

Electronic Supplementary material (Mojzes et al., *Biologia* 2017, vol. 72, Iss. 12).

Table S1. Treatment means \pm SD for plant response variables measured during the study period; $n = 3$ (occasionally 2 or 1 due to outlier exclusion). Leaf morphological and coarse structural variables: leaf area (Area, cm^2), length to width ratio (L/W), leaf mass per area (LMA, g m^{-2}), lamina thickness (LT, mm) and leaf bulk tissue density (LD, g cm^{-3}). Spectral reflectance indices of leaf pigment content: index of chlorophyll content (mND), VAZ cycle pigments in photoprotective (deepoxidated) form (PRI) and total VAZ pool (Δ PRI). Chlorophyll fluorescence parameters: potential photochemical efficiency of PSII at dawn ($F_v/F_{m_{\text{dawn}}}$), at midday ($F_v/F_{m_{\text{noon}}}$) and its diurnal depression ($F_v/F_{m_{\text{depr}}} = (F_v/F_{m_{\text{dawn}}} - F_v/F_{m_{\text{noon}}})/F_v/F_{m_{\text{dawn}}} \times 100$, %), actual photochemical efficiency of PSII (Φ PSII), PSII antenna efficiency (F_v'/F_m'), photochemical fluorescence quenching (qP), non-photochemical fluorescence quenching (NPQ) and thermally dissipated fraction of light absorbed in PSII antennae (D). Leaf gas exchange parameters: transpiration rate (E, $\text{mmol H}_2\text{O m}^{-2} \text{s}^{-1}$), stomatal conductance for water vapor (g_s , $\text{mmol H}_2\text{O m}^{-2} \text{s}^{-1}$), net photosynthetic rate (A, $\mu\text{mol CO}_2 \text{m}^{-2} \text{s}^{-1}$) and instantaneous photosynthetic water use efficiency (WUE, $\mu\text{mol CO}_2 \text{mmol}^{-1} \text{H}_2\text{O}$). CD: *Cynodon dactylon*, FV: *Festuca vaginata*, PA: *Populus alba*. NM: not measured, ND: no data due to incomplete nocturnal regeneration of maximum photochemical efficiency ($F_v/F_{m_{\text{dawn}}} < 0.78$) for missing $F_v/F_{m_{\text{depr}}}$ values, or $n \leq 1$ for the other missing values.

Table S2. Results (p values) of Repeated Measures ANOVA for variables describing leaf morphology (Area and L/W) and coarse structure (LMA, LT and LD). Abbreviations as in Table S1. Significant (p < 0.05) effects are in boldface. For filiform leaves of *F. vaginata* only Area and LMA could be determined reliably (NA = not applicable).

	Area	L/W	LMA	LT	LD
<i>Cynodon dactylon</i>					
Treatment	0.7474	0.1353	0.7178	0.5845	0.4585
Year	< 0.0001	0.0299	0.0047	0.0424	0.0033
Year × Treatment	0.3917	0.3962	0.3824	0.8223	0.2179
Month	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Month × Treatment	0.0193	0.5140	0.0004	0.0303	0.0621
Year × Month	< 0.0001	0.0306	0.0183	< 0.0001	< 0.0001
Year × Month × Treatment	0.4156	0.6850	0.1745	0.0282	0.0011
<i>Festuca vaginata</i>					
Treatment	0.8519	NA	0.8897	NA	NA
Year	0.0007	NA	< 0.0001	NA	NA
Year × Treatment	0.0693	NA	0.4932	NA	NA
Month	< 0.0001	NA	< 0.0001	NA	NA
Month × Treatment	0.5764	NA	0.6225	NA	NA
Year × Month	0.0005	NA	0.0370	NA	NA
Year × Month × Treatment	0.2298	NA	0.1661	NA	NA
<i>Populus alba</i>					
Treatment	0.3452	0.0067	0.9492	0.8303	0.7489
Year	< 0.0001	0.0938	0.0013	< 0.0001	< 0.0001
Year × Treatment	0.0584	0.5481	0.4897	0.3829	0.5173
Month	< 0.0001	0.3622	< 0.0001	< 0.0001	< 0.0001
Month × Treatment	0.0819	0.6700	0.0067	0.9799	0.1530
Year × Month	0.0647	0.1002	0.0021	0.0537	0.0260
Year × Month × Treatment	0.0219	0.5127	0.0705	0.3122	0.2461

Table S3. Results (p values) of Repeated Measures ANOVA for spectral reflectance indices of leaf pigment content (mND, PRI, Δ PRI) and chlorophyll fluorescence variables (F_v/F_m _{dawn}, F_v/F_m _{noon}, F_v/F_m _{depr}, Φ PSII, F_v'/F_m' , qP, NPQ). Abbreviations as in Table S1. Significant (p < 0.05) effects are in boldface.

