



# Ornamentals & Turf

Department of Entomology

## PERIODICAL CICADA IN INDIANA

*Clifford S. Sadof, Extension Entomologist*

In Indiana most broods of the periodical cicada appear once every 17 years. However, two broods come out every 13 years. Periodical cicadas are usually referred to as "17-year or 13-year locusts." They are about 1-1/2 to 2 inches long and have black bodies, reddish legs, wing margins, and eyes.

### LIFE HISTORY

Cicadas have an interesting life cycle. They appear in the last part of May and during June. The incessant cadence of high-pitched, shrill sounds announces their presence. Only the males make this noise. It is produced by vibrating membranes on the underside of the first abdominal segment. The females have no sound-producing organs.

A female cicada has a knife-like organ that she uses to slit or puncture twigs of woody plants in which she lays her eggs. In about 6 weeks, the eggs hatch, and the nymphs drop to the ground, dig into the soil, and feed by sucking sap from tree roots.

Females will only lay eggs in twigs between 3/16" and 7/16" in diameter. At the end of 13 or 17 years, depending upon the brood, the nymphs come out of the ground. They crawl up tree trunks, posts, or other objects, shed their last shell, and emerge as winged cicadas. These adults live about one month. During this time they mate, and each female lays 400-600 eggs. Cicadas are abundant only in areas where trees harbored the eggs of the previous generation. Cicadas can be very numerous in some areas and absent in woodlots nearby.

### DAMAGE TO TREES AND SHRUBS

While some people consider the mass emergence of cicadas one of nature's many wonders, others find it a nuisance. In urban areas, heavy infestations can make the sidewalks and roads slick with dead insect carcasses. In fruit orchards and nurseries, cicadas can seriously

damage young trees whose main stems and branches are between 3/16" and 7/16" diameter.

Female cicadas cause damage when they puncture or slit the twigs of trees and shrubs to lay their eggs. Infested branches appear as if the eggs have been stitched in by a sewing machine. These branches will turn brown, die, and sometimes break off. Female cicadas have been reported to lay eggs on over 200 woody tree species and are common on oak, hickory, flowering fruit trees, mountain ash, and grape.

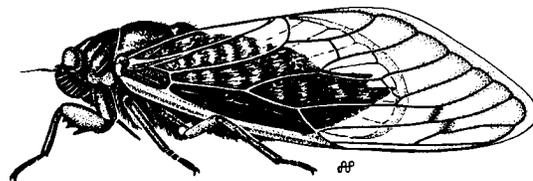
### CONTROLLING ADULT CICADAS

#### Cultural Control

The first step in managing cicadas is to familiarize yourself with their expected emergence periods. These are listed in Table 1. In this way, you can avoid damage by good planning.

When possible, avoid planting new trees in the fall before or during the spring that cicadas will emerge. This could be especially helpful in fruit orchards or woody plant nurseries. Also, delay pruning until the cicadas have disappeared. The injured branches can then be removed after cicadas have stopped flying.

Small ornamental trees and shrubs can be protected by covering them with no larger than 3/8" mesh screening while cicadas are present.



Periodical cicadas -- *Magicicada* spp. (There are six known species, five of which have been reported in Indiana.)

**Biological Control**

There are many natural enemies of cicadas. Birds, and squirrels will feast on cicadas during a mass emergence. However, the large number of cicadas are likely to outstrip the capacity of these animals to control the problem.

**Chemical Control**

The use of pesticides for controlling the cicada is controversial. Pesticide trials indicate that pesticide applications need to be repeated every 3-4 days to prevent

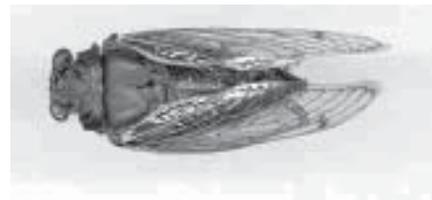
oviposition. This is not practical for the 6 week flight period. Cultural controls are therefore recommended.

