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Killing Grasses in 'Grasses'? How to control grasses in non-grassy ornamental plants

(Kyle Daniel, daniel38@purdue.edu)

A question that I often receive goes something like.... 'How do I control grassy weeds in liriopse and iris?' At first glance, it would appear that those ornamental plants are very similar to grasses, but looks may be deceiving as they are actually not grasses. We know that broadleaf weeds can be controlled in grasses via broadleaf specific herbicides (Fig. 1), as well as grassy weeds can be controlled in broadleaf plants fairly easy with grass specific herbicides (Fig. 1 and Fig. 2). What is often misunderstood is the control of grassy weeds in *grass-like* ornamental plants.

Broadleaf and grass weeds metabolize some herbicides differently. These differences allow herbicides to be selective in nature. True grasses are in the *Poaceae* family. Grass-like ornamental plants, such as liriopse and iris are not in the *Poaceae* family, so the selectivity of grass-specific herbicides will not damage these plants.



Figure 1. Grassy weeds in liriopse can be controlled with grass-specific herbicides because liriopse is not a true grass.



Figure 2. Grassy weeds in iris can be controlled with grass-specific herbicides because iris is not a true grass.

Grass-specific herbicides (called graminicides) can usually be used safely over the top of many ornamental plantings. The four labelled postemergence grass-specific herbicides in ornamental plantings (nurseries and landscapes) include fluazifop, fenoxaprop, sethoxydim, and clethodim. These herbicides fall into the ACCase Inhibitor category, which includes many agronomic herbicides that aren't labelled in ornamentals. These four products will control the majority of grassy weeds that are most prevalent in nurseries and landscapes.

Research data have suggested that some of the common ornamental grasses are somewhat tolerant to grass-specific herbicides. For example, removing foxtail from feather reed grass will result in very little injury to the feather reed grass while effectively controlling foxtail (Fig. 3). Some ornamental grasses are more tolerant, in general, than others, such as ravenna grass, switchgrass, and fountain grass being susceptible to injury at two rates of multiple herbicides, while others are more tolerant to low rates of several herbicide chemistries (Fig. 4). Though these two studies demonstrate the potential of developing safer rates of grass-specific herbicides, be very cautious and follow label directions, to prevent damage (phytotoxicity) to the ornamental grasses on your properties.

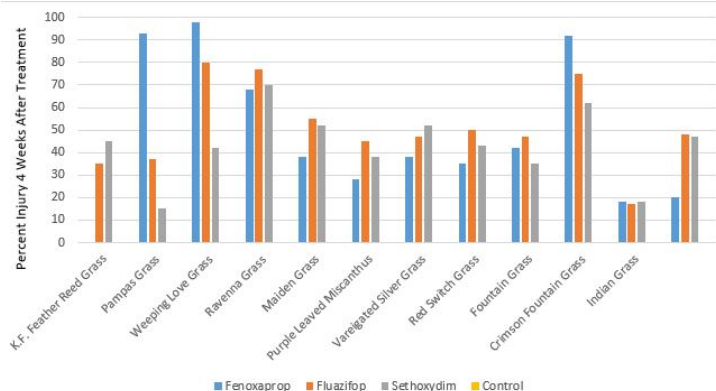


Figure 3. Injury to 11 ornamental grasses to three grass specific herbicide four weeks after treatment. Injury is rated 0-100% with 100% equivelanet to death. Modified from Hubbard and Whitwell, 1991.

