

Hosta Virus X (HVX)

Sadly in the past year, the Covid pandemic has made us all become far too familiar with the dangers of a virus – even when it isn't causing symptoms in all of the people who it has infected. We now know that people can be totally unaware that they are spreading it. Because of Covid, many of us have been spending more time in our gardens and taking great comfort from them, so I'm a bit hesitant to give our members one more thing to be concerned about – a Hosta virus that is similar to Covid in so many ways – infecting plants that can remain asymptomatic for years, and causing slight symptoms in some plants and far more severe ones, and even death, in others. But since many of us are now heading out to shop at garden centres, it's good to know that we should be on the lookout for infected plants.

Several Master Gardener Groups and Hosta Societies in Canada have recently been posting alerts for gardeners to be on the lookout for the HVX virus in Hosta, which has been spreading around the world since it was first found in 1996, but remained mostly unknown into the 2000's – except among hosta collectors. Recently more gardeners have at least heard that there is a virus of concern in hostas. Infected plants can't be cured and no hostas are considered immune. They warn that if we aren't aware of the presence of Hosta Virus X in our gardens or nurseries, it will continue to spread until there is no hope of ever eliminating it.

To spread the virus, the sap from an infected plant has to enter an uninfected plant. This can happen if you are digging up hosta and cut the root of one with a shovel to release sap, and then use that shovel to dig up another plant. It can also happen if you are pruning flower scapes or tattered leaves from an infected hosta and then prune a healthy plant's flower scape with the same pruners. Sadly, in nurseries, their propagation techniques can spread the virus from one plant to thousands. An infected plant may not show symptoms for a long time, so we can be spreading it without knowing it. If no symptoms are showing up, the only way to know for sure if a plant is infected is by scientific testing in a lab. If you have not added new hostas to your garden over the last few years, yours are more likely to be virus free, providing your tools were not used in other gardens, but it's still good to be on the lookout for changes in leaf pattern on all of your hostas. – EVEN IF the changes have you thinking that the plant is even prettier than it used to be! While the virus may cause some hostas to become very sickly looking, it can actually make some others develop interesting new patterns on the leaves that many gardeners would find attractive. In fact, some of the newer cultivars on the market aren't the result of interesting breeding programs – they're the result of the virus causing the leaves to change! The issue is that if we aren't aware of the virus, we could be spreading it from the plants that "seem improved" to all of our otherwise healthy hostas which could end up looking quite diseased and which we'll need to remove from our gardens.

The symptoms vary between various cultivars of hostas. You might see the leaf veins becoming darker, sunken areas in the leaves, thin or wrinkled leaves, or misshapen leaves. Some varieties of hosta develop brown circular rings on their leaves which are a much more obvious symptom that something is wrong with your plant. It can also cause plants to become smaller and smaller each year, and it increases leaf burn in plants that used to be able to thrive in some sun. It may make leaves appear like those on a plant in desperate need of water, even though you know your soil is moist enough. It also causes the death of leaves which turn brown and dry up. Because an infected plant remains infected its entire life, don't be fooled into thinking that a plant that appeared to be sick last year, but that looks green and healthy this year, is now "cured". It may show symptoms again later this season, or it may show none this season but return next year.

Several Master Gardener groups in Ontario say that thousands of virus- infected hostas have already been sold – even at very reputable nurseries. Therefore they just want home gardeners to be aware of it to avoid spreading it in our own gardens, and since so many gardeners split and share hostas, to avoid spreading it to other gardens.

Here's their best advice/. If you suspect one of your plants is infected, you should remove the whole plant. Plants should be dug carefully to get as many roots as possible, and the spot should not be replanted with hostas until any remaining roots have died and rotted away. Plants that have been dug out should be left to dry in the sun before disposing of them, and they should NOT be composted.

If you grow hostas, try to get into the habit of cleaning your pruners when you move from one plant to another when cutting them back or when removing flower stalks. The issue is that as gardeners, when we see a dying

leaf on a plant, our first instinct is to prune it off. If that dying leaf was due to HVX and we move to a different area of our garden and used those pruners to snip off a faded flower stalk, we could unknowingly be infecting that healthy plant. As far as they know, the virus only affects hostas.

Do not buy plants that show even the slightest suspicious markings on even one plant. Since the patterns on hosta leaves vary so much, know what a new cultivar is supposed to look like, and if it doesn't look quite right, don't bring it home. If you're a gardener who buys a lot of new cultivars each year, they recommend that you ask the company you purchase from how confident they are that their plants are virus free. There are tests available now that breeders can use to know whether their plants are infected before they sell them to nurseries

Hosta societies recommend that the following plants should all be considered to be infected, and that you not buy them for your garden: Breakdance, Eternal Father, Leopard Frog, and Lunacy. They now know that these plants developed their unique appearance BECAUSE they were infected with the virus. They also say that for now, the following plants should also be avoided as they are likely infected: Blue Freckles, Dotted Fantasy, Kiwi Dreadlocks, Kiwi Watercolours, Pamela Ann, Parkish Gold, Strip Show, and Tye Dye. Finally they warn that the following varieties have a very high percentage of infection and should be avoided, or at the very least, watched VERY closely in your garden and that any tools that contact them be sterilized before being used with your existing hostas: **Sum and Substance**, **Gold Standard** (2 very popular plants in Moncton gardens) Birchwood Parky's Gold, Blue Cadet, Corona, Gold Edger, Golden Tiara, Goldrush, Honeybells, Royal Standard, So Sweet, Stiletto, Striptease, Sweet Susan, Undulata Albomarginata, and Venucosa. Lastly they've created a list of cultivars where some infected batches have been found but some may certainly be virus free: Abby, Diamond Tiara, El Nino, Ground Master, Guacamole, Janet, June, Katherine Lewis, Krossa Regal, Minuteman, Night Before Christmas, Pacific Blue Edger, Patriot, Paradise Joyce, Regal Splendor, Revolution, Sagae, Sun Power, Sugar and Cream, and Yellow Splash Rim.

Hosta associations are recommending the following:

- 1) Find photos of the various symptoms online so that you will recognize them when you see them.
- 2) Inform friends and neighbours if you see plants with HVX symptoms in their gardens. Point them to reliable websites if they are not convinced that their plants are changing because they are infected.
- 3) HVX is still new and some smaller nurseries may still be unaware of it. If you notice any plants on their premises that are possibly infected, you could advise the owner.
- 4) Do not add any hosta leaves to your compost if you removed them because they were looking sick, and never remove a sickly looking leaf with pruners and then use them again on a different plant until they've been disinfected.
- 5) Take photos of your hosta leaves so you know what the patterns on the leaves are supposed to look like and compare the photos to the leaves in your garden each season. If you notice that the pattern is changing, especially if darker green areas of a leaf are beginning to spread out into what used to be a paler part of the leaf, consider that plant to be potentially infected.

Nursery owners and gardeners in the United States have voluntarily destroyed large numbers of hostas to help prevent the spread of HVX, but it is now found in every country in the world where hostas are grown in gardens. But many gardeners who grow only a few hosta aren't that concerned. It is true that infected plants may survive for many years without showing any symptoms, and so far no one has seen the virus infect any other plants in the garden. But for gardeners who have invested a lot of money when filling their beds with these plants, it is important to recognize the symptoms so that they aren't spreading it through their beds and eventually seeing deterioration in the health of all their hosta plants.