DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System

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
Sherrie E. Smith, Plant Pathology Instructor, Plant Health Clinic Diagnostician

Letter #5 **September 30, 2020**

Stopping Occasional Arthropod Invaders

John D. Hopkins

When the weather begins to change in the fall and things get cooler, arthropod pests like the multi-colored Asian lady beetle, the boxelder bug, crickets, various stinkbugs, or spiders are just some of the pest problems that homeowners may have to deal with. The first thing most people think of when trying to prevent a pest problem is WHAT INSECTICIDE DO I SPRAY? However, there are other measures that should be taken that will help prevent these pests from entering your home and may even eliminate the need for an insecticide application. Pest proofing your home is the **BEST** way to prevent unwanted invaders at this time **or any other time of year**. Your goal is to prevent pest entry and eliminate conditions that are conducive to pest infestation. Here are the ABC's of pest proofing your home:

A. Ensure that screens on doors and windows are properly installed and maintained. If you don't have screen doors on your home, install them. Any damaged screens should be repaired or replaced. Fine mesh screening will prevent all but the tiniest insects from entering your home.

B. Doors should seal properly. If air can pass through or light can be seen through cracks around doors then insects or spiders can get in. Install tight-fitting thresholds and door sweeps to the bottoms of exterior doors and use door seals to fill the gap around the sides and top of each door.

C. Cracks in the foundation, exterior walls, and fascia boards should be repaired. Arthropod invaders use these cracks in to gain entrance to your home. Carefully inspect the exterior of your home and use your favorite caulk or silicone sealant to fill any cracks that are found.

D. Gaps around utility lines entering the home and gaps around appliance vents should be eliminated. Just like cracks in the foundation, any gaps around dryer vents, gas lines, telephone lines, etc. should be filled. If gaps are too large for caulk, spray foam products may be helpful. Also, if holes are required for ventilation (weep holes in brick veneer) copper gauze may be used to block pest entry while still allowing for air flow. Steel wool is not recommended if conditions for rust exist.

E. Varmint-proof wire or metal mesh should be installed on attic vents and crawl space vents. Rats, mice, bats, skunks, raccoons, squirrels, birds and a myriad of other creatures may make themselves at home in attics or crawl spaces if you don't install barriers to keep them out. These animals may carry fleas, mites, or create conditions favorable for other pests that may then infest your home.

F. Moisture sources should be eliminated by fixing any leaks. Most insect pests require a certain amount of humidity to survive and any source of moisture can be attractive to them. Promptly repair all plumbing leaks and remember, even condensation on pipes can drip and create conducive conditions for infestation. Make use of dehumidifiers if necessary. Basements or crawl spaces that flood during heavy rains should be equipped with a proper ventilation and drainage system.

G. Sanitation is extremely important so keep the kitchen clean. Where food and water is readily available, certain types of pests will make themselves at home. Make every effort to keep your kitchen clean. Wipe, sweep, and vacuum surfaces as required, and clean up spills immediately. Don't leave dirty dishes in the sink overnight. Toasters and microwave ovens should be cleaned out regularly and be sure to scrub down your stovetop daily. Properly dispose of food scraps and packaging.

H. Sealable containers should be used for food storage. Sealed storage containers not only prevent pest entry, but also prevent cross contamination of other food stuffs if the original product happened to be already infested. Items like cereals, grains, dry beans, rice, and other pantry items should be disposed of immediately upon first sign of infestation. Non-perishable items should be stored in air tight containers while perishables should be stored under refrigeration or frozen.

I. Eliminate clutter. Cluttered home environments provide easily accessible sites for pests to hide and harbor. Dirty laundry should be kept in clothes hampers and laundered promptly. Floors should be kept clear of belongings and items should be properly put away when no longer in use (preferably in sealable plastic storage containers. Recyclable items should be rinsed and recycled promptly. Beverage cans and bottles, milk jugs, pet food cans, etc. will all attract insects if they are not rinsed out thoroughly.

