**Table S1.** Pesticide concentrations in bees by type.

| Sample Type | Pesticide | DF (%) | Mean±SD (ng/g) | 50th Percentile (ng/g) | 75th Percentile (ng/g) | Maximum (ng/g) |
|---|---|---|---|---|---|---|
| **Healthy bees (n=2375)** | *Insecticides* | | | | | |
| | Acetamiprid | 0 | LOD | LOD | LOD | LOD |
| | Chlorpyrifos | 3.58 | 0.29±3.01 | LOD | LOD | 14.0 |
| | Cypermethrin | 0 | LOD | LOD | LOD | LOD |
| | Dinotefuran | 0 | LOD | LOD | LOD | LOD |
| | Fipronil | 2.32 | 0.19±1.81 | LOD | LOD | 8.92 |
| | Indoxacarb | 0 | LOD | LOD | LOD | LOD |
| | *Herbicides* | | | | | |
| | Ametryn | 50.4 | 16.6±41.1 | 25.1 | 42.5 | 177 |
| | Glyphosate | 31.3 | 15.1±28.4 | LOD | 35.5 | 117 |
| | Oxadiazon | 47.0 | 20.7±40.8 | LOD | 60.1 | 172 |
| | Paraquat | 35.1 | 16.0±41.3 | LOD | 38.3 | 200 |
| | Pendimethalin | 46.0 | 19.8±39.7 | LOD | 42.8 | 193 |
| | *Fungicide* | | | | | |
| | Dimethomorph | 32.9 | 7.28±15.3 | LOD | 22.2 | 63.2 |
| | Famoxadone | 29.2 | 6.03±13.3 | LOD | 15.3 | 62.5 |
| | Tebuconazole | 29.2 | 5.03±20.4 | LOD | 38.2 | 50.9 |
| **Sick bees (n=2375)** | *Insecticides* | | | | | |
| | Acetamiprid | 37.2 | 5.43±14.2 | LOD | 23.3 | 51.2 |
| | Chlorpyrifos | 23.1 | 4.63±10.9 | LOD | LOD | 55.6 |
| | Cypermethrin | 8.59 | 3.15±11.4 | LOD | LOD | 56.0 |
| | Dinotefuran | 24.8 | 3.09±7.53 | LOD | LOD | 38.8 |
| | Fipronil | 22.8 | 5.97±19.8 | LOD | LOD | 107 |
| | Indoxacarb | 18.3 | 4.09±14.3 | LOD | LOD | 81.7 |
| | *Herbicides* | | | | | |
| | Ametryn | 56.4 | 49.9±96.6 | 86.8 | 114 | 406 |
| | Glyphosate | 39.3 | 41.0±107 | LOD | 108 | 480 |
| | Oxadiazon | 56.5 | 48.8±123 | 101 | 121 | 582 |
| | Paraquat | 45.0 | 42.7±87.3 | LOD | 89.7 | 402 |
| | Pendimethalin | 50.1 | 32.2±69.3 | 51.1 | 82.2 | 297 |
| | *Fungicide* | | | | | |
| | Dimethomorph | 37.1 | 15.9±37.7 | LOD | 40.7 | 165 |
| | Famoxadone | 46.7 | 14.8±29.9 | LOD | 33.2 | 129 |
| | Tebuconazole | 41.5 | 13.3±40.1 | LOD | 115 | 153 |
| **Dead bees (n=2327)** | *Insecticides* | | | | | |
| | Acetamiprid | 45.8 | 28.8±39.7 | LOD | 63.2 | 148 |
| | Chlorpyrifos | 30.7 | 28.6±71.2 | LOD | 118 | 483 |
| | Cypermethrin | 20.4 | 19.6±58.5 | LOD | LOD | 396 |
| | Dinotefuran | 33.2 | 16.6±69.3 | LOD | 106 | 265 |
| | Fipronil | 42.8 | 43.6±125 | LOD | 135 | 684 |
| | Indoxacarb | 32.4 | 13.3±37.5 | LOD | 35.5 | 200 |
| | *Herbicides* | | | | | |
| | Ametryn | 60.5 | 101±193 | 137.52 | 177 | 1003 |
| | Glyphosate | 47.6 | 72.7±106 | LOD | 173 | 593 |
| | Oxadiazon | 59.2 | 84.2±143 | 174.7 | 204 | 703 |
| | Paraquat | 50.3 | 80.2±144 | 143.25 | 203 | 631 |
| | Pendimethalin | 53.7 | 50.6±96.9 | 81.71 | 116 | 404 |
| | *Fungicide* | | | | | |
| | Dimethomorph | 45.2 | 18.2±40.3 | LOD | 45.3 | 183 |
| | Famoxadone | 51.8 | 21.5±37.9 | 40.65 | 52.6 | 145 |
| | Tebuconazole | 42.2 | 19.6±66.3 | LOD | 141 | 188 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Broods (n=1177)** | *Insecticides* | | | | | |
| | Acetamiprid | 3.40 | 0.23±1.42 | LOD | LOD | 6.74 |
| | Chlorpyrifos | 12.2 | 0.73±2.88 | LOD | LOD | 14.8 |
| | Cypermethrin | 0 | LOD | LOD | LOD | LOD |
| | Dinotefuran | 0 | LOD | LOD | LOD | LOD |
| | Fipronil | 6.29 | 0.50±2.79 | LOD | LOD | 14.7 |
| | Indoxacarb | 0 | LOD | LOD | LOD | LOD |
| | *Herbicides* | | | | | |
| | Ametryn | 19.4 | 3.33±9.25 | LOD | LOD | 56.7 |
| | Glyphosate | 11.3 | 2.06±9.03 | LOD | LOD | 42.3 |
| | Oxadiazon | 26.7 | 5.85±17.5 | LOD | 15.3 | 79.4 |
| | Paraquat | 11.8 | 3.31±7.25 | LOD | LOD | 38.5 |
| | Pendimethalin | 31.4 | 7.01±15.3 | LOD | 12.3 | 79.8 |
| | *Fungicid*e | | | | | |
| | Dimethomorph | 28.2 | 4.06±10.7 | LOD | 10.1 | 58.4 |
| | Famoxadone | 12.1 | 1.55±4.91 | LOD | LOD | 27.0 |
| | Tebuconazole | 21.4 | 2.56±8.32 | LOD | LOD | 45.5 |

