

BEE GARDENING IN MARYLAND: Providing Forage Plants for Honey Bees in Maryland 2008

By Christopher R. Costa

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Few activities are as rewarding as attracting honey bees to your bee garden or receiving the bees' pollination services for your garden's fruits and vegetables. Honey bees are very important to our environment - as pollinators and producers of honey, pollen, propolis and beeswax - and can benefit from your attention and assistance. You can easily create a bee garden to attract and feed honey bees, receive their pollination services, and help nurture an important element of Maryland's environment.

Promote the life and health of honey bees in Maryland by:

- planting or nurturing plants with flowers that provide abundant pollen and nectar sources for bees, and bloom in succession from Spring to Fall;
- using herbicides and pesticides sparingly, if at all;
- providing a water tray with small rocks in it (limit mosquitoes by changing water daily, or provide a very slow drip rate to keep water moving);
- teaching children about the habits of bees and other insects, and how to minimize stinging incidents; and
- supporting beekeeping in your area by purchasing locally made honey and hive products, and taking a short course to learn more about bees and beekeeping.

Providing Pollen & Nectar Sources with a Succession of Flowering Plants

Honey bees visit flowers to collect nectar and pollen for their food. Nectar is the carbohydrate portion of the bee's food and is converted into honey by addition of enzymes, which break down nectar into simple sugars, and by evaporation of moisture content in the nectar down to about 18%. Pollen is the bee's natural protein source and provides essential amino acids. While seeking and obtaining nectar and pollen from a flower, bees move some of the pollen from the stamens to the stigmas of flowers. Other insects, birds, winds and rain also provide some pollination by moving pollen.

To make your bee garden, consider adding or encouraging some of these flowering plants with long blooming periods:

<u>Name</u>		<u>Blooming Period</u> ¹	<u>Nectar</u> <u>Pollen</u>	<u>Type/</u> <u>Zones</u> ²
<u>Ornamental Plants</u>				
Russian Sage ³	(<i>Perovskia atriplicifolia</i>)	July - October	N	3-8
Cone Flower, Purple	(<i>Echinacea purpurea</i>)	July - September	-	4-8
Vitex	(<i>Vitex negundo heterophylla</i>)	July - September	-	8-10
Golden Rain Tree	(<i>Koelreuteria paniculata</i>)	July - September	-	5-9
Blue Mist Shrub	(<i>Caryopteris clandonensis</i>)	Late July - October	-	3-7
Winter Aconite ⁴	(<i>Eranthis hyemalis</i>)	February - March	-	4-7
Crocus	(<i>Crocus spp.</i>)	Late February - March	P	3-8
<u>Agricultural Plants</u>				
Lavender, English ³	(<i>Lavandula angustifolia</i>)	June - November	N	5-8
Anise Hyssop	(<i>Agastache foeniculum</i>)	June - October	N	5-9
Greek Oregano	(<i>Origanum heracleoticum</i>)	Late June - October	N	Annual 5-9
Buckwheat	(<i>Fagopyrum sagittatum</i>)	Mid June - October	N&P	Annual

Sunflower	(<i>Helianthus spp.</i>)	July - Mid October	N&P	Annual
Alfalfa	(<i>Medicago sativa</i>)	June - Mid September	N&P	Perennial
Basil	(<i>Ocimum basilicum</i>)	July - Mid October	-	Annual

Wild Plants

Common Dandelion ³	(<i>Taraxacum officinale</i>)	March - November	N&P	Perennial
White Dutch Clover	(<i>Trifolium repens</i>)	April - October	N&P	Perennial
Common Motherwort	(<i>Leonurus cardiaca</i>)	May - October	-	Perennial
Vipers Bugloss	(<i>Echium vulgare</i>)	June - October	N	Biennial 1-11
Mountain Mint	(<i>Pycnanthemum muticum</i>)	July - October	N	Perennial 2-9
Field Mustard	(<i>Brassica rapa</i>)	Late March - June	N&P	2-7
Red Dead Nettle	(<i>Lamium purpureum</i>)	March - May	-	Annual
Jewelweed	(<i>Impatiens capensis</i>)	Late July - September	-	Annual
Skunk Cabbage ⁵	(<i>Symplocarpus foetidus</i>)	February - Mid March	-	Perennial

Special thanks to Mr. Arthur Gruver for his extensive research and materials (see Resources, below) which identify honey bee forage plants and blooming times, and upon which the tables are based.

