

WEED GROWTH & DEVELOPMENT GUIDE

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Introduction

The data in this guide is a combination of growth cabinet, glasshouse and field observations on a range of weeds, recording characteristics such as growth rate, time to flowering and time to first mature seeds. The data set is not complete, but gives the best information currently available. Additional data will be added as it becomes available.

This data may be used as a guide to how quickly these weeds can grow and set seed in the field, giving an indication to the timing of weed management operations to prevent seed set. However, the data is a indication only, weeds may grow more or less quickly than shown in this guide, depending on environmental conditions such as temperature, soil moisture and soil nutrition. Generally, weeds will grow more slowly in cooler spring conditions and most quickly over mid-summer, provided soil moisture is not limiting. Also, weeds can be expected to grow more quickly in the northern-cotton areas and less quickly in the southern areas.

Differences in growth rate can be easily adjusted for by using the plant height as an indicator of growth stage. For example, in a field with a low density of anoda, the weed pressure might not be sufficient to require these weeds to be controlled (as indicated by the **Critical Period for Weed Control, WEEDpak section B4**). However, the information on the following page shows that the anoda is likely to start flowering about 25 days after emergence and will have mature seed around 16 days later. If the plants in the field are already around 20 - 30 cm high, then it is likely that they are already flowering and may have as many as 500 mature seeds per plant. They will need to be controlled as soon as possible. This estimation can be made even though the date of the anoda emergence is unknown and without considering the rate of growth.

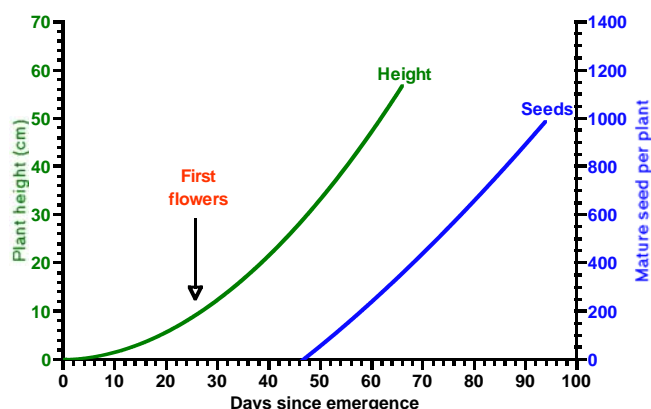
Plant height may often be a better indicator of weed maturity than the time since weed emergence. However, stressed weeds may flower and set seeds while much smaller than is indicated in this guide. If in doubt, check some plants to determine their stage of growth.

Acknowledgements

I gratefully acknowledge the input of Dr. Stephen Johnson (NSW DPI), whose research produced much of the data used to develop this guide. Thanks also go to Todd Green for the fleabane data.

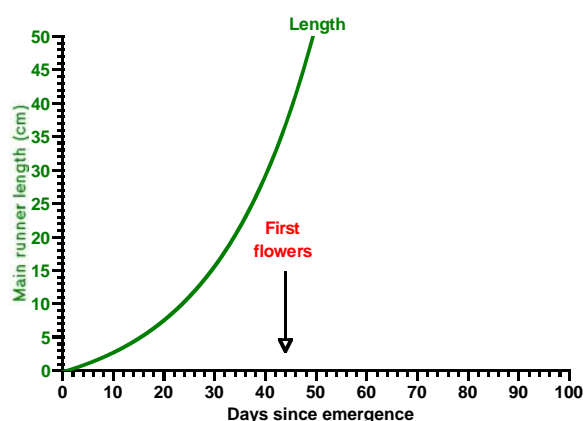
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Anoda (*Anoda cristata*)



