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附录I 增温后青藏高原不同高寒植物物候期及高度变化(平均值±标准误)

Supplement I Changes of phenological period and height among alpine plants under warming condition on the Qingzang Plateau (mean ± SE)

功能群 Functional group	返青时间 Leaf out time (d)	现蕾时间 Flower bud time (d)	开花时间 Flower time (d)	结实时间 Fruit time (d)	开花持续时间 Flowering time (d)	高度 Height (cm)
矮生嵩草 <i>Kh</i>	0	-7.20 ± 3.55	-12.00 ± 4.00*	-4.50 ± 4.67	7.50 ± 5.73	-1.21 ± 0.68
高山豆 <i>Th</i>	-11.17 ± 2.81*	-9.68 ± 3.04*	-7.55 ± 1.67*	-1.65 ± 0.84	7.15 ± 1.39*	-0.53 ± 0.28
花苜蓿 <i>Mr</i>	-13.21 ± 3.26*	-14.42 ± 3.19*	-15.02 ± 3.14*	-4.63 ± 2.01	10.39 ± 2.43*	0.06 ± 0.50
甘肃棘豆 <i>Ok</i>	-0.25 ± 3.41	-4.50 ± 2.95	-8.88 ± 3.03*	-10.23 ± 3.45*	-1.27 ± 2.64	-2.28 ± 1.89
金露梅 <i>Pf</i>	0.17 ± 0.40	-15.06 ± 11.11	-4.83 ± 12.34	-4.06 ± 12.59	0.78 ± 3.06	-4.86 ± 2.55*
麻花艸 <i>Gs</i>	-4.29 ± 1.87*	-0.33 ± 8.24	-2.50 ± 2.50	0	0	-5.65 ± 1.88*
美丽风毛菊 <i>Sp</i>	2.67 ± 3.13	-9.93 ± 5.64	-11.50 ± 3.81*	-8.90 ± 5.80	5.13 ± 3.10	-2.21 ± 0.88*
垂穗披碱草 <i>En</i>	0	-9.08 ± 2.47*	-4.71 ± 1.70*	-2.08 ± 0.74*	2.63 ± 1.64	-6.13 ± 3.43
红棕藁草 <i>Cp</i>	0.21 ± 0.37	-3.50 ± 3.50	-7.75 ± 7.75	0.25 ± 0.25	8.00 ± 8.00	-3.71 ± 3.84
线叶龙胆 <i>Gf</i>	0	-4.00 ± 1.75	-	-	-	0.16 ± 1.08
线叶嵩草 <i>Kc</i>	-2.14 ± 1.00	-11.57 ± 6.72	-13.75 ± 6.65	-2.57 ± 2.80	9.83 ± 4.97	3.14 ± 4.08
异针茅 <i>Sa</i>	-0.05 ± 0.37	-4.38 ± 4.29	0.64 ± 3.97	-3.50 ± 3.50	-1.64 ± 2.29	14.49 ± 3.60*
草地早熟禾 <i>Pp</i>	-0.25 ± 0.25	-7.29 ± 3.26*	-5.58 ± 2.01*	0.88 ± 0.59	6.46 ± 2.13*	2.41 ± 2.12
珠芽蓼 <i>Pv</i>	-3.92 ± 2.07	-3.30 ± 4.35	-3.55 ± 4.67	2.22 ± 4.43	3.81 ± 1.42*	-4.92 ± 3.09
藏异燕麦 <i>Ht</i>	0	-	-	-	-	-4.06 ± 4.03

Cp, 红棕藁草; *En*, 垂穗披碱草; *Gf*, 线叶龙胆; *Gs*, 麻花艸; *Ht*, 藏异燕麦; *Kc*, 线叶嵩草; *Kh*, 矮生嵩草; *Mr*, 花苜蓿; *Ok*, 甘肃棘豆; *Pp*, 草地早熟禾; *Pf*, 金露梅; *Pv*, 珠芽蓼; *Sa*, 异针茅; *Sp*, 美丽风毛菊; *Th*, 高山豆。表中正值、负值分别表示与对照相比物候事件推迟、提前的天数, 开花持续时间延长、缩短的天数, 植株升高、降低的高度。*表示增温与对照相比差异显著($p < 0.05$)。

Cp, *Carex przewalskii*; *En*, *Elymus nutans*; *Gf*, *Gentiana lawrencei* var. *farreri*; *Gs*, *Gentiana straminea*; *Ht*, *Helictotrichon tibeticum*; *Kc*, *Kobresia capillifolia*; *Kh*, *Kobresia humilis*; *Mr*, *Medicago ruthenica*; *Ok*, *Oxytropis kansuensis*; *Pp*, *Poa pratensis*; *Pf*, *Potentilla fruticosa*; *Pv*, *Polygonum viviparum*; *Sa*, *Stipa aliena*; *Sp*, *Saussurea pulchra*; *Th*, *Tibetia himalaica*. Positive or negative values indicate the delayed or advanced days of phenological events, the longer or shorter flowering time, the higher or lower height than the control, respectively. * indicates significant difference between treatment and the control ($p < 0.05$).