

Supplementary Material

1 Supplementary Tables

Table S1 Species list and trait values.

Order	Species	Mean color lightness	Mean size (mm)	Morphology
Agaricales	<i>Armillaria ostoyae</i>	0.41	67.50	Stipitate-Pileate
Agaricales	<i>Callistosporium luteoolivaceum</i>	0.49	32.50	Stipitate-Pileate
Agaricales	<i>Callistosporium pinicola</i>	0.52	17.50	Stipitate-Pileate
Agaricales	<i>Chrysomphalina strombodes</i>	0.43	37.50	Stipitate-Pileate
Agaricales	<i>Clitocybe gibba</i>	0.66	52.50	Stipitate-Pileate
Agaricales	<i>Clitocybula lacerata</i>	0.63	25.00	Stipitate-Pileate
Agaricales	<i>Clitopilus hobsonii</i>	0.78	13.50	Stipitate-Pileate
Agaricales	<i>Clitopilus rhodophyllus</i>	0.67	17.50	Stipitate-Pileate
Agaricales	<i>Collybia confluens</i>	0.68	27.50	Stipitate-Pileate
Agaricales	<i>Coprinus disseminatus</i>	0.62	10.00	Stipitate-Pileate
Agaricales	<i>Coprinus domesticus</i>		52.50	Stipitate-Pileate
Agaricales	<i>Coprinus micaceus</i>	0.65	40.00	Stipitate-Pileate
Agaricales	<i>Crepidotus applanatus</i>	0.56	37.50	Sessile-Pileate
Agaricales	<i>Crepidotus brunneoroseus</i>	0.56	20.00	Sessile-Pileate
Agaricales	<i>Crepidotus cesatii</i>	0.76	13.50	Sessile-Pileate
Agaricales	<i>Crepidotus roseibrunneus</i>	0.91	6.00	Sessile-Pileate
Agaricales	<i>Crepidotus variabilis</i>	0.73	14.50	Sessile-Pileate
Agaricales	<i>Delicatula integrella</i>	0.87	5.50	Stipitate-Pileate
Agaricales	<i>Entoloma cetratum</i>	0.54	30.00	Stipitate-Pileate
Agaricales	<i>Entoloma dichroum</i>	0.52	16.00	Stipitate-Pileate
Agaricales	<i>Flammulaster limulatus</i>	0.65	32.50	Stipitate-Pileate
Agaricales	<i>Flammulaster muricatus</i>	0.6	17.50	Stipitate-Pileate

Order	Species	Mean color lightness	Mean size (mm)	Morphology
Agaricales	<i>Galerina ampullaceocystis</i>	0.67	11.50	Stipitate-Pileate
Agaricales	<i>Galerina camerina</i>	0.63	14.00	Stipitate-Pileate
Agaricales	<i>Galerina cerina</i>	0.47	9.50	Stipitate-Pileate
Agaricales	<i>Galerina hypnorum</i>	0.64	9.50	Stipitate-Pileate
Agaricales	<i>Galerina marginata</i>	0.49	32.50	Stipitate-Pileate
Agaricales	<i>Galerina perplexa</i>	0.66	13.50	Stipitate-Pileate
Agaricales	<i>Galerina sideroides</i>	0.56	25.00	Stipitate-Pileate
Agaricales	<i>Galerina triscopa</i>	0.45	8.50	Stipitate-Pileate
Agaricales	<i>Galerina vittaeformis</i>	0.34	13.50	Stipitate-Pileate
Agaricales	<i>Gymnopilus penetrans</i>	0.47	77.50	Stipitate-Pileate
Agaricales	<i>Gymnopilus picreus</i>	0.65	32.50	Stipitate-Pileate
Agaricales	<i>Hohenbuehelia petaloides</i>	0.58	50.00	Sessile-Pileate
Agaricales	<i>Hydropus marginellus</i>	0.58	15.50	Stipitate-Pileate
Agaricales	<i>Hydropus subalpinus</i>	0.68	26.00	Stipitate-Pileate
Agaricales	<i>Hypholoma fasciculare</i>	0.66	47.50	Stipitate-Pileate
Agaricales	<i>Hypholoma radicosum</i>	0.73	45.00	Stipitate-Pileate
Agaricales	<i>Kuehneromyces mutabilis</i>	0.45	60.00	Stipitate-Pileate
Agaricales	<i>Lepiota echinella</i>	0.7	17.50	Stipitate-Pileate
Agaricales	<i>Lepiota felina</i>	0.64	27.50	Stipitate-Pileate
Agaricales	<i>Marasmiellus ramealis</i>	0.79	11.00	Stipitate-Pileate
Agaricales	<i>Marasmius alliaceus</i>	0.27	21.50	Stipitate-Pileate
Agaricales	<i>Marasmius androsaceus</i>	0.61	8.25	Stipitate-Pileate
Agaricales	<i>Marasmius rotula</i>	0.87	9.00	Stipitate-Pileate
Agaricales	<i>Megacollybia platyphylla</i>	0.68	70.00	Stipitate-Pileate
Agaricales	<i>Micromphale perforans</i>	0.69	10.00	Stipitate-Pileate
Agaricales	<i>Mycena abramsii</i>	0.71	25.00	Stipitate-Pileate
Agaricales	<i>Mycena amicta</i>	0.49	10.00	Stipitate-Pileate