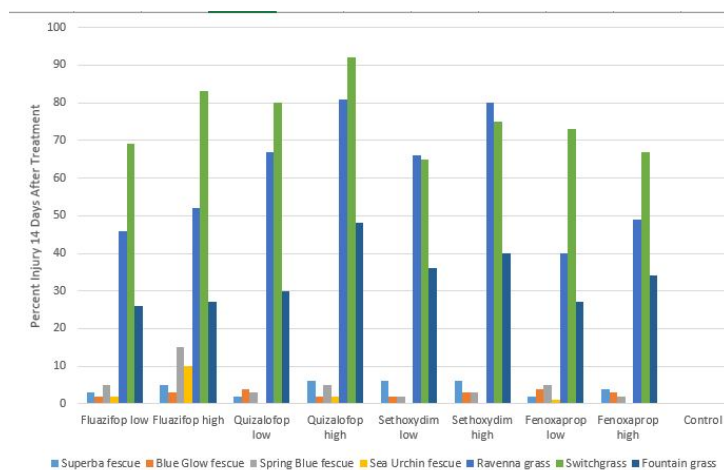


Figure 4. Injury to seven ornamental grasses after applying low and high rates of four herbicides at 14 days after treatment. Modified from Catanzaro et.al., 1993.

If you would like to discuss your herbicide management plan for your nursery or landscape, contact Kyle at daniel38@purdue.edu.

Always follow the pesticide label of the products you are using. Reference in this publication to any specific commercial product, process, or service, or the use of any trade, firm, or corporation name is for general informational purposes only and does not

constitute an endorsement, recommendation, or certification of any kind by Purdue University. Individuals using such products assume responsibility for their use in accordance with current directions of the manufacturer.

References:

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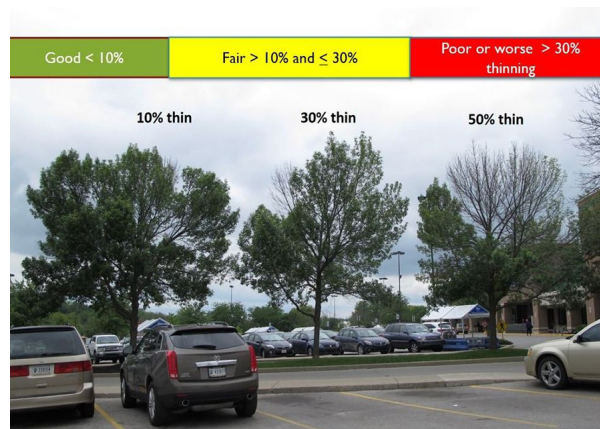
Joanna Hubbard and Whitwell, Ted. (1991). Ornamental Grass Tolerance to Postemergence Grass Herbicides. *HortSci*, 26(12):1507-1509. Retrieved from <https://journals.ashs.org/hortsci/view/journals/hortsci/26/12/article-p1507.pdf>.

Updated Guide to Chemical Control of Emerald Ash Borer Available

(Cliff Sadof, csadof@purdue.edu)

Emerald ash borer is the most destructive insect pest to attack the North American forest. Its march through our country mobilized groups of concerned entomologists to find ways to keep ash trees alive. The latest guide to [chemical control of emerald ash borer](#) uses their collective wisdom to explain

- How to use insecticides to effectively and consistently protect even the largest of ash trees from emerald ash borer.
- Why irrigation is necessary during drought to get protective chemicals in the tree.
- How an injections of emamectin benzoate can provide up to 3 years of control.
- When soil or trunk applied insecticides are viable alternatives.
- When a tree is too heavily damaged to be saved.



Not every ash tree is worth protecting. Treating ash trees in home landscapes that have lost < 30% of their canopy gives you the best chance of saving a tree.



Cities like Fort Wayne, IN have been able to keep its favorite ash trees alive even after some trees were already lost to EAB.

Our newly [designed management page for EAB](#) can help you put this information on chemical control to use on your property or in your city.

In the absence of protection your ash tree will be killed by EAB. Ash trees that have been attacked by EAB can rapidly become brittle and dangerous to prune or remove. We strongly recommend that you hire a professional to remove or prune ash trees. The link below is a guide to help professionals safely remove ash trees.

