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THE PURDUE LANDSCAPE REPORT

In This Issue

Cold weather in January 2018 may have killed bagworms in some parts of Indiana

(Cliff Sadof, csadof@purdue.edu)

Although winter weather came late this year, when it finally arrived at the end of December, it was fiercely cold with temperatures dipping well below 0 ˚ F. Most Indiana insects can survive these temperatures. One serious defoliator, the evergreen bagworm may have been killed by the cold weather.

What are bagworms?

Bagworms, *Thyridopteryx ephemeraeformis* (Haworth) are caterpillars that can strip the leaves from a wide variety of trees and shrubs. Evergreen shrubs, like juniper, red cedar, falsecypress, spruce, arborvitae, fir and pines can be killed when they lose more than half of their leaves to this pest. Although deciduous trees like maples, elms, birch, crabapples, willows and poplars are more likely to survive when they lose their leaves, affected trees are unsightly and repeated defoliation is likely to kill these trees.

Bagworms get their name from their habit of living inside a silk bag that they cover with bits of leaves and needles as they feed. In the summer they carry these leaf coated bags as they feed on the canopy.

https://www.purduelandscapereport.org/wp-content/uploads/2018/02/Video-1.-Bagworm-Feeding-on-Maple-HD-720p.mp4

Bagworms hatch from old bags, filled with eggs in late May or early June. Young caterpillars crawl out of the bags and either crawl to new leaves, or are blown on silken strands to new plants. Caterpillars continue feeding through August when winged male bagworms fly out of their own bags to mate with wingless females. Bags of mature females can be up to 2 inches long and are often mistaken for pinecones.

The female lays her eggs inside her body cavity, where they remain until they hatch into caterpillars during the following spring (figure 2 female filled with eggs).

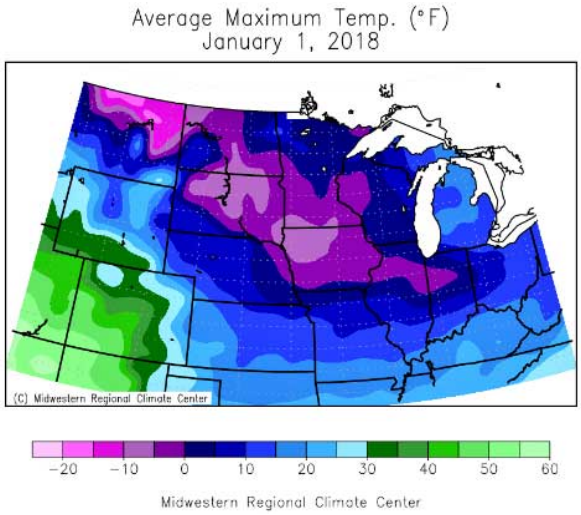
Why is cold weather more likely to kill bagworms than other insects in Indiana?

Unlike many insects who insulate themselves from the cold by burying below the soil surface, bagworm eggs dangle in bags from branches, well above the soil. Also, they lack the protective mechanisms that many other insects have to protect their tender tissues from ice crystals that form during the freezing process. Research conducted at Purdue shows that most bagworm eggs can die when they are kept below -0.6˚ F for 24 hours. So, if the daily HIGH temperature is less this temperature you may not have a bagworm problems

What should You do?

Examine this weather map to see if you live in areas that were warmer than 0 ˚ F. If so, you will probably have most of your bagworms surviving and will have to plan to manage this insect with insecticides as you have in the past. If you do live in areas where it was colder than 0 ˚ F you should check your bagworm infested plants for new bags starting in late May (Figure 4). Plants are best protected by applying insecticides to the leaves when bags are small, and caterpillars have removed leaves. Homeowners can use spinosad (Fertilome Borer and Bagworm

Killer, or Captain Jack's Deadbug) to kill bagworm. Other products, such as carbaryl (Sevin) can also be effective, but may cause spider mite problems.