DF: Detection frequency; LOD: Limit of detection; SD: Standard deviation.

**Table S2.** Pesticide concentrations in hive products by type.

| Sample Type | Pesticide | DF (%) | Mean±SD (ng/g) | 50th Percentile (ng/g) | 75th Percentile (ng/g) | Maximum (ng/g) |
|---|---|---|---|---|---|---|
| **Pollen (n=1580)** | *Insecticides* | | | | | |
| | Acetamiprid | 56.7 | 62.7±88.8 | 89.7 | 144 | 378 |
| | Chlorpyrifos | 47.8 | 70.1±154 | LOD | 253 | 787 |
| | Cypermethrin | 38.4 | 27±55.3 | LOD | 84.1 | 256 |
| | Dinotefuran | 54.7 | 29.2±53.3 | 75.5 | 106 | 270 |
| | Fipronil | 51.4 | 76.9±175 | 153 | 354 | 703 |
| | Indoxacarb | 40.6 | 48.3±195 | LOD | 368 | 807 |
| | *Herbicides* | | | | | |
| | Ametryn | 64.0 | 72.2±121 | 100 | 155 | 532 |
| | Glyphosate | 51.0 | 69.3±134 | 128 | 162 | 587 |
| | Oxadiazon | 53.1 | 62.5±175 | 130 | 158 | 758 |
| | Paraquat | 53.4 | 80±104 | 122 | 189 | 506 |
| | Pendimethalin | 55.6 | 50.9±67.4 | 92.6 | 121.3 | 309 |
| | *Fungicide* | | | | | |
| | Dimethomorph | 41.5 | 20.7±34.2 | LOD | 53.2 | 178 |
| | Famoxadone | 53.1 | 19.8±37.3 | 35.5 | 41.2 | 197 |
| | Tebuconazole | 44.1 | 20.9±72.1 | LOD | 178 | 236 |
| **Beeswax (n=2158)** | *Insecticides* | | | | | |
| | Acetamiprid | 51.4 | 48.3±54.7 | 68.3 | 90.7 | 322 |
| | Chlorpyrifos | 37.5 | 34.6±90.9 | LOD | 109 | 471 |
| | Cypermethrin | 23.6 | 20.0±52.6 | LOD | LOD | 257 |
| | Dinotefuran | 47.3 | 20.5±80.1 | LOD | 128 | 312 |
| | Fipronil | 40.1 | 56.0±144 | LOD | 172 | 651 |
| | Indoxacarb | 35.7 | 21.0±54.2 | LOD | 55.2 | 299 |
| | *Herbicides* | | | | | |
| | Ametryn | 54.8 | 35.2±43.4 | 55.4 | 91.4 | 211 |
| | Glyphosate | 39.2 | 39.3±63.7 | LOD | 91.5 | 300 |
| | Oxadiazon | 50.1 | 34.6±55.9 | 71.8 | 98.5 | 254 |
| | Paraquat | 39.9 | 32.9±31.6 | LOD | 57.9 | 165 |
| | Pendimethalin | 46.6 | 28.0±33.7 | LOD | 68.8 | 179 |
| | *Fungicide* | | | | | |
| | Dimethomorph | 46.0 | 19.1±27.9 | LOD | 47.7 | 153 |
