h$$

$$R^2 = 0,9290$$

$$n = 36$$

$$p = 2$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15 | 16 | 17 | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33 | 34 | 35 |
|-------|----|----|----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|----|----|
| 15    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 16    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 17    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 18    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 19    |    |    |    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 20    |    |    |    | 344  | 354  | 364  | 373  | 383  | 392  | 402  | 411  | 421  |      |      |      |      |      |      |    |    |    |
| 21    |    |    |    | 363  | 374  | 384  | 395  | 405  | 416  | 426  | 437  | 447  |      |      |      |      |      |      |    |    |    |
| 22    |    |    |    | 382  | 394  | 406  | 417  | 429  | 440  | 452  | 463  | 475  |      |      |      |      |      |      |    |    |    |
| 23    |    |    |    | 403  | 415  | 428  | 441  | 453  | 466  | 478  | 491  | 504  | 516  | 529  |      |      |      |      |    |    |    |
| 24    |    |    |    | 424  | 438  | 451  | 465  | 479  | 493  | 506  | 520  | 534  | 547  | 561  |      |      |      |      |    |    |    |
| 25    |    |    |    | 446  | 461  | 476  | 491  | 506  | 521  | 535  | 550  | 565  | 580  | 595  |      |      |      |      |    |    |    |
| 26    |    |    |    | 469  | 485  | 501  | 518  | 534  | 550  | 566  | 582  | 598  | 614  | 630  |      |      |      |      |    |    |    |
| 27    |    |    |    | 493  | 511  | 528  | 545  | 563  | 580  | 597  | 615  | 632  | 649  | 667  | 684  |      |      |      |    |    |    |
| 28    |    |    |    | 518  | 537  | 555  | 574  | 593  | 611  | 630  | 649  | 667  | 686  | 705  | 723  |      |      |      |    |    |    |
| 29    |    |    |    | 544  | 564  | 584  | 604  | 624  | 644  | 664  | 684  | 704  | 724  | 744  | 764  |      |      |      |    |    |    |
| 30    |    |    |    | 571  | 592  | 613  | 635  | 656  | 678  | 699  | 721  | 742  | 763  | 785  | 806  |      |      |      |    |    |    |
| 31    |    |    |    | 598  | 621  | 644  | 667  | 690  | 713  | 735  | 758  | 781  | 804  | 827  | 850  |      |      |      |    |    |    |
| 32    |    |    |    | 627  | 651  | 675  | 700  | 724  | 749  | 773  | 797  | 822  | 846  | 870  | 895  | 919  | 943  | 968  |    |    |    |
| 33    |    |    |    | 656  | 682  | 708  | 734  | 760  | 786  | 812  | 837  | 863  | 889  | 915  | 941  | 967  | 993  | 1019 |    |    |    |
| 34    |    |    |    | 686  | 714  | 741  | 769  | 796  | 824  | 851  | 879  | 906  | 934  | 961  | 989  | 1017 | 1044 | 1072 |    |    |    |
| 35    |    |    |    | 718  | 747  | 776  | 805  | 834  | 863  | 892  | 922  | 951  | 980  | 1009 | 1038 | 1067 | 1097 | 1126 |    |    |    |
| 36    |    |    |    | 781  | 811  | 842  | 873  | 904  | 935  | 966  | 996  | 1027 | 1058 | 1089 | 1120 | 1151 | 1181 |      |    |    |    |
| 37    |    |    |    | 815  | 848  | 880  | 913  | 946  | 978  | 1011 | 1043 | 1076 | 1108 | 1141 | 1174 | 1206 | 1239 |      |    |    |    |
| 38    |    |    |    | 885  | 920  | 954  | 988  | 1023 | 1057 | 1092 | 1126 | 1160 | 1195 | 1229 | 1263 | 1298 |      |      |    |    |    |
| 39    |    |    |    | 924  | 960  | 996  | 1032 | 1069 | 1105 | 1141 | 1177 | 1213 | 1250 | 1286 | 1322 | 1358 |      |      |    |    |    |
| 40    |    |    |    | 963  | 1001 | 1039 | 1078 | 1116 | 1154 | 1192 | 1230 | 1268 | 1306 | 1344 | 1382 | 1420 |      |      |    |    |    |
| 41    |    |    |    | 1004 | 1044 | 1084 | 1124 | 1164 | 1204 | 1244 | 1284 | 1324 | 1364 | 1404 | 1444 | 1484 |      |      |    |    |    |
| 42    |    |    |    | 1045 | 1087 | 1129 | 1171 | 1213 | 1255 | 1297 | 1339 | 1381 | 1423 | 1465 | 1507 | 1549 |      |      |    |    |    |
| 43    |    |    |    | 1088 | 1132 | 1176 | 1220 | 1264 | 1308 | 1352 | 1396 | 1440 | 1484 | 1528 | 1572 | 1616 |      |      |    |    |    |
| 44    |    |    |    | 1131 | 1177 | 1223 | 1269 | 1316 | 1362 | 1408 | 1454 | 1500 | 1546 | 1592 | 1638 | 1684 | 1730 |      |    |    |    |
| 45    |    |    |    | 1272 | 1320 | 1368 | 1417 | 1465 | 1513 | 1561 | 1609 | 1658 | 1706 | 1754 | 1802 |      |      |      |    |    |    |
| 46    |    |    |    | 1322 | 1372 | 1423 | 1473 | 1523 | 1574 | 1624 | 1674 | 1725 | 1775 | 1826 | 1876 |      |      |      |    |    |    |
| 47    |    |    |    | 1373 | 1425 | 1478 | 1531 | 1583 | 1636 | 1688 | 1741 | 1793 | 1846 | 1899 | 1951 |      |      |      |    |    |    |
| 48    |    |    |    | 1425 | 1480 | 1534 | 1589 | 1644 | 1699 | 1754 | 1809 | 1864 | 1918 | 1973 | 2028 |      |      |      |    |    |    |
| 49    |    |    |    | 1478 | 1535 | 1592 | 1649 | 1706 | 1764 | 1821 | 1878 | 1935 | 1992 | 2049 | 2106 |      |      |      |    |    |    |
| 50    |    |    |    |      |      |      |      |      |      | 1770 | 1830 | 1889 | 1949 | 2008 | 2068 | 2127 | 2187 |      |    |    |    |

# Onda

(*Populus deltoides*)

$$v = -9,3 + 0,0307d^2h$$

$$R^2 = 0,9887$$

$$n = 15$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 28  | 29  | 30 | 31 | 32 | 33 | 34 | 35 |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|
| 15    | 94  | 101 | 108 | 115 | 122 | 129 | 136 | 143 | 150 |     |     |     |     |     |     |    |    |    |    |    |    |
| 16    | 109 | 116 | 124 | 132 | 140 | 148 | 156 | 164 | 171 | 179 | 187 |     |     |     |     |    |    |    |    |    |    |
| 17    | 124 | 133 | 142 | 150 | 159 | 168 | 177 | 186 | 195 | 204 | 212 | 221 | 230 | 239 |     |    |    |    |    |    |    |
| 18    | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 219 | 229 | 239 | 249 | 259 | 269 |     |    |    |    |    |    |    |
| 19    | 157 | 168 | 179 | 190 | 201 | 212 | 223 | 234 | 246 | 257 | 268 | 279 | 290 | 301 |     |    |    |    |    |    |    |
| 20    | 175 | 187 | 199 | 212 | 224 | 236 | 249 | 261 | 273 | 285 | 298 | 310 | 322 | 335 |     |    |    |    |    |    |    |
| 21    | 207 | 221 | 234 | 248 | 261 | 275 | 289 | 302 | 316 | 329 | 343 | 356 | 370 |     |     |    |    |    |    |    |    |
| 22    |     |     | 258 | 273 | 288 | 303 | 318 | 332 | 347 | 362 | 377 | 392 | 407 | 422 |     |    |    |    |    |    |    |
| 23    |     |     | 283 | 299 | 315 | 332 | 348 | 364 | 380 | 397 | 413 | 429 | 445 | 462 | 478 |    |    |    |    |    |    |
| 24    |     |     | 309 | 327 | 344 | 362 | 380 | 397 | 415 | 433 | 450 | 468 | 486 | 503 | 521 |    |    |    |    |    |    |
| 25    |     |     | 336 | 355 | 374 | 394 | 413 | 432 | 451 | 470 | 490 | 509 | 528 | 547 | 566 |    |    |    |    |    |    |
| 26    |     |     |     | 406 | 426 | 447 | 468 | 489 | 510 | 530 | 551 | 572 | 593 | 613 |     |    |    |    |    |    |    |
| 27    |     |     |     | 438 | 461 | 483 | 505 | 528 | 550 | 573 | 595 | 617 | 640 | 662 |     |    |    |    |    |    |    |
| 28    |     |     |     | 472 | 496 | 520 | 544 | 568 | 592 | 616 | 641 | 665 | 689 | 713 |     |    |    |    |    |    |    |
| 29    |     |     |     | 507 | 533 | 559 | 585 | 610 | 636 | 662 | 688 | 714 | 739 | 765 |     |    |    |    |    |    |    |
| 30    |     |     |     | 543 | 571 | 599 | 626 | 654 | 681 | 709 | 737 | 764 | 792 | 820 |     |    |    |    |    |    |    |
| 31    |     |     |     | 581 | 610 | 640 | 669 | 699 | 728 | 758 | 787 | 817 | 846 | 876 |     |    |    |    |    |    |    |
| 32    |     |     |     | 619 | 651 | 682 | 714 | 745 | 777 | 808 | 839 | 871 | 902 | 934 |     |    |    |    |    |    |    |
| 33    |     |     |     | 726 | 760 | 793 | 826 | 860 | 893 | 927 | 960 | 994 |     |     |     |    |    |    |    |    |    |
| 34    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 35    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 36    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 37    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 38    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 39    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 40    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 41    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 42    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 43    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 44    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 45    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 46    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 47    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 48    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 49    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
| 50    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |

