

Industry News

Cicadas are coming.

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Spring 2021 is an exciting year for entomologists and bug lovers alike, as Brood X periodical cicadas are set to emerge after being underground for 17 years. Their numbers will total in the billions across 15 U.S. states. You may already be seeing signs of the emergence, as the nymphs reside about 4-8 inches below the surface and make a tasty meal for moles.



1 Cicadas on a tree. Source: Dr. Gene Kritsky, Mount St. Joseph University.

Most of a periodical cicada's life is spent underground feeding on tree roots. After 17 years, the nymphs begin to emerge once the soil 8 inches below the surface reaches a temperature of 64 F. They typically emerge after a heavy rainfall around late April to mid-May. Over the course of a few days, thousands of cicadas will emerge, overwhelming their predators to satiation and still leaving thousands more to sing, mate and lay eggs to start the process all over again.

Annual cicadas, which emerge each year, are black and green. However, periodical cicadas have black bodies, orange wing veins, bright red eyes and are 1-2 inches long. Brood X is comprised of three species of periodical cicadas.

Shortly after adult cicadas emerge, males will begin to sing, creating loud chorusing centers (heard up to half a mile away) to attract females. Once a female is mated, she will lay her eggs in the new, woody growth of trees with her saw-like ovipositor. A female uses her ovipositor to cut into new growth near the end of tree branches, which can create a small scar on the tree or cause branches to break.

Leaves on branches will become brown and turn down, which is referred to as "flagging." This is only cosmetic damage and will not damage mature trees. Young trees (saplings less than three years old) can be protected by covering them with netting or cheesecloth with a mesh no less than a quarter inch. It is advised to place netting over trees when the first male songs are heard.

If you live in an emergence area (see map below), you or your customers might have questions. Below are facts and tips on periodical cicadas:

- Cicadas belong to the order Hemiptera and are relatives of insects such as leafhoppers and aphids. Insects in this group have sucking mouthparts.
- Cicadas are not grasshoppers or locusts, which have chewing mouthparts.
- Periodical cicadas emerge every 13 or 17 years. Brood X falls under the 17-year emergence.
- Cicadas are harmless – they don't bite, sting or carry disease, and they are not poisonous.
- Cicadas are not pests, and adults die after about a month.
- Pesticides are not effective at controlling cicadas and should not be used.
- Only male cicadas sing, and each species has its own song for mating and signaling danger.
- Cicada singing is loud and can be as high as 100 decibels.
- Female cicadas lay approximately 500 eggs.
- Females use sharp ovipositors (egg-laying structures) at the ends of their abdomens to make small slits in tree twigs where they lay their eggs.
- Twig damage can occur, but this natural "pruning" can benefit the tree, resulting in increased flower and fruit yields in following years.
- Young trees can be protected with netting. The mesh should be no less than a quarter inch.
- Cicadas aerate the soil as they emerge, and their decaying bodies return nitrogen back to the soil.
- You may see increased mole activity in lawns due to the abundance of cicada nymphs.
- Following heavy rainfall, cicada nymphs can build "chimneys." This involves cicadas packing mud along their tunnel, extending it above the water-logged ground.
- Adults are clumsy fliers. To prevent them from accidentally gaining entry indoors, ensure windows, doors and screens are closed.
- Cicadas will be less active early in the morning and during the night when temperatures are cooler.
- Shed cicada skins and dead cicadas can be raked away and discarded.



2 Map of Brood X for 2021. Source: Dr. Gene Kritsky, Mount St. Joseph University.



3 *Cicada nymph climbing a tree.* Source: Dr. Gene Kritsky, Mount St. Joseph University.

4 *Emerging cicada adult.* Source: Dr. Gene Kritsky, Mount St. Joseph University.

5 *Cicada adult and empty shell.* Source: Dr. Gene Kritsky, Mount St. Joseph University.

Despite the vast numbers of cicadas that will emerge, these insects are harmless and can be a wonderful sight to behold. You can help track the 2021 emergence by downloading the free Cicada Safari app from the [Apple App Store](#) or [Google Play](#).¹ This app allows you to photograph and submit pictures of cicadas, where they will be posted to a live map once verified.

For more information, visit [SyngentaPMP.com](https://www.syngenta.com/pmp).

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¹*Cicada Safari* was created by Dr. Gene Kritsky working with the Center for IT Engagement at Mount St. Joseph University in Cincinnati.

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