COOPERATIVE EXTENSION SERVICE
HOME, YARD & GARDEN PEST NEWSLETTER
College of Agricultural, Consumer and Environmental Sciences, University of Illinois at Urbana - Champaign
Illinois Natural History Survey, Champaign

HYG articles May 20, 2020

Modified Growing Degree Days (Base 50° F, March 1 through May 18)

Station Location	Actual Total	Historical Average (11 year)	One- Week Projection	Two-Week Projection
Freeport	209	327	283	367
St. Charles	234	313	302	379
DeKalb	219	361	299	389
Monmouth	315	411	398	491
Peoria	317	445	402	497
Champaign	339	449	430	531
Springfield	373	503	474	584
Perry	387	479	476	575
Brownstown	415	555	521	636
Belleville	521	583	629	748
Rend Lake	503	633	618	744
Carbondale	562	599	671	792
Dixon Springs	557	650	671	796

Insect development is temperature dependent. We can use degree days to help predict insect emergence and activity. Home, Yard, and Garden readers can use the links below with the degree day accumulations above to determine what insect pests could be active in their area.

GDD of Landscape Pests
GDD of Conifer Pests

Degree day accumulations calculated using the Illinois IPM Degree-Day Calculator (a project by the Department of Crop Sciences at the University of Illinois and the Illinois Water Survey).

Kelly Estes

Asian Giant Hornets: Your Questions Answered

On May 3, 2020, articles and videos discussing the first instance of Asian giant hornets (*Vespa mandarinia*) identified in the US began to run in the national news. These headlines have raised concern about this animal and may leave some wondering if they have seen it or if we need to worry about it in Illinois. Here are the answers to some frequently asked questions about Asian giant hornets:

Where has Asian giant hornet been found in North America?

In September 2019, a nest of Asian giant hornets was found and destroyed on Vancouver Island in British Colombia, Canada. In Washington State, there were 3 photo sightings, each of a single hornet, in August, October and December of 2019. The December photo was of a dead hornet that was later submitted to experts and confirmed as an Asian giant hornet. This hornet was the only confirmed Asian giant hornet in the US.

What is being done to detect and remove them?

Washington State Department of Agriculture has already begun monitoring the areas where the hornets were sighted and the surrounding counties to determine if any hornets are present. Monitoring efforts include traps baited with food or pheromone attractants to capture foraging adults and infrared monitoring to identify potential nest sites. If Asian giant hornets are identified, they will be eradicated. There have been no sightings or trap captures so far in 2020.

Asian giant hornet (Vespa mandarinia), Washington State Department of Agriculture , Washington State Department of Agriculture, Bugwood.org

Where is the hornet from and how did it get to the US?

Asian giant hornets are native to forested areas in east Asia and southeast Asia. They occur in multiple countries but are most common in Japan. It is unclear how the hornets arrived in North America.

Are they in Illinois?

No. There have been no reports of Asian giant hornet in Illinois or anywhere in the US outside of Washington State. The hornets are not capable of reaching Illinois without being transported by humans. If a sighting is ever confirmed in Illinois, the United States Department of Agriculture, Illinois Department of Agriculture and University of Illinois at Urbana-Champaign will release a Pest Alert to notify the public and the media.

How can they impact human health?

Like our native hornet species, Asian giant hornets only sting if they are threatened or defending their nest. These hornets may also defend the nests of other insects they intend to use as food for their young, creating an additional situation where they could feel threatened and sting. Asian giant hornets feed on honey bees (*Apis mellifera*), so beekeepers are more likely to encounter these hornets. Beekeeping protective clothing is not thick enough to prevent stings from this hornet so beekeepers should not approach the hornets.

The media has reported that people can be killed by Asian giant hornet stings. This is not the normal outcome of a single sting. Most people who have died after being stung by this insect were stung many times or had allergic reactions. This hornet's venom is similar to that of other hornets but, because it is so large, it injects more venom and can have a greater impact on human health. Protecting people is one of the primary goals in monitoring and controlling these insects.

How can they impact honey bees and wildlife?

