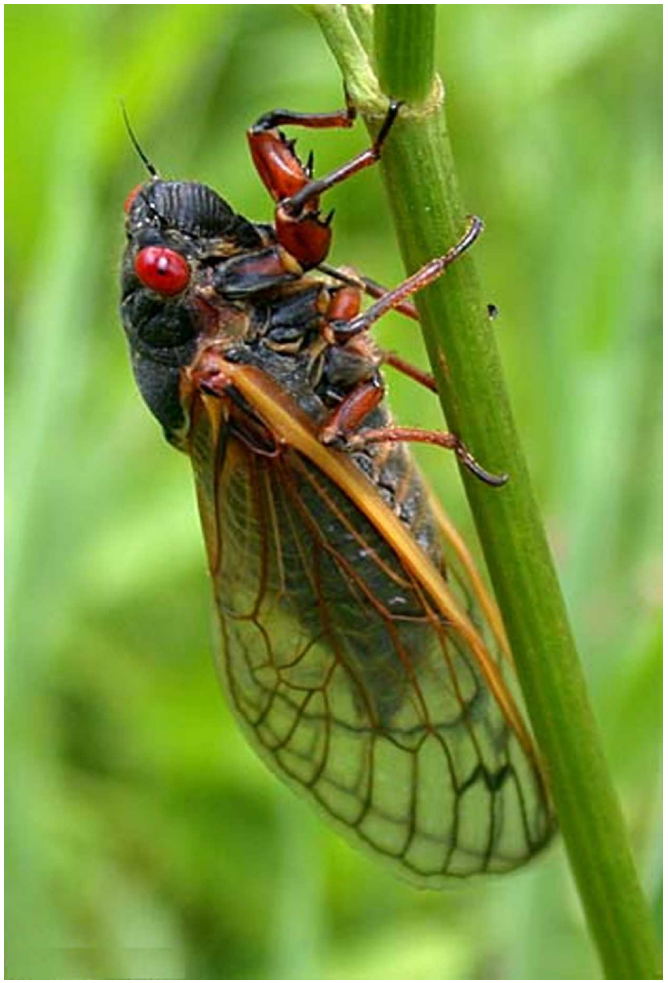
Walt Helmick
Commissioner of Agriculture

THE PERIODICAL CICADA



IN WEST VIRGINIA

Contact Information

Communications Division
Market Bulletin
Phone: 558-3708
Fax: 558-3131
marketbulletin@wvda.us

Executive Division
Phone: 558-3200
Fax: 558-2203
www.wvagriculture.org

Plant Industries Division
Phone: 558-2212
Fax: 558-2435

Walt Helmick, Commissioner

The Periodical Cicada

(Magicicada septendecim L.)

Few insects excite as much curiosity and wonder as do the periodical cicadas when they make their sudden, springtime appearance at intervals of 17 or 13 years.

After years of living in underground tunnels, millions of cicadas issue from the earth as if by a predetermined signal, undergo startling transformations and spread through nearby trees and bushes. From morning till night they fill the air with their droning songs. In a few weeks, after mating and laying their eggs, they die, leaving behind a multitude of injured twigs on the trees which they have visited.

Damage To Trees

The egg-laying habits of the female cicada can cause severe damage to young fruit trees and newly transplanted shade trees and can ruin the appearance of specimen shade trees.

Using the blades of a curved, saw-like egg-laying apparatus on the end of the abdomen, the female cicada punctures the bark of a twig and makes a pocket in the wood where she deposits from 24 to 28 eggs in two rows. She then moves forward, cuts another pocket and lays more eggs. One female cicada will make five to 20 such pockets during her egg-laying period. Often these pockets form a continuous slit two or tree inches long.

Egg punctures can cause the twigs and branches of small trees to wilt and often to break or partly break. Fruit may be lost on bearing trees and when twig damage

is severe, small trees may be killed. Even when the damage is less severe, the twig remains permanently scarred and abnormal.

