

Pest Management News

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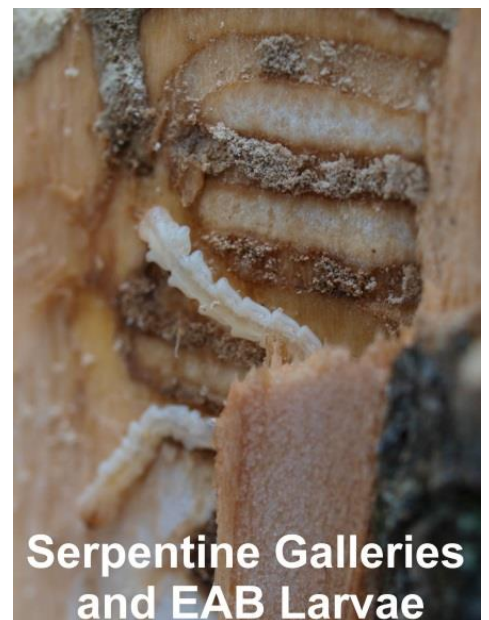
Letter #3

July 31, 2014

Arkansas State Plant Board Confirms Emerald Ash Borer in Three More Arkansas Counties

John D. Hopkins

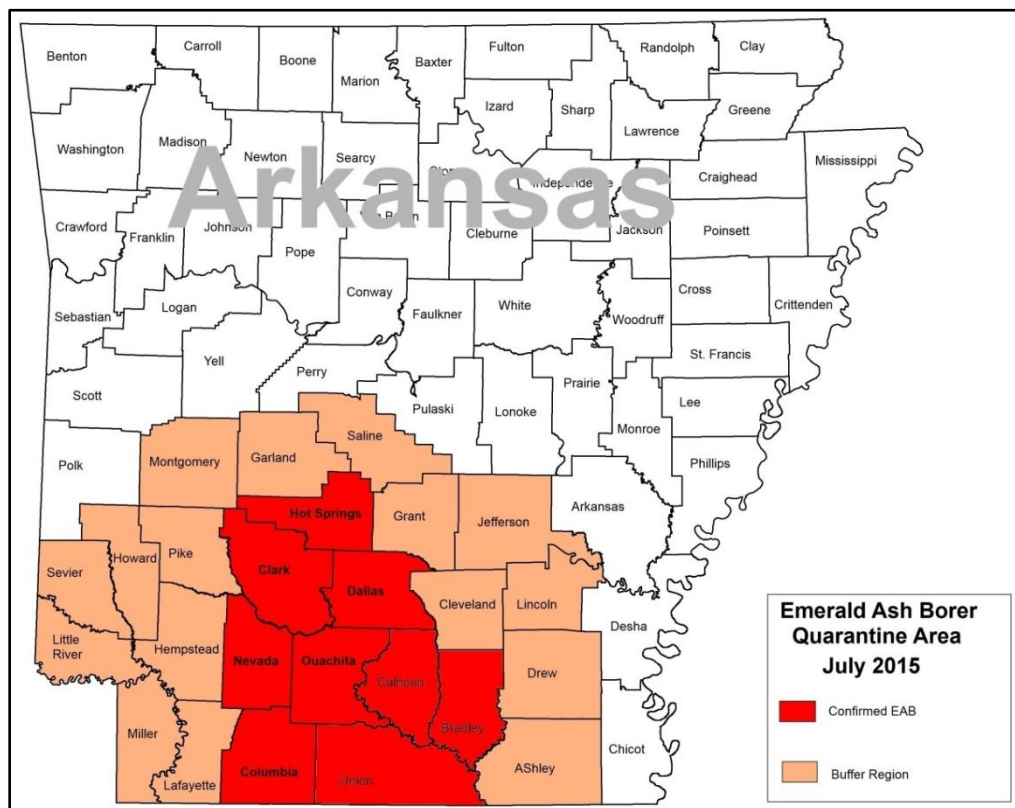
The Arkansas State Plant Board has confirmed that the emerald ash borer (EAB), *Agrilus planipennis*, an invasive pest of ash trees (*Fraxinus* spp.) has been confirmed from three more Arkansas counties (Calhoun, Union, and Bradley). EAB was first confirmed in the state last summer from Hot Spring, Clark, Dallas, Nevada, Ouachita, and Columbia Counties. USDA-APHIS-PPQ and the Arkansas State Plant Board continue to monitor for the presence of this pest in Arkansas with purple prism traps baited with lures that are attractive to the EAB.



