

Table S1. ANOVA outputs of processing physiological parameters.

	Df	Sum Sq	Mean Sq	F value	Pr(>F)	Significance
Plant's height, cm						
Soil (S)	1	406	406	38.2	6.17E-08	< 0.001
Treatment (T)	2	200	100	9.40	2.80E-04	< 0.001
Time	4	4 219	1 055	99.1	9.90E-26	< 0.001
S × T	2	220	110	10.4	1.37E-04	< 0.001
S × Time	4	444	111	10.4	1.78E-06	< 0.001
T × Time	8	25.2	3.14	0.30	0.96	-
S × T × Time	8	112	14.0	1.32	0.25	-
Tillers quantity						
S	1	3.40	3.40	1.57	0.21	-
T	2	37.3	18.6	8.61	5.15E-04	< 0.001
Time	4	413	103	47.7	5.45E-18	< 0.001
S × T	2	32.1	16.1	7.42	1.32E-03	< 0.01
S × Time	4	14.5	3.62	1.67	0.17	-
T × Time	8	57.1	7.14	3.30	3.48E-03	< 0.01
S × T × Time	8	13.6	1.71	0.79	0.61	-
Stems diameter, cm						
S	1	0.02	0.02	0.87	0.35	-
T	2	0.50	0.25	9.29	3.05E-04	< 0.001
Time	4	3.02	0.76	28.3	3.29E-13	< 0.001
S × T	2	0.44	0.22	8.30	6.57E-04	< 0.001
S × Time	4	0.06	0.01	0.55	0.70	-
T × Time	8	0.07	0.01	0.31	0.96	-
S × T × Time	8	0.05	0.01	0.25	0.98	-
Plant's total area, cm ²						
S	1	21 574	21 574	28.8	1.38E-06	< 0.001
T	2	189 486	94 743	126	3.13E-22	< 0.001
Time	4	713 689	178 422	238	4.61E-36	< 0.001
S × T	2	10 061	5 030	6.70	2.35E-03	< 0.01
S × Time	4	114 924	28 731	38.3	6.84E-16	< 0.001
T × Time	8	40 650	5 081	6.77	2.69E-06	< 0.001
S × T × Time	8	32 719	4 090	5.45	3.55E-05	< 0.001
Dry weight, g						
S	1	1.42	1.42	2.85	0.10	-
T	2	74.2	37.1	74.5	5.08E-11	< 0.001
Plant parts (PP)	1	84.5	84.5	170	2.25E-12	< 0.001
S × T	2	46.3	23.1	46.5	5.59E-09	< 0.001
S × PP	1	0.04	0.04	0.09	0.77	-
T × PP	2	1.04	0.52	1.05	0.37	-
S × T × PP	2	14.0	6.99	14.0	9.17E-05	< 0.001
Fv'/Fm'						
S	1	0.004	0.004	37.9	2.30E-06	< 0.001
T	2	0.001	0.001	6.03	7.57E-03	< 0.01
Time	1	2.763	2.763	24 309	1.37E-37	< 0.001

S × T	2	0.005	0.002	21.3	4.77E-06	< 0.001
S × Time	1	0.003	0.003	27.4	2.28E-05	< 0.001
T × Time	2	0.001	0.001	4.74	1.85E-02	< 0.05
S × T × Time	2	0.007	0.004	32.7	1.42E-07	< 0.001

Table S2. Physiological parameters of *M×g* at the beginning and end of the vegetation season. Different letters within one month indicate a significant difference between the values.

