**Table S1** Three-way ANOVA from harvest times (days 1, 10, 30, and 70), light (low light versus high light), defoliation (defoliation versus non-defoliation), and their interactions on plant traits for *R. pseudoacacia* seedlings.

|  |  |  |
| --- | --- | --- |
| Parameters | *R. pseudoacacia* |  |
| T | L | D | T×L | T×D | L×D | T×L×D |
| *H* (cm) | **88.617\*\*\*** | **168.532\*\*\*** | 0.849 | **11.390\*\*\*** | 0.661 | 0.443 | 0.383 |
| BD (mm) | **54.601\*\*\*** | **99.117\*\*\*** | 3.155 | **21.491\*\*\*** | 0.927 | 1.289 | 0.090 |
| TB (g) | **69.440\*\*\*** | **218.135\*\*\*** | **9.022\*\*** | **53.144\*\*\*** | 0.539 | 2.248 | 0.449 |
| LMR | **70.764\*\*\*** | **78.980\*\*\*** | **7.163\*** | **9.643\*\*\*** | **30.121\*\*\*** | 0.274 | 2.295 |
| SMR | **32.592\*\*\*** | **13.894\*\*** | **7.546\*\*** | 1.899 | **14.326\*\*\*** | 1.383 | 1.161 |
| RMR | **6.815\*\*** | 1.749 | 0.140 | 1.113 | **7.982\*\*\*** | 0.105 | 0.475 |
| R/S | **6.287\*\*** | 1.786 | 0.009 | 1.292 | **7.463\*\*\*** | 0.233 | 0.393 |
| *A* (μmol m-2 s-1) | **7.820\*\*\*** | **34.476\*\*\*** | 0.01 | **9.615\*\*\*** | 0.028 | 0.166 | 0.006 |
| *E* (mmol m-2 s-1) | **26.670\*\*\*** | 1.804 | 0.353 | 1.019 | 0.074 | 0.092 | 0.378 |
| *G*s(mmol m-2 s-1) | **15.517\*\*\*** | 2.246 | 3.709 | 0.835 | 0.694 | 0.346 | 0.124 |
| iWUE | **21.629\*\*\*** | **6.001\*** | 1.007 | **6.968\*\*** | 0.072 | 0.189 | 0.299 |
| SLA (cm2 g-1) | **12.568\*\*\*** | **36.349\*\*\*** | **26.135\*\*\*** | **4.493\*\*** | **7.791\*\*\*** | **22.896\*\*\*** | **6.269\*\*** |
| Leaf SS (mg g-1) | **16.372\*\*\*** | 3.467 | 1.394 | **2.970\*** | 1.432 | 0.002 | 0.736 |
| Stem SS (mg g-1) | **14.310\*\*\*** | **10.444\*\*** | 4.781 | **5.335\*\*** | 1.967 | 0.031 | 1.539 |
| Root SS (mg g-1) | **4.506\*\*** | **20.472\*\*\*** | 0.096 | **14.536\*\*\*** | **3.3000\*** | 1.101 | **5.583\*\*** |
| Leaf ST (mg g-1) | **30.253\*\*\*** | **15.182\*\*\*** | 0.010 | 2.064 | 1.457 | 1.698 | **6.132\*\*** |
| Stem ST (mg g-1) | **26.670\*\*\*** | **104.778\*\*\*** | 0.010 | **20.643\*\*\*** | 2.569 | 0.353 | 1.483 |
| Root ST (mg g-1) | **4.268\*\*** | 2.756 | **4.137\*** | **4.898\*\*** | 0.973 | 1.055 | **3.074\*** |
| NSC (mg g-1) | **14.570\*\*\*** | **23.253\*\*\*** | 2.331 | **10.116\*\*\*** | 1.514 | 0.095 | 0.716 |

Notes: T, harvest time; L, light treatment; D, defoliation treatment; *H*, height; BD, basal diameter; TB, total biomass; LB, leaf biomass; SB, stem biomass; RB, root biomass; LMR, leaf mass ratio, SMR, stem mass ratio, RMR, root mass ratio, R/S, root-shoot ratio; SLA, specific leaf area; *A*, the net photosynthetic rate, *E*, transpiration rate, *G*s, stomatal conductance; Leaf SS, leaf soluble sugar concentration; Stem SS, stem soluble sugar concentration; Root SS, root soluble sugar concentration; Leaf ST, leaf starch concentration; Stem ST, stem starch concentration; Root ST, root starch concentration; NSC, non-structural carbohydrate concentration. \*, *p* < 0.05; \*\*, *p* < 0.01; \*\*\*, *p* < 0.001. × represents the interaction effect. *n* = 4.