J. Clean up after your pets. Some pests like dry pet food so store your pet’s food in an air tight container. Do not leave extra pet food exposed and accessible except at feeding time and clean your pet's food dishes regularly. Other pests like flies are attracted to pet waste so clean your cat's litter box daily. Also, wash pet bedding on a regular basis.

K. Frequent removal of household garbage is a necessity. Even before you can smell it, it is attractive to pests so remove household garbage often. Line waste bins with plastic garbage bags and secure the bags tightly before taking them to outdoor garbage containers. Outdoor containers should not be located near entryways and regular scheduled pick up and removal should be arranged.

L. Clean trash bins as needed. Sometimes plastic liners or garbage bags tear and spills occur inside garbage cans. At least several times a year, clean the inside of garbage containers with soap and water or a mild bleach solution to eliminate smells and sticky substances that may attract pests. As before, outdoor garbage containers should not be kept close to the house.

M. Do not allow trees and shrubs to contact the house. Trees and shrubs in contact with the roof or outside walls of your home can serve as a bridge to allow pests to gain access to your home. Keep shrubs and tree branches pruned away from the home.

If the above listed maintenance and sanitation guidelines are carried out, pests will be discouraged or prevented from invading in the first place.

However, if nuisance pests do get inside:

In large numbers,

1. They can be vacuumed up and the vacuum bag can be discarded outside.
2. Line vacuum hose with a stocking and insects will be conveniently bagged.
3. NO INSECTICIDE RECOMMENDED! If an insecticide is used, many insects will die in inaccessible places making clean up impossible and these dead insects will serve as a food source for other pest insects like dermestid beetles.

In low numbers or individually

1. Pests can be swept up and removed, or
2. Treated with an over the counter aerosol insecticide and removed.
3. Over the counter residual insecticides labeled for crack & crevice and/or surface treatment may also provide relief (Low numbers only)

The use of residual insecticides labeled for perimeter application can also help provide a barrier to prevent nuisance insect pest/spider entry.

Pest proofing or preventing nuisance pests from gaining entry in the first place is the **BEST** strategy for stopping problem pests from invading your home whether it is in the fall or any other time of year.

