

Pest Management News

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Paper Wasp Management around your Home

John D. Hopkins

“Paper wasp” is a term that commonly refers to members of the vespid subfamily Polistinae. These insects are long-legged, reddish brown to black insects and may have differing degrees of yellowish or brown striping. Their abdomens are slender and spindle-shaped. Paper wasps should not be confused with mud dauber wasps that also occur around the home. Mud daubers are dark blue/black metallic colored wasps that build mud nests and are not prone to sting. Paper wasps, while not as aggressive as hornets or yellow jackets, will readily sting in defense of their nests.

Before beginning a scorched earth campaign against all paper wasps on your property, remember, paper wasps are actually beneficial insects. They are predaceous on other insects that we consider pests in the home vegetable garden or of ornamental plants and turf around our homes. On the other hand, unlike honeybees, wasps can sting a victim multiple times and do not lose their stinger in the stinging process as honey bees do. If a wasp nest is located in an area frequented by people and presents a stinging hazard, it should be eliminated, especially if someone in the home is allergic to stings. Wasp, hornet, yellow jacket and honey bee stings can be life-threatening to persons who are allergic to the venom. People who develop hives, difficulty breathing or swallowing, wheezing or similar symptoms of allergic reaction should seek medical attention immediately upon



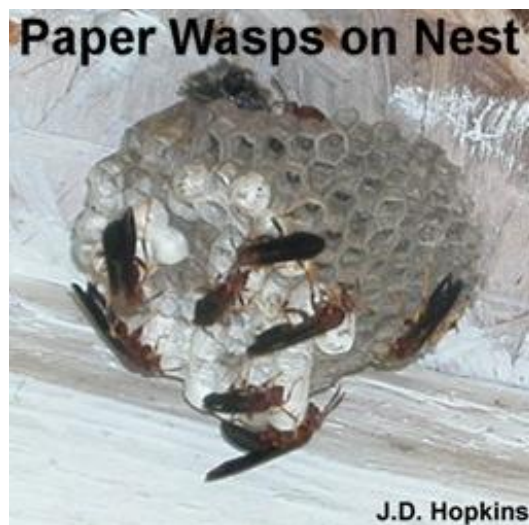
being stung. First aid treatment for stings from wasps and other stinging insects can be seen by going to the following link:

<http://www.nlm.nih.gov/medlineplus/ency/article/002857.htm>

Additional information about wasps including stings and the associated wasp venom can be obtained through the link below.

<http://science.howstuffworks.com/zoology/insects-arachnids/wasp3.htm>

The wasp lifecycle begins when a female paper wasp queen emerges from a sheltered overwintering site in the spring and begins to build her grey, papery, umbrella shaped nest under eaves/overhangs, in window sills, in open barns, etc. Once the first few cells have been constructed, tiny, whitish, sausage-shaped eggs are laid. These eggs will hatch in a few days. This queen wasp will feed chewed-up prey insects to her young wasp larvae until they seal their cells and become pupae. Once enough new female worker wasps have emerged, they take over the duties of food collection, nest construction, and defense. The queen, in the meantime, remains with the nest producing more offspring. During the late spring and summer the nest may enlarge to 6-8 inches in diameter with increasing numbers of wasps. A typical colony normally contains fewer than 25 wasps, but late in the season, the number may swell to over 100. This is the time when the greatest stinging risk exists. In the early fall, the colony produces males and special reproductive female wasps. These reproductive females, which constitute next year's queens, mate with males and soon leave the nest in search of protected sites where they spend the winter. The remaining worker wasps eventually die and the nest becomes vacant. The old nest is not reused the following year.



Overwintering wasp queens seek shelter in hollow trees, under bark, in wood piles, attics, chimneys, barns, under siding, etc. On any warm day, the wasps may become active and fly about. If they have been resting in an attic, wall void or crawlspace, the wasps may be attracted to light coming through a gap in the baseboard, or a wall fixture, or around a heater vent, and emerge inside the home or building. Once inside a dwelling, the wasps may be found crawling around on the floor or furniture, or they may be attracted to light shining through windows. Since there is no nest or young to defend, the only real danger of being stung is from accidentally stepping on or pressing against one.

