

From Your Plant Doctor: Dealing with Viruses - Some Do's and Don'ts

Hello Dahlia Nation;

I hope you all had a good season and enjoyed having dahlias in your gardens. I attended the National Show in Tacoma in August and the Midwest Conference in Youngstown, OH in September. Both shows were a feast to my eyes. Paraphrasing a well-known quote, "If you don't know how to say it, say it with some dahlias" :-)

My research on dahlia viruses has been going well. I've made some important discoveries and will be sharing them with you in future issues of the Bulletin. For now, while the season is winding down and you are preparing for the next season, here are some tips to deal with those little critters called viruses.

The key to reducing viruses in your garden and in your local dahlia community as a whole is great attention to the first appearance of disease. There is a wide range of symptoms that are usually associated with virus infections. Usually, symptoms first appear on leaves. A common and readily detectable symptom on leaves indicative of virus infection is 'mosaic' - a mixture of dark and light green patches/islands. On a bright and sunny day, they may go unnoticed. But they can be more easily seen under shade. Another prominent symptom is clearing of green color along the veins of leaves. Not all leaves of a plant may show these symptoms. Sometimes, leaves may develop bright yellow spots or patches. In case severely diseased plants, they tend to be stunted with little or no flowers.

The dahlia virus web site has images of virus-induced symptoms (use the key words, 'WSU and dahlia viruses' in Google to find the link). Plants with these symptoms should be removed from your gardens and destroyed. Many of the viruses in dahlias are spread by insects (for example, aphids and thrips) and leaving 'virused' plants in your garden will be a source of these insects to spread the viruses to neighboring healthy plants. So, it makes sense not to leave the diseased plants in the garden for an extended period of time.

Another habit that goes a long way in reducing viruses in your garden is to destroy tubers from virused plants. Most of the viruses in dahlia survive in the tubers and the disease is likely to show up in the following season.

Here are some frequently asked questions and my responses.

I pulled out a diseased plant. Is it okay to plant in the same soil again?

- If the disease was due to a virus, you may plant again in the same soil. Many viruses do not survive in soil.

Ok. I followed your advice and pulled out a few diseased plants. Is it okay to compost them?

- Yes. Most viruses do not survive the composting process.

Is there something that I can spray to 'cure' my diseased plants?

- Unfortunately, no. We don't have chemical therapies yet to inactivate or kill viruses. This is the same for many of the viruses that infect humans (like common cold or flu)

Are these viruses spread by using contaminated tools?

- You bet they do! It is a good habit to disinfect cutting tools. Research has shown that 10% household bleach is effective. Dip the knife in diluted bleach solution and rinse in water.

My plants looked diseased with leaves showing symptoms of virus of infection. Should I keep using the tubers/cuttings from these plants?'

- Not a good idea! Viruses accumulate and pass on from generation to generation and can cause more damage.

Some of my plants looked diseased but new growth looked fine for rest of the season. Why is that?

- This happens sometimes. Plants fight back and try to recover from the disease. This does not mean that they got rid of the virus.

Is it possible to make dahlias resistant to viruses?

- Yes. Through the process called plant breeding. For this we first need to identify genes that provide that resistance and move them to other varieties. Usually resistance to viruses is controlled by several genes so it requires a huge effort to move them into other varieties. In my observations, I noticed that varieties with dark leave tend to have less disease.

I really take good care of my plants and I don't see much of a disease issues!

- Good for you! Stresses like lack of water or poor soil fertility could weaken your plants and could result in disease expression. Keep the plant vigor and optimal growing conditions could help keep the plants stay healthy.

Finally, I would like to express my appreciation to the Scheetz-Chuey Charitable Foundation for their recent substantial donation to WSU in support of virus research. Their generosity has

made it possible to create the Carl F. Chuey Dahlia Virus Research Fund. That fund will greatly enhance our ability to minimize and eradicate virus in dahlias.

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