**Table S2** Three-way ANOVA from harvest times (days 1, 10, 30, and 70) light (low light versus high light) and defoliation (defoliation versus non-defoliation), and their interactions on plant traits for *A. fruticosa* seedlings.

|  |  |  |
| --- | --- | --- |
| Parameters | *A. fruticosa* |  |
| T | L | D | T×L | T×D | L×D | T×L×D |
| *H* (cm) | **164.124\*\*\*** | **66.064\*\*\*** | 0.674 | **5.747\*\*** | 0.574 | 0.002 | 1.206 |
| BD (mm) | **92.721\*\*\*** | **130.418\*\*\*** | **6.267\*** | **94.379\*\*\*** | 2.620 | 2.031 | 0.901 |
| TB (g) | **168.346\*\*\*** | **369.176\*\*\*** | **16.438\*\*\*** | **97.103\*\*\*** | 1.659 | 1.628 | 0.208 |
| LMR | **59.346\*\*\*** | **67.745\*\*\*** | **11.677\*\*** | **35.499\*\*\*** | **8.316\*\*\*** | 0.002 | 2.685 |
| SMR | **10.066\*\*\*** | **7.294\*** | **6.932\*** | 2.483 | **5.676\*\*** | 0.007 | 1.092 |
| RMR | **80.647\*\*\*** | **48.671\*\*\*** | 0.007 | **14.871\*\*\*** | 1.034 | 0.241 | 0.320 |
| R/S | **92.722\*\*\*** | **62.244\*\*\*** | 0.208 | **24.276\*\*\*** | 1.153 | 0.623 | 0.282 |
| *A* (μmol m-2 s-1) | **39.114\*\*\*** | **70.044\*\*\*** | 0.006 | **6.949\*\*** | 1.762 | 0.192 | 0.855 |
| *E* (mmol m-2 s-1) | **53.826\*\*\*** | 0.897 | 0.631 | 2.744 | 0.587 | 0.933 | 0.206 |
| *G*s(mmol m-2 s-1) | **15.386\*\*\*** | 3.800 | 1.453 | **5.097\*\*** | 0.505 | 0.084 | 0.153 |
| iWUE | **22.154\*\*\*** | **4.403\*** | 0.151 | **14.728\*\*\*** | 0.148 | 0.051 | 0.331 |
| SLA (cm2 g-1) | 0.385 | **43.415\*\*\*** |  1.351 | **4.102\*** | 0.443 | 1.095 | 0.318 |
| Leaf SS (mg g-1) | 0.698 | **48.163\*\*\*** | 0.791 | **4.859\*\*** | 2.129 | 3.437 | 0.463 |
| Stem SS (mg g-1) | **9.848\*\*\*** | **4.208\*** | **8.967\*\*** | **3.516\*** | **4.762\*\*** | 2.425 | **4.573\*\*** |
| Root SS (mg g-1) | 1.608 | **23.600\*\*\*** | 0.237 | **7.546\*\*\*** | 1.496 | **8.121\*\*** | 0.172 |
| Leaf ST (mg g-1) | **25.078\*\*\*** | **87.558\*\*\*** | 1.098 | **21.209\*\*\*** | **3.889\*** | 0.069 | **5.054\*\*** |
| Stem ST (mg g-1) | **121.141\*\*\*** | **79.532\*\*\*** | 1.861 | 2.571 | **4.816\*\*** | 0.695 | 2.286 |
| Root ST (mg g-1) | **33.695\*\*\*** | **46.486\*\*\*** | 0.545 | **7.923\*\*\*** | 1.851 | **7.663\*\*** | 2.111 |

Notes: T, harvest time; L, light treatment; D, defoliation treatment; *H*, height; BD, basal diameter; TB, total biomass; LB, leaf biomass; SB, stem biomass; RB, root biomass; LMR, leaf mass ratio, SMR, stem mass ratio, RMR, root mass ratio, R/S, root-shoot ratio; SLA, specific leaf area; *A*, the net photosynthetic rate, *E*, transpiration rate, *G*s, stomatal conductance; Leaf SS, leaf soluble sugar concentration; Stem SS, stem soluble sugar concentration; Root

SS, root soluble sugar concentration; Leaf ST, leaf starch concentration; Stem ST, stem starch concentration; Root ST, root starch concentration; NSC, non-structural carbohydrate concentration. \*, *p* < 0.05; \*\*, *p* < 0.01; \*\*\*, *p* < 0.001. × represents the interaction effect. *n* = 4.