Ash with Dying Crown Due to EAB Infestation



Purple Prism Trap

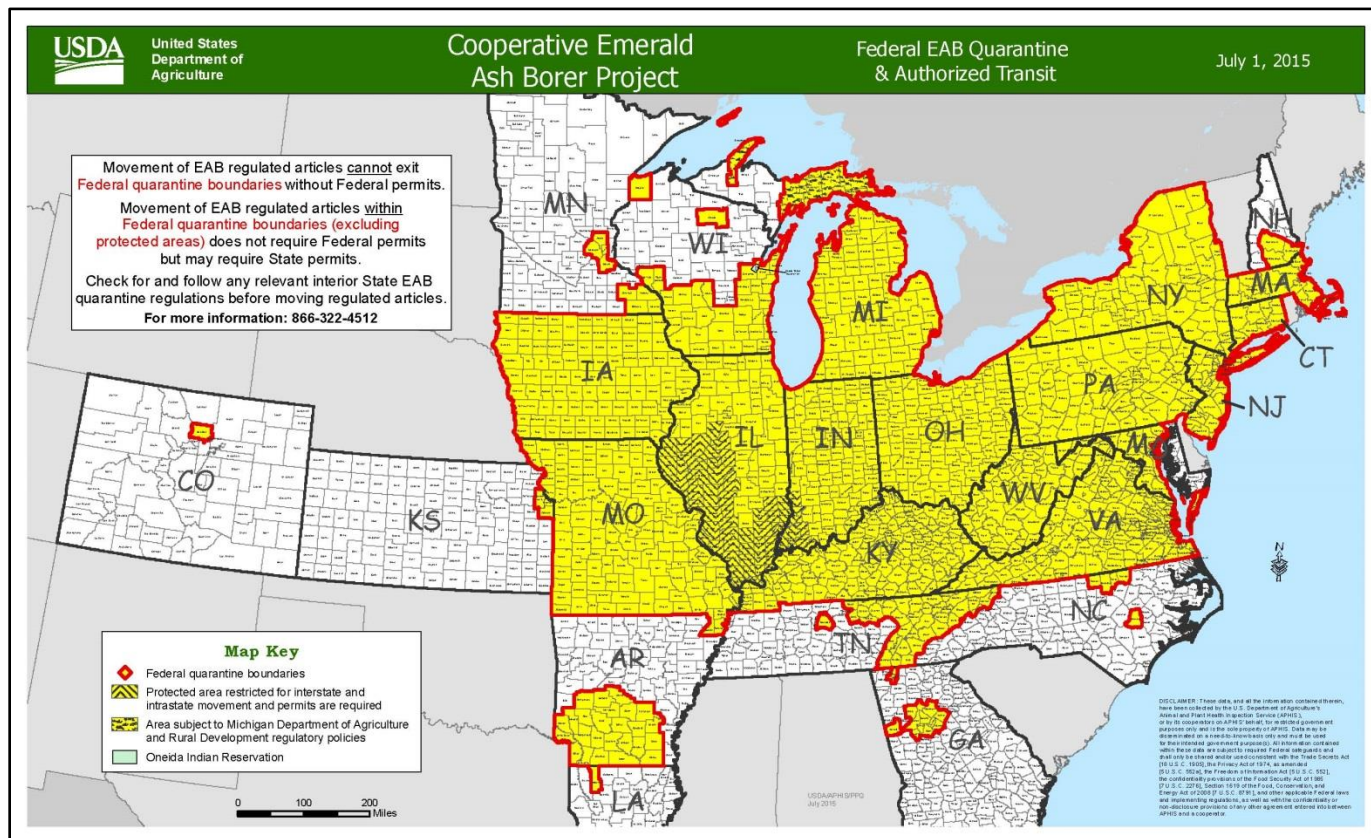


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This pest was first identified in the U.S. in 2002 from affected ash trees in southeast Michigan (Detroit area). The original source of the invading EAB, while still uncertain, was likely Asia where it is a native species. It is most likely that the pest was imported in wood packing material. The Federal EAB Quarantine area (as of July 1, 2015) can be seen in the map below.