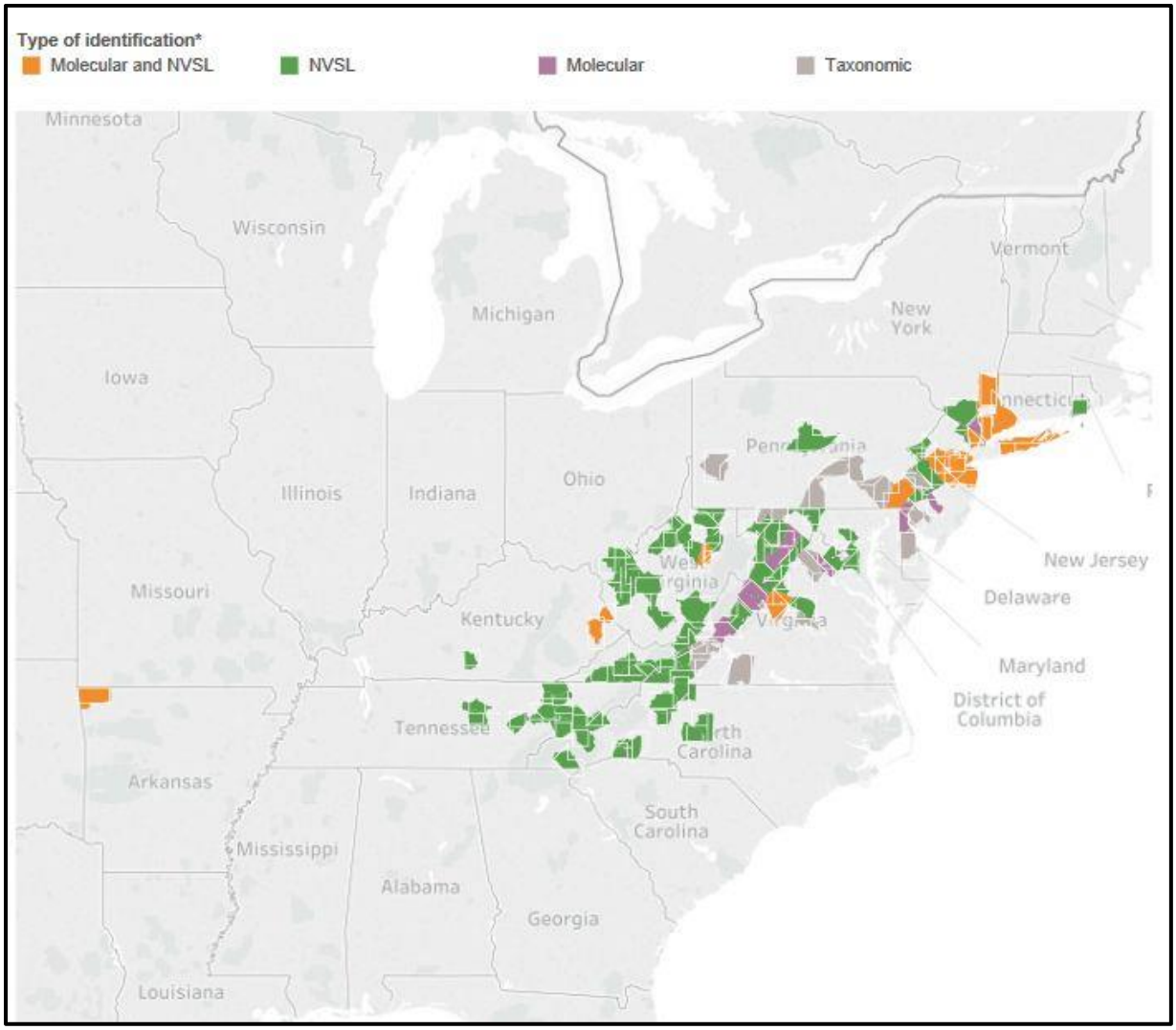
You should realize that achieving a totally arthropod free home is not practical. Entomologists from North Carolina State University have found that we share our homes with more than 500 different kinds of arthropods (insects, spiders, mites, and others). Click on the link below for some interesting information from “Entomology Today,” an online publication from the Entomological Society of America.

https://entomologytoday.org/2016/01/19/researchers-find-hundreds-of-arthropod-species-in-u-s-homes/