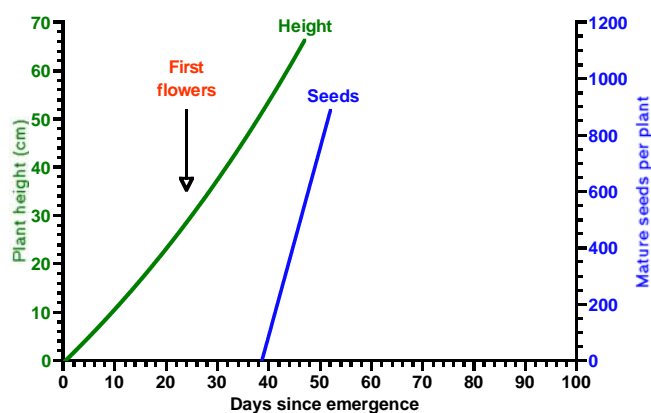
Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		4 - 12
Typical emergence		20%
Depth of emergence		
First flowers		25 days
Mature pods		41 days
Seeds per pod		11 - 14
Seeds per medium plant		4000
Mature plant height		2 m
An introduced weed	<input checked="" type="checkbox"/>	

Australian bindweed (*Convolvulus erubescens*)



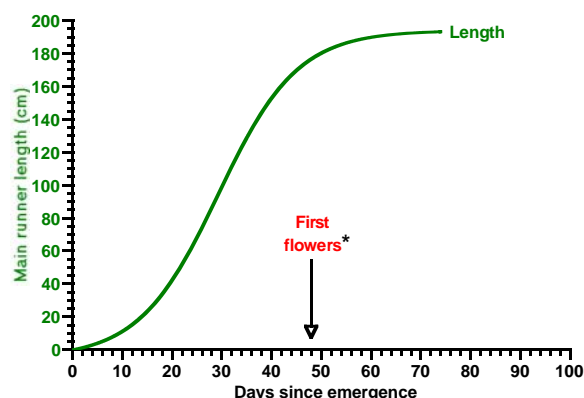
Perennial	<input checked="" type="checkbox"/>	
Frost tolerant	<input checked="" type="checkbox"/>	
Emergence		Autumn - spring
Days to emerge		4 - 9
Typical emergence		2%
Depth of emergence		
First flowers		44 days
Mature pods		
Seeds per pod		4
Seeds per medium plant		100
Mature plant diameter		2 m
A native plant	<input checked="" type="checkbox"/>	

Awnless barnyard grass (*Echinochloa colona*)



Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		5 - 7
Typical emergence		20 - 30%
Depth of emergence		0 - 7 cm
First flowers		24 days
Mature seeds		39 days
Seeds per stem		75
Seeds per medium plant		
Mature plant height		0.6 m

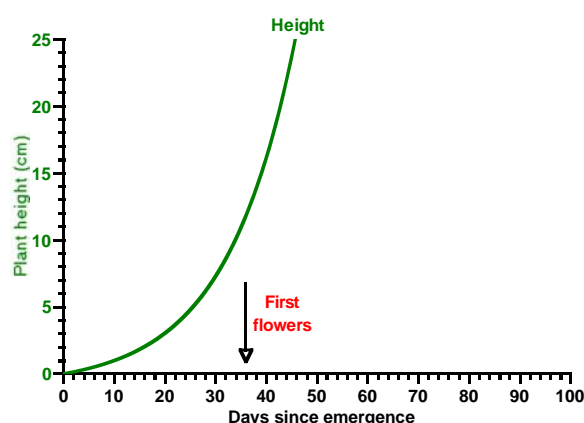
Bellvine (*Ipomoea plebeia*)



Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring & summer
Days to emerge		4
Typical emergence		60 - 90%
Depth of emergence		2 - 4 cm
First flowers*		48 days*
Mature pods		
Seeds per pod		4
Seeds per medium plant		
Mature plant diameter		2 - 3 m
A native plant	<input checked="" type="checkbox"/>	

