

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.

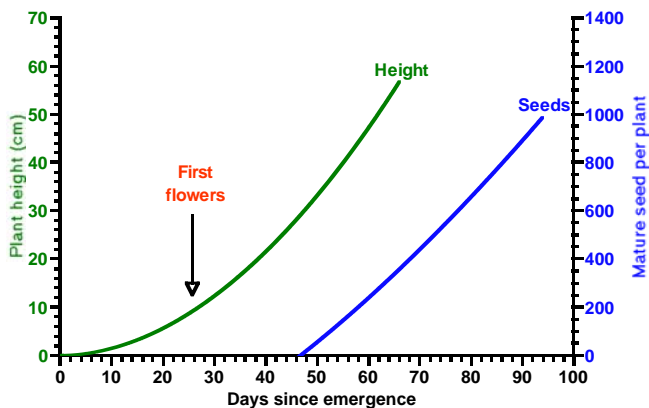
Plant height may often be a better indicator of weed maturity than the time since weed emergence. However, stressed weeds may flower and set seeds while much smaller than is indicated in this guide. If in doubt, check some plants to determine their stage of growth.

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.

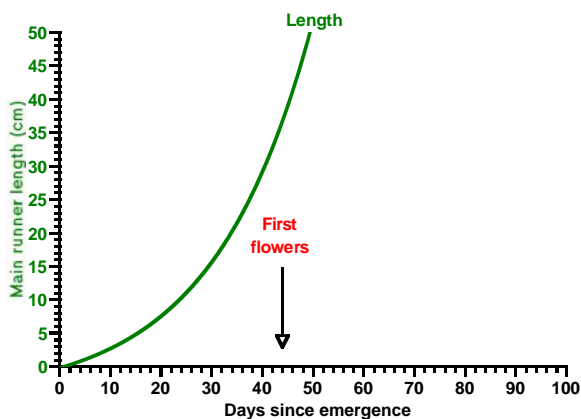
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Anoda (*Anoda cristata*)



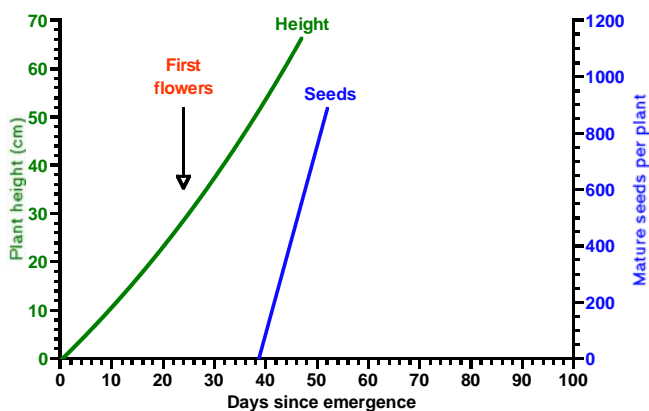
Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		4 - 12
Typical emergence		20%
Depth of emergence		
First flowers		25 days
Mature pods		41 days
Seeds per pod		11 - 14
Seeds per medium plant		4000
Mature plant height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

Australian bindweed (*Convolvulus erubescens*)



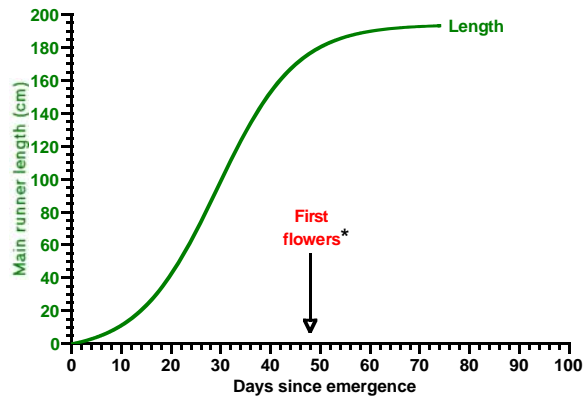
Perennial	<input checked="" type="checkbox"/>	
Frost tolerant	<input checked="" type="checkbox"/>	
Emergence		Autumn - spring
Days to emerge		4 - 9
Typical emergence		2%
Depth of emergence		
First flowers		44 days
Mature pods		
Seeds per pod		4
Seeds per medium plant		100
Mature plant diameter		2 m
A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

