



BARTLETT TREE

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Technical Report

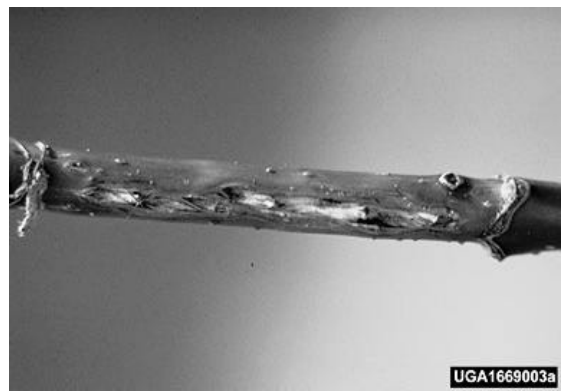


Periodical Cicadas

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Periodical cicadas or the so-called seventeen-year locust are native to the eastern half of North America and exist nowhere else in the world. Cicadas have one of the longest life cycles of any insect, lasting between thirteen and seventeen

years. Adult cicadas emerge from the soil in tremendous numbers, and males fill the air with the droning of their mating calls. Although these insects are often mistakenly thought to cause large crop losses, the cicada actually produces no noticeable plant injury through its feeding. Woody



plants may be damaged severely through the oviposition, or egg-laying habits, of the female cicada. More than eighty species of trees and shrubs are used by cicadas for egg laying. Oak, hickory, dogwood and members of the rose family are among the preferred species. Females insert a saw-like ovipositor into the bark and wood of twigs and cut a pocket into which eggs are deposited. One female may produce as many as thirty-five bark punctures. Repeated attacks can girdle twigs and may kill small trees and shrubs. The wounds also provide an entrance for disease causing organisms.

THE INSECT

Periodical cicadas are comprised of six closely related species. Three species occur primarily in the Northern United States and appear on a seventeen-year cycle, and three species occur primarily in the South on a thirteen-year cycle. Another group of cicadas known as dog-day



cicadas or harvest flies occur on a three to five year cycle. The latter group seldom occurs in numbers large enough to cause significant damage to plants.

The term locust, frequently applied to cicadas, is a misnomer. Locusts are actually a type of grasshopper, such as the migratory locust, which occasionally causes crop destruction in Egypt and other areas of the Mideast.

The periodical cicada is a robust, heavy bodied insect, approximately 1.5 inches long. The body is mostly black with clear, membranous wings and large, conspicuous compound eyes.

LIFE CYCLE

Adult cicadas begin to appear in spring or early summer. Adults live for only a few weeks, during which time they mate and lay eggs in twigs of trees and shrubs. Eggs hatch within six to eight weeks, and the

newly hatched immatures or nymphs drop to the soil and burrow down eighteen to twenty-four inches. The nymphs attach to tree roots and feed by withdrawing sap.

The immatures continue to develop within the soil for the next thirteen to seventeen years. At the end of the period, the nearly mature nymphs emerge from the soil and immediately transform to adults. Thus the cycle begins again.

The thirteen or seventeen year life cycle does not mean that cicadas are present only at those intervals. Approximately thirty broods of periodical cicadas exist and nearly every year, at least one brood is present in a particular geographic area. Some broods have large populations with a broad range while other broods are very small and virtually unnoticeable. The range and date of emergence of several of the more important broods are listed below:

Brood I:	Southeast Pennsylvania, Maryland, Virginia, West Virginia and Western North Carolina	1978, 1995
Brood II:	Eastern Seaboard from Connecticut to North Carolina	1979, 1996
Brood V:	Eastern Ohio, West Virginia	1982, 1999
Brood VIII:	Western Pennsylvania, Eastern Ohio, Northern West Virginia	1985, 2002
Brood X:	Northeastern quarter of United States	1987, 2004
Brood XIX:	Southern United States	1985, 1998
Brood XXIII:	Mississippi Valley from Southern Indiana to Gulf of Mexico	1989, 2002

CONTROL

Small trees and shrubs can be protected from injury caused by the periodical cicada by covering the plants with Mosquito netting, screens, cheesecloth, etc. Chemical control of cicadas requires frequent (weekly) applications of a contact insecticide during the period in which the insect is active. Consult the Bartlett Tree Research Laboratories Insect Control Recommendations or local state recommendations for labeled insecticides and rates for control of cicadas.

Twigs and branches weakened or killed by the periodical cicada should be pruned out. Fertilization will increase plant vigor and help offset the debilitating effects from the twig and branch dieback.