

Beneficial Insects



Mason Bees

Common and Scientific Names

- Common name: Mason bee
- Scientific name: *Osmia lignaria*

Description

A mason bee may appear similar to a small black fly, but flies only have one pair of wings and bees have two pairs.

Mason bees are also slightly smaller than honeybees and the actual size of the bee depends largely upon the size of the hole in which it grew.

Life Cycle

Mason bees emerge in early spring when fruit trees start to bloom. Males emerge first, quickly mate when females come out, and then females immediately begin work on their nests for the next year.

Nesting begins by finding a suitable hole. When the mason bee finds a suitable location, she places a mud plug at the bottom of the hole and brings in 15 to 20 loads of nectar and pollen which she has collected from the spring flowers of apples and other fruits.

Female eggs are laid at the rear of the chamber, for protection, and male eggs are placed toward the front. When finished, the female mason bee seals off the front of the tube with a mud plug. The plug of the mason bee is always rough, while wasps prepare a smooth plug, and leaf-cutter bees seal the holes with chewed-up leaves.

The larvae hatch after several days and eat the pollen the mother has provided before entering a pupal stage. The following spring, the adult bees emerge and the process begins again.

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Habitat and Preferred Plants

Mason bees are in the “solitary bees” category, meaning they do not live in a colony or hive. Females prefer to use existing holes in wood or natural cavities such as hollow stems- slightly larger than their bodies – for nests.

They also thrive in artificially-constructed nests, as long as nests include tubes made of cardboard or paper where the female bee can lay her eggs.

How They Benefit the Environment

Mason bees are a gentle beneficial insect that has potential as a pollinator of apples, cherries, and other fruit trees. They are found throughout most of North America, particularly in wooded areas but often around homes in towns and cities. One mason bee can pollinate 2,000 blossoms in a single day.

What We Can Do to Support Them and Increase Their Numbers

Purpose-built nests, often called bee boxes, can be constructed, and placed out in early spring when daytime temperatures regularly reach 55 degrees. The bee box should face south in a location that is sunny but protected from wind and rain. Because mason bees will not fly farther than three hundred yards from their nest, bee boxes must be located within range of fruit trees and flowering plants.

Sources:

- <https://extension.oregonstate.edu/sites/default/files/documents/12281/masonbee.pdf>
- <https://extension.psu.edu/programs/master-gardener/counties/luzerne/news/2015/so-what-is-a-mason-bee>
- <https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=23425>

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Constructing (Simple) Mason Bee Houses

What do you need for your mason bees?

- A block of wood (not pressure treated or cedar)
- A drill
- Pollen sources within 300 feet of the nesting holes
- Mud (critical for nesting)
- Nesting holes that are protected

You can make mason bee houses by drilling holes into a block of wood. Holes should be $\frac{1}{4}$ to $\frac{3}{8}$ inch in diameter, 3-6 inches deep, and open only on the entry end.

Place the nest in a dry, protected site preferably with east or southeast exposure. Insert a paper straw liner into each hole to make retrieval of the cocoons easier if you 'wash' your bees in the fall. Washing rids them of most mites and diseases.

The female mason bee will lay eggs in the nesting holes. It fills the holes with enough food for the larvae to survive, and then plugs it with mud to hold the food in place. In the spring the bees will eat their way through the mud and emerge ready to pollinate.

