

# Periodical Cicadas in Nurseries



Adult periodical cicadas, like the one pictured here (*Magicicada septendecim*) are smaller than the annual cicadas that are common in the summer months. Photo by Jon Yuschock, Bugwood.org.

Often referred to as locusts, cicadas are common summer insects. Annual or “dog day” cicadas are commonly heard during the Summer. However, their cousin, the periodical cicada (*Magicicada* spp.), is more of a concern to nurserymen. Here in parts of Western North Carolina, we are expecting a hatch of periodical cicadas this Spring.

Periodical cicadas are insects that we don’t encounter often in the nursery, but when we do they can cause extensive damage, because of the high population, which is often in the millions. They are unique in that their generations are synchronized so that all individ-

uals in a generation emerge at the same time. Their life cycle is much longer than other insects, each requiring either 13 or 17 years to go from egg to adult. Adults of each synchronized population, or brood, emerge at regular 13- or 17-year intervals.

### Distribution

In parts of the foothills and mountains, we are expecting the emergence of brood VI periodical cicadas (*Magicicada septendecim*) this spring. Based on historical reports, the counties most likely to see them are Buncombe, Burke, Caldwell, Henderson, McDowell, Polk and Wilkes counties.



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Periodical Cicadas	Year of Emergence				General Region
<b>17-year Broods</b>					
II	1979	1996	2013	2030	CT, MD, NC, NJ, NY, PA, VA
VI	1983	2000	2017	2034	GA, NC, SC
IX	1969	1986	2003	2020	NC, VA, WV
X	1970	1987	2004	2021	DE, GA, IL, IN, KY, MD, MI, NC, NJ, NY, OH, PA, TN, VA, WV
XIV	1974	1991	2008	2025	KY, GA, IN, MA, MD, NC, NJ, NY, OH, PA, TN, VA, WV
<b>13-year Broods</b>					
XIX	1985	1998	2011	2024	AL, AR, GA, IN, IL, KY, LA, MD, MO, MS, NC, OK, SC, TN, VA

Data from Cicadomania.com



Brood VI periodical cicadas are expected to emerge in Western North Carolina this Spring. Brown symbols are verified records. Blue symbols are based on 1923 data and gold symbols are from 1988 data. Source: [magiccicada.org](http://magiccicada.org)



Mated female cicadas lay up to 600 eggs in the branches of trees. Healthy trees with minor egg laying damage will heal over. Photo by John John Ghent, [Bugwood.org](http://Bugwood.org).

**In April or May, adult periodical cicadas will emerge from the ground where they have spent the last several years. Adults will emerge over the course of two weeks in April or May, beginning when the soil, at an 8" depth, reaches 64°F, usually after a warm rain.**

Historical data shows that the range of periodical cicadas was once much larger than it is now. Documents from 1889 indicate this brood was also once found in the counties of Alexander, Bladen, Cabarrus, Catawba, Iredell, Lincoln, Macon, Moore, Montgomery, Pender, Randolph, Rutherford, Swain, Transylvania, Union and Washington. It is thought that urbanization and loss of forestland has reduced their range.

### Life cycle

In April or May, adult periodical cicadas will emerge from the ground where they have spent the last several years. Adults will emerge over the course of two weeks in April or May, beginning when the soil, at an 8" depth, reaches 64°F, usually after a warm rain.

The adults do little feeding after they emerge and instead are focused on mating. About five days after emerging, males begin performing courting calls to attract females and mate. About one week after mating, mated females will begin laying eggs in tree branches. Females die after laying eggs, only a few weeks after emerging. Eggs hatch shortly after that and nymphs fall to the ground where they burrow into the earth, not to be seen for another 13 or 17 years.

This egg laying damage is where the real concern lies with nursery growers. Adults don't feed much and are instead focused on mating. Mated females make slits in tree branches with their knife-like ovipositor and lay up to 600 eggs each. Damaged trees may exhibit flagging and branches with heavy egg-laying damage may break off.

In field nurseries, adult periodical cicadas will fly into fields from nearby wooded areas; however, they rarely travel more than a few hundred meters. They are not emerging from ground within the field, since most nursery fields have been plowed (which kills cicadas) and soil is removed during harvest, eliminating the adults. Periodical cicadas could be hatching from bare ground within container nurseries.

### Control

Control of periodical cicada damage in landscapes is straightforward. Healthy, mature trees can withstand the damage. If there is a high population at a site, newly planted trees can be protected by covering them with bird netting or cheesecloth and securing it around the trunk. Pruning in

summer after females have laid eggs will reduce the population of the next generation.

Unfortunately, there is little research on the control of periodical cicadas in nurseries. It is not known if applying insecticides is effective or feasible, given the frequency with which they would need to be applied. We also don't know whether the cost of applying insecticides outweighs the cost of the damage that periodical cicadas do.

Healthy nursery stock with light damage from egg laying will heal up, although small scars may be visible for a couple of years. Trees with heavier damage can be pruned and may require extra time in production to reach a desirable caliper. In the most severe cases, trees can be disfigured beyond saleable.

Applications of broad-spectrum pesticides, like those containing carbaryl or cyfluthrin, flare secondary pests like spider mites by killing natural enemies. Products containing carbaryl have also been shown to favor spider mites by increasing the nitrogen level in leaves and making them reproduce faster. Multiple applications of these products can also have detrimental effects on pollinators.

While there are no studies on which trees are preferred by periodical cicadas in a nursery setting, growers say that dogwoods are one of their favorites. Conifers are rarely affected, presumably because of the abundance of sap that would interfere with egg laying.

Given the current shortage of shade trees in the market, there probably won't be a problem selling trees with light cicada damage. However, growers may find that the tolerance for cicada damage is lower on stock, like dogwoods, that are going into homeowner landscapes.

To see when the next hatch of periodical cicadas will be in your area, visit [magiccicada.org](http://magiccicada.org). Questions about periodical cicadas can be directed to your local or regional Cooperative Extension professional. 🌿

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