Spring through early summer is the best time to consider controlling paper wasps around your home. At this time, nests are still small and have less wasps associated with them than later in the summer and thus the stinging risk is reduced. Mechanical methods are always a viable option for control. If the nest is just beginning with a single queen, a broom may be all that is needed to knock it down. Wasps that somehow enter a dwelling may be swatted, stepped on or vacuumed up. If these early season nests have gone unnoticed and have been allowed to become larger nests tended by many wasps, they may be more easily destroyed in the evening with a freeze-type aerosol insecticide that is labeled for "wasps or hornets". These formulations have an added advantage in that they often spray

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as far as 10 to 20 feet. Most wasp and hornet sprays cause insects to drop instantly when contacted by the insecticide so do not stand directly below a nest when applying this type of insecticide or you risk being stung. Some of the “Green Category” materials such as mint oil sprays and soap based products also provide adequate control of paper wasps outdoors. Following and insecticide treatment, wait a day to ensure that the colony is destroyed, then scrape or knock down the nest. This will prevent the development of secondary problems from carpet beetles, ants and other scavenging insects.

In homes, cracks and crevices should be sealed and attic vents should be properly screened to exclude overwintering queens. If wasps are already present in an attic or storage room, a total-release aerosol may be used on a warm day. Follow the product’s label instructions concerning the number of cans needed for the size area you are treating. **NEVER** exceed the number of recommended units and always be careful using these products near open flames or electrical sparks due to the risk of explosion.

For recommended residual surface spray insecticides, see the “Hornets, Mud Daubers, Wasps, Yellow Jackets” entry under the “HOUSEHOLD AND STRUCTURAL PEST CONTROL SECTION” in the current MP144 “Insecticide Recommendations for Arkansas.”

<https://www.uaex.edu/publications/MP144.pdf#page=306>

Permethrin Treated Clothing and the Prevention of Tick Bites

John D. Hopkins

A current CDC study reinforces the fact that permethrin treated clothing may help prevent tick bites. New data from this study shows that just a minute or two of contact with permethrin-treated clothing caused ticks to become incapacitated or fall from the fabric. The research examined a variety of permethrin-treated clothing types and fabrics and revealed that the items can be toxic to several species of ticks and at different stages in their life cycles, potentially keeping them from getting beneath clothing and staying next to skin long enough to bite. The study “Contact Irritancy and Toxicity of Permethrin-Treated Clothing for



Ixodes scapularis, *Amblyomma americanum*, and *Dermacentor variabilis* Ticks (Acari: Ixodidae)” by Robert Prose, Nicole E Breuner, Tammi L Johnson, Rebecca J Eisen, Lars Eisen was published in the Journal of Medical Entomology and can be read in its entirety by clicking on the following link: <https://doi.org/10.1093/jme/tjy062>.

James Dickerson, Ph.D., chief scientific officer with “Consumer Reports” (www.consumerreports.org) says the CDC research sounds promising but, it’s still unclear whether the permethrin-embedded apparel actually prevents bites. “The CDC’s study did not test any items while they were being worn, so it doesn’t show conclusively how well the clothes might keep ticks from biting you.

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Poultry Mites

Kelly M. Loftin

Mites in commercial, organic and backyard poultry production can become significant pests. Physical damage caused by mites can result in lowered egg production, reduced weight gain and carcass downgrading. Often the type of operation (commercial, backyard, free range, etc.) will influence the potential of a specific mite species to cause economic damage. Depending on the mite species, control may be either aimed directly at the bird, the premises or both. For additional information of insecticides labeled for use against poultry pests, check out the Poultry section of the “2018 Insecticide Recommendations for Arkansas” available at:

<http://www.uaex.edu/publications/pdf/mp144/b-animals-poultry.pdf>

Northern fowl mites: Northern fowl mites are bloodsucking parasites of poultry that can significantly reduce production. Many consider this mite as the most important external parasite of poultry in the U.S. Northern fowl mite (feather mite), *Ornithonyssus sylviarum* (Canestrini and Fanzano), has been found in AR since 1960. It is a serious external parasite of poultry with heavy populations capable of significantly reducing egg production. The northern fowl mite, unlike other mite pests of poultry, spends its entire life cycle on the bird sucking blood and causing irritation. The only time it is found off the bird is when extremely heavy infestations occur. When this occurs they may be found on eggs laid by infested birds and can cause some annoyance to egg handlers and other personnel.



