Supplementary

**Table S1.** For twenty samples, ID, diameter at breast height *D* (cm), diameter at ground basis *D*0 (cm), crown diameter *CD* (m), tree height   
*H* (m), number of fronds *N*f (dimensionless), stem specific gravity (g·cm−3) at bottom ρ0, middle ρ50 and top ρ100, leaf mass *M*l (kg), stem mass *M*s (kg), root mass *M*r (kg) and above-ground mass *M*a (kg) are shown. ID number three (AC03) does not exist because of an accidental loss.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | ***D*** | ***D*0** | ***CD*** | ***H*** | ***H*/*D*** | ***H*/*D*0** | ***N*f** | **ρ0** | **ρ50** | **ρ100** | ***M*l** | ***M*s** | ***M*r** | ***M*a** |
| AC 02 | 3.9 | 6.6 | 2.2 | 2.3 | 0.59 | 0.35 | 5 | 0.218 | 0.302 | 0.143 | 0.34 | 0.96 | 0.61 | 1.30 |
| AC 21 | 5.0 | 8.7 | 3.2 | 4.9 | 0.98 | 0.56 | 5 | 0.249 | 0.187 | 0.257 | 0.53 | 2.88 | 0.57 | 3.41 |
| AC 18 | 5.4 | 9.9 | 4.0 | 4.0 | 0.74 | 0.40 | 9 | 0.223 | 0.215 | 0.211 | 0.54 | 2.78 | 0.52 | 3.32 |
| AC 19 | 5.4 | 7.4 | 3.0 | 7.8 | 1.44 | 1.05 | 7 | 0.331 | 0.251 | 0.224 | 0.76 | 4.38 | 0.45 | 5.14 |
| AC 17 | 6.3 | 9.9 | 3.9 | 8.1 | 1.29 | 0.82 | 8 | 0.227 | 0.309 | 0.254 | 1.61 | 5.69 | 1.09 | 7.30 |
| AC 09 | 7.5 | 12.4 | 4.3 | 7.8 | 1.04 | 0.63 | 9 | 0.203 | 0.389 | 0.229 | 2.10 | 5.66 | 0.95 | 7.76 |
| AC 20 | 7.8 | 12.7 | 4.6 | 8.1 | 1.04 | 0.64 | 8 | 0.225 | 0.292 | 0.238 | 1.70 | 7.65 | 1.05 | 9.35 |
| AC 15 | 8.3 | 16.2 | 4.7 | 7.4 | 0.89 | 0.46 | 12 | 0.249 | 0.291 | 0.223 | 2.62 | 9.74 | 4.66 | 12.36 |
| AC 07 | 8.7 | 13.9 | 4.4 | 7.4 | 0.85 | 0.53 | 11 | 0.363 | 0.257 | 0.214 | 3.76 | 11.71 | 8.52 | 15.47 |
| AC 08 | 8.7 | 16.0 | 4.2 | 7.0 | 0.80 | 0.44 | 11 | 0.180 | 0.276 | 0.208 | 3.51 | 8.12 | 4.54 | 11.63 |
| AC 16 | 9.0 | 17.7 | 3.6 | 5.0 | 0.56 | 0.28 | 14 | 0.206 | 0.232 | 0.217 | 3.07 | 7.61 | 2.68 | 10.68 |
| AC 13 | 9.8 | 12.2 | 4.6 | 11.8 | 1.20 | 0.97 | 16 | 0.681 | 0.551 | 0.246 | 5.38 | 36.73 | 17.94 | 43.08 |
| AC 06 | 10.5 | 18.0 | 4.3 | 7.0 | 0.67 | 0.39 | 13 | 0.262 | 0.293 | 0.248 | 2.21 | 13.76 | 2.93 | 15.97 |
| AC 10 | 10.5 | 12.7 | 5.6 | 9.4 | 0.90 | 0.74 | 16 | 0.734 | 0.444 | 0.226 | 6.54 | 35.06 | 7.18 | 42.75 |
| AC 01 | 10.7 | 13.8 | 4. 5 | 8.7 | 0.81 | 0.63 | 15 | 0.617 | 0.393 | 0.322 | 3.34 | 30.65 | 13.2 | 34.79 |
