

Pest Management News

Dr. John D. Hopkins, Professor and Extension Entomologist – Coeditor
Dr. Kelly M. Loftin, Professor and Extension Entomologist – Coeditor

Contributors

Dr. Tommy Butts, Assistant Professor and Extension Weed Scientist
Dr. Aaron Cato, Assistant Professor and Horticulture IPM Extension Specialist
Dr. Rebecca McPeake, Professor and Wildlife Extension Specialist
Sherrie E. Smith, Plant Pathology Instructor, Plant Health Clinic Diagnostician

Letter #5

September 30, 2019

How to Submit an Insect Sample for Identification

John D. Hopkins

If a client brings in or you encounter an insect that you suspect is causing a problem and you do not know what it is, you may submit a good in-focus digital photo (see Wilcox and Loftin photography tips below).

Wilcox Method

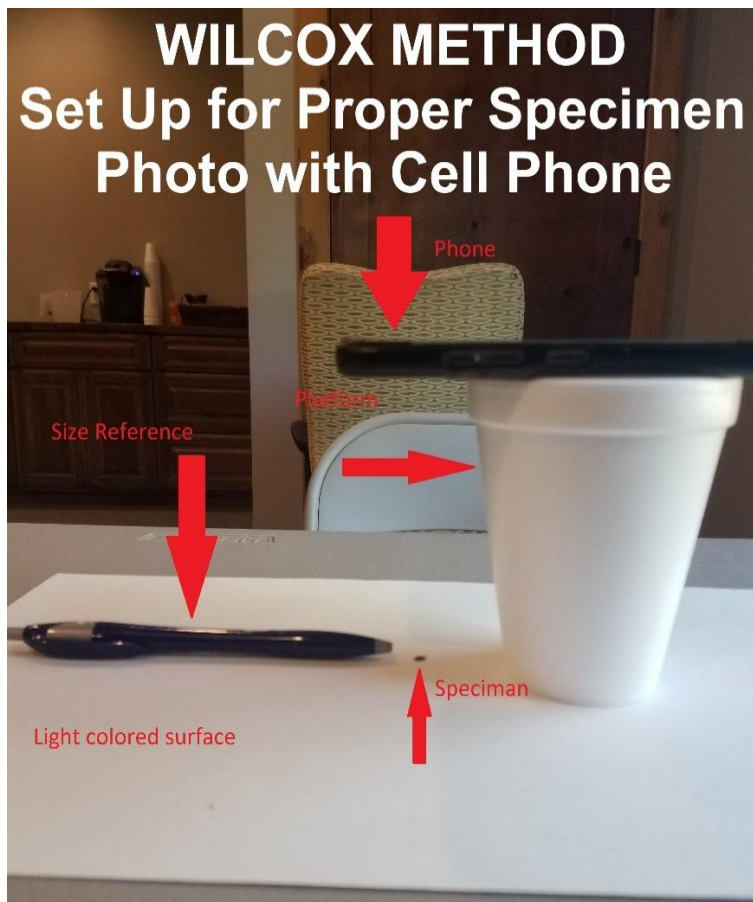
You will need a cell phone, a styrofoam cup, a reference scale (pen, ruler, etc.), appropriate lighting, and your specimen, preferably dead so it does not move around on you (kill in alcohol or freeze).

Special thanks to Christian Wilcox, Technical Director and Associate Certified Entomologist, McCauley Services, Bryant, AR.

Loftin Method

You will need a stereo microscope, your cell phone camera unless you have a camera that mounts to the microscope, a reference scale, appropriate lighting, and your specimen. If your microscope has rubberized eyecups, you will need to remove them so as to be able to hold the cell phone camera lens flush with the microscope objective. Be patient as it is tricky to get everything to line up but you will be able to take a higher magnification photo than with the Wilcox method above.

SEE ILLUSTRATIONS OF METHODS ON NEXT PAGE



University of Arkansas, United States Department of Agriculture and County Governments Cooperating.