# Orba

(*Populus ×euramericana*)

$$v = 13,8 + 0,0299d^2h$$

$$R^2 = 0,9236$$

$$n = 15$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15 | 16 | 17 | 18 | 19  | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33 | 34 | 35 |
|-------|----|----|----|----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|----|----|----|
| 15    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 16    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 17    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 18    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 19    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 20    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 21    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 22    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 23    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 24    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 25    |    |    |    |    | 444 | 462  | 481  | 500  | 518  | 537  | 556  | 574  | 593  |      |      |      |      |      |    |    |    |
| 26    |    |    |    |    | 479 | 499  | 519  | 539  | 559  | 580  | 600  | 620  | 640  | 661  | 681  | 701  |      |      |    |    |    |
| 27    |    |    |    |    | 515 | 537  | 559  | 580  | 602  | 624  | 646  | 668  | 689  | 711  | 733  | 755  |      |      |    |    |    |
| 28    |    |    |    |    | 553 | 576  | 600  | 623  | 647  | 670  | 694  | 717  | 740  | 764  | 787  | 811  |      |      |    |    |    |
| 29    |    |    |    |    | 592 | 617  | 642  | 668  | 693  | 718  | 743  | 768  | 793  | 818  | 844  | 869  | 894  |      |    |    |    |
| 30    |    |    |    |    | 633 | 660  | 687  | 713  | 740  | 767  | 794  | 821  | 848  | 875  | 902  | 929  | 956  |      |    |    |    |
| 31    |    |    |    |    | 675 | 703  | 732  | 761  | 790  | 818  | 847  | 876  | 905  | 933  | 962  | 991  | 1019 |      |    |    |    |
| 32    |    |    |    |    | 718 | 749  | 779  | 810  | 840  | 871  | 902  | 932  | 963  | 994  | 1024 | 1055 | 1085 |      |    |    |    |
| 33    |    |    |    |    | 763 | 795  | 828  | 860  | 893  | 925  | 958  | 991  | 1023 | 1056 | 1088 | 1121 | 1153 |      |    |    |    |
| 34    |    |    |    |    | 843 | 878  | 912  | 947  | 982  | 1016 | 1051 | 1085 | 1120 | 1154 | 1189 | 1224 |      |      |    |    |    |
| 35    |    |    |    |    | 893 | 929  | 966  | 1003 | 1039 | 1076 | 1113 | 1149 | 1186 | 1222 | 1259 | 1296 |      |      |    |    |    |
| 36    |    |    |    |    | 944 | 983  | 1021 | 1060 | 1099 | 1138 | 1176 | 1215 | 1254 | 1293 | 1331 | 1370 |      |      |    |    |    |
| 37    |    |    |    |    | 996 | 1037 | 1078 | 1119 | 1160 | 1201 | 1242 | 1283 | 1324 | 1365 | 1405 | 1446 |      |      |    |    |    |
| 38    |    |    |    |    |     |      |      |      | 1136 | 1179 | 1223 | 1266 | 1309 | 1352 | 1395 | 1439 | 1482 | 1525 |    |    |    |
| 39    |    |    |    |    |     |      |      |      | 1196 | 1242 | 1287 | 1333 | 1378 | 1424 | 1469 | 1515 | 1560 | 1605 |    |    |    |
| 40    |    |    |    |    |     |      |      |      | 1305 | 1353 | 1401 | 1449 | 1497 | 1545 | 1592 | 1640 | 1688 |      |    |    |    |
| 41    |    |    |    |    |     |      |      |      | 1371 | 1421 | 1471 | 1522 | 1572 | 1622 | 1672 | 1723 | 1773 |      |    |    |    |
| 42    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 43    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 44    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 45    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 46    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 47    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 48    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 49    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |
| 50    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |      |      |    |    |    |

# Pinseque

(*Populus ×euramericana*)

$$v = -19,5 + 0,0305d^2h$$

$$R^2 = 0,9918$$

$$n = 35$$

$$p = 2$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   |      |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|
| 15    | 83  | 90  | 97  | 104 | 111 | 118 | 125 |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |
| 16    | 98  | 105 | 113 | 121 | 129 | 137 | 145 | 152 | 160 |     |     |      |      |      |      |      |      |      |      |      |      |      |
| 17    | 113 | 122 | 130 | 139 | 148 | 157 | 166 | 174 | 183 |     |     |      |      |      |      |      |      |      |      |      |      |      |
| 18    | 129 | 139 | 149 | 158 | 168 | 178 | 188 | 198 | 208 | 218 |     |      |      |      |      |      |      |      |      |      |      |      |
| 19    | 146 | 157 | 168 | 179 | 190 | 201 | 212 | 223 | 234 | 245 | 256 | 267  |      |      |      |      |      |      |      |      |      |      |
| 20    | 164 | 176 | 188 | 200 | 212 | 225 | 237 | 249 | 261 | 273 | 286 | 298  |      |      |      |      |      |      |      |      |      |      |
| 21    | 182 | 196 | 209 | 223 | 236 | 250 | 263 | 276 | 290 | 303 | 317 | 330  | 344  |      |      |      |      |      |      |      |      |      |
| 22    |     | 217 | 231 | 246 | 261 | 276 | 291 | 305 | 320 | 335 | 350 | 364  | 379  |      |      |      |      |      |      |      |      |      |
| 23    |     | 239 | 255 | 271 | 287 | 303 | 319 | 336 | 352 | 368 | 384 | 400  | 416  |      |      |      |      |      |      |      |      |      |
| 24    |     | 262 | 279 | 297 | 314 | 332 | 349 | 367 | 385 | 402 | 420 | 437  | 455  |      |      |      |      |      |      |      |      |      |
| 25    |     |     | 305 | 324 | 343 | 362 | 381 | 400 | 419 | 438 | 457 | 476  | 495  |      |      |      |      |      |      |      |      |      |
| 26    |     |     | 331 | 352 | 372 | 393 | 414 | 434 | 455 | 475 | 496 | 517  | 537  | 558  | 578  | 599  |      |      |      |      |      |      |
| 27    |     |     |     | 359 | 381 | 403 | 425 | 447 | 470 | 492 | 514 | 536  | 559  | 581  | 603  | 625  | 648  | 670  |      |      |      |      |
| 28    |     |     |     | 387 | 411 | 435 | 459 | 483 | 507 | 531 | 554 | 578  | 602  | 626  | 650  | 674  | 698  | 722  | 746  | 770  |      |      |
| 29    |     |     |     |     | 442 | 468 | 494 | 519 | 545 | 571 | 596 | 622  | 647  | 673  | 699  | 724  | 750  | 776  | 801  | 827  |      |      |
| 30    |     |     |     |     | 475 | 502 | 530 | 557 | 584 | 612 | 639 | 667  | 694  | 722  | 749  | 777  | 804  | 831  | 859  | 886  |      |      |
| 31    |     |     |     |     | 508 | 537 | 567 | 596 | 625 | 655 | 684 | 713  | 743  | 772  | 801  | 831  | 860  | 889  | 918  | 948  |      |      |
| 32    |     |     |     |     |     | 574 | 605 | 636 | 668 | 699 | 730 | 761  | 793  | 824  | 855  | 886  | 918  | 949  | 980  | 1011 |      |      |
| 33    |     |     |     |     |     |     | 645 | 678 | 711 | 744 | 778 | 811  | 844  | 877  | 911  | 944  | 977  | 1010 | 1043 | 1077 |      |      |
| 34    |     |     |     |     |     |     |     | 686 | 721 | 756 | 791 | 827  | 862  | 897  | 933  | 968  | 1003 | 1038 | 1074 | 1109 | 1144 |      |
| 35    |     |     |     |     |     |     |     |     | 728 | 765 | 803 | 840  | 877  | 915  | 952  | 989  | 1027 | 1064 | 1101 | 1139 | 1176 | 1214 |
| 36    |     |     |     |     |     |     |     |     | 771 | 811 | 850 | 890  | 929  | 969  | 1008 | 1048 | 1087 | 1127 | 1166 | 1206 | 1245 | 1285 |
| 37    |     |     |     |     |     |     |     |     |     |     |     | 1024 | 1066 | 1108 | 1150 | 1191 | 1233 | 1275 | 1317 | 1358 |      |      |
| 38    |     |     |     |     |     |     |     |     |     |     |     | 1082 | 1126 | 1170 | 1214 | 1258 | 1302 | 1346 | 1390 | 1434 |      |      |
| 39    |     |     |     |     |     |     |     |     |     |     |     | 1140 | 1187 | 1233 | 1279 | 1326 | 1372 | 1419 | 1465 | 1511 |      |      |
| 40    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |
| 41    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |
| 42    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |
| 43    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |
| 44    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |
| 45    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |
| 46    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |
| 47    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |
| 48    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |
| 49    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |
| 50    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |

