

Pest Management News

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Managing Paper Wasps Around the Home

John D. Hopkins

Paper wasps (*Polistes* sp.) 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 yellowjackets, will readily sting in defense of their nests. Before starting 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, yellowjacket 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:

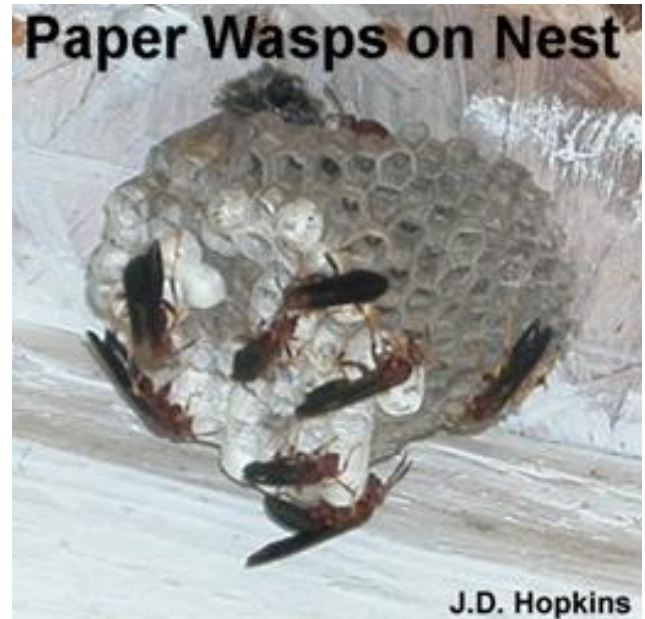


<http://www.nlm.nih.gov/medlineplus/ency/article/002857.htm>

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 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. The female wasp will feed chewed-up caterpillars 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 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 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.

Why is now the time to consider controlling paper wasps around your home? The answer is because 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. Larger nests are most easily destroyed in the evening with a freeze-type aerosol insecticide that is labeled for "hornets or wasps". These formulations have an added advantage in that they often spray as far as 20 feet. Most wasp

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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 an 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, 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.

Bermudagrass stem maggot in Arkansas

Kelly M. Loftin and John D. Hopkins

Last week we identified the bermudagrass stem maggot, *Atherigona reversura* (Family Muscidae), in a bermudagrass field near Magnolia. To our knowledge, this is the first confirmation of its presence in Arkansas. This potential pest is a native of south Asia, from Japan west to Oman and Pakistan. In the U.S. it was first discovered in Georgia in 2010 and is currently found in other southeastern states as well as Oklahoma and Texas. Information on its biology, the damage it causes and control methods is very limited. Much of the work with this fly has been conducted by entomologists at the University of Georgia. To date, economic thresholds and yield loss data have not been established for this pest.

Damage caused by the bermudagrass stem maggot results from larval stages (maggots) feeding in the shoot causing the top two or three leaves to die (Fig. 1a-b). Lower leaves remain alive and



Fig. 1a. Typical damage caused by the bermudagrass stem maggot. Note the dead upper leaves.



Fig 1.b. Bermudagrass stem maggot damage.

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unaffected by the maggot's feeding. Because of the death of the top couple of leaves, the plant (and field, if heavily infested) will exhibit a frosted appearance. In Georgia (likely very similar in Arkansas), the life cycle from egg to adult requires about three weeks (21-25 days but can be shorter). The adult female fly will lay eggs on the bermudagrass stem near a node. The maggot will hatch from the egg, crawl up to toward the last plant node (where the leaf blade emerges from the stem) and burrow into the shoot and begin feeding. Often by the time the top leaves have died, the maggots have exited the stem and pupated on the ground. With such as short generation period, multiple generations occur and populations tend to increase later in the season and damage tends to accumulate.

The adult fly is small (~1/8 inch long) and yellow colored with four prominent black spots on the abdomen (Fig. 2a-b). The maggot (larva) is also yellowish colored and about 1/8 inch in length when fully mature (Fig. 3).

Although yield data and economic threshold data is very limited, experiences in other states provide basic guidelines to consider. In general, this pest is less of a problem in coarse stemmed bermudagrass varieties (Tifton 85), bermudagrass that is grazed or bermudagrass that is baled for cattle hay. In grazed pastures, cattle eat the fly eggs and maggots along with the grass preventing the population from building up. Bermudagrass stem maggots can become an economic pest in finer stemmed varieties (common, Coastal, Alicia) that are baled for horse hay especially later in the season after the population builds. The issue with horse hay is that the dead top leaves cause an unsightly appearance to some in the horse hay market, resulting in rejected hay.

Growing conditions influence the amount of damage caused by the bermudagrass stem borer. Impact on yield is lessened when soil and



Fig. 2a. Bermudagrass stem maggot adult. Note the four black spots on its abdomen.



Fig. 2b. Relative size of the bermudagrass stem maggot.



Fig. 3. Bermudagrass stem maggot larva. Figure from ANR-1462, Biology and Management of bermudagrass stem maggot.

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moisture conditions allow for normal rapid growth. In this situation, loss of a few upper leaves would have a smaller impact on yield. In situations where growth is limited by poor soil conditions and moisture, yield losses may occur. Researchers believe this is because the slow growth rate allows egg-laying and maggot development to occur earlier in the grass growth cycle. Also, in heavy infestations, regrowth after cutting will be slowed substantially which is more likely to occur later in the season.

