Table S4. The effects of parasite treatment (infected vs uninfected) on monarch survival (virulence) and the effects of increasing spore load on survival (tolerance) over a 35-day period. Estimates were produced using Cox proportional hazards regression models [coxph functions of the survival package (Therneau and Lumley, 2014)] to calculate the differences in survival among treatments. To measure virulence using this method of survival analysis, we investigated the covariates of parasite treatment, milkweed species and CO_2 treatment on the probability of survival. To measure tolerance, we instead included the covariate of spore load along with milkweed species and CO_2 treatment on the probability of survival. Tables include: the hazard ratio (exp(coef): values > 1 indicate a higher risk of death, values < 1 indicate a lower risk of death), standard error of the regression coefficient (se(coef)), the Wald statistic value (z), p-values (Pr(>|z|)), and 95% confidence intervals (lower.95 & upper.95). Milkweed species: CUR =*A. curassavica*, SYR=*A. syriaca*, SPE=*A. speciosa*, INC=*A. incarnata*.

Virulence: Fixed Effects	exp(coef)	se(coef)	z	Pr(>|z|)	lower .95	upper .95
INC	0.3957	0.288	-3.219	0.00129	0.22501	0.6959
SPE	0.6572	0.2922	-1.437	0.15085	0.37072	1.1652
SYR	0.5324	0.2769	-2.276	0.02284	0.30942	0.9162
elevated CO_2	0.5498	0.2818	-2.123	0.03374	0.31647	0.955
INOC	1.2055	0.3126	0.598	0.54995	0.65328	2.2244
INC: elevated CO_2	2.5397	0.4027	2.314	0.02065	1.15343	5.5922
SPE: elevated CO_2	1.7267	0.4109	1.329	0.1837	0.77177	3.8633
SYR: elevated CO_2	1.571	0.39	1.158	0.24675	0.73152	3.3738
INC: INOC	4.4731	0.4344	3.449	0.00056	1.9093	10.4796
SPE: INOC	3.6292	0.4549	2.834	0.0046	1.48801	8.8514
SYR: INOC	2.3601	0.4464	1.924	0.05438	0.98399	5.6607
elevated CO_2: INOC	3.4312	0.4453	2.769	0.00563	1.43359	8.2125
INC: elevated CO_2: INOC	0.1267	0.6052	-3.414	0.00064	0.03868	0.4147
SPE: elevated CO_2: INOC	0.1978	0.638	-2.54	0.01107	0.05664	0.6905
SYR: elevated CO_2: INOC	0.3725	0.6331	-1.56	0.11881	0.10771	1.2883

Tolerance: Fixed Effects	exp(coef)	se(coef)	z	Pr(>|z|)	lower .95	upper .95
INC	0.3678	0.2697	-3.708	0.0002	0.2168	0.6241
SPE	0.5638	0.2859	-2.004	0.0451	0.3219	0.9875
SYR	0.4868	0.2696	-2.67	0.0076	0.287	0.8257
elevated CO_2	0.5549	0.2645	-2.227	0.0259	0.3304	0.9318
sqrt(Spore Load)	1.000	0.0004	0.101	0.9193	0.9992	1.0009
INC: elevated CO_2	2.697	0.3679	2.697	0.007	1.3115	5.5471
SPE: elevated CO_2	1.788	0.3925	1.481	0.1387	0.8285	3.8598
SYR: elevated CO_2	1.578	0.3712	1.229	0.2191	0.7624	3.2667
INC: sqrt(Spore Load)	1.003	0.0006	4.822	0.00000142	1.0016	1.0039
SPE: sqrt(Spore Load)	1.003	0.0007	4.633	0.00000361	1.0019	1.0046
SYR: sqrt(Spore Load)	1.001	0.0006	2.184	0.029	1.0001	1.0024
elevated CO_2: sqrt(Spore Load)	1.002	0.0006	2.963	0.003	1.0006	1.0029
INC: elevated CO_2: sqrt(Spore Load)	0.9968	0.0007	-4.357	0.0000132	0.9953	0.9982
SPE: elevated CO_2: sqrt(Spore Load)	0.9973	0.0009	-3.035	0.0024	0.9956	0.999
SYR: elevated CO_2: sqrt(Spore Load)	0.9996	0.0008	-0.528	0.5975	0.998	1.0011