

MATERIAL SUPLEMENTARIO

Tabla S1. Modelos locales para estimar altura de los árboles en cada piso altitudinal de vegetación. Selva pedemontana = SP; selva montana = SM; bosque montano = BM; error residual estándar = RSE; parámetros de las funciones = A-B-C; altura estimada = \hat{A} . Nivel de significancia: no significativo (NS); <0.05 (*); <0.01 (**); <0.001 (***)

Table S1. Local models to estimate tree height for each altitudinal vegetation level. Premontane forest = SP; lower montane forest = SM; upper montane forest = BM; residual standard error = RSE; function parameters = A-B-C; estimated height = \hat{A} . Significance level: not significant (NS); <0.05 (*); <0.01 (**); <0.001 (***)

| | | Log 2-parámetros | Log 3-parámetros | Weibull | Michaelis-Menten |
|---------------|---------------------------------|------------------|------------------|------------|------------------|
| SP N = 262 | RSE | 3.652 | 3.636 | 3.635 | 3.630 |
| | A | 0.78 *** | -0.49 NS | 27.33 ** | 28.75 *** |
| | B | 0.52 *** | 1.27 *** | 51.39 NS | 33.76 *** |
| | C | - | -0.11 * | 0.74 *** | - |
| | \hat{A}_{media} | 15.2 | 15.2 | 15.1 | 15.1 |
| | $\hat{A}_{min} - \hat{A}_{max}$ | 7.4 - 23.7 | 6.6 - 21.4 | 7 - 21.7 | 6.6 - 21.2 |
| SM N = 257 | RSE | 3.355 | 3.337 | 3.336 | 3.349 |
| | A | 1.09 *** | 0.39 NS | 28.36 ** | 23.54 *** |
| | B | 0.41 *** | 0.82 ** | 75.24 NS | 24.48 *** |
| | C | - | -0.06 NS | 0.56 *** | - |
| | \hat{A}_{media} | 14.2 | 14.2 | 14.1 | 14.1 |
| | $\hat{A}_{min} - \hat{A}_{max}$ | 7.9 - 24.9 | 7.4 - 22.3 | 6.8 - 22.2 | 6.8 - 20.4 |
| BM N = 301 | RSE | 2.478 | 2.465 | 2.464 | 2.466 |
| | A | 1.15 *** | 0.37 NS | 17.10 *** | 16.97 *** |
| | B | 0.34 *** | 0.79 *** | 32.91 * | 17.97 *** |
| | C | - | -0.06 * | 0.60 *** | - |
| | \hat{A}_{media} | 11.7 | 11.7 | 11.7 | 11.8 |
| | $\hat{A}_{min} - \hat{A}_{max}$ | 7.1 - 16.9 | 6.6 - 15.6 | 6.7 - 15.4 | 6.2 - 14.9 |

Tabla S2. Promedio de altura (A) en metros (mínima y máxima) a nivel de parcela (i.e., promedio de A de los árboles de una parcela ponderada por el área basal de cada árbol) y a nivel de árbol (promedio de A de los árboles dentro de cada piso altitudinal), usando modelos A ~ DAP alternativos: modelo climático de Chave et al. (2014) y el modelo local ajustado en este estudio. Selva pedemontana = SP; selva montana = SM; bosque montano = BM; metros sobre el nivel del mar = m.

Table S2. Average height (A) in meters (minimum and maximum) at the plot level (i.e., average A of the trees in a plot weighted by the basal area of each tree) and at the tree level (average A of the trees within each elevation level), using alternative A ~ DAP models: climate model of Chave et al. (2014) and local model fitted in this study. Premontane forest = SP; lower montane forest = SM; upper montane forest = BM; meters above sea level = m.

