

Kids Ask Dr. Bug

Home to more than plants, kids ask Dr. Tamra Reall about the curious things found in the garden.

Brood X periodical cicadas are emerging in many eastern states. While these cicadas are not emerging in Missouri and Kansas this year, questions are still coming in about these fascinating insects

Why do so many periodical cicada's come up all at the same time? Chelsea, 9

These magnificent $\frac{3}{4}$ - $1\frac{1}{2}$ inch long insects, black-bodied with red wings and eyes, have one of longest developmental times in the insect world. From the time eggs are laid – followed by hatching, falling to the ground below, burrowing in and feeding on plant roots 2-18 inches underground, and then emerging to finish life as an adult – takes 13 or 17 years depending on where they are in the Midwest to Eastern United States. Periodical cicadas are different than the annual cicadas that we see and hear each summer.

Even though there are a few species of periodical cicadas, all the eggs are laid during the same 6–8-week period and the nymphs develop at the same time and rate, so it makes sense that they all emerge at the same time. This happens with other insects, too. For example, if you watch a cluster of stink bug eggs in your garden, they hatch approximately at the same time. Periodical cicadas are nymphs for so long, they need to emerge with others of their same species so the species will continue. So much can happen in 13 or 17 years – where were you (or your parents) 13 or 17 years ago?

How do they know when to come up? Annalise, 8

This is still a mystery! After the long 13- or 17-year developmental period, these cicadas are at the end of their nymphal stage and ready to become an adult. Perhaps it's the day-length, or a certain temperature in the soil, that lets them know it is time to come up. Whatever the cue, cicada nymphs emerge from the ground and find something to climb – a tree, a house, a pole, etc. This is a slow process, so you don't have to worry about them climbing up on you. Then, they pause, and just like out of a horror film, their back splits apart and the winged adult slowly slides out. New adults are white and very soft for an hour or so until they darken and harden. These big, fleshy insects are a tasty treat for many animals - birds, squirrels, skunks, raccoons, turtles, and perhaps even your dog! People even eat them! However, because there are so many, billions in fact, animals can't eat them all and many cicadas will survive to start the next generation. Resting in trees, male cicadas "sing" to attract females and when all the bugs sing together, it can get very loud – over 100 decibels! After mating, females lay eggs in tree twigs and the cycle starts again.

Why are periodical cicadas' eyes red? Will, 9

Red compound eyes are a genetic feature of most periodical cicadas. However, some periodical cicadas have mutant eye colors - blue, white, grey, or multi-colored. Cicadas actually have five eyes –two large compound eyes and three tiny ocelli found on the top of their head.



A periodical cicada. (Image: T. Reall)

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Do periodical cicadas hurt people or animals? Pat, 9

No, rather many animals love feasting on cicadas – they eat so many they can't eat anymore! Cicadas may land on people, but they won't eat you – you don't taste, feel, or smell right to them. That said, brush them off if they land, just in case the cicada is curious about what you might taste like!

Cicadas are sometimes called locusts, but this is not correct. Locusts are a type of short-horned grasshopper that swarms and consumes plants, while cicadas are true bugs and are related to aphids and leafhoppers. Cicadas feed on plant juices, but the impact on plants is small. As adults, females lay their eggs in small twigs in trees. Some twigs may die back, but this doesn't harm large healthy trees. Mosquito nets or cloth can protect young trees.

When will we have periodical cicadas in Missouri again? Andy, kid-at-heart

The next periodical cicada emergence in Missouri will be in 2024. This will be Brood XIX and will cover most of Missouri. Visit this site (<https://www.fs.fed.us/foresthealth/docs/CicadaBroodStaticMap.pdf>) to see a map of all the different broods in the US.

Do you have questions for Dr. Bug? Send them to ReallT@Missouri.edu or <https://bit.ly/KidsAskDrBug>. Please include your name and age. To help me learn what you learn from this column, consider filling out this survey: <https://bit.ly/KidsAskDrBugSurvey>

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