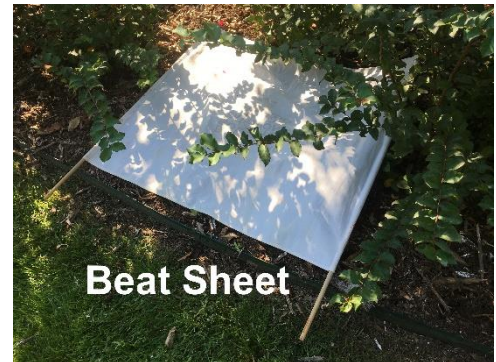
The Arkansas Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, religion, gender, age, disability, marital or veteran status, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

The mention of any commercial product in this publication does not imply its endorsement by the University of Arkansas Cooperative Extension Service over other products not named, nor does the omission imply that they are not satisfactory.

If you don't have a camera or cell phone camera, you may submit your sample the old fashion way and mail the specimen(s) in (see sample collection, preservation, and shipment tips below).

Sample Collection

- **Equipment:**
 - Heavy Duty Sweep Net with 2 foot long handle - heavy cloth bag on short handle used to beat or sweep foliage to collect insects
 - Beat Sheet - heavy piece of cloth approximately 34"x38" mounted between two 42" wooden dowels - sheet is placed below plant foliage and foliage is shaken vigorously to dislodge insects that then fall onto the sheet for collection
 - Aerial or butterfly net - Made of much lighter material than the heavy duty sweep net and used to catch flying/jumping insects like flies, wasps, bees, butterflies, moths or grasshoppers
 - Q-tip or a camel's hair brush dipped in alcohol – used to collect small insects
- **Record facts about the specimens:**
 - When collected
 - Where collected
 - Host plant collected from or specific location collected from
 - Description of damage or problem
- **Send more than one specimen**
- **Don't jam-pack the insects into the container**
- **If the specimen is mutilated, find a better sample to send**



Sample Preservation

- **After collection, specimen should be quickly killed to avoid damage**
- **Most insects can be killed by placing them in vial containing 70% alcohol (common rubbing alcohol):**
 - Beetles, true bugs, bees, wasps, ants, aquatic insects, and spiders
- **Most larvae, especially white grubs and caterpillars should be killed in near boiling water to prevent darkening of the tissues after they are placed in alcohol:**
 - Drop the living larva into near boiling water and let it remain until the water cools
 - Remove specimen from water, pat dry with paper towel
 - Transfer larva into alcohol
- **Moths and butterflies are best identified from dry specimens**
 - Kill by freezing

University of Arkansas, United States Department of Agriculture and County Governments Cooperating.

The Arkansas Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, religion, gender, age, disability, marital or veteran status, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

The mention of any commercial product in this publication does not imply its endorsement by the University of Arkansas Cooperative Extension Service over other products not named, nor does the omission imply that they are not satisfactory.

- Carefully place dead moths or butterflies between wax paper to protect wings
- Put them in an envelope (do not crush)
- Put envelope inside a mailing tube or crush proof box
- Galls, damaged plant material, and plant material with scales, mealybugs, and aphids can be carefully wrapped in soft tissue, boxed, and submitted
- **DO NOT** apply scotch tape directly to a specimen or crush the insect and mail it in an envelope. Dried and crumbled or squashed insects are usually impossible to identify accurately

Shipment

- Make sure the container is leak proof
- Wrap sample securely in bubble wrap or other packing material to prevent breakage during shipping
- If necessary, cushion specimen with additional packing material when shipping.
- If dry specimens are to be shipped, insure that they remain dry and are not crushed
- Carefully package in a crush proof container
- Ship insect specimens to arrive Monday thru Thursday
- Mail to appropriate specialist
- Enclose properly filled out Form AG-387 "Insect Identification Request." The form can be acquired at the following link: <https://www.uaex.edu/extension-policies/templates/agri.aspx>