The FactSheet FSA7066 “Emerald Ash Borer: An Invasive Pest of Ash Trees in Arkansas” provides information on EAB identification, biology, and ash tree symptoms. The publication can be accessed by clicking on the following link: <http://www.uaex.edu/publications/PDF/FSA-7066.pdf>.

Additional information about the EAB in Arkansas can be found at: <http://www.arinvasives.org/potential-invaders-of-arkansas/emerald-ash-borer/> and at: <http://www.uaex.edu/environment-nature/default.aspx>.

Why are we concerned about this pest? **!!! EAB KILLS ASH TREES !!!** Within 2 years of observing symptoms, most of the crown of an infested tree will be dead. Complete tree death typically occurs within 5 years, but may take as few as 2-3 years.

In Arkansas, ash makes up only 2.5% of the total forest composition (5-7% of total composition in Delta forests) but ash trees also provide shade and aesthetic beauty in public and private landscapes where the loss of these trees will cost homeowners, cities, and municipalities thousands of dollars. Ash is used in the sawtimber and pulpwood markets. Landowners might not be able to sell their resources outside of any quarantine area. Landowners who have planted ash as part of a conservation program may not see any returns from their investment and in fact, may incur the costs

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of removing ash from their property. And most importantly, the possibility exists that all ash species may disappear from our forest ecosystems. We lost our native chestnut trees to an exotic disease back in the 1960's. We could very well lose our native ashes from our forests for the foreseeable future.

There are no effective means to protect or save trees from the EAB in a forest environment. The best option for most ash trees is to quickly detect the presence of EAB in new areas and destroy affected tree materials. Cut down dead and dying ash trees and chip, burn, or bury the wood on the site, in accordance with all local regulations, to reduce the chance of other trees being attacked. Details of the Arkansas State Plant Board's Emerald Ash Borer Quarantine may be viewed at the following link (<http://plantboard.arkansas.gov/PlantIndustry/Documents/EAB%20Emergency%20Quarantine.pdf>).

Insecticide options are available for those wishing to protect high-value ornamental trees, an option which is not recommended until the beetle is known to be present within 15 miles. If a tree is already infested and if over half the crown is alive, systemic insecticides applied as soil drenches/injections, trunk injections, or trunk sprays, may be used to help trees recover. Bark and canopy sprays with pyrethroids or carbaryl may also be beneficial in controlling adults during their flight season from early April to late September. Recovery is slow and improvement in tree health might not be noticeable for one to two years. Re-treatment must take place every one to two years.

The USDA is investigating various native and imported exotic biological control measures (parasitic wasps) but success in this area would likely provide results only in the long term.

How can you help stop the Emerald Ash Borer?

- Never Move Firewood - <http://www.dontmovefirewood.org/>.
- Burn It Where You Buy It
- Report Beetle Sightings or Signs of Infestation to the Arkansas State Plant Board (501-225-1598), your local Cooperative Extension Office, or your local forester.

Additional information about the Emerald Ash Borer can be obtained from the National EAB Information Website: <http://www.emeraldashborer.info/#sthash.5Qe2Pwpv.dpbs>.

EPA Proposes to Cancel Certain Uses of Propoxur

John D. Hopkins

In a news release dated July 1, 2015, the U.S. Environmental Protection Agency (EPA) is proposing to cancel certain uses of the insecticide propoxur after preliminary human health assessment found risks from certain applications.

The EPA, from 1995 to 2013, has imposed regulations that reduced exposure from carbamates, the class of insecticide that includes propoxur. As a result, the use of carbamates has fallen by 70 percent.



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EPA and the registrant reached an agreement to voluntarily cancel certain uses of propoxur. At the same time, EPA is proposing to cancel certain other pesticide registrations. EPA is proposing to cancel all indoor aerosol, spray and liquid formulations of propoxur inside hospitals and other commercial or institutional facilities where children may be present, and all use in food-handling establishments.

After these cancellations, there would be no remaining food uses, and no tolerance levels for propoxur. In 2007, EPA canceled the use of propoxur sprays inside homes, day care facilities and schools, and in 2014, EPA canceled propoxur pet collars. The action taken July 1 was conducted as part of the agency's registration review program.