Helpful YouTube Links

[Staging and Managing Your Cities Emerald Ash Borer Infestation](#) (4 mins)

[Practical EAB Management](#) (1 hour)

[Dead Ash Danger: A Professional Guide to Pruning and Removal Techniques](#) (1 hour)

Hosta Virus X

(Tom Creswell, creswell@purdue.edu)

Hosta Virus X (HVX) is not a new problem, however, it's not as prevalent as it was nearly a decade ago because growers have gotten better about recognizing the disease and removing infected plants from their nurseries. The most common symptoms include mottled, light or dark green discolorations along leaf veins (Fig 1). HVX may also be expressed as green and yellow mottling of the leaf blades, puckering, circular discolored areas or twisted leaves. The appearance of symptoms varies widely by cultivar and the color of foliage (Fig 2, 3).



Figure 1: Hosta virus X infected plant adjacent to healthy plants.



Figure 2: Hosta August Moon, healthy plant on left with HVX infected plant on right.



Figure 3: Hosta Golden Tiara, healthy leaf below left with HVX infected leaf upper right.

HVX is not vectored by insects. It is transmitted from plant to plant by contact with infected sap through such activities as dividing or trimming. It doesn't spread nearly as easily as Tobacco mosaic virus but care should still be taken to disinfect contaminated tools to avoid spread to healthy hosta.

Management:

- Send samples to a diagnostic lab when HVX is suspected
- Remove plants that test positive for HVX
- Disinfect tools that may have been in contact with infected plants
- Check new hosta plants for symptoms before buying and planting

For the home gardener just thoroughly scrubbing tools in hot

soapy water should be enough to prevent spreading. Professionals may want to use disinfectants such as Zerotel, KleenGrow, Phytan or Virkon after removing all organic matter from tools. When disinfecting the tools, be sure to allow adequate contact time with the disinfectant as indicated on the product label.

Symptomatic plant tissues can be sent to the Purdue Plant and

Pest Diagnostic Laboratory ([PPDL](#)) for virus testing and identification.

As with many virus diseases of plants HVX won't kill the plant but it can reduce overall plant vigor and beauty. Unfortunately, there are no known controls for HVX. The only way to get rid of the virus is to remove and destroy the infected plant.

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What Nurseries Need to Know About the Invasive Species Regulation? New Publication for Nursery Growers

(Kyle Daniel, daniel38@purdue.edu)

A new publication for nursery growers has been released! This publication, a joint venture between Purdue University and Indiana Department of Natural Resources, informs that nursery and landscape industry about new state regulations regarding invasive plants. The rule goes into effect in two stages. As of April 18, 2019, it is illegal to introduce a plant species (from the list of 44) if it is not already in Indiana. Listed plant species already in trade will be restricted from sale one year later (April 2020). The one-year grace period is designed to reduce the economic impact on the nursery industry by allowing time to sell down existing stock and adjust production.



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NURSERY INDUSTRY REGULATIONS:

What Nurseries Need to Know About the Invasive Species Regulation

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By now most growers in Indiana's nursery industry are probably familiar with, or have heard mention of, the problems associated with species of plants that have become invasive. This document seeks to update the nursery and landscape industry about legislative steps the State of Indiana has taken in response to this problem. Educating clients on better selections has long been part of the job. This document provides information to help the nursery industry stay compliant with new laws that just took effect and those will take effect in 2020.

The *Indiana Terrestrial Plant Rule* (312 IAC 18-3-25) makes it illegal to sell, gift, barter, exchange, distribute, transport or introduce 44 species of plants in the State of Indiana.

The rule goes into effect in two stages. As of April 18, 2019, it is illegal to introduce a plant species (from the list of 44) if it is not already in Indiana. Listed plant species already in trade will be restricted from sale one year later (April 2020). The one-year grace period is designed to reduce the economic impact on the nursery industry by allowing time to sell down existing stock and adjust production.

From the nursery industry's perspective, the inclusion of the one-year grace period is important. It reflects lessons learned from the emerald ash borer invasion. The nursery industry suffered major economic losses from that ongoing invasion, which continues to haunt the Indiana landscape.

Purdue Extension published a document for the nursery industry that lists potential replacement species that an operation can consider when reducing/eliminating a species that is considered invasive.

Figure 1. Click the image to receive a free download of the new publication for growers: What Nurseries Need to Know About the Invasive Species Regulation.