# Primo

(*Populus ×euramericana*)

$$v = 14,2 + 0,0321d^2h$$

$$R^2 = 0,9559$$

$$n = 13$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15 | 16 | 17 | 18 | 19 | 20  | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32 | 33 | 34 | 35 |
|-------|----|----|----|----|----|-----|------|------|------|------|------|------|------|------|------|------|------|----|----|----|----|
| 15    |    |    |    |    |    | 159 | 166  | 173  | 180  | 188  | 195  | 202  | 209  |      |      |      |      |    |    |    |    |
| 16    |    |    |    |    |    | 179 | 187  | 195  | 203  | 211  | 220  | 228  | 236  |      |      |      |      |    |    |    |    |
| 17    |    |    |    |    |    | 200 | 209  | 218  | 228  | 237  | 246  | 255  | 265  |      |      |      |      |    |    |    |    |
| 18    |    |    |    |    |    | 222 | 233  | 243  | 253  | 264  | 274  | 285  | 295  | 305  | 316  |      |      |    |    |    |    |
| 19    |    |    |    |    |    | 246 | 258  | 269  | 281  | 292  | 304  | 315  | 327  | 339  | 350  |      |      |    |    |    |    |
| 20    |    |    |    |    |    | 271 | 284  | 297  | 310  | 322  | 335  | 348  | 361  | 374  | 387  |      |      |    |    |    |    |
| 21    |    |    |    |    |    | 297 | 311  | 326  | 340  | 354  | 368  | 382  | 396  | 411  | 425  |      |      |    |    |    |    |
| 22    |    |    |    |    |    | 325 | 340  | 356  | 372  | 387  | 403  | 418  | 434  | 449  | 465  |      |      |    |    |    |    |
| 23    |    |    |    |    |    | 388 | 405  | 422  | 439  | 456  | 473  | 490  | 507  |      |      |      |      |    |    |    |    |
| 24    |    |    |    |    |    | 421 | 439  | 458  | 476  | 495  | 513  | 532  | 550  | 569  | 587  | 606  |      |    |    |    |    |
| 25    |    |    |    |    |    | 456 | 476  | 496  | 516  | 536  | 556  | 576  | 596  | 616  | 636  | 656  |      |    |    |    |    |
| 26    |    |    |    |    |    | 492 | 513  | 535  | 557  | 578  | 600  | 622  | 643  | 665  | 687  | 709  |      |    |    |    |    |
| 27    |    |    |    |    |    | 529 | 552  | 576  | 599  | 623  | 646  | 669  | 693  | 716  | 740  | 763  |      |    |    |    |    |
| 28    |    |    |    |    |    | 568 | 593  | 618  | 643  | 669  | 694  | 719  | 744  | 769  | 794  | 820  |      |    |    |    |    |
| 29    |    |    |    |    |    | 608 | 635  | 662  | 689  | 716  | 743  | 770  | 797  | 824  | 851  | 878  |      |    |    |    |    |
| 30    |    |    |    |    |    | 679 | 708  | 736  | 765  | 794  | 823  | 852  | 881  | 910  | 939  |      |      |    |    |    |    |
| 31    |    |    |    |    |    | 724 | 755  | 785  | 816  | 847  | 878  | 909  | 940  | 970  | 1001 |      |      |    |    |    |    |
| 32    |    |    |    |    |    | 770 | 803  | 836  | 869  | 902  | 935  | 967  | 1000 | 1033 | 1066 | 1099 |      |    |    |    |    |
| 33    |    |    |    |    |    | 818 | 853  | 888  | 923  | 958  | 993  | 1028 | 1063 | 1098 | 1133 | 1168 |      |    |    |    |    |
| 34    |    |    |    |    |    | 868 | 905  | 942  | 979  | 1016 | 1053 | 1090 | 1127 | 1165 | 1202 | 1239 |      |    |    |    |    |
| 35    |    |    |    |    |    | 919 | 958  | 997  | 1037 | 1076 | 1115 | 1155 | 1194 | 1233 | 1273 | 1312 |      |    |    |    |    |
| 36    |    |    |    |    |    | 971 | 1013 | 1054 | 1096 | 1137 | 1179 | 1221 | 1262 | 1304 | 1345 | 1387 |      |    |    |    |    |
| 37    |    |    |    |    |    |     |      |      |      | 1157 | 1201 | 1245 | 1289 | 1333 | 1376 | 1420 | 1464 |    |    |    |    |
| 38    |    |    |    |    |    |     |      |      |      | 1219 | 1266 | 1312 | 1358 | 1405 | 1451 | 1497 | 1544 |    |    |    |    |
| 39    |    |    |    |    |    |     |      |      |      | 1284 | 1332 | 1381 | 1430 | 1479 | 1528 | 1577 | 1625 |    |    |    |    |
| 40    |    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 41    |    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 42    |    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 43    |    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 44    |    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 45    |    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 46    |    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 47    |    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 48    |    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 49    |    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 50    |    |    |    |    |    |     |      |      |      |      |      |      |      |      |      |      |      |    |    |    |    |

# Raspalje

(*Populus ×interamericana*)

$$v = -19,2 + 0,0303d^2h$$

d: diámetro normal (cm)

$$R^2 = 0,9852$$

h: altura total (m)

$$n = 144$$

v: volumen con corteza (dm<sup>3</sup>)