Order	Species	Mean color lightness	Mean size (mm)	Morphology
Agaricales	<i>Mycena epipterygia</i>	0.49	15.00	Stipitate-Pileate
Agaricales	<i>Mycena erubescens</i>	0.65	10.00	Stipitate-Pileate
Agaricales	<i>Mycena galericulata</i>	0.63	40.00	Stipitate-Pileate
Agaricales	<i>Mycena galopus</i>	0.7	17.50	Stipitate-Pileate
Agaricales	<i>Mycena haematopus</i>	0.68	17.50	Stipitate-Pileate
Agaricales	<i>Mycena hiemalis</i>	0.61	6.00	Stipitate-Pileate
Agaricales	<i>Mycena laevigata</i>	0.82	20.00	Stipitate-Pileate
Agaricales	<i>Mycena leptcephala</i>	0.64	15.00	Stipitate-Pileate
Agaricales	<i>Mycena maculata</i>	0.41	27.50	Stipitate-Pileate
Agaricales	<i>Mycena metata</i>	0.54	15.00	Stipitate-Pileate
Agaricales	<i>Mycena purpureofusca</i>	0.66	22.50	Stipitate-Pileate
Agaricales	<i>Mycena renati</i>	0.79	21.00	Stipitate-Pileate
Agaricales	<i>Mycena rorida</i>	0.55	6.00	Stipitate-Pileate
Agaricales	<i>Mycena rubromarginata</i>	0.63	20.00	Stipitate-Pileate
Agaricales	<i>Mycena sanguinolenta</i>	0.58	11.50	Stipitate-Pileate
Agaricales	<i>Mycena speirea</i>	0.49	7.50	Stipitate-Pileate
Agaricales	<i>Mycena stipata</i>	0.5	15.50	Stipitate-Pileate
Agaricales	<i>Mycena viridimarginata</i>	0.5	22.50	Stipitate-Pileate
Agaricales	<i>Oudemansiella mucida</i>	0.94	50.00	Stipitate-Pileate
Agaricales	<i>Panellus stypticus</i>	0.57	24.00	Sessile-Pileate
Agaricales	<i>Panellus violaceofulvus</i>	0.4	15.00	Sessile-Pileate
Agaricales	<i>Pholiota flammans</i>	0.6	47.50	Stipitate-Pileate
Agaricales	<i>Pholiota scamba</i>	0.66	25.00	Stipitate-Pileate
Agaricales	<i>Pholiota squarrosoides</i>	0.66	70.00	Stipitate-Pileate
Agaricales	<i>Pholiota subochracea</i>	0.49	20.00	Stipitate-Pileate
Agaricales	<i>Pholiotina brunnea</i>	0.56	17.50	Stipitate-Pileate
Agaricales	<i>Phyllotus porrigens</i>	0.73	45.00	Sessile-Pileate
Agaricales	<i>Pleurotus ostreatus</i>	0.53	120.00	Sessile-Pileate