Those who still wish to use pesticides to reduce injury should apply them to foliage and trunks as adults emerge and repeat 5 to 7 days later. Permethrin (Eight or Spectracide Bugstop), or cyfluthrin (Bayer Advanced) are general use pesticides for fruit and ornamentals that could be used by homeowners and commercial producers in accordance with the label. Commercial fruit producers wanting to protect their fruit trees can use Danitol in accordance with the label.

TABLE 1. WHEN AND WHERE IN INDIANA THE 17-YEAR AND 13-YEAR CICADAS WILL APPEAR.			
Brood number	Race	Year to appear	Where they will appear
X	17-year	2004	In all counties, but heaviest in south-central Indiana; largest of the 17-year broods.
XII	17-year	2006	Allen and Orange counties; scarce in Indiana.
XIII	17-year	2007	Lake, LaPorte, and Porter counties.
XIV	17-year	2008	40 counties, but heaviest in southwestern Indiana; dense swarms expected in Brown and Warrick.
I	17-year	2011	Last reported in 1858 in Knox, Sullivan, and Posey counties; may not exist.
II	17-year	2013	Dearborn County; probably a very light emergence.
XIX	13-year	2011	8 western counties, from Posey and Warrick on the south to Newton and Jasper on the north.
XXIII	13-year	2015	21 counties mostly in southwestern Indiana, with Fountain, Tippecanoe and Fayette the northern limits.
VI	17-year	2017	24 counties, particularly in Clark, Clay, Dearborn, Jennings, Lawrence, Marion, and Washington; not very numerous in any one locality.



Adult periodic cicada (side view) - (Gary Michel)



Adult periodic cicada (top view) - (Gary Michel)

**Table 2. Plants at high risk for damage by cicadas (adapted from Ahern et.al., 2004).**

Genus	Common Name
<i>Acer</i>	Maples
<i>Amelanchier</i>	Serviceberry
<i>Castanea</i>	Chestnut
<i>Cercidiphyllum</i>	Katsura tree
<i>Cercis</i>	Redbud
<i>Chionanthus</i>	Fringe tree
<i>Cornus</i>	Dogwood
<i>Cotinus</i>	Cotinus
<i>Cotoneaster</i>	Cotoneaster
<i>Crataegus</i>	Hawthorn, Cockspur
<i>Fraxinus</i>	Ash
<i>Hamamelis</i>	Witch-hazel
<i>Malus</i>	Apple, Crabapple
<i>Nyssa</i>	Sour gum
<i>Ostrya</i>	Hophornbeam
<i>Oxydendrum</i>	Sourwood
<i>Prunus</i>	Cherries, Peaches and Plums
<i>Quercus</i>	Oaks
<i>Rosa</i>	Roses
<i>Sorbus</i>	Mountain Ash
<i>Tilia</i>	Basswood
<i>Ulmus</i>	Elm
<i>Weigela</i>	Weigela



Adult periodic cicada - (J. Davidson)

**Table 3. Plants with moderate and low susceptibility to cicada damage (adapted from Ahern et.al., 2004).**

Genus	Common Name
<b><i>Ilex</i></b>	<b>Hollies</b>
<i>Laburnum</i>	Golden chain tree
<i>Phellodendron</i>	Corktree
<i>Betula</i>	Birch
<i>Carpinus</i>	Hornbeam
<i>Magnolia</i>	Magnolia
<i>Chamaecyparis</i>	Cedar

**Literature Cited**

Ahern, R., H. Lemke, K. Bejleri, and M. J. Raupp 2004. Periodical Information for Landscape professionals and Nurseries. University of Maryland Cooperative Extension. <[http://www.entm.umd.edu/highlights/Cicada\\_Information\\_Sheet.pdf](http://www.entm.umd.edu/highlights/Cicada_Information_Sheet.pdf)>



Dieback on oak trees caused by cicada egg laying (J. Obermeyer)

Revised 4/2004