Biosecurity for Australian solitary and semi-social native bees

Source: Jeremy Jones, University of New England NSW

NATIVE AUSTRALIAN BEES

What can you do?

There's still a lot we don't know about biosecurity best practice for solitary or semi-social bees, but the following steps can help keep your bees healthy:

1. Be aware of threats

- Know the major pests and diseases that can impact your native bees and educate others.
  (See: Pests for Australian solitary and semi-social native bees factsheet.)

2. Check your bee hotel or nest

- Observing your bee hotels/human made nests seasonally increases the chance of picking up new pests or diseases early, increasing the chances of containing them before they spread further.
- Where possible, choose warm, sunny days for the greatest chance of observing hotel/nest activity.
- Inspecting your bee hotels/nests should involve looking at all parts of the hotel you have access to.
- Visually inspect the front of the bee hotel and check for any unusual activity.
- Keep detailed records of your observations and take photos as a point of reference.

2. Keep it clean

- Obtain bee hotels from pest-free and reliable sources.
- Do not leave bee products exposed in the open as this can encourage robbing behaviours and pest transfer.
- Bee hotels which have been vacant for a long period should be cleaned out and restocked with new nesting material to reduce pest build up.

If you see anything unusual, call the Exotic Plant Pest Hotline. .

EXOTIC PLANT PEST HOTLINE
1800 084 881

Solitary bees such as *Megachile* sp. can be found in human-made nesting material

Source: Dr Jenny Shanks, Plant Health Australia

Ground swelling solitary bees can be found in nests such as the one pictured.

Source: Dr Jenny Shanks, Plant Health Australia

How to prevent pests in your native bee hotels

Wasps, mites, spiders and other native bees such as cuckoo bees may try to invade native bee hotels/nests. The following measures can help prevent the establishment of these pests and give your native bees the best chance to emerge.

Hatching box

- A hatching (or emergence) box which you can replace every 3 years or so, can be a way of ensuring you have clean material for your bees and ensures burrows aren't being reused once brood has hatched.

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Source: Jeremy Jones, University of New England NSW

- A hatching box is a cardboard box where bee hotels with occupied nests can be placed in spring to limit any predators killing emerging bees. The hatching box has a sealed lid and a hole in the top corner to allow light into the box. This is covered with a light flap of fabric to discourage other bees from entering and finding the hotel.
- As new young bees emerge from their nests, they fly to the light from the hole and escape from the top of the box. Once all of the brood has emerged (which may take several months) clean nest holes with a pipe cleaner or redrill the holes to remove debris, and freeze the hotel for a week.

Nest-lining tubes

- Nest-lining tubes are small paper tubes that are placed inside the hollowed stem material or drilled blocks of wood before the bees establish inside the nest.
- When new young bees emerge from their nests you will be able to remove the liner and therefore remove any pests and debris along with it.

Nest-lining tubes

Source: Aussie Bee (www.aussiebee.com.au)

Barriers to prevent ant build-up

- Vaseline, cinnamon, flour, baby powder or non-toxic horticultural glue placed around the support of the bee hotel can be used to deter ants from entering the bee hotel.
- These barriers are location/climate dependant, e.g., gels can turn into liquid in hot climates and powder can be blown away by wind or washed away by rain.

New mudbricks every few years

- For blue banded bees you can make new mudbricks every few years. This may be important if you observe bees are not using old mudbricks anymore. In this case, do not reuse the soil from old mudbricks (especially if there have been bee deaths).

Keep smaller hotels

- Having smaller but more numerous native bee hotels spread over a wider distance may reduce the risk of pests. This will reduce the 'smorgasbord' effect, where predators and parasitoids are attracted to a large number of hosts in one area.

For more information visit
www.aussiebee.com.au/bee-hotel-manage-pests

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