Supplementary material for:

Effect of Sublethal Concentrations of Agrochemicals on Zooplankton Populations: A Meta-analysis study.

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Tables

Model	k	ES	SMD	z	p(z)	Q	p(Q)	t^2	I^2	H^2	95%CI	Bias	pBias	Half	pHalf	NFs
All data	1036	**-1.59**	0.06	**-26.87****	<.0001	3392.21**	<.0001	2.48	73.69%	3.80	-1.71; -1.48	-31.03**	<.0001	841575	<.0001	6989
Removing outliers	669	**-1.42**	0.04	**-34.19****	<.0001	901.63**	<.0001	0.24	25.91%	1.35	-1.50; -1.34	-31.03**	<.0001	841575	<.0001	4199

Table 1. Summary of the meta-analysis on the effect of sublethal concentrations of agrochemicals on abundance in zooplankton populations across all data points (All data) and after the removal of outlier data (Removing outliers).

Note: **k:** Number of data points; **ES:** Average Effect Size based on the difference between the Means of the Control vs. Exposed populations; **SMD:** Standard Error associated with the Mean difference; **z:** Standardized effect size. 95%-C.I.: 95% Confidence Interval constructed from the bounds around the Difference; **Q:** Q-statistic expressing the weighted sum of squared differences between study means and the fixed-effects estimate; **t^2:** underlying variability between studies; **I^2:** Proportion of variance explained by the analysed variable attributable to heterogeneity between studies and not sampling error; **H^2:** ratio of total variability in effect size estimates to sampling variability. Among all heterogeneity statistics, I^2 stands out as it is the only one independent of the number of studies and precision (study size); **Bias:** Egger's significance test on the regression model intercept parameter of standardized effect sizes on precision; **Half:** Median Effect Size; **pHalf:** Confidence Interval of the Median; **NFs:** fail-safe N index, the number of studies with an average of null results that would need to be added to the given set of observed results to reduce the observed significance level to a particular alpha level (e.g., 0.05). ** $p<0.01$. * $p<0.05$.

Variables	Group Differences/ Residual Heterogeneity			Moderator Effect		
	df	**QM test**	p	**df**	**QM test**	p
Laboratory	16	301.6	**<.0001**	16	305.44	**<.0001**
Agrochemical	3	57.84	**<.0001**	3	41.18	**<.0001**
Agrochemical composition	14	162.09	**<.0001**	14	150.88	**<.0001**
Concentration range	2	94.96	**<.0001**	1	4.75	**.0292**
Experiment	2	30.45	**<.0001**	2	17.24	**.0002**
Taxonomic order	7	50.14	**<.0001**	7	43.70	**<.0001**
Species	22	206.29	**<.0001**	22	206.68	**<.0001**
Time	667	901.19	**<.0001**	1	0.56	.4525

Table 2. Summary of the analysis of moderator variables. Subgroups analysis, or group differences within each categorical variable (rows one to seven), have been examined through the Group Differences test. In comparison, heterogeneity in the meta-regression context for the time variable was assessed using the Residual Heterogeneity test (eighth row). Furthermore, the possible moderator effect of each variable is evaluated using a specific statistical test in all cases, for both categorical and time variables (columns on the right-hand side of the table).