The EPA is requesting a 30-day comment period that will begin upon publication in the Federal Register at [Regulations.gov](http://www.regulations.gov) and searching for EPA-HQ-OPP-2015-0296.

EPA is posting a pre-publication copy at www2.epa.gov/safepestcontrol/proposed-cancellation-certain-uses-propoxur. Persons other than registrants will generally be allowed to sell, distribute, or use existing stocks of the affected products until such stocks are exhausted, provided that such sale, distribution, or use is consistent with the terms of the previously approved labeling on, or that accompanied, the canceled product.

Products, with propoxur as the active ingredient, that are still registered by the Arkansas State Plant Board for use in Arkansas can be accessed at the following link (<http://170.94.200.136/prodreg/>).

Face Flies

Kelly M. Loftin

We are still receiving a few calls on face flies, *Musca autumnalis*. Their abundance began increasing in late May. In June and July, populations reached treatment levels in many areas of the northern half of Arkansas. In Arkansas, face flies do not reach the abundance to cause economic concerns every year. The period of peak abundance also varies significantly. Face fly abundance can spike as early as June or as late as the early August. With a few exceptions, we are noting a population decline which should continue through the remainder of the season.

In general, face flies are more of a concern in the northern half of Arkansas than the south. These flies are economically important as an annoyance to cattle and horses. When face fly abundance is high, grazing may be disrupted resulting in weight and milk production losses. In addition, they can be vectors of *Moraxella bovis*, a principal cause of pinkeye and are implicated in the transmission of the eyeworm (*Thelazia* sp.) in cattle.

Like several important insects, face flies are an introduced pest. Most likely they were introduced into Nova Scotia from Europe in the early 1950's and began spreading. By the early to mid-1970s, face flies were common in parts of Arkansas. Although face flies are not a major pest in Arkansas every year, they are major pests in the north and northeastern U.S.

Face flies are found primarily on the face, neck and head of cattle and horses. Unlike the horn flies (*Haematobia irritans*) that feed on blood, face flies are non-blood feeders similar to house flies (*Musca domestica*). Instead of blood feeding, they feed using their sponging mouthparts on mucous secretions found around the eyes, nose, mouth and wounds. Nearly all face flies that are found on the

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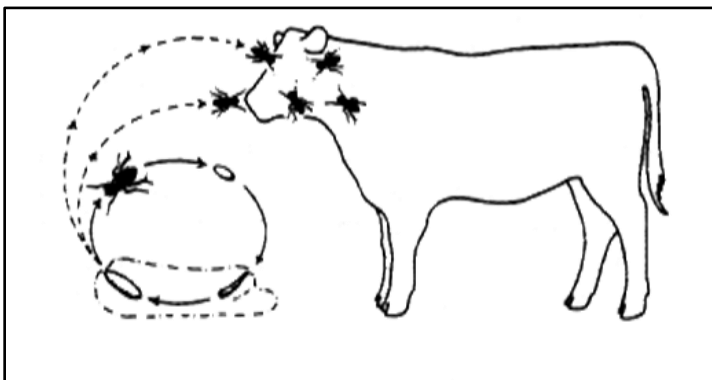
animal are female. This is because only females feed on the animal to consume the rich protein secretions necessary for their egg production. Male face flies primarily feed on nectar. It has been estimated that only about 4% of the face fly population is on the animal at any given time. In appearance, face flies are very similar to house flies except about 20% larger. Adult activity begins in early spring and ends in late autumn.



Face flies feeding on eye secretions around the eyes of a calf. Photo by Clemson University CES.



Face flies (~30) feeding around the eye of a horse. Photo taken mid-July 2015.



Face fly life cycle.

In some ways, the face fly life cycle is like the horn fly life cycle. One key similarity to the horn fly, is that the face fly will only lay eggs in fresh cattle manure. It takes about 6 to 12 days, for a newly deposited egg to become a fully mature larva (maggot). The fully mature larva transforms into a pupa under the manure pat. Then, from 6 to 11 days later, an adult fly emerges from the pupa. During optimum conditions, it takes from 12 to 23 days for an egg to develop into an adult fly. Unlike horn flies that overwinter as pupae in the soil, face flies overwinter as adults in protected areas such as barns, outbuildings, lofts and attics. During warm spells in winter months, face flies can become household pests as they become active from brief warm-ups.

