Denny McKeown's BLOOMIN Garden Centre & Landscaping
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Tip Sheets

Periodical and "Dog-Day" Cicadas

Adult periodical cicadas, *Magicicada* spp., are sucking insects, about 1.5-inches long, that appear from May to July. They are most numerous in the last two weeks of May and first week of June. They are black and have reddish-orange eyes and legs. Adults have clear wings with orange veins that are held roof-like over their bodies. Periodical cicadas emerge in specific locations once every 17 years in the northern part of their range, and once every 13 years in the southern part. Different groups called "broods" emerge somewhere in the eastern United States almost every spring. Massive brood emergence is believed to overwhelm predators, which are mostly birds. This ensures that enough survivors will be left behind to reproduce. Male cicadas are capable of making a loud buzzing noise and squawk when disturbed. The males often synchronize their buzzing in trees which produces a deafening noise. It is believed that such droning and squawking is effective in deterring predators.


The "dog-day" or annual cicadas appear during the long summer days of July and August. These cicadas have two to five-year life cycles but their broods overlap and some appear every summer. Dog-day cicadas are larger than periodical cicadas and have green to brown bodies with black markings and a whitish bloom. Their wings have green veins. Annual cicadas do not ordinarily cause much damage.

Damage

Periodical cicadas damage trees above and below ground. The most obvious damage is that caused by egg laying in small twigs. This damage causes twigs to split, wither, and die, causing a symptom called "flagging." Flagging is especially serious on young plants (four years or younger) because more of the branches are of the preferred size for oviposition, ¼ to ½ inch in diameter. Some of the more favored trees for oviposition include maple, oak, hickory, beech, ash, dogwood, hawthorn, magnolia, willow, apple, peach, cherry, and pear. Flowers, vines and shrubs include Rose of Sharon, rose, raspberry, grape, black-eyed Susan, hollies, spirea, rhododendron, viburnum, junipers, and arborvitae. More than 270 species of plants have been noted as hosts for egg laying female cicadas. Damage is also done by the nymphs that suck sap from roots. Prolonged feeding by nymphs on a tree's root system may reduce plant growth and fruit production.

Cicadas do not bite or sting and have no known toxic chemicals. Adult cicadas are usually a nuisance by their sheer numbers and loud piercing call. Cicadas have fluttered into automobiles and frightened drivers, leading to traffic accidents.

Emerging cicadas may also be consumed by dogs and cats, but they cause no harm to these animals. These pets occasionally will consume so many of the cicadas that they become constipated or regurgitate.

Life Cycle

Immature periodical cicadas (nymphs) develop underground and suck juices from plant roots. After 13 or 17 years below ground, mature nymphs emerge from the soil at night and climb onto nearby vegetation or any vertical surface. They then molt into winged adults. Their shed outer skins or exoskeletons are found attached to tree trunks and twigs. The emergence is often tightly synchronized, with most nymphs appearing within a few nights. Adult cicadas live for only two to four weeks. During this short time, they feed relatively little. Male cicadas sing by vibrating membranes on the underside of the first abdominal segment. Male courtship songs attract females for mating. Females are silent. After mating, females lay their eggs in twigs, ¼ to ½ inch in diameter. The female's ovipositor slices into the wood and deposits the eggs. One to several dozen eggs can be laid in one branch, with up to 400 eggs being laid by each female in 40 to 50 sites.

Cicada eggs remain in the twigs for six to ten weeks before hatching. The newly hatched, ant-like nymphs fall to the ground where they burrow 6 to 18 inches underground to feed.

During the spring of the emergence year, periodical cicada nymphs may build mud tubes that project three to five inches above the soil, apparently to escape wet or saturated soils. These tubes are often mistaken for the tubes that crayfish build.

Annual cicadas usually emerge from June through August. Their emergence is scattered over this time and they rarely emerge in noticeable numbers. Annual cicada males also sing to attract females. The cicada killer wasp often captures these insects to provision its nest in the ground.

Control Tactics

Periodical cicadas are especially damaging to young plants that have the most desirable branch size for egg laying. Large, established trees can withstand considerable flagging.

Option 1: Cultural Control - Delay Tree Planting
If a periodical cicada emergence is predicted, it may be best to postpone new orchard plantings until the following spring. Home gardeners are encouraged to delay planting until late summer or fall, after the adult cicadas have died.

Option 2: Cultural Control - Prevent Egg Laying
Trees in small orchards or yards can be protected with nylon netting or cheesecloth during the egg laying period. The netting should have a mesh of no less than ¼ inch and should be placed over the trees when the first male songs are heard. The netting should be tied to the trunk beneath the lower branches and can be removed after adult activity has ended.

Option 3: Cultural Control - Remove Eggs
Prune out and destroy young twigs that have been damaged by egg laying within a three-week period after eggs are laid. This will prevent newly emerged nymphs from reaching the ground.

Option 4: Chemical Control - Nurseries or Orchards
Ornamental nurseries and orchards near woods should be scouted every two to three days during the egg laying period to detect incoming females. Sprays may be necessary if egg laying activity is apparent; sprays are targeted against egg-laying adults. Insecticides labeled for use on cicadas include carbaryl (=Sevin), chlorpyrifos (=Dursban, Lorsban), esfenvalerate (=Asana) and resmethrin. Fruit orchards using methomyl (=Lannate), oxamyl (=Vydate) or permethrin (=Pounce, Ambush) in a cover spray need not add a special cicada insecticide. Applications of Sevin or Vydate within 21 days after apple full bloom may cause thinning. The use of pyrethroids, Vydate or Sevin is cautioned in orchards because of the subsequent problems with increased spider mite densities due to toxicity to predatory mites.

Option 5: Chemical Control - Landscape Ornamentals
The insecticides carbaryl (=Sevin) and chlorpyrifos (=Dursban) have products labeled to protect shrubs and trees. Either can be applied about once a week, although blooming plants should be avoided to preserve honey bees and other pollinating insects.

Source: OSU Ext., David J. Shetlar, Celeste Welty, Wade Pinkston