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Variable	Levels	k	ES	SMD	z	p(z)	95%-CI	Q	p(Q)	t^2	I^2	H^2
	Asan, South Korea	3	-0.80	0.27	-2.98**	.0029	[-1.33,-0.27]	0.48	0.7852	0.00	0.00	1.00
	Bangladesh	60	-0.93	0.11	-8.09**	<.0001	[-1.15,-0.70]	47.33	0.8625	0.00	0.00	1.00
	Beijing, China	143	-1.55	0.10	-15.86**	<.0001	[-1.74,-1.36]	87.94	0.9999	0.00	0.00	1.00
	Bracknell, United Kingdom	33	-0.30	0.14	-2.23*	.0256	[-0.57,-0.04]	5.13	1.0000	0.00	0.00	1.00
	Frederiksberg, Denmark	190	-1.62	0.08	-20.38**	<.0001	[-1.77,-1.46]	216.50	0.0830	0.22	0.13	1.15
	Graville, USA	11	-1.08	0.23	-4.59**	<.0001	[-1.54,-0.62]	9.48	0.4871	0.00	0.00	1.00
	Guangzhou, China	42	-2.42	0.22	-11.03**	<.0001	[-2.84,-1.99]	62.46*	0.0170	0.71	0.34	1.52
	Jaén, Spain	7	-1.08	0.27	-3.96**	.0001	[-1.61,-0.54]	7.59	0.2697	0.08	0.21	1.27
Laboratory	Konstanz, Germany	37	-0.69	0.11	-6.45**	<.0001	[-0.91,-0.48]	7.90	1.0000	0.00	0.00	1.00
	Lund, Sweden	1	-3.13	1.22	-2.57*	.0102	[-5.52,-0.74]	0.00	-	-	-	-
	Mayote Island, Mozambique	12	-0.97	0.27	-3.64**	.0003	[-1.49,-0.44]	13.38	0.2695	0.02	0.18	1.22
	New York, USA	28	-2.67	0.31	-8.68**	<.0001	[-3.27,-2.07]	70.57**	0.0000	1.54	0.62	2.61
	Pennsylvania Furlance, USA	47	-1.11	0.11	-9.79**	<.0001	[-1.33,-0.89]	35.56	0.8672	0.00	0.00	1.00
	Pittsburgh, USA	6	-2.17	0.77	-2.82**	.0048	[-3.68,-0.66]	14.20*	0.0144	2.25	0.65	2.84
	Renkum, Netherlands	36	-3.40	0.22	-15.68**	<.0001	[-3.82,-2.97]	15.89	0.9977	0.00	0.00	1.00
	Santa Fé, Argentina	11	-2.86	0.29	-9.71**	<.0001	[-3.44,-2.28]	1.63	0.9985	0.00	0.00	1.00
	Vancouver, Canadá	2	-0.41	0.51	-0.80	.4227	[-1.40, 0.59]	0.15	0.6958	0.00	0.00	1.00
	Fertiliser	3	-0.52	0.42	-1.23	.2179	[-1.35, 0.31]	1.45	0.4843	0.00	0.00	1.00
Agrochemical	Fungicide	7	-1.03	0.22	-4.74**	<.0001	[-1.45,-0.60]	7.17	0.3050	0.00	0.16	1.20
	Herbicide	67	-0.77	0.10	-7.81**	<.0001	[-0.96,-0.57]	65.49	0.4947	0.00	0.00	1.00
	Insecticide	592	-1.54	0.05	-33.65**	<.0001	[-1.63,-1.45]	779.84**	0.0000	0.26	0.24	1.32
	Carbamate	22	-1.15	0.18	-6.56**	<.0001	[-1.50,-0.81]	28.16	0.1358	0.00	0.25	1.34
	Chloroacetanilide	12	-0.77	0.21	-3.60**	.0003	[-1.18,-0.35]	2.58	0.9952	0.00	0.00	1.00
	Chlorothalonil	1	-0.59	0.46	-1.29	.1954	[-1.49, 0.30]	0.00	-	-	-	-
	Copper sulphate	5	-1.32	0.33	-4.07**	<.0001	[-1.96,-0.69]	5.10	0.2773	0.10	0.22	1.27
	Diamide	143	-1.55	0.10	-15.86**	<.0001	[-1.74,-1.36]	87.94	0.9999	0.00	0.00	1.00
	Dicloruro-dimetil-bipiridilo	5	-1.71	0.57	-2.98**	.0029	[-2.84,-0.59]	6.43	0.1695	0.64	0.38	1.61
