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## Home Made Mason Bee Paper Liners That Work by Randy Person

The simplest mason bee homes are holes drilled in wood. While easy to make, they have several disadvantages. Pests, especially mites, are a natural part of the mason bee life cycle. In wood, the mature cocoons cannot be removed for cleaning, so pest populations remain high. It is also nearly impossible to clean the holes for re-use without destroying either unhatched adults or freshly laid eggs.

Many who raise mason bees turn to paper liners. These treated paper or cardboard tubes fit into holes in wood or other medium, or are sometimes used alone. The bees nest in the tubes (or "straws"), which can be removed when the bees are mature. Fresh liners in the holes provide clean nest spaces for the following season. Some liners can be opened for access to the cocoons for cleaning, but many are difficult. In those, bees still emerge in association with pests. Plus, there is the ongoing expense of replacing the liners annually.

If you like to build your own bee houses, and are able to drill long, straight holes, there is a way to make your own lined bee holes. Not only will you save money, but your home-made liners are easily opened to harvest the cocoons for cleaning. Credit for this idea goes to Dave Pehling, of the Washington State Cooperative Extension office in Snohomish County, Washington. He described the idea to me in conversations several years ago, and I have tested and refined the basic idea since.

### The Block

The heart of the system is the block. Since I also use the tray systems developed and sold by Beediverse®, my blocks are very close to that size. This allows me to place the Beediverse® blocks interchangeably with my home-made ones. The blocks are 3 ½" square and 5 ½" long. After the backs are added, they are about 6" long, the same as the Beediverse® blocks. Choose a wood with a fairly straight grain – bad grain can pull even a sharp drill bit out of line. Also, don't use a highly aromatic wood like cedar or redwood, unless it's well weathered. Their rot and bug repellent qualities work on mason bees, too!

The ideal hole size for mason bees is 5/16". We'll drill these 3/8", and after the liner material is inserted, they will be very close to ideal. For clean holes, use brad point bits. For a series of parallel holes, a drill press is handy, if not essential. Most home drill presses have a maximum hole depth of around 3", so the holes have to be done in two steps.

First, lay out the hole pattern. I use a 5 x 5 pattern, for 25 holes in each block. Each hole is a little under ¾" from the next, center to center. Various sources suggest spacing from 1" on center on down to bundling the straws and stuffing them into a can. My spacing seems to work well.

around the rolling rod, and hold it against the rod as you slip it through the hole and out the back. When the paper is sticking out both ends, release it. It should try to unroll, and will expand to fill the hole tightly. Push one end flush with the front of the block. To measure the width needed, make a small cut through all layers at the point where the corner of the paper is. Then remove and unroll the paper – the cuts will mark full turns. Measure how much is needed for three full turns, plus a little. Then figure how to use your material best, and cut enough rectangles to line each hole. As an example, the material I have is 15" wide. Dividing that into four equal pieces does not give three layers. So I just cut it into thirds, and use pieces 6 ¼ "x 5". I get nearly a full extra layer, and that's better to me than being weak.

### **Fill the Holes**

Gather up your blocks, paper, and rolling rod, and plunk down to your favorite TV show or video. You'll soon get the feel of getting the paper started on the rod, and getting a good, tight roll is the secret to getting the tubes in place easily. If the tubes don't fill out immediately, push them back and forth a few times. That usually seats them. You're done loading when all the paper ends are flush with the block on one end, and sticking out the back at the other.

### **Bend the Tubes**

Place the block on it's face, with the tubes sticking up in the air. Bend each tube sharply down. Bend all the same direction. A sharp crease at the end will maximize available tube space.

### **Seal the Back**

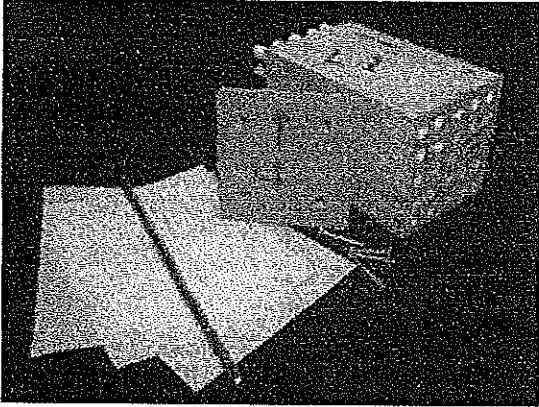
Place the back on the block, and screw it in to secure the tube "tails." Those closest to the edge will be sticking out. They trim easily with a sharp knife. The block is ready to use.