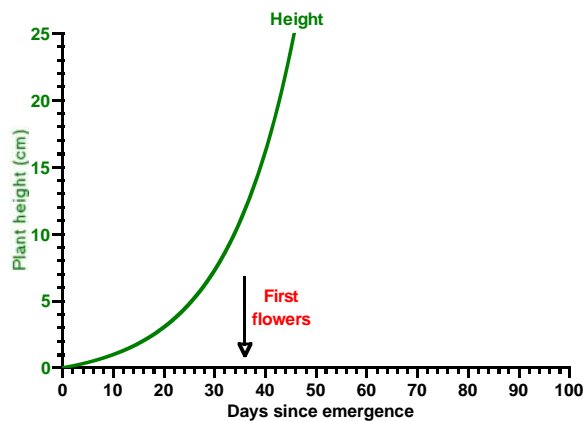
Bellvine (*Ipomoea plebeia*)



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"/>

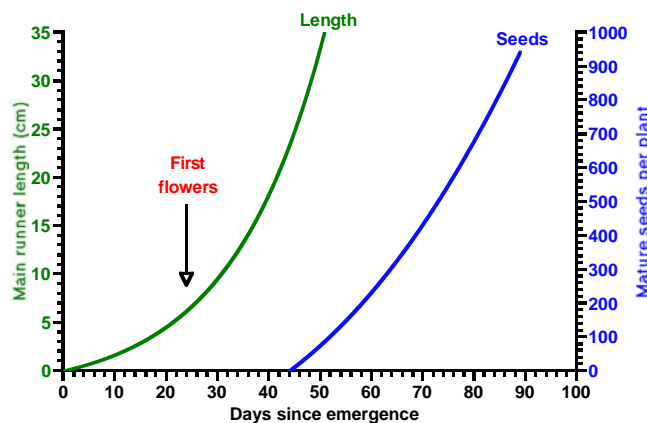
Note* Plants respond to day length and mostly flower in autumn, regardless of plant size.

Blackberry nightshade (*Solanum nigrum*)



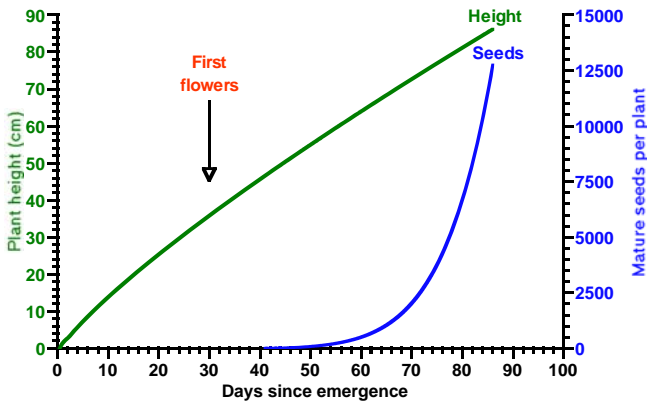
Annual	<input checked="" type="checkbox"/>	or	short-lived perennial	<input checked="" type="checkbox"/>
Frost tolerant	<input checked="" type="checkbox"/>			
Emergence		Winter - summer		
Days to emerge		6 - 7		
Typical emergence		30 - 90%		
Depth of emergence				
First flowers		36 days		
Mature pods				
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*)