	mND	PRI	Δ PRI	F_v/F_m _{dawn}	F_v/F_m _{noon}	F_v/F_m _{depr}	Φ PSII	F_v'/F_m'	qP	NPQ
<i>Cynodon dactylon</i>										
Treatment	0.6321	0.9048	0.7447	0.2244	0.5666	0.7989	0.2471	0.8046	0.2888	0.3918
Year	0.3016	0.0290	<0.0001	0.0569	0.0645	0.0001	0.0191	0.5547	0.0021	0.0003
Year \times Treatment	0.1704	0.0862	0.2294	0.2010	0.5391	0.2458	0.1541	0.1531	0.0041	0.0064
Month	<0.0001	0.0660	<0.0001	0.0525	0.7836	0.9937	0.0542	0.1551	0.0374	0.4743
Month \times Treatment	0.1701	0.3338	0.3555	0.4595	0.4972	0.9953	0.9585	0.3549	0.7603	0.9874
Year \times Month	0.0079	<0.0001	0.0012	0.0028	0.0395	0.0167	0.0209	0.2604	0.0323	0.0845
Year \times Month \times Treatment	0.7669	0.3941	0.2929	0.3056	0.1370	0.3936	0.1343	0.8244	0.0213	0.0923
<i>Festuca vaginata</i>										
Treatment	0.6216	0.3814	0.0378	0.2271	0.6025	0.9022	0.3436	0.2934	0.2367	0.1819
Year	<0.0001	0.0315	0.0092	0.0142	0.0030	0.0189	0.0596	0.0254	0.8415	0.2185
Year \times Treatment	0.5362	0.0230	0.8712	0.4833	0.3549	0.4913	0.1089	0.8604	0.4670	0.6116
Month	0.0001	<0.0001	<0.0001	0.2046	0.0240	0.0454	0.0024	0.0025	0.0004	0.2175
Month \times Treatment	0.0424	0.0719	0.0465	0.1244	0.0561	0.9851	0.2587	0.2641	0.1929	0.0376
Year \times Month	0.0016	0.0042	0.0001	0.0048	<0.0001	0.2390	0.0132	0.0613	0.3195	0.1849
Year \times Month \times Treatment	0.1745	0.3618	0.5669	0.7756	0.4630	0.4754	0.7314	0.1053	0.5572	0.3639
<i>Populus alba</i>										
Treatment	0.5978	0.1466	0.0663	0.8208	0.2530	0.5428	0.6399	0.3700	0.9187	0.3840
Year	<0.0001	0.0049	0.0741	<0.0001	0.1857	0.3712	0.0013	0.0007	0.0142	0.0468
Year \times Treatment	0.8307	0.6876	0.9685	0.4450	0.8137	0.5530	0.5901	0.5941	0.5773	0.5508
Month	<0.0001	<0.0001	<0.0001	0.0052	0.0596	0.9150	<0.0001	0.0230	0.0001	0.7383
Month \times Treatment	0.0318	0.0311	0.0527	0.9718	0.7863	0.7013	0.1473	0.9734	0.0346	0.6095
Year \times Month	<0.0001	<0.0001	0.0018	<0.0001	0.0250	0.0915	0.0001	<0.0001	0.0078	0.1239
Year \times Month \times Treatment	0.4875	0.9633	0.2894	0.8125	0.4026	0.2464	0.5005	0.4074	0.2802	0.1136

Table S4. Results (p values) of Repeated Measures ANOVA for leaf gas exchange parameters (E, g_s , A, WUE) and topsoil (0-6 cm) volumetric water content (SWC) at plant base (for *P. alba* under bare soil surface). Other abbreviations as in Table S1. Significant ($p < 0.05$) effects are in boldface.

	E	g_s	A	WUE	SWC
<i>Cynodon dactylon</i>					
Treatment	0.3794	0.3714	0.4611	0.8377	0.0013
Year	<0.0001	<0.0001	0.8672	0.0010	<0.0001
Year \times Treatment	0.3934	0.7969	0.5686	0.3878	0.0343
Month	0.0121	0.0287	0.1293	0.1428	<0.0001
Month \times Treatment	0.1433	0.0449	0.1418	0.2500	<0.0001
Year \times Month	0.0025	0.3908	0.0099	<0.0001	<0.0001
Year \times Month \times Treatment	0.2805	0.0544	0.8192	0.9320	<0.0001
<i>Festuca vaginata</i>					
Treatment	0.0727	0.0504	0.1710	0.6117	0.0645
Year	0.0006	0.0040	<0.0001	0.0271	<0.0001
Year \times Treatment	0.4160	0.3489	0.0369	0.0764	0.0027
Month	<0.0001	<0.0001	0.0068	<0.0001	<0.0001
Month \times Treatment	0.0338	0.0818	0.0115	0.5453	0.0016
Year \times Month	<0.0001	0.0006	<0.0001	0.0009	<0.0001
Year \times Month \times Treatment	0.0377	0.0375	0.4842	0.8346	0.0001
<i>Populus alba</i>					
Treatment	0.6797	0.4599	0.1562	0.3048	0.0004
Year	0.0003	<0.0001	<0.0001	0.0002	<0.0001
Year \times Treatment	0.3971	0.7517	0.8577	0.7553	0.0031
Month	<0.0001	<0.0001	<0.0001	0.0004	<0.0001
Month \times Treatment	0.2546	0.0789	0.6993	0.3987	<0.0001
Year \times Month	<0.0001	0.0015	<0.0001	0.3250	<0.0001
Year \times Month \times Treatment	0.6060	0.9201	0.8348	0.5789	<0.0001