Order	Species	Mean color lightness	Mean size (mm)	Morphology
Agaricales	<i>Pleurotus pulmonarius</i>	0.79	95.00	Sessile-Pileate
Agaricales	<i>Plicatura crispa</i>	0.58	25.00	Sessile-Pileate
Agaricales	<i>Pluteus cervinus</i>	0.58	90.00	Stipitate-Pileate
Agaricales	<i>Pluteus hispidulus</i>	0.54	15.00	Stipitate-Pileate
Agaricales	<i>Pluteus inquilinus</i>	0.82	20.00	Stipitate-Pileate
Agaricales	<i>Pluteus nanus</i>	0.42	35.00	Stipitate-Pileate
Agaricales	<i>Pluteus nigrofloccosus</i>	0.54	75.00	Stipitate-Pileate
Agaricales	<i>Pluteus phlebophorus</i>	0.45	36.00	Stipitate-Pileate
Agaricales	<i>Pluteus podospileus</i>	0.74	22.50	Stipitate-Pileate
Agaricales	<i>Pluteus thomsonii</i>	0.74	17.50	Stipitate-Pileate
Agaricales	<i>Psathyrella candolleana</i>	0.77	50.00	Stipitate-Pileate
Agaricales	<i>Psathyrella piluliformis</i>	0.52	50.00	Stipitate-Pileate
Agaricales	<i>Psathyrella senex</i>	0.58	25.00	Stipitate-Pileate
Agaricales	<i>Ramicola centunculus</i>	0.65	12.50	Stipitate-Pileate
Agaricales	<i>Rimbachia neckerae</i>	0.54	2.00	Sessile-Pileate
Agaricales	<i>Schizophyllum commune</i>	0.56	30.00	Sessile-Pileate
Agaricales	<i>Simocybe rubi</i>	0.66	11.00	Stipitate-Pileate
Agaricales	<i>Trichocybe puberula</i>	0.57	36.00	Stipitate-Pileate
Agaricales	<i>Tricholomopsis decora</i>	0.44	51.00	Stipitate-Pileate
Agaricales	<i>Tubaria conspersa</i>	0.72	12.00	Stipitate-Pileate
Agaricales	<i>Xeromphalina campanella</i>	0.44	12.00	Stipitate-Pileate
Auriculariales	<i>Auricularia mesenterica</i>	0.61	100.00	Sessile-Pileate
Auriculariales	<i>Pseudohydnum gelatinosum</i>	0.43	40.00	Stipitate-Pileate
Boletales	<i>Hygrophoropsis aurantiaca</i>	0.56	40.00	Stipitate-Pileate
Gloeophyllales	<i>Gloeophyllum abietinum</i>	0.61	35.00	Sessile-Pileate
Gloeophyllales	<i>Gloeophyllum odoratum</i>	0.52	110.00	Sessile-Pileate
Gloeophyllales	<i>Gloeophyllum sepiarium</i>	0.5	52.50	Sessile-Pileate

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Hymenochaetales	<i>Trichaptum abietinum</i>	0.71	20.00	Sessile-Pileate
Not assigned	<i>Oxyporus corticola</i>	0.5	35.00	Sessile-Pileate
Polyporales	<i>Bjerkandera adusta</i>	0.53	55.00	Sessile-Pileate
Polyporales	<i>Coriolopsis gallica</i>	0.4	125.00	Sessile-Pileate
Polyporales	<i>Coriolopsis trogii</i>	0.45	80.00	Sessile-Pileate
Polyporales	<i>Daedaleopsis confragosa</i>	0.5	150.00	Sessile-Pileate
Polyporales	<i>Fomes fomentarius</i>	0.63	200.00	Sessile-Pileate
Polyporales	<i>Fomitopsis pinicola</i>	0.52	125.00	Sessile-Pileate
Polyporales	<i>Fomitopsis rosea</i>	0.51	60.00	Sessile-Pileate
Polyporales	<i>Hapalopilus rutilans</i>	0.54	70.00	Sessile-Pileate
Polyporales	<i>Irpex lacteus</i>	0.65	45.00	Sessile-Pileate
Polyporales	<i>Ischnoderma benzoinum</i>	0.47	100.00	Sessile-Pileate
Polyporales	<i>Laetiporus sulfureus</i>	0.5	300.00	Sessile-Pileate
Polyporales	<i>Lentinus adhaerens</i>	0.6	45.00	Stipitate-Pileate
Polyporales	<i>Lenzites betulinus</i>	0.52	55.00	Sessile-Pileate
Polyporales	<i>Phaeolus spadiceus</i>	0.46	17.50	Stipitate-Pileate
Polyporales	<i>Piptoporus betulinus</i>	0.61	100.00	Sessile-Pileate
Polyporales	<i>Polyporus badius</i>	0.36	135.00	Stipitate-Pileate
Polyporales	<i>Polyporus ciliatus</i>	0.71	55.00	Stipitate-Pileate
Polyporales	<i>Polyporus leptcephalus</i>	0.74	30.00	Stipitate-Pileate
Polyporales	<i>Polyporus mori</i>	0.53	50.00	Stipitate-Pileate
Polyporales	<i>Polyporus tephroleucus</i>	0.74	35.00	Stipitate-Pileate
Polyporales	<i>Polyporus tuberaster</i>	0.74	30.00	Stipitate-Pileate
Polyporales	<i>Polyporus varius</i>	0.81	30.00	Stipitate-Pileate
Polyporales	<i>Pycnoporellus fulgens</i>	0.52	30.00	Sessile-Pileate
Polyporales	<i>Pycnoporus cinnabarinus</i>	0.48	60.00	Sessile-Pileate
Polyporales	<i>Spongiporus caesius</i>	0.6	45.00	Sessile-Pileate
Polyporales	<i>Spongiporus fragilis</i>	0.56	40.00	Sessile-Pileate