Time point	Control	Chomutov Charkor	Kametur	Control	Všebořice Charkor	Kametur	S	<i>p</i> -value T	S × T
Plant's height, cm									
June	20.3 ± 3.51 a	18.3 ± 1.25 ab	13.5 ± 1.50 b	14.8 ± 1.25 ab	7.00 ± 1.00 c	16.8 ± 2.75 ab	< 0.001	< 0.01	< 0.001
October	34.4 ± 2.90	29.4 ± 6.76	27.5 ± 4.54	38.3 ± 2.42	37.6 ± 2.62	37.7 ± 3.10	< 0.01	0.28	0.42
Tillers quantity									
June	1.50 ± 0.50 b	2.00 ± 1.00 ab	3.67 ± 0.58 a	3.50 ± 0.50 a	3.50 ± 0.50 a	3.67 ± 0.58 a	< 0.01	< 0.05	< 0.05
October	8.50 ± 2.50 ab	10.5 ± 1.50 ab	8.30 ± 0.58 ab	11.5 ± 0.50 a	8.00 ± 1.73 ab	6.50 ± 1.80 b	0.57	< 0.05	< 0.05
Stems diameter, cm									
June	1.03 ± 0.12	0.87 ± 0.12	1.10 ± 0.10	0.90 ± 0.10	0.88 ± 0.16	0.90 ± 0.10	0.08	0.20	0.30
October	1.67 ± 0.38	1.20 ± 0.10	1.50 ± 0.10	1.50 ± 0.36	1.43 ± 0.06	1.57 ± 0.06	0.68	0.13	0.33
Plant's total area, cm ²									
June	225 ± 11.7	208 ± 18.1	225 ± 9.11	151 ± 17.9	107 ± 34.2	141 ± 8.24	< 0.001	< 0.05	0.46
October	425 ± 11.9 bc	270 ± 68.6 d	365 ± 15.2 c	487 ± 14.3 ab	354 ± 9.52 c	548 ± 12.8 a	< 0.001	< 0.001	< 0.05

Table S3. TEs concentrations (in mg kg⁻¹) accumulated in *M×g* leaves and stems after the vegetation season. Different letters within one month indicate a significant difference between the values.

S	T	PP	Mg	Al	Si	P	S	K
Chomutov	Control	Leaves	2 137 ± 132 b	757 ± 29.4 b	25 969 ± 2 472 c	302 ± 22.6 cd	537 ± 47.4 de	4 638 ± 539 g
		Stems	2 712 ± 160 a	-	10 235 ± 96.2 d	472 ± 109 ab	705 ± 44.4 bcd	7 793 ± 199 ef
	Charkor	Leaves	1 869 ± 157 b	784 ± 53.1 b	35 525 ± 2 166 b	279 ± 27.5 cd	566 ± 44.4 cde	7 112 ± 364 efg
		Stems	1 846 ± 7.29 b	-	9 206 ± 515 d	472 ± 136 ab	716 ± 47.0 bc	12 559 ± 2 181 cd
	Kametur	Leaves	2 487 ± 156 a	1 052 ± 74.8 a	40 050 ± 2 034 a	466 ± 9.52 ab	601 ± 57.7 cde	5 563 ± 123 fg
		Stems	1 975 ± 72.4 b	-	10 709 ± 885 d	507 ± 13.8 a	782 ± 48.1 ab	7 640 ± 552 ef
Všebořice	Control	Leaves	1 279 ± 98.0 cd	683 ± 77.9 bc	23 468 ± 1 839 c	210 ± 9.80 d	458 ± 49.9 e	9 893 ± 1 152 de
		Stems	1 514 ± 54.4 c	-	7 763 ± 924 d	334 ± 8.74 bcd	932 ± 59.2 a	21 293 ± 1 373 b
	Charkor	Leaves	1 261 ± 89.7 cd	589 ± 55.3 c	22 073 ± 202 c	212 ± 8.11 d	465 ± 28.4 e	7 318 ± 134 efg
		Stems	1 103 ± 76.4 d	-	8 717 ± 389 d	338 ± 35.5 bcd	554 ± 139 cde	15 215 ± 1 337 c
	Kametur	Leaves	1 090 ± 9.81 d	743 ± 42.5 bc	22 010 ± 2 436 c	192 ± 8.70 d	459 ± 4.81 e	8 447 ± 775 ef
		Stems	1 211 ± 68.3 cd	-	7 717 ± 119 d	302 ± 22.6 abc	721 ± 27.6 bc	24 266 ± 805 a
<i>p</i> -value	S		< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	< 0.001
	T		< 0.001	< 0.001	< 0.001	< 0.01	< 0.01	0.09
	PP		0.26	-	< 0.001	< 0.001	< 0.001	< 0.001
	S × T		< 0.001	< 0.05	< 0.001	0.17	< 0.001	< 0.001
	S × PP		0.45	-	< 0.001	0.51	< 0.01	< 0.001
	T × PP		< 0.001	-	< 0.001	0.84	< 0.01	< 0.05
	S × T × PP		< 0.001	-	< 0.001	< 0.05	< 0.01	< 0.001
S	T	PP	Ca	Ti	Mn	Fe	Cu	Zn
Chomutov	Control	Leaves	8 354 ± 770 b	87.6 ± 4.75 cd	169 ± 13.7 c	524 ± 25.0 b	3.26 ± 0.26 bc	45.5 ± 0.16 de
		Stems	3 467 ± 258 ef	23.5 ± 1.65 e	114 ± 8.85	109 ± 10.7 d	2.30 ± 0.01 ef	127 ± 6.32 b
	Charkor	Leaves	9 663 ± 341 ab	72.2 ± 4.02 d	175 ± 20.9 c	437 ± 19.6 c	3.41 ± 0.20 b	50.5 ± 3.05 d
		Stems	3 737 ± 17.3 def	13.1 ± 2.04 e	107 ± 7.40	45.5 ± 3.70 d	2.47 ± 0.05 def	125 ± 8.31 b
	Kametur	Leaves	10 459 ± 1 082 a	139 ± 14.0 a	195 ± 27.5 c	777 ± 75.9 a	4.26 ± 0.24 a	43.2 ± 0.89 de
		Stems	3 128 ± 26.7 f	18.0 ± 0.74 e	162 ± 8.36	80.0 ± 4.00 d	2.54 ± 0.31 def	150 ± 8.37 a
Všebořice	Control	Leaves	4 809 ± 464 cde	70.4 ± 12.0 d	823 ± 60.2 a	438 ± 51.7 c	3.35 ± 0.27 b	29.6 ± 2.89 e
		Stems	1 360 ± 32.5 g	18.6 ± 0.52 e	762 ± 62.3	75.1 ± 1.69 d	2.58 ± 0.10 cdef	138 ± 4.45 ab
	Charkor	Leaves	5 207 ± 613 c	94.5 ± 4.99 bc	890 ± 58.0 a	437 ± 23.0 c	2.86 ± 0.33 bcde	29.5 ± 0.84 e
		Stems	1 632 ± 136 g	20.8 ± 1.13 e	755 ± 39.6	77.4 ± 8.25 d	1.91 ± 0.06 f	125 ± 13.6 b
	Kametur	Leaves	5 029 ± 570 cd	108 ± 1.75 b	753 ± 31.0 b	485 ± 3.28 bc	3.25 ± 0.33 bc	31.3 ± 3.01 e
		Stems	1 475 ± 142 g	25.0 ± 2.90 e	566 ± 0.64	92.2 ± 5.47 d	3.04 ± 0.31 bcd	101 ± 1.81 c
<i>p</i> -value	S		< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	< 0.001
	T		< 0.05	< 0.001	< 0.001	< 0.001	< 0.001	0.33
	PP		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