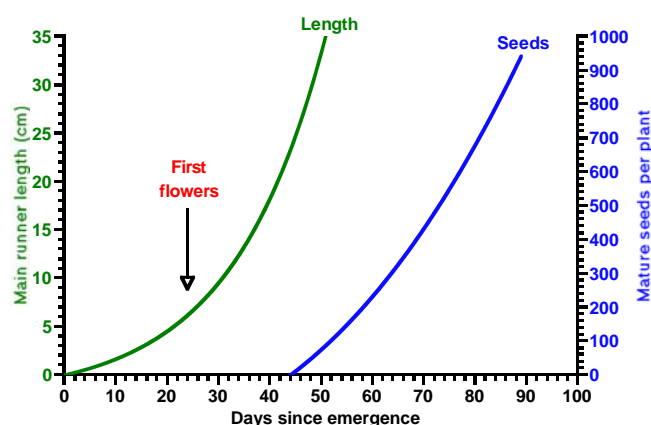
Note* Plants respond to day length and mostly flower in autumn, regardless of plant size.

Blackberry nightshade (*Solanum nigrum*)



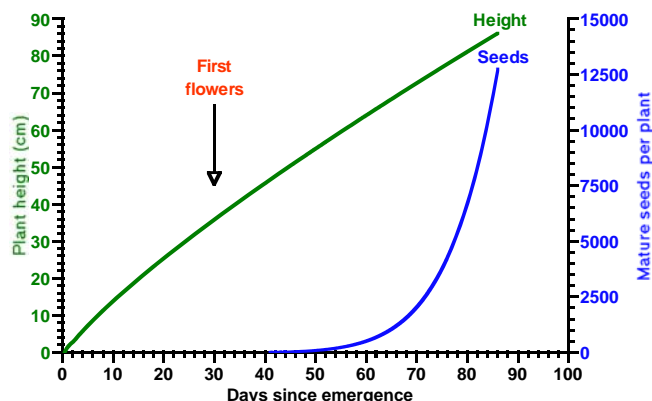
Annual	<input checked="" type="checkbox"/>	or short-lived perennial	<input checked="" type="checkbox"/>
Frost tolerant	<input checked="" type="checkbox"/>		
Emergence			Winter - summer
Days to emerge			6 - 7
Typical emergence			30 - 90%
Depth of emergence			
First flowers			36 days
Mature pods			
Seeds per stem			
Seeds per medium plant			
Mature plant height			0.6 - 1.2 m
An introduced weed	<input checked="" type="checkbox"/>		

Black pigweed (*Trianthema portulacastrum*)



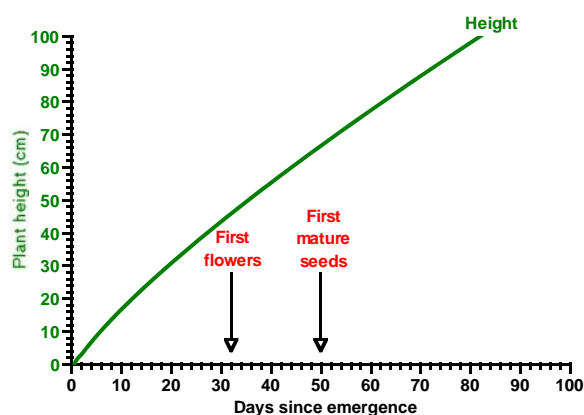
Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - summer
Days to emerge		4 - 8
Typical emergence		30 - 50%
Depth of emergence		to 7 cm
First flowers		24 days
Mature pods		43 days
Seeds per pod		3 - 15
Seeds per medium plant		7000
Mature plant diameter		0.6 - 1 m
An introduced weed	<input checked="" type="checkbox"/>	

Bladder ketmia – narrow leaf (*Hibiscus tridactylites*)



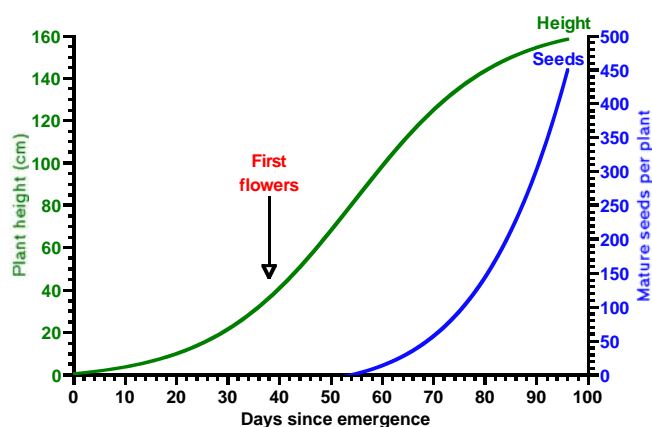
Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		3 - 6
Typical emergence		1 - 10%
Depth of emergence		
First flowers		30 days
Mature seed pods		40 days
Seeds per pod		33
Seeds per medium plant		15 000
Mature plant height		1.3 m

