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Hosta Diseases

The hosta is a popular landscaping plant, loved for its beautiful variety of foliage, and ease of cultivation. Around this time, delicate purple or white flowers develop before frost. Below are some of the most prevalent pathogens on hosta in Illinois.

Foliar nematodes

The plant clinic has received several hosta samples damaged by foliar nematodes (*Aphelenchoides* spp). These microscopic worms infect the above-ground parts of hostas. They are able to swim through a film of water on the leaf surface of a hosta and then enter plant tissue via natural openings or wounds. Foliar nematodes that infect hosta are able to spread to other plants in drops of splashing water or by way of gardening tools. Wet conditions throughout the summer favored their spread. Symptoms of these foliar nematodes start out as water-soaked areas within parallel veins on leaves, but later these long areas can become necrotic, dark, and maybe even tattered in appearance. To control foliar nematodes remove infected leaves, reduce overhead irrigation, and sanitize garden tools. Overwintering populations of nematode can potentially be reduced by keeping mulch and plant debris away from hosta crowns.

Petiole Blight

This is a devastating fungal disease caused by *Sclerotium rolfsii*. Under fa-

vorable conditions, the pathogen can rapidly take-over and defoliate an otherwise healthy hosta. It was previously named Hosta Crown Rot, but was re-named due to the fact that the pathogen attacks the petiole while the plant's crown remains unharmed.

This pathogen is particularly devastating because of its ability to survive in the soil and on the soil surface from several months to years. Survivability is attributed to the tough, mustard seed-like overwintering structures, known as sclerotia. The pathogen becomes active during warm, humid weather at which point the sclerotia germinate and tufts of white mycelium fan out over the soil surface. When the fungus comes in contact with a host, it releases oxalic acids that break-down plant cells walls and tissues. On hostas, symptoms begin as wilting and discoloration of lower leaves. In a short time the upper leaves also wilt; and close inspection shows a soft, brown rot of the base of petioles. The entire leaf soon collapses above the site of infection.

Prevention and sanitation are important for disease control. The fungus is spread by sclerotia or by mycelium growing from the sclerotia. Contaminated nursery plants and exchange between gardeners has aided long distance spread of the disease. Closely inspect plants for signs of the disease before purchasing plants or accepting plants from friends

and family. If you spot the disease in your landscape, remove all of the infected plant parts, placing them directly into a bag to remove them from the garden. Be careful not to spread any of the fungal mycelium or sclerotia. Do not compost diseased plants. Remove the top several inches of soil around the plant, again being careful not to spill any as you work. Unfortunately, no effective fungicides are currently available for homeowners to use. Mulch may contribute to the overwinter survival of the pathogen. Pulling mulch back from the base of plants before winter may help to kill the fungus. There are differences in levels of susceptibility among hosta cultivars, but nothing with high levels of resistance.

Hosta Virus X

Hosta virus X (HVX) is a pathogen that has plagued gardeners worldwide. As with most viruses, HVX will not kill hosta; however it can cause a number of undesirable symptoms such as: mosaics, yellowing, and necrosis on the foliage. Once a hosta is infected, this virus can lurk within infected plant sap, and can easily be spread by hands and garden tools. HVX can also persist in plants for years before symptoms develop, and any plants propagated from an infected plant will also develop the disease. No controls are available once the plant has been infected. Avoid introducing the disease by purchasing disease free plants from reputable sources. Destroy any symptomatic hostas, and sanitize equipment before working with nearby healthy hosta plants.

Leaf Spots

Leaf spots are common to hosta. While they make plants less attractive, they rarely are considered to be serious dis-

eases; although they can contribute to overall plant stress. There are many different fungi that cause foliar spots on hosta. Control methods for all of the hosta leaf spot diseases are similar, regardless of the fungal causal pathogen and infected area, as follows: overhead irrigation should be avoided, heavily infected leaves removed, and garden equipment sanitized. Protective fungicides can be applied before the disease infection takes place. These chemicals are especially useful for plants that were previously affected by fungal leaf spots in the past.