$$p = 7$$

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 28  | 29  | 30  | 31   | 32   | 33   | 34   | 35   |      |      |      |      |      |      |      |      |      |  |  |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| 15    | 83  | 90  | 97  | 104 | 110 |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 16    | 96  | 105 | 113 | 120 | 128 | 136 | 144 | 151 | 159 | 167 |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 17    | 112 | 121 | 130 | 138 | 147 | 156 | 165 | 173 | 182 | 191 |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 18    | 128 | 138 | 148 | 158 | 167 | 177 | 187 | 197 | 207 | 216 | 226 |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 19    | 145 | 156 | 167 | 178 | 189 | 200 | 211 | 221 | 232 | 243 | 254 | 265 | 276 |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 20    | 163 | 175 | 187 | 199 | 211 | 223 | 235 | 247 | 260 | 272 | 284 | 296 | 308 | 320 |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 21    | 181 | 195 | 208 | 221 | 235 | 248 | 261 | 275 | 288 | 302 | 315 | 328 | 342 | 355 |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 22    | 201 | 215 | 230 | 245 | 259 | 274 | 289 | 303 | 318 | 333 | 347 | 362 | 377 | 391 |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 23    | 221 | 237 | 253 | 269 | 285 | 301 | 317 | 333 | 349 | 366 | 382 | 398 | 414 | 430 | 446 |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 24    | 243 | 260 | 278 | 295 | 312 | 330 | 347 | 365 | 382 | 400 | 417 | 435 | 452 | 470 | 487 | 504 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 25    | 265 | 284 | 303 | 322 | 341 | 360 | 379 | 397 | 416 | 435 | 454 | 473 | 492 | 511 | 530 | 549 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 26    |     | 329 | 350 | 370 | 390 | 411 | 431 | 452 | 472 | 493 | 513 | 534 | 554 | 575 | 595 |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 27    |     |     | 378 | 401 | 423 | 445 | 467 | 489 | 511 | 533 | 555 | 577 | 599 | 621 | 643 | 666 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 28    |     |     |     | 408 | 432 | 456 | 480 | 503 | 527 | 551 | 575 | 598 | 622 | 646 | 670 | 693 | 717  | 741  | 765  | 789  |      |      |      |      |      |      |      |      |      |      |  |  |
| 29    |     |     |     |     | 440 | 465 | 490 | 516 | 541 | 567 | 592 | 618 | 643 | 669 | 694 | 720 | 745  | 771  | 796  | 822  | 847  |      |      |      |      |      |      |      |      |      |  |  |
| 30    |     |     |     |     |     | 472 | 499 | 526 | 554 | 581 | 608 | 635 | 663 | 690 | 717 | 744 | 772  | 799  | 826  | 853  | 881  |      |      |      |      |      |      |      |      |      |  |  |
| 31    |     |     |     |     |     |     | 505 | 534 | 563 | 592 | 621 | 651 | 680 | 709 | 738 | 767 | 796  | 825  | 854  | 883  | 913  |      |      |      |      |      |      |      |      |      |  |  |
| 32    |     |     |     |     |     |     |     | 539 | 570 | 601 | 632 | 663 | 694 | 725 | 757 | 788 | 819  | 850  | 881  | 912  | 943  |      |      |      |      |      |      |      |      |      |  |  |
| 33    |     |     |     |     |     |     |     |     | 575 | 608 | 641 | 674 | 707 | 740 | 773 | 806 | 839  | 872  | 905  | 938  | 971  |      |      |      |      |      |      |      |      |      |  |  |
| 34    |     |     |     |     |     |     |     |     |     | 611 | 646 | 681 | 716 | 751 | 786 | 821 | 857  | 892  | 927  | 962  | 997  | 1032 |      |      |      |      |      |      |      |      |  |  |
| 35    |     |     |     |     |     |     |     |     |     |     | 723 | 760 | 797 | 835 | 872 | 909 | 946  | 983  | 1020 | 1057 | 1094 | 1131 |      |      |      |      |      |      |      |      |  |  |
| 36    |     |     |     |     |     |     |     |     |     |     |     | 766 | 805 | 845 | 884 | 923 | 963  | 1002 | 1041 | 1080 | 1120 | 1159 | 1198 |      |      |      |      |      |      |      |  |  |
| 37    |     |     |     |     |     |     |     |     |     |     |     |     | 810 | 852 | 893 | 935 | 976  | 1018 | 1059 | 1101 | 1142 | 1184 | 1225 | 1267 |      |      |      |      |      |      |  |  |
| 38    |     |     |     |     |     |     |     |     |     |     |     |     |     | 856 | 900 | 943 | 987  | 1031 | 1075 | 1118 | 1162 | 1206 | 1250 | 1293 | 1337 |      |      |      |      |      |  |  |
| 39    |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 949 | 995 | 1041 | 1087 | 1133 | 1179 | 1225 | 1271 | 1317 | 1363 | 1410 | 1456 |      |      |      |      |  |  |
| 40    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 999 | 1047 | 1096 | 1144 | 1193 | 1241 | 1290 | 1338 | 1387 | 1435 | 1484 | 1532 |      |      |      |  |  |
| 41    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 1152 | 1203 | 1254 | 1305 | 1356 | 1407 | 1458 | 1509 | 1560 | 1611 | 1662 | 1713 |      |      |  |  |
| 42    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      | 1210 | 1264 | 1317 | 1371 | 1424 | 1477 | 1531 | 1584 | 1638 | 1691 | 1745 | 1798 | 1852 |  |  |
| 43    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      | 1269 | 1325 | 1381 | 1437 | 1493 | 1550 | 1606 | 1662 | 1718 | 1774 | 1830 | 1886 | 1942 |  |  |
| 44    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      | 1330 | 1389 | 1447 | 1506 | 1565 | 1623 | 1682 | 1741 | 1799 | 1858 | 1917 | 1975 | 2034 |  |  |
| 45    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      | 1637 | 1699 | 1760 | 1822 | 1883 | 1944 | 2006 | 2067 | 2128 |      |      |      |  |  |
| 46    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      | 1712 | 1776 | 1840 | 1904 | 1968 | 2033 | 2097 | 2161 | 2225 |      |      |      |  |  |
| 47    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      | 1788 | 1855 | 1922 | 1989 | 2056 | 2123 | 2190 | 2257 | 2323 |      |      |      |  |  |
| 48    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      | 1936 | 2005 | 2075 | 2145 | 2215 | 2285 | 2354 | 2424 |      |      |      |  |  |
| 49    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      | 2163 | 2236 | 2309 | 2382 | 2454 | 2527 |      |      |      |      |  |  |
| 50    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      | 2253 | 2329 | 2405 | 2481 | 2556 | 2632 |      |      |      |      |  |  |

# San Martino

(*Populus ×euramericana*)

$$v = 19,3 + 0,0298d^2h$$

$$R^2 = 0,9688$$

$$n = 15$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15 | 16  | 17  | 18  | 19  | 20  | 21  | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32 | 33 | 34 | 35 |
|-------|----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|----|----|----|----|
| 15    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 16    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 17    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 18    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 19    |    | 234 | 245 | 256 | 267 | 277 | 288 | 299  | 310  |      |      |      |      |      |      |      |      |    |    |    |    |
| 20    |    | 258 | 270 | 282 | 293 | 305 | 317 | 329  | 341  |      |      |      |      |      |      |      |      |    |    |    |    |
| 21    |    | 282 | 295 | 308 | 322 | 335 | 348 | 361  | 374  |      |      |      |      |      |      |      |      |    |    |    |    |
| 22    |    | 308 | 322 | 337 | 351 | 365 | 380 | 394  | 409  |      |      |      |      |      |      |      |      |    |    |    |    |
| 23    |    | 335 | 350 | 366 | 382 | 398 | 413 | 429  | 445  | 461  |      |      |      |      |      |      |      |    |    |    |    |
| 24    |    | 363 | 380 | 397 | 414 | 431 | 448 | 466  | 483  | 500  |      |      |      |      |      |      |      |    |    |    |    |
| 25    |    | 392 | 410 | 429 | 448 | 466 | 485 | 504  | 522  | 541  | 559  | 578  |      |      |      |      |      |    |    |    |    |
| 26    |    | 422 | 442 | 462 | 483 | 503 | 523 | 543  | 563  | 583  | 603  | 624  |      |      |      |      |      |    |    |    |    |
| 27    |    | 454 | 475 | 497 | 519 | 541 | 562 | 584  | 606  | 628  | 649  | 671  | 693  |      |      |      |      |    |    |    |    |
| 28    |    | 487 | 510 | 533 | 557 | 580 | 603 | 627  | 650  | 673  | 697  | 720  | 744  |      |      |      |      |    |    |    |    |
| 29    |    | 520 | 546 | 571 | 596 | 621 | 646 | 671  | 696  | 721  | 746  | 771  | 796  |      |      |      |      |    |    |    |    |
| 30    |    | 556 | 582 | 609 | 636 | 663 | 690 | 717  | 743  | 770  | 797  | 824  | 851  |      |      |      |      |    |    |    |    |
| 31    |    | 592 | 621 | 649 | 678 | 707 | 735 | 764  | 792  | 821  | 850  | 878  | 907  | 936  | 964  |      |      |    |    |    |    |
| 32    |    |     |     |     |     |     | 721 | 752  | 782  | 813  | 843  | 874  | 904  | 935  | 965  | 996  | 1026 |    |    |    |    |
| 33    |    |     |     |     |     |     | 766 | 798  | 831  | 863  | 895  | 928  | 960  | 993  | 1025 | 1058 | 1090 |    |    |    |    |
| 34    |    |     |     |     |     |     | 812 | 846  | 880  | 915  | 949  | 984  | 1018 | 1053 | 1087 | 1122 | 1156 |    |    |    |    |
| 35    |    |     |     |     |     |     | 859 | 895  | 932  | 968  | 1005 | 1041 | 1078 | 1114 | 1151 | 1187 | 1224 |    |    |    |    |
| 36    |    |     |     |     |     |     | 908 | 946  | 985  | 1023 | 1062 | 1101 | 1139 | 1178 | 1217 | 1255 | 1294 |    |    |    |    |
| 37    |    |     |     |     |     |     | 958 | 998  | 1039 | 1080 | 1121 | 1162 | 1202 | 1243 | 1284 | 1325 | 1366 |    |    |    |    |
| 38    |    |     |     |     |     |     |     | 1052 | 1095 | 1138 | 1181 | 1224 | 1267 | 1310 | 1353 | 1396 | 1439 |    |    |    |    |
| 39    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 40    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 41    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 42    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 43    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 44    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 45    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 46    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 47    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 48    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 49    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |
| 50    |    |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |    |    |    |    |

