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**Appendices to J Poll Ecol 31(5), Stanley & Cosnett**

A picture containing calendar

Description automatically generated

**Figure S1.** Correlation matrix showing the impact of landscape measures on pollinator species richness (Rich.) and abundance (Abun.) as well as the environmental variability between orchards. All variables were measured in 1km buffer around the orchards. Temp is the mean annual temperature (°C), Precip. Is the mean annual rainfall (mm). The landscape variables measured as a percentage cover within the buffer. Richness and abundance (highlighted in green) were used as the response variables in a linear mixed effects model. No environmental variables showed a significant relationship with either richness or abundance of pollinator species. Value on the upper triangle is the Pearson’s correlation coefficient and the \* refer to the p-value significance level; \*>0.05, \*\*>-.01, \*\*\*>0.0001.

**Table S1.** Linear mixed effects model to test for the effect of the surrounding landscape and climate conditions on pollinator species richness and abundance per orchard.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Species Richness** | | | **Abundance** | | |
| **Predictors** | **Estimates** | **CI** | **p** | **Estimates** | **CI** | **p** |
| (Intercept) | -2338.99 | -6728.07–2050.08 | 0.406 | -14570.7 | -32994.08–3852.7 | 0.573 |
| Annual Temp (°C) | 20.08 | -591.61–631.77 | 0.955 | -648.18 | -3129.22–1832.86 | 0.662 |
| Annual Precip (mm) | 0.17 | -1.43–1.77 | 0.856 | 1.45 | -5.11–8.00 | 0.731 |
| Grassland (%) | 18.11 | -66.01–102.24 | 0.714 | 211.32 | -124.81–547.45 | 0.38 |
| Agriculture (%) | 21.15 | -72.71–115.01 | 0.702 | 253.32 | -120.34–626.98 | 0.383 |
| Urban (%) | 25.6 | -21.20–72.40 | 0.396 | 210.76 | 24.78–396.73 | 0.255 |
| Forest (%) | 23.74 | -22.30–69.79 | 0.419 | 193.54 | 9.52–377.57 | 0.217 |
| **Random Effects (District)** | | |  |  |  |  |
| σ2 | 5716.51 | 89876.83 |  |  |  |  |
| τ00 | 0 | 11050.43 |  |  |  |  |
| ICC |  | 0.11 |  |  |  |  |
| N | 3 | 3 |  |  |  |  |
| Observations | 9 | 9 |  |  |  |  |
| Marginal R2 / Conditional R2 | 0.458 / NA | 0.513 / 0.566 |  |  |  |  |

**Table S2.** Linear mixed effects model to test for the effect pollinator abundance on mean apple weight (g).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Mean Weight** | | | **Mean Weight**  **(excluding total abundance)** | | |
| **Predictors** | **Estimates** | **CI** | **p** | **Estimates** | **CI** | **p** |
| (Intercept) | 58.73 | 50.93–66.54 | <0.001 | 62.8 | 57.78–67.81 | <0.001 |
| Total abundance | 0.05 | 0.04–0.05 | <0.001 |  |  |  |
| Hoverfly abundance |  |  |  | 0.07 | 0.06–0.08 | <0.001 |
| Honeybee abundance |  |  |  | 0.05 | 0.05–0.06 | <0.001 |
| **Random Effects** | | |  |  |  |  |
| σ2 | 6.53 | 8.12 |  |  |  |  |
| τ00 | 28.13 | 0 |  |  |  |  |
| ICC | 0.81 |  |  |  |  |  |
| N | 3 | 3 |  |  |  |  |
| Observations | 9 | 9 |  |  |  |  |
| Marginal R2 / Conditional R2 | 0.888 / 0.979 | 0.968 / NA |  |  |  |  |