## Raspberry: wildflowers for crop pollinators Sarah E. J. Arnold, Michelle T. Fountain NIAB

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## Major UK pollinators of raspberry are likely to include:

Bees	Bombus terrestris and lucorum	Buff-tailed and white-tailed bumblebee	
	Andrena haemorrhoa	Early mining bee	
	Bombus pratorum	Early bumblebee	
	Bombus pascuorum	Common carder bee	
	Bombus lapidarius	Red-tailed bumblebee	
	Bombus hypnorum	Tree bumblebee	
Hoverflies	Syrphus ribesii	Common banded hoverfly	
	Syrphus vitripennis	Lesser banded hoverfly	
	Eupeodes luniger	Migrant hoverfly	



However, some wild plants are potential hosts of:

- a = melon-cotton aphid;
- **b** = Botrytis;
- **c** = European tarnished plant bug;
- f = cabbage stem flea beetle;
- g = common green capsid;
- o = ornate (violet) aphid;
- p = potato aphid;
- **s** = strawberry blossom weevil;
- t = tobacco thrips;
- v = Verticillium wilt





A selection of wildflowers that attract and support  $\mbox{\it raspberry}$  pollinators includes:

Perennials	Alsike Clover	Trifolium hybridum	a,c,g
	Bird's-foot Trefoil	Lotus corniculatus	
	Black Knapweed	Centaurea nigra	b,c
	Brown Knapweed	Centaurea jacea	
	Comfrey	Symphytum sp.	
	Common Daisy	Bellis perennis	b
	Dandelions	Taraxacum officinale agg.	a,b,c,s,t
	Field Scabious	Knautia arvensis	
	Timothy Grass	Phleum pratense	
	Welsh Poppy	Papaver cambricum	0
	White Clover	Trifolium repens	b,c,g
Annuals	Bee Phacelia	Phacelia tanacetifolia	
	Bird's-eye Speedwell	Veronica persica	о,р
	Borage	Borago officinale	
	Field Poppy	Papaver rhoeas	С
Variable	Chickweed	Stellaria media	c,t,v
	Groundsels	Senecio sp.	b,c,v
	Hawksbeard	Crepis sp.	С
	Herb Robert	Geranium robertianum	
	Houndstongue	Cynoglossum officinale	

How these tables were compiled:

- 1. A literature search and assembly of published and unpublished data sets of insects recorded visiting this crop in the UK.
- 2. The insects were ranked by number of crop visits/visitors in each data set and aggregate weighted ranks were created that take into account the same insects dominating multiple data sets.
- 3. For each of these insects, data on their wildflower visit activity in the UK and wider north-western Europe was assembled using existing literature.
- **4.** These data sets were ranked by frequency of interaction and aggregate ranks produced.
- 5. Plants were removed from the ranks if they were woody/trees, bulbs, not native or naturalised non-native.
- **6.** A further literature search assembled a list of wildflower-pest and wildflower-disease associations for pests and pathogens of key UK crops, to highlight any plants that may carry pest/disease risk (however slight).

The BEESPOKE project (Benefitting Ecosystems through Evaluation of food Supplies for Pollination to Open up Knowledge for End users) aims to increase levels of pollinators and crop pollination at local and landscape scales by providing land managers and policy makers with new expertise, tools and financial knowledge to create more sustainable and resilient agroecosystems.

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