## Ticino

(*Populus ×euramericana*)

$$v = -22,0 + 0,0300d^2h$$

$$R^2 = 0,9458$$

$$n = 15$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24  | 25  | 26  | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35 |
|-------|----|----|----|----|----|----|----|----|----|-----|-----|-----|------|------|------|------|------|------|------|------|----|
| 15    |    |    |    |    |    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |    |
| 16    |    |    |    |    |    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |    |
| 17    |    |    |    |    |    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |    |
| 18    |    |    |    |    |    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |    |
| 19    |    |    |    |    |    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |    |
| 20    |    |    |    |    |    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |    |
| 21    |    |    |    |    |    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |    |
| 22    |    |    |    |    |    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |    |
| 23    |    |    |    |    |    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |    |
| 24    |    |    |    |    |    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |    |
| 25    |    |    |    |    |    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |    |
| 26    |    |    |    |    |    |    |    |    |    | 485 | 505 | 526 | 546  | 566  | 586  | 607  | 627  | 647  | 668  |      |    |
| 27    |    |    |    |    |    |    |    |    |    | 525 | 547 | 569 | 590  | 612  | 634  | 656  | 678  | 700  | 722  | 743  |    |
| 28    |    |    |    |    |    |    |    |    |    | 566 | 590 | 613 | 637  | 660  | 684  | 707  | 731  | 754  | 778  | 801  |    |
| 29    |    |    |    |    |    |    |    |    |    | 609 | 634 | 659 | 684  | 710  | 735  | 760  | 785  | 811  | 836  | 861  |    |
| 30    |    |    |    |    |    |    |    |    |    | 653 | 680 | 707 | 734  | 761  | 788  | 815  | 842  | 869  | 896  | 923  |    |
| 31    |    |    |    |    |    |    |    |    |    | 699 | 728 | 756 | 785  | 814  | 843  | 872  | 901  | 929  | 958  | 987  |    |
| 32    |    |    |    |    |    |    |    |    |    | 746 | 777 | 807 | 838  | 869  | 900  | 930  | 961  | 992  | 1022 | 1053 |    |
| 33    |    |    |    |    |    |    |    |    |    | 795 | 827 | 860 | 893  | 925  | 958  | 991  | 1023 | 1056 | 1089 | 1121 |    |
| 34    |    |    |    |    |    |    |    |    |    | 845 | 880 | 914 | 949  | 984  | 1018 | 1053 | 1088 | 1122 | 1157 | 1192 |    |
| 35    |    |    |    |    |    |    |    |    |    | 897 | 934 | 970 | 1007 | 1044 | 1081 | 1117 | 1154 | 1191 | 1228 | 1264 |    |
| 36    |    |    |    |    |    |    |    |    |    |     |     |     | 1067 | 1106 | 1144 | 1183 | 1222 | 1261 | 1300 | 1339 |    |
| 37    |    |    |    |    |    |    |    |    |    |     |     |     | 1128 | 1169 | 1210 | 1251 | 1292 | 1333 | 1374 | 1415 |    |
| 38    |    |    |    |    |    |    |    |    |    |     |     |     | 1191 | 1234 | 1278 | 1321 | 1364 | 1408 | 1451 | 1494 |    |
| 39    |    |    |    |    |    |    |    |    |    |     |     |     | 1256 | 1301 | 1347 | 1393 | 1438 | 1484 | 1529 | 1575 |    |
| 40    |    |    |    |    |    |    |    |    |    |     |     |     | 1322 | 1370 | 1418 | 1466 | 1514 | 1562 | 1610 | 1658 |    |
| 41    |    |    |    |    |    |    |    |    |    |     |     |     |      |      | 1491 | 1541 | 1592 | 1642 | 1693 | 1743 |    |
| 42    |    |    |    |    |    |    |    |    |    |     |     |     |      |      | 1566 | 1619 | 1671 | 1724 | 1777 | 1830 |    |
| 43    |    |    |    |    |    |    |    |    |    |     |     |     |      |      | 1642 | 1698 | 1753 | 1809 | 1864 | 1919 |    |
| 44    |    |    |    |    |    |    |    |    |    |     |     |     |      |      | 1720 | 1778 | 1837 | 1895 | 1953 | 2011 |    |
| 45    |    |    |    |    |    |    |    |    |    |     |     |     |      |      | 1801 | 1861 | 1922 | 1983 | 2044 | 2104 |    |
| 46    |    |    |    |    |    |    |    |    |    |     |     |     |      |      | 1882 | 1946 | 2009 | 2073 | 2136 | 2200 |    |
| 47    |    |    |    |    |    |    |    |    |    |     |     |     |      |      | 2032 | 2099 | 2165 | 2231 | 2297 |      |    |
| 48    |    |    |    |    |    |    |    |    |    |     |     |     |      |      | 2121 | 2190 | 2259 | 2328 | 2397 |      |    |
| 49    |    |    |    |    |    |    |    |    |    |     |     |     |      |      | 2211 | 2283 | 2355 | 2427 | 2499 |      |    |
| 50    |    |    |    |    |    |    |    |    |    |     |     |     |      |      | 2303 | 2378 | 2453 | 2528 | 2603 |      |    |

# Triple

(*Populus ×euramericana*)

