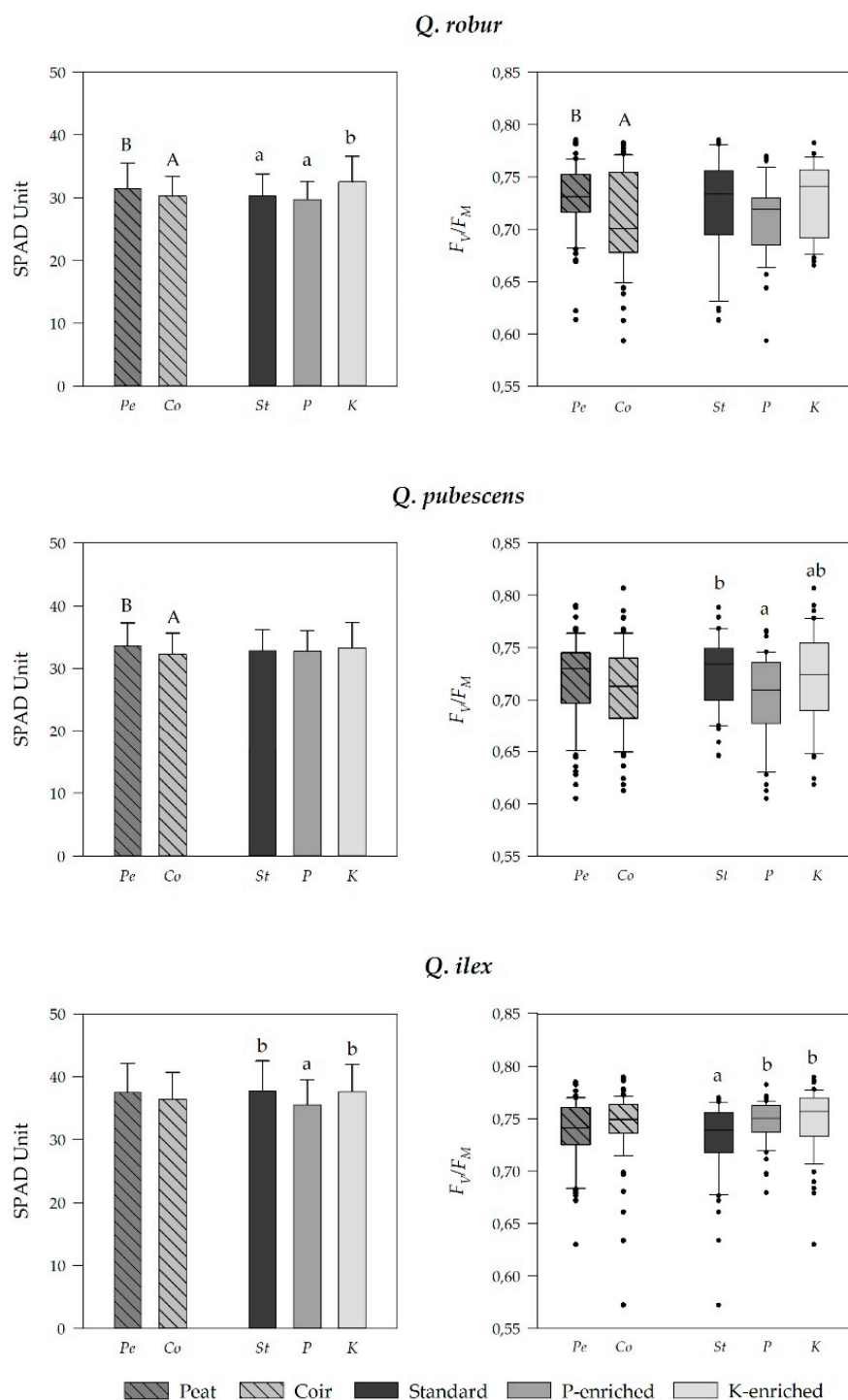


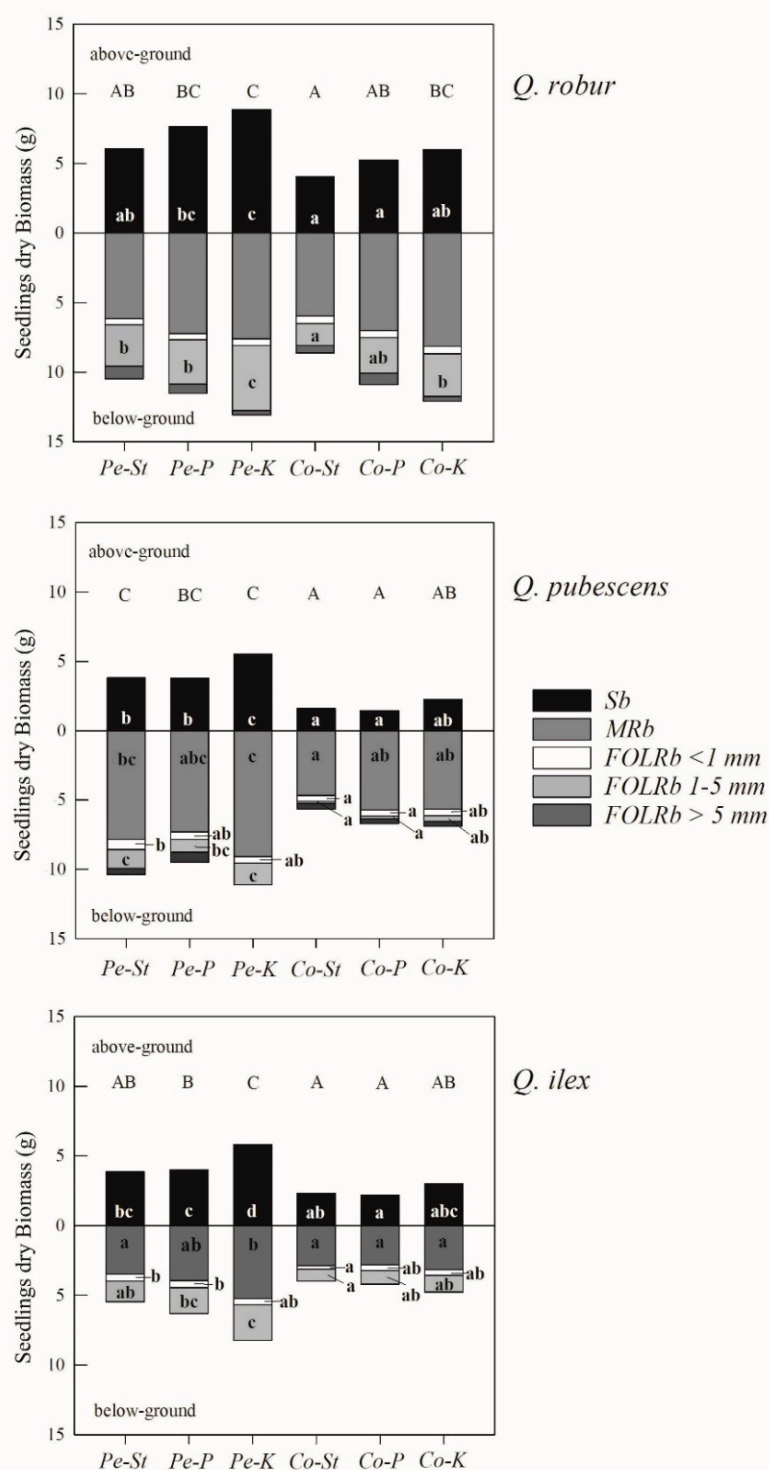
# Supplementary Material

**Table S1.** Multifactorial ANOVA and Tukey post-hoc test results ( $p \leq 0.05$  in bold) for seedling morphological traits (mean  $\pm$  SD) at the end of the season ( $N_{\text{obs}} = 20$  seedlings per stocktype). Source of variation: substrate (S), fertilization (F), and their interaction ( $S \times F$ ). Lowercase letters indicate homogeneous groups. Variables: *H*: height; *RcD* (root collar diameter in mm); *H/RcD* (seedling taper); *Rv* (root-system volume in  $\text{cm}^3$ ); *Rd* (root-system density =  $Rb/Rv$  in  $\text{g cm}^{-3}$ ); *S/R* (shoot-root ratio); *SLA* (specific leaf area, in  $\text{cm}^2 \text{g}^{-1}$ ); *Ln* (number of leaves); and *Lb* (leaf dry biomass in g).

