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Appendix B from C. D. Muir and M. Thomas-Huebner, "Constraint around Quarter-Power Allometric Scaling in Wild Tomatoes (*Solanum* sect. *Lycopersicon*; Solanaceae)" (Am. Nat., vol. 186, no. 3, p. 000)

Scaling Coefficients Estimated Using Ordinary and Total Least Squares Are Very Similar

Ordinary least squares (OLS) estimates regression coefficients by minimizing the squared distance between the actual and fitted response variables, assuming no measurement error in the predictor. Total least squares (TLS), a general method that includes standardized major-axis regression, minimizes the total Euclidean distance between fitted values and data for both response and predictor variables. In other words, this method assumes measurement error in both variables. Thus, OLS and TLS estimate different coefficients from the same data. Here, we compare allometric-scaling coefficients derived from different methods for the constant-scaling model and the mass-specific-scaling model (table B1). The R code to estimate mass-specific allometric scaling using both OLS and TLS is available is available in the file "OnlineAppendixB_Code.R" in the Supporting Information directory.[1]

Table B1: Allometric-scaling exponents (θ_{LA}) and 95% confidence intervals (CI) from TLS and OLS regression for all 17 accessions of wild tomato studied under the constant-scaling and mass-specific-scaling models

			Mass-specific scaling: $\theta_m = b_1 + b_{2,j}\log M + b_3(\log M)^2$					
	Constant scaling: θ_{LA} (95% CI)		b_1		$b_{2,j}$		b_3	
Accession	TLS	OLS	TLS	OLS	TLS	OLS	TLS	OLS
All accessions			.87	.87			−.019	−.020
S. arcanum (LA2172)	.70 (.64–.75)	.69 (.63–.74)			−.0167	−.0154		
S. cheesmaniae (LA0429)	.72 (.65–.80)	.71 (.63–.79)			−.0292	−.0286		
S. chilense (LA4339)	.75 (.67–.84)	.74 (.66–.82)			−.0303	−.0285		
S. chilense (LA0458)	.76 (.72–.80)	.75 (.71–.80)			−.0345	−.0336		
S. chmiewlewskii (LA3643)	.70 (.63–.77)	.69 (.62–.76)			−.0410	−.0381		
S. corneliomulleri (LA3219)	.62 (.55–.70)	.60 (.53–.68)			−.0472	−.0539		
S. galapagense (LA0436)	.79 (.71–.88)	.79 (.70–.87)			.0000	.0008		
S. habrochaites (LA1777)	.74 (.69–.79)	.73 (.68–.78)			−.0049	−.0005		
S. huaylasense (LA1360)	.67 (.60–.76)	.66 (.58–.74)			−.0607	−.0517		
S. huaylasense (LA1983)	.70 (.65–.76)	.69 (.64–.80)			−.0290	−.0323		
S. neorickii (LA1321, LA1322)	.73 (.65–.81)	.72 (.64–.80)			−.0575	−.0509		
S. pennellii (LA3791)	.74 (.69–.80)	.74 (.69–.79)			−.0135	−.0153		
S. pennellii (LA0716)	.75 (.71–.80)	.75 (.70–.79)			−.0097	−.0132		
S. peruvianum (LA2744)	.70 (.63–.78)	.69 (.61–.76)			−.0340	−.0342		
S. pimpinellifolium (LA1269)	.67 (.61–.73)	.66 (.60–.72)			−.0222	−.0190		
S. pennellii var. *puberulum* (LA3778)	.75 (.69–.80)	.74 (.68–.80)			−.0010	−.0011		
S. sitiens (LA4112–LA4116)	.84 (.76–.92)	.83 (.74–.91)			−.0702	−.0727		

Note: *Solanum* species names and Tomato Genetics Resource Center accession numbers (in parentheses) are given in the first column (see table S1 for accession details). The constant-mass TLS (i.e., standardized major-axis) coefficients are the same as in table 2. Under the constant-scaling model, TLS and OLS coefficients are very similar and have a central tendency toward 3/4. Likewise, mass-specific scaling parameters estimated with OLS and TLS are very similar. OLS = ordinary least squares; TLS = total least squares.

[1] Code that appears in the *American Naturalist* has not been peer-reviewed, nor does the journal provide support.