



Entomology Insect Information Series

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Carpenter Bees

Carpenter bees (*Xylocopa virginica*) are very active from early spring through summer around houses and other wooden structures. These insects bore one-half inch wide holes that appear to be perfectly round on exterior wooden surfaces of house siding, eaves, window trim, fascia boards, shingles, decks and outdoor furniture.

Homeowners are often frightened by these pesky black bees that fly erratically around their homes. The male carpenter bee is very territorial and protects its nesting sites by hovering and attacking intruders. Although the male is aggressive, it does not have a stinger, making it harmless. The female does have a stinger, but rarely stings.

Identification: Homeowners often refer to these large, dark colored insects as bumble bees because of their similarities in size and appearance. Carpenter bees nest in excavated wooden tunnels. Bumble bees nest in the ground. Carpenter bees are robust, heavy bodied bees that range three-quarters inch to one inch in length. The carpenter bee can be identified by having bright yellow, orange or white hairs on the thorax and a black shiny abdomen. The bumble bee has a hairy abdomen black or yellow in color. The male carpenter bee can be identified by having white markings on the head.



Carpenter Bee

(abdomen is dark, shiny, and hairless)

Bumblebee

Photo Source: Dept. of Entomology, University of Kentucky

Life Cycle: Adult female and male carpenter bees overwinter in abandoned nest tunnels in which they have stored small amounts of pollen. The adults emerge in the spring (April and May), mate, and search for nest sites. Females may use an old abandoned nest tunnel or excavate a new gallery to lay her eggs within a series of six to eight cells. Females supplies each cell with “bee bread” (a mixture of pollen and nectar), lay an egg on the food mass, and seals off each cell with chewed wood pulp. The egg hatches and the larva (grub stage) develops to the adult which chews through the cell partition and emerges in late summer.

Economic Importance: Carpenter bees are nuisance pests in most cases, but they can cause considerable structural damage from repeated colonization of the same area. Fine sawdust caused by the adult bees excavating activities during the spring of the year will normally be found lying on the ground beneath the gallery entrances. Repeated boring activities may result in unsightly stains caused by falling bee waste around the entrance hole. Homeowners often notice a buzzing or burrowing sound coming from within the wood this time of year. The excavating bee will bore directly into the wood with her mouth parts for about an inch, then turn sharply and bore at a 90 degree angle usually along the grain of the wood. Normally, the gallery will extend about four to six inches, but with repeated use galleries have measured ten feet long. Nest sites by a single bee results in slight damage, but repeated colonization over several years may result in considerable damage.

Prevention: Unpainted, exposed wood is especially attractive to carpenter bees. The most effective deterrent to carpenter bee activities is a painted (oil base or polyurethane) surface. Insecticide additive paints are available which may repel bees attempting to nest. Wood stains provide little repelling action. Nail holes or exposed saw cuts should be filled in with wood putty or dowels and painted. If practical, remove severely damaged wood and replace with chemical pressure-treated wood to deter nest construction. To further discourage carpenter bees looking for potential nesting sites, a homeowner should secure all doors, windows, and other building openings during the

spring. Non-wood surfaces such as vinyl siding are not damaged by carpenter bees.

Control: Liquid insecticide sprays of synthetic pyrethroids such as (permethrin) can be sprayed on wood surfaces to reduce carpenter bee activity. The expected residual effectiveness of these insecticides on exterior surfaces is less than thirty days, so re-application may be necessary for long term control.

Established bee galleries should be sprayed with liquid insecticides or dusts labeled for wasp or bee control. The insecticide spray or dust should be directed into the passage entrance hole to ensure bee contact. **These control efforts should be conducted in late evening or at night when the bees are inside the wood tunnels.** After twenty-four hours, all tunnel entrances should be plugged with wood putty, caulking compound, or a wooden dowel coated with wood glue to prevent re-colonization by other nesting bees. If an insecticide is not used, the trapped adult carpenter bees can excavate new openings.

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Eiis/HS-8 (New 09/1998) (Revised 07/2000).