When an average of ten flies per face occurs in the herd, economic loss can occur. When monitoring face flies, count the number of flies on the face of 10-15 animals. If average number per animal begins to approach ten flies per face, treatment is warranted. Face flies can be difficult to control for

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three reasons. First, they are primarily found on the animal's face, which is an area that is often difficult to treat. Second, only a very small percentage of the population is found on the host at any given time. Last, face flies are intermittent feeders, spending very little time on the animal. With that in mind and when using traditional insecticides, frequent application is often necessary. In the northeastern U.S., dairy producers may install automated face misters/sprayers at the milking barn exit to apply pyrethrins and sometimes pyrethroid insecticides to the cow's face. Fortunately for us, our populations do not normally reach this extreme abundance. In terms of self-treatment, forced-use back rubbers equipped with fly flips charged with a pyrethroid such as permethrin are effective. A few of the insecticide impregnated ear tags cattle such as Cygard®, Python®, GardStar® plus and a few others can provide control. Because face flies only develop in cattle manure, feed-through larvicides/IGRs (insect growth regulators) such as ClariFly® will prevent new flies from emerging. Products registered for use against insect pests of cattle are listed in the 2015 Insecticide Recommendations for Arkansas (<http://www.uaex.edu/publications/mp-144.aspx>).

In horses, economic thresholds are not widely established partially because they are companion animals and often more bothered by their presence. The horse pictured above definitely needs relief from the face flies (the picture was taken after she rubbed off her fly mask). Two effective control options for horses include the use of fly masks and wiping on synergized permethrin pour-on. For example, pour-on products such as Permethrin CDC, Buzz Off Pour-on and Martin's Fly Ban Pour-on wiped on the face are effective (avoiding wiping it into the eyes). Roll-on insecticides (such as Endure Roll-On for Horses, Flysect Face Repellent Roll-On and others also provide relief. Products registered for use against insect pests of horses are listed in the 2015 Insecticide Recommendations for Arkansas (<http://www.uaex.edu/publications/mp-144.aspx>).

Forage Update

Kelly M. Loftin

Fall Armyworms

We continue receiving calls about fall armyworms in pastures and hay meadows. In some cases, the worms were ready to pupate and a large portion of the field wiped out by the time the infestation was noticed. Although many of the calls are coming in from the south and southwest part of the state, now is the time of year we can expect to see fall armyworm issues in any part of the state. Please encourage your hay producers to scout for fall armyworms. It is important to note whether the worms are of uniform size or of mixed (small, medium and large) sizes. If worms are abundant and of mixed sizes, overlapping generations are likely present and indicate that egg laying can occur more frequently. When overlapping generations are suspected and the treatment threshold has been reached (3 per square foot), producers should strongly consider trying products with longer residual control.

Please refer to last month's issue of Pest Management News and the 2015 Insecticides Recommendations for Arkansas (<http://www.uaex.edu/publications/mp-144.aspx>), for more information on scouting, management and product selection. Additional information on armyworm biology and management can be found in "Managing Armyworms in Pastures and Hayfields" at <http://www.uaex.edu/publications/PDF/FSA-7083.pdf>.

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Bermudagrass Stem Maggot

Within the last couple of weeks, I've received a couple of calls about bermudagrass stem maggots. Because now is a peak period for bermuda hay production and bermudagrass stem maggot abundance, we are republishing an article from last year's Pest Management News (see below). Please email Kelly Loftin (kloftin@uaex.edu) if you notice bermudagrass stem maggots in your county or have questions about this pest. Feel free to include pictures of the infested field(s).

As you may recall from previous Pest Management Newsletter articles, this potential pest is a native of south Asia. 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. Much of the information provided below appeared in last year's Pest Management Newsletter, however, timing of the insecticide applications have been slightly modified.

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. 1). Lower leaves remain alive and unaffected by the maggot's feeding. Because of the death of the top couple of leaves, the plant (and field, if heavily infested) may exhibit a frosted appearance (Fig. 2.). The life cycle, from egg to adult, requires about three weeks. 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. Usually by the time the top leaves have died, the maggots have exited the stem and pupated on the ground. With such a short generation period, multiple generations occur and populations tend to increase later in the season causing an accumulation of damage.