Asian Longhorned Tick Update

Kelly Loftin

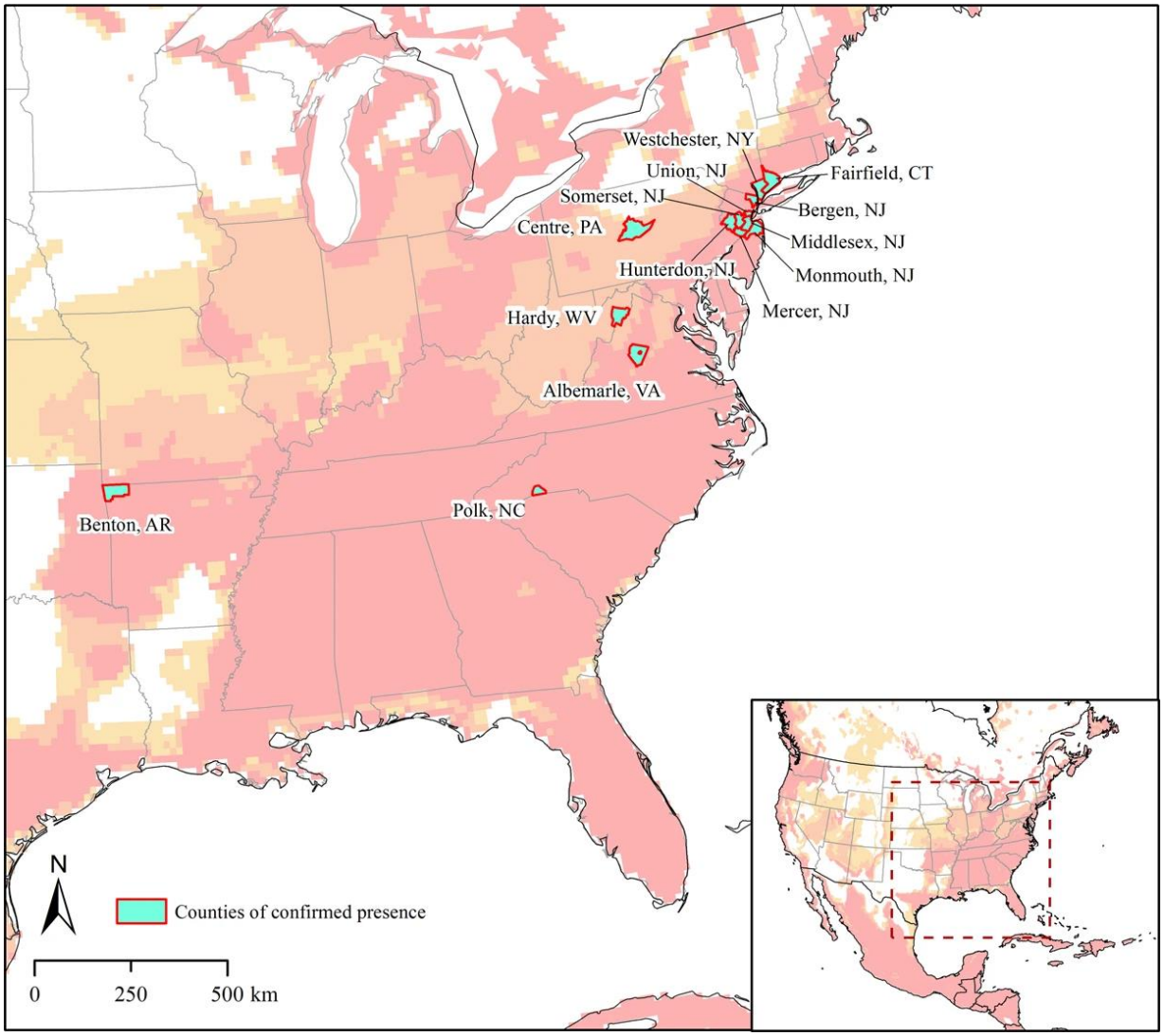
The Asian longhorned tick (ALT), *Haemaphysalis longicornis*, was first confirmed in the United States after being collected from sheep in New Jersey in 2017. Since the fall of 2017, this invasive tick has been collected in thirteen additional states including Arkansas. The ALT is native to Eastern Asia and has established in Australia and New Zealand to become a major livestock pest. Although the exact mode and time of its introduction into the U.S. is unknown, it has been intercepted at U.S. ports of entry on imported animals.



Current confirmed Asian longhorned tick (ALT) infestations in the U.S. Source: National *Haemaphysalis longicornis* Situation Report, USDA, APHIS, Sept. 14, 2020.

To date in Arkansas, the Asian longhorned tick (ALT) has only been confirmed in Benton County. The first tick was a nymph and found attached to dog in June, 2018; roughly a year later another immature ALT was collected from the environment at the same premise. During the spring of 2020, we conducted fairly intensive sampling in NW Arkansas, resulting in no new confirmations. We are

continuing less intensive monthly sampling and will keep you posted on the outcome. In some of the eastern states infested with ALT, prevalence is greater and at densities causing concern in livestock production. Prevalence in eastern states and modeling of the predicted ALT range strongly indicate that continued sampling efforts are necessary. The potential U.S. range of ALT as predicted by Rahnavan et. al. (2019 - Raghavan, R.K., Barker, S.C., Cobos, M.E. et al. Potential Spatial Distribution of the Newly Introduced Long-horned Tick, *Haemaphysalis longicornis* in North America. Sci Rep 9, 498 (2019). https://doi.org/10.1038/s41598-018-37205-2) suggest that the ALT can establish in the SE U.S. (including Arkansas), the Pacific Northwest and Central and Southern Mexico.



