

Pest Management News

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Squash Bugs in the Home Garden

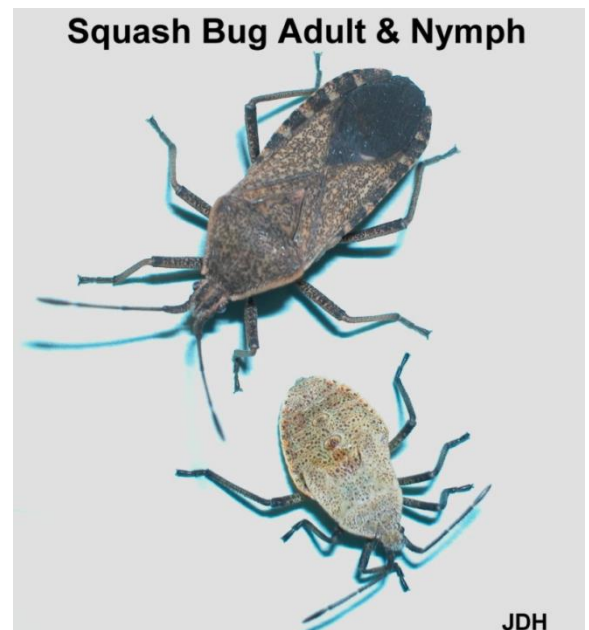
John D. Hopkins

If you are not already inspecting the squash plants in your home garden, then you should really think about starting now. Squash bugs, *Anasa tristis* (DeGeer), will feed on all cucurbits, but squash (especially yellow squash) and pumpkins are preferred. This insect pest is also a vector of the cucurbit yellow vine disease bacterium.

Squash bugs overwinter as adults in plant debris or in protected areas in woods or other sheltered areas near the garden site. Only one generation of squash bugs occur each year, but because of the extended egg-laying period, adults and nymphs are present throughout the summer.

Adult squash bugs are about 5/8 inch long, flat backed, and brownish in color. Over-wintered females will begin laying eggs in the garden in early summer. The female squash bug lays groups of 7 to 20 shiny bronze to brick red colored eggs in rows on the undersides of leaves usually at leaf vein junctions. Nymphs hatch from eggs after about 7 to 10 days. Young nymphs continue to remain together in a group and begin to feed on the underside of leaves. The immature nymph stage lasts 5 to 6 weeks during which nymphs develop through 5 instars. Nymph coloration is variable ranging from greenish with a red head and legs to dark greenish gray with a dark head and legs. The last two nymphal instars have visible wing pads. Overall, it takes 5 to 8 weeks for squash bugs to develop from egg to adult.

Colonies of feeding adults and nymphs suck plant juices through piercing sucking mouthparts. However, plant



damage results from the injection of a toxic substance that causes vines to wilt and die. These bugs will also feed on fruit if present.

Cultural control methods for the homeowner include hand picking adults and egg masses in small gardens. Squash bugs also have a tendency to aggregate in sheltered locations and this behavior can be turned to your advantage. Bugs will congregate under boards or shingles placed on the soil around plants and can be crushed or otherwise destroyed each morning. Other things that will help lessen damage include maintaining healthy vigorously growing plants through proper watering and fertilization and destruction and removal of crop debris.

Honeybees and other pollinators are very important in cucurbit production, and insecticide application can interfere with pollination by killing honeybees. If insecticides are to be applied when blossoms are present, it is advisable to use insecticides with little residual activity, and to apply insecticides late in the day, when honeybees are less active.

If chemical control is desired, be observant and do not let the squash bug population get out of hand. Home gardeners should be aware that adult squash bugs are difficult to kill. Control measures should be targeted against young nymphs as they are more susceptible to insecticides. Control materials available to home gardeners for squash bug management in cucurbits include various formulations and of acetamiprid (*Ortho Bug B Gon Systemic Insect Killer* - 0.5% acetamiprid; *Ortho Flower, Fruit & Vegetable Insect Killer Concentrate* - 0.5% acetamiprid), bifenthrin (*Ortho® Bug-B-Gon MAX Lawn & Garden Insect Killer Concentrate* - 0.3% bifenthrin), carbaryl (*Garden Tech Sevin Bug Killer Concentrate* - 22.5% carbaryl; *Garden Tech Sevin-5 Ready to Use 5% Dust Bug Killer* - 5% carbaryl; *Hi-Yield Garden Dust for Outdoor Homeowner Use* - 5% carbaryl), and, permethrin (*Bayer Advanced Complete Brand Insect Dust for Gardens Ready to Use* - 0.25% permethrin). Various botanical insecticides may also provide some control.