| | | Gradiente completo | SP (400-900 m) | SM (900-1500 m) | BM (1500-2100 m) |
|-------------|-------------------------------|--------------------|--------------------|--------------------|--------------------|
| A (parcela) | Modelo climático | 13.5 (10.1 – 16.5) | 13.2 (10.5 – 14.6) | 14.3 (11.7 – 16.5) | 13.4 (10.1 – 16.2) |
| | Modelo local | 13.3 (10.3 – 16.6) | 14.3 (11.9 – 15.5) | 13.9 (12.6 – 16.6) | 11.4 (10.3 – 13.1) |
| A (árbol) | Modelo climático | 9.6 (5.2 – 32.5) | 9.7 (5.8 – 27) | 9.8 (6.2 – 32.5) | 9.3 (5.2 – 29.9) |
| | Modelo local | 9.9 (5.8 – 24) | 10.4 (5.8 – 24) | 10.4 (6.8 – 21.1) | 8.9 (6.1 – 15.2) |
| | Modelo climático (>80 cm DAP) | 20.7 (15.8 – 32.5) | 21.2 (19.4 – 27) | 23 (19 – 32.5) | 19.4 (15.8 – 26) |
| | Modelo local (>80 cm DAP) | 16.8 (13.9 – 24) | 21 (20.2 – 24) | 19.1 (18.1 – 21.1) | 14.3 (13.9 – 15.2) |

Tabla S3. Media y desviación estándar de la biomasa estimada (Mg ha^{-1}) con las diferentes ecuaciones alométricas y formas de estimar variables no medidas en el campo (Densidad de madera = DM local y DM global; Altura estimada con modelo local y modelo climático = AL y AE). Se muestra para todo el gradiente altitudinal y por piso altitudinal de vegetación. Selva pedemontana = SP; selva montana = SM; bosque montano = BM; metros sobre el nivel del mar = m.

Table S3. Mean and standard deviation of biomass estimated (Mg ha^{-1}) with the different allometric equations and ways to estimate variables not measured in the field (Wood density = DM local y DM global; Tree height estimated with local model and climatic model = AL y AE). It is shown for the entire altitudinal gradient and by altitudinal vegetation floor. Premontane forest = SP; lower montane forest = SM; upper montane forest = BM; meters above sea level = m.

| Ecuación alométrica | Gradiente completo | SP (400-900m) | SM (900-1500 m) | BM (1500-2100 m) |
|-------------------------|--------------------|---------------|-----------------|------------------|
| Brown | 306 ± 14.5 | 246 ± 12.7 | 300 ± 21.1 | 397 ± 27.3 |
| Chave-DAP (DM local) | 333 ± 13.3 | 336 ± 20.6 | 320 ± 19.7 | 341 ± 29.3 |
| Chave-DAP (DM global) | 322 ± 13.4 | 301 ± 18.0 | 322 ± 21.5 | 352 ± 30.7 |
| Álvarez-DAP (DM local) | 274 ± 10.8 | 285 ± 17.4 | 258 ± 16.4 | 275 ± 22.0 |
| Álvarez-DAP (DM global) | 265 ± 10.6 | 254 ± 15.0 | 260 ± 17.5 | 284 ± 23.5 |
| Chave-AL (DM local) | 158 ± 6.2 | 176 ± 10.4 | 157 ± 9.2 | 133 ± 9.1 |
| Chave-AL (DM global) | 152 ± 5.6 | 158 ± 9.1 | 158 ± 9.9 | 138 ± 9.7 |
| Chave-AE (DM local) | 159 ± 6.2 | 162 ± 10.2 | 159 ± 10.2 | 155 ± 12.1 |
| Chave-AE (DM global) | 154 ± 6.2 | 146 ± 8.9 | 161 ± 11.2 | 160 ± 13.2 |
| Álvarez-AL (DM local) | 142 ± 5.5 | 156 ± 9.3 | 138 ± 7.9 | 124 ± 8.7 |
| Álvarez-AL (DM global) | 136 ± 4.9 | 138 ± 8.0 | 140 ± 8.7 | 129 ± 9.4 |
| Álvarez-AE (DM local) | 142 ± 5.4 | 148 ± 9.1 | 140 ± 8.2 | 136 ± 10.2 |
| Álvarez-AE (DM global) | 137 ± 5.3 | 132 ± 7.8 | 141 ± 9.1 | 141 ± 11.3 |

Figura S1. Distribución de las 47 parcelas permanentes de la RedSPP establecidas en el sector norte de las Yungas de Argentina que se analizaron en este trabajo.

Figure S1. Distribution of the 47 permanent plots of the RedSPP established in the northern sector of the Yungas of Argentina that were analyzed in this work.