Extension Specialist Contact Information

Dr. John Hopkins, Extension Entomologist
University of Arkansas System, Div of Agric. CES
2301 S. University Ave.
Little Rock, AR 72204-4940
501-671-2217
jhopkins@uaex.edu

Dr. Ben Thrash, Extension Entomologist
University of Arkansas System, Div of Agric. CES
Lonoke Agricultural Center
2001 Hwy 70 E
Lonoke, AR 72086
501-676-3124
bthrash@uaex.edu

Dr. Kelly Loftin, Extension Entomologist
University of Arkansas System, Div of Agric. CES
Cralley-Warren Research Center
2601 North Young Avenue
Fayetteville, AR 72704
479-575-3462
kloftin@uaex.edu

Dr. Nick Bateman, Extension Entomologist
University of Arkansas System, Div of Agric. CES
Rice Research and Extension Center
2900 Hwy 130 E
Stuttgart, AR 72160
870-673-2661
nbateman@uaex.edu

Dr. Glenn Studebaker, Extension Entomologist
University of Arkansas, Cooperative Extension Service
Box 48 NEREC
Keiser, AR 72351
870-526-2199 Ext. 114
gstudebaker@uaex.edu

Dr. Gus Lorenz, Assoc Dept Head/Extension Entomologist
University of Arkansas System, Div of Agric. CES
Lonoke Agricultural Center
2001 Hwy 70 E
Lonoke, AR 72086
501-676-3124 glorenz@uaex.edu

University of Arkansas, United States Department of Agriculture and County Governments Cooperating.

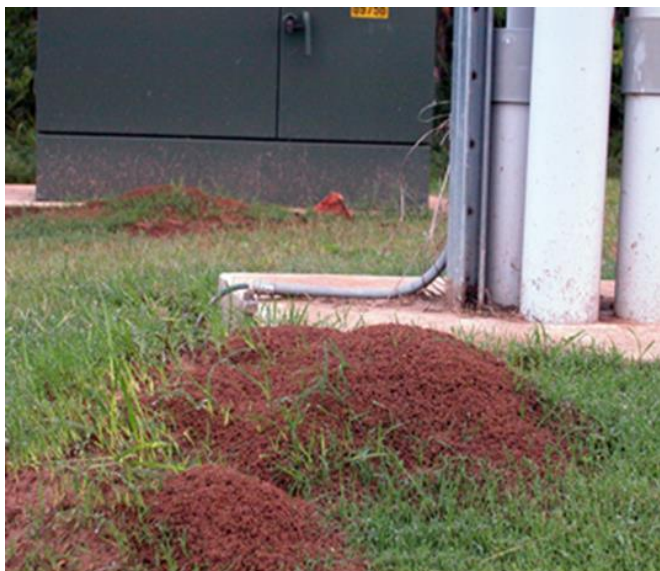
The Arkansas Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, religion, gender, age, disability, marital or veteran status, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

The mention of any commercial product in this publication does not imply its endorsement by the University of Arkansas Cooperative Extension Service over other products not named, nor does the omission imply that they are not satisfactory.

Fall Fire Ant Bait Applications

Kelly M. Loftin

I've received several fire ant calls within the last few weeks, which is fairly typical for September. One question that frequently accompanies the call is: Can I apply fire ant baits this time of year? With a few precautions, the answer is YES. As long as temperatures do not get too cool, baiting fire ants in the fall is very effective. A good rule of thumb would be to apply fire ant baits prior to October 15. However during some milder falls, bait applications can be effective well after October 15. Fire ant baits should be applied when soil temperatures are 60°F or above. When in doubt, determine if fire ants are actively foraging. Foraging activity is easily evaluated by placing small pieces of hot dogs or greasy potato or corn chips in the area you plan on treating. Leave this attractive material out for thirty minutes and then check. If this food is covered in fire ants you know that they are actively foraging and application of a fire ant bait should be effective.