Bladder ketmia – wide leaf (*Hibiscus verdcourtii*)



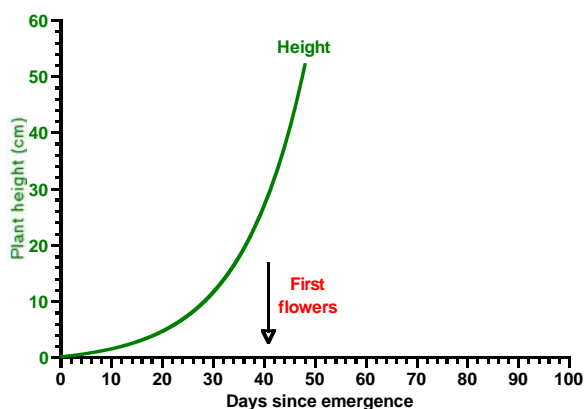
Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		4 - 7
Typical emergence		1 - 10%
Depth of emergence		
First flowers		32 days
Mature seed pods		50 days
Seeds per pod		33
Seeds per medium plant		8000
Mature plant height		1.5 m

Budda pea (*Aeschynomene indica*)



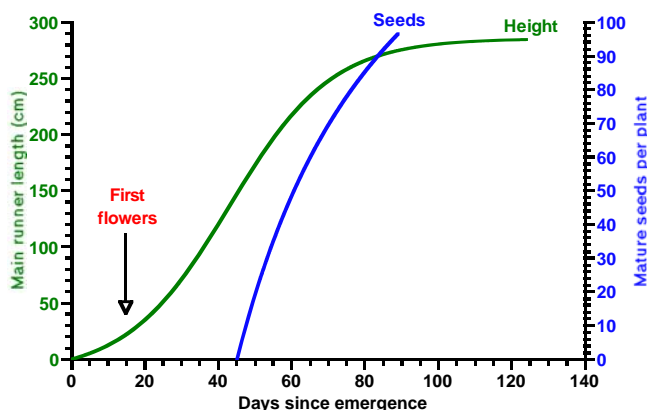
Annual	<input checked="" type="checkbox"/>	or short-lived perennial <input checked="" type="checkbox"/>
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring & summer
Days to emerge		11
Typical emergence		20%
Depth of emergence		
First flowers		40 days
Mature seed pods		55 days
Seeds per pod		3 - 9
Seeds per medium plant		1000
Mature plant height		2 m
A native plant	<input checked="" type="checkbox"/>	

Cobbler's pegs (*Bidens pilosa*)



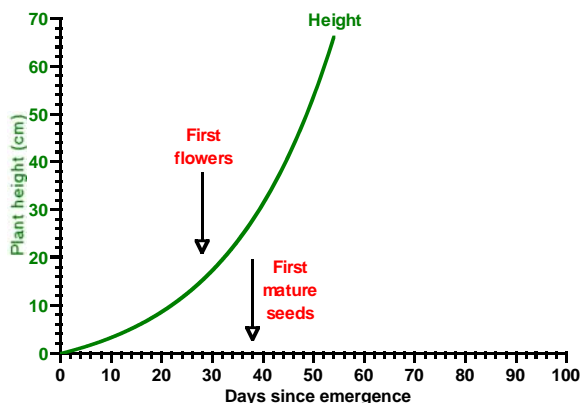
Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		3 - 6
Typical emergence		70 %
Depth of emergence		
First flowers		41 days
Mature seeds		
Seeds per head		
Seeds per medium plant		
Mature plant height		1 m
An introduced weed	<input checked="" type="checkbox"/>	

