

Wickander, N. J., Rasmussen, P. U., Marteinsdóttir, B., Ehrlén, J. and Tack, A. J. M. 2020. Ecological and evolutionary responses of an arctic plant to variation in microclimate and soil. – Oikos doi: 10.1111/oik.07794

## Appendix 1

Table A1. The impact of original soil temperature (OST), mother plant temperature (MPT), experimental soil temperature (EST) and soil sterilization (FS), as well as bulbil mass, on the timing of sprouting of bulbils of *Persicaria vivipara*. Each factor had two temperature levels, i.e. low and high temperature. Shown are p-values with significant values in bold.

	Day of sprouting		
	p-value	df	$\chi^2$
Original soil temperature (OST)	0.311	1	1.03
Mother plant temperature (MPT)	0.564	1	0.33
Experimental soil temperature (EST)	<b>&lt;0.001</b>	1	33.51
Field or sterile (FS)	<b>&lt;0.001</b>	1	13.17
Bulbil mass	0.260	1	1.22
OST x MPT	0.943	1	0.01
OST x EST	0.944	1	0.01
MPT x EST	0.490	1	0.48
OST x FS	0.748	1	0.10
MPT x FS	0.438	1	0.50
EST x FS	0.188	1	1.74
OST x MPT x FS	0.407	1	0.69
OST x EST x FS	0.104	1	2.65
MPT x EST x FS	0.076	1	3.14
OST x MPT x EST	0.928	1	0.01

Table A2. Test statistics and degrees of freedom associated with the models reported in Table 1. Each factor had three temperature levels, i.e. low, intermediate, and high temperature. The number of observations (bulbils or plants) for each response variable is given within parentheses.

	Original soil temperature (OST)		Mother plant temperature (MPT)		Experimental soil temperature (EST)		Bulbil mass		OST × MPT		OST × EST		MPT × EST		OST × MPT × EST	
	$\chi^2$	df	$\chi^2$	df	$\chi^2$	df	$\chi^2$	df	$\chi^2$	df	$\chi^2$	df	$\chi^2$	df	$\chi^2$	df
Sprouting success (n = 378)	0.31	2	0.33	2	17.78	2	1.94	1	7.30	4	5.83	4	5.11	4	9.36	8
Day of sprouting (n = 240)	15.62	2	4.73	2	43.64	2	3.23	1	0.83	4	8.34	4	3.65	4	7.89	8
Plant height on day 84 (n = 217)	0.47	2	4.85	2	2.17	2	22.30	1	1.70	4	7.63	4	1.90	4	7.65	8
Plant height on day 126 (n = 77)	1.83	2	0.87	2	1.27	2	4.68	1	2.98	4	4.55	4	2.62	4	10.60	6
Leaf number on day 84 (n = 217)	2.47	2	1.33	2	3.46	2	0.34	1	1.28	4	1.73	4	1.56	4	1.55	8
Leaf number on day 126 (n = 77)	8.76	2	4.27	2	11.06	2	0.00	1	0.80	4	1.80	4	2.99	4	0.34	6
Leaf size on day 97 (n = 162)	5.43	2	2.44	2	6.30	2	3.36	1	3.12	4	2.46	4	9.48	4	6.68	8
Leaf size on day 159 (n = 48)	3.64	2	0.16	2	5.81	2	0.41	1	4.92	4	11.13	4	8.56	4	-	-