Active red imported fire ant colonies following a fall rain.



Fire ant colony on the University of Arkansas Fayetteville campus. Photo by Haylee Campbell.



Fire ants foraging on a "hot dog" bait

Fall is an excellent time to control imported fire ants in your home garden especially if you plan on using the insect growth regulators (IGR) methoprene (Extinguish) or pyriproxyfen (Esteem). Baits containing an IGR generally take longer to achieve the desired results, however if any of these baits are applied now, control will occur prior to gardening next spring. For gardeners desiring organic fire ant baits, products containing spinosad (Fertilome "Come and Get It") is available. Remember that spinosad fire ant bait is applied at a higher rate (2.5 – 5.0 pounds per acre) than the other baits (1.0 – 1.5 pounds per acre).

A wider variety of baits are labeled for use around the home or other non-agriculture sites. The products mentioned above

University of Arkansas, United States Department of Agriculture and County Governments Cooperating.

The Arkansas Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, religion, gender, age, disability, marital or veteran status, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

The mention of any commercial product in this publication does not imply its endorsement by the University of Arkansas Cooperative Extension Service over other products not named, nor does the omission imply that they are not satisfactory.

are approved for use in residential and recreational turf as well as baits containing hydramethylnon, metaflumizone and indoxacarb. Baits containing indoxacarb (Advion) or metaflumizone (Siesta) are generally quicker in achieving desirable control. With indoxacarb bait applications, foraging activity is significantly reduced two days post-application and colonies controlled from two to seven days post-application. Older bait formulations such as Amdro (hydramethylnon) and Extinguish Plus (hydramethylnon and methoprene) are very effective and easy to find but may require a few weeks to achieve control.

Livestock producers have four fire ant bait products from which to choose. Extinguish (methoprene), Amdro Pro (hydramethylnon), Extinguish Plus (methoprene and hydramethylnon) and Esteem (pyriproxyfen) are all labeled for use in pastures grazed by livestock intended for meat and milk production as well as companion animals. Advion fire ant bait is now labeled for use in fenced pastures but only if grazed by companion animals (i.e., animals not raised for production of meat or milk). Advion fire ant bait is a fast acting toxin and provides control within a few days after application. Extinguish and Esteem are IGRs; Amdro Pro is a slow acting toxin; and Extinguish Plus is a combination of a slow acting toxin and an IGR. Products such as Amdro Pro and Extinguish Plus provide control within about 3 weeks. The IGRs, Esteem and Extinguish, will usually provide control within a couple of months.

Should you treat individual mounds or broadcast bait over the entire area? The best answer is to broadcast if colony density is twenty or more per acre. If less than twenty colonies per acre are present, then treating individual colonies is appropriate. When baiting individual colonies remember do not apply directly to the mound, instead apply uniformly from one to three feet around the base of the mound. Also, never disturb the mound prior to treatment.

Occasionally fire ants will forage indoors especially during dry conditions; so can we apply fire ant baits indoors? Yes, but in a very specific manner. Usually a good bait application outside and particularly around the structure's perimeter will provide the control necessary to prevent fire ants from foraging indoors. However, Amdro Pro, Extinguish and Extinguish Plus can be used inside structures but only under very specific circumstances. These three products are labeled for use inside structures but ONLY in inaccessible areas such as cracks, crevices, wall voids, unfinished attics and crawlspaces of structures such as homes, commercial residences, commercial buildings and warehouses. Please consult the label for more detailed information on indoor use.

Fall Management of Raspberry Crown Borer

Aaron Cato

Now that it is officially fall we need to remember to focus our scouting efforts on what is generally our most serious insect pest of blackberry, the raspberry crown borer, *Pennisetia marginata*. Most growers around the state are familiar with this pest and the damage it can cause, but many still don't scout for signs of damage or presence before using control measures. It's possible that some money and time could be saved in holding off control if the pest isn't present.

