

VERBASCUM (MULLEIN) KEY

SPECIES KEY

Single flower at each bract	Anthers all transverse	Inflorescence simple or little-branched; flower stalks to 30mm, longer than bract beneath them; corolla usu. purple			<i>V. phoeniceum</i>	
		Inflorescence narrow but with many erect crowded branches; flower stalks 3-8mm, shorter than bract beneath them; corolla yellow.			<i>V. pyramidatum</i>	
	Anthers of 2 lower stamens oblique to decurrent	Flower stalks \geq 12mm and/or \geq calyx; corolla yellow or white	Stamens 5		<i>V. blattaria</i>	
			Stamens 4		<i>V. arcturus</i>	
		Flower stalks 2-10mm and \leq calyx; corolla yellow	Calyx 5-8mm, lobes entire; stamens 5		<i>V. virgatum</i>	
			Calyx 8-15mm, lobes serrate; stamens 4		<i>V. creticum</i>	
At least lower bracts with >1 flower	Anthers all transverse	Basal leaves distinctly lobed	Leaves shortly cottony on upper surface, obscuring veins; basal leaves usu. strongly lobed at base		<i>V. sinuatum</i>	
			Leaves sparsely dendroid-hairy on upper surface; veins obvious; basal leaves somewhat lobed at base		<i>V. chaixii</i> ssp. <i>chaixii</i>	
	Basal leaves not or obscurely lobed	Basal and lower stem leaves broadly wedge-shaped, truncate or cordate at the base	Basal leaves truncate or shortly wedge-shaped at the base; flower stalks c. as long as calyx		<i>V. chaixii</i> ssp. <i>austriacum</i>	
			Basal leaves heart-shaped at base; flower stalks about as long as calyx		<i>V. nigrum</i>	
		Basal and lower stem leaves tapered gradually to the stalk	Leaves densely and persistently whitish-woolly on both surfaces	Flowering stalks longer than calyx		<i>V. speciosum</i>
				Flowering stalks shorter than calyx		<i>V. pulverulentum</i>
	Mature leaves hairless to sparsely hairy and green, at least on upper surface		Flowering stalks longer than calyx		<i>V. lychnitis</i>	
			Flowering stalks shorter than calyx		<i>V. pulverulentum</i>	
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At least lower bracts with >1 flower	Anthers of 2 lower stamens oblique to decurrent	Stem within inflorescence conspicuously glandular						<i>V. virgatum</i>	
		Inflorescence with no or scattered glands	Upper stem leaves distinctly decurrent	Stigma spathulate, tapering onto style				<i>V. densiflorum</i>	
				Stigma capitate				<i>V. thapsus</i>	
		Upper stem leaves not or slightly decurrent	Filaments of 2 lower stamens entirely hairless					<i>V. phlomoides</i>	
			Filaments of 2 lower stamens hairy at least at base	Flowering stalks absent or <5mm	Inflorescence densely white-woolly, concealing bracts and calyces		<i>V. bombyciferum</i>		
		Inflorescence shortly hairy; bracts and calyces visible			<i>V. lagurus</i>				
		Flowering stalks up to 16mm	Anthers of 2 lower stamens 1-1.5mm		<i>V. olympicum</i>				
			Anthers of 2 lower stamens >1.5mm		<i>V. longifolium</i>				

