



Hampshire Beekeepers' Association Asian Hornet Monitoring & Trapping Guidance

INTRODUCTION

As beekeepers we've been aware that the Asian Hornet (now increasingly being called the "Yellow Legged Asian Hornet" for greater precision) is likely sooner rather than later to establish itself in the UK having spread across France, Spain and now rapidly into Belgium and other adjacent countries.

We know how much of a problem this invasive species will become, not just in regard to its impact on honeybees but on insect life in general and then on the wider ecological balance in affected areas. In 2023 the number of AH Nests detected in England, particularly in Kent, rose very sharply. We will soon know the results of lab DNA tests currently underway, as to whether or not that the Asian Hornet has truly established itself in the UK. If it proves positive, this means they have overwintered from previous years, rather than having arrived during the year on the wind or on vehicles etc. crossing the Channel.

Hampshire is clearly in the frontline in terms of the AH establishing itself in England bearing in mind our proximity to the Continent and the suitability of our local climate for this insect. Although there were no confirmed sightings of active nests in the County in October or November 2023, our beekeepers will want to know what they can best do to reduce the likely spread of the AH in the coming year/s. There has been considerable publicity given to the benefit of trapping in the fight against the Asian Hornet but in practice this is a complex issue and HBA recognises the need for guidance on what kind of trapping is appropriate in different circumstances and at different times of year. The following has been prepared by Alan Baxter, HBA's AH co-ordinator, drawing on a variety of authoritative sources.

GUIDANCE ON ASIAN HORNET TRAPPING

1.0 GENERAL

1.1 The subject of trapping is surrounded by controversy, mainly concerning its effectiveness and its impact on other species and can risk pulling beekeepers in different directions.

1.2 Naturally, we are keen to protect our bees, using the best equipment available. *However, it's important to understand that traps are not a silver bullet that will solve the problem of the Asian Hornet in our apiaries – they are just one weapon in our defensive armoury as part of an Integrated Apiary Management Strategy. Getting our bees Fit2Fight is a vital part of our preparations.*

1.3 To protect biodiversity, it is essential to avoid catching insects of other species as far as possible. Even if they are released, the experience of being captured and imprisoned with other insects is highly stressful. It has serious effects on them from which they may not fully recover, including staying alive for very long after release or being able to reproduce.

1.4 Whatever the manufacturers and their supporters claim, as far as we are aware, no trap has yet been produced that is 100% guaranteed to avoid catching innocent victims.

1.5 Analysis of the contents of a non-selective trap in 5.4 shows the potential dangers.

2.0 TYPES OF TRAPPING

2.1 There are different types of trapping. The objectives are different, the logistics are different, the execution is different, the outcomes are different, and it's important not to confuse them. They are:

- Spring queen trapping for queens emerging from hibernation.
- Monitoring trapping throughout the season.
- Kill trapping in an apiary under attack.
- Autumn queen trapping to catch newly mated queens
- Bait stations during track and trace for locating nests.

3.0 MONITORING TRAPPING FOR WIND BLOWN, MIGRATING OR HITCH-HIKING QUEENS

3.1 Monitoring traps or wick pots can be put out randomly throughout the area in places where they can be checked every day, for example outside a kitchen or office window. Family members, friends, neighbours, and colleagues can all be recruited to help.

3.2 Traps should be located in the sun facing south or south-east, near sources of foraging such as flowering shrubs and trees, and near a source of water.

3.3 Closed traps can be checked at the end of the day and don't need to be watched all the time. Simple, inexpensive traps (see para 5 below) are suitable for this.

3.4 Alternatively, a jar with a wick can be used but it needs to be watched to be effective.

3.5 There were no confirmed, active nests in Hampshire in October or November 2023, therefore **Monitoring trapping is recommended.**

4.0 INTENSIVE SPRING TRAPPING FOR QUEENS EMERGING FROM HIBERNATION

4.1 The purpose of spring trapping is to catch and kill queens newly emerged from hibernation at a time when they are most vulnerable in an area ***where there were live nests the previous October or November***. At this stage, the foundress queen is the head of a single parent family, and she has to forage to provide food for herself and for her young brood. The theory is that if they are caught and killed at this stage, they can't go on to develop their own colonies.