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



Fig. 2. Bermudagrass stem maggot damage.

The adult fly is small (~1/8 inch long) and yellow colored with four prominent black spots on the abdomen (Fig. 3). The maggot (larva) is also yellowish colored and about 1/8 inch in length when fully mature (Fig. 4).

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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



Fig. 3. Bermudagrass stem maggot adult. Note the four black spots on its abdomen.



Fig. 4. Bermudagrass stem maggot larvae.

bermudagrass varieties (Tifton 85 and others), 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, lessening population build up. Bermudagrass stem maggots may become an economic pest in finer stemmed varieties (common, Coastal, Alicia and others) 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 appear to influence the amount of damage caused by the bermudagrass stem maggot. Impact on yield is lessened when soil and moisture conditions allow for normal rapid growth. In this situation, loss of a few upper leaves would have little impact on yield. In situations where growth is limited by poor soil conditions or lack of moisture, yield losses are more likely to occur. Researchers believe this is because the slow growth rate allows egg-laying and maggot development to occur earlier and more often in the grass growth cycle. Also, in heavy infestations, regrowth after cutting will be slowed substantially when a greater percentage of stems are damaged.

Management options for the bermudagrass stem maggot include harvesting and in some cases insecticide application. Cutting for hay is usually recommended if significant damage is identified within one week of normal harvest. When damage occurs from one to three weeks after harvest and is substantial, yield may be compromised. In this situation, harvest may be necessary to prevent further

stunting and significant yield loss. Pyrethroid insecticides labeled for use in hay fields appear to be the least expensive and most effective insecticide. These insecticide treatments should be applied from 7 to 10 days after cutting. This treatment interval is important because the grass has resprouted and adults emerging from larvae that pupated at the time of cutting should have emerged and are

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ready to lay eggs. The pyrethroid insecticide application is aimed at the egg-laying adults and less effective once the bermudagrass is thick. This is because the insecticide cannot penetrate the canopy where adults are often found. So far, insecticide applications aimed at maggots developing in the stem have not been effective.

Deer in Gardens and Yards

Becky McPeake

White-tailed deer have adapted to residential areas. As food availability wains in the heat of summer, deer converge on well-fertilized and watered plants in gardens and yards. Besides constructing a 14-foot high fence around your yard, what options are available? Unfortunately, none are 100% effective, but by employing an Integrated Pest Management (IPM) strategy, you can reduce the risk of plant damage. An IPM deer management strategy includes population reduction, repellents, fencing, and vegetation management.

Population reduction. If you are located where deer hunting is permitted near your property, or where an urban deer hunt occurs, invite hunters to remove deer from your property. Having fewer “mouths to feed” reduces your risk.

Repellents. No repellent has proven 100% effective. Their effectiveness depends on many variables which can change seasonally or even daily. Factors include number of sunny days (sunlight chemically breaks down repellents faster), the number or concentration of deer, how hungry deer are, how palatable the plant is, and familiarity with the plant, to name a few. Despite these limitations, using a repellent can be an important tool. Under certain conditions, a repellent might be enough of a deterrent to persuade deer to seek food elsewhere. Always read label directions to make sure the product can be used on the particular plant you are protecting. Some repellents cannot be used on garden produce destined for human consumption.

Fencing. Many fence designs have been researched and some can be very effective, depending on how much money and time you want to invest on construction and maintenance. A flimsy, temporary fence of four or five-foot high chicken wire loosely wrapped outside a tomato plant may be enough of a deterrent if other, easily accessible food choices are available. Temporary netting can be placed over a row of bush beans or field peas until the crop is harvested. A single or two-strand electric fence, draped with aluminum foil and peanut butter, can give deer a jolt on the nose. This behavior modification technique is improved with flagging the electric line, so deer learn to avoid flagging. Check the legality first before installing an electric fence. Some city governments and homeowners associations do not allow installing an electric fence in your neighborhood.

Vegetation management. Compared to domestic animals, deer are akin to goats in their eating habits. They browse on woody shrubs, leaves, twigs, buds, forbs, and even briars. Planting less-



White-tailed deer have adapted to residential areas. Photo by David Cappaert, Michigan State University, bugwood.org.