Biology

Raspberry crown borer has 1 generation per year in Arkansas. Adult moths are clearwing moths that exhibit yellow and black coloration, similar to a wasp. Adult moths emerge from pupal cases in early September-October, mate in around 7 days, then begin to lay eggs. Eggs are laid on the underside of

University of Arkansas, United States Department of Agriculture and County Governments Cooperating.

The Arkansas Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, religion, gender, age, disability, marital or veteran status, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

The mention of any commercial product in this publication does not imply its endorsement by the University of Arkansas Cooperative Extension Service over other products not named, nor does the omission imply that they are not satisfactory.

blackberry leaves, right around the margin. These eggs are oval in shape and have a dark copper appearance (Figure 1). Larvae hatch from eggs around a month later, depending on temperature, then move down the cane to bore into the cambium just below the soil. Larvae will overwinter in this area until early spring. Larvae will then bore in to the crown and up canes where they will feed and complete their larval life cycle (Figure 2). Mature Larvae emerge in late summer through exit holes at the base of canes and pupate (Figure 3 and 4).

Damage

Larval boring and feeding can completely cut off nutrients and water to canes which can result in no production and death of that cane. This is generally identified by a shepherd hooks appearance of the cane, which can be confirmed by cutting open the bottom of the cane and looking for presence of a larvae or insect excrement (Figure 2 and 5).

Sampling

- After harvest when floricanes are being pruned out, inspect primocanes for a wilted shepherd hooks appearance, and cut open canes to look for larvae if it is still July-August (Figure 2 and 5).
- Late September-Early October scouting should target presence of exit holes and pupal skins at the crown of plants (Figure 3 and 4).
- Scout for eggs on the underside of leaves through October. It's important to note when you first start seeing them (Figure 1).

Cultural Control

- Remove all wild brambles from nearby areas. These can harbor raspberry crown borer that will emerge and move on to your plantings.
- Remove infested primocanes during summer floricanes pruning. Remove the entire plant if many canes are suspected to be infested with raspberry crown borer.

Chemical Control

Chemical control should occur from late October – Early November, with exact timing based on observations that have occurred since harvest. Research by Dr. Donn Johnson has found that an application of Brigade (Pyrethroid) or Altacor (Diamide) in the first week of November will provide excellent control. This application should be applied as a soil drench in a 50-100 gal/acre solution. The goal is to get the product to the area that the larvae is trying to overwinter, where it will have great residual control in the soil around the base of canes. Control of this pest is less feasible once it bores into the crown and cane.

Information and most photos for this article are courtesy of Dr. Donn Johnson. Please see the fact sheet created by Dr. Johnson for more specific information and recommendations.

<https://www.uaex.edu/publications/PDF/FSA-7082.pdf>

Check out the Arkansas Small Fruits Management Schedule and Southeastern Regional Caneberry Integrated Management Guide for more information and recommendations.

<https://www.uaex.edu/publications/PDF/MP467.pdf>
<https://smallfruits.org/files/2019/06/Caneberry-Spray-Guide.pdf>

University of Arkansas, United States Department of Agriculture and County Governments Cooperating.

The Arkansas Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, religion, gender, age, disability, marital or veteran status, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

The mention of any commercial product in this publication does not imply its endorsement by the University of Arkansas Cooperative Extension Service over other products not named, nor does the omission imply that they are not satisfactory.



Fig. 1 – Raspberry crown borer egg on the underside of a leaf. Photo courtesy of Donn Johnson.



Fig. 2 – Raspberry crown borer larvae tunneling within the base of canes. Photo courtesy of Donn Johnson.



Fig. 3 - Raspberry crown borer exit holes. Photo courtesy of Mark Boldt, University of California.



Fig. 4 – Raspberry crown borer pupal cases at the base of canes. Photo courtesy of Donn Johnson.



Fig. 5 – Typical damage caused by raspberry crown borer. Photo courtesy of Donn Johnson.

University of Arkansas, United States Department of Agriculture and County Governments Cooperating.

