

# Blue orchard Mason Bee

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*Osmia lignaria propinqua*  
Family Megachilidae

## DISTINGUISHING FEATURES

- Slightly smaller than a honey bee
- Shiny dark blue color
- Female is larger than the males
- Females have hairs on their underside to carry pollen
- Females' antennae are short and thick, males' are longer
- Males have light colored facial hairs, which appear as a "white face"

## CHARACTERISTICS

**Non-aggressive** Females have a stinger but will not sting unless squeezed, males do not have a stinger at all

**Solitary** Mason bees don't live in hives but in nesting tubes in close proximity to one another

**Non-destructive** They do not excavate holes but search out man-made nesting boxes, tubes, or any 5/16" diameter hole that is naturally occurring

**Heavy pollinators** Mason bees collect pollen from the nearest source regardless of plant species or family  
Pollen is carried in scopa (rows of stiff hairs on the underside of their body)  
Landing directly on the flower stigmas, the reproductive structure of the blossom, makes mason bees more efficient pollinators than honey bees, who land on the petals of flowers  
They have a high bloom visitation rate - Each female is capable of visiting over 300,000 flowers during her lifetime

**Healthy** Resistant to parasites and diseases provided they have clean housing

**Cold tolerant** Mason bees are active above 54° F, returning to their nest sites at night and during cold snaps  
Emergence coincides with the development of early blooming plants and most fruit trees, including apples, pears, and stone fruits  
Mason bees remain active during cloudy or rainy weather

## LIFE CYCLE

### Spring

Bees emerge when temperatures reach approximately 54°F for five consecutive days. This normally corresponds with the swelling of flower buds on fruit trees. In the Pacific Northwest this is usually early March.

Male bees emerge first and wait near the hole entrances for the females to appear. This may take up to two weeks. They mate almost immediately upon females' emergence. The males spend this waiting and mating time foraging for food and then, their mission accomplished, they die.

## Late spring

Female bees stay busy collecting pollen and nectar. In each nest hole, she regurgitates the nectar and places the pollen on it, repeating this procedure 15 to 20 times until she has collected enough to sustain a new larva. She locates the cell she is filling by marking it with her particular pheromone. The female then lays an egg on the top of the mixture, backs out of the hole a bit, applies a thin mud wall, and begins the next cell. Eggs laid in the rear 30% of a nest hole become female bees. The forward compartments contain the males. When a six inch nest straw is filled, holding about eight cells, the adult bee applies a thick layer of mud almost 3/16" thick to the entrance cell to protect against invaders. The adult female *Osmia lignaria* then goes on to the next straw and repeats the same process. She will live from four to eight weeks, laying between one and two eggs each day. The larvae hatch from their eggs in a few days.

## Summer

During the summer the larvae consume the stored nectar and pollen, spin cocoons, pupate, and remain in their cocoons as adult Mason bees until it is time to emerge in the early spring. This is the season to avoid moving nesting boxes, as disturbed eggs or larvae might not survive being jostled.

## Fall/Winter

Mason bees remain dormant throughout the winter. In late October/early November, mobile boxes can be safely moved to a sheltered area with a temperature ranging between 30° and 45°F. In the early spring boxes should be moved outside and hung on a south facing wall with an overhang to protect them against rain and hot sun.

## REQUIREMENTS FOR ATTRACTING MASON BEES

- 5/16" holes drilled in any wood (except cedar or pressure treated), manufactured nesting straws or previously used holes
- Mud source for cell walls
- Early blooming fruit trees (peach, cherry, European plum, pear, quince, and apple)
- Flowering plants, especially those that are blue, purple, or yellow and that bloom during the entire lifespan of the Mason bees, particularly *Pieris japonica*
- Flowers should be single rather than double

## REASONS FOR NON-EMERGENCE

- Housing absorbed moisture
- Moved box too early - eggs or larvae became dislodged from the food supply
- Winter storage temperature below 10°F
- Severe infestation by mites - especially in old nesting holes
- Overheating in summer

*Compiled by Jane Henry for the Home Orchard Society; July, 2005*

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www.homeorchardsociety.org  
masonbees@homeorchardsociety.org  
Open year round from 9-3 pm on Tuesdays and Saturdays.  
503.338.8479 (Tue-Sat 9 AM – 5 PM Pacific Time)  
P.O. Box 607 Oregon City, OR 97045  
Mason bees and nesting supplies available for purchase.

Home Orchard Society  
**ARBORETUM**

# Home Orchard Society **mason bee supplies**

We are a non-profit 501c(3) organization dedicated to educating our members and the general public about growing good fruit at home.

For many years, a group of our members have been spending their spare time raising mason bees to sell to other backyard fruit growers. Currently, at nine different sites around Portland and the North Willamette valley, members set out new tubes every spring to increase their mason bee populations, making it possible to sell full tubes to others. These bees are home-grown, adapted to the Pacific northwest climate, and extremely hardy.