| AC 12 | 11.2 | 13.6 | 3.5 | 16.4 | 1.46 | 1.21 | 14 | 0.699 | 0.654 | 0.24 | 6.79 | 74.60 | 9.85 | 84.22 |
| AC 05 | 11.5 | 14.3 | 4.4 | 8.0 | 0.70 | 0.56 | 15 | 0.624 | 0.398 | 0.249 | 4.62 | 27.96 | 6.75 | 36.24 |
| AC 11 | 11.9 | 16.7 | 5.0 | 14.5 | 1.22 | 0.87 | 15 | 0.625 | 0.443 | 0.200 | 8.90 | 64.72 | 15.71 | 79.72 |
| AC 04 | 12.6 | 14.9 | 5.2 | 16.0 | 1.27 | 1.07 | 15 | 0.650 | 0.232 | 0.356 | 10.09 | 69.57 | 21.04 | 84.87 |
| AC 14 | 12.7 | 16.5 | 4.3 | 14.5 | 1.14 | 0.88 | 16 | 0.612 | 0.537 | 0.208 | 8.25 | 65.16 | 34.89 | 76.61 |

**Table S2.** As dependent variable *y*, tree height *H* (m), stem specific gravity ρ (g·cm−3)   
and biomass components (kg) including leaf mass *M*l, stem mass *M*s, root mass *M*r and above-ground mass *M*a are assigned in Equation (2). As independent variable *x*, stem diameter at breast height *D* (cm), *H* (m), stem diameter at ground basis *D*0 (cm), crown diameter *CD* (m), ρ(g·cm−3), number of fronds *N*f and their combined variables are   
assigned. The ln*g* and *h* are coefficients in Equation (2), and their 95% confidence intervals are shown in parentheses. The values of adjusted coefficient of determination *R*adj2 are also shown. The highest *R*adj2 values in each dependent variable are boldfaced.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***y*** | ***x*** | **Ln*g*** |  | ***h*** |  | ***Radj*2** |
| *H* | *D* | −0.97 | (−1.86–−0.08) | 1.43 | (1.07–1.90) | **0.658** |
| *H* | *D*0 | −2.24 | (−4.05–−0.42) | 1.69 | (1.13–2.54) | 0.287 |
| ρ | *D* | −0.36 | (−0.60–−0.12) | 0.32 | (0.23–0.45) | **0.515** |
| ρ | *D*0 | −0.64 | (−1.11–−0.18) | 0.38 | (0.24–0.60) | 0.093 |
| *M*l | *D* | −5.30 | (−6.23–−4.38) | 2.94 | (2.54–3.40) | 0.914 |
| *M*l | *D*0 | −7.91 | (−10.66–−5.16) | 3.49 | (2.58–4.72) | 0.613 |
| *M*l | *H* | −3.30 | (−4.42–−2.18) | 2.06 | (1.60–2.65) | 0.733 |
| *M*l | *CD* | −5.72 | (−7.95–−3.49) | 4.76 | (3.44–6.59) | 0.556 |
| *M*l | *D*2*H* | −4.74 | (−5.55–−3.93) | 0.90 | (0.78–1.03) | 0.920 |
| *M*l | *D*02*H* | −6.74 | (−8.15–−5.34) | 1.08 | (0.90–1.29) | 0.867 |
| *M*l | *CD*2*H* | −4.97 | (−6.35–−3.58) | 1.22 | (0.97–1.53) | 0.785 |
| *M*l | *D*2*HN*f | −5.04 | (−5.80–−4.28) | 0.69 | (0.61–0.78) | **0.937** |
| *M*l | *D*02*HN*f | −6.56 | (−7.74–−5.38) | 0.79 | (0.67–0.92) | 0.902 |
| *M*l | *CD*2*HN*f | −5.39 | (−6.52–−4.27) | 0.87 | (0.73–1.04) | 0.875 |