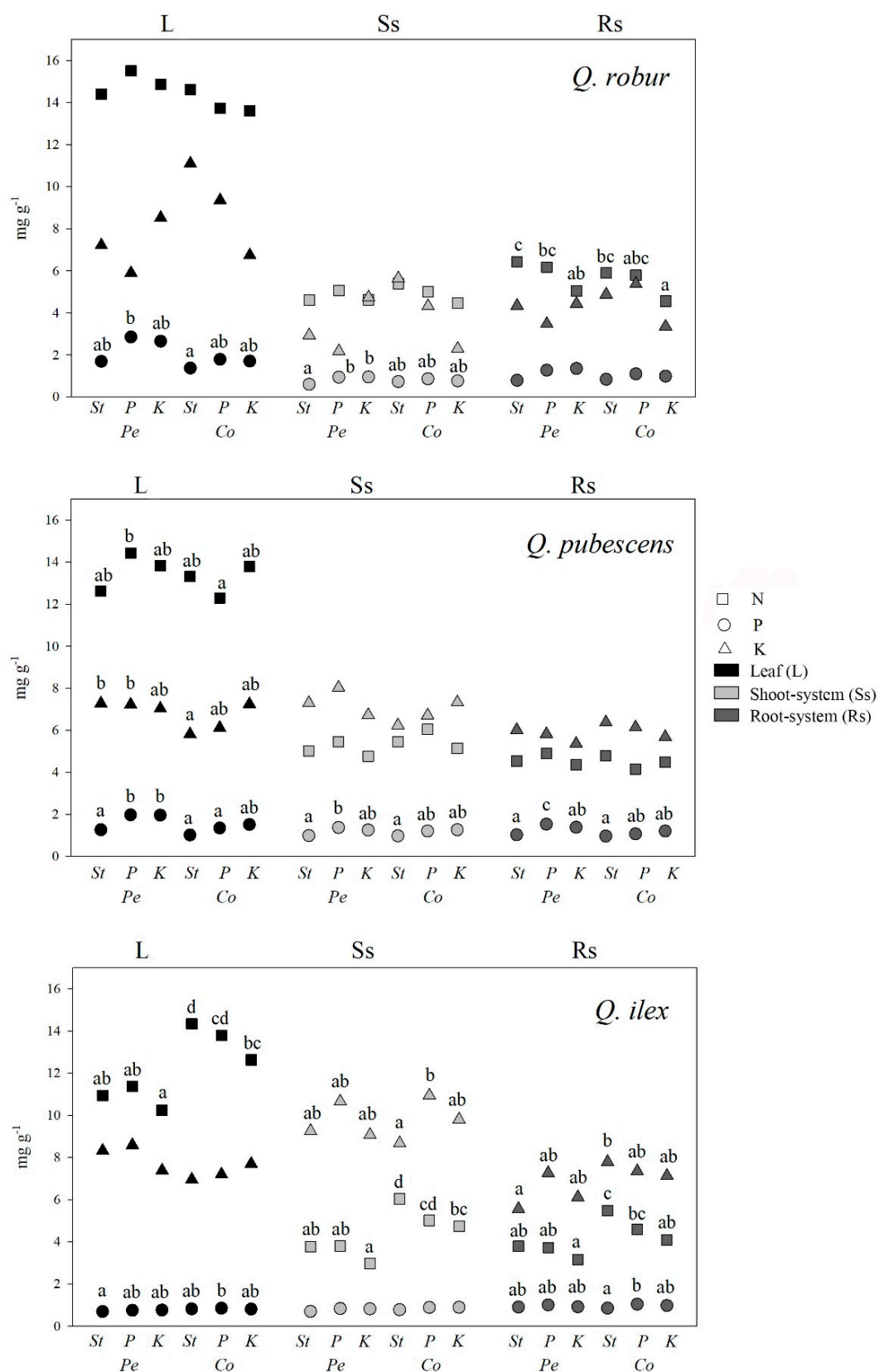
| <i>Q. Robur</i>     | <i>Pe-St</i>                    | <i>Pe-P</i>                     | <i>Pe-K</i>                    | <i>Co-St</i>                   | <i>Co-P</i>                   | <i>Co-K</i>                     |
|---------------------|---------------------------------|---------------------------------|--------------------------------|--------------------------------|-------------------------------|---------------------------------|
| <i>H</i>            | 53.51 $\pm$ 9.94 <sup>abc</sup> | 58.12 $\pm$ 10.91 <sup>bc</sup> | 61.15 $\pm$ 10.67 <sup>c</sup> | 43.09 $\pm$ 10.62 <sup>a</sup> | 44.82 $\pm$ 9.61 <sup>a</sup> | 49.60 $\pm$ 10.08 <sup>ab</sup> |
| <i>RcD</i>          | 10.3 $\pm$ 1.8 <sup>ab</sup>    | 11.6 $\pm$ 1.9 <sup>b</sup>     | 11.6 $\pm$ 1.9 <sup>b</sup>    | 9.9 $\pm$ 1.8 <sup>a</sup>     | 10.9 $\pm$ 1.6 <sup>ab</sup>  | 11.6 $\pm$ 1.2 <sup>b</sup>     |
| <i>H/RcD</i>        | 53.2 $\pm$ 13.8 <sup>b</sup>    | 50.7 $\pm$ 8.9 <sup>ab</sup>    | 53.8 $\pm$ 11.7 <sup>b</sup>   | 43.7 $\pm$ 9.4 <sup>a</sup>    | 41.6 $\pm$ 8.5 <sup>a</sup>   | 43.3 $\pm$ 9.7 <sup>a</sup>     |
| <i>Rv</i>           | 22.6 $\pm$ 6.4 <sup>ab</sup>    | 27.0 $\pm$ 8.2 <sup>b</sup>     | 34.4 $\pm$ 8.7 <sup>c</sup>    | 19.4 $\pm$ 5.2 <sup>a</sup>    | 26.9 $\pm$ 7.9 <sup>b</sup>   | 27.6 $\pm$ 7.6 <sup>b</sup>     |
| <i>Rd</i>           | 0.46 $\pm$ 0.08 <sup>ab</sup>   | 0.43 $\pm$ 0.06 <sup>ab</sup>   | 0.38 $\pm$ 0.05 <sup>a</sup>   | 0.47 $\pm$ 0.12 <sup>b</sup>   | 0.41 $\pm$ 0.07 <sup>ab</sup> | 0.44 $\pm$ 0.06 <sup>ab</sup>   |
| <i>S/R</i>          | 0.59 $\pm$ 0.15 <sup>bc</sup>   | 0.66 $\pm$ 0.08 <sup>c</sup>    | 0.70 $\pm$ 0.16 <sup>c</sup>   | 0.46 $\pm$ 0.16 <sup>a</sup>   | 0.49 $\pm$ 0.13 <sup>ab</sup> | 0.52 $\pm$ 0.16 <sup>ab</sup>   |
| <i>SLA</i>          | 155.2 $\pm$ 22.8 <sup>ab</sup>  | 145.9 $\pm$ 38.5 <sup>ab</sup>  | 167.0 $\pm$ 20.5 <sup>b</sup>  | 138.8 $\pm$ 13.4 <sup>a</sup>  | 138.6 $\pm$ 24.4 <sup>a</sup> | 148.8 $\pm$ 13.0 <sup>ab</sup>  |
