



# **Certified Best Practices for Sustainably Sourcing and Managing Orchard Bees**

## **Shipping Guidelines for Distributors**

### **Overview**

Several issues are involved in shipping bees, primarily where to ship which bees and how to ship successfully. There is ongoing discussion in the government and scientific communities about primarily where to ship which bees. We hope that the OBA can have some guiding influence on decisions as policy gets. We will try to keep this updated, but please, check the links provided for current policy with the different entities since we do not want to mistakenly suggest anything outside of existing compliance, or see anyone doing so out of ignorance.

An important aspect of this process is keeping track of what bees came from where and where they are being shipped to. Different techniques are available to distributors, from notes on boxes to bar codes to blockchain type information. From this, information about the bees from source to consumer can be tracked in a straightforward manner, but only if established ahead of time.

### **Where to ship which bees**

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#### **Importing bees**

There are international animal health standards through OIE, the World Organization for Animal Health. <https://www.oie.int/en>

**APHIS - Animal and Plant Health Inspection Service, USDA** regulates the importation of bees into the US - <https://www.aphis.usda.gov/aphis/ourfocus/planthealth/import-information/permits/regulated-organism-and-soil-permits>. Native bees should NOT be shipped outside of their country of origin, (excluding permitted bees to or, with a

few exceptions, from Canada - <https://www.aphis.usda.gov/aphis/ourfocus/planthealth/import-information/permits/plant-pests/sa-bees/ct-bees-importation>) except to researchers who obtain appropriate import permits from the country where the bees are to be shipped. Be sure that appropriate permits have been obtained before shipping bees.

Note – for shipments from Canada, the Canadian supplier must obtain an export certificate (HA2187) from the Canadian Food Inspection Agency (CFIA), verifying that the bees are of Canadian origin (no more than 10 days prior to shipment). Similarly, shipping to Canada requires a permit. Canadian buyers should apply for a permit at this website: <http://www.inspection.gc.ca/plants/plant-protection/imports/eng/1324569244509/1324569331710>.

### **OBA general shipping policy of shipping between states**

Vendors should check with the Department of Agriculture of the state where the bees are being shipped since the individual states Department of Agriculture regulates importation requirements for bees.

No live bees should be shipped to any state where that species does not already occur (except for appropriate permitted research in confinement).

Blue orchard bees (*Osmia lignaria*) sourced on the west coast and intermountain western US have been shipped to other western states by numerous vendors. Vendors should only do this after approval from the Department of Agriculture of the state where the bees are being shipped. We are currently aware of only one state in the west, California, which requires a permit for importing certain non-*Apis* bees already present in the state. Other western states prohibit importation of certain species from other states, especially ones that do not normally occur there. This is an attempt to reduce potential competition with bees native to that region as well as the other problems associated with unwanted insect invasions (see Kenis et al. 2009). For example, Oregon currently allows only honey bees, blue orchard bees, alkali bees, leafcutter bees, and a couple native bumble bee species. They are forming a task force to address this issue. The main criteria for possible approval mentioned so far is that any approved species already occurs in the state, will not be invasive and is of economic need.

Blue orchard bees sourced on the eastern and midwestern US have been shipped to other eastern and midwestern states by a small number of vendors. We do not endorse eastern vendors shipping to the west. Orchard bee populations in the east are more likely to include hornfaced bees, *Osmia cornifrons*, other non-native species such as *O. taurus*, as well as their associated introduced parasites and diseases. The eastern blue orchard bee also a different sub-species (*O. lignaria lignaria*) and if shipped west of the Rocky Mountains, they are likely to become mixed with the western sub-species (*O. lignaria propinqua*), which may raise issues

with introducing disease and undesirable characteristics in the mixed offspring. Likewise, we do not endorse shipping *O. lignaria* from western sources to the east coast, since it is possible that western parasites, diseases, and (further) unwanted gene mixing may be transmitted to eastern populations (in spite of it being done often in the past).

OBA does not endorse western vendors with *Osmia cornifrons* (common in the Portland, Oregon area) to sell this species in the western US.

Note that, according to the state department of agriculture in California, Oregon, and Washington *O. cornifrons*, and the eastern subspecies of *O. lignaria* are not allowed to be shipped into their state. For an example, below is California's procedure for appropriate shipping.

### **Shipping to California**

“California Food and Agricultural code (FAC) Section 6305 requires persons to obtain a permit from the director to import into, or ship or transport within California live insects, with certain exceptions. Honey bees are exempted by the FAC from permit requirements. California Code of Regulations Section 3558 lists other insects which may be imported or shipped into or within California without a permit. BOB (blue orchard bees, *Osmia lignaria propinqua*), are not currently on the exempt list.

“In order to receive BOB from out of state (or other non-exempt pollinator which is not regulated by the federal government), the California receiver must have a valid State permit. Permits will not be issued for the eastern subspecies of BOB or hornfaced bees.

“California businesses distributing BOB (or other non-exempt pollinators) must also have a State permit. “The State permit application may be downloaded from the following website: <http://www.cdfa.ca.gov/plant/permitsandregs.html>.

The required form is Form 66-026, “Application and Permit to Move and Use Live Plant Pests or Insects or Noxious Weeds”.\*

\*Pers. Comm. Stephen Brown, Special Assistant, Permits and Regulations Plant Health and Pest Prevention Services, California Department of Food and Agriculture. March, 2013.

