**Plots showing:**

* Raw data (transparent dots, their size is scaled to sample size precision)
* Model estimates (big dots)
* 95% confidence intervals
* ‘k’ provides number of effect sizes

**1 – Overall effect**

Chart

Description automatically generated with low confidence

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Estimate** | **95%CI** | | **I2 total** | **I2 study ID** | **I2 species** | **I2 residual** |
| Intercept (SMD) | -0.661 | -1.448 | 0.126 | 0.970 | 0.445 | 0.000 | 0.526 |

I also checked for publication bias following new methods explained in this pre-print, <https://doi.org/10.32942/osf.io/k7pmz>, and found no evidence for small-study effects or time-lag effects (two types of publication bias).

**2 – Effect by biomarker**

**Chart, scatter chart

Description automatically generated**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Biomarker** | **estimate** | **95%CI** | | **r2** |
| CAT | -0.348 | -1.212 | 0.516 | 0.016 |
| ***GPx*** | ***-1.356*** | ***-2.406*** | ***-0.305*** |
| ***GR*** | ***-1.585*** | ***-2.937*** | ***-0.233*** |
| GSH | -0.613 | -1.580 | 0.354 |
| MDA | -0.891 | -1.819 | 0.037 |
| SOD | -0.420 | -1.317 | 0.477 |

**3 – Effect by pollutant**

**Chart, scatter chart

Description automatically generated**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Pollutant** | **estimate** | **95%CI** | | **r2** |
| ***Fungicide*** | ***-4.403*** | ***-6.215*** | ***-2.590*** | 0.222 |
| Heavy Metal | -0.311 | -1.829 | 1.208 |
| Herbicide | 0.613 | -0.524 | 1.750 |
| Insecticide | -0.392 | -3.037 | 2.254 |
| Pesticide | -0.486 | -1.650 | 0.677 |
| Wastewater contaminants | -0.671 | -2.122 | 0.780 |

**4 – Effect by developmental stage**

**Chart, scatter chart

Description automatically generated**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Developmental stage** | **estimate** | **95%CI** | | **r2** |
| Embryo | 0.402 | -1.543 | 2.347 | 0.012 |
| Tadpole | -0.936 | -1.872 | 0.001 |
| Adult | -0.593 | -2.444 | 1.258 |