| | Famoxadone | 48.1 | 16.2±33.9 | LOD | 30.1 | 142 |
| | Tebuconazole | 39.8 | 18.0±57.8 | LOD | 141 | 188 |
| **Honey (n=1379)** | *Insecticides* | | | | | |
| | Acetamiprid | 37.6 | 5.85±17.8 | LOD | 10.6 | 73.3 |
| | Chlorpyrifos | 28.5 | 5.89±19.2 | LOD | 27.9 | 115 |
| | Cypermethrin | 4.28 | 1.91±5.02 | LOD | LOD | 24.7 |
| | Dinotefuran | 18.1 | 3.18±19.3 | LOD | LOD | 91.3 |
| | Fipronil | 29.3 | 8.32±30.2 | LOD | 58.9 | 103 |
| | Indoxacarb | 22.6 | 4.07±17.3 | LOD | LOD | 77.4 |
| | *Herbicides* | | | | | |
| | Ametryn | 39.2 | 4.85±10.5 | LOD | 8.23 | 64.5 |
| | Glyphosate | 17.9 | 6.07±11.3 | LOD | LOD | 59.3 |
| | Oxadiazon | 34.6 | 6.80±10.7 | LOD | 15.5 | 63.1 |
| | Paraquat | 12.6 | 3.44±8.51 | LOD | LOD | 35.3 |
| | Pendimethalin | 41.6 | 10.6±19.1 | LOD | 23.6 | 95.1 |
| | *Fungicide* | | | | | |
| | Dimethomorph | 37.1 | 5.67±10.7 | LOD | 15.2 | 63.5 |
| | Famoxadone | 16.1 | 2.98±14.5 | LOD | LOD | 61.8 |
| | Tebuconazole | 29.9 | 4.71±15.6 | LOD | 37.1 | 49.4 |
| **Royal Jelly (n=1225)** | *Insecticides* | | | | | |
| | Acetamiprid | 3.7 | 0.93±11.0 | LOD | LOD | 50.0 |

| | | | | | |
|---|---|---|---|---|---|
| Chlorpyrifos | 18.1 | 2.68±8.38 | LOD | LOD | 34.4 |
| Cypermethrin | 2.12 | 0.79±6.07 | LOD | LOD | 23.8 |
| Dinotefuran | 4.90 | 0.22±2.15 | LOD | LOD | 12.1 |
| Fipronil | 13.9 | 3.16±15.9 | LOD | LOD | 74.9 |
| Indoxacarb | 3.76 | 0.49±2.81 | LOD | LOD | 15.1 |
| *Herbicides* | | | | | |
| Ametryn | 29.4 | 5.21±14.2 | LOD | 8.84 | 66.8 |
| Glyphosate | 14.8 | 3.97±5.01 | LOD | LOD | 24.7 |
| Oxadiazon | 36.5 | 7.03±12.04 | LOD | 14.3 | 64.2 |
| Paraquat | 9.31 | 2.6±5.29 | LOD | LOD | 30.1 |
| Pendimethalin | 42.0 | 8.02±12.7 | LOD | 15.5 | 61.4 |
| *Fungicid*e | | | | | |
| Dimethomorph | 21.1 | 3.72±14.0 | LOD | LOD | 76.0 |
| Famoxadone | 8.90 | 1.34±7.88 | LOD | LOD | 42.3 |
| Tebuconazole | 17.4 | 2.51±9.52 | LOD | LOD | 42.5 |

DF: Detection frequency; LOD: Limit of detection; SD: Standard deviation.