All chemical information provided is given with the understanding that no endorsement of named products is intended, nor is criticism implied of similar products that are not mentioned. Individuals who use pesticides are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Before purchasing or using any pesticide, always read and carefully follow the label directions.

Stable Flies: Important Pest of Cattle and Horses

Kelly M. Loftin

Moisture, rotting hay, livestock manure and warm temperatures are the ingredients necessary for a healthy stable fly population. I've noticed more stable flies at my place this year than in the recent past. One difference at my place is that my horses wasted more hay last winter than past winters, probably because I fed poorer quality hay. I suspect that others could be experiencing similar issues.

The stable fly, *Stomoxys calcitrans* (L.), is both a nuisance to companion livestock and an economic pest in traditional livestock production. This fly is a filth fly that breeds in decaying organic matter, manure, spilled feed, and wet hay or grass. The male and female are both



Typical outdoor stable fly breeding site.
(University of Missouri Extension Service)

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blood feeders that can cause painful bites and irritation for pets, livestock, and humans. Stable flies are persistent feeders and will continue to take a blood meal even after being swatted at several times. Sunny outdoor areas are the preferred resting site for adult stable flies to spend much of their time; however they will enter buildings such as in horse stables, dairy calf pens or poultry houses often for breeding purposes. They also breed outside in decaying organic matter such as wasted hay mixed with urine and feces.



Adult stable fly, *Stomoxys calcitrans* (Linnaeus).
(Whitney Cranshaw, Colorado State University,
Bugwood.org)

Because a single stable fly will take multiple blood meals per day, stable flies become significant nuisance and economic pests.

Feeding usually occurs on the lower regions of the body such as the lower half of the livestock's legs. Stable fly feeding is readily apparent by the stomping of animal's feet because of the painful bite being inflicted. Flies that do not move about on the animal, particularly the legs, are very likely to be stable flies because they remain stationary in order to take a blood meal.

Not only are stable flies annoying, they can cause economic losses. High stable fly populations on cattle can result in a potential 10-15% loss of body weight. This loss is related to both loss of blood and disturbance caused by the fly's feeding. Loss in milk production resulting from extreme stable fly abundance has been reported to be 40% or more. Stable flies are also implicated in the transmission of livestock diseases such as equine infectious anemia, anthrax, and surra.

Life Cycle and Identification

Adult stable flies are about the same size as the adult house fly, *Musca domestica* L. The stable fly proboscis (resembles a bayonet) which is used to take their blood meal is very prominent and a good characteristic to distinguish it from the house fly and other filth flies with sponge-like mouth parts. The adult stable fly is gray in color with four dark stripes on the thorax and three dark spots on the abdomen creating a "checkerboard pattern".

The adult female can lay eggs after having several blood meals. The white eggs are usually laid in decaying vegetative matter such as wet hay or straw mixed with manure. The female stable fly lays eggs in batches of 25-50. The larvae hatch from the eggs in about 1-2 days. Larvae are typical maggot shaped, white maggots that feed on the same type of material where the eggs were laid. The larvae stages last for 6-8 days and then develop into a brown pupa from which the adult emerges after about 6-8 days. The duration of the stable fly life cycle is temperature dependent, for example in warm weather (75-85°F) the cycle from egg to adult can be completed in 13-18 days. At cooler temperatures the stable fly can take several weeks to complete its life cycle. Overwintering of stable flies is not completely known, but larvae likely develop slowly during winter months under the frost line and move toward the soil surface to pupate as temperatures rise.

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Control Methods

The best method to reduce stable fly abundance is practicing good sanitation. Removing manure, spilled feed, and wet hay or straw at least once a week (preferably every 2 to 3 days) will help reduce the stable flies' breeding. Concentrate sanitation efforts around stables, feeding areas, corrals and barns. The aim of sanitation is to reduce and/or eliminate habitat for larval development. Accumulated manure and wasted feed should be removed and/or spread thinly. Vegetation management in areas where manure, hay and dead organic matter accumulate is also recommended. Excess moisture around the barnyard should be reduced or eliminated. Reduce or eliminate hay wastage as this becomes ideal breeding habitat when the hay becomes wet and soaked with manure and urine. Without sanitation other methods of fly control will be much less effective.

