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Cicada Killers in Managed Turf

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Introduction

There is probably no more misunderstood insect in managed turf in Virginia than the cicada killer wasp (***Sphecius speciosus***). They are active in the summer, so it is likely that if you spend some time outdoors that you are going to notice either the wasp itself or its tunneling activity in the ground. And given their name, it is logical that more questions about this fierce looking wasp will arise during any year that features significant emergence of a periodical cicada brood.

Identification

While this relatively large wasp certainly looks threatening (Figure 1), for most situations (noted exceptions being golf and sports turf situations detailed below), it is not an insect of concern to humans and pets. It grows up to 1.5 inches long and its markings (black and gold stripes on its abdomen) are often confused with that of yellowjackets or other hornets (see comparisons and descriptions of these and similar insects at Virginia Cooperative Extension publication ENTO-592 *Large Invasive Hornets* at https://www.pubs.ext.vt.edu/ENTO/ento-592/ento-592.html, and ENTO-237 *Economic Pests of Turfgrass* at https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/ENTO/ento-237/ENTO-237.pdf).

The cicada killer wasp is generally a docile insect that primarily feeds on nectar as an adult. It takes its name from its capture and use of cicadas that are used to feed its larvae. Male cicada killers are territorial and will protect their areas through their flying patterns that are intended to make invaders of their territory feel uncomfortable. However, only the female cicada killer can sting, and this occurs only if the insect is directly handled by a human or the female wasp feels immediately threatened due to serious disruption/disturbance of their tunnel.

Look for the characteristic mound with a 'U-shaped' tunnel leading to the hole in the ground as identification of a cicada killer nesting site (Figure 2). The cicada killer constructs multiple sub-surface nesting cells in the soil for reproduction. The female wasp stings a cicada (thus paralyzing it) and carries the prey back to the tunnel where an egg is laid on the cicada. After the egg hatches, the larvae feed on the cicada in its nesting cell, subsisting and going through all steps in its development based on the energy provided by the cicada carcass. Bugspray.com made a video of the cicada killer in action, and it can be seen at http://www.youtube.com/watch?v=mLtCPI_dM3c.

Figure 1. A cicada killer extracting nectar from a flower. Notice the color pattern on the wasp's abdomen. (Photo courtesy of Rod Youngman)

Figure 2. The characteristic 'U-shaped' soil burrowing activity leading to the tunnel of a cicada killer. (Photo courtesy of Michael Goatley)

Management

In general, human interaction with cicada killers should probably follow a philosophy of “live and let live”; they are an excellent biological predator of the cicada, are not aggressive to humans, and do not feed or nest on or in our plants or structures. But there are situations where cicada killer control is warranted when their presence in large numbers intersects with lots of human traffic in the area, and the disruption of turf surface playability their burrowing into the soil causes on golf greens and baseball/softball infields.

Are there chemical controls for the cicada killer? Yes. Cicada killers are classified as digger wasps, so select insecticides to be used according to this category of pest, and the latest recommendations can be found in the annually-updated Virginia Cooperative Extension Pest Management Guides at https://www.pubs.ext.vt.edu/. However, in an era when we are trying to minimize possible environmental impact with pesticide applications, consider mechanical control options as well as insecticides if this wasp warrants treatment. Virginia Tech Entomologist Dr. Rod Youngman conducted research in the early 2000s on golf course putting greens in northern Virginia that were particularly struggling with surface playability issues due to very large populations of cicada killers burrowing into the surface. He reported that the best management of the insects was achieved by a combination of chemical treatment (using an insecticide that contained the active ingredients imidacloprid and bifenthrin) and mechanical insect control by way of 3 to 4 times daily visits to the affected greens by the maintenance team and their deft use of dew whipping poles in swatting the insects as they either emerged from or entered into their burrow. And if you have ever seen a tennis racket placed by a putting green with cicada killer activity, the racket is not placed there for you to work on your forehand– its intent is to be used as a mechanical control alternative by the golfer for any cicada killers that are behaving a little too aggressively for comfort.

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