**Table S3.** Pesticide concentrations in environmental dust by distance.

| Sample Location | Pesticide | DF (%) | Mean±SD (ng/g) | 50th Percentile (ng/g) | 75th Percentile (ng/g) | Maximum (ng/g) |
|---|---|---|---|---|---|---|
| **0 – 50 m (n=758)** | *Insecticides* | | | | | |
| | Acetamiprid | 27.0 | 6.06±32.2 | LOD | 41.3 | 67.9 |
| | Chlorpyrifos | 25.7 | 10.2±30.2 | LOD | 32.3 | 119 |
| | Cypermethrin | 13.7 | 5.49±17.1 | LOD | LOD | 72.9 |
| | Dinotefuran | 32.5 | 7.28±38.8 | LOD | 67.9 | 122 |
| | Fipronil | 33.9 | 9.98±25.8 | LOD | 35.5 | 79.9 |
| | Indoxacarb | 22.6 | 6.16±17.7 | LOD | LOD | 61.1 |
| | *Herbicides* | | | | | |
| | Ametryn | 47.2 | 12.7±29.4 | LOD | 21.5 | 111 |
| | Glyphosate | 35.6 | 10.2±30.7 | LOD | 24.2 | 126 |
| | Oxadiazon | 40.5 | 13.7±28.7 | LOD | 31.5 | 105 |
| | Paraquat | 39.1 | 8.45±20.2 | LOD | 17.7 | 62.7 |
| | Pendimethalin | 43.1 | 10.2±28.9 | LOD | 22.3 | 118 |
| | *Fungicide* | | | | | |
| | Dimethomorph | 39.2 | 10.6±29.8 | LOD | 25.5 | 133 |
| | Famoxadone | 43.4 | 9.03±22.0 | LOD | 16.2 | 93.4 |
| | Tebuconazole | 42.1 | 10.1±49.7 | LOD | 96.7 | 129 |
| **50 – 150 m (n=748)** | *Insecticides* | | | | | |
| | Acetamiprid | 44.3 | 8.03±16.4 | LOD | 19.4 | 56.3 |
| | Chlorpyrifos | 41.0 | 11.1±26.2 | LOD | 34.5 | 85.9 |
| | Cypermethrin | 20.7 | 7.23±10.5 | LOD | LOD | 44.6 |
| | Dinotefuran | 41.8 | 7.93±33.9 | LOD | 57.7 | 79.4 |
| | Fipronil | 33.3 | 8.57±24.6 | LOD | 27.6 | 72.4 |
| | Indoxacarb | 26.6 | 7.82±14.2 | LOD | 19.5 | 46.0 |
| | *Herbicides* | | | | | |
| | Ametryn | 44.8 | 11.1±21.6 | LOD | 18.8 | 114 |
| | Glyphosate | 32.5 | 10.6±21.2 | LOD | 21.2 | 109 |
| | Oxadiazon | 44.8 | 10.6±28.5 | LOD | 21.9 | 122 |
| | Paraquat | 36.2 | 12.5±70.7 | LOD | 29.1 | 637 |
| | Pendimethalin | 43.1 | 12.8±40.9 | LOD | 20.7 | 188 |
| | *Fungicide* | | | | | |
| | Dimethomorph | 44.0 | 13.1±20.8 | LOD | 21.3 | 187 |
| | Famoxadone | 42.5 | 12.8±22.1 | LOD | 27.3 | 99.3 |
| | Tebuconazole | 43.1 | 13.5±63.3 | LOD | 120 | 159 |
| **150 – 500 m (n=741)** | *Insecticides* | | | | | |
| | Acetamiprid | 44.1 | 23.9±30.9 | LOD | 63.2 | 153 |
| | Chlorpyrifos | 42.9 | 28.5±79.6 | LOD | 106 | 413 |
| | Cypermethrin | 21.9 | 20.9±27.8 | LOD | LOD | 165 |
| | Dinotefuran | 53.9 | 27.6±60.1 | 79.7 | 105 | 186 |
| | Fipronil | 34.6 | 23.1±40.5 | LOD | 60.8 | 165 |
| | Indoxacarb | 29.7 | 18.6±31.7 | LOD | 39.7 | 160 |
