



Home, Yard, and Garden Pest Newsletter

Issue 10 • September 1, 2022

In This Issue

Tips for Attracting Monarch Butterflies to Gardens and Landscapes 1

Bacterial Leaf Scorch of Shade Trees 3

Illinois EPA Announces Temporary Suspension of Household Hazardous Waste Collections 5

Tips for Attracting Monarch Butterflies to Gardens and Landscapes

Last month, the migratory monarch butterfly was added to the International Union for Conservation of Nature (IUCN) Red List as an endangered species. IUCN is an international non-profit organization and the world’s leading authority on biodiversity. The IUCN Red List is different than the US Federal Endangered Species list managed by the US Fish and Wildlife Service. Currently, the migratory monarch is not on the US Federal Endangered Species list but will be re-evaluated for endangered status in the future. At this time Illinois applicators are not required to change their operations, but many are wondering what they can do to help our native monarchs.

The following are suggestions for improving monarch gardens based on research by Adam Baker PhD, and presented in a recent [Horticultural Research Institute webinar by Dan Potter PhD](#). Baker’s research looked at factors affecting monarch utilization of garden spaces and factors affecting monarch survival in those spaces. Here are some

Choose a garden location with north-south access:

In Baker’s research, more monarchs were counted in gardens in locations with north and south access. Since monarchs travel toward the north or south in their migration, access to gardens from those directions is most beneficial. This means that planting a garden along the east or west side of a building or fence is beneficial because it allows monarchs to easily enter the garden from the north or south.

Plant milkweed where monarchs can see it:

Monarchs locate host plants visually, so making sure milkweed plants are easy to see by passing butterflies is key. This can be done by:

Planting milkweed along the perimeter of gardens

- In research, more monarchs were found on milkweed plants placed along the perimeter of gardens compared to those located in the center or mixed throughout the garden.



Top: Monarch adult on purple coneflower. Sarah Hughson, University of Illinois.
Bottom: Monarch caterpillars on common milkweed. Sarah Hughson, University of Illinois.

Plant milkweed in structured gardens

- More monarchs were found on milkweed in structured gardens where plants were spaced and separated by mulch compared to gardens with dense mixtures of plants. In dense plantings, non-host plants may grow around the milkweed, making it difficult for monarchs to see and locate the milkweed.

Preferred milkweed species:

Tall milkweed species were preferred

- More monarchs were found on taller species of milkweed like swamp milkweed, common milkweed and showy milkweed.
- Smaller species are still beneficial to monarch but may not attract as many monarchs. Smaller plants are also great for bee diversity in the garden.

Nativars were just as helpful for monarchs in gardens

- Nativars are native species that have been bred or cloned to produce showier flowers.
- Research found no difference in the number of monarchs or the development of caterpillars on nativar milkweed compared to the wild-type of the same milkweed species.
- While it is fine to use nativars in gardens, we don't recommend using nativars in nature preserves or protected areas.

Avoid tropical milkweed

While tropical milkweed is an attractive addition to a garden, it is not the best choice for monarchs. Here are three drawbacks to planting tropical milkweed:

- Tropical milkweed does not dieback at the same time as our native milkweed plants. Milkweed dieback is an important cue that lets monarchs know that it is time to migrate, so monarchs feeding on tropical milkweed may not leave the plants at the right time to migrate successfully.

- Since monarchs are lingering on tropical milkweed plants, their populations can build up and transmit illness, particularly OE (*Ophryocystis elektrosirra*). OE is a parasite that can impact the ability to emerge from the pupal casing, ability to fly and migrate properly, and survival. Some infected individuals may have small or crumpled wings.
- In higher temperatures caused by climate change, tropical milkweed may produce higher levels of toxins than native milkweeds and become toxic to monarchs.

Control European paper wasps (*Polistes dominula*)

European paper wasps are an introduced species that feed caterpillars to their young. This species is not put off by the distastefulness of monarch caterpillars and may feed on them. Younger caterpillars are more at risk of predation by European paper wasps but larger caterpillars can sometimes be taken.

European paper wasps look similar to yellowjackets (*Vespula spp.*).

