

The Sentinel Apiary Programme for England and Wales

Introduction to exotic pest surveillance

An important part of the National Bee Unit's (NBU's) apiary inspection programme is surveillance for exotic pests, which pose serious threats to honey bee health should they be found in the UK. Clearly, early detection and interception of high risk species such as the Small Hive Beetle (SHB) and *Tropilaelaps* mites are key to preventing their establishment. This year up to 10% of all apiary visits carried out by our Inspectorate will be for the purposes of exotic pest surveillance (EPS). We use geographic information systems to identify 'at risk' apiaries, for instance those situated close to civilian and military airports, close to freight depots and ports of entry, or belonging to bee importers, and concentrate EPS efforts in these places. A map of risk points is available to view on the NBU's BeeBase website (Figure 1).

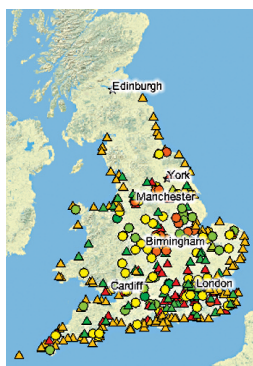


Figure 1. EPS risk points and type. Taken from <https://secure.fera.defra.gov.uk/beebase/maps/map.cfm> (select Exotic risk points to view the map).

Abbreviated Key:

- Landfill site assoc with imports; ▲ Crude hive products importer;
- Military airport (UK forces); ▲ Military airport (US); ● Fruit and veg wholesale market; ▲ Freight port/ Port; ● Freight depot; ▲ Civilian airport; ■ Confirmed outbreak. ☆ UK Mid and large cities.

The sentinel apiary holders

EPS is an important first line defence, but we do not work alone in our ongoing campaign to keep exotic pests at bay. For the past two years a selected group of beekeepers in England and Wales has been specifically monitoring their honey bee colonies for exotic pest species on behalf of the NBU. These 'Sentinel Apiary' (SA) holders represent a valuable additional front-line defence against exotic pest incursion. There are currently about fifteen SAs in each of the eight beekeeping regions (i.e. 120 SAs in total across England and Wales). Selected from our BeeBase database, beekeepers located in at risk areas were approached and asked if they would like to take part in the SA programme. A few additional beekeepers in areas not associated with particular risk points have also been invited to take part to give a more complete regional coverage. As



Figure 2. Checking the SHB trap. All photos courtesy of The Food and Environment Research Agency (Fera), Crown Copyright; images supplied by the National Bee Unit at Fera.

a result the distribution of SAs is deliberately such that some are in at risk areas while others are sited at random, thus maximising the likelihood of early pest detection. SA holders are provided with a monitoring and sampling kit and regularly examine their colonies according to standard protocols. Monitoring is carried out using SHB traps (Figure 2), uncapping drone brood to look for exotic mites, and twice a year hive debris samples (Figure 3) are

tested by Fera's honey bee diagnosticians for the presence of SHB and exotic mites. Finally, at the end of the season, a log of the SA inspections is returned to the NBU to provide a record of the surveillance programme.

Additional surveillance for the Asian hornet (*Vespa velutina*)

The Asian hornet, *Vespa velutina*, is an aggressive predator of honey bees and other beneficial insects. It has recently extended its geographical range from Asia to mainland Europe following an accidental introduction to France and is now also present in Spain and Belgium. Adult hornets are highly mobile; the rate of spread across France is approximately 100 km/year. There is now great concern that this exotic insect will reach the UK, either by hitching a ride on imported goods or simply by flying across the Channel.

A commercially available wasp and hornet trap, modified to (i) maximise the probability of catching an Asian hornet in such a condition that completely reliable identification is possible and (ii) minimise the impact on any other insects that may be drawn to the trap, has recently been offered to SA holders and is now being deployed across England and Wales. The coastal regions of South and South East England are probably at most risk of incursion by *V. velutina* and beekeepers in these areas who are interested in monitoring for Asian hornets can contact the NBU office or e-mail Gay Marris at gay.marris@fera.gsi.gov.uk. If traps are not already being deployed nearby then a limited number of traps are available.



Figure 3. Collecting floor debris for examination.

All beekeepers are encouraged to monitor for the Asian hornet. There is a feature on the front cover of April BBKA News, and an identification sheet and links to much more information about this insect under the Pest and Diseases pages of our BeeBase website www.nationalbeeunit.com including a French design for a home-made hornet trap. It is also possible to make your own traps simply using a couple of plastic bottles — just remember to insert a grid over the bait so that the insects are trapped rather than drowned to aid easy identification.

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