



National Bee Unit

Monitoring for Asian hornets

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, is now also present in Spain and Belgium and Italy. Adult hornets are highly mobile; the rate of spread across France is approximately 60 km/year. This sheet describes a trap designed for Asian hornets, explains its design and provides a standard protocol for trap surveillance.

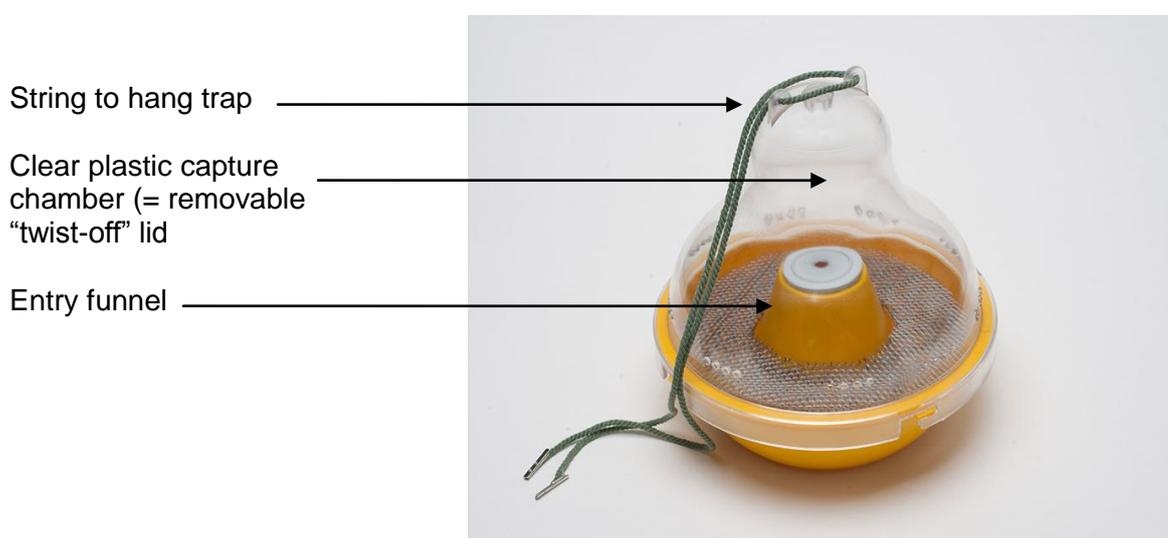
The efficiency of hanging traps

A variety of traps are available for catching European hornets “on the wing”. Comparisons of various designs for use against *Vespa velutina* in France have shown that funnel traps work best. Field trials show that when funnel traps are hung in apiaries where Asian hornets are present these capture considerable numbers of individuals (~400 hornets/week/trap). You have been provided with an Asian hornet monitoring kit that includes the following items:

- 1 hanging trap, especially modified to attract and contain Asian hornets;
- 1 capture chamber (clear);
- 1 hanging string;
- Mesh insert;
- 1 bait chamber (yellow);
- 1 ID sheet (laminated) for the Asian hornet.

Trap design

The trap comprises a bulb-shaped flask, with a clear plastic (removable) lid and a yellow base that takes the form of an inverted funnel. The neck of the funnel creates a moat in the base, into which a liquid bait mixture is poured. Adult hornets that are attracted to the bait will fly to the trap, crawl up through the funnel, and become confined within the capture chamber from which they are unable to escape.



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The device is an off-the-shelf wasp trap that has been 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. Key design features are as follows:

Funnel entrance has been reduced to a diameter of 9 mm. This is sufficiently wide to allow entry of Asian hornets but too narrow for native European hornets (*V. crabro*).



What bait to use

At the end of hibernation emergent hornets have a raised energy requirement and show a preference for sweet foods. In early spring such food resources are comparatively rare in the environment, so this means that sweet baits are highly attractive for the first captures of Asian hornet queens. French beekeepers often use a mixture of beer and sugar for this purpose. Other effective baits include sweet mixtures of wine, sugar, cassis, and water. Pour approximately 150 ml bait (to a depth of approx. 3 cm) into the moat of the trap. Cover with the mesh insert and replace the trap lid. Bait needs to be regularly replaced (monthly). Top up with water if necessary.