Life Cycle

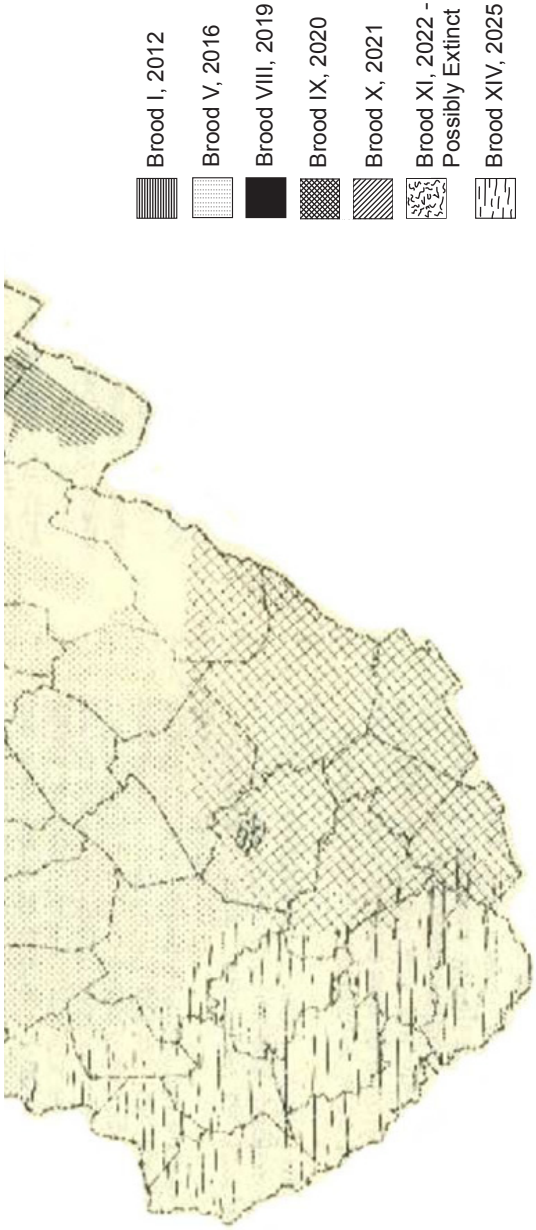
The eggs laid by the females hatch in midsummer, and the young cicadas drop to the ground where they burrow into the soil in search of small plant roots on which they feed for the next 17 years. At the end of this period, in May or early June, they move to the surface, crawl up a convenient tree trunk, emerge from the pupal skin and begin their adult life. At this time, the woods are filled with the mating or challenging calls of the male during most of the daylight hours. Five different calls are known, but the call most commonly noted is best described as sounding like “f-a-r-r-o.” A second common call is a "whir" sound.

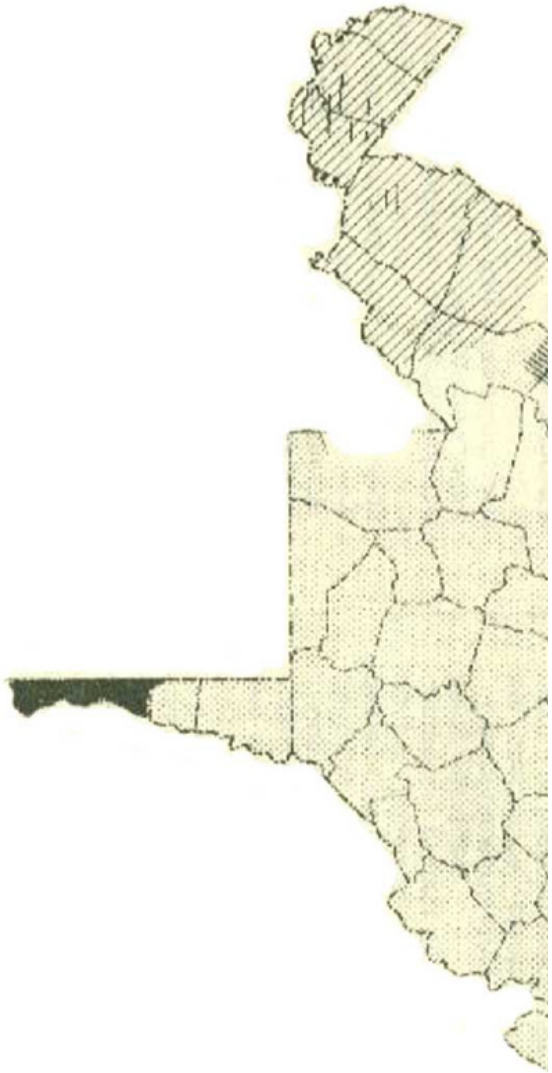
About The Insect

The periodical cicada is a stout-bodied, black insect that is from one and a half to two inches in length. There are orange or orange-brown stripes and spots on the body. The wings are membranous, and both the eyes and legs are red. The periodical cicada closely resembles the common “dog-day cicadas” or “jarflies” seen every year in late summer except that it is smaller and somewhat darker in color. The dog-day cicada appears after the first of July and does not produce the “f-a-r-r-o” sound.