Take Precautions When Hiring Tree Services to Help with Storm Clean-Up

(Lindsey Purcell, lapurcel@purdue.edu)

Finding a qualified tree service is important protection for the tree owner. Often, less credible tree companies follow storms for a "quick buck" and move out of town as fast as the storm. Knowing how to hire a reputable arborist can help prevent becoming a victim all over again.

A professionally trained arborist can help determine if a tree can be saved. Even if the tree must be removed, safety and training are still needed to prevent additional damage from the removal. In a time of disaster, a fast recovery is desirable, but not taking the time to hire a reputable tree service may create greater problems in the future.

When hiring a tree care service:

- **Certification –** Ask if the arborists on staff hold an ISA certification. ISA offers a range of certification credentials from Certified Tree Worker/Climber Specialist to Board Certified Master Arborist. To be certified, individuals must pass a voluntary comprehensive exam. Certification must be maintained through continuing education, which means they should be up-to-date on the latest in arboricultural technology and are knowledgeable of acceptable practices.
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  Professional Affiliation – Ask about membership in professional organizations such as the International Society of Arboriculture (ISA) and/or one of its chapters. There are also state arborist associations such as the Louisiana Arborist Association (LAA) and the Professional Arborist Association of Mississippi (PAAM). Affiliation with industry organizations demonstrates a willingness to stay up-to-date on the latest techniques and information.
- **Advertisement** – Check the local yellow pages directory or newspaper for arborists who list themselves as ISA Certified and/or state licensed arborists or who display the official logos of professional membership. Also look for logos of business accreditation by organizations such as The Tree Care Industry Association (TCIA), who requires they have an ISA Certified Arborist on staff.
- **Insurance –** Ask for proof of insurance, and then verify coverage with the insurance company. A reputable arborist should have insurance to cover personal and property damage as well as worker's compensation. If you hire an uninsured tree expert, you can be held liable for any damages or injuries that occur while they are on the job. If you hire a company that is from another state, verify that his insurance covers him for work done in your state.
- **References –** Ask for references from past customers, and do not hesitate to check them or to visit the locations where the company or individual has done tree care work. A drive-by to inspect their work is easy to do.
- **Estimates –** Do not be afraid to ask for an estimate, and remember that it is okay to get more than one. You should not always select the lowest bid. And most importantly, get it in writing. Most reputable arborist will have the customer sign a contract, so be sure to review it, and do not be afraid to ask questions.
- It is important to remember that good tree work by qualified professionals is worth the additional expense. Poor work, no matter the price paid, can cost you a great deal in the long run including lethal damage to the tree.

Take the time to be an informed consumer and prevent yourself from becoming victimized.

For more tree care information, or to find an ISA Certified Arborist, visit www.treesaregood.org.

https://www.extension.purdue.edu/extmedia/fnr/fnr-faq-12-w.pdf

Damping-off of seeds and seedlings

(Janna Beckerman, janna@purdue.edu)

Figure 1. Damping-off describes the death of seeds or seedlings

This is the time of year when growers begin planting seed—whether you are child planting a few seeds in Dixie cup for a school project, home tomato growers, or professional horticulturists. Unfortunately, one problem you may share in common is damping-off. Damping-off describes the death of seeds or seedlings and includes all of the following phenomena: Seeds that rot before they germinate, the newly emerging root (radicle) or shoot (cotyledons) of the seedling rots before emergence, or stems of seedlings (cotyledon) are attacked near the soil line, causing the young plants to collapse. Damping-off is caused by several fungi, including *Botrytis spp* and *Rhizoctonia solani*, and fungal-like organisms such as *Pythium spp.* and *Phytophthora spp.* These microbes are found in practically all soils and pose a large threat to plant propagation. Almost all species of plants can be infected, and these organisms also cause new cuttings to rot, as well.