Northern fowl mite symptoms on vent area of chicken. Photo by Brad Mullins, UC-Riverside.

The northern fowl mite usually spends its entire life cycle on the host and is the only species that remains on the bird during the day. To monitor for this mite, check first on the vent, then tail, back and legs of layers. The life stages of the mite consists of the egg, larva, nymph, and adult. The complete life cycle can be completed in as little as a week. Mite eggs are laid in the bird's feathers and hatch in one to two days. After hatching, mites go through a series of molts, leaving cast skins in the feathers of infested birds. Adult mites are eight-legged, about 1mm in length, and are red to black in color. Mite numbers can build rapidly due to the short duration of the life cycle. Northern fowl mites may spread through the introduction of infested birds, on clothing or equipment, or from wild birds such as sparrows.

Feathers of infested birds exhibit a dirty, rough, matted appearance due to a buildup of mite eggs, cast skins, dried blood from feeding, and mite excrement, especially in the vent area. Scabs often form on infested areas of the bird's body. The presence of these mites is often first noticed on the

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chicken eggs. Early detection can reduce the number of caged layers that need treatment. Birds should be monitored weekly for mites by examining the base of feathers around the vent. When mite numbers are greater than 50, treatment should be considered. Several other things should be considered before a control decision is made. It may not be economical to treat older birds because mite numbers are not likely to increase as quickly, compared to younger birds. Finally, because mite populations increase in cooler weather, infestations can be expected to increase in the fall and decrease as temperatures warm in the spring.

Destroying bird (such as sparrow) nests around poultry facilities is recommended. Although mites spend their entire life cycles on the birds, they can live off the birds for several weeks, provided temperature and humidity are suitable. For this reason, a house vacated for less than 3 weeks may have mites, which will infest newly placed birds. Populations of northern fowl mites build faster on young birds than on older birds and tend to be worse in cool weather.

When chemical control measures are indicated, it is very important to direct the insecticide application to the vent area using sufficient pressure to allow wetting of the skin. Treatment of the litter may be necessary if the previous flock was heavily infested and the facility will not be vacant for an extended period.

Chicken Mites: Chicken mites are also bloodsucking parasites of poultry that can significantly reduce production. The chicken mite, *Dermanyssus gallinae* (DeGeer) is a common pest of poultry in Arkansas. This pest remains secluded during the day in cracks and crevices and emerges at night to feed on poultry. Heavily infested birds become listless and exhibit pale combs and wattles from blood loss. Weight gain and egg production can also be adversely affected. Problems with chicken mites seldom occur in caged-layer operations because there are few places for mites to hide and lay eggs. More serious problems can occur in breeder houses where nest boxes and slats offer ideal hiding places. Chicken mites do not usually increase to serious numbers in broiler flocks due to the short grow-out cycle that prevents a population build up.

The chicken mite feeds intermittently and is usually found on the host at night. This mite is very small and grayish



Area infested with chicken mites. Photo by British Free Range Egg Producers Association.

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before feeding but becomes deep red or nearly black after a blood meal. Due to the presence of mites and eggs, infested areas can have an appearance resembling a salt-and pepper mixture.

Mite eggs are laid in cracks or under dry manure in the house. In warm weather, the life cycle of the chicken mite can be completed in 7 to 10 days, with mites being inactive in cold weather.

A mite infestation may go unnoticed unless birds are examined at night; and as a result, examination of cracks and crevices in the poultry facility is a more effective method for determining mite presence. Modern egg production practices have almost eliminated this mite as a pest, because suspended wire cages reduce the number of mite oviposition sites. Bird production on litter or an operation using nest boxes is more susceptible.