Within each plant type (i.e. Ornamental, Agricultural or Wild), plants are listed by length of blooming period. To provide significant initial benefits, start the bee garden with plants with lengthy blooming periods (i.e. Dandelion, White Dutch Clover, Motherwort, Vipers Bugloss, English Lavender, Anise Hyssop, Greek Oregano, Russian Sage, Purple Cone Flower), then add plants offering blooms in other periods.

¹ Blooming periods are identified for northern Maryland (Harford County) and will vary by climate and microclimate.

² All listed plants found in Maryland. USDA Plant Hardiness Zones provided for other locations; Maryland is in Zones 7b, 7a & 6a. See <http://www.usna.usda.gov/Hardzone/ushzmap.html>

³ Outstanding length of flower bloom by type of plant class. Russian Sage performs poorly in clay soils, be sure to add ample amendment.

⁴ Poisonous plant report at: <http://www.hort.wisc.edu/mastergardener/Features/bulbs/winteraconite/winteraconite.htm>

⁵ Poisonous plant report at: <http://www.pfaf.org/database/plants.php?Symplocarpus+foetidus>

Trees

Tulip Poplar & Black Locust:

The Tulip Poplar (*Liriodendron tulipifera*) and Black Locust (*Robinia pseudo-acacia*) trees are principal nectar sources for bees in Maryland. These trees flower and provide nectar abundantly for the Spring nectar flow (times may vary; usually April through late May or early June in southern Maryland (Montgomery County), and late May through late June in northern or cooler parts of Maryland). If you have space, plant one of these trees and offer the bees a large number of flowers with highly preferred nectar. These large deciduous trees can also provide shade for the home or garage when located to the southwest.

Honey bees will seek their preferred sources of nectar and pollen and they may prefer not to visit your bee garden if the nectar or pollen elsewhere is more desirable to them (i.e. Tulip Poplar or Black Locust nectar). The honey bee will return to your bee garden after the blooms of more desirable flowers diminish or end.

Early Spring Blooming Trees:

The Apricot (*Prunus spp.*), Peach (*Prunus persica*), Sweet Cherry (*Prunus spp.*), Pear (*Pyrus spp.*), Apple (*Pyrus malus*) and Willow (*Salix spp.*) trees, with blooms in March or April, are early Spring blooming plants and, with the Dandelion, are important Spring build-up plants for honey bees. Pear trees provide flowers that are very attractive to bees, even though their nectar is only about 10-12% sugar. The pear tree's pollen, like the pollen of many fruit trees, has a very high protein content and such pollen is very attractive to bees.

Use Herbicides & Pesticides Sparingly, If At All

To protect bees, eliminate or reduce your use of herbicides (i.e. weedkillers like Weed-B-Gone®, Brush-B-Gone®, RoundUp®) and pesticides. Refrain from spraying herbicides on dandelions and other "lawn weeds", and either admire them as a very important bee forage plant, or remove them by digging out the long tapered roots. If application of herbicides are necessary, apply them to avoid bee activities. Applications late in the day, on cooler (< 57°F) days, and/or cloudy days may save bees, since bees prefer sunny days with temperatures of 57°F or more, and only fly during daylight hours. Select pesticides with low toxicity to bees (such as insecticidal soap) when possible, and time pesticide applications to avoid bee activities.

Provide a Water Tray for Visiting Bees

Consider providing a water tray with small rocks in it to assist the bees visiting your garden flowers, especially in hot weather. Bees need sound footing to access drinking water. Bees float in water, however, they easily drown in water one half inch or more deep, usually after exhausting their energy in efforts to get out of the water. The potential mosquito breeding area can be reduced or eliminated by changing the water daily or providing a very slow drip rate to keep water moving.

