

Supplementary Materials

Table S1. P-values of two-way ANOVA for treatment effects and interaction on growth characteristics of unfertilized and fertilized *Heracleum moellendorffii* and *Adenophora divaricata*.

Significant p-values are written in bold font.

Parameter	Factor	<i>Heracleum moellendorffii</i>		<i>Adenophora divaricata</i>	
		Unfertilized	Fertilized	Unfertilized	Fertilized
Aboveground biomass	Planting	0.854	0.044	0.002	<0.001
	Shade	0.521	0.054	0.007	0.023
	Planting × Shade	0.070	0.779	0.051	0.593
Production	Planting	0.968	0.468	0.257	<0.001
	Shade	0.026	0.711	0.039	0.073
	Planting × Shade	0.542	0.820	0.745	0.352
	Shade				
Leaf specific weight	Planting	0.102	0.637	0.024	0.262
	Shade	0.051	0.699	0.166	0.128
	Planting × Shade	0.624	0.515	0.097	0.070
	Shade				
Height	Planting	0.707	0.245	0.523	0.140
	Shade	<0.001	<0.001	0.092	0.440
	Planting × Shade	0.109	0.089	0.894	0.857
	Shade				

Table S2. P-values of two-way ANOVA for treatment effects and interaction on growth characteristics of *Heracleum moellendorffii* and *Adenophora divaricata* grown in low and high soil moisture. Significant p-values are written in bold font.

Parameter	Factor	<i>Heracleum moellendorffii</i>		<i>Adenophora divaricata</i>	
		Low moisture	High moisture	Low moisture	High moisture
Aboveground biomass	Planting	0.235	0.063	0.716	0.441
	Shade	0.545	0.503	0.969	0.620
	Planting × Shade	0.546	0.406	0.473	0.091
Belowground biomass	Planting	0.078	0.147	0.027	0.089
	Shade	0.556	0.581	0.307	0.548
	Planting × Shade	0.669	0.624	<0.001	0.639
Height	Planting	0.018	0.069	0.679	0.485
	Shade	0.129	0.017	0.075	0.598
	Planting × Shade	0.625	0.227	0.478	0.886