

Imported Honey Bees: Risks and Mitigation

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What happens when queens and her attendants are imported from the EU? Ben Jones and Nigel Semmence explain the procedures that must be followed.

Imports of honey bees have increased steadily over recent years as shown in the chart below. With the exit of the United Kingdom (UK) from the European Union (EU) our status has changed and new rules have come into force that are now being applied across the UK.¹ Great Britain (GB) is now trading with the EU as a third country and movements of honey bees from the EU to GB must undergo more stringent checks.

On entry into GB, paperwork checks will be carried out on the consignment. Any deemed to be non-compliant, for example by not having the correct health certificate, will be returned to the country of origin, or destroyed if the non-compliance cannot be resolved within seven days. Post-import checks are also performed and are risk-based, depending on the country of origin. If contacted by a National Bee Unit (NBU) inspector, the consignment must be held at its destination, and not transferred to new cages, until inspected.

The key changes that have occurred this year are:

- There is a new Defra system of notification called the 'Import of Products, Animals, Food and Feed System' (IPAFFS). Detailed instructions on how to register along with guidance notes and FAQs can be found on BeeBase in the imports and exports section.

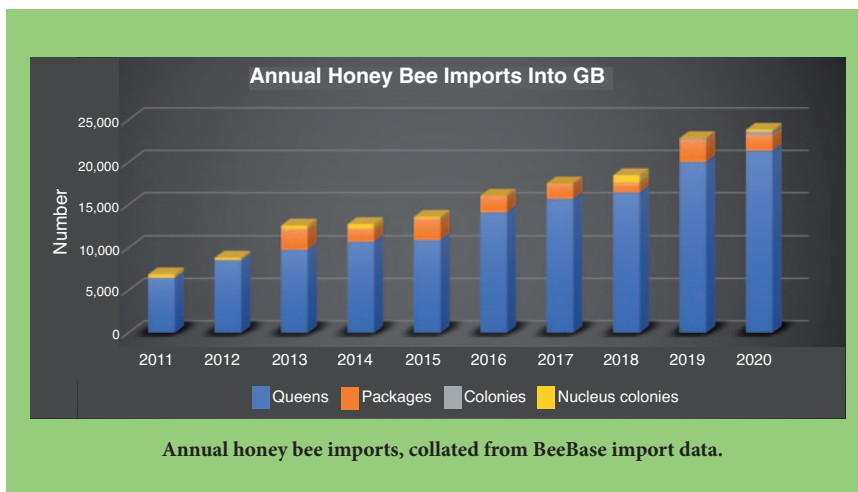
- Only queen bees with up to twenty attendants per cage can be directly imported into GB from the EU. Packages, nuclei and full colonies cannot be imported from the EU.
- On arrival at the destination, the queens must be transferred to new cages and the old cages, attendants and packaging sent to a GB national reference laboratory (NRL) within five days of receipt. For England and Wales, the NRL is Fera Science Ltd and for Scotland it is SASA (Science and Advice for Scottish Agriculture).

Risks and mitigation

The two notifiable exotic pests that are of concern for imports are small hive beetle (SHB), *Aethina tumida*, and *Tropilaelaps* mites. Contingency plans and pest risk-analysis have been prepared for both these pests and further details can be found on the specific pest pages on BeeBase.²

The range of mitigation put in place for imports into the UK is quite large and includes:

- Only countries, where SHB and *Tropilaelaps* mites are notifiable pests, can export to the UK.
- Imports must come with an export health certificate, issued by the exporting country's competent authority, showing that they have been inspected and have come from within an area of at least 100km radius which is not the subject of any restrictions associated with SHB or *Tropilaelaps* mites.
- Only queens can be imported direct into GB from the EU.
- All packaging, queen cages and attendants will be sent to the NRL and a proportion will be analysed as detailed below. All samples will be kept for six months.
- Post-import checks are performed on consignments at the rate of 100% for any imports from Sicily, 50% from the rest of Italy and 25% from the rest of the EU.
- Importers with high-level throughput of imports are flagged on BeeBase as





Small hive beetle



Tropilaelaps mite

risk points and these highlight neighbouring apiaries for surveillance.

