



Supplementary material

Bacteria, Fungi, and Enzymes in Soil Treated with Sulcotrione and Terbutylazine

Małgorzata Baćmaga, Jadwiga Wyszowska*, Jan Kucharski and Agata Borowik

Department of Soil Science and Microbiology, Faculty of Agriculture and Forestry, University of Warmia and Mazury in Olsztyn, 10-719 Olsztyn, Poland; m.bacmaga@uwm.edu.pl (M.B.); agata.borowik@uwm.edu.pl (A.B.); jan.kucharski@uwm.edu.pl (J.K.)

* Correspondence: jadwiga.wyszowska@uwm.edu.pl

Table S1. Effect of herbicides on abundance of soil microorganisms, cfu 10ⁿ kg⁻¹ d.m. soil.

Object	Org × 10 ¹⁰	Act × 10 ¹⁰	Fun × 10 ⁸
C	1.328±0.055 ^d	1.438±0.101 ^c	0.692±0.009 ^{bc}
SulRD	1.745±0.133 ^{ab}	1.674±0.038 ^b	0.710±0.004 ^b
Sul10RD	1.427±0.103 ^c	1.476±0.041 ^c	0.571±0.016 ^d
TezRD	1.888±0.163 ^a	1.839±0.111 ^{ab}	0.868±0.022 ^a
Tez10RD	1.521±0.098 ^{bc}	1.253±0.065 ^d	0.620±0.020 ^{cd}
SucRD	1.782±0.055 ^{ab}	1.244±0.123 ^d	0.752±0.092 ^b
Suc10RD	1.982±0.016 ^a	1.966±0.010 ^a	0.540±0.016 ^d

C—control soil; Sul—Sulcogan 300 SC; Tez—Tezosar 500 SC; Suc—Sulcotrek 500 SC; RD—dose recommended by the manufacturer; 10RD— dose 10-fold higher than recommended by the manufacturer; Org—organotrophic bacteria; Act—actinobacteria; Fun—fungi; ±—standard deviation. Homogeneous groups denoted by letters (a–d) were calculated separately for each group of microorganisms.

Table S2. Effect of herbicides on soil enzyme activity, kg⁻¹ d. m. soil h⁻¹.

Object	Deh	Cat	Pal	Pac	Glu	Aryl	Ure
	μmol TFF	mol O ₂	mmol PNP				mmol N-NH ₄
C	19.918±1.376 ^a	0.357±0.004 ^a	0.335±0.016 ^c	2.246±0.079 ^e	0.248±0.008 ^a	0.165±0.014 ^c	0.859±0.017 ^a
SulRD	17.097±0.300 ^b	0.358±0.004 ^a	0.320±0.024 ^c	2.421±0.015 ^e	0.245±0.003 ^a	0.227±0.002 ^a	0.659±0.017 ^b
Sul10RD	16.827±0.237 ^b	0.340±0.011 ^b	0.261±0.003 ^d	2.743±0.010 ^b	0.251±0.003 ^a	0.245±0.003 ^a	0.567±0.003 ^c
TezRD	17.779±0.119 ^b	0.358±0.001 ^a	0.389±0.021 ^b	2.915±0.022 ^a	0.249±0.006 ^a	0.197±0.007 ^b	0.567±0.003 ^c
Tez10RD	18.296±0.590 ^{ab}	0.370±0.001 ^a	0.485±0.019 ^a	2.706±0.013 ^b	0.231±0.002 ^b	0.190±0.007 ^b	0.548±0.017 ^c
SucRD	17.691±0.060 ^b	0.367±0.001 ^a	0.519±0.003 ^a	2.595±0.032 ^c	0.253±0.010 ^a	0.198±0.007 ^b	0.620±0.017 ^b
Suc10RD	18.353±0.658 ^{ab}	0.339±0.007 ^b	0.311±0.009 ^c	2.794±0.013 ^b	0.250±0.003 ^a	0.182±0.003 ^{bc}	0.421±0.017 ^d

C—control soil; Sul—Sulcogan 300 SC; Tez—Tezosar 500 SC; Suc—Sulcotrek 500 SC; RD—dose recommended by the manufacturer; 10RD— dose 10-fold higher than recommended by the manufacturer; Deh—dehydrogenases, Cat—catalase, Pal—alkaline phosphatase, Pac—acid phosphatase, Glu—β-glucosidase, Aryl—arylsulfatase, Ure—urease; ±—standard deviation. Homogeneous groups denoted by letters (^{a-e}) were calculated separately for each enzyme.

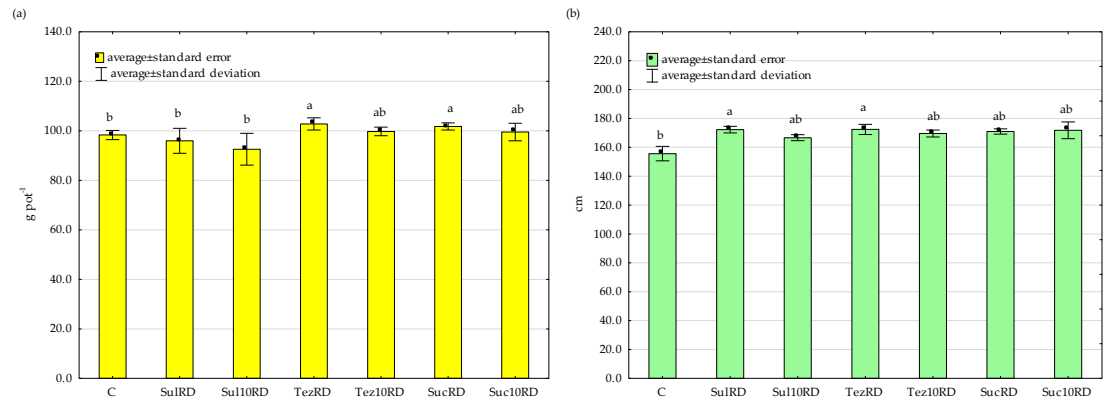


Figure S1. Effect of herbicides on (a) dry matter yield, and (b) length of aboveground parts of *Zea mays* L. C—control soil; Sul—Sulcogan 300 SC; Tez—Tezosar 500 SC; Suc—Sulcotrek 500 SC; RD—dose recommended by the manufacturer; 10RD— dose 10-fold higher than recommended by the manufacturer. Homogeneous groups denoted with letters (a-b).