Blue orchard bee vendors should insure that their California buyers obtain a valid permit before shipping to California. Sellers can expedite the process by helping buyers fill out the forms and ensuring that the forms are submitted to the CDFA by e-mail. Sellers are advised to wait until permits are approved before shipping (normally a quick turnaround if above guidelines are followed). Bees shipped without approval can be confiscated and destroyed.

Buyers and sellers should also purchase and sell native bees sourced from areas as close as possible to where the bees will be released, if available. Source identification is valuable in this instance. Since local bees are not always available, given the uneven distribution of suppliers and buyers, it is important for the seller to be able to still supply bees that have been properly pre-wintered and overwintered for the correct emergence time for the region of the buyer, or the bees will emerge out of synchrony with the bloom of the desired crop. This requires some pre-planning from the supplier and encouragement of receiving orders before the end of September the year before shipping in order to supply viable bees at the appropriate time. Generally, bees shipped for early bloom (ex: California crops) from Utah, Oregon, or Washington, need to be cooled early in order to have enough wintering to emerge quickly in February or March. In addition, some time of warmer wintering temperatures aids in earlier emergence. For example, the final month of wintering temperatures before shipping can be raised from 4 degrees C to 7 degrees C for faster March emergence.

It is always important to test the timing of emergence for populations to be shipped by pulling out a small sample a few weeks early to see how fast emergence occurs. If too slow, warm a few more degrees for those last weeks. With some experience and steady clients, this process becomes routine. Also, any population returns from early emerging bees will then need to be monitored for adulthood sooner than normal and cooled appropriately. Again, demonstrating the value of retaining source identification.

Buyers should also be made aware that successful blue orchard bee populations (and other solitary bees) depend on the availability of appropriate climate, habitat, and resources for the bees. See the section on propagation.

For a discussion of the issues, both ecological and regulatory, involved in moving bees from one location to another, see Strickler and Cane, 2003 ed., *For Nonnative Crops, Whence Pollinators of the Future?* Thomas Say Publications in Entomology Ent Soc of Am.

Especially –

Flanders et al, 2003, Chapter 6. Laws and Regulations on the Import, Movement and Release of Bees in the United States.

Barthell et al 2003, Chapter 10. Impacts of Solitary Bees on Natural and Agricultural Systems: The Case of the Leafcutting Bee *Megachile apicalis* (Hymenoptera: Megachilidae).

Also, as noted above -

Kenis M., M-A. Auger-Rozenberg, A. Roques, L. Timms, C Pere, M.J.W. Cock, J. Settele, S. Augustin, and Cl Lopez-Vaamonde. 2009. Ecological effects of invasive alien insects. *Biological Invasions* 11:21-45.

## How to ship successfully

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- Check with shipping companies to be sure that they will ship live insects. Currently neither UPS nor FedEx would ship live insects in cocoons. USPS will ship them, but will not ensure shipments if the cocoons are damaged or do not survive. Insurance only covers loss or damage to the packaging.
- Ship only dormant cocoons with adult bees unlikely to emerge in transit. This means shipping cocoons or nests with cocoons between about September (after bees have developed into adults) to March. Avoid shipping cocoons with eggs, larvae or pupae, since they are more susceptible to mortality.
- Ship early in the week (Monday or Tuesday) to allow sufficient time for delivery before the weekend. Also, avoid shipping close to a holiday that may delay delivery. Shipments should not sit around in the post office undelivered over a weekend or holiday. Always check with the receiving party to be sure someone will be available to accept the package or pick it up at the post office on the day that it is scheduled to arrive. Also, check on the reliability of delivery services in the area.
- Minimize the time that bee cocoons spend in transit. Never ship cocoons first class or standard post, as parcels shipped this way are slow and difficult to track. Priority mail is appropriate if bees are dormant and not close to emergence. Priority Mail Express is usually delivered the next day, and is preferable to Priority, especially in March or early April when bees are likely to emerge if they warm up.
- Shipments that are not going far and that are made during the winter when temperatures are cold, but not too cold (25 – 35°F), can be shipped without special packaging, although with some risk. To reduce risk, ship cocoons in an insulated carton on blue ice. Place the ice in a plastic bag in case it leaks. An insulated package with ice should keep bee cocoons at a relatively constant cold temperature for 2 – 3 days, despite fluctuations in the environment from room temperature inside the post office, to below freezing temperatures at night inside a plane or on the tarmac at the airport.
- When shipping large quantities of bee cocoons or straws with cocoons, keep in mind that the cocoons can generate a great deal of heat if they are packed in a large volume with little surface area. Flat containers (not ziplock plastic bags) with some ventilation - punch small holes in plastic containers if necessary - no more than 1.5 – 2 inches thick with ice above and below the containers are better than deep, square containers to be sure that heat dissipates from the cocoons and they can breathe.
- Finally, have a clear policy for what compensation you offer if the cocoons do not survive shipping, and be sure that your customers know what the policy is.

## **State Sales Tax**

Many states charge sales taxes for items purchased within the state. Orchard bee sellers should be sure to find out if sales tax is required by the state where you are shipping bees or other items for sale.

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