- European paper wasps build their paper nests in crevices or under overhangs, while yellowjackets nest underground in abandoned rodent holes or other concealed locations.
- European paper wasps have yellow or orange tipped antennae, yellowjackets have black antennae



Left: European paper wasp (*Polistes dominula*), Joseph Berger, Bugwood.org.

Right: Eastern yellowjacket (*Vespula maculifrons*), Whitney Cranshaw, Colorado State University, Bugwood.org.

Avoid placing butterfly houses in or around pollinator gardens.

- While butterfly houses are cute, butterflies don't utilize them.
- Butterfly houses are attractive sites for European paper wasps nests, so butterfly houses may inadvertently lead to monarch predation by European paper wasps.

Monarch Resources:

Monarch Waystations <https://monarchwatch.org/waystations/>

Monarch Joint Venture: Learn more about monarch biology, create habitat or get involved with community science projects that benefit monarchs <https://monarchjointventure.org/>

Xerces Society: Learn about pollinator protection, including lists of pollinator plants for your region and other educational materials <https://xerces.org/>

Primary Research used in this article:

Baker, A.M. and D.A. Potter. 2018. Colonization and usage of eight milkweed (*Asclepias*) species by monarch butterflies and bees in urban garden settings. *Journal of Insect Conservation*, 22, 405 - 418. <https://link.springer.com/article/10.1007/s10841-018-0069-5>

Baker, A.M. and D.A. Potter. 2019. Configuration and location of small urban gardens affect colonization by monarch butterflies. *Frontiers in Ecology and Evolution*. <https://doi.org/10.3389/fevo.2019.00474>

Baker, A.M. and D.A. Potter. 2020. Invasive paper wasp turns urban pollinator gardens into ecological traps for monarch butterfly larvae. *Scientific Reports*, 10, 9553. <https://doi.org/10.1038/s41598-020-66621-6>

Baker, A.M., C.T. Redmond, S.B. Malcolm and D.A. Potter. 2020. Suitability of native milkweed (*Asclepias*) species versus cultivars for supporting monarch butterflies and bees in urban gardens. *PeerJ* 8:e9823. <https://peerj.com/articles/9823/>

Sarah Hughson

Bacterial Leaf Scorch of Shade Trees

Bacterial leaf scorch (BLS) symptoms are evident on many oaks in central Illinois. This disease causes a slow, multiyear decline and eventually death of the host tree. BLS is caused by the bacterium *Xylella fastidiosa*, which is also responsible for Pierce's Disease in grapes and is currently causing widespread damage to the Italian olive industry.

Bacterial leaf scorch affects a wide variety of Illinois tree species. The most common hosts in our state are oak (red oak group), elm, sycamore, London plane, sweetgum, hackberry, ginkgo, and maple (sugar and red). Many other woody and herbaceous plants can be susceptible to the pathogen. The bacteria is found only in the xylem (water-conducting) tissue of the plants and is spread from host to host xylem-feeding leafhoppers, treehoppers, and spittlebugs. *X. fastidiosa* is known to pass between certain host species through root grafts. However, root grafts do not appear to be an important transmission route between shade trees.



Red oak leaves from a tree infected with BLS. Note the yellow band between green and scorched tissues. Travis Cleveland, University of Illinois.



Top: Shingle oak tree infected with BLS, August 2021. Travis Cleveland, University of Illinois.

Bottom: The same shingle oak tree, one year later with advanced dieback, August 2022. Travis Cleveland, University of Illinois.

Scorch symptoms appear on leaves in mid to late summer and gradually intensify as the season progresses. Affected leaves may turn a yellow/green color before turning brown, usually from the margin of the leaf inwards. Older leaves are often affected first, and an individual branch or section of branch-

es usually becomes discolored at the same time. Symptoms are generally not scattered throughout the crown. Branches will leaf out the following spring, but symptoms will re-appear and slowly spread through the canopy over subsequent seasons. Except in oaks, leaves generally do not drop until autumn.

It's important to note that BLS symptoms can easily be confused with drought stress, cultural problems, cankers, and, in oak trees, oak wilt. They can also be confused with *Verticillium* wilt in some trees. Submitting a sample to a plant diagnostic laboratory is the only way to diagnose the disease definitively.