4.2 Apart from other dangers when she is out of the nest, the attrition rate amongst queens emerging from hibernation is very high due to fierce, deadly competition between them for nest sites, known as usurpation.

4.3 The period over which queens wake up from their winter sleep is long, and for every queen you kill another queen will be waiting to replace her, which is why the trapping continues until the **end of May**.

4.4 Most queens hibernate within 200 metres of their original nest. Traps are put near the location of any nests from the previous year because hornets, like other Vespoidea (Wasps), often return to the same site.

4.5 Foundress queens are known to forage up to 1km from the embryo or primary nest, but in practice a radius of 600 metres is more likely as they don't want to leave their eggs or larvae for very long.

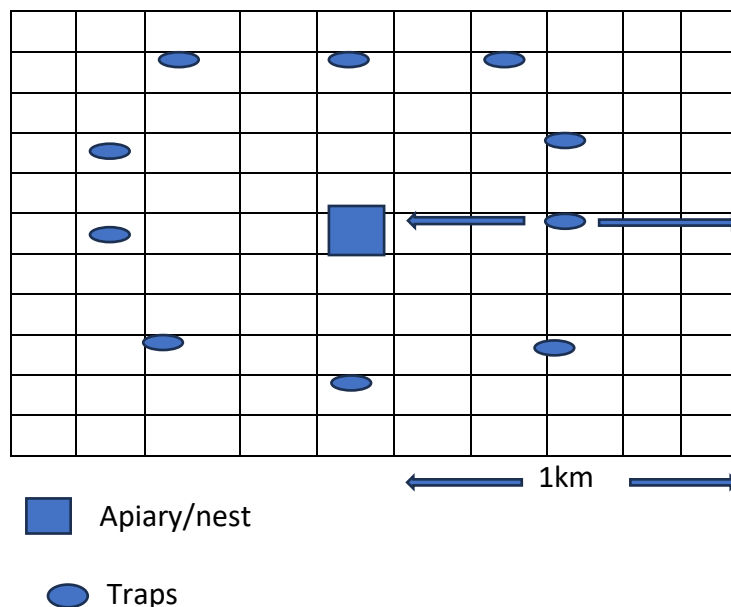
4.6 A definitive method of spring queen trapping has yet to be identified. In France trials were carried out deploying a high density of traps in a wide circle centred on a nest from the previous October and November, repeated over a period of 4 years. While this was found to be successful in reducing the number of nests it was very expensive in time and equipment.

4.7 Methods are continuing to evolve. Recently, the French National Plan suggests a more localised, less intensive approach:

4.8 The aim is to reduce predation pressure on apiaries by limiting the establishment of nests nearby, Spring trapping can protect colonies whose survival was threatened by the

presence of the Asian hornet the previous year, by targeting impacted apiaries and places where nests were present.

- Traps can be put out in February when daytime temperatures average 12 deg C for 4 or 5 consecutive days, and removed at the end of May
- An evenly-spaced network of traps is placed around the apiary or nest
- There are normally 1 to 2 traps per hive and up to 10 traps distributed within a radius of 500 m.
- The distance between the traps is no more than 350 metres.
- The grid positioning is to achieve coverage, but the plan also advises that they can be moved around to be near to sources of forage such as flowering plants, shrubs and trees.
- Traps should be near sources of water on the upwind side
- Traps are set up in the sun facing south or south-east, in an area of 1sq km around the old nest or the apiary as shown below:



4.9 It remains unclear as to whether even this reduced intensity will be possible in more highly populated areas of England.

4.10 *As there were no confirmed active nests in Hampshire last October or November, intensive spring trapping is not appropriate.*

5.0 TRAP DESIGN

5.1 Traps should be designed with an **entry of 7 mm diameter**, large enough to admit and retain the Asian hornet, but small enough to exclude the entry of larger insects (e.g. European hornet), **an exit hole or grills of 5.5 mm** will let as many smaller, non-target species escape as possible. One commercially produced trap has an 8mm entry for queens and a 7mm one for workers.