Order	Species	Mean color lightness	Mean size (mm)	Morphology
Polyporales	<i>Spongiporus guttulatus</i>	0.69	75.00	Sessile-Pileate
Polyporales	<i>Spongiporus stipticus</i>	0.73	50.00	Sessile-Pileate
Polyporales	<i>Spongiporus subcaesius</i>	0.52	45.00	Sessile-Pileate
Polyporales	<i>Spongiporus undosus</i>	0.61	60.00	Sessile-Pileate
Polyporales	<i>Trametes gibbosa</i>	0.73	85.00	Sessile-Pileate
Polyporales	<i>Trametes hirsuta</i>	0.76	65.00	Sessile-Pileate
Polyporales	<i>Trametes pubescens</i>	0.73	60.00	Sessile-Pileate
Polyporales	<i>Trametes versicolor</i>	0.57	50.00	Sessile-Pileate
Russulales	<i>Heterobasidion annosum</i>	0.64	15.00	Sessile-Pileate
Russulales	<i>Laxitextum bicolor</i>	0.36	95.00	Sessile-Pileate
Russulales	<i>Lentinellus cochleatus</i>	0.64	40.00	Sessile-Pileate
Russulales	<i>Lentinellus vulpinus</i>	0.71	32.50	Sessile-Pileate

Table S2 Multivariate linear model testing the effect of temperature on assemblage fruit body color lightness considering different data subsets (sensitivity analysis). Displayed are the t-values of the observed assemblage fruit body color lightness and standardized effect size (OBS / SES). Bold numbers indicate significance ($p < 0.05$). As goodness of fit we report the adjusted R^2 -values. Numbers in the top row indicate the minimum number of species on a plot in the respective analysis. Note that the main results remain significant with lower and larger community sizes ($n \geq 3$, $n \geq 8$).

Threshold minimum community size	≥ 3	≥ 4	≥ 5	≥ 6	≥ 7	≥ 8
Intercept	-5.63 / -2.35	-5.53 / -2.32	-4.4 / -2.01	-4.15 / -1.76	-3.16 / -0.9	-3.47 / -1.25
Temperature	5.49 / 5.11	5.54 / 4.95	5.25 / 4.74	5.09 / 4.52	3.76 / 3.39	2 / 1.78
Vegetation cover	-0.94 / -0.58	-0.76 / -0.49	-0.95 / -0.45	-0.87 / -0.4	0.2 / 0.5	0.17 / 0.37
Precipitation	2.76 / 2.88	3.03 / 2.82	2.18 / 2.32	2.14 / 2.29	1.38 / 1.58	1.78 / 1.82
Nr. of host species	0.23 / 0.08	0.47 / 0.28	0.49 / 0.37	0.2 / 0.15	-0.98 / -0.77	0.7 / 0.71
Dead-wood surface	-0.3 / -0.91	-0.1 / -0.77	0.14 / -0.63	-0.14 / -0.8	-1.1 / -1.56	-0.69 / -1.03
Decay stage	-2.45 / -2.94	-2.75 / -2.94	-3.15 / -3.12	-3.22 / -3.23	-2.54 / -2.43	-0.95 / -0.83
Fruit body size	-1.6 / -1.59	-2.14 / -1.66	-2.72 / -1.92	-2.81 / -1.93	-1.99 / -1.3	-0.72 / -0.26
Adj. R^2	0.26 / 0.26	0.28 / 0.26	0.29 / 0.27	0.29 / 0.27	0.22 / 0.21	0.07 / 0.07