While adult Asian giant hornet workers feed on sweet foods like fruit and sap, they collect protein-rich foods to feed their larvae. These foods are usually other insects, including honey bees. Unlike Asian honey bees (*Apis cerana*) in the hornet's native range, European honey bees in the US, are unable to defend themselves against this predator. A group of worker hornets can enter a honey bee hive and kill nearly all of the bees inside, but this only occurs in the late summer, when the hornets are collecting food for their young. In Japan, screens or small bars are placed over hive entrances to allow the bees to come and go but prevent hornets from entering. Currently, we do not know how these hornets could impact native bees or other wildlife. Protecting wildlife and honey bees are among the main reasons to closely monitor and control the hornets.

What should I do if I see one?

If you think you have seen this animal, do not approach it or attempt to remove a nest without professional help. Instead, contact University of Illinois Extension and let them know what you have seen. There is a good chance that the insect you are seeing is European hornet, baldfaced hornet or eastern cicada killer, which are all large wasps that occur in Illinois. Extension educators can provide identification and notify Illinois Department of Agriculture and United States Department of Agriculture if necessary.

- University of Illinois Extension

European hornet

European hornet (Vespa crabro), Allan Smith-Pardo, Invasive Hornets, USDA APHIS PPQ, Bugwood.org

European hornet (*Vespa crabro*) was introduced to the US in the 1800s as a biocontrol agent and has become established in the Northeast, South and parts of the Midwest, including Illinois.

European hornet is about 1 inch long with a yellow and black abdomen. The black bands on the abdomen extend into a V-shape over the center of the first few segments. Each abdominal segment has a black spot on the left and right side. For comparison, the Asian giant hornet is 1.5 – 1.75 inches long and noticeably bulkier than our local hornets. Asian giant hornet has an orange head and an abdomen with orange and black stripes, so if the wasp you see has strong yellow coloration on the abdomen, it is more likely a European hornet.

The nesting sites of these species also differ. European hornets usually nest in tree holes but Asian giant hornet is a ground nesting species that may choose a nesting site in an abandoned animal hole in a forested area.

European hornet is unlikely to sting but may approach or bump into a person to intimidate them so they leave the area. They usually only sting if handled or stepped on.

Baldfaced hornet

Left: Baldfaced hornet (Dolichovespula maculata), Johnny N. Dell, Bugwood.org
Center: Baldfaced hornet (Dolichovespula maculata), Whitney Cranshaw, Colorado State University, Bugwood.org
Right: Baldfaced hornet (Dolichovespula maculata), David Cappaert, Bugwood.org

Baldfaced hornets (*Dolichovespula maculata*) are found throughout most of North America. They are 0.5 - 0.8 inches in length and appear bulkier than other native wasps of a similar size. Adults have a black body with distinct white markings on their head and white banding on the last few segments of their abdomen. Asian giant hornets are at least twice the length of the average baldfaced hornet worker and at least twice as wide. Asian giant hornet has a bright orange head and an abdomen with orange and black stripes. While baldfaced hornets appear bulky and proportionately similar to Asian giant hornets, the white markings on the head and abdomen will let you know that you have encountered baldfaced hornet and not Asian giant hornet.

Baldfaced hornets build papery football-shaped nests on tree branches or shrubs. The nests are positioned at least 3 feet above the ground and some can be located very high in trees. In contrast, Asian giant hornets nest in the ground in forested areas.

Like many bees, wasps and hornets, baldfaced hornets will sting if they feel threatened or if their nest is disturbed. However, they are a species of yellowjacket and like other yellowjackets, they may feel threatened and sting if you are too close to a nest or if they are swatted or otherwise threatened while foraging. It is a good idea to avoid baldfaced hornet and yellowjacket nesting sites and give foragers a respectful distance.

Eastern cicada killer


Left: Cicada killer (Sphecius speciosus), David Cappaert, Bugwood.org
Center: Cicada killer (Sphecius speciosus), Nancy Hinkle, University of Georgia, Bugwood.org
Right: Cicada killer (Sphecius speciosus), Jim Occi, BugPics, Bugwood.org

Eastern cicada killers (*Sphecius speciosus*) are large wasps native to most of the eastern US. The cicada killer is 1.5 inches long, with a red to brown head and a black abdomen with uneven yellow banding. The Asian giant hornet is similar in length measuring 1.5 – 1.75 inches long but much bulkier. Asian giant hornet has an orange head and an abdomen with orange and black stripes.