Management options for the bermudagrass stem maggot include harvesting and in some cases insecticide application. Cutting for hay is usually recommended if damage is identified within one week of normal harvest. When damage is apparent from one to three weeks after harvest, yield may be compromised, so harvest (if yield is sufficient to warrant cutting) would be an option. To date, researchers have evaluated a variety of foliar insecticide formulations and found that pyrethroid insecticides labeled for use in hay fields to be the least expensive and most effective method. These insecticide treatments should be applied after cutting. Alabama and Georgia recommendations are to apply pyrethroid insecticides after the grass begins to resprout after cutting. Because pyrethroid insecticides have little residual activity, a second application five to seven days following the first application may be needed in cases where damage levels and fly pressure are high. Researchers also suggest that a single round of applications may provide enough control to protect the grass though the remainder of the growing season.

Some have voiced concerns about the possibility of the bermudagrass stem maggot being transported from farm to farm in baled hay. Bermudagrass stem maggots are very unlikely to be transported in this manner. This is because maggots in the stem will die as the hay dries (maggots need moisture). Mature larvae that pupate do so after they exit the stem and pupate on the ground.

Although research has shown that turf bermudagrass varieties are attacked by this maggot, the frequent mowing of the turf does not allow the fly to complete a life cycle before the next mowing.

With this being a new pest in Arkansas, we are trying to determine the extent of the damage and range of this pest in Arkansas. Please call or email if you suspect a bermudagrass field is infested with this pest. Its presence is determined by damage and can be confirmed with adult collections of the fly. Adults are easily collected by using a sweep net to collect the flies in the bermudagrass.

Fall Armyworm Update

Kelly M. Loftin

It is nearly August and we've had no reports of major issues with fall armyworms attacking pastures and hayfields. What fall armyworms I've seen so far, have been well below the treatment threshold. Much different than last year and I hope it stays that way. With this said, now is the time to encourage your producers to scout their fields for fall armyworms. We don't want to see anyone caught with their guard down (Fig. 1).

Control decisions should be based on treatment thresholds derived from sampling the field. In general, insecticide treatment is warranted if three or more half-grown armyworms per square foot are

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present. The best way to conduct sampling is to make at least 10 random samples across the field. Also remember that moths often lay eggs in the lushest part of the field, so include a few samples from these areas. A sampling device constructed of $\frac{1}{2}$ or $\frac{3}{4}$ PVC pipe that covers one square foot makes the sampling much easier (Fig. 2). Also, early signs of armyworm damage by small caterpillars include leaves that are chewed on the underside only and fields with a slight “frosted” appearance. Another sign that fall armyworms may be present are birds feeding in the pasture or hayfield.

Factors such as the size of the caterpillars and maturity of the hay crop should be considered before making an insecticide application. For example, if a field is heavily infested and the grass is ready to harvest, consider cutting and baling as soon as possible rather than making an insecticide application. In contrast, if the field is not ready to cut and you have just over three or four very small (from $\frac{1}{8}$ to $\frac{1}{4}$ inch) fall armyworm caterpillars per square foot, continue scouting and if their abundance does not decline below threshold by the time they reach $\frac{1}{2}$ inch, then treat with an insecticide. Don't wait until the armyworms are $1\frac{1}{2}$ inches long because they are about ready to pupate and have likely already caused most all of the damage that they will do, and besides large worms are hard to kill. Additional information on armyworms can be found in “Managing Armyworms in Pastures and Hayfields” and is available at:



Fig. 1. Fall armyworm larvae.



Fig. 2. Fall armyworm sampling device.

http://www.uaex.edu/Other_Areas/publications/PDF/FSA-7083.pdf.

Per-acre insecticide cost will vary from as low as about \$3.00 up to over \$10.00. When calculating cost, always consider the cost per acre and not the cost per gallon of product. Also consider residual activity of the product especially if you are seeing an overlapping population (all sizes of fall armyworm caterpillars) and heavy armyworm pressure. Remember, pyrethroid insecticides have less residual activity. In contrast, some of the more expensive products ((Prevathon (chlorantraniliprole), Intrepid (methoxyfenozide)) do have longer residual activity and can reduce the number of applications necessary to produce a hay crop. A section 2 (ee) label for Prevathon recommends 10-13 ounces of product per acre for control of fall armyworms, which is considerably lower than the product label rate. Research has shown that this lower rate is effective. For additional information on insecticides labeled for use against fall armyworms in pastures and hayfields, check out the Forages section of the “2013 Insecticide Recommendations for Arkansas” available at:

http://www.uaex.edu/Other_Areas/publications/PDF/MP144/C_Forages.pdf.

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Name That Weed

Bob Scott

This month's weed is known by a number of common names. Historically it has been a severe problem in peanuts and prefers well drained sandy soils. It has a large seed and can be difficult to control with grass herbicides such as Dual and Prowl. It is densely pubescent all over and this characteristic has given it one of its nicknames "the velvetleaf of the grasses". Currently it is driving some miscanthus farmers (and county agents) crazy in Greene County!

Be the first to email me (bscott@uaex.edu) with the common name of this unique grass weed 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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