$$v = -60,4 + 0,0335d^2h$$

$$R^2 = 0,9723$$

$$n = 138$$

$$p = 8$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   |      |      |  |  |
|-------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| 15    | 53  | 60  | 68  | 75  | 83  |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 16    | 68  | 77  | 85  | 94  | 103 | 111 | 120 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 17    | 85  | 94  | 104 | 114 | 124 | 133 | 143 | 153  | 162  | 172  | 182  |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 18    | 102 | 113 | 124 | 135 | 146 | 157 | 168 | 178  | 189  | 200  | 211  |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 19    | 121 | 133 | 145 | 157 | 169 | 181 | 194 | 206  | 218  | 230  | 242  |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 20    | 141 | 154 | 167 | 181 | 194 | 208 | 221 | 234  | 248  | 261  | 275  | 288  | 301  |      |      |      |      |      |      |      |      |      |      |  |  |
| 21    | 161 | 176 | 191 | 205 | 220 | 235 | 250 | 265  | 279  | 294  | 309  | 324  | 338  |      |      |      |      |      |      |      |      |      |      |  |  |
| 22    | 183 | 199 | 215 | 231 | 248 | 264 | 280 | 296  | 312  | 329  | 345  | 361  | 377  | 394  |      |      |      |      |      |      |      |      |      |  |  |
| 23    | 205 | 223 | 241 | 259 | 276 | 294 | 312 | 329  | 347  | 365  | 383  | 400  | 418  | 436  |      |      |      |      |      |      |      |      |      |  |  |
| 24    | 229 | 248 | 268 | 287 | 306 | 325 | 345 | 364  | 383  | 403  | 422  | 441  | 461  | 480  | 499  |      |      |      |      |      |      |      |      |  |  |
| 25    | 254 | 275 | 296 | 316 | 337 | 358 | 379 | 400  | 421  | 442  | 463  | 484  | 505  | 526  | 547  | 568  | 589  |      |      |      |      |      |      |  |  |
| 26    | 279 | 302 | 325 | 347 | 370 | 392 | 415 | 438  | 460  | 483  | 506  | 528  | 551  | 574  | 596  | 619  | 642  |      |      |      |      |      |      |  |  |
| 27    | 306 | 330 | 355 | 379 | 404 | 428 | 452 | 477  | 501  | 526  | 550  | 575  | 599  | 623  | 648  | 672  | 697  |      |      |      |      |      |      |  |  |
| 28    | 334 | 360 | 386 | 412 | 439 | 465 | 491 | 517  | 544  | 570  | 596  | 622  | 649  | 675  | 701  | 727  | 754  | 780  |      |      |      |      |      |  |  |
| 29    | 362 | 390 | 419 | 447 | 475 | 503 | 531 | 559  | 588  | 616  | 644  | 672  | 700  | 728  | 757  | 785  | 813  | 841  |      |      |      |      |      |  |  |
| 30    | 392 | 422 | 452 | 482 | 512 | 543 | 573 | 603  | 633  | 663  | 693  | 723  | 754  | 784  | 814  | 844  | 874  | 904  |      |      |      |      |      |  |  |
| 31    | 422 | 455 | 487 | 519 | 551 | 583 | 616 | 648  | 680  | 712  | 744  | 777  | 809  | 841  | 873  | 905  | 938  | 970  | 1002 |      |      |      |      |  |  |
| 32    |     | 523 | 557 | 591 | 626 | 660 | 694 | 729  | 763  | 797  | 831  | 866  | 900  | 934  | 969  | 1003 | 1037 | 1072 |      |      |      |      |      |  |  |
| 33    |     |     | 560 | 596 | 633 | 669 | 706 | 742  | 779  | 815  | 852  | 888  | 925  | 961  | 998  | 1034 | 1070 | 1107 | 1143 | 1180 | 1216 |      |      |  |  |
| 34    |     |     |     | 598 | 637 | 675 | 714 | 753  | 792  | 830  | 869  | 908  | 946  | 985  | 1024 | 1063 | 1101 | 1140 | 1179 | 1218 | 1256 | 1295 |      |  |  |
| 35    |     |     |     |     | 637 | 678 | 719 | 760  | 801  | 842  | 883  | 924  | 966  | 1007 | 1048 | 1089 | 1130 | 1171 | 1212 | 1253 | 1294 | 1335 | 1376 |  |  |
| 36    |     |     |     |     |     | 851 | 895 | 938  | 982  | 1025 | 1068 | 1112 | 1155 | 1199 | 1242 | 1285 | 1329 | 1372 | 1416 | 1459 |      |      |      |  |  |
| 37    |     |     |     |     |     |     | 903 | 949  | 994  | 1040 | 1086 | 1132 | 1178 | 1224 | 1270 | 1315 | 1361 | 1407 | 1453 | 1499 | 1545 |      |      |  |  |
| 38    |     |     |     |     |     |     | 955 | 1004 | 1052 | 1101 | 1149 | 1197 | 1246 | 1294 | 1342 | 1391 | 1439 | 1488 | 1536 | 1584 | 1633 |      |      |  |  |
| 39    |     |     |     |     |     |     |     | 1010 | 1061 | 1112 | 1162 | 1213 | 1264 | 1315 | 1366 | 1417 | 1468 | 1519 | 1570 | 1621 | 1672 | 1723 |      |  |  |
| 40    |     |     |     |     |     |     |     | 1119 | 1172 | 1226 | 1280 | 1333 | 1387 | 1440 | 1494 | 1548 | 1601 | 1655 | 1708 | 1762 | 1816 |      |      |  |  |
| 41    |     |     |     |     |     |     |     |      | 1291 | 1347 | 1404 | 1460 | 1516 | 1573 | 1629 | 1685 | 1742 | 1798 | 1854 | 1911 |      |      |      |  |  |
| 42    |     |     |     |     |     |     |     |      | 1358 | 1417 | 1476 | 1535 | 1594 | 1653 | 1712 | 1771 | 1831 | 1890 | 1949 | 2008 |      |      |      |  |  |
| 43    |     |     |     |     |     |     |     |      |      | 1488 | 1550 | 1612 | 1674 | 1736 | 1798 | 1860 | 1922 | 1984 | 2046 | 2108 |      |      |      |  |  |
| 44    |     |     |     |     |     |     |     |      |      | 1561 | 1626 | 1691 | 1756 | 1820 | 1885 | 1950 | 2015 | 2080 | 2145 | 2210 |      |      |      |  |  |
| 45    |     |     |     |     |     |     |     |      |      |      | 1636 | 1703 | 1771 | 1839 | 1907 | 1975 | 2043 | 2110 | 2178 | 2246 | 2314 |      |      |  |  |
| 46    |     |     |     |     |     |     |     |      |      |      | 1783 | 1853 | 1924 | 1995 | 2066 | 2137 | 2208 | 2279 | 2350 | 2421 |      |      |      |  |  |
| 47    |     |     |     |     |     |     |     |      |      |      |      | 1864 | 1938 | 2012 | 2086 | 2160 | 2234 | 2308 | 2382 | 2456 | 2530 |      |      |  |  |
| 48    |     |     |     |     |     |     |     |      |      |      |      | 1946 | 2024 | 2101 | 2178 | 2255 | 2332 | 2409 | 2487 | 2564 | 2641 |      |      |  |  |
| 49    |     |     |     |     |     |     |     |      |      |      |      | 2031 | 2111 | 2192 | 2272 | 2353 | 2433 | 2513 | 2594 | 2674 | 2755 |      |      |  |  |
| 50    |     |     |     |     |     |     |     |      |      |      |      |      | 2285 | 2368 | 2452 | 2536 | 2620 | 2703 | 2787 | 2871 |      |      |      |  |  |

# Unal

(*Populus ×interamericana*)

$$v = 40,2 + 0,0288d^2h$$

d: diámetro normal (cm)

$$R^2 = 0,9812$$

h: altura total (m)

$$n = 35$$

v: volumen con corteza (dm<sup>3</sup>)