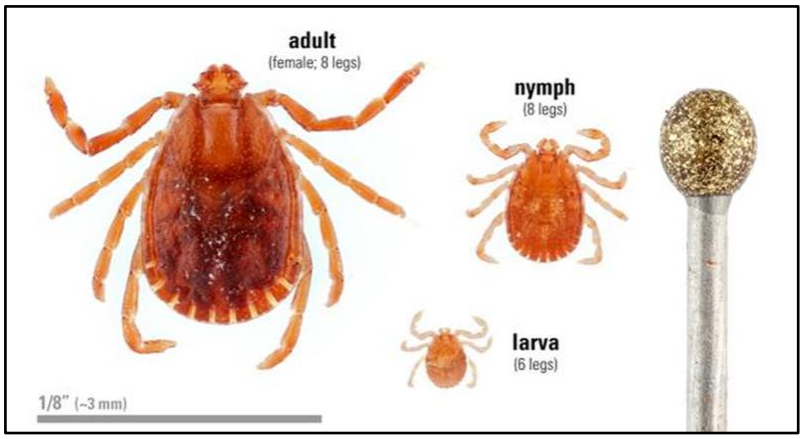
Potential Asian longhorned tick (ALT) Range. Source: Raghavan, R.K., Barker, S.C., Cobos, M.E. *et al.* Potential Spatial Distribution of the Newly Introduced Long-horned Tick, *Haemaphysalis longicornis* in North America. *Sci Rep* 9, 498 (2019). https://doi.org/10.1038/s41598-018-37205-2. Darker colors indicate a stronger agreement with models.

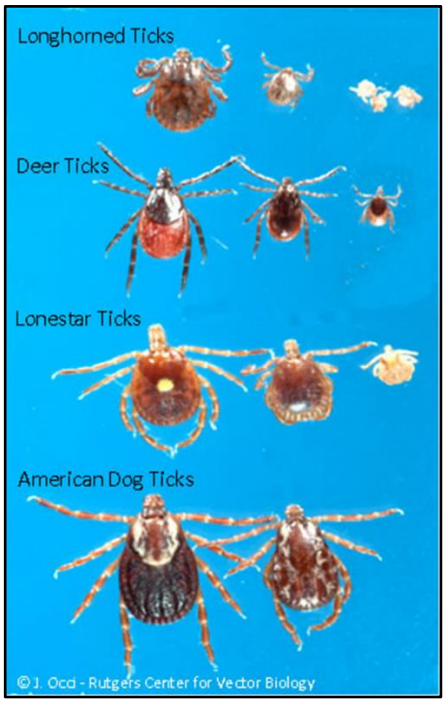
The ALT's unique reproduction and potential role as a vector of disease are the main causes of concern. ALTs can reproduce parthenogenetically (without a male) – meaning a single blood-fed adult female can create a new population of ticks. Because of its mode of reproduction, population

density can become very high. In addition, it is known to feed on a wide variety of host animals. In the U.S. it has been found attached to 24 wild and domestic mammal and bird species. Viral, bacterial and protozoan agents of livestock and human disease are known or suspected of being transmitted by this tick. Like most Arkansas ticks, the ALT is a three-host tick meaning it can acquire a disease from an infected animal then potentially transmit the agent to an uninfected animal during its next stage and subsequent feeding.

Although the ALT has been in the U.S. for only three years, evidence is suggesting it may become a very significant livestock pest. For example, cattle deaths from a hemoprotozoan infection recently occurred in Virginia on a farm infested with the ALT. Further investigation revealed ALTs infected with the ikeda genotype of *Theileria orientalis*. Prior to this discovery and the establishment of the ALT, this genotype of *T. orientalis* was unknown to the U.S. The primary vector of this blood parasite in New Zealand and Australia is the ALT. Subsequent follow up studies on the specific farm results in the collection of ALTs carrying this disease agent. Follow up disease transmission studies are underway to confirm ALTs roles in transmission of the ikeda genotype of *T. orientalis*.