Abiotic Problems

Like all plants, hosta is susceptible to sunscald and drought stress. Slugs can also be major pests of hosta. Hosta plants prefer moist, well-drained soils. Depending on the variety, they will do well in a range of full shade to full sun (though most favor partial shade). Stressed plants tend to develop diseases more frequently than unstressed ones, so reducing stress and increasing plant vitality can be a powerful tool to prevent disease development in your garden. *(Diane Plewa and Travis Cleveland)*

Scoliid Wasp

Scoliid wasps, family Scoliidae, feed as parasitoids on the larvae of green June beetles. Where there were high numbers of these beetles, this is followed by large numbers of scoliid wasps. These are one inch long black wasps with the posterior portion of the abdomen being orange with a couple of yellow spots. These wasps cruise over turf areas in figure 8 patterns searching for locations to lay their eggs. They tend to fly a foot or so above the grass, being very noticeable.

Once located, the wasps crawl down into the burrows of the green June beetle grubs. Once it locates a beetle grub, it stings it to paralyze it, and lays an egg on the underside of the grub. This egg hatches into a legless larva that feeds on the paralyzed, but still living, beetle grub. When fully grown, the larva spins a cocoon, pupates, and emerges as an adult wasp during the next growing season.

Although fearsome in appearance, the adult wasps are unlikely to sting unless grabbed or stepped on while barefoot. With these wasps in almost constant motion, it is difficult to find one at rest where it could be grabbed or stepped upon. They are also numerous on flowering plants including goldenrod and Queen Anne's lace as the adult wasps feed on flower nectar. Treatment is normally not recommended. However, applying a grub control should indirectly cause the adult wasps to leave due to a lack of hosts to attack. (*Phil Nixon*)

White Grubs

White grub infestations continue to be widespread and scattered this year. There appears to be more mammal and bird damage than direct grub damage appearing. With the low number of Japanese beetle and masked chafer adults in most areas of the state, this makes sense. It takes ten to twelve grubs per square foot to cause turf injury. Even marginally high grub numbers will not produce obvious damage due to the periodic rains in most areas of the state. With sufficient rainfall and low grub numbers, the turf will grow new roots to replace those that are eaten by grubs.

Mammals and birds commonly damage turf with as few as three grubs per foot square. While searching for and feeding on grubs, a single skunk in one night can make about 100 holes through the turf that are 2 to 3 inches in diameter. Raccoons peel back the sod in areas that are usually 4 to 8 inches wide to expose the grubs. Armadillos dig holes several inches deep and several inches wide to feed on grubs. Armadillos entered Illinois several years ago and are most common in the southern third of the state. However, several have been found in the rest of the state, including northeastern Illinois. Insectivorous birds, such as starlings, blackbirds, cowbirds, and robins, peck holes through the thatch to feed on grubs. Areas that have been heavily worked by birds look brown from hundreds of tiny divots of thatch having been pulled up. Where the grubs are numerous, robins in particular chicken-scratch, scratching away the turf in patches that are several inches across in searching for grubs. (*Phil Nixon*)

Oak Sawfly

Oak sawflies are being found on white oak. They are generally most common on pin oak, also occurring on black and scarlet oaks. It is one of the slug sawflies along with pear slug and rose slug that appear as slimy, elongate, slug-like creatures. Oak slug sawfly larvae are yellow and green.

They feed on the leaf underside, causing window-feeding. They eat through the lower leaf surface or epidermis and eat the inside of the leaf, leaving the upper leaf surface intact. This remaining leaf surface is initially whitish but

soon dries and turns brown. As the larvae mature, they lose their slimy coverings and appear more like the sawfly larvae that they are. They will be greenish with three obvious pairs of true legs and more than five pairs of prolegs. These older larvae will skeletonize the leaves, eating holes in the leaves and eating away the leaf margins.

Although slug sawflies are usually not numerous, it is important that correct control measures are used if the population is large enough to warrant treatment. *Bacillus thuringiensis kurstaki* or slug baits are not effective. However, many other chemical insecticides such as carbaryl (Sevin) or pyrethroids used for caterpillar or beetle control will provide control. (*Phil Nixon*)