

Virus Testing - 2019

Ongoing support from Professor Hanu Pappu at Washington State University (WSU) and financial support from the Scheetz-Chuey Foundation will make it possible for the ADS to continue to perform the dahlia virus testing and analyses that have helped us to understand and begin to control virus in our gardens. The prime objective of the analysis work in 2019 will be to expand the availability of clean stock to our members. Of course, we will also continue to use the results to better understand virus in our dahlias!

One of the key conclusions from the 2018 results was confirmation that the most reliable sources for clean tubers and plants are plants that were tested and found to be free of virus in the previous season. An important corollary to that conclusion is that the virus-free plants used as a source for the tubers and plants as well as the current season plants must be raised in a greenhouse or garden where the cleanliness and disinfection practices described earlier (December '18 Bulletin) are rigorously followed.

The basic recommendation from Professor Pappu has been, from the outset, to throw out questionable stock ("If in doubt, throw it out!") and save only the best stock for the subsequent season. In 2017, we tested "Gx" plants (plants grown from stock determined to be clean the previous x seasons) from all growers and were disappointed to discover that about 38% of those plants tested positive. In 2018, we limited the Gx tests to plants grown in Virus Team gardens where rigorous disinfecting practices are followed. We were encouraged to find that only 17% of those Gx samples were positive for virus.

Tubers from the Team – The availability of clean stock has been relatively common within the Dahlia Society of Ohio, the Mahoning Valley Dahlia Society, and, to some extent, within the Midwest Conference. With the help and support of the Officers and many members of each club and the financial support of the Scheetz-Chuey Foundation, most of the plants sold at the club level were grown from tubers that were free of virus. The Midwest Conference members showed their appreciation for those plants by bidding clean stock to a substantial premium at the Conference auction. That is an important result that will, hopefully, encourage our dahlia vendors to provide us, their customers, with stock that has been tested and found to be free of virus.

The following project attempts to do for other ADS Participating and Affiliated Dahlia Societies around the country what we have begun to do within the Midwest Conference – to increase the availability of clean stock.

Offense for 2019: 1. Dahlia Club Project - In order to help encourage a similar approach to expanding the availability of clean stock, the ADS, with the financial support of the Scheetz-Chuey Foundation, will cover half the cost of the testing of up to 30 samples from each ADS Dahlia Society. The cost for that testing has been \$300 for the 30 samples. With this program, the cost will be \$150 for those first 30 samples. There are several basic requirements for the clubs to provide in order to participate in this project. Each Society needs to identify a manager for the local project. He or she should complete the application form available on the ADS website, dahlia.org, as soon as possible but no later than June 30.

Clubs should be aware that the results of the early testing in the Virus Team gardens were disappointing. The current results, of the order of 80+% clean, have evolved over 5 years of testing and a lot of sorting of clean plants. While the initial results for individual clubs in this test program will likely be worse than expected, it is important for everybody to start on a similar refinement process.

2. Vendor Tests – Over the summer of 2018, the ADS sponsored the testing of the plants of a number of dahlia vendors. There was a huge range in the test results over the various vendors. It was our hope and expectation that the vendors who participated would take best advantage of the plants that tested clean. We also hoped that they would recognize and take advantage of the tool disinfection practices we've discussed. At this writing, it is too early to determine whether any of the suppliers will be "advertising" their results, but that is also a reasonable expectation.

The extension of the program into 2019, again made possible by the support of Professor Pappu and his group at WSU and the financial support of the Scheetz-Chuey Foundation will be similar to the one in 2018. Free testing will be provided to all those vendors interested. The results will be strictly confidential. The number of tests to be provided to each vendor at no cost will be determined after we know how many vendors will be participating.

3. Individual Tests – Professor Pappu will continue to provide virus testing to individuals who provide sets of leaf samples in accord with the instructions on the website. Those samples will be analyzed at a rate of \$300 for 30 samples. Individuals, clubs, vendors can take advantage of this option to broaden their testing and the knowledge of virus in their own gardens.

Applications and Instructions - Applications for involvement in these testing projects and detailed instructions for sending samples are available on the ADS website, dahlia.org.

Team Testing – We will continue to perform targeted experiments within the Virus Team. Plans for 2019 include

1. A repeat of the integrated pest management project completed in cooperation with the University of Maryland. See another article on that work in the March Bulletin.
2. We will continue to try to better understand the transfer of virus between plants.
3. Perhaps the most challenging task will be to better define the differences in the behaviors of the different viruses.
4. Perhaps the most exciting of the tasks is an effort to produce clean plants from virus-infected plants through the development of appropriate tissue culture practices. That work is just getting started at WSU by Dr. Moyo and Prof. Pappu.
5. WSU will, of course, continue to do the basic research on viruses that provide the bases for all our field work.

We wish to acknowledge the fact that all of this work depends on the support of Professor Pappu and his colleagues at WSU as well as the financial support of the Scheetz-Chuey Foundation.

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