Some Misconceptions

The periodical cicada is most often referred to as the “17-year locust.” This name supposedly originated when the early colonists, who had never seen this insect that occurs only in the eastern half of the United States, thought that a “locust plague” had been visited upon them when they first saw millions of cicadas emerge from the ground. The term “locust” is correctly applied only to certain species





of grasshoppers. Migratory locusts, which comprise one of these species, ruined crops in Egypt in Biblical times and still cause much damage to crops in that country and in many other parts of the world.

Another belief that is less widely held today than formerly is that the distinct black W toward the outer end of the front wings foretells war. The mark is a characteristic of the insect and is produced by deeper pigmentation of the veins that form the W.

Another false belief is that the cicada can sting, and any story is mythical that tells of cicadas poisoning fruit by stinging it.

Where The Cicada Appears

The periodical cicada has a range covering nearly all of the United States east of the Missouri Valley and includes Arkansas and Louisiana.

The northern cicadas take 17 years to complete their development while the southern insects complete their life cycles in 13 years.

The fact that life cycles are completed in 17 years in the North and 13 years in the South would seem to mean that these insects are seen only every 13 or 17 years. In fact, the insects emerge somewhere almost every year. The explanation is that there are different broods, which emerge in different years. Sometimes these broods occur in the same geographic locality, and these areas will experience the ravages of cicadas more often than areas where just one brood occurs.

The cicada broods have been accurately mapped and given numbers. The Roman numerals I through XVII have been given to the 17 broods of northern cicada and the numerals XVIII through XXX to the 13 broods of the southern cicadas. This system of numbering began in 1893 when a brood emerged in Northeastern West Virginia and parts of Pennsylvania, Maryland and Virginia.

The following listing shows the more important broods of cicada that occur in West Virginia.

Brood I – a small brood that occurs in northeastern West Virginia. Next emergence **–** 2012.

Brood V – a compact brood that occurs throughout West Virginia except for the southern part. Next emergence – 2016.

Brood VIII – this brood was seen in the Northern Panhandle of West Virginia in 2002. Next emergence – 2019.

Brood IX – occurs in Southeastern West Virginia and was seen in 2003. Next emergence – 2020.

Brood X – the largest brood; occurs in abundance over much of the Northeastern United States, and in West Virginia. It occurs in the Eastern Panhandle and was seen in 2004. Next emergence – 2021.

Brood XI – occurs in one location in Fayette County. This fact is more interesting because the remainder of this brood occurs in New England. Next emergence – 2022.

Brood XIV – occurs in the southwestern part of West Virginia and in parts of Hampshire, Morgan and Berkeley Counties and appeared in 2008. Next emergence – 2025.

While there is some overlapping of these broods and in some cases they are not uniformly distributed, this list points out the general areas and dates when the more important broods of the periodical cicada may be expected.

Control

In spite of the newer insecticides, this insect, when it occurs, continues to do considerable damage. While some of these insecticides have made some control possible, they cannot be relied upon to completely protect the trees from being damaged.

One of the earliest recommendations for avoiding damage was to cover the susceptible plants with heavy cheesecloth, netting or tobacco shade cloth. This remains one of the best ways to protect orchard trees one or two years old. Many growers refrain from planting orchards in a cicada year, or in the preceding year.

Before postponing the planting of trees, the grower should consider cloth protection and weigh the cost of this protection against the loss represented by a one-or two-year delay in planting.

Another control measure that will help is to prune the trees very lightly the fall and spring before a brood is due to emerge, and then much of the Injured wood can be pruned away the following winter.

For specific, current chemical insecticide recommendations, contact the Plant Industries Division, W.Va. Department of Agriculture, 1900 Kanawha Blvd., E., Charleston, WV 25305, your county extension agent or the extension specialist in plant pathology and entomology at West Virginia University.

Natural Enemies

Birds may destroy many cicadas when they are numerous in an area where the insect has emerged. In dense woods, for instance, where birds are few in number, the cicadas are not materially reduced. Where the situation is reversed, as in small open groves where birds are abundant, the cicada population may be greatly reduced.

A few insects and mites attack cicada eggs, and a fungus disease kills some adults.