Insecticides applied directly onto the animal are often used to provide immediate relief for the animal. Animal insecticide treatments for stable flies are normally directed toward the lower regions of the body, primarily the legs. For cattle, stable fly counts should be carried out by counting the number of stable flies present on the legs of each animal. Application of the animal sprays should be considered when stable flies reach an average of 10 flies per animal.

Another chemical method of stable fly control is applying residual sprays on surfaces where the flies rest, such as fences, walls and vegetation. These sprays may remain effective for 10 days when temperatures are not too high or rainfall is limited. When using residual sprays, do not allow runoff to create a puddle beneath the application site and do not contaminate feed or water.

Area space sprays can also be used and are more effective where flies are congregating in abundance. Remember space sprays offer little residual activity, thus direct contact is necessary to kill the fly. These types of sprays can be used in combination with residual sprays and may require 2-3 applications a week, when stable fly abundance is very high.

Consult the Animal Section of the MP 144 "Insecticide Recommendations for Arkansas" for a listing of insecticides labeled to control stable flies on livestock or livestock premises. Addition information on stable flies and other pests of horses is available at:

http://www.uaex.edu/Other_Areas/publications/PDF/MP484.pdf.

Dollar Spot of Bermudagrass

Stephen R. Vann

Dollar spot is a fungal disease that is caused by the fungus *Sclerotinia homoeocarpa*. It is particularly favored by hot days with cool nights from which heavy dew often results. In Arkansas, this is a very common turf disease each year during the late summer and early fall. Heavy dew encourages disease incidence. This fungal disease is usually more of a problem on drought stressed and low cut grass. Both low cutting heights and low nitrogen fertility can also



Distinctive dollar spot symptoms of bermudagrass

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increase disease severity. Small, circular, straw-colored spots which are 1 to 3 inches in diameter are the most common symptoms of dollar spot. These spots tend to be most obvious on closely mowed hybrid bermudagrass. The randomly occurring spots may grow together, forming larger dead areas of turf that are readily seen in home lawns, athletic fields, and commercial turf environments. The disease may go unnoticed until smaller spots grow together to form larger ones. The fungus produces white “cottony” growth (mycelium) that resembles cob webs on symptomatic grass that is visible after heavy dew in the early morning hours. The fungal growth will quickly disappear once the dew has dried. On individually infected leaves, yellow to brown lesions with a distinctive dark purplish-brown border develops which eventually girdles the leaf blade. This distinctive symptom is useful for diagnosis. This disease is perhaps the most widespread disease of bermudagrass, but can also occur on zoysiagrass in both residential and commercial landscapes. Most of the damage to the plants is restricted to the foliage. The disease is favored by temperatures between 59 and 86 degrees F and high humidity over extended periods. The fungus survives as mycelium in the diseased grass. Infected clippings left by the lawnmower can contribute to future disease infections. Dollar spot usually spreads by the movement of infected grass clippings by lawnmowers and other lawn maintenance equipment.

For the home lawn, disease management should focus on adjusting cultural practices, particularly watering schedules. The turfgrass should be irrigated deeply but infrequently to minimize moisture stress and subsequent dollar spot infection. Early morning irrigations (between 4-8 a.m.) are best to help reduce the time the leaves remain wet. Grass blades should be allowed to dry by mid to late morning times.

Temporarily raising the cutting height of the grass can help minimize stress on the plants. Since the fungus can spread by lawnmower, it is best to avoid mowing when the grass is wet. Collect and dispose of clippings from affected areas. If the disease is confined to a specific area, consider mowing that affected area last.

Chemical control is often considered if dollar spot is persistent and severe. Applications should begin in the early spring and fall before disease development or at the early stages disease onset. Fungicides should not be the only management tool. Homeowners should address the cultural techniques listed above. Fungicide choices include those that contain myclobutanil (e.g. Spectracide Immunox), triadimefon (e.g. Bayleton), thiophanate-methyl (e.g. Fertilome Halt), or propiconazole (e.g. Banner Maxx or Fertilome Systemic Fungicide). Newer generation professional turf care products such as those which contain azoxystrobin as the only active ingredient are not effective for dollarspot.