Agrochemical composition	dimetilditiocarbamato+Zn	1	-0.78	0.46	-1.68	.0922	[-1.69, 0.13]	0.00	-	-	-	-
	Diuron	6	-0.67	0.30	-2.27*	.0232	[-1.25,-0.09]	3.36	0.6445	0.00	0.00	1.00
	Glyphosate	3	-0.80	0.46	-1.72	.0848	[-1.71, 0.11]	2.52	0.2835	0.08	0.21	1.26
	Imidazole	26	-0.48	0.17	-2.77**	.0055	[-0.81,-0.14]	31.61	0.1695	0.00	0.21	1.26
	Neonicotinoid	79	-1.83	0.19	-9.50**	<.0001	[-2.21,-1.46]	207.41**	0.0000	1.82	0.62	2.66
	Nitrate	3	-0.52	0.42	-1.23	.2179	[-1.35, 0.31]	1.45	0.4843	0.00	0.00	1.00
	Organophosphate	126	-1.00	0.07	-14.18**	<.0001	[-1.14,-0.86]	124.34	0.5000	0.00	0.00	1.00
	Pyrethroid	221	-1.98	0.07	-26.78**	<.0001	[-2.13,-1.84]	231.45	0.2850	0.14	0.05	1.05
	Triazine	16	-0.97	0.19	-5.08**	<.0001	[-1.35,-0.60]	12.46	0.6437	0.00	0.00	1.00
Concentration Range	1	307	-1.50	0.06	-24.56**	<.0001	[-1.62,-1.38]	381.06**	0.0022	0.22	0.20	1.25
	3	125	-2.26	0.13	-18.01**	<.0001	[-2.51,-2.02]	169.46**	0.0042	0.57	0.27	1.37
	2	237	-1.02	0.06	-18.52**	<.0001	[-1.13,-0.91]	260.52	0.1309	0.00	0.09	1.10
	Acute test	3	-0.80	0.27	-2.98**	.0029	[-1.33,-0.27]	0.48	0.7852	0.00	0.00	1.00
Experiment	Mesocosms	360	-1.64	0.06	-25.32**	<.0001	[-1.77,-1.52]	532.58**	0.0000	0.44	0.33	1.48
	Microcosms	306	-1.22	0.05	-23.41**	<.0001	[-1.32,-1.12]	347.64*	0.0466	0.04	0.12	1.14
	Anomopoda	8	-0.44	0.25	-1.73	.0836	[-0.94, 0.06]	0.55	0.9993	0.00	0.00	1.00
	Anostraca	3	-0.80	0.27	-2.98**	.0029	[-1.33,-0.27]	0.48	0.7852	0.00	0.00	1.00
	Cladocera	386	-1.54	0.05	-27.97**	<.0001	[-1.65,-1.43]	447.88*	0.0147	0.15	0.14	1.16
Taxonomic Order	Copepoda	141	-1.13	0.08	-13.69**	<.0001	[-1.29,-0.97]	215.67**	0.0000	0.23	0.35	1.54
	Nauplii	2	-1.30	0.81	-1.60	.1088	[-2.88, 0.29]	3.01	0.0830	0.88	0.67	3.01
	Oligochaeta	8	-2.45	0.39	-6.30**	<.0001	[-3.21,-1.69]	3.30	0.8558	0.00	0.00	1.00
	Ostracoda	23	-1.15	0.19	-6.09**	<.0001	[-1.52,-0.78]	15.42	0.8436	0.00	0.00	1.00
	Rotifera	98	-1.68	0.13	-13.36**	<.0001	[-1.92,-1.43]	161.63**	0.0000	0.56	0.40	1.67
	Acroperus harpae	10	-3.53	0.42	-8.47**	<.0001	[-4.35,-2.71]	2.12	0.9894	0.00	0.00	1.00
	Alona quadrangularis	45	-1.75	0.18	-9.88**	<.0001	[-2.09,-1.40]	6.15	1.0000	0.00	0.00	1.00
	Alona sp.	5	-0.86	0.30	-2.90**	.0037	[-1.45,-0.28]	1.17	0.8830	0.00	0.00	1.00
	Artemia sp.	3	-0.80	0.27	-2.98**	.0029	[-1.33,-0.27]	0.48	0.7852	0.00	0.00	1.00
	Ascomorpha	16	-3.07	0.31	-9.94**	<.0001	[-3.67,-2.46]	9.13	0.8705	0.00	0.00	1.00