Cowvine - peachvine (*Ipomoea lonchophylla*)



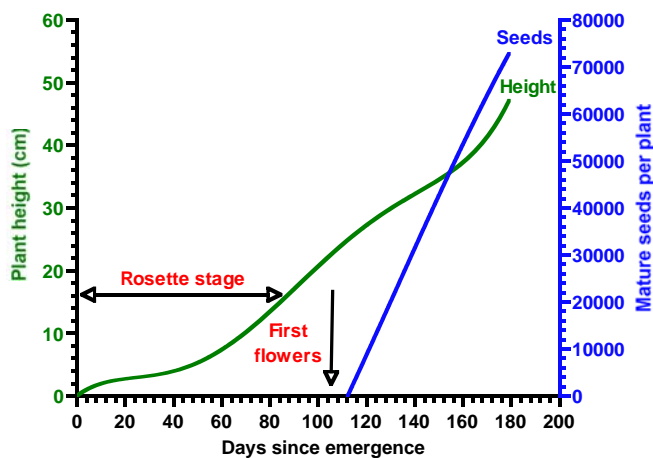
Annual	<input checked="" type="checkbox"/>	or	short-lived perennial	<input checked="" type="checkbox"/>
Frost sensitive	<input checked="" type="checkbox"/>			
Emergence				Spring - autumn
Days to emerge				4
Typical emergence				1 - 10%
Depth of emergence				5 cm
First flowers				16 days
Mature seed pods				50 days
Seeds per pod				3 - 4
Seeds per medium plant				1000
Mature plant diameter				2 - 3 m
A native plant	<input checked="" type="checkbox"/>			

Dwarf amaranth (*Amaranthus macrocarpus*)



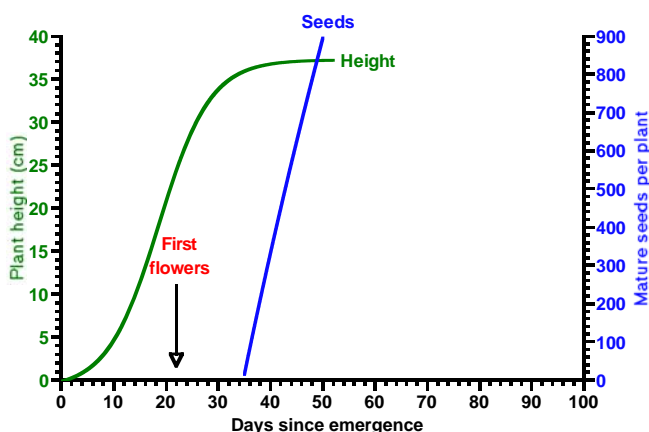
Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		3 - 7
Typical emergence		10 - 50%
Depth of emergence		
First flowers		28 days
Mature seed pods		35 days
Seeds per pod		
Seeds per medium plant		
Mature plant height		0.3 m
A native plant	<input checked="" type="checkbox"/>	

Flaxleaf fleabane (*Conyza bonariensis*)



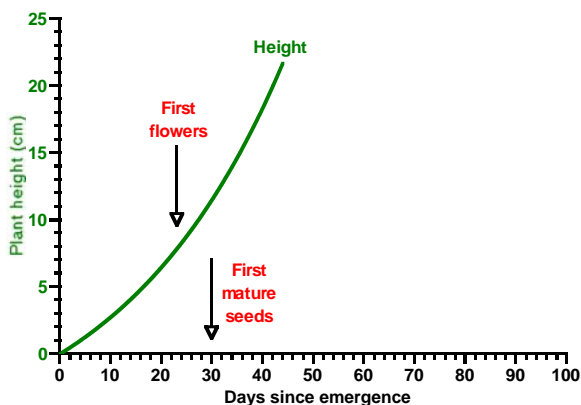
Annual	<input checked="" type="checkbox"/>	
Frost tolerant	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		2 - 3
Typical emergence		10 - 60%
Depth of emergence		Surface only
First flowers		106 days
Mature seeds		124 days
Seeds per head		180 - 240
Seeds per medium plant		60 000 - 85 000
Mature plant height		0.4 - 1 m
Seedbank decay (50%)		3 - 9 months
An introduced weed	<input checked="" type="checkbox"/>	