Chicken mites can be controlled, not by direct treatment of birds, but by thorough treatment of the house and litter with a recommended insecticide. Vacant houses, with a history of infestation, should be treated thoroughly before the introduction of new birds because chicken mites can survive several weeks without feeding.

Scaly-leg mite: Scaly-leg mite, *Knemidocoptes mutans* (Robin and Lanquentin), is a highly contagious bloodsucking parasite of poultry, that can significantly reduce production. The scaly-leg mite is occasionally found on flocks in Arkansas, particularly on flocks raised on the ground or in roosts. This mite has also been reported on pheasants, partridges, bullfinches, goldfinches, and many passerine birds. It is suspected that wild birds transmit the mites to domestic flocks. Severe infestations may cause loss of toes, loss of appetite, lowered egg production, emaciation, and death.



Scaly-leg mite symptoms. Photo by Dr. Dietrich Barth, Merial.

Scaly-leg mites burrow under scales on the feet and legs of fowl, resulting in irritation, sores, and secretions. The female mite is small with a round body and short, stubby legs. Because these mites are only 0.4mm long, they require magnification to be identified. Newly hatched mites are at first six-legged and, through progressive molts, become eight-legged.

Female mites burrow under scales on the feet and legs of poultry and deposit eggs. The entire life cycle from egg to adult requires 10 to 14 days. Female mites begin laying eggs a short time after they burrow under the skin and continue to lay eggs for about 2 months.

Mites burrow beneath scales on feet and legs resulting in a powdery material that accumulates and binds into a scab of serum discharge. Affected feet and legs usually have red blotches. Glands in the mouthparts of mites may secrete an irritating fluid that causes the discharge and blotches. Eventually, the feet and legs may be covered with these crusts or scabs. Mites remain beneath the crusts in small oval vesicles. Irritation from mite infestation causes poultry to pick at the crusty

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formations. As these formations extend over the feet and legs, they interfere with joint flexion and cause lameness.

Because scaly-leg mite is more of an issue on flocks raised on the ground or in roosts, relocation of pens after treatment helps in preventing new mite outbreaks. If scaly-leg mites are found, insecticide treatment of the entire flock is necessary. Also, disinfect roosting areas and pen enclosures. Relocation of pens can aid in preventing new mite outbreaks.

New Technologies for Baiting Feral Hogs

Becky McPeake

Although shooting and other removal methods have their place, the recommended practice for controlling feral hogs is corral trapping. Before setting the trigger, pigs are conditioned to enter the trap to insure the entire sounder (group of sows and their young) is caught. Whole corn bait is often used as an attractant. The efficiency of the trapping operation could be improved if raccoons, deer, bear, crows, and other wildlife were prevented from consuming bait. Keeping deer from bait is especially critical in areas where chronic wasting disease is a factor, as congregating is thought to enhance disease transmission.

Interest in the possible use of poisons for feral hog control has contributed to advances in bait station technology. Many oppose using poisons because of the potential for accidental death of non-target species such as deer and raccoons. The Hog-Hopper™ (pictured right) and other feeders limit access through training feral hogs to lift a heavy lid or gate. Hogs can lift ten pounds or more with their snouts, which effectively limits access by raccoons and other species. In Arkansas, black bears have been a special concern as they are able to lift such weights and presumably gain access.



A newer trap style relies on the weight of the pig to open the door and access bait. The **WPF (Wild Pig Feeder)**, www.wpfeeder.com (pictured below) uses a weighted feed pan to release the feed. Spaces in the floor are intended to dissuade tiny-hoofed deer from entering.



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WiseEye™ Smart Feeders (www.wiseeyefeeders.com) (pictured below) use species recognition technology to allow access to feed. The feeder can be programmed to open doors when recognizing a hog and remain shut when recognizing a deer, or vice versa. A video demonstrating this technology is available on their website. Feeders have built-in solar panels and are sold in various configurations, including single or multiple doors, and feed capacities.