	Bosmina sp.	13	-1.19	0.21	-5.62**	<.0001	[-1.61,-0.78]	2.69	0.9974	0.00	0.00	1.00
	Brachionus sp.	3	-0.92	0.48	-1.93	.0535	[-1.86, 0.01]	1.97	0.3742	0.05	0.00	1.00
	Calanoid sp.	9	-0.54	0.21	-2.50*	.0126	[-0.96,-0.12]	0.09	1.0000	0.00	0.00	1.00
	Ceriodaphnia sp.	13	-2.22	0.43	-5.15**	<.0001	[-3.07,-1.38]	23.77*	0.0219	1.18	0.50	1.98
	Chydori sp.	57	-0.99	0.11	-8.70**	<.0001	[-1.22,-0.77]	80.91*	0.0164	0.00	0.31	1.44
	Cyclops sp.	35	-0.85	0.13	-6.64**	<.0001	[-1.10,-0.60]	43.17	0.1348	0.00	0.21	1.27
Species	Daphnia sp.	54	-1.74	0.14	-12.55**	<.0001	[-2.02,-1.47]	55.84	0.3685	0.16	0.05	1.05
	Dero digitata	8	-2.45	0.39	-6.30**	<.0001	[-3.21,-1.69]	3.30	0.8558	0.00	0.00	1.00
	Diaphanosoma sp.	58	-0.95	0.13	-7.21**	<.0001	[-1.20,-0.69]	18.87	1.0000	0.00	0.00	1.00
	Diaptomus sp.	10	-0.28	0.25	-1.10	.2698	[-0.77, 0.22]	0.64	0.9999	0.00	0.00	1.00
	Keratella sp.	3	-1.66	0.55	-3.04**	.0024	[-2.74,-0.59]	0.18	0.9122	0.00	0.00	1.00
	Kerattella tropica	10	-2.29	0.51	-4.51**	<.0001	[-3.29,-1.30]	18.26*	0.0323	1.30	0.51	2.03
	Lecane lunaris	12	-2.74	0.41	-6.71**	<.0001	[-3.54,-1.94]	14.48	0.2075	0.57	0.24	1.32
	Moina sp.	1	-0.47	0.83	-0.57	.5720	[-2.09, 1.15]	0.00	-	-	-	-
	Nauplii	16	-1.26	0.22	-5.74**	<.0001	[-1.69,-0.83]	6.53	0.9695	0.00	0.00	1.00
	Simocephalus vetulus	45	-1.71	0.18	-9.31**	<.0001	[-2.07,-1.35]	35.59	0.8128	0.00	0.00	1.00
	Sinodiaptomus sarsi	8	-4.07	0.51	-8.01**	<.0001	[-5.06,-3.07]	0.84	0.9970	0.00	0.00	1.00
	Thermocyclops decipiens	5	-1.27	0.48	-2.64**	.0082	[-2.21,-0.33]	5.46	0.2429	0.27	0.27	1.37

Table 3. Extended Analysis of Moderator Variables.

Note: **k:** Number of data points; **ES:** Average Effect Size based on the difference between the Means of the Control vs. Exposed populations; **SMD:** Standard error associated with the Mean Difference; **z:** Standardized effect size. 95%-C.I.: 95% Confidence Interval constructed from the bounds around the difference; **Q:** Q-statistic expressing the weighted sum of squared differences between study means and the fixed-effects estimate; $\mathbf{t^2}$**:** underlying variability between studies; $\mathbf{I^2}$**:** Proportion of variance explained by the analysed variable attributable to heterogeneity between studies and not sampling error; $\mathbf{H^2}$**:** ratio of total variability in effect size estimates to sampling variability. Among all heterogeneity statistics, I^2 stands out as it is the only one independent of the number of studies and precision (study size).