

## Native Bees

In the last few years we have heard that the populations of honeybees are on the decline, due to fierce competition from other bees, or from a species of mites. In looking for an alternative, native or solitary bees come to mind.

Native bees do not live in collective hives; instead they build nests in tiny holes or tunnels that they find. This protects them from being overcome by the Africanized bees. They are also resistant to the varroa and tracheal mites.

While honeybees have workers with specialized tasks, native bees are each a potential pollinator. The native bee will collect pollen as small balls and then deposit the balls inside the tunnel or nest. She will then lay an egg and seal it off with mud or pieces of leaves. The native bee then collects more pollen, deposits another pollen ball then lays another egg, and so on. Depending upon her specie and the depth of the nest, the native bee may lay as many as 15 to 20 eggs in a single nest. This may require as many as 100 trips to and from flowers to gather the pollen for each of the eggs.

There are many species of native bees, and each is particularly suited to a specific crop, such as apples, peaches, or blackberries.

There are about 20,000 species of bees worldwide. The greatest diversity of bee species is found in warm, arid or semiarid areas, such as the American Southwest and Mexico. Bees range in size from 0.08 inch in length to the much larger 1.6 inch. While many bees are black or gray, others are bright yellow, red, metallic green or blue.

One specie of native bee that is of particular interest to home gardeners and orchardists in the Pacific Northwest is the *Osmia lignaria* or Orchard Mason Bee. When temperatures reach 55oF, the males chew their way out of the nest. The male eggs are always put at the end of the nest holes. The males will stay close to the nest for several days until the females emerge. They immediately mate, and the female starts gathering pollen. This is the time when your fruit trees would be pollinated! As described above, the female will then lay an egg on a lump of pollen in the nest, then use mud to build a partition, and lay another egg on a lump of pollen, etc. She will continue to do this until all her eggs are laid or until she dies.

One specie of native bee that is of particular interest to home gardeners and orchardists in the Pacific Northwest is the *Osmia lignaria* or Orchard Mason Bee. When temperatures reach 55oF, the males chew their way out of the



nest. The male eggs are always put at the end of the nest holes. The males will stay close to the nest for several days until the females emerge. They immediately mate, and the female starts gathering pollen. This is the time when your fruit trees would be pollinated! As described above, the female will then lay an egg on a lump of pollen in the nest, then use mud to build a partition, and lay another egg on a lump of pollen, etc. She will continue to do this until all her eggs are laid or until she dies.

These eggs hatch in summer and the larva feed on the lump of pollen. The larva then makes a cocoon and pupates. It will develop into an adult bee by fall, but will remain in the cocoon until next spring when the cycle begins again.

To provide an environment for the orchard mason bee, you will need to provide food, mud and nesting sites. Pollen from fruit trees is the best food. If the bees cannot find sufficient food in your yard, they will go to your neighbors. Be sure you do not spray flowering trees or flowers with any pesticide, or you may kill the bees before they have done their job.

To provide mud for the bees, dig a shallow hole close to the nest, from 6 to 12 inches wide. Make sure there is plenty of loose soil available around the hole. Keep a milk jug filled with water nearby, and sprinkle water into the hole every time you walk by it, if it hasn't rained.

Orchard mason bees need small dry nesting holes with only one entrance. They often use holes left by woodpeckers or beetles, or may find cracks in your siding. To assist them, you can easily build an attractive nest by drilling 5/16-inch diameter holes into a block of wood. Cedar is a good choice of wood. The holes should have a depth of 6 to 8 inches. You only want one entrance, so be sure you do not drill all the way through the block. You should build some kind of shelter over the top of the block, to protect the nests from rain.

Now, put your nesting block in the yard close to the food source – your fruit trees. The closer the nest is to the food source, the more time they spend in your trees and the less time flying around. If you have a fairly large orchard, you might want to place several nesting blocks around in it. It is best to have the nest openings facing any direction other than north. It should be about 5 feet off of the ground, so you can observe the bees best.

Many nursery and bird shops carry mason bees cocooned in straws, or your local Home Orchard Society will know where you can secure some.

## Resources

[Native Bees Could Fill Pollinator Hole Left By Honeybees](#), retrieved January 27, 2010.

*Sunset Western Garden Problem Solver*, Sunset Books, Inc., Menlo Park, CA, 1998, p. 157, "Bees".

Home Orchard Society, [Mason Bee Supplies](#), Retrieved February 2, 2010.