Honey Bee Habits

Foraging honey bees are intent on collecting nectar and pollen and have little interest in stinging people or animals. Honey bees often work flower blooms with other insects, like bumble bees and smaller bees (osmia, orchard mason bee, leafcutter bee, alkali bee). Honey bees (other than Africanized honey bees, with reported locations in Texas to Florida) usually only sting to defend their hive from a perceived threat, or to protect themselves from being crushed or struck. The honey bee dies when her barbed stinger pulls out of its abdomen. If ever stung, quickly scrape the stinger and attached sac away from the skin with a fingernail, move away from the area and seek appropriate treatment. Some people have allergic reactions to bee stings, while many others do not. You can minimize stinging incidents by wearing white or light colored clothing, minimizing fragrance use, making slow deliberate movements, and not swinging at or trying to hit bees in the air. Learn the differences between honey and other beneficial bees and the wasps (i.e. yellow jackets, paper wasps, etc.), and teach your children about their differences.

Support Beekeeping & Learn More About Bees

Support bees and beekeeping in your area by purchasing locally made honey and hive products and learning more about bees and beekeeping. Visit your local and state beekeeping association's website for information on programs, demonstrations and vendors who sell honey and other hive products.

Attend a short course on bees and beekeeping, which are offered in early Spring by many local beekeeping associations, and taught by experienced beekeepers. For beekeeping associations and courses in your area visit the [Maryland State Beekeepers Association's website](#)

<http://www.msbeea.org/main/home.html> , and click on “Local Clubs”. The 2008 Short Course offered by the Montgomery County Beekeepers Association starts February 28, 2008, and information and registration form are available at: <http://www.montgomerycountybeekeepers.com/course.asp>

Resources:

Gruver, Arthur B., Bee Forage Through the Year in Northern Maryland, presented to Eastern Apiculture Society (“EAS”) August 2000 conference, Salisbury, MD. Mr. Gruver is an expert and outstanding resource on Maryland honey plants. The author thanks Mr. Gruver for his guidance and materials.

Morse, Roger A., The New Complete Guide to Beekeeping, Countryman Press, Woodstock, Vt., 1994, ISBN 0-88150-315-0, Call # 638.1 Mor.

Waring, Adrain & Claire, Beekeeping, McGraw-Hill Companies, Inc., 2006, Call #: 638.1 War.

Web 1: <http://beelab.osu.edu/garden/Default.asp>
OARDC Honey Bee Lab: Bee Garden (Wooster, Ohio)
[Descriptions and pictures of honey bee plants.]

Web 2: http://maarec.cas.psu.edu/floral-sources_files/frame.htm
Mid-Atlantic Apiculture Research and Extension Consortium (“MAAREC”).
[Excellent photos by Diana Sammataro, Ph.D., author of “The Beekeeper’s Handbook” – one great book.]

Web 3: <http://ohioline.osu.edu/hyg-fact/2000/2168.html>
Tew, James E., Some Ohio Nectar and Pollen Producing Plants, Both Major and Minor Sources, HYG-2168-98, Ohio State University Extension Fact Sheet, OARDC/Entomology, Honey Bee Lab, Wooster, OH.

Web 4: <http://www.easywildflowers.com/index.html>
Easyliving Wildflowers: Native Perennials, Native Wildflower Seeds and Plants for Home Landscaping and Prairie Restoration; P.O. Box 522, Willow Springs, Mo. 65793, phone & fax 417-469-2611

Web 5: <http://www.ahs.org/> & http://www.ahs.org/membership/seed_exchange.htm
American Horticultural Society
2008 AHS Seed Exchange Catalog: http://www.ahs.org/pdfs/08/2008_Seed_Exchange_List.pdf
(see items: 5, 44, 62, 91, 110 & 149)

Web 6: <http://www.msbeea.org/main/home.html>
Maryland State Beekeepers Association
[Click on link for “Local Clubs” for links and info to local associations in your area.]

Web 7: <http://www.montgomerycountybeekeepers.com/>
Montgomery County Beekeepers Association
2008 Short Course: <http://www.montgomerycountybeekeepers.com/course.asp>

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