

Supplementary Materials:

Table S1 Means and standard deviation [SD] of all measured and calculated trees' structural data *D. regia*, *F. nitida* and *P. dactylifera*. Where n— number of samples, dbh— diameter at breast height, h-tree height, cl-crown length, cd-crown diameter, cpa -crown projection area, and cv-crown volume, respectively.

Age	n	dbh [cm] Mean±SD	h [m] Mean±SD	cl [m] Mean±SD	cd [m] Mean±SD	cpa [m ²] Mean±SD	cv [m ³] Mean
<i>D. regia</i>							
≤25	69	35.28±11.09	5.7±1.24	3.79±1.29	7.98±1.72	52.38±22.10	101.09±51.71
<i>F. nitida</i>							
≤15	30	17.0± 2.68	4.7±0.58	3.1±0.65	4.76 ±0.99	18.51±7.79	29.041±15.50
16-25	34	31.89±1.52	6.9±1.52	4.8 ±1.47	8.28±2.65	59.2 ±43.91	160±186.06
≥25	9	51.95±9.93	8.3 ±1.67	5.93 ±1.06	8.07 ±2.12	54.33 ±27.33	172±109.32
<i>P. dactylifera</i>							
≤25	10	43.74±3.80	13.41±1.09	4.95±1.13	5.64±0.48	25.10±4.26	95.48±24.28
30-79	22	45.77 ±5.56	13.83±2.65	3.18±1.47	5.39±1.67	23.79±15.45	99.96±95.70
≥80	38	49.32 ±8.77	13.48±3.57	2.58±1.59	4.57±1.19	18.02±8.94	62.58±46.84

Table S2 Results of the regression analysis of LAI, the predictor variables, and the tree variables (dbh, h, cd and cv) as a response and the regression equation (y)=a+b×ln(x). The table below lists the determination of R², standard error and p-values.

(y) = a + b × ln(x)							
Species	Parameters	n	a	b	p-value	SE	R ²
<i>D. regia</i>	LAI vs ln(dbh)	69	3.60	0.01	0.44	0.02	<0.01
	LAI vs ln(h)	69	1.69	0.01	0.72	0.01	0.22
	LAI vs ln(cv)	69	4.79	(0.06)	0.14	0.04	0.03
	LAI vs ln(cd)	69	2.26	(0.03)	0.01*	0.01	0.08
<i>F. nitida</i>	LAI vs ln(dbh)	71	3.35	(0.02)	0.47	0.03	0.01
	LAI vs ln(h)	71	1.82	(0.01)	0.74	0.02	0.01
	LAI vs ln(cv)	71	4.50	(0.06)	0.37	0.07	0.01
	LAI vs ln(cd)	71	2.03	(0.03)	0.13	0.02	0.03
<i>P. dactylifera</i>	LAI vs ln(dbh)	48	3.95	(0.39)	(0.05)	0.02	0.08
	LAI vs ln(h)	48	2.82	(0.08)	0.01*	0.03	0.13
	LAI vs ln(cv)	48	3.74	0.16	0.09	0.09	0.06
	LAI vs ln(cd)	48	1.46	0.05	0.09	0.03	0.06

Table S3 Mean of the tree pit and related standard error to the growth site for *D. regia*, *F. nitida*, and *P. dactylifera*, as well as the p-values for each ANOVA. Mean values in the same column differ significantly when followed by different letters.

Species	site	Mean tree pit	Standard error
P=<0.001 ***			
<i>F.nitida</i>	Street	13.6a	4.37
	parking lot	23.2a	6.27
	Public place	58.9b	7.05
P=<0.001 **			
<i>D.regia</i>	Street	57.71b	5.98
	parking lot		
	Public place	5.11a	19.23
P=0.363			
<i>P.dactylifera</i>	Street	301.1a	7.15
	Square	16.7a	12.38
	Public place	34.7a	3.92

Table S4 Results of the summary of the linear mixed model regression analysis of a carbon fixation and the predictor variables, and the tree variables (h, dbh, cd, and age) as a response and the regression equation $\ln(y) = a + b1 \times \ln(x1) + b2 \times \ln(x2) + b3 \times \ln(x3) + \varepsilon$. The table below lists the determination of R², τ_{00} : variance of random intercept, N site" refers to the number of distinct groups or sites in the data, where each group may have multiple observations, N T.pit" refers to the number of total observations or data points in all the sites, which is equal to the sum of the number of observations in each site, σ^2 refers to the residual variance, and p-values.

Species	Observations	Predictors	Estimates	p	Random Effects	
<i>D. regia</i>	69	(Intercept)	-235	<0.001	Marginal R ²	Conditional R ²
		dbh [cm]	4.44	<0.001	0.996	0.999
		h	0.48	<0.001	$\sigma^2 = 0$	τ_{00} site, T.pit=0
		cd	0.23	<0.001	N site =2	N T.pit = 63
<i>F. nitida</i>	73	(Intercept)	-2.81	<0.001	Marginal R ²	Conditional R ²
		dbh [cm]	4.52	<0.001	0.963	0.978
		h	0.89	<0.001	$\sigma^2 = 0$	τ_{00} site, T.pit=0
		cd	0.27	<0.001	N site =4	N T.pit = 65
<i>P. dactylifera</i>	70	(Intercept)	1.48	<0.001	Marginal R ²	Conditional R ²
		h	2	<0.001	0.71	0.75
		cd	0.31	0.024	$\sigma^2 = 0.02$	τ_{00} site, T.pit=0
		Age	0.31	0.002	N site =70	N T.pit = 0

Table S5 Results of the summary of linear mixed model regression analysis of a shaded area and the predictor variables, and the tree variables (h, dbh, cd, and age) as a response and the regression equation $n(y) = a + b1 \times \ln(x1) + b2 \times \ln(x2) + \epsilon$. The table below lists the determination of R^2 , τ_{00} : variance of random intercept, N site" refers to the number of distinct groups or sites in the data, where each group may have multiple observations , N T.pit" refers to the number of total observations or data points in all the sites, which is equal to the sum of the number of observations in each site, σ^2 refers to the residual variance, and p-values.

Species	Observations	Predictors	Estimates	p	Random Effects	
<i>D. regia</i>	69	(Intercept)	1.29	0.031	Marginal $R^2 = 0.189$	Conditional $R^2 = 0.644$
		h	1.19	0.056	$\sigma^2 = 0.09$	τ_{00} site:T.pit= 0.12
		cd	1.63	0.008	N site=2	N T.pit=63
<i>F. nitida</i>	73	(Intercept)	-0.52	<0.001	Marginal $R^2 = 0.943$	Conditional $R^2 = 0.951$
		h	2.95	<0.001	$\sigma^2 = 0.02$	τ_{00} site:T.pit= 0.0
		cd	2.25	<0.001	N site=4	N T.pit=65
<i>P. dactylifera</i>	48	(Intercept)	8.52	0.012	Marginal $R^2 = 0.085$	Conditional $R^2 = 0.178$
		h	-3.23	0.066	$\sigma^2 = 0.52$	τ_{00} site:T.pit= 0.06
		cd	-0.26	0.796	N site=3	N T.pit=0