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preferred plant species around your yard may help, but when deer are hungry, they will find something to consume. If you have a “browse line” where deer have eaten every green leafy plant material from ground level to five feet high, it will be difficult to find any plant they won’t eat. But there is at least one plant deer avoid – daffodils!

In summary, consider an IPM strategy to reduce deer damage in your garden and yard. For example, place an electric fence around your garden plot, spray repellents on garden plants, and place netting over those you wish to protect. Encourage hunters to remove deer from surrounding habitat, and replace yard plants with those less-preferred by deer. Employing an IPM strategy reduces the risk of plant damage by the adaptable, abundant white-tailed deer.

Grape Downy Mildew

Sherrie E. Smith

Downy mildew of grape is a common disease of grape in Arkansas. The causal agent, *Plasmopara viticola*, can attack all green parts of the plant, including leaves, petioles, stems, and fruit. Leaf lesions are yellowish and oily, or angular, yellow to reddish brown, and limited by the veins. A dense, white, cottony growth of sporulation occurs on the underside of the leaf. Infected shoots curl into a shepherd’s crook, and become

Grape Downy Mildew-*Plasmopara viticola*



Sherrie Smith University of Arkansas Cooperative Extension

white with sporulation, eventually turning brown and dying. Leaves with numerous downy mildew lesions drop prematurely, reducing sugar content in the fruit and decreasing winter hardiness of the buds. Young berries are also highly susceptible. They appear grayish in color and covered with downy felt-like sporulation. Infected berries do not ripen normally, but remain firm, eventually dropping from the vine. As with all downy mildews, good soil drainage is essential. The cleanup of fallen leaves and berries, and the removal of infected shoots helps limit inoculum, but rarely are these measures sufficient in themselves to control Downy mildew in areas with high disease pressure. Fungicides must be applied, starting at 3-6” shoot growth. Captan, Mancozeb, Ziram, Abound, Sovran, Pristine, Aliette, Scala, Rovral, Reason, and Gavel are labeled for downy mildew control.

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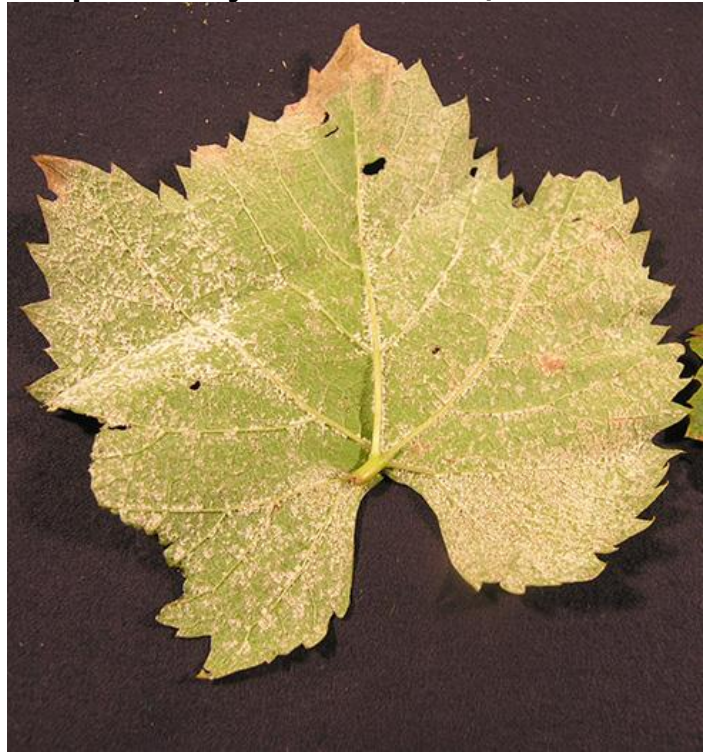
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Grape Downy Mildew-*Plasmopara viticola*



**Sherrie Smith University of Arkansas Cooperative
Extension**

Grape Downy Mildew-*Plasmopara viticola*



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Name That Weed

Bob Scott

This week's plant is very unique! Due to its invasive "twining" nature, it is most often considered a weed. But it cannot exist alone. It needs a host, so it is considered a parasitic plant or weed. Note the lack of green color (it's the orange one). It lacks chlorophyll so it steals its energy from its host.

Be the first to email me at bscott@uaex.edu with the correct common name 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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