

Table 1. Residual concentrations of DDT in sandy loam soil spiked with 20 mg DDT kg<sup>-1</sup> and soil contaminated with DDT >50 years ago incubated with 1 or 10 g nZVI kg<sup>-1</sup> for 7 and 30 days (spiked soil only) in soil slurries. Means associated with the same letter in each column are not significantly different (one way ANOVA, p<0.05, n=3)

7 days incubation, spiked soil				
	o+p DDT (mg kg <sup>-1</sup> )	DDD (mg kg <sup>-1</sup> )	DDE (mg kg <sup>-1</sup> )	Total DDT (mg kg <sup>-1</sup> )
Control	15.8 a	0.2 c	2.3 a	18.3 a
1 g nZVI	5.1 d	0.2 c	2.8 a	8.1 c
10 g nZVI	15.2 a	0.4 b	1.9 a	17.4 a
30 days incubation, spiked soil				
Control	16.1 a	0.4 b	0.04 c	17 a
1 g nZVI	7.6 c	0.2 c	0.02 c	7.9 c
10 g nZVI	10 b	0.9 a	0.04 c	10.9 b
7 days incubation, historically polluted soil				
Control	16.3 x	0.2 x	6.6 x	23.1 x
1 g nZVI	11.3 y	0.2 x	6.0 x	17.6 y
10 g nZVI	10.7 y	0.3 x	5.7 x	16.7 y

Table 2. Effects of DDT and/or nZVI on collembolan mortality (adult survival) and reproduction (juvenile numbers) in spiked soil after 7 and 30 days of incubations with 1 or 10 g nZVI kg<sup>-1</sup>.

	7 days		30 days	
	Adults	Juveniles	Adults	Juveniles
Soil without DDT (control)	7±1.4	68±12	8± 0.9	138±13
Soil with DDT	9±0.7	0	8±1.2	3±0.7
Soil with 1g nZVI, no DDT	0	0	4±0	0
Soil with 10 g nZVI, no DDT	0	0	2±0.7	0
Soil with 1g nZVI and DDT	0	0	4±0.7	0
Soil with 10g nZVI and DDT	0	0	2±0.7	0

Table 3. Effects of exposure to the aqueous phase or solid phase of soil suspension made of spiked or historically DDT-contaminated soil treated with nZVI for 7 or 30 d on ostracod mortality and growth inhibition (GI), (n=3).

	Water phase		Solid phase	
	Mortality %	GI %	Mortality %	GI %
Spiked soil after 7 days slurry incubation				
Soil without DDT	0	0	7 c	39 c
Soil with DDT	27 c	56 b	33 b	72 b
Soil with 1g nZVI kg <sup>-1</sup>	67 b	**	100 a	100 a
Soil with 10 g nZVI kg <sup>-1</sup>	100 a	100 a	100 a	100 a
Soil with 1g nZVI kg <sup>-1</sup> and DDT	100 a	100 a	100 a	100 a
Soil with 10 g nZVI kg <sup>-1</sup> and DDT	100 a	100 a	100 a	100 a
Spiked soil after 30 days slurry incubation				
Soil without DDT	7 c	17 c	7 c	7 b
Soil with DDT	27 b	-12 c	27 b	28 c
Soil with 1g nZVI	27 b	58 b	27 b	27 c
Soil with 10g nZVI	100 a	100 a	100 a	100 a
Soil with 1g nZVI kg <sup>-1</sup> and DDT	20 b	60 b	20 b	57 b
Soil 10g nZVI kg <sup>-1</sup> and DDT	100 a	100 a	100 a	100 a
Aged DDT-contaminated soil after 7 days slurry incubation				
Soil without nZVI	7 c	42 c	33 b	51 b
Soil with 1 g nZVI kg <sup>-1</sup>	23 b	75 b	100 a	100 a
Soil with 10 g nZVI kg <sup>-1</sup>	100 a	100 a	100 a	100 a

\*\* High mortality invalid for inhibition measurement

Table 4. EC<sub>50</sub> and LC<sub>50</sub>-values of components from nZVI contributing to ostracod toxicity.

	EC <sub>50</sub>	LC <sub>50</sub>
DDT (mg kg <sup>-1</sup> )	11.5	-
nZVI (mg L <sup>-1</sup> )	36	77
Fe <sup>2+</sup> (mg L <sup>-1</sup> )	19	13

Table 5. Iron in the aqueous and solid phases of slurries from spiked or historically DDT-contaminated soils after 7 and 30 days incubation with nZVI (mean  $\pm$  SD, n=3).

	Water phase		Solid phase	
	Fe(II) (mg L <sup>-1</sup> )	Fe(III) (mg L <sup>-1</sup> )	Fe(II) (mg kg <sup>-1</sup> )	Fe(III) (mg kg <sup>-1</sup> )
7 days				
Control	6.6 $\pm$ 0.5	0.33 $\pm$ 0.6	31 $\pm$ 2.5	82 $\pm$ 30
1 g nZVI kg <sup>-1</sup>	7.2 $\pm$ 0.1	1.4 $\pm$ 0.2	34 $\pm$ 4.4	136 $\pm$ 39
10 g nZVI kg <sup>-1</sup>	10 $\pm$ 0.2	2.3 $\pm$ 0.1	102 $\pm$ 7	1042 $\pm$ 61
30 days				
Control	4.9 $\pm$ 0.2	0,18 $\pm$ 0.3	37 $\pm$ 2	175 $\pm$ 28
1 g nZVI kg <sup>-1</sup>	6.1 $\pm$ 0.1	3.1 $\pm$ 0.7	45 $\pm$ 8	193 $\pm$ 46
10 g nZVI kg <sup>-1</sup>	7 $\pm$ 0.8	2.8 $\pm$ 0.03	148 $\pm$ 24	1102 $\pm$ 72
DDT-contaminated soil after 7 days				
Control	6.8 $\pm$ 0.3	0.26 $\pm$ 0.2	59 $\pm$ 1.3	242 $\pm$ 15
1 g nZVI kg <sup>-1</sup>	6.9 $\pm$ 0.1	0.62 $\pm$ 0.15	99 $\pm$ 2	348 $\pm$ 5
10 g nZVI kg <sup>-1</sup>	8.1 $\pm$ 0.4	2.2 $\pm$ 0.2	205 $\pm$ 11	1471 $\pm$ 244