Their nesting sites also differ from those of the Asian giant hornet. Cicada killers are not social insects, each female digs a hole in an open area with bare soil where she rears her young. Female cicada killers collect cicadas and bring them back to their hole to feed the young. Asian giant hornets are eusocial, with many individuals living in a nest and working together to rear their young. Asian hornets prefer to nest in the ground in forested areas away from open areas and humans.

Male cicada killers defend a territory where they may approach people who pass within the boundary. While this is an intimidating behavior, male cicada killers do not have a sting and cannot harm you. Female cicada killers do have a sting but usually do not approach people and only stings if handled or stepped on.

Sarah Hughson

Additional Resources:

Asian giant hornet and human health. Washington State Department of Agriculture.
https://agr.wa.gov/departments/insects-pests-and-weeds/insects/hornets/agh-human-health

Asian giant hornet fact sheet. 2020. Susan Cobey, Tim Lawrence and Mike Jensen. Washington State University Extension.
https://s3.wp.wsu.edu/uploads/sites/2091/2020/04/AGHPreReview4Factsheet.pdf

Asian giant hornet: What gardeners need to know. Washington State Department of Agriculture.
https://cms.agr.wa.gov/WSDAKentico/Documents/Pubs/831-AsianGiantHornet-FactSheet-Gardeners.pdf

Asian giant hornet: What outdoor workers need to know. Washington State Department of Agriculture.
https://cms.agr.wa.gov/WSDAKentico/Documents/Pubs/834-AsianGiantHornet-FactSheet-OutdoorWorkers.pdf

New pest response guidelines. 2020. Amber Tripodi and Trace Hardin. United States Department of Agriculture.
https://cms.agr.wa.gov/WSDAKentico/Documents/PP/PestProgram/Vespa_mandarinia_NPRG_10Feb2020-(002).pdf

Sizing up the Asian giant hornet. Washington State Department of Agriculture.
https://agr.wa.gov/departments/insects-pests-and-weeds/insects/hornets/size-comparisons

Ground Ivy (Creeping Charlie)

Ground ivy (*Glechoma hederacea*) is a low growing perennial weed commonly found in lawns and landscape beds. It is commonly referred to Creeping Charlie but is also known as gill-over-the-ground, cats-foot, and field balm. It is sometimes sold in hanging baskets and as a groundcover. It actually makes a fantastic groundcover, but the problem with this plant is that it doesn't behave or know it's boundaries and will attempt to cover the county if you let it. Also, this weed is tough to control.

Ground ivy moving from the lawn into a neighboring landscape bed – photo by Michelle Wiesbrook

Ground ivy spreads aggressively to form dense patches by both seeds and creeping stems that root at the nodes. The leaves are 1/2 to 1-1/2 inches in diameter. They are round or kidney shaped with rounded toothed margins and are medium to dark green in color. Leaves can be smooth or hairy but they are found opposite each other on long petioles. Ground ivy plants emit a strong mint-like odor when crushed, mowed, or simply walked upon. Some love this smell, while some hate this smell. Stems

are square (four-sided). The flowers are small, lavender to purplish blue, funnel shaped, and clustered in leaf axils. They appear from April to June. This weed normally occurs in shaded sites with poorly drained (think plenty of moisture), fertile soils, but can spread into sunny areas.

A dense population of ground ivy – photo by Michelle Wiesbrook

When ground ivy first appears, it can be easily confused with henbit, a winter annual. However, henbit leaves do not appear opposite one another in pairs as that of ground ivy does and henbit is more erect in its growth. Slender speedwell and common mallow can look similar ground ivy but both have round rather than square stems. Purple blooming weeds are discussed in this HYG article at: http://hyg.ipm.illinois.edu/article.php?id=773.

Ground ivy can be difficult to control. For best results, alter the preferred growing conditions and provide competition. If the area is bare soil, it's a good idea to plant something that competes well with weeds. Choose plants that are also well suited for these growing conditions, such as vinca, English ivy, pachysandra, or hosta. If the area is struggling turf, adjust your cultural practices to improve turf health and density (that is, increase mowing height to 3 inches or more, fertilize and overseed in the fall, water properly, etc.). Proper turfgrass selection is also essential for obtaining thick, healthy turf. Finally, shady areas may be brightened with a little pruning. Keep in mind that although shade is preferred, creeping Charlie has been known to move into full-sun areas.

