

Supplementary information for

**EFFECTS OF THREE TEBUCONAZOLE NANOPESTICIDES ON THE SURVIVAL OF
*DAPHNIA MAGNA***

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Table S1: Aachener Daphnien Medium (ADaM).

The medium is prepared by adding synthetic sea salt and analytical grade chemicals to deionized water, as compiled in Table S1. Subsequently, it is aerated for 12 h to guarantee air saturation. Synthetic sea salt contains 7 macronutrients, 60 trace elements, 8 vitamins, 3 amino acids, 1 hormone, and natural colloids. By adding CaCl_2 and NaHCO_3 , the total hardness (2-5 0-2mmol/L), the Ca: Mg ratio (4:1).¹

Compounds	Quantity
Synthetic sea salt (Wimex hw Meersalz Bioelemente)	0.333 g/L
CaCl_2 solution, 0.8 mol/L ~ (117.6 g L ~ $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$)	2.3 ml/L
NaHCO_3 solution, 0.3 mol/ L ~ (25.2 g L ~ NaHCO_3)	2.2 ml/L
SeO_2 solution, 0.013 mol/ L ~ (1.4 g/L ~ SeO_2)	0.1 ml/L

Table S2. The total and free concentration (mg/L) of tebuconazole (TBZ) in poly- ϵ -caprolactone (PCL), after dilution in ADaM medium versus nominal (theoretical) concentration of TBZ at t=0 and t=48h. The values (in this table) are the mean \pm standard deviation (n=3).

	Nominal concentration (mg/L)	Total concentration (mg/L)		Free concentration (mg/L)	
		t=0 h	t=48 h	t=0 h	t= 48 h
C1	2.25	2.16 \pm 0.07	2.4 \pm 0.2	1.9 \pm 0.03	2.25 \pm 0.10
C2	4.50	4.2 \pm 0.07	4.0 \pm 0.2	3.40 \pm 0.15	3.77 \pm 0.50
C3	9.00	8.10 \pm 0.4	9.2 \pm 0.3	6.12 \pm 0.13	6.3 \pm 0.20
C4	18.00	17.46 \pm 0.2	18.57 \pm 0.8	7.2 \pm 0.64	8.7 \pm 0.20
C5	36.00	33.37 \pm 1.16	35.0 \pm 1.5	9.39 \pm 0.12	11.03 \pm 0.70

Table S3. The total and free concentration (mg/L) of tebuconazole (TBZ) in nanostructured lipid carrier (NLC) after dilution in ADaM medium versus nominal (theoretical) concentration of TBZ at t=0 and t=48h. The values (in this table) are the mean \pm standard deviation (n=3).

	Nominal concentration (mg/L)	Total concentration (mg/L)		Free concentration (mg/L)	
		t=0 h	t=48 h	t=0 h	t= 48 h
C1	2.25	2.02 \pm 0.02	2.41 \pm 0.07	2.05 \pm 0.03	2.485 \pm 0.05
C2	4.5	3.75 \pm 0.06	3.95 \pm 0.40	3.845 \pm 0.03	4.085 \pm 0.03
C3	9	7.94 \pm 0.6	8.58 \pm 0.40	7.65 \pm 0.07	7.855 \pm 0.05
C4	18	15.95 \pm 0.6	17.93 \pm 0.60	12.45 \pm 0.62	14.275 \pm 0.66
C5	36	30.48 \pm 0.6	34.46 \pm 1.50	19.85 \pm 0.94	20.825 \pm 0.41

Table S4. The total and free concentration (mg/L) of tebuconazole (TBZ) in poly(3-hydroxybutyrate) (PHB) after dilution in ADaM medium versus nominal (theoretical) concentration of TBZ. At t=0 and t=48h. The values (in this table) are the mean \pm standard deviation (n=2).

	Nominal concentration (mg/L)	Total concentration (mg/L)		Free concentration (mg/L)	
		t=0 h	t=48 h	t=0 h	t= 48 h
C1	2.25	3.23 \pm 0.35	2.07 \pm 0.20	2.50 \pm 0.10	2.07 \pm 0.20
C2	4.5	9.31 \pm 0.33	4.48 \pm 0.14	5.89 \pm 0.10	4.30 \pm 0.20
C3	9	16.42 \pm 1.94	10.42 \pm 1.21	10.50 \pm 0.70	10.60 \pm 0.60
C4	18	34.30 \pm 1.98	23.96 \pm 6.38	14.70 \pm 0.20	19.70 \pm 0.70
C5	36	180.93 \pm 58.49	62.04 \pm 10.39	22.13 \pm 0.60	27.10 \pm 1.60

Reference

1. Klittigen, B., Dulmer, U., Engels, M., & Ratre, H. T. (1994). Rapid Communication Adam, an Artificial Freshwater for the Culture of Zooplankton. *Science*, 28(3), 743–746.