

1 Star Bee & Bee Review

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Bees! They're mostly small, fluffy, round, a bit stingy, but most of all, incredibly important for the pollination of our plants. It has been all over the news- our bees are declining [1, 2]! Their habitat is being destroyed! We must help them!

Commendably, the public has noticed and they really want to help.

Awareness of the plight of the bees has increased tremendously over the last few years. Now, it is easy to buy bee hotels and plants which are 'good for pollinators'. But, despite this interest, our native bees are still struggling and in decline. Are public efforts helping or are they hindering?

Unfortunately, recent research suggests our efforts are likely to be hindering [3]. Unmanaged bee hotels are causing our cavity nesting bees and wasps to be at greater risk of disease and parasitism. There is also the issue that less than 5% of our bee species in the UK will even use bee hotels. The majority of British bees are ground nesting- a clear patch of bare earth may provide a more suitable habitat for a wider range of species, while also being cheaper and easier to maintain. Still, the love of bee hotels prevails so better recommendations on care must be more widely available.

Without proper care, bee hotels become a festering mess. Debris builds up, pollen mites in their droves will munch away at the stores left by the mother bees for their young larvae and water begins to seep in. Cut bamboo stems, pinecones and straw all provide perfect hiding places for mites and parasites. The thin, split, hollow stems, like tubes of Smarties, are full of goodies for the parasitic larvae of wasps and flies. The thinly walled tube is no match for the formidable looking ovipositor that many female parasitic wasps wield and the cracks allow those with shorter ovipositors to squeeze through into the bee's cells.

Tubes that are not cleaned out regularly also have the threat of kleptoparasitic mites. *Chaetodactylus osmiae* lives in the nests of the Red Mason Bee (*Osmia bicornis*) [4]. Although *C. osmiae* doesn't directly predate on the bee larvae, it does eat the pollen stores and, when the young bee emerges, it hitches a lift. Hitching a lift isn't so bad- no worse than letting a hitch hiker in the pouring rain sit in the back seat of your car until the next junction. The problem occurs when 100 hitchhikers try to sit in the back of your car.

Now, the car cannot move. You are stuck and unable to drive with 100 hitchhikers desperately clinging on to the back of your car. This is essentially what happens to the poor, young Red Mason Bees which are taking their first flight as they emerge from their unclean cells. In a fresh tube which has been cleaned, there will only be a few of our hitchhiking mites brought in by the mother bee, but in an old tube there may very well be hundreds waiting for a lift from the last brood that was inside it. This is because when they have killed

the bee larvae by eating all of the stores the year before; they lie in wait for the next brood as inert deutonymphs.

So what can we do to encourage these cute bees into our gardens without killing them? A fresh hotel made from pine with holes drilled 10-15cm deep, separated by 2cm to prevent disease transmission and hole diameters a range of sizes between 2mm and 15mm is ideal. A cover to prevent rain and a platform at the bottom is preferable for newly emerged bees to warm up and begin their adult lives. Markings should be burnt or painted on the front as well, as the females can get very confused and go into other nests by accident if the front looks the same. Too many markings can also confuse the females however, so think less like Jackson Pollock! Surprisingly, they also love a light blue roof so that they can easily relocate their nest again amid the darker colours. Placement of the hotels is also important – above 2ft to prevent ants, in a protected spot away from wind, south facing and, most importantly, kept dry to prevent rot [5, 6]. This hotel should then be replaced annually or biannually to prevent mite build up.

Hopefully with these tips, those 1 star B&B's will end up being luxury 5 star hotels – just what our little helpers deserve!

References

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