Liverseed grass (*Urochloa panicoides*)



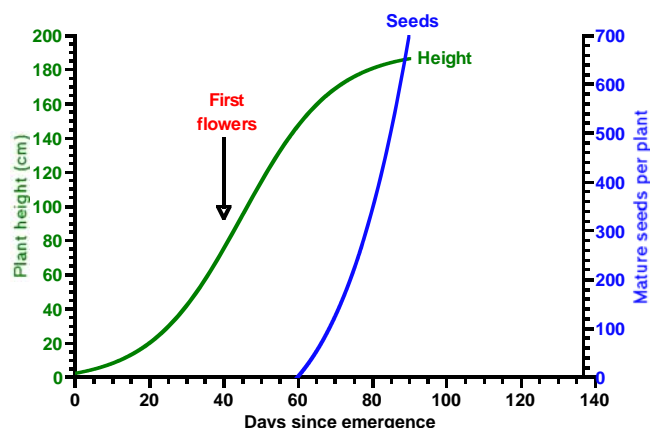
Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring
Days to emerge		5 - 7
Typical emergence		1 - 40%
Depth of emergence		
First flowers		22 days
Mature seeds		38 days
Seeds per stem		20 - 30
Seeds per medium plant		
Mature plant height		0.6 m
An introduced grass	<input checked="" type="checkbox"/>	

Mintweed (*Salvia reflexa*)



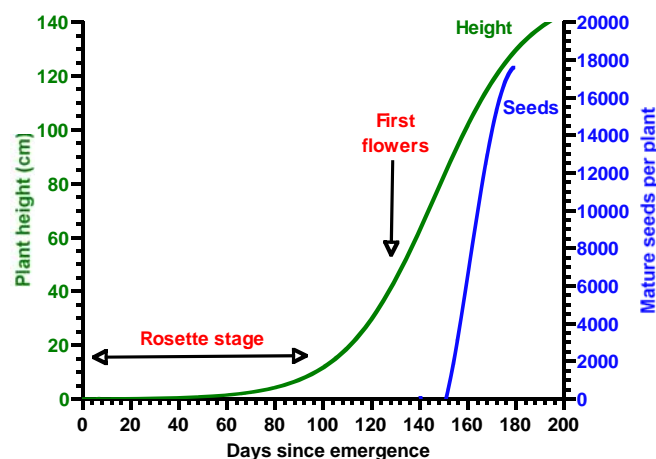
Annual	<input checked="" type="checkbox"/>	
Frost tolerant	<input checked="" type="checkbox"/>	
Emergence		Winter - summer
Days to emerge		7 - 15
Typical emergence		6%
Depth of emergence		
First flowers		23 days
Mature seed pods		30 days
Seeds per pod		2 - 4
Seeds per medium plant		
Mature plant height		0.7 m
An introduced weed	<input checked="" type="checkbox"/>	

Sesbania (*Sesbania canabina*)



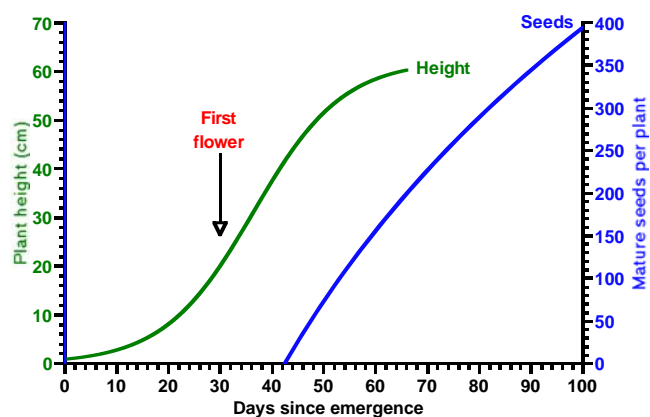
Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		4 - 9
Typical emergence		5%
Depth of emergence		
First flowers		40 days
Mature seed pods		60 days
Seeds per pod		20 - 30
Seeds per medium plant		10 000 - 20 000
Mature plant height		2 - 3.5 m
A native plant	<input checked="" type="checkbox"/>	