| <i>Ln</i>           | 46.2 $\pm$ 12.4 <sup>ab</sup>   | 51.1 $\pm$ 25.2 <sup>ab</sup>   | 72.5 $\pm$ 30.0 <sup>c</sup>   | 37.1 $\pm$ 12.7 <sup>a</sup>   | 44.9 $\pm$ 18.2 <sup>ab</sup> | 59.8 $\pm$ 20.7 <sup>bc</sup>   |
| <i>Lb</i>           | 3.58 $\pm$ 1.06 <sup>ab</sup>   | 4.40 $\pm$ 1.15 <sup>b</sup>    | 5.56 $\pm$ 1.50 <sup>c</sup>   | 2.75 $\pm$ 1.06 <sup>a</sup>   | 3.60 $\pm$ 1.25 <sup>ab</sup> | 3.91 $\pm$ 1.25 <sup>b</sup>    |
| <i>Q. pubescens</i> | <i>Pe-St</i>                    | <i>Pe-P</i>                     | <i>Pe-K</i>                    | <i>Co-St</i>                   | <i>Co-P</i>                   | <i>Co-K</i>                     |
| <i>H</i>            | 34.29 $\pm$ 10.13 <sup>bc</sup> | 33.38 $\pm$ 10.06 <sup>bc</sup> | 42.75 $\pm$ 12.39 <sup>c</sup> | 21.41 $\pm$ 6.78 <sup>a</sup>  | 20.67 $\pm$ 8.08 <sup>a</sup> | 25.14 $\pm$ 9.17 <sup>ab</sup>  |
| <i>RcD</i>          | 10.1 $\pm$ 1.8 <sup>abc</sup>   | 10.3 $\pm$ 2.0 <sup>bc</sup>    | 11.6 $\pm$ 1.6 <sup>c</sup>    | 9.4 $\pm$ 1.9 <sup>ab</sup>    | 8.4 $\pm$ 2.3 <sup>a</sup>    | 10.2 $\pm$ 2.2 <sup>abc</sup>   |
| <i>H/RcD</i>        | 34.5 $\pm$ 11.0 <sup>c</sup>    | 32.8 $\pm$ 9.6 <sup>bc</sup>    | 37.1 $\pm$ 10.4 <sup>c</sup>   | 23.2 $\pm$ 6.5 <sup>a</sup>    | 24.8 $\pm$ 7.5 <sup>ab</sup>  | 24.5 $\pm$ 7.8 <sup>a</sup>     |
| <i>Rv</i>           | 28.7 $\pm$ 13.5 <sup>c</sup>    | 22.7 $\pm$ 8.0 <sup>bc</sup>    | 25.9 $\pm$ 8.8 <sup>c</sup>    | 13.1 $\pm$ 3.5 <sup>a</sup>    | 15.0 $\pm$ 7.4 <sup>ab</sup>  | 16.7 $\pm$ 6.5 <sup>ab</sup>    |
| <i>Rd</i>           | 0.38 $\pm$ 0.07 <sup>a</sup>    | 0.42 $\pm$ 0.06 <sup>ab</sup>   | 0.42 $\pm$ 0.06 <sup>ab</sup>  | 0.45 $\pm$ 0.07 <sup>b</sup>   | 0.45 $\pm$ 0.06 <sup>b</sup>  | 0.41 $\pm$ 0.04 <sup>ab</sup>   |
| <i>S/R</i>          | 0.37 $\pm$ 0.10 <sup>bc</sup>   | 0.42 $\pm$ 0.14 <sup>cd</sup>   | 0.51 $\pm$ 0.13 <sup>d</sup>   | 0.28 $\pm$ 0.10 <sup>ab</sup>  | 0.19 $\pm$ 0.07 <sup>a</sup>  | 0.33 $\pm$ 0.13 <sup>bc</sup>   |
| <i>SLA</i>          | 102.7 $\pm$ 8.6                 | 105.5 $\pm$ 17.5                | 105.7 $\pm$ 13.1               | 100.0 $\pm$ 9.4                | 102.1 $\pm$ 8.8               | 99.7 $\pm$ 8.2                  |