ALTs are smaller than lone star ticks*, Amblyomma americanum* and similar in size to blacklegged ticks, *Ixodes scapularis*. In addition, its head (capitulum) is shorter and more angled than that of our common ticks. It strongly resembles the rabbit tick, *Haemaphysalis leporispalustris*, which is infrequently encountered. If you see a unique looking tick that you have never encountered or one resembling the ALT, please collect and preserve the tick so that we can identify it.





Larva, nymph and adult ALT (left) (Image by Matt Bertone, North Carolina State University) and comparison of ALT to common native ticks (right) (Image by J. Occi, Rutgers Center for Vector Biology).

For updates information on ALTs and distribution visit (updated monthly): https://www.aphis.usda.gov/animal_health/animal_diseases/tick/downloads/longhorned-tick-sitrep.pdf.

Pickleworm and Melonworms in Arkansas Cucurbit Crops

Aaron Cato

Following mild winters, we expect to see increased risk of tropical pests that are known to move north throughout the summer. This risk is usually greater in the southern portion of Arkansas, but with active flyers like moths, it often means we get infestations throughout the state. Pickleworm and melonworm are two closely related species that often pose a high risk to Arkansas cucurbits grown in the early Fall. Most growers in Arkansas could tell you a story about a year that they saw significant losses from a “melon”, “rind”, or “pumpkin” worm, but these occasional tropical pests are difficult to prepare for on a yearly basis. Considering that we have already gotten calls from South Arkansas where pickle worm is damaging summer squash, and that we’ve observed melonworm in Western Arkansas, growers and agents need to be on the lookout for these pests.

Pickleworm

Pickleworm, *Diaphania nitidalis,* can damage a wide variety of cucurbit crops but prefers summer squash, winter squash, and some pumpkins. This pest has also been known to damage cucumber and cantaloupe, although they are not preferred. Pickleworm larva feed on the blossoms of these crops but will often move from blossoms to tunnel inside of fruit (Picture 1). Tunneling from the larva makes fruit unmarketable and can also lead to secondary disease infections. Larva will also feed on the rind of some non-preferred hosts such as cantaloupe.

Pickle worm is incredibly difficult to scout before damage is observed as moths are small, lay hard to find eggs at night, and are not attracted to light (Picture 2). When considering that this is an occasional pest, a sound IPM plan for this pest is difficult to achieve. Pickleworm larva are killed by a variety of pesticides such as pyrethroids (Bifenthrin, Mustang Maxx, etc.) which are commonly used for other pests. The issue comes with timing pyrethroid sprays to kill young pickle worm larvae before they move inside of flowers or fruit. Selective products such as the spinosyns (Radiant or Entrust), diamides (Coragen, etc.) or insect growth regulators (Intrepid) will do a better job with control and provide increased residual.

Melonworm

Melonworm, *Diaphania hyalinata,* also only feeds on cucurbits but primarily feeds on the foliage of the plant. Larvae are often found in rolled up leaves where they spin silk to create a small shelter (Picture 3), and moths are easily identifiable by their distinct coloration and can be observed flying throughout the morning (Picture 4). Damage from this species is easy to identify by the presence of untouched leaf veins with the foliage eaten between. Melonworm is considered only a minor pest in Arkansas because it rarely gets to exceptionally damaging levels on pumpkins early in their development. However, following mild winters they can still be a large issue in late squash or other cucurbit crops. Melonworm is controlled by pyrethroids (Bifenthrin, Mustang Maxx, etc.), spinosyns (Radiant or Entrust), diamides (Coragen, etc.), or insect growth regulators (Intrepid).

Management of Pickleworm and Melonworm

Pickleworm is known to cause large levels of damage to pumpkins and late squash crops in Arkansas. Growers should always be on the lookout for this pest when we get into August and should pull the trigger on pesticides as soon as damage to flowers are observed or if other growers are

finding this pest within the state. Pyrethroids used for cucumber beetles or squash bugs will provide control but the timing must be right, and applications need to be at least every 5-7 days. Selective products such as Coragen are preferred because they will not flare aphids and they provide 14 or more days of residual. We've seen many growers in the state try to use pyrethroids to manage pickleworm and be very disappointed with results. They are often forced to swap to diamides to try to cleanup infestations. Melonworm is much easier to manage and control may not be warranted when infestations occur in mature pumpkins crops where loss of some foliage won't hinder fruit production. Checkout the Southeast vegetable guide https://content.ces.ncsu.edu/southeastern-us-vegetable-crop-handbook and the MP144 for product recommendation.