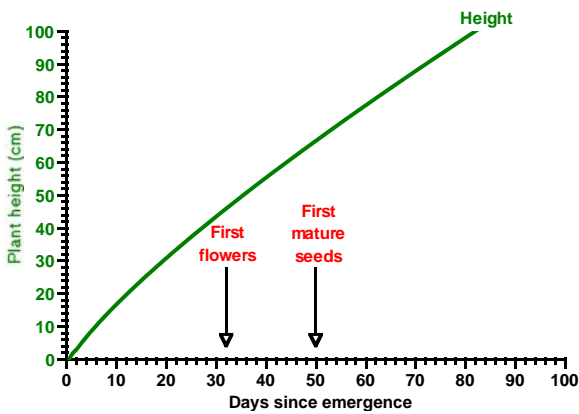
Annual	<input checked="" type="checkbox"/>
Frost sensitive	<input checked="" type="checkbox"/>
Emergence	Spring - summer
Days to emerge	4 - 8
Typical emergence	30 - 50%
Depth of emergence	to 7 cm
First flowers	24 days
Mature pods	43 days
Seeds per pod	3 - 15
Seeds per medium plant	7000
Mature plant diameter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

Bladder ketmia – narrow leaf (*Hibiscus tridactylites*)



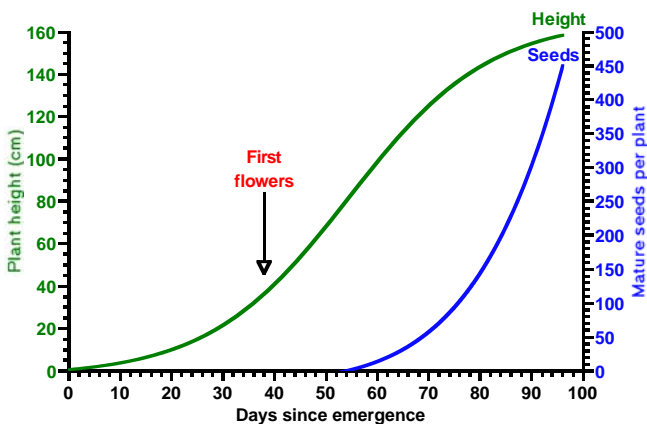
Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		3 - 6
Typical emergence		1 - 10%
Depth of emergence		
First flowers		30 days
Mature seed pods		40 days
Seeds per pod		33
Seeds per medium plant		15 000
Mature plant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

Bladder ketmia – wide leaf (*Hibiscus verdcourtii*)



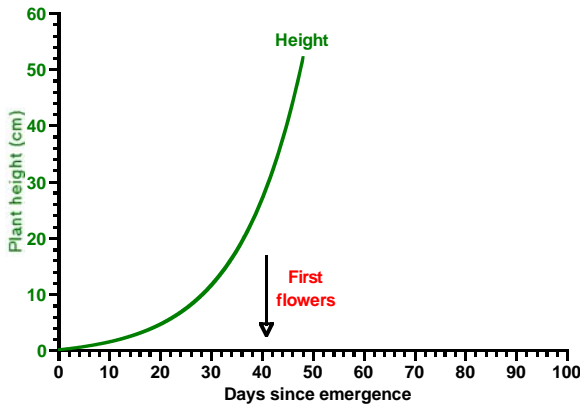
Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		4 - 7
Typical emergence		1 - 10%
Depth of emergence		
First flowers		32 days
Mature seed pods		50 days
Seeds per pod		33
Seeds per medium plant		8000
Mature plant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

Budda pea (*Aeschynomene indica*)



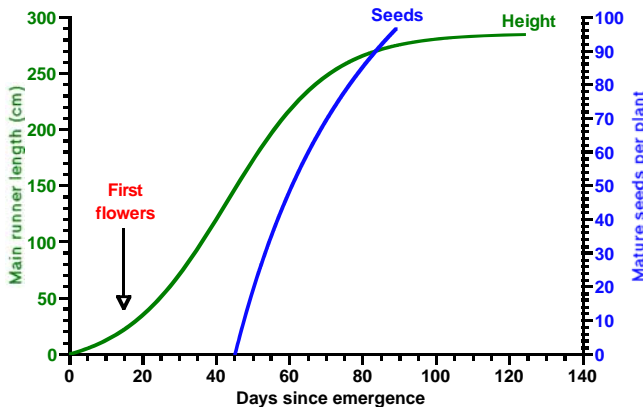
Annual	<input checked="" type="checkbox"/>	or short-lived perennial	<input checked="" type="checkbox"/>
Frost sensitive	<input checked="" type="checkbox"/>		
Emergence			Spring & summer
Days to emerge			11
Typical emergence			20%
Depth of emergence			
First flowers			40 days
Mature seed pods			55 days
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*)