2 Supplementary Figures

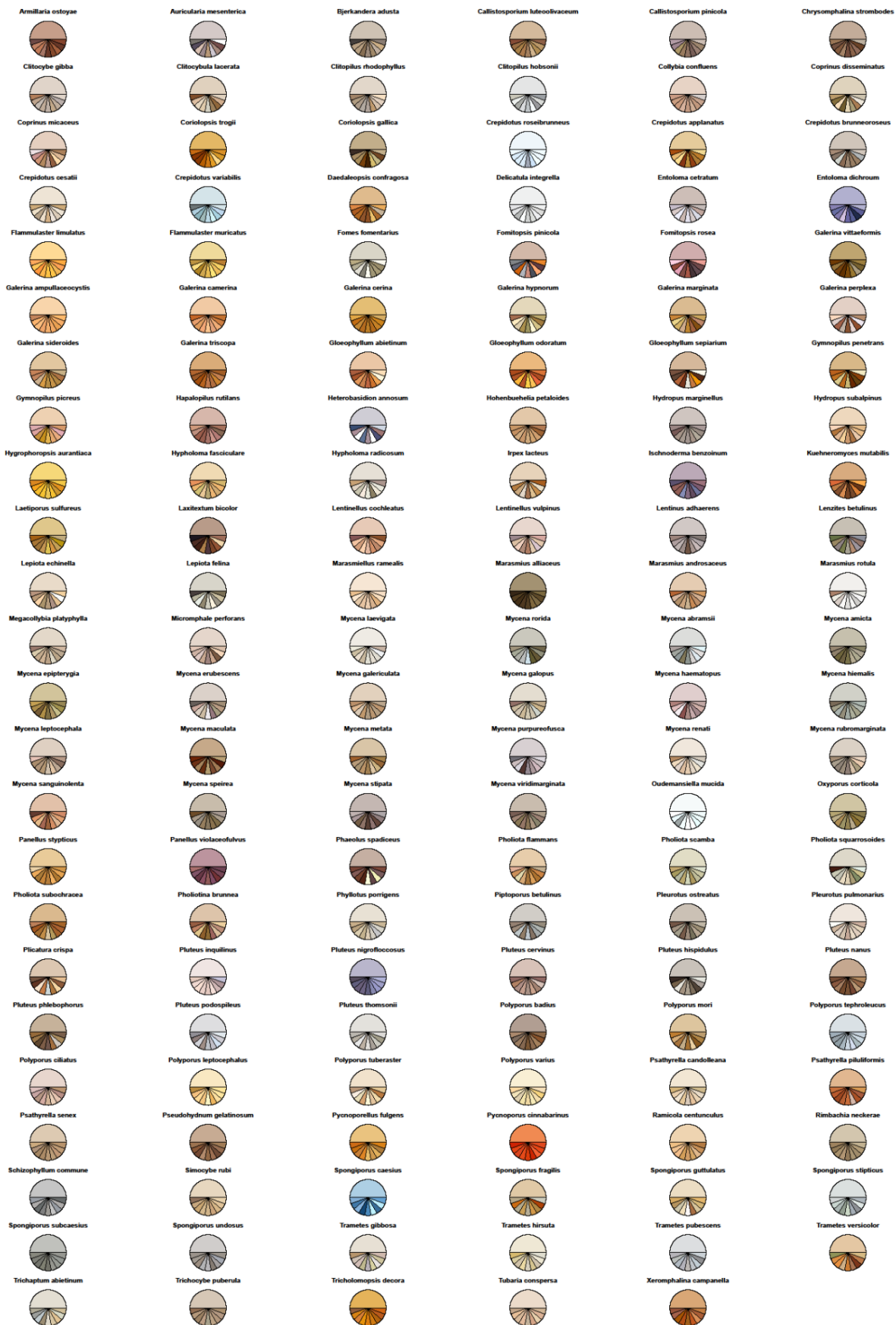


Figure S1 Visual representation of the color sampling of the fungal fruit bodies of each species in form of pie charts. The color of the nine equally large parts of the pie represents the nine different pixels sampled from each fruit body image using the program ‘pipette’ (Stefan Trost Media; <http://www.sttmedia.com>). The three components, hue, lightness, and