Tall fleabane (*Conyza sumatrensis*)



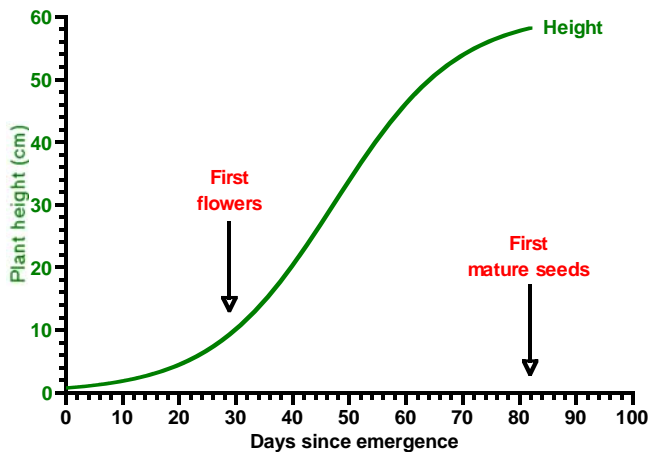
Annual	<input checked="" type="checkbox"/>	or biennial	<input checked="" type="checkbox"/>	
Frost tolerant	<input checked="" type="checkbox"/>			
Emergence				Spring - autumn
Days to emerge				2 - 3
Typical emergence				10 - 80%
Depth of emergence				Surface only
First flowers				129 days
Mature seed pods				148 days
Seeds per head				120 - 170
Seeds per medium plant				14 000 - 21 000
Mature plant height				1.2 - 2 m
Seedbank decay (50%)				3 - 8 months
An introduced weed	<input checked="" type="checkbox"/>			

Velvet leaf (*Abutilon theophrasti*)



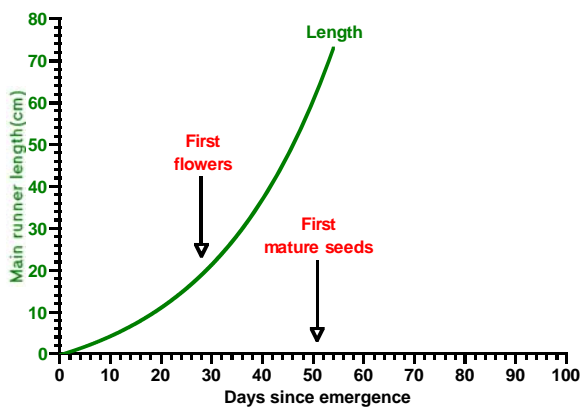
Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		3 - 7
Typical emergence		5%
Depth of emergence		
First flowers		30 days
Mature seed pods		45 days
Seeds per pod		2 - 3
Seeds per medium plant		1000 - 12 000
Mature plant height		1.4 m
An introduced weed	<input checked="" type="checkbox"/>	

Wild gooseberry (*Physalis minima*)



Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - summer
Days to emerge		7
Typical emergence		50 - 90%
Depth of emergence		
First flowers		29 days
Mature seed pods		82 days
Seeds per pod		
Seeds per medium plant		
Mature plant height		05 - 0.8 m
A native plant	<input checked="" type="checkbox"/>	

Yellow vine (*Tribulus micrococcus*)



Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		4 - 5
Typical emergence		1 - 10%
Depth of emergence		
First flowers		28 days
Mature seed pods		51 days
Seeds per pod		10
Seeds per medium plant		10 000 - 15 000
Mature plant diameter		2 - 3 m
A native plant	<input checked="" type="checkbox"/>	