Resident Canada Geese

Becky McPeake

Canada geese are easily identified by their distinctive coloration, honking call, and “Vee” flight formation. Canada geese are so common, it is difficult to imagine they were nearly eliminated in the 1900’s by unrestricted egg harvesting, commercial hunting, and draining of wetland habitat. Today, Canada geese have adapted to habitats in urban parks, golf courses, and farm ponds. Some geese find such good living conditions that they become resident flocks and stay year-round. Large flocks of

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migratory geese travel through or winter in Arkansas each year, and can damage agricultural fields by feeding and tromping on crops such as winter wheat and other grains.

In parks and residential areas, a few geese may seem desirable, until these small populations increase rapidly and become difficult to control. A common complaint is the accumulation of droppings or feathers. Recent studies have found *Escherichia coli*, *Listeria* and *Campylobacter* bacteria, strains associated with human disease, in Canada goose feces. Heavy concentrations of goose droppings contain nitrogen, which can result in eutrophication of ponds and lakes, leading to excessive algal growth, closure of public swimming areas, and reduced water quality. High concentrations of geese also increase the likelihood that avian diseases will be transmitted to other geese or waterfowl, resulting in their deaths. Canada geese are suspected of transmitting salmonella to cattle.

Geese can be very aggressive around their nests or goslings and may attack or threaten pets, children, and adults.

High concentrations of geese in the same location may overgraze and create large, dead spots on lawns or golf courses. Geese sometimes trample grass to the point of creating a “hard pan” that prevents vegetative growth and causes erosion.

Because geese like open, grassy areas, are large, and tend to form flocks; airports are particularly sensitive to their presence as they can collide with and damage aircraft.



Figure 1. Once few in number, Canada geese are very plentiful today and are a nuisance to some. Photo courtesy of the Natural Resources Conservation Service.



Figure 2. Canada geese are protective of their young.

Optional control techniques have been studied for deterring resident flocks of Canada geese. Use several of these control methods to deter Canada geese from residential areas, parks and ponds.

- **Ban feeding.** Geese tend to stay where food is present and where there is open water. Providing food will cause geese to associate the site with a readily available food source.
- **Grow less nutritious grass.** Mow and fertilize as little as possible, and avoid planting Kentucky bluegrass, which Canada geese highly prefer.
- **Disrupt travel and site lines.** Plant bushes, hedges, or shrubs to make the area appear unsafe to geese. Canada geese tend to avoid areas where predators are able to hide.

- **Modify the shoreline.** Canada geese prefer gently sloping banks with low vegetation. Allow vegetation to grow or place large stones (e.g., rip-rap) along the bank. Increase the bank slope to 64 degrees or steeper.
- **Install fencing.** Short fences, vertical banks, or hedges of at least one foot high around ponds can be very effective, especially if geese have goslings. Even if geese fly over the barrier between the pond and an open grassy area, the hassle of continuously flying over the fence has been found to eventually drive geese away. Electric fences can also be effective, if legal to use in your area. On smaller ponds, high tensile wire or UV-resistant polypropylene line can be strung tightly across no more than five feet apart and three to four inches above water level.
- **Use frightening devices.** Frightening devices are most effective when used immediately when geese first arrive or at night when roosting. Canada geese will become habituated to frightening devices after a length of time, so frequent repositioning and/or replacing these devices is recommended.
 - Common devices are pyrotechnics (e.g., specialized fireworks fired from a special starter pistol or single-fire shotgun), flagging, balloons, scarecrows, and recorded distress calls. These techniques tend to work only in the short term and should be rotated before birds become accustomed to the object. For frightening devices which produce a noise, make sure it is legal and neighbors will not be disturbed, and that the flight of frightened geese will not pose a hazard to vehicles or aircraft.
 - Effigies of coyotes or a floating alligator head (available for purchase on the internet) may also be effective until geese become accustomed to them. Move effigies regularly to improve their effectiveness.
 - Lasers used at night can be effective at frightening geese, but follow safety precautions – keep beam horizontal to the ground and never shine in the sky or in human eyes.
 - Hazing geese by using boats, planes, helicopters, or specially-trained dogs can be effective, but labor intensive and expensive.
- **Apply repellents.** Some repellents can be purchased in home and garden stores, or may require pesticide permits, such as methyl anthranilate and anthraquinone. Methyl anthranilate is an extract from grapes that causes a pain sensation when geese inhale it. Anthraquinone deters geese from eating grass by causing stomach upset. Anthraquinone has a sparkle visible to geese but not humans, which allows geese to identify treated areas.
- **Sterilize eggs.** OvoControl-G is bait that contains an active ingredient nicarbizan which prevents eggs from becoming fertilized and hatching, as long as female geese continue to eat it. Geese that are fed this product during the egg-laying season will produce sterile eggs. A pesticide license is required.
- **Legal hunting.** Hunting is effective for reducing populations and deterring geese from an area. The Arkansas Game and Fish Commission offer a special hunting season when geese are numerous. Obviously, hunting geese in residential settings often is not an option.