saturation were averaged for each species, which is here depicted as the top part of the pie chart.

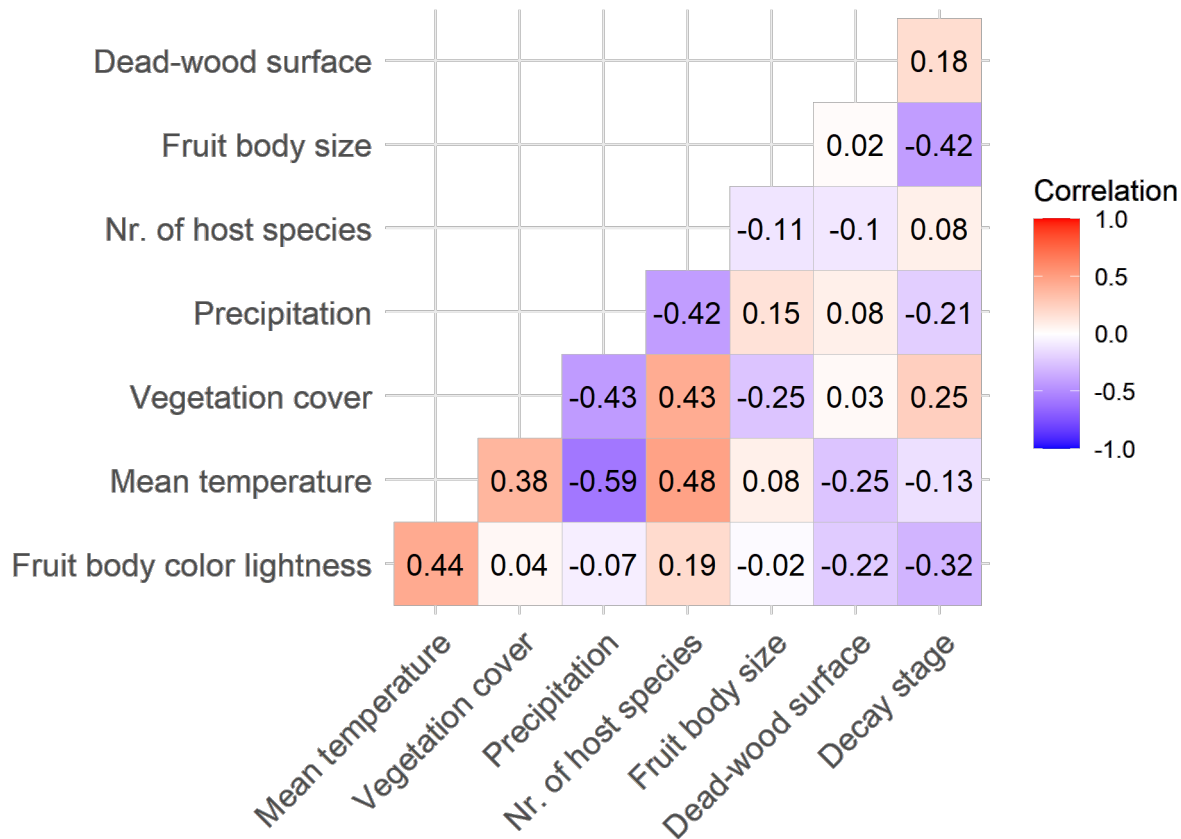


Figure S2 Pearson correlation between the mean community trait variables and the predictor variables. Note that all correlation values of the variables used in our model are below the threshold of $|r| < 0.7$ and thus no collinearity is apparent between predictors (Dormann *et al.*, 2013).