The Arkansas Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, religion, gender, age, disability, marital or veteran status, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

The mention of any commercial product in this publication does not imply its endorsement by the University of Arkansas Cooperative Extension Service over other products not named, nor does the omission imply that they are not satisfactory.

Capturing and Releasing Skunks from Cage Traps

Becky McPeake

In Arkansas, it is legal to live trap and relocate nuisance wildlife species including raccoons, squirrels, opossums, striped skunks (Figure 1), and some nongame wildlife. According to the Arkansas Game and Fish Commission (<https://www.agfc.com/en/wildlife-management/nuisance-wildlife/>), a nuisance animal can be captured in a live trap labeled with the trappers name and address, or driver's license number, or vehicle license number. A trapped animal is then released unharmed outside the municipality's boundaries within 24 hours of capture. Trapping must follow local ordinances, such as obtaining a city permit.

One nuisance animal which causes anxiety are striped skunks, whether live-trapped purposefully or accidentally. Skunks emit a foul spray when sensing danger, and can also carry rabies. If a skunk is seen behaving unnaturally during daylight hours, do not approach or attempt to trap. Call animal control, law enforcement, or a local wildlife officer, who can dispatch the animal appropriately and convey the carcass to a county health department for testing.

When trapping nuisance animals other than skunks, close the trap from dusk to dawn during the night, when skunks are more active. If attempting to capture a nocturnal species such as a raccoon or opossum, reduce the risk of capturing a skunk by elevating the trap least 18 inches off the ground, since raccoons and opossums are climbers. The trap can be affixed to a wooden platform and placed on top of a fence or other structure. Provide at least a 5-inch platform in front of the trap door with a bait trail leading through the door and into the back of the trap. If trapping raccoons, consider using bait which is less attractive to skunks and other non-target wildlife, such as vanilla wafers.

If a skunk is the culprit, wrap the trap in a disposable cover such as an old towel or tarp, leaving the trap door exposed (Figure 2). Have another cover ready to place over the trap door opening once the skunk is captured. If the skunk decides to spray, at least you are protected.



Figure 1. Striped skunk. Photo courtesy Alfred Viola, Northeastern University, Bugwood.org.



Figure 2. Keep the cover between yourself and the trapped skunk. Photo courtesy of the Internet Center of Wildlife Damage Management.

University of Arkansas, United States Department of Agriculture and County Governments Cooperating.

The Arkansas Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, religion, gender, age, disability, marital or veteran status, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

The mention of any commercial product in this publication does not imply its endorsement by the University of Arkansas Cooperative Extension Service over other products not named, nor does the omission imply that they are not satisfactory.

If a skunk is trapped unexpectedly and the trap has not been covered, slowly approach the trapped skunk with the protective cover to lay over the trap, keeping the cover between you and the skunk. Consider crouching down to look less threatening. Wait until the skunk looks away before moving close enough to drape the cover. Typically skunks don't spray what they can't see. If the skunk is thumping or showing signs of distress, use a pole to drape the covering. Skunks will thump their front feet when agitated, which is a warning that they are likely to spray.

When transporting the covered trap outside the municipality's boundaries, handle the trap gently. Shaking or banging the cage roughly may cause the skunk to spray. Place the cage in the back of a pickup truck, just in case it decides to release its odor while traveling to the release site.

The exit process depends on which type of cage trap is used. Practice opening a sprung trap door before capturing nuisance animals. Be sure to wear gloves while practicing and when releasing captured animals to limit exposure to scratches, urine, and feces. For a gravity door trap, gently rolling the trap over should cause the door to release. Practice opening the trap door from a distance using a dowel rod or painter's pole. A spring-loaded door will need to be opened by hand. Find an object like a rock or brick to prop open the door at least 5 inches for the skunk to escape. Practice by reaching under the cover to open the door and place the prop in the door. Once the cage is open, remove the cloth covering the door and back away holding the cloth between you and the skunk. Rarely do skunks bolt out of traps, but precaution is warranted.