Other options, such as egg addling (i.e., completely coating an egg with corn oil, which limits the oxygen to the developing egg, causing it to stop growing), corralling of molting residential flocks, translocation, and/or euthanasia require state and possibly federal permits.

For more information, read [Managing Canada Geese in Urban Environments: A Technical Guide](#), by Arthur E. Smith, Scott R. Craven, and Paul D. Curtis, or [Control Techniques for Canada Geese](#) at the Internet Center for Wildlife Damage Management.

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Name That Weed

Bob Scott

This month's weed is very difficult to control with herbicides and typically occurs in Arkansas in undisturbed wet areas. It can creep out of turn-rows and ditches especially in no-till production fields.



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Description: This native perennial plant is unbranched and 2-4' tall. It consists of a single central stem with multiple overlapping joints; the diameter of this stem spans up to ¾" across. The stems are green, olive-green, or dark green, rough in texture, and evergreen; they are usually erect. The joints that make up the central stem are individually several inches long; the upper joints are shorter than the lower joints. Each joint has about 10-40 fine ridges along its length. At the apex of each joint, there is an appressed ring-like sheath up to 1" long, from which the next joint develops. Except at its upper and lower rims, this sheath can be whitish grey, brown, or black; it is always black along the rim of its base, while its upper rim terminates in up to 40 tiny black teeth. These teeth are deciduous and often break off the stem. The interior cavity is quite large and spans at least one-half the diameter of a joint. Each fertile stem terminates in a spore-bearing cone up to 2" long on a short stalk. This cone is variably colored and usually pointed at the top. Infertile stems are very similar to fertile stems, except they lack spore-bearing cones. Secondary stems (branchlets) are rarely produced. The cones release their spores from late spring to mid-summer; they wither away later in the year. The root system consists of extensive rhizomes with fibrous secondary roots. This plant often forms dense colonies; sometimes these colonies can be quite large in size.

Cultivation: The preference is full sun, wet to moist conditions, and soil that is mucky, gravelly, or sandy. However, drier conditions and other kinds of soil are tolerated. This plant can spread aggressively, especially where the soil is poorly drained. It has few problems with pests and disease.

Range & Habitat: Habitats include swales in black soil prairies and sand prairies, low-lying areas along rivers and ponds, marshes, roadside ditches, pastures, and gravelly railroad embankments (including the gravel ballast). This plant is found in both degraded and higher quality habitats; the typical variety of this species occurs in Eurasia.

Comments: it is somewhat unusual in having evergreen stems. I am always impressed by the large dense colonies that are often formed by the stems of this plant. These tough stems were used to scour pots, pans, and floors during pioneer days, hence the common name. However, it is closely related to ferns and both were common during the Carboniferous period (280-345 million years ago), when tree-sized versions and ferns occurred. The coal deposits of Illinois were formed in large part from its ancestral plants and ferns. It can be distinguished from other horsetails in the state by its large size, rough unbranched stems, and pointed cones. While there is some variability across local populations, this species is usually easy to identify. However, sometimes it forms sterile hybrids with other members of the Equisetaceae family. When this occurs, it is possible to confuse the hybrid with one of the parent species.

Be the first to email Bob Scott with the common name for this unique plant species and win a prize!
bscott@uaex.edu

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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