		S × T	0.22	< 0.001	< 0.001 *	< 0.001	< 0.01	< 0.001
		S × PP	< 0.001	< 0.01	< 0.01	< 0.001	< 0.01	0.36
		T × PP	< 0.05	< 0.001	0.17	< 0.001	0.86	0.13
		S × T × PP	< 0.05	< 0.001	0.05	< 0.001	< 0.001	< 0.001
S	T	PP	Rb		Sr		Pb	
Chomutov	Control	Leaves	6.15 ± 0.09	bcd	20.5 ± 0.16	b	1.18 ± 0.02	b
		Stems	8.01 ± 0.57	bc	11.0 ± 0.39		-	
	Charkor	Leaves	6.50 ± 0.030	bcd	30.2 ± 1.18	a	1.45 ± 0.12	b
		Stems	9.18 ± 1.36	b	14.5 ± 2.02		-	
	Kametur	Leaves	6.81 ± 0.45	bcd	31.5 ± 0.87	a	1.83 ± 0.16	a
		Stems	15.4 ± 2.84	a	15.9 ± 1.86		-	
Všebořice	Control	Leaves	5.11 ± 0.03	bcd	23.4 ± 2.91	b	-	
		Stems	14.2 ± 1.97	a	10.8 ± 1.10		-	
	Charkor	Leaves	4.48 ± 0.38	d	27.3 ± 3.40	b	-	
		Stems	6.86 ± 0.75	bcd	9.43 ± 0.93		-	
	Kametur	Leaves	6.26 ± 0.39	bcd	26.4 ± 2.72	b	-	
		Stems	16.4 ± 0.55	a	10.4 ± 0.46		-	
<i>p</i> -value		S	< 0.001		< 0.001		-	
		T	< 0.001		< 0.001		< 0.01	
		PP	< 0.001		< 0.001		-	
		S × T	< 0.001		< 0.001 *		-	
		S × PP	< 0.01		0.14		-	
		T × PP	< 0.001		< 0.01		-	
		S × T × PP	< 0.01		0.64		-	

Note: S – soil; T – treatment; PP – plant's part.