In some cases, local animal control authorities may be willing to transport and release a trapped animal from your cage. This is the best option for inexperienced trap users. Check with local authorities before setting the trap, to verify this option is available.

If a skunk does release its spray, mix a solution of one quart of fresh (previously unopened) 3 percent hydrogen peroxide solution, ¼ cup of baking soda (bicarbonate of soda), and 1 or 2 teaspoons of liquid dishwashing soap that is known for its degreasing qualities, or liquid laundry soap. Test application first in an inconspicuous spot, as this solution may cause discoloration. Use the solution immediately when made, while the chemical reaction is still occurring. Discard any remaining solution, as this mixture loses its effectiveness once prepared. This solution may be used on pets, but keep away from eyes, ears, and mouth, and the solution may cause discoloration. Do not wet with water prior to application, as water will deactivate the mixture. Allow mixture to stay on at least 30 minutes before bathing.

Additional information can be found in FSA9101, Dealing with Skunks and Odor Abatement.

<https://www.uaex.edu/publications/PDF/FSA-9101.pdf>

Buckeye Blotch a Disease of Horse Chestnut and Buckeye Trees

Sherrie E. Smith

Buckeye Blotch, caused by the fungus *Guignardia aseculi*, is more a cosmetic problem in Horse chestnut and Buckeye trees, than a seriously damaging disease. Reddish brown lesions with bright yellow halos enlarge to blight large portions of the leaves. Leaves look scorched and become dry, brittle, curled, and fall prematurely from the tree. Tiny pimple-like fruiting bodies of the fungus may be observed with a hand lens in the blighted portions of the leaves. Wet conditions exacerbate the problem, producing multiple cycles of infection. Control begins at budbreak as new leaves are starting to emerge. A fungicide containing chlorothalonil or Mancozeb may be used, with repeat applications at 10-14 day intervals. Practice good cultural practices by cleaning up all fallen leaves and avoiding overhead irrigation.

Buckeye Blotch



Photo by Sherrie Smith

Buckeye Blotch



Photo by Sherrie Smith

University of Arkansas, United States Department of Agriculture and County Governments Cooperating.

The Arkansas Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, religion, gender, age, disability, marital or veteran status, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

The mention of any commercial product in this publication does not imply its endorsement by the University of Arkansas Cooperative Extension Service over other products not named, nor does the omission imply that they are not satisfactory.

Name That Weed

Tommy Butts



This month's Weed Science contest is "Name that Weed". This weed (Picture 1 & 2) is an erect annual plant that is often found in moist soil, shallow water, and cultivated areas, especially rice fields. It is part of the Fabaceae (Bean) family, and therefore, is a legume which can fix its own nitrogen. These weeds have a primary taproot with fibrous roots off of it. The plant has ovate cotyledons, and only compound, alternate leaves. After flowering, a segmented legume pod forms containing the weed seeds (Picture 3). Additionally, the leaflets can be touch sensitive, folding in-ward when touched.

There are multiple methods for management of this weed. Cultivation has shown to be an effective mechanical control measure to reduce weed densities. Numerous herbicides, including preemergence and postemergence options, can be used as a chemical control. These herbicides include: ALS-inhibitors (League, Grasp, Strada, etc.), growth regulators (Loyant, 2,4-D, Facet, Grandstand), and other herbicides like Valor and Liberty. There is also a biological control (fungus, Lockdown) that is effective at controlling this weed species.

Be the first to email me at tbutts@uaex.edu with the correct common name and win a prize!



Picture 1



Picture 2



Picture 3

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

University of Arkansas, United States Department of Agriculture and County Governments Cooperating.

The Arkansas Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, religion, gender, age, disability, marital or veteran status, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

The mention of any commercial product in this publication does not imply its endorsement by the University of Arkansas Cooperative Extension Service over other products not named, nor does the omission imply that they are not satisfactory.