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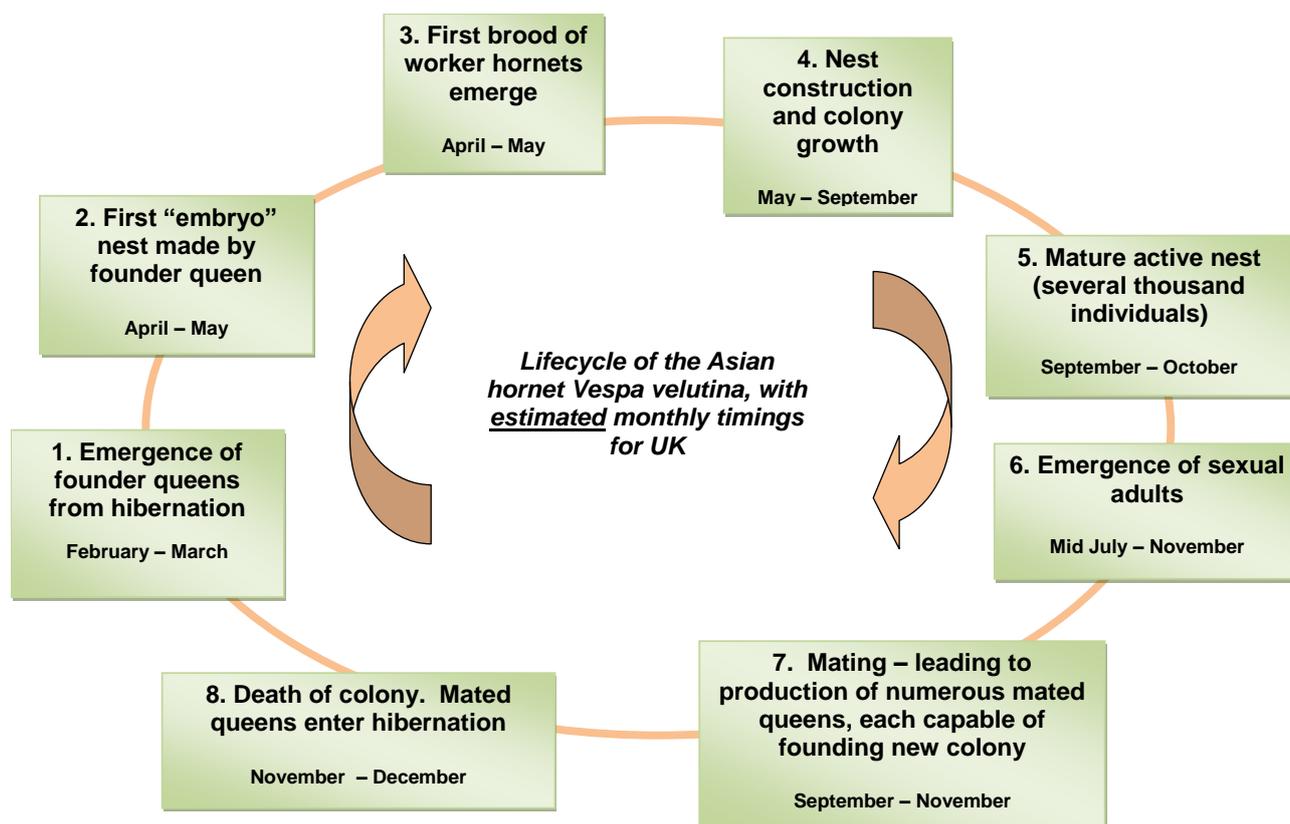
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Where to hang your trap

Hang your trap on a hive stand or in nearby trees around your apiary, at the height of a person.

When to hang your trap

The figure below shows the lifecycle of Asian hornets, with estimated timings for the UK (based on observations in France). Adult hornets will be on the wing throughout the beekeeping season, but on warm days mated queen hornets may emerge early from hibernation. Equally, adult workers and (especially) mated queens may continue to fly late into autumn. Trapping should be carried out from February until November.



How to check the trap

- Visually inspect your trap every time you visit your apiary;
- Each time you visit your trap, you need to take a clear sealable freezer bag with you;
- **Never remove the lid without first checking the contents of the capture chamber;**
- With the lid still on, carefully inspect the contents of the capture chamber;
- If you are completely satisfied that there are no Asian hornets in there, then open the lid to release the entire catch (see ID details below), ensuring you have appropriate protective clothing and equipment on to prevent you from being stung;
- If you suspect that you may have caught an Asian hornet, place the trap into the freezer bag and seal it tightly;
- Place the bag containing the trap into a domestic freezer;

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- After **12 hours in the freezer**, remove the trap lid;
- Take a picture of the hornet and send the image to alertnonnative@ceh.ac.uk or alternatively contact the National Bee Unit on the contact details below.

How to identify the Asian hornet

The Asian hornet is not easily confused with any other species. Superficially similar to our native hornet *V. crabro*, it has a characteristically brown or black velvety body with a dark abdomen and yellow tipped legs. Only the fourth abdominal segment is yellow. The Asian hornet is smaller than *V. crabro*. For further guidance on identification, you have been provided with an ID sheet for *V. velutina* in your Asian hornet monitoring kit. You can obtain further copies of the Asian hornet ID sheet from the Non Native Species secretariat website at:

<http://www.nonnativespecies.org/alerts/index.cfm?id=4>

Contact details

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You can download Asian hornet guidance notes from:

<http://www.nationalbeeunit.com/index.cfm?pageId=208>

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