$$p = 2$$

| d \ h | 15  | 16  | 17  | 18  | 19  | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35 |  |
|-------|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|--|
| 15    | 137 | 144 | 150 | 157 | 163 | 170  | 176  | 183  |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 16    | 151 | 158 | 166 | 173 | 180 | 188  | 195  | 202  |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 17    | 165 | 173 | 182 | 190 | 198 | 207  | 215  | 223  |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 18    | 180 | 190 | 199 | 208 | 218 | 227  | 236  | 245  |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 19    | 196 | 207 | 217 | 227 | 238 | 248  | 259  | 269  |      |      |      |      |      |      |      |      |      |      |      |      |    |  |
| 20    | 213 | 225 | 236 | 248 | 259 | 271  | 282  | 294  | 305  | 317  | 328  |      |      |      |      |      |      |      |      |      |    |  |
| 21    | 231 | 243 | 256 | 269 | 282 | 294  | 307  | 320  | 332  | 345  | 358  | 370  | 383  |      |      |      |      |      |      |      |    |  |
| 22    |     | 263 | 277 | 291 | 305 | 319  | 333  | 347  | 361  | 375  | 389  | 403  | 417  | 431  |      |      |      |      |      |      |    |  |
| 23    |     |     | 314 | 330 | 345 | 360  | 375  | 391  | 406  | 421  | 436  | 452  | 467  |      |      |      |      |      |      |      |    |  |
| 24    |     |     | 339 | 355 | 372 | 389  | 405  | 422  | 438  | 455  | 472  | 488  | 505  |      |      |      |      |      |      |      |    |  |
| 25    |     |     | 364 | 382 | 400 | 418  | 436  | 454  | 472  | 490  | 508  | 526  | 544  |      |      |      |      |      |      |      |    |  |
| 26    |     |     | 391 | 410 | 430 | 449  | 469  | 488  | 507  | 527  | 546  | 566  | 585  |      |      |      |      |      |      |      |    |  |
| 27    |     |     | 418 | 439 | 460 | 481  | 502  | 523  | 544  | 565  | 586  | 607  | 628  |      |      |      |      |      |      |      |    |  |
| 28    |     |     |     | 469 | 492 | 514  | 537  | 560  | 582  | 605  | 627  | 650  | 672  |      |      |      |      |      |      |      |    |  |
| 29    |     |     |     | 500 | 525 | 549  | 573  | 597  | 622  | 646  | 670  | 694  | 718  |      |      |      |      |      |      |      |    |  |
| 30    |     |     |     | 533 | 559 | 585  | 610  | 636  | 662  | 688  | 714  | 740  | 766  | 792  | 818  |      |      |      |      |      |    |  |
| 31    |     |     |     | 566 | 594 | 621  | 649  | 677  | 704  | 732  | 760  | 787  | 815  | 843  | 871  |      |      |      |      |      |    |  |
| 32    |     |     |     | 601 | 630 | 660  | 689  | 719  | 748  | 777  | 807  | 836  | 866  | 895  | 925  | 954  | 984  | 1013 |      |      |    |  |
| 33    |     |     |     | 636 | 667 | 699  | 730  | 762  | 793  | 824  | 856  | 887  | 918  | 950  | 981  | 1012 | 1044 | 1075 | 1107 |      |    |  |
| 34    |     |     |     | 673 | 706 | 739  | 773  | 806  | 839  | 873  | 906  | 939  | 972  | 1006 | 1039 | 1072 | 1106 | 1139 | 1172 | 1205 |    |  |
| 35    |     |     |     | 711 | 746 | 781  | 816  | 852  | 887  | 922  | 957  | 993  | 1028 | 1063 | 1099 | 1134 | 1169 | 1204 | 1240 | 1275 |    |  |
| 36    |     |     |     | 749 | 787 | 824  | 861  | 899  | 936  | 973  | 1011 | 1048 | 1085 | 1123 | 1160 | 1197 | 1235 | 1272 | 1309 | 1347 |    |  |
| 37    |     |     |     |     | 868 | 908  | 947  | 986  | 1026 | 1065 | 1105 | 1144 | 1184 | 1223 | 1262 | 1302 | 1341 | 1381 | 1420 |      |    |  |
| 38    |     |     |     |     |     | 955  | 997  | 1038 | 1080 | 1121 | 1163 | 1205 | 1246 | 1288 | 1329 | 1371 | 1413 | 1454 | 1496 |      |    |  |
| 39    |     |     |     |     |     | 1004 | 1048 | 1092 | 1135 | 1179 | 1223 | 1267 | 1311 | 1354 | 1398 | 1442 | 1486 | 1530 | 1573 |      |    |  |
| 40    |     |     |     |     |     | 1054 | 1100 | 1146 | 1192 | 1238 | 1284 | 1330 | 1377 | 1423 | 1469 | 1515 | 1561 | 1607 | 1653 |      |    |  |
| 41    |     |     |     |     |     | 1105 | 1154 | 1202 | 1251 | 1299 | 1347 | 1396 | 1444 | 1493 | 1541 | 1589 | 1638 | 1686 | 1735 |      |    |  |
| 42    |     |     |     |     |     | 1158 | 1209 | 1259 | 1310 | 1361 | 1412 | 1463 | 1514 | 1564 | 1615 | 1666 | 1717 | 1768 | 1818 |      |    |  |
| 43    |     |     |     |     |     | 1265 | 1318 | 1371 | 1425 | 1478 | 1531 | 1584 | 1638 | 1691 | 1744 | 1797 | 1851 | 1904 |      |      |    |  |
| 44    |     |     |     |     |     |      | 1378 | 1434 | 1490 | 1546 | 1601 | 1657 | 1713 | 1769 | 1824 | 1880 | 1936 | 1992 |      |      |    |  |
| 45    |     |     |     |     |     |      | 1440 | 1498 | 1557 | 1615 | 1673 | 1731 | 1790 | 1848 | 1906 | 1965 | 2023 | 2081 |      |      |    |  |
| 46    |     |     |     |     |     |      | 1503 | 1564 | 1625 | 1686 | 1747 | 1807 | 1868 | 1929 | 1990 | 2051 | 2112 | 2173 |      |      |    |  |
| 47    |     |     |     |     |     |      | 1567 | 1631 | 1694 | 1758 | 1822 | 1885 | 1949 | 2012 | 2076 | 2140 | 2203 | 2267 |      |      |    |  |
| 48    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      | 2164 | 2230 | 2296 | 2363 |    |  |
| 49    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      | 2253 | 2322 | 2391 | 2460 |    |  |
| 50    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      | 2344 | 2416 | 2488 | 2560 |    |  |

# 1-Z

(*Populus ×euramericana*)

$$v = 123,7 + 0,0271d^2h$$

$$R^2 = 0,9776$$

$$n = 26$$

$$p = 1$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15 | 16 | 17 | 18 | 19  | 20  | 21  | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   |
|-------|----|----|----|----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 15    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 16    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 17    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 18    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 19    |    |    |    |    |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 20    |    |    |    |    | 351 | 362 | 373 | 384  | 395  | 406  | 416  | 427  | 438  |      |      |      |      |      |      |      |      |
| 21    |    |    |    |    | 375 | 387 | 399 | 411  | 422  | 434  | 446  | 458  | 470  |      |      |      |      |      |      |      |      |
| 22    |    |    |    |    | 399 | 412 | 425 | 438  | 452  | 465  | 478  | 491  | 504  |      |      |      |      |      |      |      |      |
| 23    |    |    |    |    | 425 | 439 | 453 | 468  | 482  | 496  | 511  | 525  | 539  |      |      |      |      |      |      |      |      |
| 24    |    |    |    |    | 452 | 467 | 483 | 498  | 514  | 530  | 545  | 561  | 576  |      |      |      |      |      |      |      |      |
| 25    |    |    |    |    | 479 | 496 | 513 | 530  | 547  | 564  | 581  | 598  | 615  | 632  |      |      |      |      |      |      |      |
| 26    |    |    |    |    | 508 | 527 | 545 | 563  | 582  | 600  | 618  | 637  | 655  | 673  |      |      |      |      |      |      |      |
| 27    |    |    |    |    | 539 | 558 | 578 | 598  | 618  | 637  | 657  | 677  | 697  | 716  |      |      |      |      |      |      |      |
| 28    |    |    |    |    | 570 | 591 | 612 | 634  | 655  | 676  | 697  | 719  | 740  | 761  | 782  | 804  | 825  |      |      |      |      |
| 29    |    |    |    |    | 602 | 625 | 648 | 671  | 693  | 716  | 739  | 762  | 785  | 807  | 830  | 853  | 876  | 899  | 921  |      |      |
| 30    |    |    |    |    | 636 | 660 | 685 | 709  | 733  | 758  | 782  | 807  | 831  | 855  | 880  | 904  | 929  | 953  | 977  |      |      |
| 31    |    |    |    |    | 671 | 697 | 723 | 749  | 775  | 801  | 827  | 853  | 879  | 905  | 931  | 957  | 983  | 1009 | 1035 |      |      |
| 32    |    |    |    |    | 734 | 762 | 790 | 817  | 845  | 873  | 901  | 928  | 956  | 984  | 1012 | 1039 | 1067 | 1095 |      |      |      |
| 33    |    |    |    |    | 773 | 802 | 832 | 861  | 891  | 921  | 950  | 980  | 1009 | 1039 | 1068 | 1098 | 1127 | 1157 |      |      |      |
| 34    |    |    |    |    | 813 | 844 | 876 | 907  | 938  | 970  | 1001 | 1032 | 1064 | 1095 | 1126 | 1158 | 1189 | 1220 |      |      |      |
| 35    |    |    |    |    | 854 | 887 | 920 | 954  | 987  | 1020 | 1053 | 1086 | 1120 | 1153 | 1186 | 1219 | 1252 | 1286 |      |      |      |
| 36    |    |    |    |    | 896 | 931 | 967 | 1002 | 1037 | 1072 | 1107 | 1142 | 1177 | 1212 | 1248 | 1283 | 1318 | 1353 |      |      |      |
| 37    |    |    |    |    |     |     |     |      |      |      |      |      | 1125 | 1162 | 1200 | 1237 | 1274 | 1311 | 1348 | 1385 | 1422 |
| 38    |    |    |    |    |     |     |     |      |      |      |      |      | 1180 | 1219 | 1259 | 1298 | 1337 | 1376 | 1415 | 1454 | 1493 |
| 39    |    |    |    |    |     |     |     |      |      |      |      |      | 1237 | 1278 | 1319 | 1360 | 1401 | 1443 | 1484 | 1525 | 1566 |
| 40    |    |    |    |    |     |     |     |      |      |      |      |      | 1294 | 1338 | 1381 | 1425 | 1468 | 1511 | 1555 | 1598 | 1641 |
| 41    |    |    |    |    |     |     |     |      |      |      |      |      | 1354 | 1399 | 1445 | 1490 | 1536 | 1581 | 1627 | 1673 | 1718 |
| 42    |    |    |    |    |     |     |     |      |      |      |      |      | 1510 | 1558 | 1606 | 1653 | 1701 | 1749 | 1797 |      |      |
| 43    |    |    |    |    |     |     |     |      |      |      |      |      | 1577 | 1627 | 1677 | 1727 | 1777 | 1827 | 1877 |      |      |
| 44    |    |    |    |    |     |     |     |      |      |      |      |      | 1645 | 1698 | 1750 | 1803 | 1855 | 1908 | 1960 |      |      |
| 45    |    |    |    |    |     |     |     |      |      |      |      |      | 1715 | 1770 | 1825 | 1880 | 1935 | 1990 | 2044 |      |      |
| 46    |    |    |    |    |     |     |     |      |      |      |      |      | 1787 | 1844 | 1901 | 1959 | 2016 | 2073 | 2131 |      |      |
| 47    |    |    |    |    |     |     |     |      |      |      |      |      | 1920 | 1979 | 2039 | 2099 | 2159 | 2219 |      |      |      |
| 48    |    |    |    |    |     |     |     |      |      |      |      |      | 1997 | 2059 | 2122 | 2184 | 2247 | 2309 |      |      |      |
| 49    |    |    |    |    |     |     |     |      |      |      |      |      | 2076 | 2141 | 2206 | 2271 | 2336 | 2401 |      |      |      |
| 50    |    |    |    |    |     |     |     |      |      |      |      |      | 2156 | 2224 | 2292 | 2359 | 2427 | 2495 |      |      |      |