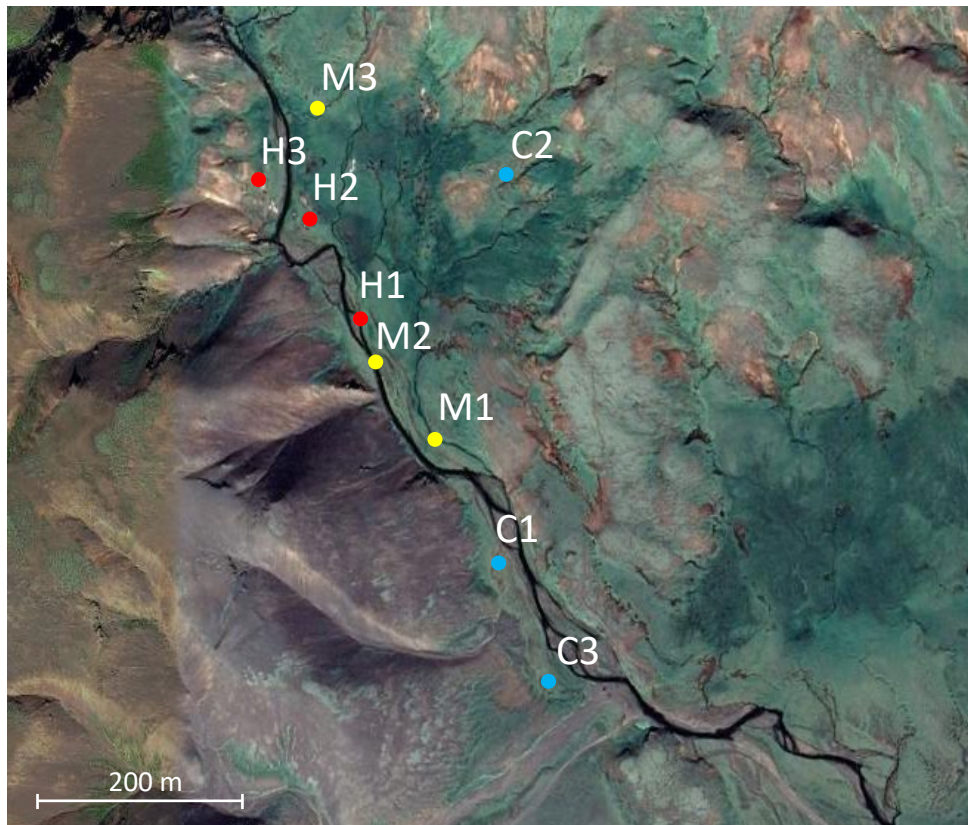


Figure A1. Overview map of the populations from which we collected plants and soil in Hengladalir valley, Iceland. Shown are populations with cold (C), medium (M) and warm (H) soils.

