

Commercial Pollination with Mason Bees

Commercial growers of blueberries, raspberries and strawberries, nuts (almonds), and fruits (apples and cherries) may seriously consider including the blue orchard mason bee in their pollination efforts.

Osmia lignaria propinqua Cresson, or the blue orchard mason bee, is an early spring cool weather pollinator, whereas honey bees are warmer weather pollinators. Both insect species can live and work together harmoniously.

Honey bees are social bees that colonize in hives, either man-made or found naturally in the wild; while mason bees are solitary bees that find nesting holes made by insects or man. An $5/16^{\text{th}}$ -inch hole is the ideal diameter for a mason bee to make a nesting chamber.

Horn-faced mason bees (*Osmia cornifrons* Radoskowski, introduced from Japan, are also used in orchard pollination. In their native Japan, they are used to pollinate cherry and apple orchards. The horn-faced mason bee is mostly found in established areas on the east coast and Midwest; and, to a lesser degree, in the Pacific Northwest, along the south Puget Sound and Portland, Oregon, areas. Both are gentle pollinators, and rarely sting.

Space nesting shelters for mason bees at 200-yard intervals around, and inside, the area to be pollinated. The foraging range of both blue orchard and horn-faced mason bees is 100-yards, or the length of a football field.

Two-hundred and fifty (250) to 300 female orchard mason bees, or, 300 to 400 female horn-faced mason bees are needed to uniformly pollinate an one acre orchard.

Nesting shelters may be either permanent or hanging. Both should face east/southeast to be warmed by the early morning sun.

Hutches work well as permanent shelters. They need to be secured to the ground to withstand winds. A sloped metal or plastic roof allows precipitation to fall away from the shelter, protecting nesting units inside. A cedar roof may serve the same purpose.

Multiple-hole “hanging” nesting shelters may also be satisfactorily used throughout the orchard. Such a shelter is available thru Pollinator Paradise (www.pollinatorparadise.com) They need to be hung near the outer canopy (reach) of the fruit or nut tree to be exposed to the early morning sun. One may also utilize wooden fence posts, dead branches and tree stumps on which to hang nesting shelters.

Consider releasing mason bees in stages in the spring. One-third of the mason bees may be released into orchard blooms at one or two-week intervals.

Mud and water provisions are required near mason bee nesting shelters. Locate these sources within 50-feet of the nesting site. Mud is needed for mason bees to create mud caps and partitions in their nesting chambers.

A mud trench, or a simple water-drip system, will accomplish this need. Check each mud hole once or more weekly throughout the mason bee’s nesting season. Add a few twigs or small branches in the mud trench. Cover the mud hole, if needed, with chicken wire mesh to protect female mason bees from birds desiring them as a meal.

Remove all nesting units from their nesting sites after mid-September. Store them in a cool, dry area, such as an unheated garage, barn, or storage building. Cover each nest with fine netting to prevent invasion by chalcid wasp parasites. Consider also placing nesting units in a screened, ventilated garbage can shelter, as rodents (mice and rats) are likely to feast on mason bee larvae during hibernation.

Consult Karen Strickler, PhD, and Suzanne Batra, PhD, excellent orchard mason and horned-faced bee management information, at Pollinator Paradise (www.pollinatorparadise).

Additional information may be found in the books: “Pollination with Mason Bees” by Dr. Margriet Dogterom; “How to Manage the Blue Orchard Bee” (check your local library) by Jordi Bosch & William Kemp; and, “The Orchard Mason Bee” by Brian L. Griffin (www.knoxcellars.com).