**Table S1.** Generalized linear regression models of the effects of experimental treatments of soil samples on the abundance of predatory mites (Gamasida). For the temperature experiment, the results of a hurdle regression model are given, and only the count part of the model is shown.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| experiment | treatment | estimate | std. error | z value | P value | significance |
| storage | intercept | 8.14559 | 0.16476 | 49.438 | < 2 ⋅ 10-16 | \*\*\* |
|  | 1 week | 0.15494 | 0.23301 | 0.665 | 0.506 |  |
|  | 3 weeks | 0.03407 | 0.23301 | 0.146 | 0.884 |  |
|  | 6 weeks | 0.06159 | 0.23301 | 0.264 | 0.792 |  |
| temperature | intercept | 8.05482 | 0.15980 | 50.404 | < 2 ⋅ 10-16 | \*\*\* |
|  | 25° C | -0.07217 | 0.22600 | -0.319 | 0.749475 |  |
|  | 35° C | -0.80454 | 0.24417 | -3.295 | 9.84 ⋅ 10-4 | \*\*\* |
|  | 45° C | -2.28964 | 0.66103 | -3.464 | 5.33 ⋅ 10-4 | \*\*\* |
| shaking | intercept | 7.7962 | 0.2480 | 31.430 | < 2 ⋅ 10-16 | \*\*\* |
|  | 100 strokes | 0.1658 | 0.3508 | 0.473 | 0.636 |  |
|  | 200 strokes | 0.1728 | 0.3508 | 0.492 | 0.622 |  |
|  | 300 strokes | 0.1305 | 0.3508 | 0.372 | 0.710 |  |
| compression | intercept | 8.425940 | 0.179745 | 46.877 | < 2 ⋅ 10-16 | \*\*\* |
|  | 300 g | -0.004376 | 0.254198 | -0.017 | 0.9863 |  |
|  | 900 g | -0.390297 | 0.254211 | -1.535 | 0.1247 |  |
|  | 3000 g | -0.423087 | 0.254212 | -1.664 | 0.0961 |  |
| filling | intercept | 7.8442 | 0.1804 | 43.481 | < 2 ⋅ 10-16 | \*\*\* |
|  | 2 cores | -1.2277 | 0.2552 | -4.810 | 1.51 ⋅ 10-6 | \*\*\* |
|  | 3 cores | -1.2502 | 0.2553 | -4.898 | 9.69 ⋅ 10-7 | \*\*\* |
| combi 1 | intercept | 8.43464 | 0.13086 | 64.456 | < 2 ⋅ 10-16 | \*\*\* |
|  | treated | 0.03822 | 0.18506 | 0.207 | 0.836 |  |
| combi 2 | intercept | 8.02267 | 0.23453 | 34.207 | < 2 ⋅ 10-16 | \*\*\* |
|  | treated | 0.08154 | 0.33168 | 0.246 | 0.806 |  |

**Table S2.** Hurdle regression models of the effects of experimental treatments of soil samples on the body size structure of predatory mites (Gamasida). Only the count parts of the models are shown.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| experiment | treatment | size [μm] | estimate | std. error | z value | P value | significance |
| storage | intercept | | 7.905 | 0.1644 | 48.072 | < 2 ⋅ 10-16 | \*\*\* |
| 1 month | < 560 | 1.167 ⋅ 10-2 | 0.2286 | 0.051 | 0.959 |  |
| 561-920 | 0.3074 | 0.2288 | 1.344 | 0.179 |  |
| > 920 | 0.3365 | 0.5165 | 0.651 | 0.515 |  |
| 3 months | < 560 | -0.1386 | 0.2287 | -0.606 | 0.544 |  |
| 561-920 | 0.1758 | 0.2248 | 0.782 | 0.434 |  |
| > 920 | 0.1823 | 0.5166 | 0.353 | 0.724 |  |
| 6 months | < 560 | -4.411 ⋅ 10-2 | 0.2286 | -0.193 | 0.847 |  |
