

Asian Hornet trap

The Asian Hornet, *Vespa velutina nigrithorax*, is an aggressive predator of honey bees and of other beneficial species. It has recently extended its native geographical range from Asia to mainland Europe following an accidental introduction to France, is now also present in Spain and has been seen in Belgium. The adult hornets are highly mobile, the rate of spread across France is approximately 100km per year. There is now great concern that this exotic insect will migrate to the UK, either by hitching a ride on imported goods or simply by flying across the channel. So is there anything we can do to help in the battle against this pest? Here are some simple tips...

Identification of Asian Hornet

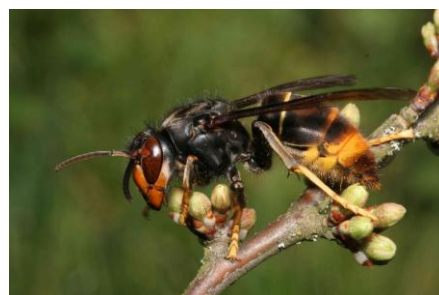
The Asian hornet is slightly smaller than the native European hornet (*Vespa crabro*) and is almost entirely black with only the 4th abdominal segment being yellow. The head is black with an orange face and the lower ends of the legs are yellow. If you see Asian hornets try to take a photo or catch a specimen, for identification purposes, but avoid being stung. Beekeepers and the public should report any suspect sightings via the Alert System: alert_nonnative@ceh.ac.uk

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Trapping overwinter hornet queens

In France *V. velutina* adults are actively flying from spring to late autumn, but the key life-stage to eliminate is the mated queen, as just one such foundress can produce an entire colony. (There is good genetic evidence that the spreading population of *V. velutina* across France and Spain arose after a single incursion). For this reason, detection and removal of any *V. velutina*, especially after hibernation, in early spring or late autumn, is likely to have the greatest impact on limiting establishment and spread. Reports from France suggest that in areas where spring trapping has been used, subsequent numbers of Asian hornet nests are reduced by as much as 97% (2 or 3 nests in trapping areas *versus* >70 nests where no traps have been hung).



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At the end of hibernation emergent Asian hornet queens have a raised energy requirement, and therefore show a preference for sweet foods. Sweet baits are thus the most effective for the first captures of foundresses. The Association de développement de l'apiculture en Aquitaine (ADAAQ), the Centre national de développement apicole (CNDA) and the Office pour l'information et la documentation en apiculture (OPIDA) recommend a mixture of beer and sugar, but other recipes include sweet mixtures of wine, sugar, cassis, water etc. Dates for hanging traps will vary with local climate. In Aquitaine, France, the first sorties by Asian hornet queens begin between mid-January and late February. French beekeepers place their traps in trees and on hive stands, in and around affected apiaries, as well as at other critical locations such as piles of wood, stones & tiles etc., which are all favourable hibernation sites. It is important that only the target insect is captured, so if the European hornet is being caught the traps should be removed. Traps are hung at about the height of a person.

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Photo - J. BLOT

Making a hornet trap

A variety of traps are available for catching predatory adult hornets “on the wing”, including Asian hornets. Preliminary comparisons of various designs for use against *V. velutina* in Europe have shown that funnel traps are the most efficient. Hornet traps can be purchased over-the-counter, but French beekeepers are frequently resorting to home-made equivalents. These can be made at minimal cost. Most of these share the same basic design: a plastic flask or bottle, containing a food attractant/bait, over which is inverted a funnel; the insects enter the funnel and crawl/drop into the attractant mixture from which they cannot easily escape; trapped insects subsequently drown. This “pit-fall” effect can be enhanced by treating the inner walls of the trap with talc, thus maximising the numbers of individuals entering and minimising the numbers of escapees. (*note that the orifice of the funnel should be 7 mm, and no wider, as this will assist preventing the larger, native, European hornet from passing through)

Other husbandry techniques

Another helpful husbandry practice includes allowing vegetation around apiaries; tall grass in front of hives hinders the Asian hornets’ prey-capture behaviours, limiting their ability to “hawk” for honey bee workers on the wing. Of course, taking sensible precautions such as not leaving wet frames in the open after honey extraction, will avoid attracting hornets (Asian or European) to the apiary.

Reducing entrance size

The latest guidance given to beekeepers by ADAAQ-CNDA-OPIDA, is that hive entrances need to be reduced, using entrance blocks, to a height of 5.5 mm to prevent Asian hornets from entering. It is the experience of French beekeepers that traditional metal entrance strips are ineffective at excluding *V. velutina*.

References:

Beebase <https://secure.fera.defra.gov.uk/beebase/index.cfm?pageid=208>

Non-Native Species Secretariat
<https://secure.fera.defra.gov.uk/nonnativespecies/alerts/index.cfm?id=4>

The Association de développement de l’apiculture en Aquitaine ADAAQ
<http://www.apiculteurs-en-aquitaine.fr>

The basic trap design can be found at
<http://www.apiculteurs-en-aquitaine.fr/pdf/frelon-piege.pdf>.