VERBASCUM (MULLEIN) KEY

<i>Species flower characters</i>	1 flower / node	>1 flower / node	Flowers stalked	Flowers ± sessile	Calyx size	Calyx lobe shape	Corolla size	Corolla colours ¹	No. of fertile stamens	Anthers all transverse	2 anthers oblique	Filaments glabrous	Filaments hairy at base	Filaments entirely hairy	Filament hair colour	Stigma spatulate	Stigma capitate
<i>V. arcturus</i>	X		X		3-5mm	Elliptic-lanceolate	2.5-3cm		4		X		↓ ²	↑			X
<i>V. blattaria</i>	X		X		5-8mm	Oblong-lanceolate	2-3cm	()	5		X		↓	↑			X
<i>V. bombyciferum</i>		X	(X) ₃	X	6-10mm	Lanceolate	3-4cm		5		X		↓	↑		X	
<i>V. chaixii</i>		X	X	(X)	3-5mm	Linear-lanceolate	1.2-2.2cm		5	X			(↓)	X			X
<i>V. creticum</i>	X		X	(X)	8-15mm	Lanceolate, serrate	4-5cm		4		X	↓		↑		X	
<i>V. densiflorum</i>		X	X	(X)	5-12mm	Triangular	2-2.5cm		5		X	↓		↑		X	
<i>V. lagurus</i>		X	X	(X)	4-7mm	Lanceolate	2-3cm		5		X	↓		↑		X	
<i>V. longifolium</i>		X	X		5-8mm	Linear-lanceolate	2.5-3.5cm		5		X	↓	(↓)	↑		(X)	X
<i>V. lychnitis</i>		X	X		1.5-4mm	Linear-lanceolate	1.2-2.2cm	()	5	X				X			X
<i>V. nigrum</i>		X	X		2.5-5mm	Lanceolate	1.2-2.2cm		5	X				X			
<i>V. olympicum</i>		X	X		3-5mm	Linear-lanceolate	2-3cm		5		X		↓	↑		X	
<i>V. phlomoides</i>		X	X	(X)	5-15mm	Triangular	2-5.5cm		5		X	↓		↑		X	

¹ Colour options should be taken as a guide for wild populations only. Many colour forms go under species names in the horticultural literature.

² ↑ refers to upper 3 stamens; ↓ to lower 2.

³ () Indicates less usual or borderline state.

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Species flower characters	1 flower / node	>1 flower / node	Flowers stalked	Flowers ± sessile	Calyx size	Calyx lobe shape	Corolla size	Corolla colours ¹	No. of fertile stamens	Anthers all transverse	2 anthers oblique	Filaments glabrous	Filaments hairy at base	Filaments entirely hairy	Filament hair colour	Stigma spatulate	Stigma capitate
<i>V. phoeniceum</i>	X		X		4-8mm	Lanceolate to obovate-elliptical	2-3.8cm	()	(4) 5	X				X			X
<i>V. pulverulentum</i>		X	X	(X)	5-7mm	Linear	1.8-2.5cm		5	X				X			X
<i>V. pyramidatum</i>	X		X	(X)	3-5mm	Broad triangular	2-3cm		(4) 5	X				X			X
<i>V. sinuatum</i>		X	X	X	2-4mm	Ovate-lanceolate	1.5-3cm		5	X				X		(X)	(X)
<i>V. speciosum</i>		X	X	(X)	3-6mm	Linear-lanceolate	1.8-3cm		5	X				X			X
<i>V. thapsus</i>		X	(X)	X	5-12mm	Lanceolate or ovate-acuminate	1.2-3.5cm		5		X	↓	(↓)	↑			X
<i>V. virgatum</i>	X	X	X	(X)	5-8mm	Oblong or lanceolate	3-4cm		5		X		↓	↑			X