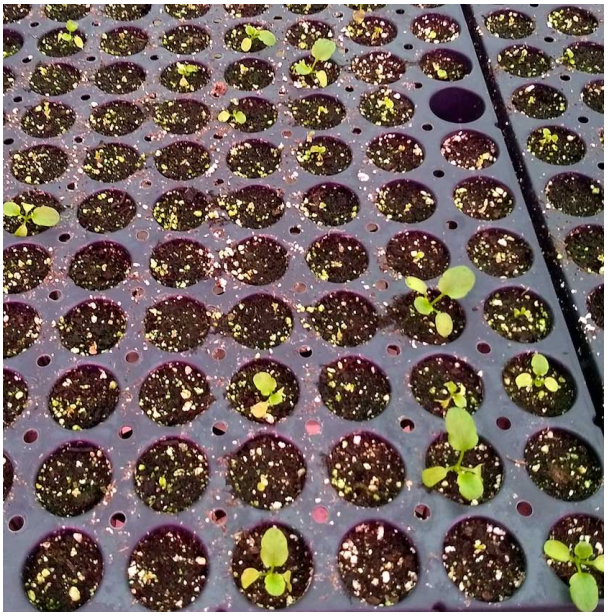

Figure 2. Seedling tray with damping off

Symptoms. In large flats or direct seeded gardens, damping-off commonly occurs in patches. Pre-emergent damping-off describes a seed rot (Fig. 1), or the death of the seedlings before they emerge from the soil. Post-emergent damping-off affects newly developed seedlings that have emerged from the soil(Fig. 2). Symptoms of post-emergent damping-off usually involve a dark stem rot near the soil surface that causes seedlings to collapse and rot.

Management. In this case, disease prevention is a cornerstone of management. If planting in the garden, sow seeds when temperatures are favorable for rapid seedling growth. When starting seedlings indoors or in a greenhouse, this disease can be avoided if seeds and cuttings are planted in sterilized, soil-less seedling mix or other planting media, using only sterilized containers. A soil-less starting mix composed of a peat moss/vermiculite/sand mix is preferable for starting seeds. Use clean water on the seeds, not stored rainwater or pond water. Remove any pots or flats with damping-off immediately to prevent the spread of this problem.

As always, promote healthy plant growth–Vigorously growing seedlings are fairly resistant to infection. Follow planting instructions carefully—some seeds require light, a certain planting depth (or no depth!), soaking overnight, scarification (nicking the seed) and stratification (cold to induce germination). For plants that should not be covered, or require light for germination, plant seeds on soil, but cover with a light layer of sterile sand instead of soil. Provide good ventilation–moving air allows seedlings to dry and prevents the germination of *Botrytis*, or free water needed for *Pythium* or *Phytophthora* infection. Do not overwater, and follow instructions to thin seedlings appropriately. Yes—kill your darlings to the recommended spacing to allow them to grow big and

strong, and not topple over because they are spindly and weak!

Finally, if you are faced with persistent problems, consider using fungicide-treated seeds, adding captan to seeds prior to planting, or using a product like Banrot G incorporated into your growing media, which controls most root rot pathogens. Follow labeled recommendations as rates change depending upon type of seeds being treated. Keep in mind that certain seedlings (e.g., conifer) may be adversely affected by captan.

Allium 'Millenium' Named 2018 Perennial of the Year!

(Rosie Lerner, rosie@purdue.edu)

Allium 'Millenium' with masses of rose-purple blooms.

The Perennial Plant Association (PPA) selected its 2018 Perennial Plant of the Year: Allium 'Millenium' (yes, that's Millenium with just one n). This announcement continues to show the focus on pollinator habitat these days — Allium 'Millenium' is appropriately referred to as a butterfly and bee magnet!

'Millenium' is a hybrid *Allium* selected for late flowering. It has masses of rose-purple blooms; a uniform habit; and neat, shiny, green foliage that remains attractive long after blooms have faded. It is also known for its resistance to drought.