# 2000 Verde

(*Populus ×euramericana*)

$$v = 47,2 + 0,0308d^2h$$

$$R^2 = 0,9821$$

$$n = 76$$

$$p = 5$$

d: diámetro normal (cm)

h: altura total (m)

v: volumen con corteza (dm<sup>3</sup>)

| d \ h | 15  | 16  | 17  | 18  | 19  | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   |
|-------|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 15    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 16    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 17    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 18    |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 19    | 214 | 225 | 236 | 247 | 258 | 270  | 281  | 292  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 20    | 232 | 244 | 257 | 269 | 281 | 294  | 306  | 318  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 21    | 251 | 265 | 278 | 292 | 305 | 319  | 332  | 346  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 22    | 271 | 286 | 301 | 316 | 330 | 345  | 360  | 375  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 23    | 292 | 308 | 324 | 341 | 357 | 373  | 389  | 406  |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 24    | 313 | 331 | 349 | 367 | 384 | 402  | 420  | 438  | 455  | 473  |      |      |      |      |      |      |      |      |      |      |      |
| 25    | 336 | 355 | 374 | 394 | 413 | 432  | 451  | 471  | 490  | 509  |      |      |      |      |      |      |      |      |      |      |      |
| 26    | 360 | 380 | 401 | 422 | 443 | 464  | 484  | 505  | 526  | 547  |      |      |      |      |      |      |      |      |      |      |      |
| 27    | 384 | 406 | 429 | 451 | 474 | 496  | 519  | 541  | 564  | 586  | 609  | 631  | 653  | 676  | 698  | 721  |      |      |      |      |      |
| 28    | 409 | 434 | 458 | 482 | 506 | 530  | 554  | 578  | 603  | 627  | 651  | 675  | 699  | 723  | 748  | 772  | 796  | 820  | 844  | 868  |      |
| 29    | 436 | 462 | 488 | 513 | 539 | 565  | 591  | 617  | 643  | 669  | 695  | 721  | 747  | 773  | 798  | 824  | 850  | 876  | 902  | 928  |      |
| 30    | 463 | 491 | 518 | 546 | 574 | 602  | 629  | 657  | 685  | 713  | 740  | 768  | 796  | 823  | 851  | 879  | 907  | 934  | 962  | 990  | 1017 |
| 31    | 491 | 521 | 550 | 580 | 610 | 639  | 669  | 698  | 728  | 758  | 787  | 817  | 846  | 876  | 906  | 935  | 965  | 994  | 1024 | 1054 | 1083 |
| 32    |     |     | 615 | 646 | 678 | 710  | 741  | 773  | 804  | 836  | 867  | 899  | 930  | 962  | 993  | 1025 | 1056 | 1088 | 1120 | 1151 |      |
| 33    |     |     | 651 | 685 | 718 | 752  | 785  | 819  | 852  | 886  | 919  | 953  | 986  | 1020 | 1053 | 1087 | 1121 | 1154 | 1188 | 1221 |      |
| 34    |     |     | 688 | 724 | 759 | 795  | 831  | 866  | 902  | 937  | 973  | 1009 | 1044 | 1080 | 1115 | 1151 | 1187 | 1222 | 1258 | 1293 |      |
| 35    |     |     | 726 | 764 | 802 | 840  | 877  | 915  | 953  | 990  | 1028 | 1066 | 1104 | 1141 | 1179 | 1217 | 1255 | 1292 | 1330 | 1368 |      |
| 36    |     |     |     | 806 | 846 | 885  | 925  | 965  | 1005 | 1045 | 1085 | 1125 | 1165 | 1205 | 1245 | 1285 | 1325 | 1364 | 1404 | 1444 |      |
| 37    |     |     |     |     | 848 | 891  | 933  | 975  | 1017 | 1059 | 1101 | 1144 | 1186 | 1228 | 1270 | 1312 | 1354 | 1397 | 1439 | 1481 | 1523 |
| 38    |     |     |     |     | 937 | 981  | 1026 | 1070 | 1115 | 1159 | 1204 | 1248 | 1293 | 1337 | 1381 | 1426 | 1470 | 1515 | 1559 | 1604 |      |
| 39    |     |     |     |     |     | 1031 | 1078 | 1125 | 1172 | 1218 | 1265 | 1312 | 1359 | 1406 | 1453 | 1499 | 1546 | 1593 | 1640 | 1687 |      |
| 40    |     |     |     |     |     | 1082 | 1131 | 1181 | 1230 | 1279 | 1329 | 1378 | 1427 | 1476 | 1526 | 1575 | 1624 | 1673 | 1723 | 1772 |      |
| 41    |     |     |     |     |     |      | 1135 | 1186 | 1238 | 1290 | 1342 | 1393 | 1445 | 1497 | 1549 | 1600 | 1652 | 1704 | 1756 | 1808 | 1859 |
| 42    |     |     |     |     |     |      | 1188 | 1243 | 1297 | 1351 | 1406 | 1460 | 1514 | 1569 | 1623 | 1677 | 1732 | 1786 | 1840 | 1895 | 1949 |
| 43    |     |     |     |     |     |      | 1243 | 1300 | 1357 | 1414 | 1471 | 1528 | 1585 | 1642 | 1699 | 1756 | 1813 | 1870 | 1927 | 1984 | 2040 |
| 44    |     |     |     |     |     |      | 1299 | 1359 | 1419 | 1478 | 1538 | 1598 | 1657 | 1717 | 1776 | 1836 | 1896 | 1955 | 2015 | 2075 | 2134 |
| 45    |     |     |     |     |     |      |      |      |      |      |      |      | 1731 | 1794 | 1856 | 1918 | 1981 | 2043 | 2105 | 2168 | 2230 |
| 46    |     |     |     |     |     |      |      |      |      |      |      |      | 1807 | 1872 | 1937 | 2002 | 2068 | 2133 | 2198 | 2263 | 2328 |
| 47    |     |     |     |     |     |      |      |      |      |      |      |      | 1884 | 1952 | 2020 | 2088 | 2156 | 2224 | 2292 | 2361 | 2429 |
| 48    |     |     |     |     |     |      |      |      |      |      |      |      | 2034 | 2105 | 2176 | 2247 | 2318 | 2389 | 2460 | 2531 |      |
| 49    |     |     |     |     |     |      |      |      |      |      |      |      | 2118 | 2192 | 2266 | 2340 | 2414 | 2488 | 2562 | 2636 |      |
| 50    |     |     |     |     |     |      |      |      |      |      |      |      | 2203 | 2280 | 2357 | 2434 | 2511 | 2588 | 2665 | 2742 |      |

Colección de documentos técnicos  
para una gestión forestal sostenible



**Junta de  
Castilla y León**

Consejería de Medio Ambiente,  
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