Plants for Bugs: all in the mix

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**See also News p8**

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Guiding gardeners

The main finding was that there was no significant difference between the numbers of pollinators visiting the native and the northern hemisphere (near-native) plots. This comprehensively dispels the myth that a garden full of native plants is crucial to the success of a ‘wildlife garden’ as a habitat for pollinators. In fact, non-native plants can be just as valuable to wildlife as natives – and we now have the data to prove it.

Common names of plants such as honeywort (Cerinthe major, from southern Europe) and bee balm (Monarda didyma, from North America) play testament to recognised plant-insect relationships. The Plants for Bugs pollinator research is the first time anywhere in the world that quantifiable data has been available to prove that diversity of plant origin in gardens is not a strength – in supporting pollinating insects.

Findings for other invertebrate groups (hervibores, predators, decomposers and more) studied will be published in further papers. The soil fauna and function in the study plots was also assessed as part of a PGR project, in association with the University of Roehampton, London. The findings of the first Plants for Bugs paper are, of course, directly relevant to gardeners, but the implications are potentially more far-reaching, as they can be applied to other forms of green space that are managed in a garden-like way.

Pack them in

Unsurprisingly, the more flowers you plant, the more pollinators your garden is likely to attract. It may seem obvious, but the study found pollinator abundance increased with flower abundance (more flowers means more pollinators), regardless of plant origin. So, if in doubt, plant for more flowers and pack them in. Even the tiniest plot can find space for a windowbox of purple heliotrope and snapdragons, or a few tubules of single red Dahlia ‘Bishop of Llandaff’.

A sunny spot ensures maximum flowering and greatest draw for insects. Centaurea, hardy geranium, lavender and salvia make attractive border plants, but don’t forget flowering shrubs and climbers – these offer height and structure, so squeeze in a hebe, single-flowered rose, Oleander (daisy bush), Clematis cirrhosa or Campsis if you can. If space is too tight for large plants, go with tender Verbena bonariensis or Linaria purpurea between existing plantings. Deep shade is a challenge for most flowering plants, but part shade suits Phlox stoechas, Hydrangea paniculata and evergreen Bergenia. Lastly, consider trees: these are often overlooked for their flowering potential, but insects are drawn to pollen-rich willows and nectar-rich maples (Acer) and most limes (Tilia).

WHAT GARDENERS CAN DO TO HELP POLLINATORS

Plant a mixture

Maximise the diversity of pollinating insects that your garden supports by including as wide a range of flower types, shapes and sizes as possible. It used to be thought planting natives alone was essential for wildlife; the Plants for Bugs research, for pollinators at least, suggests this may not be the best approach in gardens. Instead, growing a mixture of plants from different regions is key. This does not mean that a wildflower meadow, Mediterranean-themed border or an exotic ‘South African’ bed has no place in a pollinator-friendly garden. But gardens themed on plants from one region are unlikely to support the highest number of pollinators.

Observe and record

Your own garden’s particular characteristics – and where it is located in the UK – will play major roles in which pollinators it can attract. Local knowledge can be vital. Pollinator-friendly plant lists offer a solid starting point, highlighting plants that work, but they are not infallible. If there is one message to take from pollinators in this RHS study, it is that plant diversity rules, so never be afraid to increase your planting palette. Observe plants in your garden, and gardens in your neighbourhood, to see which plants attract the most insects – a plant visited by hoverflies in a coastal Scottish garden may attract more hoverflies, fewer hoverflies, no hoverflies or completely different species such as solitary wasps when grown in a London garden.

Invaluable local knowledge by trying a wide range of plants and observing them over the year. Field guides can help with insect identification, or simply notice which flowers are buzzing loudest or drawing the most insects. Keep notes, and add more top performers to your garden when you can.
On allotments, too

Plants for Bugs

It is not just ornamental gardens that can support a wide range of pollinators; allotments may play their part.

The Plants for Bugs research does not stand in isolation. There are many research projects, reports and peer-reviewed papers (as many as eight or nine new ones a day) helping to inform our understanding of pollinator needs. One such project, the Urban Pollinators Project, has demonstrated that gardens and allotments are real ‘pollinator hotspots’ among other urban green spaces.

Allotment holders can make a huge contribution to pollinator conservation simply by allowing a small proportion of herbs and vegetables on their plots to flower. Crops such as tomatoes, beans and courgettes rely on pollinators to set fruit, while rocket, mizuna, lettuce, pak choi, parsnip, leek, onion and cabbage will all attract beneficial insects if a few are left to ‘bolt’ (flower and set seed).

Flowers for cutting – such as annual cornflower, Canterbury bells, larkspur, love-in-a-mist and zinnia – also add pollen and nectar value. Weeks of picking for the vase equates to plentiful nectar and pollen for bees and other insect visitors. Urban beekeepers, whose honeybees rely on foraging in greenspaces such as gardens, parks and allotments, will also benefit.

Carrying out the research

The RHS Plants for Bugs study was designed to remove bias and was developed along rigorous scientific lines as a controlled experiment. Two sites were chosen at RHS Garden Wisley, each with 18 3 x 3m (10 x 10ft) timber-edged plots, separated by 1m (39in) wide woodchip paths.

**Layout and management of the plots.**

The plots were laid out in blocks of three beds; one planted with UK native plants, one with northern-hemisphere plants (excluding the UK), and one with southern-hemisphere plants. The identically designed beds each contained 14 species of plants which corresponded within each block. For example: *Stachys officinalis* in the native bed; *Stachys byzantina* in the northern-hemisphere bed; and *Lobelia tupa* in the southern-hemisphere bed. In addition, planting was chosen from three species groups (identified as A, B and C), resulting in nine variations on the planting scheme. Thus, the set of 14 species of plants in native bed A would not have been identical to the set of 14 plants in native bed B, and so on. Plots were hand weeded, watered, and plants cut back or staked as required. No pesticides were used on the plots.

**Data recording.** Tens of thousands of invertebrates were recorded, including eight species of bumblebee; more than 50 species of spider; and more than 40 species of ground beetle. Four sampling methods were used: from the ground, using pitfall and slug and snail traps; from the foliage using a Vortis suction sampler (pictured, above right); and from the flowers by visual observation at around six-week intervals. When weather conditions were favourable for flying insects, each side of each plot was observed for one minute (am and pm) noting any insect landing on the flowers. The number of flowers open was also estimated to aid the statistical analysis.

In 2010 more than 2,300 pollinating insects were observed; in 2011 the number was more than 2,600; in 2012, more than 2,000; and in 2013 more than 1,400 pollinators were recorded. Groups of insects with good numbers of individuals (such as bumblebees, honeybees and hoverflies) were included in the analysis.

FURTHER INFORMATION

- For more information on the project, including a full plant list, an interpretation bulletin and links to the full scientific paper, visit: [www.rhs.org.uk/plants4bugs](http://www.rhs.org.uk/plants4bugs)
- Download RHS Perfect for Pollinators Plants of the World and other plants lists at: [www.rhs.org.uk/perfectforpollinators](http://www.rhs.org.uk/perfectforpollinators)
- For more on the Wildlife Gardening Forum visit: [www.wlgf.org](http://www.wlgf.org)