**If you are interested in ordering from us, please take a moment to read these guidelines**

## **PLACING YOUR ORDER - Order limit of 25 tubes of dormant bees per person!**

- We only fill orders from December 1st through February 28th.
- All dormant bees are shipped via overnight mail; orders with both empty tubes and live bees are often shipped in two separate containers to minimize costs.
- This is a volunteer-managed endeavor, please be patient; your business is important to us, and we will return your email or call as soon as we can. Help us by leaving detailed messages.
- Plan ahead for what you need – February is busy with bee tube sales, so order early!

### **For ordering, please use our order form:**

**1. Mail orders-** simply download it, print it, fill it out and send it to us with your payment. Please email to confirm supplies are available first.

**Send mail orders to:      HOS Mason Bees/Karen Tillou  
   P.O. Box 607  
   Oregon City, OR 97045**

**2. Local pickup orders** - Email is best, but phone works too:

**Phone** - Leave a message: speak slowly and clearly, place your order, and leave your name, phone number, and shipping address. (You will receive a phone call to confirm your order.)

**Call to leave your order: 503-338-8479 (Tue-Sat 9 AM – 5 PM Pacific Time)**

**Email** - download the order form, fill it out, and send it as an attachment, with “mason bee order” in the subject line. (You will receive an email confirmation of your order.)

**Email your order to: [arboretum@homeorchardsociety.org](mailto:arboretum@homeorchardsociety.org)**

## **PAYMENT**

The Home Orchard Society currently accepts cash, checks, and money orders for our mason bee sales. We must receive a check or money order before we can ship your order.

Cash is acceptable only if you are picking up your order locally.

Make checks and money orders payable to: Home Orchard Society

**RECEIVING YOUR ORDER:** You have two choices - shipping via mail or in person pick-up:

## **SHIPPING**

We do not ship our PVC houses at all, due to small volume and high shipping costs.

All filled tubes are shipped overnight mail. If your order contains both filled tubes and empties, we might ship them separately to keep costs down. We ship via US Mail.

This is a low-tech operation. We do not have an account with UPS, or a way to accept credit cards.

If you have a better idea about shipping costs to your area, we'll be glad to hear about it.

## **PICK-UP**

**If you are ordering a PVC house you must arrange a pick-up. We do not ship PVC houses!**

There are two ways to arrange a pick-up:

**1. At the HOS Scion Exchange;** generally the 1st Saturday in March, usually in the Portland (Oregon) metro area. There is a \$5 entry fee, but if you are going anyway, it's a good pick up spot. See our website link ([www.homeorchardsociety.org](http://www.homeorchardsociety.org)) for directions and times.

**2. At the HOS Arboretum;** open Tuesdays and Saturdays from 9 - 3 pm year round, on the campus of Clackamas Community College in Oregon City, Oregon. Call 503-338-8479 to set a pick-up date with the site manager.

**You must pay with cash or check at pick-up time, unless you already mailed your payment.**

## CARE OF DORMANT BEES

Upon receiving filled tubes of dormant cocoons, remember that you are dealing with living, climate sensitive creatures. After unwrapping them from their shipping materials, place them in a cool, dark place to keep them dormant - a garage, unheated basement, or refrigerator. If it is the season for them to break dormancy (are your pears and cherries in bloom?), place them in their house outside. As we get into mid-February, they can emerge from dormancy in as little as 3-5 hours at room temperature. Generally, three to four days in a row above 55°F will trigger males to start emerging outdoors.

If you receive bees that have begun emerging, release any that are alive outside, and place the rest of the tubes in the refrigerator. Chances are, only one or two males emerged, and the bulk of your bees are still fine. Please call us if it seems like too many bees emerged; we will do our best to replace a shipment. Be aware, especially if you live in a warmer climate, of the possibility of premature emergence, and order your bees as early as possible.