5.2 Proprietary liquid baits such as Trappit, or an equivalent supplied by Andermatt, have been found to be effective. Home-made attractants as widely used in France must contain an element such as white wine to deter bees. The bait should be soaked in a sponge or pot with a wick to prevent insects from drowning. Live hornets in the trap will then attract others, increasing its effectiveness.

5.3 Wick pots fashioned from a honey jar are completely safe from by-catch but need to be in a position where they can be watched during the daytime when Asian Hornets are flying.

5.4 Non-selective "bottle" or "bell" type traps with a liquid solution causing the insects to drown are **not recommended**. Their selectivity is very poor even with adaptations, and their impact on the rest of the insect population is too great. (See Example)



5.5 Despite claims made by manufacturers, **as far as is known** there are no traps currently being marketed that guarantee 100% proof against by-catch.

5.6 Traps can be emptied at dusk when Asian Hornets have stopped flying. Put the trap in a freezer for up to about 5 minutes to stun the contents. Release any by catch. Using a spoon, transfer all but 3 Asian Hornets to a plastic bag and return it to the freezer for 20 minutes to kill them. The remaining 3 Hornets will act as a very efficient lure when the trap is redeployed the next day.

6.0 KILL TRAPS DURING PREDATION IN THE APIARY

6.1 Traps can be deployed in the apiary to reduce the level of stress on the bees **but not until hornets are actually present and hawking in front of the hives**.

6.2 If there's no hawking taking place, traps in the apiary will only serve to attract hornets to it.

7.0 AUTUMN QUEEN TRAPPING

7.1 The aim of Autumn trapping is to catch newly-mated queens before going into hibernation. Carried out in an area around active nests, during the October and November mating periods the logistics are similar to spring queen trapping.

7.2 Sceptics say it's a waste of resources since most of the queens will perish anyway. On the plus side the danger to other species is less as there are fewer insects on the wing.

8.0 BAIT STATIONS

8.1 These are simple handmade open traps, using everyday domestic items, that are mainly employed to lure Asian Hornets during track and trace operations but can also be used for monitoring purposes.

9.0 SUMMARY

- Monitoring traps deployed at random from February to May will detect migrating Asian Hornet queens or ones that have blown in on the wind or hitched a lift.
- Monitoring traps can continue to be put out until November to catch foraging workers and migrating specimens.
- Spring trapping is useful in areas where there were hornet nests the previous autumn. In Hampshire there were no known nests in October or November 2023 so spring trapping is **not appropriate**.
- Kill traps are only installed in an apiary **once predation has started** to reduce stress on the bees.
- Autumn queen trapping is designed to catch newly-mated queens leaving the parent nest to go into hibernation.
- **Traps should be designed with entries of 7 mm diameter and exits of 5.5 mm to reduce the danger of by-catch.**
- In addition to monitoring Asian Hornets, beekeepers are encouraged to focus their energy on sharpening up their beekeeping skills and getting their bees **Fit2Fight** in case we have incursions in our apiaries in Hampshire this year.

Sources:

- Discussions with various experts in UK, France and Belgium
- French National Plan:
- https://gdsa29.fr/wp-content/uploads/2022/03/dossier-frelons_compressed-signets.pdf
- National Bee Unit
[https://www.nationalbeeunit.com/assets/PDFs/3 Resources for beekeepers/Fact Sheets/Fact 01 Asian Hornet Monitoring.pdf](https://www.nationalbeeunit.com/assets/PDFs/3_Resources_for_beekeepers/Fact_Sheets/Fact_01_Asian_Hornet_Monitoring.pdf)
- Dr Sarah Bunker
- Special Briefing for Beekeepers Andrew Durham 2023 and 2024
- <https://www.youtube.com/watch?v=mx3LhC2fnoc&t=3816s>

This is a live document and subject to change as the situation in the UK changes. Version 12. 03/02/24