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REPORTED VERBASCUM HYBRIDS					
Parents			Hybrid / cultivar name	Reported in wild	Reported in cultivation
<i>V. acaule</i>	x	<i>V. phoeniceum</i>			X
<i>V. acaule</i>	x	<i>V. spinosum</i>	'Golden Wings'		X
<i>V. blattaria</i>	x	<i>V. nigrum</i>	<i>V. x intermedium</i>	X	
<i>V. bombyciferum</i>	x	<i>V. nigrum</i>		X	
<i>V. bombyciferum</i>	x	<i>V. phlomoides</i>		X	
<i>V. bombyciferum</i>	x	<i>V. pulverulentum</i>		X	
<i>V. bombyciferum</i>	x	<i>V. pyramidatum</i>		X	
<i>V. bombyciferum</i>	x	<i>V. thapsus</i>		X	
<i>V. chaixii</i>	x	<i>V. olympicum</i>			X
<i>V. densiflorum</i>		<i>V. nigrum</i>	<i>V. x ambiguum</i>	X	
<i>V. dumulosum</i>	x	<i>V. pestalozzae</i>			X
<i>V. nigrum</i>	x	<i>V. lychnitis</i>	<i>V. x incanum</i>	X	X
<i>V. nigrum</i>	x	<i>V. olympicum</i>	<i>V. x oxoniense</i>	X	
<i>V. nigrum</i>	x	<i>V. pulverulentum</i>	<i>V. x mixtum</i>	X	X
<i>V. nigrum</i>	x	<i>V. speciosum</i>	<i>V. x angulosum</i>	X	
<i>V. pestalozzae</i>	x	<i>V. spinosum</i>	'Golden Dawn'		X
<i>V. phlomoides</i>	x	<i>V. nigrum</i>	<i>V. x brockmuelleri</i>	X	
<i>V. phlomoides</i>	x	<i>V. pulverulentum</i>	<i>V. x murbeckii</i>	X	
<i>V. phlomoides</i>	x	<i>V. thapsus</i>	<i>V. x kernerii</i>	X	
<i>V. phoeniceum</i>	x	<i>V. longifolium</i>	'Boadicea'		X
<i>V. phoeniceum</i>	x	<i>V. nigrum</i>	<i>V. x ustulatum</i>	X	
<i>V. pulverulentum</i>	x	<i>V. lychnitis</i>	<i>V. x regelianum</i>	X	X
<i>V. pulverulentum</i>	x	<i>V. pyramidatum</i>		X	
<i>V. pulverulentum</i>	x	<i>V. thapsus</i>	<i>V. x godronii</i>	X	
<i>V. pulverulentum</i>	x	<i>V. virgatum</i>		X	
<i>V. pyramidatum</i>	x	<i>V. nigrum</i>		X	
<i>V. pyramidatum</i>	x	<i>V. speciosum</i>		X	
<i>V. pyramidatum</i>	x	<i>V. thapsus</i>		X	
<i>V. thapsus</i>	x	<i>V. lychnitis</i>	<i>V. x thapsi</i>	X	
<i>V. thapsus</i>	x	<i>V. nigrum</i>	<i>V. x semialbum</i>	X	
<i>V. thapsus</i>	x	<i>V. speciosum</i>	<i>V. x duernsteinense</i>	X	

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REPORTED VERBASCUM HYBRIDS

Parents			Hybrid / cultivar name	Reported in wild	Reported in cultivation
<i>V. virgatum</i>	x	<i>V. nigrum</i>		X	
<i>V. virgatum</i>	x	<i>V. pulverulentum</i>		X	
<i>V. virgatum</i>	x	<i>V. thapsus</i>	<i>V. x lemaitrei</i>	X	

OTHER VERBASCUM SPECIES REPORTED IN CULTIVATION IN UK

Sources: *European Garden Flora* edn. 2, RHS⁴

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|------------------------|----------------------------|
| <i>V. acaule</i> | <i>V. sinaiticum</i> |
| <i>V. boerhavii</i> | <i>V. spinosum</i> |
| <i>V. bugulifolium</i> | <i>V. undulatum</i> |
| <i>V. delphicum</i> | ? <i>V. wiedemannianum</i> |
| <i>V. dieckianum</i> | <i>V. xanthophoeniceum</i> |
| <i>V. dingleri</i> | |
| <i>V. dumulosum</i> | |
| <i>V. epixanthinum</i> | |
| <i>V. eriophorum</i> | |
| <i>V. glabratum</i> | |
| <i>V. graecum</i> | |
| <i>V. humile</i> | |
| <i>V. leianthum</i> | |
| <i>V. levanticum</i> | |
| <i>V. litigiosum</i> | |
| <i>V. macrurum</i> | |
| <i>V. nevadense</i> | |
| <i>V. oreophilum</i> | |
| <i>V. pestalozzae</i> | |
| <i>V. roripifolium</i> | |
| <i>V. rupestre</i> | |

⁴ Taxa listed as 'Accepted Names' on World Flora Online, <http://www.worldfloraonline.org>