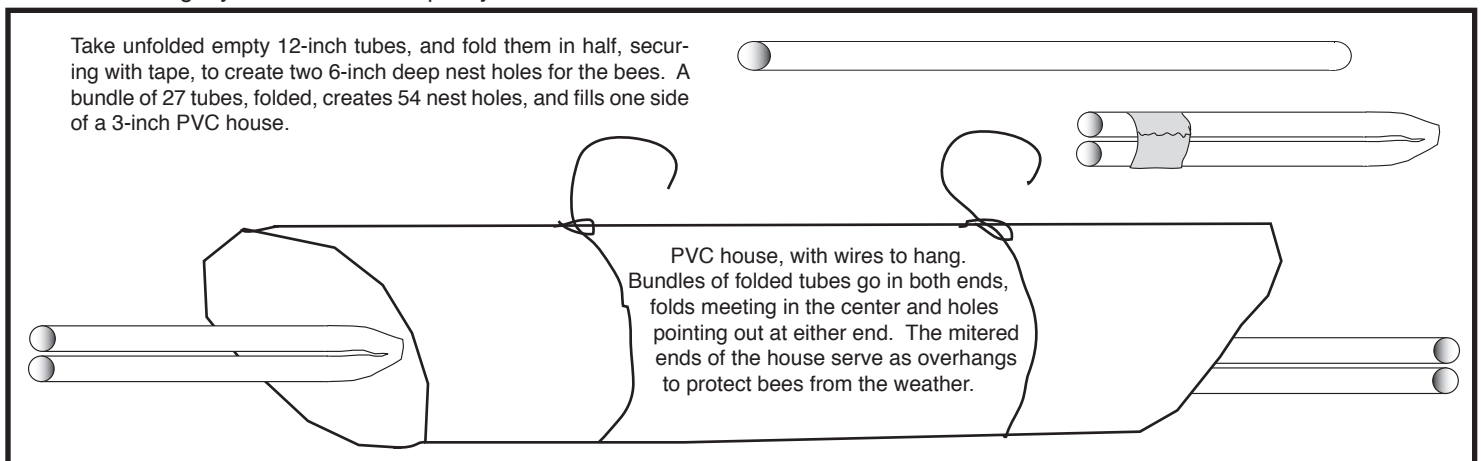
*We do our best to cull out any bee tubes that have been parasitized, damaged, or seem only half full. If you feel like the bees you have received never emerged, or emerged before you even opened the package, we will do our best to see you get replacements. Please let us know about any problems with your order as soon as possible.*

## TUBE FOLDING

The empty tubes that we provide arrive unfolded. A roll of scotch tape and rubber bands are all you need to get them ready to put them out. Mark out the length of a tube, and its center point (6 inches in from either end) on your work surface. With the marks as a guide, use a pair of needle nose pliers or your fingers at the center/6 inch mark, and fold the tube in half so its ends are even with each other. Now add enough scotch tape to hold it together (an inch or so), and keep folding tubes until you have enough.

I've found that twenty-seven is the perfect number of tubes. Twenty-seven 12-inch tubes, once folded, fit inside a length of 3 inch PVC pipe. That means that fifty-four will be how many you need to fill both ends of a 3-inch PVC house. For those of you with the 2-inch pipe, twenty-seven folded tubes will fill both sides of these smaller houses.

For people getting their first mason bees, we recommend buying a PVC house kit; you receive the PVC pipe, wires to hang it, empty tubes and 2-4 folded 12 inch tubes full of dormant bees. This ratio of empty tubes to dormant bees ensures that you have enough space for 2-3 years of nesting space as your bees multiply. If you already of nesting spaces (drilled wood blocks are most popular) then 2-4 tubes of cocoons should get you started off with plenty of bees.



## SETTING OUT YOUR NESTS

Once your house is assembled, place it carefully. Put it somewhere out of reach of any little hands, curious pets, or routine tasks (like mowing) that might jostle the nest between March and November of each year. Mason bees also like morning sun while they are actively flying (March through early June), summer shade while the young larvae are hatching in the tubes, and shelter from wind and rain. It's hard to get all three of these conditions perfectly, but try. My favorite spots for setting houses are on the south or east sides of buildings, close under the eaves, or hanging 5-8 feet up in deciduous trees (on a solid branch).

If you are setting out an empty wood block-type nest, and are adding tubes of dormant bees to get started, place the tubes in something (tin cans are great) to protect the cocoons and the emerging bees while they move in to their permanent home, and hang it below or alongside the wood block.

Questions? Comments?  
Want to help grow out mason bees for us?  
Contact Karen Tillou; 503.338.8479  
(Tue-Sat 9 AM – 5 PM Pacific Time)  
[arboretum@homeorchardsociety.org](mailto:arboretum@homeorchardsociety.org)  
P.O. Box 607, Oregon City, OR 97045

**Home Orchard Society**  
**ARBORETUM**

2008/09

# HOS mason bee supply price list

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## Item Descriptions

## Item Code / Unit Price

### Bees - LIMIT of 25 total per ORDER - Supplies are low!

Our tubes of bees are designed to fit inside PVC houses, but can be tucked anywhere safe and dry; tubes are paper coated with a thin plastic coating for weather resistance. Please note that these are cocoons inside paper tubes; the cocoons themselves have not been cleaned or sorted.