### **Next Fall**

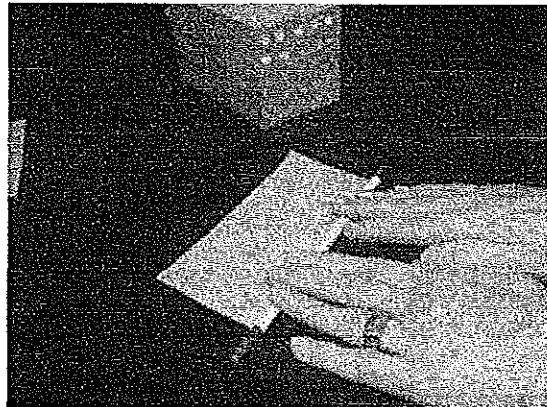
In the fall when the bees are mature, remove the back, grab the tails, and pull the tubes out. They will maintain shape fine. However, you can easily unroll them to inspect your harvest and clean them. For more information on this, see the fine book written by Dr. Dogterom, available at [Beediverse@](mailto:Beediverse@). Finally, sometime during the winter, cut more paper, re-line the holes, and you're ready for another season.

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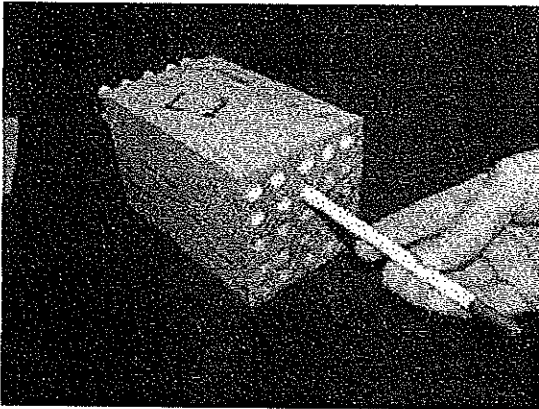
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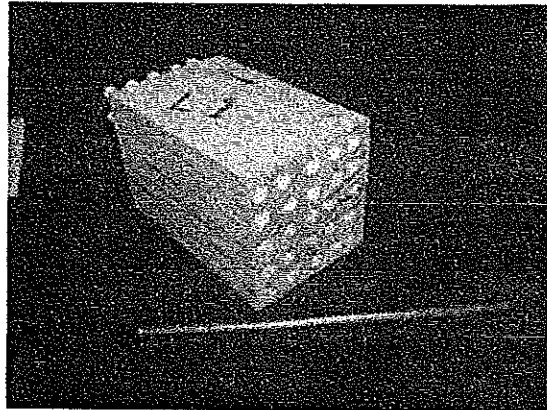
All you need for your own lined bee nest



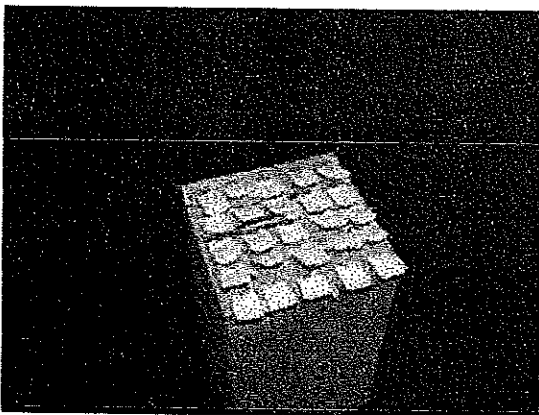
Roll the paper tightly around the rod



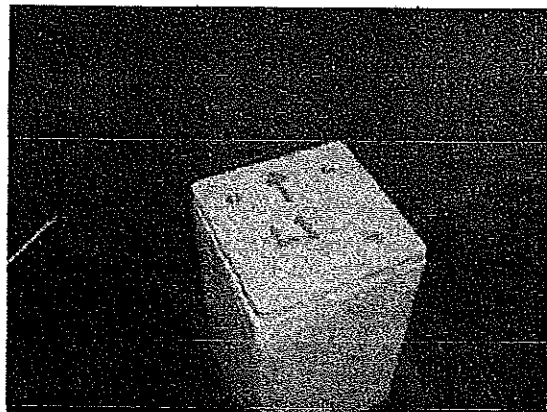
Hold tight, slip rod and paper into hole



Release paper, it unrolls to fill hole



Bend over tails sticking out the back



Screw on back, trim tails; you're done!