

Supplemental Table 1 The phenology of chasmogamous (CH) and cleistogamous (CL) flower production by life history (annual or perennial) and genus. Phenology is described as sequential (no overlap in the production of CH and CL flowers), overlapping (partial overlap), or simultaneous (complete overlap in production of CH and CL flowers). Flower type initiated first indicates which flower type is produced first within a flowering season.

Genus (Family)	Flower phenology	Flower type initiated first	Reference
Annuals			
<i>Amphicarpaea</i> (Fabaceae)	Overlapping	CL	1-2
<i>Amphicarpum</i> (Poaceae)	Overlapping	CL	3-4
<i>Andropogon</i> (Poaceae)	Overlapping	CL	5
<i>Centaurea</i> (Asteraceae)	Overlapping	CL	6
<i>Ceratocarpus</i> (Fumariaceae)	Overlapping	CL	7
<i>Collomia</i> (Polemoniaceae)	Overlapping	CL	8-9
<i>Emex</i> (Polygonaceae)	Overlapping	CL	10
<i>Impatiens</i> (Balsaminaceae)	Overlapping	CL	11-16
<i>Lamium</i> (Lamiaceae)	Overlapping	CL	17
<i>Mimulus</i> (Scrophulariaceae)	Overlapping	CL	18
<i>Salpiglossis</i> (Solanaceae)	Overlapping	CL	19
Perennials			
<i>Ajuga</i> (Lamiaceae)	Overlapping	CL	20
<i>Amphibromus</i> (Poaceae)	Overlapping	CL	21
<i>Calathea</i> (Marantaceae)	Simultaneous, year round	NA	22

<i>Danthonia</i> (Poaceae)	Overlapping	CL	21; 23-24
<i>Dichanthelium</i> (Poaceae)	Sequential	CH	25
<i>Microleana</i> (Poaceae)	Simultaneous	unknown	26
<i>Oxalis</i> (Oxalidaceae)	Sequential	CH	27-29
<i>Scutellaria</i> (Lamiaceae)	Sequential	CH	30
<i>Viola</i> (Violaceae)	Sequential	CH	28; 31-34

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Supplemental Table 2 Effects of plant size and favorable environmental conditions on the degree of cleistogamy (proportion of flowers that are cleistogamous).

Species (Family)	Effect on degree of cleistogamy	Reference
Increased size		
<i>Amphicarpaea bracteata</i> (Fabaceae)	Decrease	1
<i>Impatiens capensis</i> (Balsaminaceae)	Decrease	2-3
<i>Mimulus nasutus</i> (Scrophulariaceae)	Decrease	4
<i>Oxalis acetosella</i> (Oxalidaceae)	Increase	5
More favorable environment		
<i>Amphicarpaea bracteata</i> (Fabaceae)	Decrease	1
<i>Calathea micans</i> (Marantaceae)	Decrease	6
<i>Collomia grandiflora</i> (Polemoniaceae)	Decrease	7-8
<i>Danthonia spicata</i> (Poaceae)	Decrease	9
<i>Dichanthelium clandestinum</i> (Polygonaceae)	Decrease	10
<i>Emex spinosa</i> (Lamiaceae)	Decrease	11
<i>Impatiens</i> spp. (Balsaminaceae)	Decrease	2; 12-15
<i>Lamium amplexicaule</i> (Lamiaceae)	Decrease	16
<i>Viola mirabilis</i> (Violaceae)	Increase	17

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Supplemental Table 3 Ratio of fitness of offspring produced by cleistogamous flowers to that of offspring produced by chasmogamous flowers at different stages of the life cycle. Multiple estimates for a given stage within a study were averaged. When cumulative estimates of fitness were available, data for prior stages was omitted. Blank cells indicate that no data were available for a stage. Means for each stage (column) were multiplied to estimate cumulative fitness for studies that included only part of the life cycle (mean = 1.39). The average of this estimate and the 5 empirical measures of cumulative fitness constitute an overall mean cumulative relative fitness of 1.13.

Species (Family)	Germination probability	Juvenile growth	Juvenile survival	Adult biomass	Fecundity	Cumulative fitness	Reference
<i>Amphicarpaea bracteata</i> (Fabaceae)	5.43						1
<i>Amphicarpum purshii</i> (Poaceae)	1.75						2
<i>Collomia grandiflora</i> (Polemoniaceae)				1.00	0.96		3
<i>Danthonia spicata</i> (Poaceae)	n/a	n/a	n/a	n/a	n/a	0.94	4
<i>Danthonia spicata</i> (Poaceae)	2.17						5
<i>Impatiens capensis</i> (Balsaminaceae)	n/a	n/a	n/a	n/a	n/a	0.64	6

<i>Impatiens capensis</i> (Balsaminaceae)	n/a	n/a	n/a	n/a	n/a	0.67	7
<i>Impatiens capensis</i> (Balsaminaceae)				0.95	0.97		8
<i>Impatiens capensis</i> (Balsaminaceae)			0.88				9
<i>Impatiens capensis</i> (Balsaminaceae)	1.19	0.79					10
<i>Impatiens capensis</i> (Balsaminaceae)		0.77					11
<i>Impatiens capensis</i> (Balsaminaceae)		0.90					12
<i>Microlaena polynoda</i> (Poaceae)	1.18	1.32					13
<i>Oxalis acetosella</i> (Oxalidaceae)	0.68		1.07	1.26			14
<i>Triodanis perfoliata</i> (Campanulaceae)	0.94						15

<i>Viola canadensis</i> (Violaceae)	n/a	n/a	n/a	n/a	n/a	1.56	16
<i>Viola hirta</i> (Violaceae)	0.87			0.84			17
<i>Viola mirabilis</i> (Violaceae)	0.42			1.30			17
<i>Viola pubescens</i> (Violaceae)	1.07						18
<i>Viola riviana</i> (Violaceae)	0.75		0.93	0.94			17
<i>Viola septemloba</i> (Violaceae)	n/a	n/a	n/a	n/a	n/a	1.55	Winn unpublished
Column Mean	1.50	0.95	0.96	1.05	0.97	1.09	

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