

How to make nests for black resin bees – drilled wood blocks.

Megachile punctata and *Megachile lucidiventris*, or the black resin bee, are common to the Sydney region and are very alike in appearance. They are black and white and measure approx. 20 mm in length. The female black resin bee is a solitary bee which collects pollen and nectar to feed her young. She uses pieces of leaf mixed with plant resin to seal the individual cells she makes for her offspring (Figure 1). Normally, black resin bees make their nests in old borer holes but they will use artificial nests. Hardwood blocks drilled with 6 – 10 mm diameter burrow are well utilised by local populations of this bee species.



Figure 1. Black resin bees occupying artificial nesting blocks (Photo Steve Ruttley).

Unfortunately, in our efforts to keep our gardens tidy and free from destructive borers most people remove any wood which has signs of borer activity. This, in turn, removes natural habitat for the black resin bee as well as wasp mimic bees and some leaf cutter bee species. By providing attractive, risk-free habitat to our local bees we will ensure the natural populations remain at healthy levels and they are present in the area to perform their vital pollination duties. This is how you can help your local populations:

Hardwood is better than pine (soft wood) as it weathers better and drilled holes (burrows) are smoother and more attractive to bees (Figure 2).



Figure 2. Soft wood (top) compared to hardwood (bottom).

Burrows should be at least 10 cm (4 inches) long, preferably 15 cm (6 inches), to ensure the optimal proportion of male and female bees are produced. If burrows are too short, less females than males will be produced, thus reducing potential population growth.

Therefore, wood blocks which are 20 cm deep and 5 cm thick are easiest and most economical to work with. The length of the block is up to you.

Burrows need to be drilled **across** the grain of the wood (Figure 3). If you drill with the grain is much more difficult, the drill bit may become jammed and the burrows will not have a clean finish.



Figure 3. Burrows drilled across the wood grain.

Use an 6 - 10 mm **auger** bit (Figure 4), as auger bits remove wood chips as they cut. It is cleaner and more effective when drilling hardwood. They are expensive, but they are much better for this job than normal drill bits and will not burn the wood as you drill.

This is the equipment you will need:



Figure 4. Long auger bit is best for drilling hardwood.



Figure 5. Equipment needed to make drilled wood blocks for resin bee nests. Cordless drill to drill smaller holes, vice, marking pen, needle nose pliers and sander.

Anchor the wood block in a vice (Figure 5 & 6) or with D-clamps to ensure it doesn't move while you're working with it.

Mark the places for the burrows on the face of the block. Don't make them too close, as this will make it difficult to make clean, non-intersecting holes. 2 cm apart is easiest to manage (Figure 6).



Figure 6. Marked wood block secured in vice.

Auger bits will 'pull' the drill into the wood, so make take care. Placing the drill into 'reverse' to remove the drill bit from the wood. You will have less control if you try to pull the drill out while it is still in 'forward' mode. The chips of wood will not clear from the burrow when the bit is removed in the 'reverse' mode. So you will need to re-drill the burrow in 'forward' mode and **then** 'pull' the drill out, still in 'forward' mode. This will remove all of the wood from the burrow (Figure 7). So, drill 'forward', remove 'reverse' then re-drill 'forward' and pull out in 'forward' to clear remaining wood chips. Repeat this process for each hole.



Figure 7. Holes cleared of wood chips.

Ensure you keep the bit straight within the block or it may drill out through the block wall (Figure 8).



Figure 8. Side of block ripped open by crooked drill bit.

Remove the burrs from each hole with a pair of needle-nose pliers to make the burrow accessible to the bee (Figure 9). Sand the face of the block. You can sand each side of the block if desired.



Figure 9. Drilled burrows with burrs at entrances (left) and holes with burrs removed and sanded smooth (right).

Unless you can provide a roof for the block it is best to keep it under protection such as a decking, on a window sill, etc. Providing a roof (Figure 10) or protection will increase the life of the block. Let your imagination carry you away (Figure 11 & Figure 12).



Figure 10. Block with simple roof for protection against weathering.



Figure 11. More complicated roof.



Figure 12. Variety of roofing ideas for nesting blocks.

It may take up to two seasons for resin bees to inhabit the blocks.

If there are no natural populations in the area, they will not be utilised. This will depend on where you live and how much natural habitat has been removed over time.

If you live in an area within foraging distance of natural populations, you will be able to help increase populations within the vicinity of your own garden.

Good luck with your new residents and enjoy them. They are truly amazing to watch, as they are very, very busy bees 😊