| <i>Ln</i>           | 62.8 $\pm$ 34.6 <sup>c</sup>    | 51.6 $\pm$ 24.2 <sup>bc</sup>   | 67.2 $\pm$ 19.8 <sup>c</sup>   | 30.2 $\pm$ 7.5 <sup>a</sup>    | 31.8 $\pm$ 8.8 <sup>a</sup>   | 42.7 $\pm$ 21.7 <sup>ab</sup>   |
| <i>Lb</i>           | 4.41 $\pm$ 1.49 <sup>b</sup>    | 3.74 $\pm$ 1.30 <sup>b</sup>    | 4.82 $\pm$ 1.69 <sup>b</sup>   | 1.88 $\pm$ 0.78 <sup>a</sup>   | 1.95 $\pm$ 0.92 <sup>a</sup>  | 2.52 $\pm$ 1.39 <sup>a</sup>    |
| <i>Q. ilex</i>      | <i>Pe-St</i>                    | <i>Pe-P</i>                     | <i>Pe-K</i>                    | <i>Co-St</i>                   | <i>Co-P</i>                   | <i>Co-K</i>                     |
| <i>H</i>            | 48.36 $\pm$ 10.90 <sup>bc</sup> | 49.90 $\pm$ 12.00 <sup>cd</sup> | 59.93 $\pm$ 13.80 <sup>d</sup> | 33.37 $\pm$ 10.38 <sup>a</sup> | 33.65 $\pm$ 8.95 <sup>a</sup> | 37.87 $\pm$ 11.31 <sup>ab</sup> |
| <i>RcD</i>          | 8.3 $\pm$ 0.8                   | 8.4 $\pm$ 1.4                   | 8.8 $\pm$ 1.0                  | 7.9 $\pm$ 1.7                  | 7.4 $\pm$ 1.6                 | 8.2 $\pm$ 1.5                   |
| <i>H/RcD</i>        | 58.4 $\pm$ 11.8 <sup>bc</sup>   | 60.1 $\pm$ 12.9 <sup>c</sup>    | 69.6 $\pm$ 18.8 <sup>c</sup>   | 41.8 $\pm$ 9.2 <sup>a</sup>    | 47.0 $\pm$ 15.9 <sup>ab</sup> | 46.3 $\pm$ 11.0 <sup>ab</sup>   |
| <i>Rv</i>           | 12.2 $\pm$ 4.1 <sup>ab</sup>    | 15.4 $\pm$ 6.0 <sup>bc</sup>    | 17.0 $\pm$ 3.3 <sup>c</sup>    | 9.4 $\pm$ 3.8 <sup>a</sup>     | 10.3 $\pm$ 3.2 <sup>a</sup>   | 12.2 $\pm$ 5.5 <sup>ab</sup>    |
| <i>Rd</i>           | 0.46 $\pm$ 0.12                 | 0.41 $\pm$ 0.09                 | 0.49 $\pm$ 0.07                | 0.45 $\pm$ 0.14                | 0.42 $\pm$ 0.07               | 0.43 $\pm$ 0.15                 |
| <i>S/R</i>          | 0.73 $\pm$ 0.23 <sup>b</sup>    | 0.71 $\pm$ 0.36 <sup>ab</sup>   | 0.70 $\pm$ 0.10 <sup>ab</sup>  | 0.62 $\pm$ 0.25 <sup>ab</sup>  | 0.51 $\pm$ 0.13 <sup>a</sup>  | 0.65 $\pm$ 0.25 <sup>ab</sup>   |
| <i>SLA</i>          | 78.0 $\pm$ 7.3 <sup>b</sup>     | 70.7 $\pm$ 8.7 <sup>a</sup>     | 71.9 $\pm$ 6.3 <sup>a</sup>    | 68.1 $\pm$ 3.6 <sup>a</sup>    | 70.7 $\pm$ 5.3 <sup>a</sup>   | 72.5 $\pm$ 6.6 <sup>ab</sup>    |