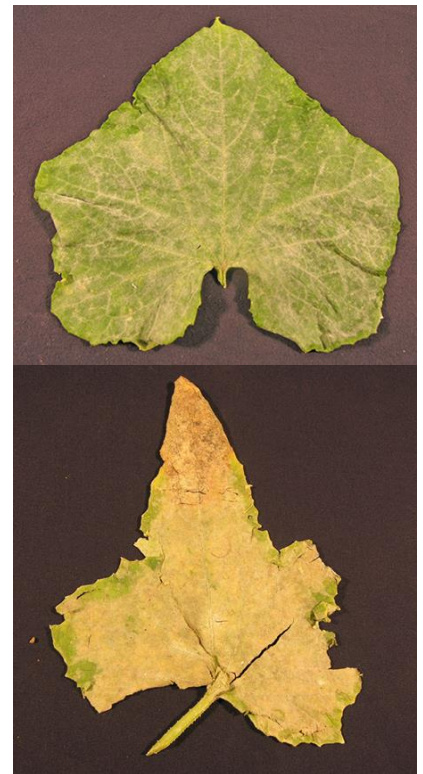


Although no bait station is perfect, new advances may help improve efficiencies of controlling feral hogs while limiting impacts on non-target wildlife and the surrounding habitat. Inventors are advised to trademark and patent their ideas in the ever-changing landscape of dealing with pesky wildlife!

Powdery Mildew of Cucumber

Sherrie Smith

All cucurbit crops are susceptible to Powdery Mildew, including cucumbers, muskmelons, honeydew, squash, gourds, and pumpkins. Several species of powdery mildew fungi have been identified on cucurbits, including *Podosphaera xanthii*, and *Erysiphe cichoracearum*, with *P. xanthii* being the predominant pathogen in most regions. Symptoms begin as white, powdery fungal growth on leaf surfaces, petioles, and stems. Yellow spots may develop on the leaf opposite the powdery growth. Lower leaves and crown leaves usually show symptoms first. Heavily infected leaves shrivel and die. Fruit may become sunburned when they lose leaf cover, or be smaller than usual. Yields are reduced because of the smaller fruit size or early death of the vine. The flavor may also be negatively impacted, as well as the storability of the fruit. Conditions optimal for Powdery Mildew are temperatures between 75-85 °F and elevated levels of relative humidity (80-95%). The best control is the use of resistant cultivars. There are now many available with excellent resistance. Plants grown under good nutritional and cultural conditions are less susceptible than stressed plants. Fungicides are most effective if used before disease becomes established. Commercial growers may use Flint 50WG, Bravo Ultrex, Bravo WeatherStik, Quadris 2.08FL, Microthiol Disperss, Pristine, Nova 40W, Procure 50WP, and Quadris Opti 5.5SC. Homeowners may use Ortho Garden Disease Control, Bonide Fung-onil RTU, Hi-Yield Daconil Vegetable and Flower



Powdery Mildew Symptoms on Cucumber Leaves. Photos by Sherrie Smith

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Fungicide, Garden Tech Daconil Concentrate, Fertilome Dusting Sulfur, Bonide Sulfur Plant Fungicide, or Safer Brand Garden Fungicide. Rotate fungicides.

Name That Weed

Bob Scott

This month's weed is an erect, stout and solitary member of the daisy family and is a truly tough weed. Often surviving shallow tillage. Cattle avoid this plant while grazing, in part due to its deeply serrated leaf, making it a common weed in some overgrazed pastures in western Arkansas. Although it's more common in the Great Plains states, preferring sandy dry or rocky hillsides. Named in part due to its thick cuticle it also resists herbicide uptake, making it hard to control all around. Be the first to email me with one of its three accepted common names at bscott@uaex.edu (use this link) and win a prize.



To The Readers

Please offer any suggestions for Urban or Livestock Integrated Pest Management topics (insect pests, plant diseases, weed problems, wildlife control problems) that you would like to see – ***OR*** – feel free to submit an article that you have prepared. Kelly and I will be glad to include it (subject to editing). Send feedback to jhopkins@uaex.edu or kloftin@uaex.edu.

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