| 561-920 | 0.1092 | 0.2248 | 0.486 | 0.627 |  |
| > 920 | -2.029 ⋅ 10-6 | 0.5637 | 0.000 | 1.000 |  |
| temperature | intercept | | 7.67439 | 0.15504 | 49.498 | < 2 ⋅ 10-16 | \*\*\* |
| 25° C | < 560 | 0.09189 | 0.22288 | 0.412 | 0.680135 |  |
| 561-920 | -0.05712 | 0.24417 | -0.234 | 0.815039 |  |
| > 920 | -0.47001 | 0.41719 | -1.127 | 0.259909 |  |
| 35° C | < 560 | -0.56566 | 0.23690 | -2.388 | 0.016949 | \* |
| 561-920 | -0.69292 | 0.35224 | -1.967 | 0.049163 | \* |
| > 920 | -0.47000 | 0.68155 | -0.690 | 0.490441 |  |
| shaking | intercept | | 7.29093 | 0.17525 | 41.604 | < 2 ⋅ 10-16 | \*\*\* |
| 100 strokes | < 560 | 0.27745 | 0.25220 | 1.100 | 0.2713 |  |
| 561-920 | 0.16502 | 0.25727 | 0.641 | 0.5213 |  |
| > 920 | 0.04879 | 0.39828 | 0.123 | 0.9025 |  |
| 200 strokes | < 560 | 0.43001 | 0.25219 | 1.705 | 0.0882 |  |
| 561-920 | -0.08709 | 0.24404 | -0.357 | 0.7212 |  |
| > 920 | -0.13354 | 0.54560 | -0.245 | 0.8066 |  |
| 300 strokes | < 560 | 0.42997 | 0.25219 | 1.705 | 0.0882 |  |
| 561-920 | -0.05714 | 0.26299 | -0.217 | 0.8280 |  |
| > 920 | -0.13354 | 0.37855 | -0.353 | 0.7243 |  |
| compression | intercept | | 8.0798 | 0.1622 | 49.817 | < 2 ⋅ 10-16 | \*\*\* |
|  | 300 g | < 560 | 0.0423 | 0.2294 | 0.184 | 0.853679 |  |
| 561-920 | -0.1255 | 0.2460 | -0.510 | 0.610036 |  |
| > 920 | -0.4520 | 0.5218 | -0.866 | 0.386340 |  |
| 900 g | < 560 | -0.2956 | 0.2332 | -1.268 | 0.204859 |  |
| 561-920 | -0.2564 | 0.2599 | -0.987 | 0.323856 |  |
| > 920 | -0.4520 | 0.5218 | -0.866 | 0.386340 |  |
| 3000 g | < 560 | -0.4079 | 0.2332 | -1.749 | 0.080265 |  |
| 561-920 | -0.2412 | 0.2546 | -0.947 | 0.343556 |  |
| > 920 | -0.4520 | 0.3809 | -1.187 | 0.235415 |  |
| filling | intercept | | 7.5786 | 0.1572 | 48.204 | < 2 ⋅ 10-16 | \*\*\* |
| 2 cores | < 560 | -1.4573 | 0.2265 | -6.433 | 1.25 ⋅ 10-10 | \*\*\* |
| 561-920 | -1.2475 | 0.2606 | -4.788 | 1.69 ⋅ 10-6 | \*\*\* |
| > 920 | -1.5903 | 0.4780 | -3.327 | 8.77 ⋅ 10-4 | \*\*\* |
| 3 cores | < 560 | -1.4129 | 0.2191 | -6.450 | 1.12 ⋅ 10-10 | \*\*\* |
| 561-920 | -1.6351 | 0.2543 | -6.431 | 1.27 ⋅ 10-10 | \*\*\* |
| > 920 | -2.2030 | 0.4846 | -4.546 | 5.47 ⋅ 10-6 | \*\*\* |
| combi 1 | intercept | | 8.151 | 0.1481 | 55.035 | < 2 ⋅ 10-16 | \*\*\* |
| treated | < 560 | 3.782 ⋅ 10-5 | 0.2095 | 0.000 | 0.9999 |  |
| 561-920 | -9.553 ⋅ 10-3 | 0.2170 | -0.044 | 0.9649 |  |
| > 920 | 0.6931 | 0.3836 | 1.807 | 0.0708 |  |
| combi 2 | intercept | | 7.79304 | 0.15550 | 50.117 | < 2⋅ 10-16 | \*\*\* |
| treated | < 560 | 0.06777 | 0.21990 | 0.308 | 0.757958 |  |
| 561-920 | -0.04877 | 0.23713 | -0.206 | 0.837043 |  |
| > 920 | -0.11778 | 0.55111 | -0.214 | 0.830766 |  |