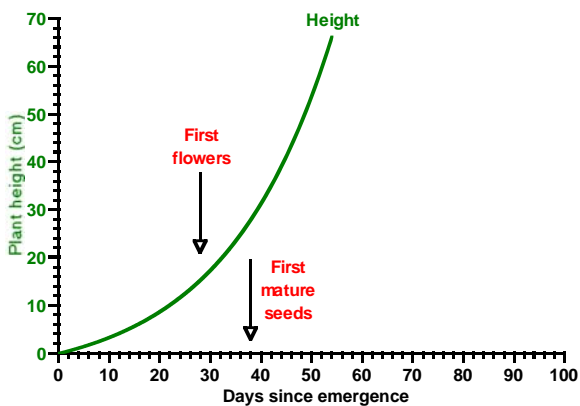
Annual	<input checked="" type="checkbox"/>
Frost sensitive	<input checked="" type="checkbox"/>
Emergence	Spring - autumn
Days to emerge	3 - 6
Typical emergence	70 %
Depth of emergence	
First flowers	41 days
Mature seeds	
Seeds per head	
Seeds per medium plant	
Mature plant height	1 m
An introduced weed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

Cowvine - peachvine (*Ipomoea lonchophylla*)



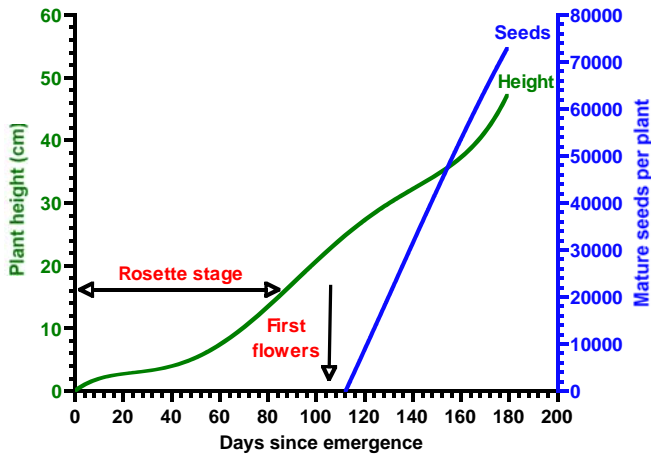
Annual	<input checked="" type="checkbox"/>	or short-lived perennial	<input checked="" type="checkbox"/>
Frost sensitive	<input checked="" type="checkbox"/>		
Emergence		Spring - autumn	
Days to emerge		4	
Typical emergence		1 - 10%	
Depth of emergence		5 cm	
First flowers		16 days	
Mature seed pods		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*)



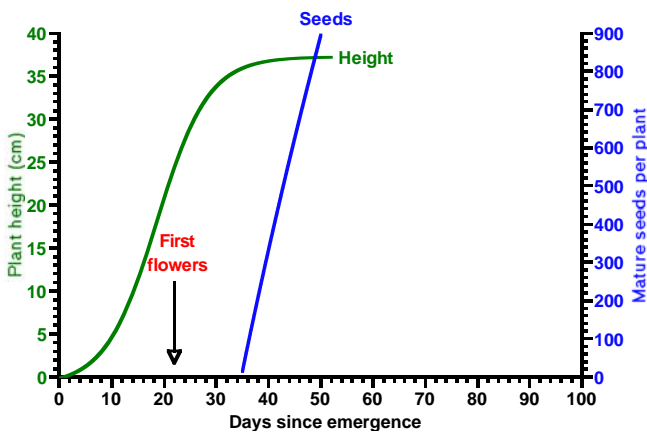
Annual	<input checked="" type="checkbox"/>
Frost sensitive	<input checked="" type="checkbox"/>
Emergence	Spring - autumn
Days to emerge	3 - 7
Typical emergence	10 - 50%
Depth of emergence	
First flowers	28 days
Mature seed pods	35 days
Seeds per pod	
Seeds per medium plant	
Mature plant height	0.3 m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