Ground ivy in bloom – photo by Michelle Wiesbrook

Hand-pulling can work well as a quick, short-term fix. A neighbor of mine uses a dethatching rake to pull up this plant. Be sure to remove uprooted plants to prevent re-rooting. Unfortunately, the extensive root system of rhizomes is very difficult to completely remove by hand-pulling.

Herbicides may be used. In landscape beds, our research colleagues at Purdue University report that limited control is reached with preemergent herbicides but flumioxazin and isoxaben may be tried. For postemergent herbicide options, they have seen the best success with sulfentrazone and sulfosulfuron.

In cool-season grasses, research has shown that the best results were with the active ingredients, fluroxypyr and triclopyr. Both work well as standalone products and may indeed work better than when as part of a two-, three-, or four-way product because the percentage of these ingredients is higher.

Combination products of these two alone should be effective as well. Applications should be made at bloom time or just after. For best results, a second application should be applied 3 to 4 weeks later. For complete control, 1 or 2 fall applications will likely be needed. Ground ivy is persistent! These products can provide injury to sensitive plants. When using any pesticide, be sure to carefully read and follow all label directions. In turfgrass, preemergence products provide little control for this perennial weed. Homemade mixtures containing boron (Borax) are NOT recommended as results are inconsistent and long-term damage can result to the soil. For more on this topic, please see this HYG article at: http://hyg.ipm.illinois.edu/pastpest/200114e.html.

For more information on the best ways to control broadleaf weeds in turf, check out this past HYG article at: http://hyg.ipm.illinois.edu/article.php?id=967.

Michelle Wiesbrook

Turf Wars with Tunnellers

Voles can be a landscaper's worst nightmare. The damage can include extensive tunnel systems above and below ground, holes throughout the yard, plants destroyed or damaged and worn grassless paths scattered across the turf. Voles have a short life span of 2-16 mos and reach sexual maturity at just three weeks of age. Their gestation, depending on species, can be 21-24 days. Having multiple generations through March to November with 3-6 babies per litter, the population growth is quick.

We might believe that voles couldn't possibly serve a single purpose in life, but they have some pretty important roles in the ecosystem. They aid in soil formation, move nutrients and are a food source for many predators. These predators include hawks, coyotes, skunks, heron, and bobcats. They are a critical part of the food chain.

Understandable conflicts arise when they move into the landscape. They can get into and occupy structures, eat plants we don't want them to eat, pose a physical risk to humans as well as cause crop/plant damage. Our first instinct might be just to trap and relocate them. This seems like the kinder option, but in the long run, it is not a kind solution. When these animals are trapped and then moved, they can starve or fall easily to predators. They can disrupt a resident population and increase the risk of spreading disease. There is the ethical issue of moving them, and in some cases, it may be illegal. Translocation is not a good option.

Vole holes in a landscape bed

Some basic tactics can reduce or prevent intrusion. We should anticipate their presence and attempt to prevent them from creating homes in the landscape. We can do this by blocking their entry (fencing or raised beds, hardware cloth- not chicken wire) in areas that we want to protect. We can also use some repellents to help deter. This will stop them by taste or smell, but many of these repellents are only effective on the above-ground plant parts. The products often need to be rotated since animals will persist feeding on food that is known to be good. Rain and sun can also degrade the products and reapplication are necessary to remain active.

Modify the habitat to reduce the capacity; this can be done by reducing vegetative cover. Reduce heavy mulch and dense vegetative cover in areas in the lawn that would provide adequate shelter for the voles. Go native! Our native plants survived all these years for a reason, and they can tolerate some damage without our intervention. We can also scale our expectations.

Trapping voles can be done with snap mouse traps baited with some peanut butter and oatmeal. These must be placed near the run or hole but should not be placed too far away as voles tend not to stray far from the path. Trapping can work but toxicants can be more effective. If you choose to use toxicants, you must follow the label instruction as it is the law. Be sure to wear proper PPE that is required. Be cautious as you use pesticides as could be liable for injury or damage unintended organisms.

Lastly, they are eaten by pretty much anything. Encouraging predators will help to reduce the population.

Sources-

Dueling with Diggers Webinar- Dana Sanchez, wildlife specialist

http://ipm.ucanr.edu/PMG/PESTNOTES/pn7439.html

Maria Turner