| <i>Ln</i>           | 46.9 $\pm$ 14.3 <sup>bc</sup>   | 44.5 $\pm$ 13.8 <sup>b</sup>    | 56.8 $\pm$ 16.6 <sup>c</sup>   | 30.3 $\pm$ 13.7 <sup>a</sup>   | 27.5 $\pm$ 6.0 <sup>a</sup>   | 32.3 $\pm$ 12.1 <sup>a</sup>    |
| <i>Lb</i>           | 4.63 $\pm$ 1.12 <sup>b</sup>    | 4.92 $\pm$ 1.81 <sup>b</sup>    | 6.15 $\pm$ 1.21 <sup>c</sup>   | 2.70 $\pm$ 1.26 <sup>a</sup>   | 2.83 $\pm$ 1.03 <sup>a</sup>  | 3.08 $\pm$ 1.27 <sup>a</sup>    |



**Figure S1.** Multifactorial ANOVA and Tukey post-hoc test results of the  $F_v/F_m$  values (box whisker plot) and SPAD units (mean and SD) analyzed for substrate and fertilization ( $N_{\text{obs}}=81$  for substrate;  $N_{\text{obs}}=54$  for fertilization) in August. Capital and lowercase letters indicate homogenous groups for substrate and fertilization, respectively. *Pe* = Peat; *Co* = Coir; *St* = Standard fertilization; *K* = K-enriched fertilization; and *P* = P-enriched fertilization.



**Figure S2.** Multifactorial ANOVA and Tukey post hoc test results ( $p \leq 0.05$ ) for seedling dry biomass (g) allocation at the end of the growing season ( $N_{\text{obs}}=20$  per stocktype per species). Source of variation: substrate (S), fertilization (F), and their interaction ( $S \times F$ ). Sb: shoot-system dry biomass; MRb: main root dry biomass; FOLRb: dry biomass of First Order Lateral Root split by diameter class (< 1 mm, 1–5 mm, >5 mm). Capital letters indicate homogenous groups for total biomass while lowercase letters indicate homogenous groups for the remaining variables. Pe = Peat; Co = Coir; St = Standard fertilization; K = K-enriched fertilization; P = P-enriched fertilization.



**Figure S3.** Macro-element concentration (mg g<sup>-1</sup> for N, P, K) in leaves, shoot-system and root-system in stocktypes (mean ± SD). Source of variation substrate (S), fertilization (F) and their interaction (Sx F). Lowercase letters indicate homogenous groups. Pe = Peat; Co = Coir; St = Standard fertilization; K = K-enriched fertilization; P = P-enriched fertilization.