Flaxleaf fleabane (*Conyza bonariensis*)



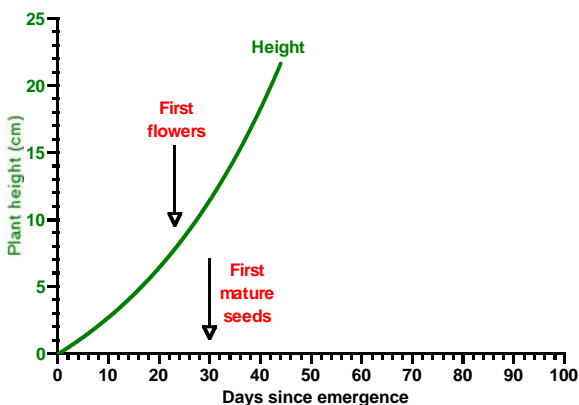
Annual	<input checked="" type="checkbox"/>	
Frost tolerant	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		2 - 3
Typical emergence		10 - 60%
Depth of emergence		Surface only
First flowers		106 days
Mature seeds		124 days
Seeds per head		180 - 240
Seeds per medium plant		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*)



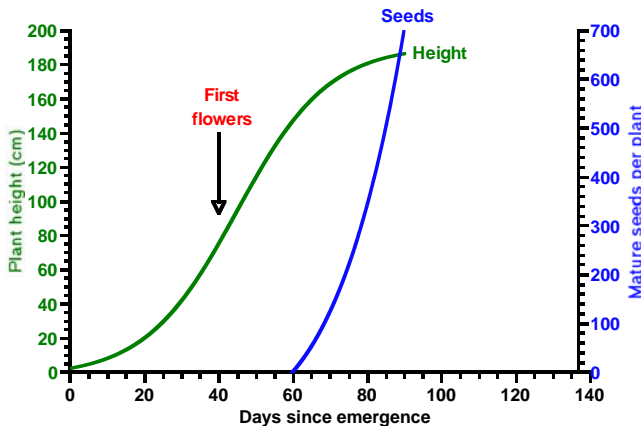
Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring
Days to emerge		5 - 7
Typical emergence		1 - 40%
Depth of emergence		
First flowers		22 days
Mature seeds		38 days
Seeds per stem		20 - 30
Seeds per medium plant		
Mature plant height		0.6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

Mintweed (*Salvia reflexa*)



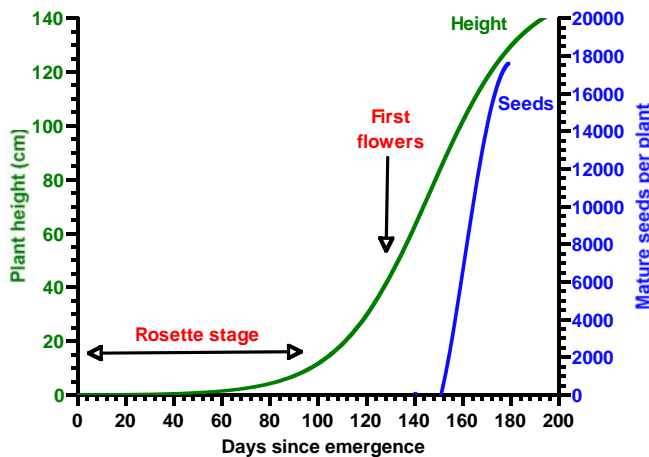
Annual	<input checked="" type="checkbox"/>	
Frost tolerant	<input checked="" type="checkbox"/>	
Emergence		Winter - summer
Days to emerge		7 - 15
Typical emergence		6%
Depth of emergence		
First flowers		23 days
Mature seed pods		30 days
Seeds per pod		2 - 4
Seeds per medium plant		
Mature plant height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