- Additionally, sentinel apiaries may be set up near to some of these importers. These can be voluntary sentinel apiaries where beekeepers regularly inspect for exotic pests and also send in floor scrapings for analysis, or enhanced sentinel apiaries where NBU inspectors perform inspections and gather floor scraping several times in a season.

Packages and hives are a greater risk pathway for these notifiable exotic pests than queens, therefore by moving to queen imports only from the EU the risk of importing these exotic pests has reduced significantly.

Consignment checks

In 2020, there were 289 consignments of queens, with a total of 21,405 queens imported into the UK from the EU. As the laboratories face a huge challenge and following consultation with Defra, Fera Science Ltd, checks on 25% of all consignments imported from the EU and 50% of all consignments imported from Italy will be conducted. All import samples are received into the laboratory and kept frozen for a minimum of six months. This ensures samples can be retrospectively checked should a statutory notifiable pest be detected in the exporting country.

To the end of May 2021, Fera Science Ltd had received twenty consignments, containing a total of 1,929 queen cages; twelve consignments from Greece, three from Malta, one from Italy, one from Cyprus, two from Denmark and one from Argentina. Seven consignments, containing a total of 712 queen cages have been identified for laboratory checks.

Description of checks done on queen cages, attendants and packaging

After the queens have been decanted into new cages by the importing beekeeper, the original packaging along with all the queen cages and attendant worker bees are sent into the NRL for diagnostic checks. To ensure that all the bees and any introduced statutory notifiable pests are killed before the checks are completed, the packages are frozen for at least 24 hours.

After freezing, all the packaging, cages and attendant worker bees are visually checked for the adults, larvae and eggs of SHB, and for *Tropilaelaps* mites. The adult attendant workers are removed from the queen cages and washed through a series of sieves of decreasing apertures. This process ensures that any phoretic mites, larvae or beetles that may not be visible are removed from the bees and caught in the sieves. The sieves are placed in bowls containing 100% ethanol which causes mites and beetles to float to the surface due to their chitinous exoskeleton. Any larvae, floating insects or mites are then collected and examined using a dissecting

microscope for identification. SHB eggs can be particularly difficult to see if they are contained within the fondant feed of the queen cage. To separate out any eggs buried in the fondant, the cages are placed in warm water and stirred until all the fondant is dissolved. The cages are then washed through a 0.355 mm aperture sieve followed by the water containing the dissolved fondant and any potential eggs. The sieve is then placed in a bowl containing 100% ethanol, causing any eggs to float to the surface for collection and identification.

Description of checks done on floor scrapings from sentinel apiaries

In addition to the routine checks for invasive statutory notifiable pests by the bee inspectors, beekeepers send floor debris samples to the laboratory. These come from a network of 186 'Sentinel Apiaries' across England and Wales. The debris samples are collected from each apiary and screened at the laboratory for the presence of SHB and *Tropilaelaps* mites. As these apiaries are checked more regularly than non-sentinel apiaries, this network has the potential to detect outbreaks of rapidly spreading pests earlier than random inspections and therefore increases the chances of eradication before pests can establish.

The floor debris are checked by the laboratory using the 'alcohol flotation' method in the same way as the worker bees from import consignments outlined above. Briefly, debris samples are first washed through a series of sieves with decreasing apertures before being submerged in 100% ethanol. However, if dry, the debris can be poured directly into ethanol and stirred. Any larvae, floating insects or mites can then be collected and identified, and the beekeepers receive a report from the laboratory detailing what was found.

Organisms commonly found in floor debris samples

The laboratory often finds numerous insects and mites in floor debris samples that are not unusual in honey bee colonies. For example, *Varroa* mites, *Braula* flies and wax moth larvae are common finds, as well as a variety of beetles including pollen beetles, fungus beetles and plaster beetles. European hornets (*Vespa crabro*) and wasps have been found in samples as well as other scavengers such as woodlice, earwigs and ants.

Reference

1. Parker A. Honey Bee Imports into Great Britain. *BeeFarmer* 04/2021, p18-19.
2. Beebase: www.nationalbeeunit.com/index.cfm?sectionid=24

Further reading

BeeBase website. FAQ page on imports provides links to the guidance and answers lots of the questions.