The University of Illinois Plant Clinic uses an antibody test to determine the presence of *X. fastidiosa* in symptomatic tissue. The test requires a high population of bacteria to be effective. Thus, the plant clinic offers BLS testing in late August or early September when populations are high enough for detection. BLS tests conducted in spring or early summer may result in a false negative due to the population of bacteria being too low.

If you suspect that a tree or shrub is affected by BLS, you may submit a sample to the University of Illinois Plant Clinic. **Samples should consist of symptomatic leaves complete with the petiole** (the structure that attaches the leaf to the branch). Ideally, at least a few of the leaves would be transitioning from green to brown. There is a \$25 fee for this test. To download a sample submission form, visit the Plant Clinic's website at <https://extension.illinois.edu/plant-clinic> and click on the "Download Forms" tab. Please indicate that you wish the sample to be tested for BLS.

Management for trees affected with BLS consists of increasing tree vitality by mulching the base of the tree to retain moisture, watering during periods of dryness lasting more than two weeks, pruning out dead branches, and fertilizing when appropriate. While trunk injections with antibiotics have been shown to be effective at delaying symptom development, they do not cure the tree, and the injection sites open new paths of entry for organisms that decay wood. Over time, repeated treatments can severely weaken the tree. Choosing non-susceptible hosts to plant near affected trees is also recommended to prevent the spread of disease.

Diane Plewa and Travis Cleveland

Illinois EPA Announces Temporary Suspension of Household Hazardous Waste Collections

SPRINGFIELD – The Illinois Environmental Protection Agency (Illinois EPA) has announced a temporary suspension of all Household Hazardous Waste (HHW) collection events and locations after a fire occurred at the current disposal facility in Ohio. Illinois EPA is working with the current contractor to evaluate alternatives for disposal. Illinois EPA is suspending the scheduled one-day HHW collections planned for this fall, as well as the long-term HHW disposal facilities in Chicago, Naperville, Lake County, Rockford, and Madison County that Illinois EPA supports, until normal disposal operations can resume.

Illinois EPA currently has a contract for the disposal of collected HHW, which disposes much of the collected waste at an incinerator located in Ohio. The Ohio facility had a fire in July, which required them to cease operations until specifically made parts can be shipped from Germany. It is estimated that the facility will not be operational until mid-November.

In August 2021, the U.S. EPA issued a memorandum detailing a continuing nationwide incinerator backlog, which has rendered handling materials like HHW extremely difficult over the past year. This month,

U.S. EPA reiterated the memorandum remains in effect. As a result, an alternative incinerator has not yet been identified to accept Illinois' HHW and guarantee its incineration in a timely manner. This is the first time the Illinois EPA HHW collection program has encountered this issue in more than two decades of operation.

Residents in possession of household hazardous wastes (e.g., oil-based paints, herbicides, cleaning supplies, household batteries) should keep the materials safely stored in their original manufacturer containers, as those are designed to safely hold the items, until HHW collections resume. The Illinois EPA is committed to rescheduling the one-day HHW collection events in Tinley Park, East Moline, Bloomington, Quincy, and Springfield once alternative disposal arrangements are available. The Illinois EPA continues to explore other options for HHW disposal. Depending on the availability of other avenues and when the Ohio facility is operational, Illinois EPA may be able to reschedule these events yet this fall/early winter. If not, Illinois EPA plans to add them to the spring schedule.

For more information on Household Hazardous Waste, please visit:

<https://www2.illinois.gov/epa/topics/waste-management/waste-disposal/household-hazardous-waste/Pages/default.aspx>

Source: Illinois Environmental Protection Agency News Release. August 22, 2022



Illinois Extension

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

College of Agricultural, Consumer and Environmental Sciences

University of Illinois, U.S. Department of Agriculture, Local Extension Councils Cooperating.

University of Illinois Extension provides equal opportunities in programs and employment.

The mention of trade names in this newsletter is for general information purposes only. It does not constitute an endorsement of one product over another, nor is discrimination intended against any product.

©2022 University of Illinois Board of Trustees. For permission to reprint, revise, or otherwise use, contact hygnewsletter@illinois.edu