

POLLINATORS

Pollinating insects play a critical role in maintaining productive natural plant communities, and they also pollinate most crop plants grown for their fruits, vegetables, nuts, seeds, and fiber. Bees are excellent pollinators because they spend most of their adult lives collecting pollen to feed to their developing offspring. The plumed hairs on their bodies attract pollen grains, and “brushes” on their legs enable them to collect pollen and carry it back to the nest. Flowers provide energy in the form of nectar, and many bees have long tongues that allow them to reach into deep flowers that other insects cannot use.

Five major bee families are found in the Midwest: **Apidae** (honey bees, bumble bees, carpenter bees, and a diverse group of solitary soil-nesting bees), **Andrenidae** (andrenid bees), **Halictidae** (sweat bees), **Megachilidae** (leafcutter and mason bees), and



Honey bee



Bumble bee



Carpenter bee



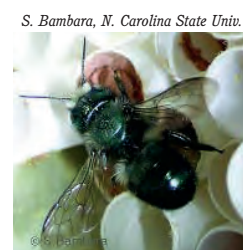
Andrenid bee



Sweat bee, brown



Sweat bee, green



Mason bee



Leafcutter bee

Colletidae (cellophane bees, not shown). Some of the more common species in these groups are pictured here.

Most bee species are solitary (each female produces offspring in her own nest), with only one generation of bees per year. However, some of the most abundant species, such as honey bees and bumble bees, are social, working together to provision a single nest in which a queen presides and produces multiple generations per year. Bees with multiple generations per year need food resources (pollen and nectar) across most of the growing season to build their colonies. Providing plants with overlapping bloom periods in a landscape will help these bees survive and prosper. The table in this bulletin can be used to select plants that will provide flowers through the growing season.

For more information on pollinators, please see the *Other Resources* section below.

Other Resources

Enhancing Beneficial Insects with Native Plants Web site: www.nativeplants.msu.edu

Flint, M.L., and S.H. Dreistadt. 1998. *Natural Enemies Handbook: the Illustrated Guide to Biological Pest Control*. Publication 3386. Berkely, CA: University of California Press, Division of Agriculture and Natural Resources.

Gardiner, M., C. DiFonzo, M. Brewer and T. Noma. 2006. *Identifying Natural Enemies in Crops and Landscapes*. Extension bulletin E-2949. East Lansing, Mich.: Michigan State University.

Shepherd, M., S.L. Buchmann, M. Vaughan and S.H. Black. 2003. *Pollinator Conservation Handbook*. Portland, Ore.: The Xerces Society.

Attracting Beneficial Insects with Native Flowering Plants

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Common name	Scientific name	Natural enemies	Bees	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER
1. wild strawberry	<i>Fragaria virginiana</i>	★★	★	[Yellow bar]					
2. golden Alexanders	<i>Zizia aurea</i>	★★★	★★	[Yellow bar]					
3. Canada anemone	<i>Anemone canadensis</i>	★★★	★		[Yellow bar]				
4. penstemon/hairy beardtongue	<i>Penstemon hirsutus</i>	★★	★★		[Yellow bar]				
5. angelica	<i>Angelica atropurpurea</i>	★★★	★		[Yellow bar]				
6. cow parsnip	<i>Heracleum maximum</i>	★★★	★		[Yellow bar]				
7. sand coreopsis/lanceleaf tickseed	<i>Coreopsis lanceolata</i>	★★★	★		[Yellow bar]				
8. shrubby cinquefoil	<i>Potentilla fruticosa</i>	★★★	★		[Yellow bar]				
9. Indian hemp	<i>Apocynum cannabinum</i>	★★★	★		[Yellow bar]				
10. late figwort	<i>Scrophularia marilandica</i>	★★	★★			[Yellow bar]			
11. swamp milkweed	<i>Asclepias incarnata</i>	★★	★★			[Yellow bar]			
12. Culver's root	<i>Veronicastrum virginicum</i>	★★	★★★★			[Yellow bar]			
13. yellow coneflower	<i>Ratibida pinnata</i>	★★★	★★				[Yellow bar]		
14. nodding wild onion	<i>Allium cernuum</i>	★	★★				[Yellow bar]		
15. meadowsweet	<i>Spiraea alba</i>	★★★	★★				[Yellow bar]		
16. yellow giant hyssop	<i>Agastache nepetoides</i>	★★	★★★★				[Yellow bar]		
17. horsemint/spotted beebalm	<i>Monarda punctata</i>	★★★	★★				[Yellow bar]		
18. Missouri ironweed	<i>Vernonia missurica</i>	★★	★★				[Yellow bar]		
19. cup plant	<i>Silphium perfoliatum</i>	★★★	★★★★				[Yellow bar]		
20. pale Indian plantain	<i>Cacalia atriplicifolia</i>	★★	★★				[Yellow bar]		
21. boneset	<i>Eupatorium perfoliatum</i>	★★★	★★				[Yellow bar]		
22. blue lobelia	<i>Lobelia siphilitica</i>	★★★	★★★★				[Yellow bar]		
23. pale-leaved sunflower	<i>Helianthus strumosus</i>	★★★	★★				[Yellow bar]		
24. Riddell's goldenrod	<i>Solidago riddellii</i>	★★★	★★★★				[Yellow bar]		
25. New England aster	<i>Aster novae-angliae</i>	★★★	★★				[Yellow bar]		
26. smooth aster	<i>Aster laevis</i>	★★	★★				[Yellow bar]		

Native Flowering Plants that Attract Beneficial Insects

The bloom periods shown for the native perennials are for 2-year-old plants growing in full sun in 2005 in Ingham County, Michigan. Bloom times will vary between years and locations. All plants are native to the north central United States; many are native to the eastern United States. Check with local resources to determine if they are native to your area.

Key:

- ★ good
- ★★ better
- ★★★ best

[Yellow bar] Entire bloom period.
 [Yellow area] Yellow area shows peak bloom.


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