



The Impact of Permethrin and Cypermethrin on Plants, Soil Enzyme Activity, and Microbial Communities

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Table S1. Enzyme activity in 1 kg d.m. soil in 1 hour.

Object	Deh	Cat	Ure	Pac	Pal	Aryl	Glu	BA
Unsown soil								
uC	1.388 ^a	0.115 ^a	0.173 ^a	3.026 ^a	0.586 ^a	0.085 ^a	0.294 ^a	5.666 ^a
uPr	0.446 ^b	0.119 ^a	0.159 ^a	2.513 ^b	0.543 ^{ab}	0.081 ^a	0.233 ^b	4.095 ^b
uCp	0.436 ^b	0.099 ^b	0.146 ^a	2.537 ^b	0.522 ^b	0.080 ^a	0.282 ^a	4.102 ^b
Sown soil								
ZmC	4.408 ^a	0.174 ^a	0.270 ^a	3.898 ^a	0.630 ^a	0.115 ^a	0.343 ^a	9.838 ^a
ZmPr	3.812 ^b	0.160 ^a	0.244 ^{ab}	3.860 ^a	0.618 ^{ab}	0.089 ^c	0.298 ^b	9.081 ^b
ZmCp	3.315 ^c	0.129 ^b	0.189 ^c	3.801 ^a	0.601 ^b	0.106 ^b	0.284 ^b	8.425 ^c

Homogeneous groups denoted with letters (a–c) were counted for each enzyme and BA separately for sown soil and unsown soils, Deh - dehydrogenases, $\mu\text{mol TFF}$; Cat - catalase, mol O_2 ; Ure - urease, mmol N-NH_4 ; Pac - acid phosphatase, mmol PN ; Pal - alkaline phosphatase, mmol PN ; aryl - arylsulfatase, mmol PN ; Glu - β -glucosidase, mmol PN ; uC - contaminated unsown soil; uPr - sown soil contaminated with permethrin; uCp - sown soil contaminated with cypermethrin; ZmC - uncontaminated soil sown with *Zea mays*; ZmPr - soil sown with *Zea mays* contaminated with permethrin; ZmCp - soil sown with *Zea mays* contaminated with cypermethrin; BA - index of soil biochemical fertility.

Table S2. Number of microorganisms in 1 kg d.m. soil.

Object	Org, $\times 10^9$	Act, $\times 10^9$	Fun, $\times 10^6$
Unsown soil			
uC	11.829 ^b	10.286 ^c	28.053 ^a
uPr	16.317 ^a	15.896 ^b	22.910 ^a
uCp	16.411 ^a	21.180 ^a	15.429 ^b
Sown soil			
ZmC	28.894 ^b	23.938 ^c	92.106 ^a
ZmPr	30.110 ^b	26.650 ^b	45.352 ^b
ZmCp	34.925 ^a	37.497 ^a	41.144 ^b

Homogeneous groups denoted with letters (a–c) were counted for each group of microorganisms and separately for sown soil and unsown soils, Org—organotrophic bacteria; Act—actinomycetes; Fun—fungi; uC - contaminated unsown soil; uPr - sown soil contaminated with permethrin; uCp - sown soil contaminated with cypermethrin; ZmC - uncontaminated soil sown with *Zea mays*; ZmPr - soil sown with *Zea mays* contaminated with permethrin; ZmCp - soil sown with *Zea mays* contaminated with cypermethrin.

Table S3. Colony development index (CD) of microorganisms.

Object	Org	Act	Fun
Unsown soil			
uC	30.049 ^{ab}	16.824 ^b	38.230 ^a
uPr	28.490 ^b	16.009 ^b	44.084 ^a
uCp	31.964 ^a	27.532 ^a	41.717 ^a
Sown soil			
ZmC	39.746 ^a	26.853 ^a	47.813 ^a
ZmPr	31.294 ^b	27.348 ^a	31.452 ^b
ZmCp	30.966 ^b	23.994 ^b	35.624 ^b

Homogeneous groups denoted with letters ^(a-c) were counted for each group of microorganisms and separately for sown soil and unsown soils, Org—organotrophic bacteria; Act—actinomycetes; Fun—fungi; uC – contaminated unsown soil; uPr – sown soil contaminated with permethrin; uCp – sown soil contaminated with cypermethrin; ZmC – uncontaminated soil sown with *Zea mays*; ZmPr – soil sown with *Zea mays* contaminated with permethrin; ZmCp – soil sown with *Zea mays* contaminated with cypermethrin.

Table S4. Ecophysiological diversity index (EP) of microorganisms.

Object	Org	Act	Fun
Unsown soil			
uC	0.825 ^c	0.903 ^a	0.674 ^b
uPr	0.848 ^b	0.898 ^a	0.772 ^a
uCp	0.980 ^a	0.911 ^a	0.695 ^b
Sown soil			
ZmC	0.938 ^a	0.803 ^c	0.671 ^a
ZmPr	0.892 ^b	0.853 ^b	0.635 ^a
ZmCp	0.912 ^{ab}	0.960 ^a	0.692 ^a

Homogeneous groups denoted with letters ^(a-c) were counted for each group of microorganisms and separately for sown soil and unsown soils, Org—organotrophic bacteria; Act—actinomycetes; Fun—fungi; uC – contaminated unsown soil; uPr – sown soil contaminated with permethrin; uCp – sown soil contaminated with cypermethrin; ZmC – uncontaminated soil sown with *Zea mays*; ZmPr – soil sown with *Zea mays* contaminated with permethrin; ZmCp – soil sown with *Zea mays* contaminated with cypermethrin.