The upright foliage clump of grass-like, glossy, deep-green leaves reaches 10-15 inches tall in spring. In midsummer, two or three flower stalks rise above the foliage, and each produces two or three showy globes of rose-purple florets that last as long as four weeks. They dry to a light tan, often holding a blush of their former rose-purple color.

'Millenium' is just about the perfect low-maintenance perennial for full sun. Once established, about the only maintenance it needs is cutting back foliage in late fall after the plants fade. This plant is hardy to USDA zones 4-9 (possibly zone 3), which makes it a great choice throughout the Midwest. No serious pest problems have been reported, though leaf spot may occur in overcrowded growing conditions with decreased air circulation. Deer and rabbits appear to avoid browsing.

Gardeners sometimes avoid planting Alliums because of their unwanted reseeding behavior. Fortunately, 'Millenium' produces 50 percent fewer seeds, which raises less concern for unwanted self-seeding.

'Millenium' has a clump habit with a fibrous root system, which makes it easy to propagate by division in either spring or fall.

The Perennial Plant Association selects a different perennial plant each year to promote throughout the nursery and gardening industry. PPA members nominate plants based on several criteria, including low maintenance needs, adaptability to a wide range of climates, pest and disease resistance, wide availability, multiple seasons of interest, and ease of propagation. A selection committee then narrows the field to three or four choices from which the members cast their votes.

For more information about the Perennial of the Year program, see www.perennialplant.org.

Previous PPA Perennial Plant of the Year winners:

- 2017 *Asclepias tuberosa* (butterfly milkweed)
- 2016 *Anemone* × *hybrida* 'Honorine Jobert' (windflower)
- 2015 *Geranium* 'Biokova' (dwarf cranesbill, hardy geranium)
- 2014 *Panicum virgatum* 'Northwind' (tall switch grass)
- 2013 *Polygonatum odoratum* var. *variegatum* (Solomon's seal)
- 2012 *Brunnera macrophylla* 'Jack Frost' (Siberian bugloss)
- 2011 *Amsonia hubrichtii* (blue star)
- 2010 *Baptisia australis* (blue false indigo)
- 2009 *Hakonechloa macra* 'Aureola' (Japanese forest grass)
- 2008 *Geranium* 'Rozanne' (cranesbill, hardy geranium)
- 2007 *Nepeta racemosa* 'Walker's Low' (catmint)
- 2006 *Dianthus* 'Feuerhexe' (aka 'Firewitch') (cheddar pink)
- 2005 *Helleborus* x hybridus (hellebore, Lenten rose)
- 2004 *Athyrium niponicum* var. *pictum* (Japanese painted fern)
- 2003 *Leucanthemum* × *superbum* 'Becky' (shasta daisy)
- 2002 *Phlox paniculata* 'David' (garden phlox)
- 2001 *Calamagrostis* × *acutiflora* 'Karl Foerster' (feather reed grass)
- 2000 *Scabiosa* 'Butterfly Blue' (pincushion flower)
- 1999 *Rudbeckia fulgida* var. *sullivantii* 'Goldsturm' (black-eyed Susan)
- 1998 *Echinacea purpurea* 'Magnus' (purple coneflower)
- 1997 *Salvia* × *sylvestris* 'Mainacht' (aka 'May Night') (wood sage)
- 1996 *Penstemon digitalis* 'Husker Red' (beardtongue)
- 1995 *Perovskia atriplicifolia* (Russian sage)
- 1994 *Astilbe* 'Sprite' (dwarf astilbe)
- 1993 *Veronica* 'Sunny Border Blue' (speedwell)
- 1992 *Coreopsis verticillata* 'Moonbeam' (threadleaf coreopsis)
- 1991 *Heuchera micrantha* var. *diversifolia* 'Palace Purple' (coral bells)
- 1990 *Phlox stolonifera* (creeping phlox)

Photo Credit: Perennial Plant Association

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