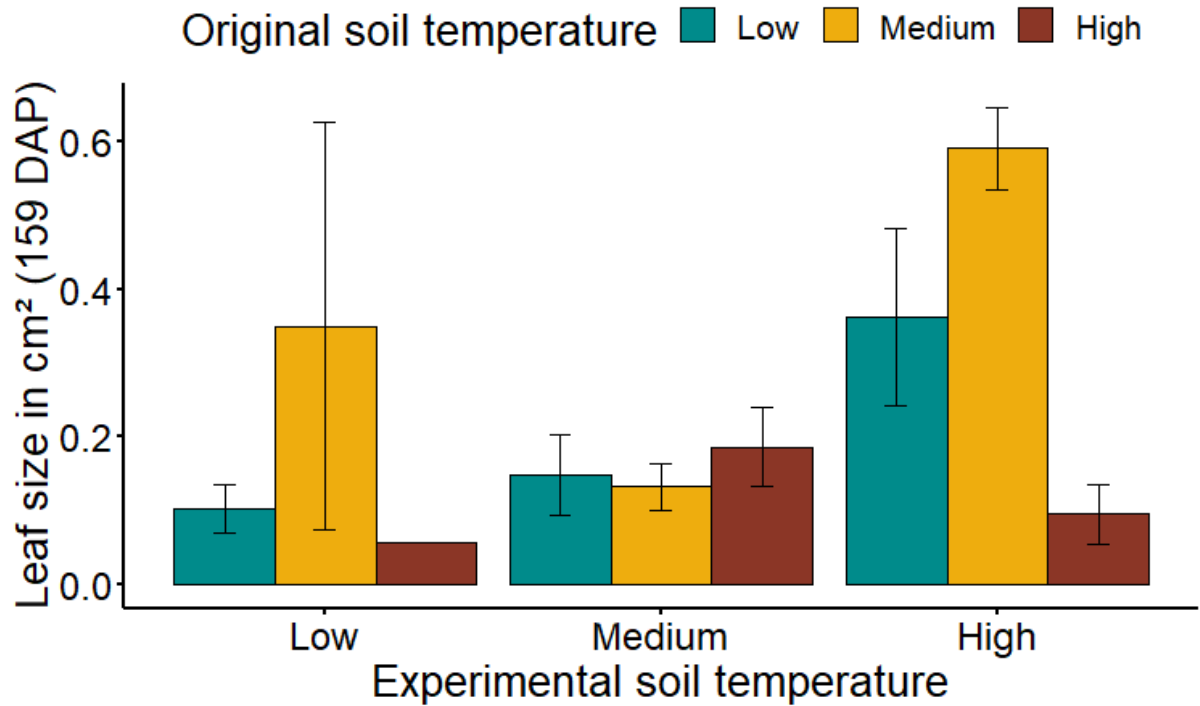


Figure A2. The influence of original soil temperature and experimental soil temperature on leaf size of *Persicaria vivipara* 159 days after planting (DAP). Shown are means  $\pm$  SE.

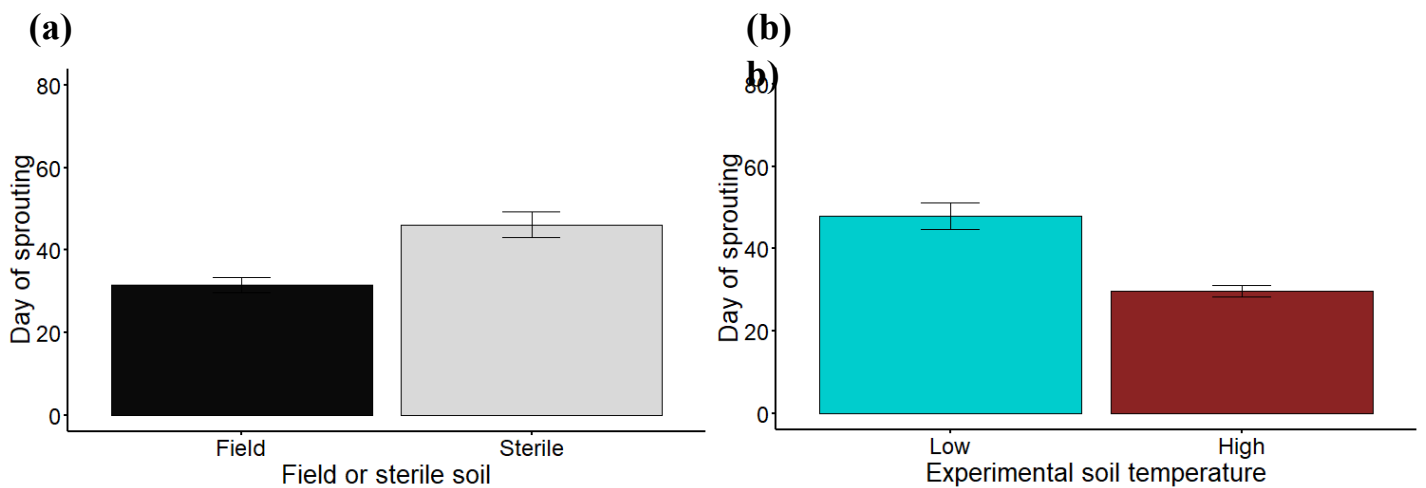


Figure A3. The day of sprouting of bulbils of *Persicaria vivipara* for plants grown in (a) field (non-manipulated) or sterile soil and (b) at low or high experimental soil temperature. Shown are means  $\pm$  SE.