Table S4. Distribution family selection for GLM analyses of morphological traits, indicating individual traits, approximate lambda values and result of Shapiro-Wilk test, data transformations, possible distribution families, AIC values and residual deviance values, for each parameter combination. Chosen transformations and distribution families indicated in bold.

Trait	Transformation None Log/BoxCox	GLM family	AIC	Residual deviance on 95 df
Foliar traits				
Middle leaflet length (mm)	None	Gaussian	477.25	689.11
		InverseGaussian	462.89	0.19385
Continuous data		Gamma	464.79	2.8587
Lambda = 0	**Log**	Gaussian	-63.757	2.7590
ShapiroWilk=0.0003349		InverseGaussian	-64.02	0.14476
		Gamma	-64.365	0.38472
Middle leaflet width (mm)	None	Gaussian	524.29	1113.6
		InverseGaussian	531.95	0.14242
Continuous data		Gamma	525.49	2.7036
Lambda = 0.6	**Log**	**Gaussian**	-64.129	2.7486
ShapiroWilk= 0.5975		InverseGaussian	-55.84	0.11015
		Gamma	-59.149	0.31992
	Sqrt	Gaussian	91.701	13.480
		InverseGaussian	97.727	0.15589
		Gamma	94.708	0.68149
Lateral leaflet length (mm)	None	Gaussian	435.46	449.88
		InverseGaussian	440.98	0.19849
Continuous data		Gamma	436.55	2.5282
Lambda = 0.45	**Log**	**Gaussian**	-73.479	2.4985
ShapiroWilk=0.0525		InverseGaussian	-66.917	0.15458
		Gamma	-69.593	0.38862
	Sqrt	Gaussian	43.519	8.2444
		InverseGaussian	47.64	0.17560
		Gamma	45.594	0.62847
Lateral leaflet width (mm)	None	Gaussian	477.71	692.35
		InverseGaussian	479.12	0.14840
Continuous data		Gamma	475.68	2.3959
Lambda = 0.45	**Log**	**Gaussian**	-76.137	2.4316
ShapiroWilk=0.2225		InverseGaussian	-70.809	0.11536
		Gamma	-73.095	0.31684
	Sqrt	Gaussian	63.019	10.059
		InverseGaussian	65.351	0.14974
		Gamma	63.801	0.60332
Petiole length (mm)	None	Gaussian	895.43	49145
		InverseGaussian	913.06	0.083110
Continuous data		Gamma	902.51	6.5772
Lambda = 1	**Log**	**Gaussian**	28.544	7.0761
ShapiroWilk=0.6452		InverseGaussian	37.295	0.086003
		Gamma	34.053	0.37259

Trait	Transformation None Log/BoxCox	GLM family	AIC	Residual deviance on 95 df
Number of leaves Count Data	**None**	Poisson **Neg binomial**	594.1 574.63	160.85 89.835
Ratio middle leaflet width to length MidLeafWidth/MidLeafLength	Log **None**	quasiPoisson (Negative values present) **quasiPoisson**	- NA	- 1.8221
Ratio lateral leaflet width to length LatLeafWidth/LatLeafLength	Log **None**	quasiPoisson **quasiPoisson**	NA NA	1.8384 1.0081
Floral traits				
Petal width (mm) Continuous data Lambda = +- 0.35 ShapiroWilk= 0.01106	None **Log** Sqrt	Gaussian InverseGaussian Gamma **Gaussian** InverseGaussian Gamma Gaussian InverseGaussian Gamma	369.61 367.7 365.82 -77.446 -72.552 -74.818 8.4678 9.0781 8.2309	229.74 0.25095 2.3655 2.3993 0.21920 0.48316 5.7653 0.19361 0.59558
Petal length (mm) Continuous data Lambda = 0.65 ShapiroWilk= 0.1192	None **Log** Sqrt	Gaussian InverseGaussian Gamma **Gaussian** InverseGaussian Gamma Gaussian InverseGaussian Gamma	451.76 453.53 451.34 -109.26 -106.26 -107.47 34.214 36.103 35.073	531.28 0.098275 1.6921 1.7342 0.07595 0.21492 7.4976 0.10303 0.42807
Flower diameter (mm) Continuous data Lambda = 0.15 ShapiroWilk= 0.03588	None **Log**	Gaussian InverseGaussian Gamma **Gaussian** InverseGaussian Gamma	516.97 514.35 513.03 -76.819 -74.332 -75.424	1033.5 0.12054 2.4028 2.4147 0.091377 0.27132
Sepal length (mm) Continuous data Lambda =+- 0.15 ShapiroWilk=9.803e-06	None **Log**	Gaussian InverseGaussian Gamma **Gaussian** InverseGaussian Gamma	279.93 278.82 277.87 -77.737 -73.825 -75.603	92.013 0.39404 2.3843 2.3922 0.42292 0.74896

Trait	Transformation None Log/BoxCox	GLM family	AIC	Residual deviance on 95 df
Sepal width (mm) Continuous data Lambda = +- 0.15 ShapiroWilk= 1.91e-13	None **Log**	Gaussian InverseGaussian Gamma Gaussian InverseGaussian **Gamma**	148.75 147.37 147.53 -30.744 -31.164 -31.271	24.128 1.5458 3.8261 3.8641 5.5110 4.8436
Bract length (mm) Continuous data Lambda = -0.1 ShapiroWilk= 3.759e-06	None **Log**	Gaussian InverseGaussian Gamma **Gaussian** InverseGaussian Gamma	386.69 369.13 371.92 56.3 61.535 57.792	273.49 1.9302 9.5950 9.3928 2.6137 3.8968
Peduncle length (mm) Continuous data Lambda =+- 0.35 ShapiroWilk=0.1115	None **Log** Sqrt	Gaussian InverseGaussian Gamma **Gaussian** InverseGaussian Gamma Gaussian InverseGaussian Gamma	882.22 881.85 879.93 -20.118 -18.135 -18.905 293.38 294.94 293.9	42946 0.044258 4.2603 4.3067 0.045492 0.20703 105.54 0.10907 1.0711
Ratio flower diameter to petal length FlowerDiameter/PetalLength	Log **None**	quasiPoisson (Negative nalues) **quasiPoisson**	- NA	- 1.5685
Ratio petal length to width PetalLength/PetalWidth	Log **None**	quasiPoisson **quasiPoisson**	NA NA	3.1530 2.6246
Ratio sepal length to width SepalLength/SepalWidth	**Log** None	**quasiPoisson** quasiPoisson	NA NA	4.2967 9.3694
Ratio peduncle length to bract position PeduncleLength/BractPosition	Log **None**	quasiPoisson **quasiPoisson**	NA NA	3.0233 0.56499
Number of inflorescences Count data	**None**	Poisson **Neg binomial**	519.31 504.99	161.90 97.815
Difference in peduncle and petiole length (mm) Continuous data, with negative values Lambda = Must be positive	**None** Log (Na's produced)	**Gaussian** InverseGaussian (negative values) Gamma (negative values) Gaussian InverseGaussian	893.87 - - - -	48368 - - - -

Trait	Transformation None Log/BoxCox	GLM family	AIC	Residual deviance on 95 df
ShapiroWilk = 0.7235		Gamma	-	-