

**Appendices to J Poll Ecol 36(11), Tissier et al.**

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Fecal sampling protocol to assess bumble bee health in conservation research

Mathilde L. Tissier, Cole Blair, Sarah MacKell, Lynn S. Adler, J. Scott MacIvor, Patrick Bergeron, Carolyn Callaghan, Geneviève Labrie, Sheila Colla, Valérie Fournier.

**This document includes:**

Table S1

Table S2

**Table S1: Number and proportion of species and castes of individual bumble bees captured in the four studies**. Most common species are *impatiens*, *ternarius* and *griseocollis*.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Studies | *Bombus* species  | N individuals | Relative abundance | Castes | N individuals | N faecal samples |
| Study 1 | *impatiens* | 33 | 68.8 | Queen | 3 |  |
| *ternarius* | 12 | 25.0 | Worker | 45 | 30 |
| *griseocollis* | 3 | 6.2 | Male | 0 |  |
| Study 2 | *impatiens* | 395 | 99.2 | Queen | 6 |  |
| *griseocollis* | 3 | 0.5 | Worker | 386 | 288 |
| Male | 2 |  |
| Study 3 | *ternarius* | 135 | 45.3 | Queen | 45 | 256 |
| *griseocollis* | 63 | 21.1 |
| *borealis* | 17 | 5.7 |
| *impatiens* | 15 | 5.0 | Worker | 245 |
| *terricola* | 11 | 3.7 |
| *sandersoni* | 6 | 2.0 |
| Unidentified *Psithyrus spp.* | 3 | 1.0 | Male | 3 |
| *rufocinctus* | 2 | 0.7 |
| *pensylvanicus* | 1 | 0.3 |
| NA | 45 | 15.1 | NA | 5 |
| Study 4 | *impatiens* | 92 | 47.4 | Queen | 192 | 163 |
| *bimaculatus* | 39 | 20.1 |
| *rufocinctus* | 19 | 9.8 |
| *auricomus* | 7 | 3.6 | Worker | 2 |
| *perplexus* | 7 | 3.6 |
| *fervidus* | 6 | 3.1 |
| *griseocollis* | 5 | 2.6 | Male | 0 |
| *citrinus* | 3 | 1.5 |
| *ternarius* | 2 | 1.0 |
| *terricola* | 1 | 0.5 | NA | 0 |
| *vagans* | 1 | 0.5 |
| Total four studies | 938 bumble bees captured | 737 |

**Table S2**: output of alternative GLMMs (binomial distribution with a logit function) investigating the effects of the castes on the faces collection success (with its ΔAIC compared to the model presented in the main manuscript looking at the effect of the method). The site and the species were included as random effects, while we included the Julian date and the cast as fixed effects.

|  |  |  |  |
| --- | --- | --- | --- |
| *Alt. Model - Cast effect (ΔAIC = 1.66)* | *F* | *df* | *P-value* |
| Constant | 1.021 | 4;926 | 0.396 |
| Cast | 1.345 | 3;926 | 0.258 |
| Julian date | 0.039 | 1;926 | 0.844 |