**Table S4**. Linear and quadratic coefficients of the fixed factors (temperature, T, mean relative humidity, RH, rainfall, P, spider, ant, and earwig captures) estimated by the GLMs adjusted to beetle activity density and their corresponding statistics (*t*- and *p*-values) in the different treatments (bare soil-BS, df = 173, mulch of straw-M, df = 175, and *F. arundinacea* cover-FA, df = 172) (AIC = 117.6, 179.42, and 257.47, respectively). Null deviance values are 62.651, 260.99 and 489.7 for BS, M and FA, respectively, with 59 df in all cases. Those of the residual deviance are 19.10, 55.34 and 183.9, respectively, with 53, 54 and 51 df, respectively. Because the models were refined by removing non-significant effects, these are not part of the final model and are reported as nr in the table. No earwigs were found in BS.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Linear and quadratic coefficients ± SE | | | *t*-value | | | | *p*-value | | | |
|  | BS | M | FA | | BS | M | FA | | BS | M | FA |
| T | -0.85 ± 0.17 | -0.56 ± 0.16 | nr | | -5.04 | -2.57 | --- | | <0.001 | 0.013 | --- |
| T2 | nr | -0.65 ± 0.22 | 1.73 ± 0.37 | | --- | -2.71 | 4.65 | | --- | 0.009 | <0.001 |
| RH | -0.30 ± 0.13 | nr | 2.42 ± 0.39 | | -2.33 | --- | 6.18 | | 0.024 | --- | <0.001 |
| RH2 | -0.26 ± 0.05 | -0.71 ± 0.09 | nr | | -5.26 | -7.90 | --- | | <0.001 | <0.001 | --- |
| P | 0.02 ± 0.01 | nr | -0.14 ± 0.03 | | 2.31 | --- | -4.38 | | 0.025 | --- | <0.001 |
| P2 | < -0.01 | nr | < 0.01 | | -3.66 | --- | 4.66 | | 0.001 | --- | <0.001 |
| Spiders | 0.08 ± 0.04 | nr | 0.23 ± 0.10 | | 2.13 | --- | 2.37 | | 0.038 | --- | 0.022 |
| Ants | nr | nr | -1.12 ± 0.15 | | --- | --- | -7.38 | | --- | --- | <0.001 |
| Earwigs | --- | 1.27 ± 0.10 | 2.37 ± 0.67 | | --- | 12.17 | 3.57 | | --- | <0.001 | <0.001 |