Certified Best Practices for Sustainably Sourcing and Managing Orchard Bees

Harvesting/Propagation Guidelines

Propagation through Orchard Pollination

Sustainability

You're supplying the bees in most cases. They should be clean of pests, if for no other reason than to maximize your returns. If there might be wild bees around, you are adding to their population through introduction of your managed native bees. Therefore, the level of sustainability is dependent on your management practices.

Guidelines for orchard propagation

It is usually hoped that, at minimum, the number of female progeny you have at the end of the pollination season will be equal to the number of females you originally released into the orchard. Any increase in females in an orchard setting indicates the bees nested very well. When propagation in the orchard is poorer than expected, it is usually a result of poor retention. Females will leave the orchard, if resources are not adequate for nesting. Ideally, an orchard should have:

- A flowering cover crop that mason bees can forage from to sustain bees past bloom so try to work with the grower to reduce or avoid tilling or mowing during or after bloom. It is also beneficial if there is some early blooming cover crop planted in the fall. It has been shown that the presence of blooming cover crops does not decrease pollination of the target crop.
- Work with the grower to try to minimize spraying of pesticides while bees are present. Pesticides, including fungicides and herbicides, are potentially detrimental to bees in some way, since there has been little work done to test lethal or sub-lethal effects on orchard bees. When pesticide application is required, the use of bee safe products is the best option. The label will provide this information regarding honeybees. Also, pesticides should be

sprayed as late in the evening as possible, or preferably at night. Ideally, nesting boxes should be covered prior to spraying and uncovered before morning.

- Provide plenty of nesting holes. At minimum, 1.5-2 holes/female released. Bees will fly elsewhere if there is too much competition for nesting space.
- Use adequate mud. It is best if there are several sources of moist soil in the orchard that are not allowed to dry out while bees are flying in the orchard, preferably near nesting structures.
- It is best to remove bee nests from the orchard before birds and other pests get to them.

A final factor is bee density. More bees will not necessarily result in better pollination. If bees face too much competition for resources such as food and nesting holes, some will leave the orchard. The number of bees required may vary depending on the crop being pollinated. The recommendation of 300 nesting females per acre of apples has been made, but this rate could be reduced if honey bees are present. Remember too that retention is never 100%, so it is a good practice to release more bees than you expect to have nesting.