Folded 12 inch tubes (12-18 cocoons)	Each	12FT	\$3.00
6 inch tubes (6-9 cocoons)	Each	6FT	\$1.50

### Empty tubes

Empty tubes are paper coated with a thin plastic coating for weather resistance. Tubes need folding in half, as a 12" tube is too deep for bees to use efficiently. We sell bundles of 27 because this is the number of tubes that fit (folded) in one side of a 3" PVC house, or that fills both ends of a 2" PVC house.

Coated 12 inch	Each	12T	\$0.24
	Bundle of 27	2712T	\$6.00

### PVC Houses and Starter kits

**NOTE: We do not ship PVC houses/kits. These are for pickup only!**

#### Empty PVC Houses

Our PVC houses are simple: a 2 or 3" diameter length of PVC pipe is cut with overhangs at either end (rain/weather protection). Folded tubes are placed in each end, with the folds butting up against each other in the center. This gives the bees a blind tunnel for nesting, and keeps out more parasites. Wires complete the package, for easy hanging on orchard wires, tree limbs, or a fence.

3 inch pipe, double-ended w/wires	3PVC	\$5.00
2 inch pipe, double-ended w/wires	2PVC	\$4.00

#### PVC houses with empty tubes

If you already have mason bees, maybe in a wood block house, or a first PVC house, then this is what you need for expanding your population: the same PVC house as above, but filled with empty tubes so your bees have new nesting sites!

3 inch pipe, double-ended w/wires And 54 empty 12 inch tubes	3PVCE	\$17.00
2 inch pipe, double-ended w/wires And 27 empty 12 inch tubes	2PVCE	\$10.00

#### PVC houses with empty tubes and dormant bees

For the first-timer, this kit is a great start: you get a house, empty nesting tubes, and several tubes of dormant bees to get your population started. You will have enough nesting space for several years with this package.

3 inch pipe, double-ended w/wires, 54 empty & 4 full 12" tubes	3PVCEF	\$28.00
2 inch pipe, double-ended w/wires, 27 empty & 2 full 12" tubes	2PVCEF	\$15.00

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# Home Orchard Society Mason Bee Order Form

2008/09

**Your information:**

Name \_\_\_\_\_ Date \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone # \_\_\_\_\_

Email \_\_\_\_\_

**Mail orders, send this order with payment to:**

HOS Mason Bees/Karen Tillou

P.O. Box 607

Oregon City, OR 97045

**Local pickups, email or phone:**

arboretum@homeorchardsociety.org

503-338-8479

(Tue-Sat 9 AM – 5 PM Pacific Time)

<b>Chart A - Overnight shipping</b>	
<b>Bee Subtotal</b>	<b>Shipping cost</b>
\$0 - 30.00	\$19.00
\$30-100.00	\$23.00
<b>Chart B - Tube shipping</b>	
<b>Tube Subtotal</b>	<b>Shipping cost</b>
\$0 - 20.00	\$5.50
\$20 - 40.00	\$10.00
\$40 - 60.00	\$12.00
For large orders, please email ahead for a custom shipping price	

\_\_\_\_\_ I want my order shipped to address above

\_\_\_\_\_ Call/email me - I'll pick up my order (check one)

\_\_\_\_\_ HOS Arboretum (Tues/Sat only)

\_\_\_\_\_ HOS Scion Exchange (March)

Item Description	Item Code	Unit Price	Quantity	Total
<b>Bees - LIMIT 25 per ORDER!!!</b>				
Folded 12 inch tubes (12-18 cocoons)	12FT	\$3.00		
6 inch tubes (6-9 cocoons)	6FT	\$1.50		
<b>Bee Subtotal</b>				
<b>Overnight shipping (shipping chart A)</b>				
<b>Empty tube</b>				
Coated 12 inch tubes	12T	\$0.24	Each	
	2712T	\$6.00	Bundle of 27	
<b>Tube Subtotal</b>				
<b>Tube Shipping (shipping chart B)</b>				
<b>PVC Houses and Starter kits</b>				
<b>Empty PVC Houses</b>				
3 inch pipe, double-ended	3PVC	\$5.00		
2 inch pipe, double-ended	2PVC	\$4.00		
<b>PVC houses with empty tubes</b>				
3 inch pipe, double-ended w/wires and 54 empty 12 inch tubes	3PVCE	\$17.00		
2 inch pipe, double-ended w/wires and 27 empty 12 inch tubes	2PVCE	\$10.00		
<b>PVC houses with empty tubes and dormant bees</b>				
3 inch pipe, double-ended w/wires, 54 empty & 4 full 12 inch tubes	3PVCEF	\$28.00		
2 inch pipe, double-ended w/wires, 27 empty & 2 full 12 inch tubes	2PVCEF	\$15.00		
<b>PVC Subtotal</b>				
<b>Total due</b>				

We accept cash or checks for pick-up orders, checks or money orders for mailorders. Make checks payable to: Home Orchard Society

(add up the grey boxes)