Sesbania (*Sesbania canabina*)



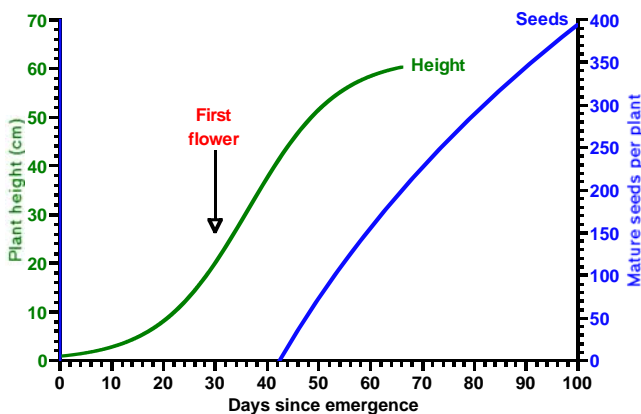
Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		4 - 9
Typical emergence		5%
Depth of emergence		
First flowers		40 days
Mature seed pods		60 days
Seeds per pod		20 - 30
Seeds per medium plant		10 000 - 20 000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

Tall fleabane (*Conyza sumatrensis*)



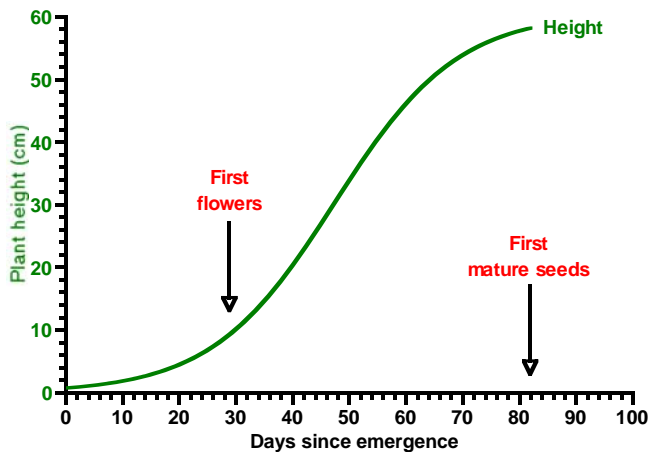
Annual	<input checked="" type="checkbox"/>	or biennial	<input checked="" type="checkbox"/>
Frost tolerant	<input checked="" type="checkbox"/>		
Emergence			Spring - autumn
Days to emerge			2 - 3
Typical emergence			10 - 80%
Depth of emergence			Surface only
First flowers			129 days
Mature seed pods			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*)



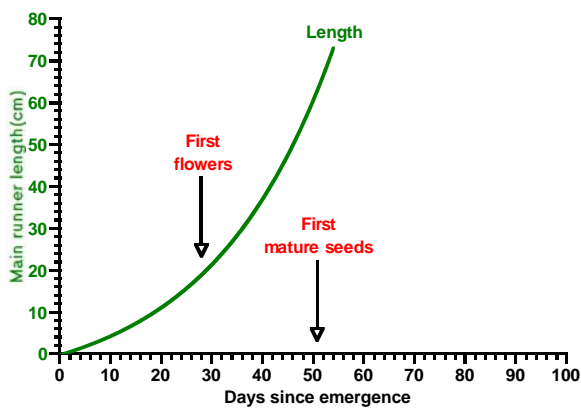
Annual	<input checked="" type="checkbox"/>	
Frost sensitive	<input checked="" type="checkbox"/>	
Emergence		Spring - autumn
Days to emerge		3 - 7
Typical emergence		5%
Depth of emergence		
First flowers		30 days
Mature seed pods		45 days
Seeds per pod		2 - 3
Seeds per medium plant		1000 - 12 000
Mature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

