Pests of Australian native solitary and semi-social bees

Source: Jeremy Jones, University of New England NSW

NATIVE AUSTRALIAN BEES

Despite the rapid increase in the numbers of people keeping native bees, very little is still known about the pests and diseases that affect them. In particular, there is a lack of information on solitary/semi-social native bees in Australia as these bee species are often more difficult to observe than managed colonies of European honey bees or native stingless bees.

Hive beetles and mites

Nosemosis

Nosemosis is a fungal disease caused by *Nosema ceranae* commonly found in European honey bees. Nosemosis has also been found to affect Australian native stingless bees causing lethargy, reduced foraging ability, shortened life-span. *N. ceranae* has been rarely detected in Halictidae species, but has not been recorded on other solitary or semi social bee species. However there is some likelihood it could impact these species, given its host range overseas.

Pollen mites

Pollen mites (such as *Chaetodactylus krombeini*) can infest stingless bee hives and feed on pollen stores. Pollen mites have also been found on solitary/semi-social native bees, however the effects these mites may have on solitary/semi-social natives is unknown.

Pollen mites on exotic solitary bee *(Chelostoma florisomne)*

Source: www.flickr.com

Potential threats to Australian solitary/ semi-social native bees

Reporting unusual symptoms or unexplained colony deaths will assist build knowledge and may be the vital clue needed to identify a new pest or disease and stop it spreading.

The pests listed below are present in Australia unless otherwise specified. Below are some threats that have the potential to negatively impact our Australian solitary/semi-social native bees:

Parasitoid insects

- Insects such as Bembix wasps or Velvet ants are parasitoids of native bees. These pests are unlikely to cause serious harm to native bees however they could potentially impact weakened bee populations.
- Potential symptoms include:
  - Wasps or ants inside the solitary/semi-social native bee nest.
  - Unusual looking eggs inside the nest.

Bembix wasp

Source: Dr Jenny Shanks, Plant Health Australia

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Chalkbrood diseases

- Chalkbrood disease (*Ascosphaera apis*) affects European honey bee colonies across Australia. Different strains of chalkbrood diseases have been shown to affect different bee species, but there is potential for strains to 'jump' into Australian native bees. For example, *Ascosphaera aggregata* (exotic to Australia) has been shown to affect the introduced leafcutter bee *Megachile rotundata,* and there could be potential for this disease to jump to Australian native bees
- Potential symptoms include:
  - chalky brood (brood coated in black/grey powder)
  - large amounts of larval death.

Chalkbrood fungus

Source: Tim Heard, Australian Native Bee Association

Honey bee viruses

- Some European honey bee viruses have been observed in overseas native bee populations. It is not known whether Australian native bees may also be susceptible to bee viruses, many of which are exotic to Australia.
- Examples of potential symptoms include:
  - Deformed wing virus (exotic to Australia): unusual looking wings on bees or sudden colony death.
  - Black queen cell virus (exotic to Australia): mortality in queen bee pupae, dead queen bee larvae turning yellow and then brown/black.
  - Sacbrood virus: infected brood capping discoloured, sunken or perforated and larvae become a fluid filled sac.

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

EXOTIC PLANT PEST HOTLINE
1800 084 881

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