Table S4. BCF values for TEs accumulated in *M*×*g* leaves and stems after the vegetation season. Different letters within one month indicate a significant difference between the values.

S	T	PP	Mg	Al	Si	P	S	K
Chomutov	Control	Leaves	0.16 ± 0.01 b	0.008 ± 0 b	0.085 ± 0.008 b	0.17 ± 0.01 cd	1.80 ± 0.16	0.15 ± 0.02 g
		Stems	0.20 ± 0.01 a	-	0.033 ± 0 c	0.27 ± 0.06 a	2.36 ± 0.15	0.26 ± 0.01 fg
	Charkor	Leaves	0.14 ± 0.01 bcd	0.008 ± 0.001 b	0.116 ± 0.007 a	0.16 ± 0.02 cd	1.90 ± 0.15	0.23 ± 0.01 g
		Stems	0.14 ± 0.001 bcd	-	0.030 ± 0.002 c	0.27 ± 0.08 a	2.40 ± 0.16	0.41 ± 0.07 ef
	Kametur	Leaves	0.19 ± 0.01 a	0.011 ± 0.001 a	0.130 ± 0.007 a	0.26 ± 0.01 ab	2.02 ± 0.19	0.18 ± 0.004 g
		Stems	0.15 ± 0.01 bc	-	0.035 ± 0.003 c	0.28 ± 0.01 a	2.62 ± 0.16	0.25 ± 0.02 g
Všebořice	Control	Leaves	0.12 ± 0.01 cde	0.006 ± 0.001 c	0.085 ± 0.007 b	0.11 ± 0.01 d	0.33 ± 0.04	0.67 ± 0.08 d
		Stems	0.15 ± 0.01 bc	-	0.028 ± 0.003 c	0.17 ± 0.01 cd	0.67 ± 0.04	1.44 ± 0.09 b
	Charkor	Leaves	0.12 ± 0.01 de	0.005 ± 0 c	0.080 ± 0.001 b	0.11 ± 0.004 d	0.34 ± 0.02	0.49 ± 0.01 e
		Stems	0.11 ± 0.01 e	-	0.032 ± 0.001 c	0.17 ± 0.02 bcd	0.40 ± 0.10	1.03 ± 0.09 c
	Kametur	Leaves	0.11 ± 0.001 e	0.006 ± 0 c	0.080 ± 0.009 b	0.10 ± 0.004 d	0.33 ± 0.003	0.57 ± 0.05 de
		Stems	0.12 ± 0.01 de	-	0.028 ± 0 c	0.22 ± 0.01 abc	0.52 ± 0.02	1.64 ± 0.05 a
<i>p</i> -value	S		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	T		< 0.001	< 0.001	< 0.001	< 0.01	0.07	< 0.001
	PP		0.20	-	< 0.001	< 0.001	< 0.001	< 0.001
	S × T		< 0.001	< 0.01	< 0.001	0.15	< 0.05	< 0.001
	S × PP		0.34	-	< 0.001	0.75	< 0.001	< 0.001
	T × PP		< 0.001	-	< 0.001	0.79	0.23	< 0.001
	S × T × PP		< 0.001	-	< 0.001	< 0.05	0.48	< 0.001
S	T	PP	Ca	Ti	Mn	Fe	Cu	Zn
Chomutov	Control	Leaves	1.18 ± 0.11 b	0.012 ± 0.001 b	0.11 ± 0.01	0.010 ± 0 b	0.07 ± 0.01 b	0.23 ± 0.001 de
		Stems	0.49 ± 0.04 c	0.003 ± 0 ef	0.08 ± 0.01	0.002 ± 0 e	0.05 ± 0 cde	0.64 ± 0.03 b
	Charkor	Leaves	1.37 ± 0.05 ab	0.010 ± 0.001 c	0.12 ± 0.01	0.009 ± 0 c	0.08 ± 0.004 b	0.25 ± 0.02 d
		Stems	0.53 ± 0.002 c	0.002 ± 0 fg	0.07 ± 0.01	0.001 ± 0 e	0.06 ± 0.001 cd	0.63 ± 0.04 b
	Kametur	Leaves	1.48 ± 0.15 a	0.019 ± 0.002 a	0.13 ± 0.02	0.015 ± 0.002 a	0.10 ± 0.01 a	0.22 ± 0.004 de
		Stems	0.44 ± 0.004 c	0.002 ± 0 fg	0.11 ± 0.01	0.002 ± 0 e	0.06 ± 0.01 c	0.75 ± 0.04 a
Všebořice	Control	Leaves	0.56 ± 0.05 c	0.003 ± 0.001 def	1.51 ± 0.11	0.007 ± 0.001 d	0.05 ± 0.004 cdef	0.15 ± 0.01 e
		Stems	0.16 ± 0.004 d	0.001 ± 0 g	1.40 ± 0.11	0.001 ± 0 e	0.04 ± 0.001 fg	0.69 ± 0.02 ab
	Charkor	Leaves	0.61 ± 0.07 c	0.005 ± 0 de	1.63 ± 0.11	0.007 ± 0 d	0.04 ± 0.01 ef	0.15 ± 0.004 e
		Stems	0.19 ± 0.02 d	0.001 ± 0 g	1.38 ± 0.07	0.001 ± 0 e	0.03 ± 0.001 g	0.62 ± 0.07 b
	Kametur	Leaves	0.59 ± 0.07 c	0.005 ± 0 d	1.38 ± 0.06	0.008 ± 0 cd	0.05 ± 0.01 cdef	0.16 ± 0.02 e
		Stems	0.17 ± 0.02 d	0.001 ± 0 g	1.04 ± 0.001	0.001 ± 0 e	0.04 ± 0.004 def	0.50 ± 0.01 c
<i>p</i> -value	S		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	T		< 0.05	< 0.001	< 0.001	< 0.001	< 0.001	0.34
	PP		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