| | *Herbicides* | | | | | |
| | Ametryn | 54.4 | 21±40.2 | 34.9 | 44.6 | 200 |
| | Glyphosate | 36.6 | 14.8±30.6 | LOD | 39.4 | 109 |
| | Oxadiazon | 46.3 | 20.8±41.9 | LOD | 52.8 | 158 |
| | Paraquat | 36.8 | 19.3±28.9 | LOD | 33.3 | 97.6 |
| | Pendimethalin | 45.9 | 24.3±41.9 | LOD | 57.1 | 190 |
| | *Fungicide* | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Dimethomorph | 43.7 | 16.2±34.9 | LOD | 35.2 | 163 |
| | Famoxadone | 52.2 | 16.4±30.2 | 25.5 | 37.6 | 107 |
| | Tebuconazole | 47.1 | 17.4±73.3 | LOD | 159 | 211 |
| **500 – 1500 m (n=745)** | *Insecticides* | | | | | |
| | Acetamiprid | 47.5 | 26.3±50.8 | LOD | 55.3 | 252 |
| | Chlorpyrifos | 39.3 | 25.7±52.5 | LOD | 78.9 | 151 |
| | Cypermethrin | 20.1 | 21.2±65.6 | LOD | LOD | 134 |
| | Dinotefuran | 51.0 | 19.9±71.0 | 50.1 | 151 | 249 |
| | Fipronil | 41.1 | 30.1±53.0 | LOD | 94.3 | 180 |
| | Indoxacarb | 37.3 | 18.1±29.7 | LOD | 41.2 | 113 |
| | *Herbicides* | | | | | |
| | Ametryn | 54.2 | 25.2±45.4 | 44.0 | 68.0 | 193 |
| | Glyphosate | 41.3 | 20±41.0 | LOD | 47.0 | 182 |
| | Oxadiazon | 46.6 | 23.1±39.1 | LOD | 59.0 | 122 |
| | Paraquat | 39.7 | 23.7±35.4 | LOD | 47.5 | 129 |
| | Pendimethalin | 49.1 | 28.5±59.5 | LOD | 70.8 | 212 |
| | *Fungicid*e | | | | | |
| | Dimethomorph | 43.5 | 23.2±53.6 | LOD | 50.6 | 196 |
| | Famoxadone | 51.7 | 23.6±43.3 | 39.9 | 50.1 | 167 |
| | Tebuconazole | 44.8 | 25.5±92.5 | LOD | 213 | 283 |
| **1500 – 2500 m (n=745)** | *Insecticides* | | | | | |
| | Acetamiprid | 50.4 | 18.6±41.5 | 32.3 | 40.1 | 142 |
| | Chlorpyrifos | 40.5 | 32.1±76.3 | LOD | 109 | 493 |
| | Cypermethrin | 23.2 | 17.6±21.1 | LOD | LOD | 120 |
| | Dinotefuran | 47.7 | 20.1±79.2 | LOD | 151 | 304 |
| | Fipronil | 36.3 | 18.0±43.2 | LOD | 59.6 | 219 |
| | Indoxacarb | 25.7 | 15.7±26.9 | LOD | 40.1 | 149 |
| | *Herbicides* | | | | | |
| | Ametryn | 54.3 | 19.1±27.9 | 25.9 | 40.3 | 101 |
| | Glyphosate | 35.9 | 13.3±30.1 | LOD | 39.6 | 125 |
| | Oxadiazon | 47.8 | 16.0±27.2 | LOD | 25.2 | 126 |
| | Paraquat | 30.3 | 12.7±16.9 | LOD | 21.5 | 55.0 |
| | Pendimethalin | 47.5 | 20.6±38.0 | LOD | 54.2 | 132 |
| | *Fungicid*e | | | | | |
| | Dimethomorph | 47.2 | 25.0±35.2 | LOD | 70.1 | 256 |
| | Famoxadone | 50.4 | 23.1±40.1 | 35.5 | 57.2 | 184 |
| | Tebuconazole | 49.0 | 22.0±60.7 | LOD | 128 | 170 |

DF: Detection frequency; LOD: Limit of detection; SD: Standard deviation.