Give me a call at acato@uaex.edu, 479-249-7352 if you think you have either of these pests or if you have any questions at all.

Picture 1. Pickle worm larva feeding on pumpkin. Photograph by Thomas Kuhar.

Picture 2. Pickleworm moth. Photograph by John L. Capinera, University of Florida.

Picture 3. Melonworm larva observed at Kibler, AR.

Picture 4. Melonworm moth observed in Kibler, AR.

Cabbage Black Rot

Sherrie Smith

Cabbage Black Rot

Gerald Holmes, California Polytechnic State University at San Luis Obispo, Bugwood.org

Cabbage Black rot caused by *Xanthomonas campestris* pv. *campestris* is one of the most damaging diseases of crucifers wherever they are grown. Susceptible hosts include broccoli, Brussels sprouts, cabbage, cauliflower, kale, rutabaga and turnip, as well as weeds in the cruciferous family such as shepherd's purse and wild mustard. Yield and quality losses may be high when environmental conditions are conducive for disease development. On seedlings, cotyledons may turn black and drop off. Lesions appear on leaves as yellow, V-shaped spots along the leaf edge, with the base of the V usually directed along a vein. As the lesions expand, the tissue wilts and becomes necrotic. The infection may move up or down the petiole and spread through the stem into the roots. The veins of infected leaves, stems, petioles, and roots become black as the bacterium multiplies and shuts off the flow of nutrients to plant parts. When affected stems are cut crosswise, the vascular ring appears black. Yellow bacterial ooze may exude from cut tissues. The use of clean seed is important in preventing the disease. Seedling rates should not be too high as the dense foliage aids in disease development. Sprinkler irrigation should be avoided. Fields should only be worked when the foliage is dry. Transplants or seed should not be grown in a spot that has been in crucifers the last 3 years. Plants with visible symptoms should be pulled up and removed from the vicinity of the field. Deep plowing helps break down crop residue faster and should be practiced where practical.

Cabbage Black Rot

Photo courtesy of Alyssa Hughes

Cabbage Black Rot

Photo by Sherrie Smith

What Weed Is It?

Tommy Butts

This month's Weed Science contest is What Weed Is It? This weed is an erect, branching annual weed that can be found in prairies, pastures, dry ditches, fields, roadsides, and other open, sandy, disturbed areas (Pictures 1, 2, and 3). Although found in numerous areas, it is most commonly a problem in overgrazed pastures. This weed is a part of the Euphorbiaceae (spurge) family of plants. This weed can grow up to 3 feet tall (typically only about 1.5-foot-tall) with stems and leaves densely covered in hairs (Picture 2). Leaves tend to be lance-shaped, may have a wavy margin, and are alternately arranged (Picture 1). The dense hairs on this weed often provide the plant with a white, fuzzy appearance (Picture 2 and 3). This weed species produces a small spherical capsule in which each capsule contains 3 circular or oblong seeds. In larger quantities, this weed can be toxic to cattle especially if fed in hay; however, in a pasture, cattle tend to avoid this plant. An alternative name for this weed (although it is not the WSSA approved common name) may remind you of Harry Potter's School of Witchcraft and Wizardry. All pictures were taken in Lonoke County.

Control of this weed should occur in May or early June when it is small and actively growing. Herbicides such as 2,4-D, picloram (Grazon), dicamba, or metsulfuron (Ally or Cimarron) are extremely effective at controlling this weed species. However, the most effective, long-term approach to managing this weed is to implement a rotational grazing strategy and improve the grass establishment of the pasture.

Be the first to email me at tbutts@uaex.edu with the correct (WSSA-approved) 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

---