		S × T	0.16	< 0.001	< 0.001 *	< 0.001	< 0.01	< 0.001
		S × PP	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.48
		T × PP	< 0.05	< 0.001	0.11	< 0.001	0.39	0.13
		S × T × PP	< 0.05	< 0.001	0.07	< 0.001	< 0.001	< 0.001
S	T	PP	Rb		Sr		Pb	
Chomutov	Control	Leaves	0.03 ± 0 d		0.11 ± 0.001 b		0.010 ± 0 b	
		Stems	0.04 ± 0.003 cd		0.06 ± 0.002 e		-	
	Charkor	Leaves	0.03 ± 0 d		0.16 ± 0.01 a		0.012 ± 0.001 b	
		Stems	0.04 ± 0.01 cd		0.08 ± 0.01 cd		-	
	Kametur	Leaves	0.03 ± 0.002 d		0.17 ± 0.01 a		0.015 ± 0.001 a	
		Stems	0.07 ± 0.01 b		0.09 ± 0.01 c		-	
Všebořice	Control	Leaves	0.04 ± 0 cd		0.06 ± 0.01 e		-	
		Stems	0.12 ± 0.02 a		0.03 ± 0.003 f		-	
	Charkor	Leaves	0.04 ± 0.003 cd		0.07 ± 0.01 de		-	
		Stems	0.06 ± 0.01 bc		0.02 ± 0.002 f		-	
	Kametur	Leaves	0.05 ± 0.003 bc		0.06 ± 0.01 de		-	
		Stems	0.13 ± 0.004 a		0.03 ± 0.001 f		-	
<i>p</i> -value		S	< 0.001		< 0.001		-	
		T	< 0.001		< 0.001		< 0.01	
		PP	< 0.001		< 0.001		-	
		S × T	< 0.001		< 0.001		-	
		S × PP	< 0.001		< 0.001		-	
		T × PP	< 0.001		< 0.001		-	
		S × T × PP	< 0.001		< 0.05		-	

Note: S – soil; T – treatment; PP – plant's parts.