| *M*s | *D* | −5.26 | (−6.59–−3.93) | 3.67 | (3.10–4.34) | 0.884 |
| *M*s | *D*0 | −8.51 | (−12.61–−4.41) | 4.35 | (3.04–6.24) | 0.449 |
| *M*s | *H* | −2.76 | (−3.88–−1.65) | 2.57 | (2.10–3.15) | 0.831 |
| *M*s | *CD* | −5.78 | (−8.84–−2.73) | 5.94 | (4.17–8.46) | 0.468 |
| *M*s | *D*2*H* | −4.56 | (−5.36–−3.75) | 1.12 | (1.00–1.26) | 0.949 |
| *M*s | *D*02*H* | −7.06 | (−9.25–−4.87) | 1.34 | (1.07–1.68) | 0.793 |
| *M*s | *CD*2*H* | −4.84 | (−6.56–−3.13) | 1.52 | (1.21–1.90) | 0.788 |
| *M*s | *D*2*H*ρ | −2.11 | (−2.43–−1.79) | 0.90 | (0.84–0.96) | **0.982** |
| *M*s | *D*02*H*ρ | −3.92 | (−4.78–−3.06) | 1.08 | (0.95–1.23) | 0.931 |
| *M*s | *CD*2*H*ρ | −1.75 | (−2.48–−1.03) | 1.16 | (0.99–1.36) | 0.894 |
| *M*r | *D* | −7.50 | (−9.48–−5.53) | 4.12 | (3.31–5.14) | **0.799** |
| *M*r | *D*0 | −11.16 | (−15.57–−6.74) | 4.89 | (3.46–6.91) | 0.494 |
| *M*r | *H* | −4.70 | (−6.72–−2.68) | 2.89 | (2.09–3.99) | 0.561 |
| *M*r | *CD* | −8.09 | (−11.76–−4.42) | 6.68 | (4.58–9.74) | 0.391 |
| *M*r | *D*2*H* | −6.71 | (−8.66–−4.76) | 1.26 | (0.99–1.60) | 0.765 |
| *M*r | *D*02*H* | −9.53 | (−12.58–−6.47) | 1.51 | (1.15–1.99) | 0.681 |
| *M*r | *CD*2*H* | −7.04 | (−9.75–−4.32) | 1.70 | (1.24–2.34) | 0.579 |
| *M*r | *D*2*H*ρ | −3.97 | (−5.21–−2.72) | 1.01 | (0.81–1.27) | 0.787 |
| *M*r | *D*02*H*ρ | −6.00 | (−7.72–−4.28) | 1.21 | (0.96–1.53) | 0.781 |
| *M*r | *CD*2*H*ρ | −3.56 | (−5.00–−2.12) | 1.30 | (0.98–1.73) | 0.669 |

**Table S2.** *Cont.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***y*** | ***x*** | **Ln*g*** |  | ***h*** |  | ***Radj*2** |
| *M*a | *D* | −4.87 | (−6.07–−3.66) | 3.59 | (3.07–4.19) | 0.901 |
| *M*a | *D*0 | −8.05 | (−11.96–−4.14) | 4.26 | (3.00–6.05) | 0.476 |
| *M*a | *H* | −2.43 | (−3.54–−1.31) | 2.51 | (2.04–3.09) | 0.823 |
| *M*a | *CD* | −5.38 | (−8.33–−2.42) | 5.81 | (4.09–8.25) | 0.479 |
| *M*a | *D*2*H* | −4.18 | (−4.91–−3.45) | 1.10 | (0.99–1.22) | 0.956 |
| *M*a | *D*0*2H* | −6.63 | (−8.67–−4.58) | 1.31 | (1.06–1.63) | 0.810 |
| *M*a | *CD2H* | −4.46 | (−6.13–−2.79) | 1.48 | (1.18–1.86) | 0.790 |
| *M*a | *D2H*ρ | −1.79 | (−2.10–−1.48) | 0.88 | (0.83–0.94) | **0.983** |
| *M*a | *D*02*H*ρ | −3.56 | (−4.34–−2.78) | 1.06 | (0.94–1.19) | 0.940 |
| *M*a | *CD*2*H*ρ | −1.44 | (−2.16–−0.72) | 1.13 | (0.96–1.34) | 0.890 |